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Manufacturing Miracles

PATHS OF INDUSTRIALIZATION IN LATIN AMERICA AND EAST ASIA

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CHAPTER 4

Big Business and the State

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THE LATIN AMERICAN and East Asian newly industrializing countries (NICs) frequently have been taken to represent two contrasting development orientations: Mexico, Brazil, and Argentina are seen as having given primacy to an inward-oriented (import-substituting) mode of development, while Taiwan, South Korea, Hong Kong, and Singapore are associated with an outward-oriented (export-promoting) model. While these regional contrasts help us to understand many features of Latin American and East Asian development, national diversity among the NICs often overshadows regional similarities.

One form of subregional variation that tends to have been ignored in previous studies is industrial structure. There are two sets of indicators related to industrial structure: (1) the characteristics of a country's leading firms and (2) aggregate concentration measures that show how important big business is within the national economy. At the firm level, the three main features of industrial structure are: size, ownership, and industrial sector. At the aggregate level, the most convenient way to measure industrial concentration is to see what share of a country's gross domestic product (GDP) is accounted for by a certain number of the biggest firms. We will use both kinds of indicators in this chapter.

Taiwan and South Korea have sharply contrasting industrial structures in terms of the characteristics of their leading business enterprises. Taiwan has a predominance of small and medium-sized firms, often family-owned, while Korean industry centers around huge economic conglomerates (*chaebols*). Although local private companies predominate in both East Asian countries, state-owned enterprises are still quite important in Taiwan. They are relatively insignificant in South Korea, however. Foreign-owned firms play a limited role in both economies, with a focus on select export industries. Even there, local companies account for the vast majority of export sales. Although both Taiwan and South Korea have strong textile and electronics industries, they differ in the prominence of

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their other leading sectors. Taiwan has given considerable emphasis to petrochemicals and plastics, while South Korea has emerged as a world power in heavier industries, such as steel, shipbuilding, and motor vehicles (see Haggard and Cheng, 1987).

The Latin American NICs, on the other hand, are extensively penetrated by transnational corporation (TNC) subsidiaries. Foreign firms and state-owned enterprises are clustered at the top of the industrial pyramid in each country. Mexico, to a greater extent than Brazil, has promoted joint ventures between foreign and local investors. As a result, local private capital has a somewhat larger role in the Mexican economy. The automobile complex has been central to the industrialization efforts of the Latin American NICs, but they differ in the relative importance of other leading industries. The capital goods sector in Brazil is the most advanced in Latin America. An export-oriented armaments industry and the local production of computers are top priorities for Brazil as well. Mexico's economy revolves around oil and petrochemicals, but a wide array of other industries from the booming labor-intensive *maquiladora* (bonded processing) export plants along the U.S. border to high-tech computer exports also are playing growing roles (see Gereffi, 1989a; 1989b). Whereas Mexican industries are becoming ever more tightly integrated to the U.S. market, Brazil is growing into a regional economic power with expanding investment and trade ties with Western Europe and Japan.

This chapter will explore the impact that these differences in industrial structure have on the *paths* of industrialization in the Latin American and East Asian NICs. The nature of each country's industrial structure also is a key determinant in understanding the choice, implementation, and consequences of the government's main economic *policies*.

Different industrial structures help us understand why the same broad industrial path may have distinctive characteristics within a region. Heavy and chemical industrialization (HCI) in South Korea and Taiwan in the 1970s, for example, had a contrasting pace and sectoral profile in each country. There is a similar contrast in the process of secondary import-substituting industrialization (ISI) in Mexico and Brazil, which began in the late 1950s. Industrial structure not only mediates the consequences of development trajectories, but it also helps to shape their design. In the 1980s South Korea has been pursuing a strategy that combines high value-added manufactured exports with aggressive (although still relatively limited) overseas investments and marketing efforts by the Korean *chaebol* groups in the United States and other developed country markets. This type of internationalization is beyond the capability of the smaller Taiwanese companies.

In the Latin American countries, foreign investors play a similar organizational role to the *chaebols* by utilizing their global networks to facilitate industrial integration across national boundaries. Transnational automobile companies in Mexico, relying on the country's proximity to the U.S. market and its plummeting labor costs due to recent peso devaluations, have converted Mexico into a major platform for automotive exports to the United States in the 1980s. A large proportion of these exports are intrafirm sales between related TNC units that directly link Mexican suppliers to their buyers in the United States and elsewhere. Japanese and American companies now are rushing to expand their manufacturing capacity in the Mexican industry. The Brazilian automobile industry is also strong and export-oriented, but the structure of its global integration is distinctive because of its geographical location and the relatively greater prominence of West German and Japanese auto firms there. Attention to industrial structure will allow us to better understand these and other national variations in development among the NICs.

Big Business: National Variations in Ownership, Sectoral Distribution, and Size

The ten largest industrial enterprises in Mexico, Brazil, South Korea, and Taiwan are listed in table 4.1. This provides us with a glimpse into some of the most salient firm-level differences in industrial structure in the Latin American and East Asian NICs.

First, there are clear regional contrasts. The largest firms in Mexico and Brazil are state-owned enterprises or foreign subsidiaries of TNCs. Local private companies, on the other hand, are without question the dominant firms in South Korea, and together with state enterprises they share industrial leadership in Taiwan. A closer look, however, also reveals some important subregional differences in industrial structure.

There is a rather consistent division of labor in the roles played by foreign, state, and local private capital in the Latin American NICs (see Gereffi and Evans, 1981; Newfarmer, 1985). Foreign firms have been central to the development of certain industries: electrical and nonelectrical machinery, motor vehicles, tires, rubber, chemicals, and pharmaceuticals, among others. State enterprises are concentrated in the natural resource industries, such as oil and minerals, transportation and communication, and steel production. Local private capital is quite diversified, but it is a more prominent actor in Mexico than Brazil. This has to do in part with Mexico's long-standing policy of promoting joint ventures in which domestic capitalists are involved.

We can see in table 4.1, for example, that local private capital has a substantial minority share in two of the largest state firms in Mexico (Telefonos de México and Compañía Mexicana de Aviación). Eleven of the top twenty-five industrial companies in the country are majority-owned

Table 4.1
The Ten Largest Companies in Mexico, Brazil, South Korea, and Taiwan, 1987

Rank/Company	*Main Industry*	*Sales*[a] *(US$ millions)*	*Employees*	*Ownership*[b]
		Mexico		
1. Petróleos Mexicanos	Petroleum	13,115.7	210,157	State
2. Chrysler de México	Motor vehicles	1,216.6	15,412	Foreign
3. General Motors de México	Motor vehicles	1,129.6	9,793	Foreign
4. Teléfonos de México	Communications	1,081.1	44,700	State[c]
5. Ford Motor Company	Motor vehicles	1,054.4	5,344	Foreign
6. Altos Hornos de México	Iron and steel	816.1	24,963	State
7. Gigante	Commerce	681.1	20,680	Local private
8. Volkswagen de México	Motor vehicles	644.9	12,855	Foreign
9. Cia. Mexicana de Aviación	Transportation	629.0	14,052	State[d]
10. Celanese Mexicana	Synthetic fibers and resins	549.3	8,263	Local private[e]
		Brazil		
1. Petrobrás	Petroleum	12,492.4	50,000	State
2. Petrobrás Distribuidora	Petroleum	4,690.8	4,300	State
3. Shell Brasil	Petroleum	2,952.1	3,200	Foreign
4. Esso Brasil	Petroleum	1,877.3	1,350	Foreign
5. Eletropaulo	Electric power	1,755.3	20,600	State
6. Cia. Vale do Rio Doce	Minerals	1,736.4	23,673	State
7. Cia. Energetica São Paulo	Electric power	1,528.3	15,157	State
8. Texaco	Petroleum	1,464.9	1,313	Foreign
9. Cia. Brasileira Distribucão	Commerce	1,429.7	49,000	Local private
10. Furnas Centrais Eletricas	Electric power	1,385.3	9,101	State
		South Korea		
1. Samsung	Electronics	21,053.5	160,596	Local private
2. Lucky-Goldstar	Electronics	14,422.3	88,403	Local private
3. Daewoo	Electronics	13,437.9	94,888	Local private

TABLE 4.1 (*cont.*)

Rank/Company	Main Industry	Sales[a] (US$ millions)	Employees	Ownership[b]
4. Sunkyong	Petroleum refining	6,781.6	17,985	Local private
5. Ssangyong	Petroleum refining	4,582.7	16,870	Local private
6. Korea Explosives	Chemicals	3,563.8	18,291	Local private
7. Pohang Iron and Steel	Iron and steel	3,533.2	19,329	State
8. Hyundai Motor	Motor vehicles	3,437.4	29,000	Local private
9. Hyosung	Textiles	3,257.8	24,000	Local private
10. Hyundai Heavy Industries	Transportation equipment	2,964.5	48,200	Local private
	Taiwan			
1. Chinese Petroleum	Petrochemicals and plastics	5,491.0	20,700	State
2. Taiwan Tobacco and Wine Monopoly Bureau	Food and beverages	2,277.1	13,495	State
3. Nan Ya Plastics	Petrochemicals and plastics	1,423.7	11,883	Local private
4. China Steel	Steel	1,287.8	9,476	State
5. Formosa Plastics	Petrochemicals and plastics	946.8	5,352	Local private
6. Ret-Ser Engineering	Construction	852.0	13,358	State
7. Tatung	Electronics	836.2	14,139	Local private
8. Formosa Chemicals and Fiber	Textiles and dyeing	702.9	8,377	Local private
9. Yue Loong Motor	Motor vehicles	687.4	3,782	Local private
10. San Yang Industry	Motor vehicles	600.9	3,637	Local private

Sources: Mexico: *Expansión* (1988); Brazil: *Visão* (1988); South Korea: *Fortune* (1988); and Taiwan: *CommonWealth* (1988).

[a] The following annual average exchange rates for 1987 were used for converting company sales figures from the domestic currency into U.S. dollars: Mexico—1,378.2 pesos per $1.00 (IMF, 1988, p. 364); Brazil—39.229 cruzados per $1.00 (IMF, 1988, p. 132); and Taiwan—31.975 NT$ per $1.00 (calculated as an average of year-end exchange rates for 1986 and 1987, CEPD, 1988, p. 199). The sales totals for South Korean companies were initially given in U.S. dollars.

[b] Ownership designations indicate a majority share. The classifications for Mexico, Brazil, and Taiwan come from the sources cited, while the ownership categories for South Korea have been supplied by the author using a variety of secondary sources.

[c] Teléfonos de México; 51 percent state-owned, 49 percent local private capital.

[d] Compañía Mexicana de Aviación: 56 percent state-owned, 44 percent local private capital.

[e] Celanese Mexicana: 60 percent local private capital, 40 percent foreign capital.

by local private capital, compared with a total of seven foreign and seven state firms among the top twenty-five (*Expansión*, 1988). In Brazil, on the other hand, local private businesses account for only five of the top twenty-five industrial enterprises, while twelve state companies and eight TNC subsidiaries make up the remainder of the list (*Visão*, 1988). Although foreign firms have a similar level of importance in the two Latin American NICs, the difference lies in the greater role for state enterprises in Brazil and for the local private sector in Mexico.

In the East Asian nations, local private firms are the main industrial actors. Nine of the ten largest companies in South Korea are privately held domestic conglomerates; the only exception is Pohang Iron and Steel, a state-owned enterprise that is ranked seventh (see table 4.1). Each of the private South Korean conglomerates is involved in a wide range of industries and has a staggering number of affiliates. The Lucky-Goldstar group, for example, contained sixty-two companies in 1988; Samsung was made up of thirty-seven related firms, while Hyundai had thirty-four, and Daewoo twenty-eight (Clifford, 1988).

In Taiwan, as in South Korea, there are no TNCs among the top ten companies and only three foreign-owned firms in the top twenty-five. The upper level of Taiwan's industrial pyramid is relatively evenly divided between four state enterprises and six local private companies in the first ten, although four of the six biggest firms in Taiwan are government-owned (see table 4.1). Fourteen of the top twenty-five companies in Taiwan and twenty-nine of the top fifty are local private businesses, while government and foreign-owned firms account for ten and eleven, respectively, of Taiwan's fifty biggest enterprises (*CommonWealth*, 1988). The state enterprise sector in Taiwan is more diversified than in the other NICs, with wide-ranging interests that include petrochemicals, plastics, steel, shipbuilding, construction, fertilizer, food, and beverages.

Just as significant as these regional and subregional variations in ownership and sectoral emphasis are differences among the NICs in the size of their leading industrial enterprises. South Korea's industrial structure is dominated by giant *chaebol* groups. The biggest Korean conglomerate, Samsung, had a sales total of $21 billion for 1987, which is nearly 40 percent larger than the sales of all of Taiwan's top ten companies in 1987 *combined*. Samsung's 160,000 employees exceed by more than 50 percent the total employment of the ten biggest companies in Taiwan.

The largest enterprises in Brazil and Mexico are their state-owned oil companies, Petrobrás and Pemex (Petróleos Mexicanos), with 1987 sales of $17.2 billion (including Petrobrás Distribuidora) and $13.1 billion, respectively. Once we move beyond these industrial leaders, however, the next largest Brazilian company is Shell Brasil, whose annual sales total of $2.95 billion for 1987 would place it just behind South Korea's tenth-ranking company (Hyundai Heavy Industries, with $2.96 billion in sales). Mexico's second largest firm, Chrysler de México, had a 1987 sales total of $1.2 billion, which is only two fifths that of Korea's tenth-ranking company, Hyundai Heavy Industries (see table 4.1). South Korea had eleven companies in *Fortune*'s list of the five hundred largest non-U.S. industrial firms in 1987. There were six Brazilian companies on the list, three companies from Taiwan, and two from Mexico (*Fortune*, 1988).

The differing levels of industrial concentration in the Latin American and East Asian NICs are indicated by the share of the ten largest companies in the GDP of each country (see table 4.2). South Korea's top ten firms accounted for 63.5 percent of the country's GDP in 1987, compared to concentration ratios of 14.7 percent for Mexico, 14.3 percent for Taiwan, and 10.5 percent for Brazil. The striking disparities that exist between the size of the largest companies in South Korea versus the other three NICs may be overstated somewhat because the listings for Taiwan, Mexico, and Brazil take firms rather than economic groups as the unit of analysis. The Korean *chaebol* that appear in *Fortune*'s "International 500" are in fact diversified enterprise groups, and similar kinds of economic groupings exist in each of the other countries as well.

A recent analysis of enterprise groups in East Asia compares six major intermarket groups (*kigyo shudan*) and ten large independent industrial groups (*keiretsu*) in Japan, the fifty biggest *chaebol* in Korea, and the top ninety-six business groups (*jituanqiye*) in Taiwan. The number and size of affiliated firms in each group vary markedly. Japan's business groups include the largest number of firms, with an average of over 112 companies for each of the six intermarket groups, and about thirty-three firms for each of the ten independent *keiretsu*. South Korea's *chaebol*, in contrast, are composed on average of about eleven firms each, while Taiwan's business groups are smaller still, typically having only about eight affiliated firms each. Overall sales also differ sharply, with Japanese business groups representing an extraordinary total of $871 billion (U.S.) in 1982, South Korea's fifty *chaebol* earning $68 billion in 1983, and Taiwan's ninety-six business groups selling $16.5 billion in 1983 (Hamilton et al., 1987, pp. 82–83). Thus even if we include business groups rather than individual firms as our unit of analysis for Taiwan, the gap between the two East Asian NICs is still very significant, with the average *chaebol* being eight times larger in terms of sales than the average Taiwanese business group.

TABLE 4.2
GDP Shares of the Ten Largest Companies, 1987 (US$ millions)

Country	*Sales of the Top Ten Companies*	*Gross Domestic Product*	*Top Ten Companies/ GDP (percent)*
Mexico	20,917.8	141,940	14.7
Brazil	31,312.5	299,230	10.5
South Korea	77,034.7	121,310	63.5
Taiwan	15,105.8	105,750	14.3

Sources: Sales of the top ten companies for each country are from table 4.1; gross domestic product figures for 1987 are from the World Bank (1989, p. 169) and CEPD (1988, pp. 23, 199).

THE POLITICAL IMPACT OF BIG BUSINESS

This analysis raises a key question about the political impact of these variations in industrial structure among the Latin American and East Asian NICs. How are the government's economic policies affected by the different character of big business in each country? The Latin American and East Asian NICs each have authoritarian states that have strongly supported industrial growth, often at the expense of the agricultural sector. The capitalist class in these countries plays a major role, not so much in formulating development strategies but, even more importantly, in implementing them (see Deyo, chap. 7, this volume). Development strategies must be carried out by a distinct constellation of big business interests in each nation, and this influences what can be achieved.

In the East Asian NICs, although the state actively participates in the public and private spheres of the economy, a good deal of this involvement is indirect (e.g., government-controlled credit, government regulation of the purchase of raw materials, energy, and foreign exchange, and price controls for selected commodities; see Wade, chap. 9, this volume). In South Korea, the *chaebol* are crucially important in the implementation of the government's economic policies. This was especially true during the phase of HCI in the 1970s, when the steel, shipbuilding, automobile, petrochemical, and heavy machinery industries were the focus of the government's "big push" approach, which was predicated on an unprecedented concentration of capital in the *chaebol* groups (see Cheng, chap. 6, this volume). The normative or authority structure that underlies this pattern of interfirm relations is what might be called a principle of *corporate patriarchy*, in which "these huge industrial empires are the property of an authoritarian individual and his designees who manage them not by consensus, but by centralized command supported by the state" (Hamilton et al., 1987, p. 102).

The link between the government and business groups in South Korea is quite direct. These vertical pressures cannot be easily countered, because intermediate or independent local institutions are weak, repressed, or absent. A homogeneous and very nationalistic big business class thus is available in South Korea to carry out the government's objectives in terms of domestic and overseas investments and external trade.

Taiwan, in sharp contrast to South Korea, is characterized by a decentralized pattern of industrialization, a low level of firm concentration, and a predominance of small and medium-sized family businesses. Whereas there are strong pressures for vertical integration in Korea's *chaebols*, Taiwan's business groups resemble loosely knit agglomerations in which firms tend to be organizationally separate from other firms, with no unified management structure. Instead of a formal system of command, one finds a highly flexible management arrangement that relies on networks generated by personal relationships based on reciprocal trust, loyalty, and predictability (Hamilton and Kao, 1987). The underlying social principle here is that of the *patrilineal network*, since "the Taiwanese business groups do not express the will of a single patriarch but rather the interests of an extended family" (Hamilton et al., 1987, p. 102).

While South Korean patriarchs may direct their business empires even in the absence of a corporate position, Taiwanese business leaders simultaneously hold multiple executive posts to reinforce their authority. The strategy of expansion typically is to start new companies, even if it is in the same or a closely related product line, rather than enlarging the size of the original firm. This pattern of opportunistic diversification helps explain the existence of numerous small and medium-sized firms.

How does this configuration of interfirm relations in Taiwan affect state planning in the economy? Gary Hamilton and Nicole Biggart (1988) argue that while there is state planning in both South Korea and Taiwan, the difference in the role of the state resides in the fact that Taiwan's government has no real implementation procedures. Furthermore, in regard to the export business sector, the Taiwan government is said to promote "virtually free trade conditions," which leaves the export sector plenty of latitude to work out its own preferences.

This interpretation seems to ignore the fact that state enterprises continue to operate in a wide range of economic areas, and that they are disproportionately represented among Taiwan's biggest companies (see table 4.1). The state, in fact, has tended to discourage the creation of large private firms. An alternative explanation for this pattern is that there is a strong ethnic cleavage in Taiwan between the Mainlander-dominated political elite that arrived on the island in the late 1940s (and which runs state enterprises) and the Taiwanese-based economic elite. This situation makes it very difficult for Taiwan's government to have an effective industrial policy, because the state cannot count on the unqualified support

of a subordinate capitalist class to compete with the large, vertically integrated Japanese and South Korean conglomerates and general trading companies. This has led to Taiwan's "gradualist" approach in implementing large-scale projects like HCI (see Cheng, chap. 6, this volume) and to its difficulty in penetrating external markets in capital- and technology-intensive industries associated with export-oriented industrialization (EOI), other than through short-term subcontracting relationships with big foreign buyers.

The Latin American NICs have very different industrial structures from their East Asian counterparts, as we have seen. Transnational corporations have been an integral part of the industrialization process in Mexico and Brazil, especially since the secondary ISI phase that began in the 1950s. In contrast to the familial basis of East Asia's leading businesses, which led to patrimonial and patrilineal interfirm networks, TNCs have tied the Latin American NICs to the rest of the world economy according to two very different principles of global economic organization: (1) during the ISI period of the 1950s and 1960s, TNCs, at the behest of national governments, followed a principle of *national segmentation*, in which the foreign companies set up parallel national industries to supply highly protected domestic markets; and (2) during the turn to diversified EOI in the 1970s and 1980s, TNCs followed the logic of *transnational integration* in reuniting the Latin American NICs to global markets through export promotion schemes that often were heavily subsidized by the host governments. While manufactured exports during the import-substitution phase were based on the utilization of existing excess capacity, new highly automated export-oriented plants began to be built at or above the minimum efficient scale in Mexico and Brazil during the 1970s and 1980s, with the export market increasingly seen as the main outlet for production.

Foreign firms in the postwar period typically came to establish new industries (like automobiles, petrochemicals, and electrical and nonelectrical machinery) to supply the domestic market, or they sought to modernize certain traditional industries (like textiles or food-processing), which resulted in the displacement of many of their domestic rivals. Family ties and personal networks play virtually no role in this setting. Foreign companies were authorized by the state to enter certain segments of the domestic market where local capital was relatively weak or absent. The subsequent bargaining that took place between TNCs and the host governments usually revolved around how to incorporate changing national priorities into the TNCs' global decision-making framework.

Mexico and Brazil enlisted foreign firms to help make the shift in the 1970s and 1980s from ISI to a diversified EOI strategy, while simultaneously restructuring domestically oriented industries by lifting the mantle of permanent protectionism and privatizing many public enterprises in order to push local companies to higher levels of competitiveness. The trend toward economic liberalization and a reduced governmental role in the Latin American NICs, when coupled with the relative weakness of their local private sectors and an overwhelming external debt burden, meant that foreign economic and political actors had increased leeway to shape development patterns in the region. Bargaining between TNCs and host governments during the EOI phase centered around renegotiating the form of insertion of the NICs in the world economy in response to new patterns of international production and trade that were redefining the spatial location of integrated global industries (see Gereffi, 1989a). As a *quid pro quo* for increased exports, the TNCs demanded and frequently got significant policy shifts from the Mexican and Brazilian governments with regard to the relaxation of local content requirements, reduced import tariffs on inputs, and very attractive packages of export incentives.

The presence of TNCs as major industrial actors in the Latin American NICs has posed both opportunities and constraints for the formulation and implementation of state development strategies. As long as the domestic market was expanding, the Mexican and Brazilian governments had a significant degree of bargaining power over foreign investors. Nonetheless, TNCs inevitably are guided by a global rather than a national perspective, and their ability to shift their investments elsewhere meant that nationalistic governments had to be cautious in what they demanded. The financial controls that proved to be an effective lever of influence for East Asian governments in dealing with local private capital have little or no effect over TNCs since they have multiple sources of financing available to them. Since TNCs continue to be the major exporters in the Latin American NICs, their access to global markets through integrated production and export networks gives the TNCs the upper hand in their dealings with Latin American governments pursuing export-promotion strategies. Conversely, in the East Asian NICs, governments have the advantage as they induce their local private exporters to adopt a mercantilistic approach to global markets where overseas sales are equated with enhanced national security and prestige.

The Internationalization of Big Business: The Case of Automobiles

So far, our analysis of industrial structures in the Latin American and East Asian NICs has emphasized the ownership, sectoral distribution, size, and concentration of the largest companies in each country, and some of the implications of these patterns for the formulation and implementation of industrial policy by the state. Another angle from which we can compare

the NICs is to look at how industrial structure has affected the internationalization of their industries. The case of the automobile industry will be examined to illustrate this point.

The fascination of Latin American countries with the automobile industry as the centerpiece for secondary ISI probably resulted in large part from their desire to emulate the industrialization experience of the United States. In the 1970s and 1980s, however, the international motor vehicle industry underwent a profound change. The oil price rises of 1973 and 1979, coupled with the rapid growth of the Japanese automotive industry since the 1960s and the decline in the demand for motor vehicles in the main producing countries, led to a major restructuring in the motor vehicle industry, which required massive new investments at a time of very low profitability (see Jenkins, 1987, chaps. 9–11).

This restructuring has significantly advanced the internationalization of capital and fostered the creation of a truly global industry. The three primary blocs of North America, Europe, and Japan are becoming much more closely integrated in trade, cross-investments, and joint production arrangements. The leading automotive TNCs, especially from the United States, increasingly view their operations as an integrated whole and have developed "world component supply strategies" to fit their concept of the world car. Finally, there is a tendency toward market homogenization as the main regional motor vehicle producers supply similar cars using similar production techniques in auto factories around the world (Jenkins, 1987, pp. 170–84).

The restructuring of the international motor vehicle industry has given a new importance to peripheral economies as production sites for the integrated operations of auto producers. The state's role in the NICs has been to persuade locally established carmakers and parts suppliers to take advantage of these new export opportunities. In Mexico and Brazil, the state in the 1970s and 1980s tried to exploit the increased competition between the automotive TNCs in order to generate more exports. In return, the TNCs were granted a battery of incentives, ranging from one half to two thirds of the value of auto exports in the 1970s, and reductions in the level of local content required in the production of vehicles for the protected domestic markets (Jenkins, 1987, pp. 190–94, 215–16). Mexico announced at the end of 1989 that its high tariffs on imported vehicles would be virtually eliminated by the beginning of 1991, on the condition that only auto firms already established in and exporting from Mexico be allowed to import vehicles. This practice of tying import licenses to success in exporting has long been a part of industrial policy in South Korea, and it marks a further step in the dismantling of the traditional ISI regime in the Latin American NICs.

The politics of export production in the South Korean motor vehicle industry were based on inducing the local industry leader, Hyundai Motor Company, to spearhead a spectacular export drive that increased South Korean motor vehicle exports more than tenfold between 1984 and 1987 (from 52,350 units to 546,310 units) (MVMA, 1989, p. 94). In 1988, however, motor vehicle exports (576,134 units) grew at only about one half the rate of total production (5.5 percent versus 10.6 percent, respectively) (Ward's Communications, Inc., 1989, pp. 79, 110). Strikes and slowdowns by South Korean auto workers, which closed car factories for more than two months in 1989, contributed to a 36 percent fall in exports, to 370,000 vehicles, compared to the industry's original target shipment for 1989 of 650,000 units. Domestic labor costs have roughly doubled since 1987, thus trimming the price advantage South Korean carmakers have enjoyed in export markets to $1,000 or less (down from $2,000 three years ago) (Clifford, 1989). As a result of increased worker militancy, higher labor costs, and slumping U.S. car sales, the domestic market is likely to become a much more important source of growth for South Korea's automotive industry in the near future.

Unlike the other three NICs, Taiwan does not export a substantial quantity of finished automobiles, although this remains a priority for government officials and industry executives alike (see Arnold, 1989). However, Taiwan has succeeded in establishing an export niche for itself as a supplier of auto parts. In 1985 the automotive parts industry had overseas sales of $450 million, double the export volume of three years earlier. Whereas Taiwan's auto assembly industry employed around ten thousand people in the mid-1980s, its parts industry provided fifty thousand jobs (Tank, 1986). To assure the continued growth of auto-related exports, Taiwan's government has begun to radically cut protectionist barriers in an effort to force local carmakers and component manufacturers to become internationally competitive. The philosophy behind Taiwan's bid to become a world center for auto parts was articulated by Dick Mou, director of market development at the China External Trade Development Council: "The goal is to be part of the international division of labor rather than developing a fully integrated industry. We take a global view" (Tank, 1986, p. 30).

A comparison of motor vehicle production trends in Latin America and East Asia reveals some interesting regional and subregional differences (see table 4.3). The Brazilian and Mexican motor vehicle industries were far larger than their East Asian counterparts throughout the 1970s and early 1980s. There was an enormous leap in South Korea's motor vehicle production to over 600,000 units in 1986, up 59 percent from 1985. South Korea and Brazil both topped the 1 million units mark in motor vehicle output in 1988, a plateau that Brazil first surpassed in each of the three years from 1978 to 1980. The severe slump that hit the Brazilian

TABLE 4.3
Motor Vehicle Production, 1965–1988 (thousands of units)

Year	*Mexico*	*Brazil*	*South Korea*	*Taiwan*
1965	97	185	0.1	3
1970	193	416	29	9
1971	211	517	23	20
1972	230	622	19	22
1973	286	750	26	24
1974	351	906	30	29
1975	361	930	36	31
1976	325	987	48	31
1977	281	921	83	44
1978	384	1,064	156	77
1979	444	1,128	204	116
1980	490	1,165	123	133
1981	597	781	134	138
1982	473	859	163	134
1983	285	896	221	158
1984	344	865	265	171
1985	398	967	378	160
1986	341	1,056	602	184
1987	395	920	980	224
1988	513	1,069	1,084	250

Sources: Mexico, Brazil, and South Korea—MVMA (1989, pp. 11, 13); Ward's Communications, Inc. (1989, p. 79) for 1988 production figures only. Taiwan—CEPD (1988, p. 94); Ward's Communications, Inc. (1989, p. 79) for 1987 and 1988 production figures.

economy in 1981 caused auto production to decrease by one third in a single year (from 1,165,000 units in 1980 to 781,000 units in 1981). Mexico's total vehicle production of 513,000 units in 1988 was the highest since 1981, when it peaked at almost 600,000 units. Taiwan's output of 250,000 units represented significant growth from the early 1980s, but still placed it far behind the other three NICs.

There have been distinct patterns of internationalization in the automotive industry in each of the NICs. During the course of the 1970s and 1980s, the motor vehicle industry in Mexico and Brazil became progressively more integrated into the world industry, but the exact form of this integration varied between the two countries. Export expansion in the Mexican automotive industry has been based on a component-supplier role characterized by ever-closer links to the United States, with an emphasis on TNC-made exports of parts and components for incorporation in vehicles built in the TNCs' U.S. plants (similar to the pattern that has occurred in Canada since the mid-1960s). Brazil, on the other hand, has stressed exports of finished vehicles as well as parts to a variety of international markets, with Brazil playing a regional power (or "subimperialist") role as an export base for foreign companies like Volkswagen and Ford to serve their customers in neighboring Latin American and other Third World countries. These different forms of national integration into the global motor vehicle industry are reflected in the fact that finished vehicles accounted for 58 percent of Brazil's automotive exports between 1972 and 1982, while 78 percent of Mexico's automotive exports during the same period were parts and components, particularly engines and gearboxes (Jenkins, 1987, pp. 210–11).

Automakers and suppliers from Japan and Europe as well as the United States have accelerated their efforts to export from plants in Mexico, lured by wage rates below a dollar per hour, an extremely favorable dollar/peso exchange rate, and close proximity to the U.S. market. Automotive-related shipments to the United States nearly tripled, from $460 million in 1981 to $1.3 billion in 1984, and then tripled again to $3.9 billion in 1988 (Winter, 1989, p. 27). American TNCs have taken the lead in auto exports from Mexico, with Chrysler (38.5 percent) in front of the field in 1987, followed by Ford (31.7 percent), General Motors (19.8 percent), and Nissan (9.9 percent) (*Latin American Weekly Report*, 1988). Despite skyrocketing exports to the United States, export sales as a percentage of total motor vehicle production in Mexico dropped from 41 percent in 1987 to 34 percent in 1988. Slower inflation, along with domestic consumer price freezes that in effect dropped the price of cars in Mexico by at least 20 percent in 1988, helped spur domestic automotive sales to their highest level in almost a decade (Ward's Communications, Inc., 1989, pp. 115, 117).

While the internationalization in Mexico's automobile industry has emphasized components production, this has been a weak link in Brazil's automotive complex. Inflation-ravaged suppliers have not been able to make components fast enough, and a critical parts shortage developed in 1986, causing thousands of cars and trucks to be stockpiled in holding yards awaiting installation of missing components. Seeking efficiencies of scale, Brazil's first and third largest automobile manufacturers—Volkswagen do Brasil (40.5 percent of the market) and Ford Brasil (20.3 percent)—merged their car operations in Brazil and Argentina into Autolatina, owned 51 percent by Volkswagen (*Ward's Automotive Yearbook*, 1987, pp. 84–85). Brazilian automotive production for 1988 increased 16.2 percent over 1987, although exports were down by 7.3 percent. Despite exorbitant taxation on autos, the growth in domestic sales reflects two basic trends in the Brazilian automobile industry: Brazilians are very car hungry, with only 12 million cars in a country of 140 million people, and cruzado/dollar export exchange shortfalls continue to make life very difficult for exporters (Ward's Communications, Inc., 1989, p. 115). Thus, although the auto industry in the Latin American NICs is becoming more export oriented, the domestic market remains an important source of industry growth.

South Korea emerged as one of the world's major motor vehicle competitors in the mid-1980s. South Korean automobile companies began to aggressively target the U.S. market for export sales and eventually foreign direct investments in Korean manufacturing subsidiaries, a pattern that even Brazil has not tried to follow. The ability of South Korea to internationalize its automobile industry in this way undoubtedly is related to the size and marketing capability of its *chaebols* in this sector (Hyundai, Daewoo, and Kia). Hyundai Motor Company, South Korea's leading auto manufacturer, was Canada's top importer with over 85,000 vehicles in 1985, and it set a record with sales of 168,000 subcompact Excel cars in the U.S. market in just 10 months in 1986. Unlike Hyundai, South Korea's other two automakers have utilized joint venture partnerships to get ahead in the volatile environment of the auto industry. Daewoo Motor Company is owned 50 percent by General Motors, while Kia Motors Corporation, which produces only trucks and buses, has issued a 10 percent share of its stock to Ford and 8 percent to Japan's Mazda Motor Corporation (itself partially owned by Ford).

Taiwan's limited achievements in motor vehicle exports reveal the constraints faced by its relatively small firms (Yue Loong and Ford Lio Ho), which must upgrade their production efficiency before they can mount major export drives. Yue Loong, the largest automaker with 33 percent of Taiwan's car market in 1986, has not had significant overseas sales to date. Ford Lio Ho began exporting its Mazda-based Tracer to Canada in the fall of 1986, and Toyota has now begun producing in Taiwan as well with an annual capacity of sixty thousand Coronas and Corollas (Ward's Communications, Inc., 1987, pp. 75, 77). With Taiwan's rising per capita income (over $5,500 in 1987), the domestic sales of subcompacts and larger cars is likely to show a sizable increase. To encourage additional foreign investments, the government has dropped its requirement that foreign firms export 50 percent of their production, and it has relaxed its former policy of insisting that auto manufacturers use at least 70 percent locally made parts.

Taiwan has been far more successful in fostering a competitive domestic auto parts industry that has considerable export potential. There are problems here as well, however. Most of Taiwan's two thousand auto parts firms in the mid-1980s are family businesses that are able to respond quickly to shifting consumer demand, but they are less able to invest in research and expensive production machinery needed to improve their design capability and technological sophistication. Most of Taiwan's auto exports are add-on accessories or spare parts sold in the after-market; relatively few of Taiwan's auto parts exporters have major original equipment manufacturer (OEM) contracts. Taiwan also is heavily dependent on the U.S. market, which accounted for nearly 60 percent of its auto exports in 1985 (Tank, 1986, pp. 30–31). This makes auto exports vulnerable to retaliatory protectionist legislation.

In sum, this brief overview of the motor vehicle industry in the Latin American and East Asian NICs shows how the common pressures toward internationalization in both production and trade have produced distinct results in each country. South Korea and Brazil both have stressed exports of finished vehicles, but these are based on different kinds of corporate strategies and structures. South Korea's large, integrated domestic auto companies have the resources to fund both long-term investment and product development at home and overseas, while Brazil's auto exports are the result of the global sourcing strategies of American, Japanese, and European TNCs. Taiwan and Mexico, on the other hand, have tended to emphasize a component-supplier role in the global auto industry, with close ties to the U.S. market. Whereas Mexico has implemented this strategy through TNC intrafirm supply networks, Taiwan has relied heavily on the efforts of small domestic auto parts companies who do not have major captive markets. Thus these differences in the mode of incorporation of each of the NICs into the global automotive industry are a product of variations in industrial structure at the national level, the competitive strategies of the leading manufacturers in the global automobile industry, and the role of automobiles in secondary ISI and EOI.

Conclusions

Foreign capital, private and public, has played very different roles in the Latin American and East Asian NICs (see Stallings, chap. 3, this volume). The TNCs that came into Mexico and Brazil to help implement secondary ISI initially were satisfied to supply protected domestic markets, while some of these same firms entered the newly established export processing zones in Taiwan and South Korea in the late 1960s and early 1970s to produce manufactured items for export. The lesson here would seem to be that economically powerful TNCs, under the right conditions, can be induced to contribute to either ISI or EOI development objectives.

Brazil and Mexico had some success in the 1970s requiring foreign automobile manufacturers to generate increasing export revenues as a condition for continuing to supply their domestic markets (Gereffi and

Evans, 1981). Transnational corporations substantially expanded their export efforts in the 1980s in response to the economic imperatives created by the reorganization of the global motor vehicle industry and the fiscal incentives offered by the Brazilian and Mexican governments to promote increased automotive exports. Brazil has made fewer concessions than Mexico in terms of reductions in local content requirements for car producers, which helps explain why Brazil has managed to run a sizable positive trade balance for its automotive industry since 1975, while Mexico has had an alarming growth in its trade deficit in this sector since the early 1970s (see Jenkins, 1987, p. 217).

In terms of the predominant role played by local private capital in East Asia, South Korea seems to have a key organizational edge over Taiwan. Both countries remain very dependent on the U.S. market for nearly half of their exports. Thus American protectionist pressures are a real threat to their continued economic prosperity. In South Korea's case, the *chaebols* have the capability to jump over these protectionist barriers by adopting an aggressive investment and marketing strategy overseas. In Taiwan, however, the main channel for exports (with the exception of the auto parts industry) has been OEM procurement contracts with big foreign buyers, mainly in the United States. A relatively conservative estimate would place OEM sales at 60 to 70 percent of Taiwan's total exports, and this figure is probably higher in selected industries (like footwear). In the OEM market, Taiwan suppliers are basically selling components or generic finished goods to clients who put their own brand names on these products when they reach their final destination. If these buyers decide to shift their orders elsewhere (e.g., because of rising labor costs in Taiwan), Taiwanese producers may not have sufficient international marketing networks and skills to succeed on their own.

There are different levels at which one can compare national development experiences. One can emphasize commonalities among the NICs, or alternatively one can focus on interregional or intraregional differences. This chapter has focused on intraregional variations among the four main Latin American and East Asian NICs. Industrial structure has been our central concern. At this level, each one of the Latin American and East Asian NICs is quite distinctive. Although this variety in industrial structures does not allow easy generalizations applicable to all the NICs or even to the regional pairs, it is at the level of economic institutions that much of what is useful to other countries can be learned.

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