

## INDUSTRIAL GROUPS AND DIVISION OF LABOR IN CHINA'S AUTOMOBILE INDUSTRY

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### I. INTRODUCTION

#### A. *Changes in the Division of Labor in China*

Until the 1970s, China's industries had followed a system which can be called a vertically divided division of labor. Under this system each enterprise within an industry generally specialized in producing a particular end product within a specific narrow field, and each enterprise subsumed within itself all of the stages in the production process. In the machinery industry, for example, a firm manufacturing a particular machine would carry out the final assembly process as well as the upstream machining, casting, forging, and heat-treating processes. Figure 1 illustrates the concept of the vertically divided division of labor as was found in the automobile manufacturing industry. An enterprise subsumed within itself all of those upstream-production stages encompassed by the solid line, but very often the firm produced only one particular end product.

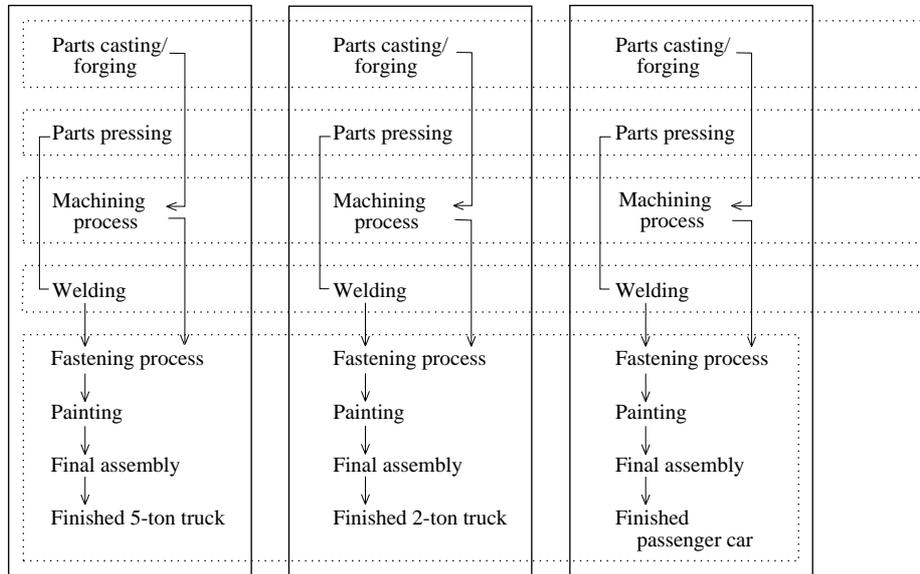
This division-of-labor system derives partly from the preconditions in China at the time the country began industrialization. The country's preexisting industrial base was extremely weak, and there was little hope of procuring parts and components externally. In addition, the vertically divided division of labor reduced the uncertainties inherent in transactions among enterprises because only a small number of enterprises became involved in the production process from the raw-materials stage to the final-assembly stage. As a result the system was seen as more suitable for a planned economy. In the former Soviet Union the vertically divided division of labor had also predominated among industries, and it was this form that the Chinese took as their model for industrialization.

In the vertically divided division-of-labor system, the scale of production for parts, castings, and other upstream processes is often too small to achieve economies of scale, or there may be imbalances in production capacity among the different stages of the production process, and segments of a firm's production capacity are left idle. Moreover, under this system firms are susceptible to changes in demand because they are unable to offset a decline in demand for a specific product by shifting production to another product; and when demand to the end product

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Fig. 1. Vertically Divided and Horizontally Divided Divisions of Labor



The vertically divided division of labor is shown by the solid lines; the horizontally divided division of labor is shown by the dotted lines.

Source: By the author.

decreases, there will be a simultaneous decrease in the operations of upstream processes as well.

Because of these problems with a vertically divided division of labor, a horizontally divided division of labor, illustrated by the dotted lines in Figure 1, has become the generally prevailing system in advanced capitalist countries. With this system, a firm specializes in a given production process and produces a variety of different products rather than specializing in the production of a given product. In a horizontally divided division-of-labor system, it is easier to realize economies of scale in each of the production processes, and it is easier to shift supply from one product to another. For these reasons, the system is seen as more productive than that of the vertically divided division of labor. Japanese, American, and European automobile manufacturers of course exhibit a variety of production organization arrangements, but all are of the horizontally divided division-of-labor type and quite unlike the division-of-labor system that was found in China and the former Soviet Union.

Adding to the problems inherent in the vertically divided division-of-labor system, China also had within many of its industries too many firms spread about the country that were producing the same products and operating on too small a scale. And because these firms had failed to form any division of labor among them-

selves, their industrial productivity was low. Therefore since the start of reforms and market-opening policies in the late 1970s, the Chinese government has aimed at shifting industries towards a horizontally divided division of labor and has also set out a policy to promote the formation of a division of labor among enterprises. These policies have not simply changed the products produced by each enterprise. They have also promoted the formation of industrial groups to function as organizations supporting a new division-of-labor system.

#### B. *Industrial Groups and Division of Labor among Enterprises*

Until the 1970s, China's industries were entirely under the control of the government. There were no such things as alliances among enterprises and the control of one enterprise by another. But at the end of the 1970s, the Chinese government started supporting loose alliances among enterprises within the same industries in the hopes that these organizational arrangements would promote the formation of a horizontally divided division-of-labor system. Since 1987 the government has been emphasizing the formation of enterprise groups having ownership and control over other enterprises, and in 1991 it started laying out plans for the formation of large enterprise groups centered on large-scale enterprises in each industry.

Most of the enterprise groups that have been formed in China are single-industry entities with upstream parts-and-materials suppliers, downstream secondary-products manufacturers, marketing firms, and service firms organized around one large-scale enterprise. The government recognizes as an enterprise group one where the firm at the center of the group has secure ownership or control over (such as majority ownership in) three or more firms.<sup>1</sup> When compared with Japan's six largest enterprise groups, however, Chinese enterprise groups are quite restricted in scale and in the scope of industries they encompass.

There is the question of the need and usefulness of forming such enterprise groups to bring about the desired new division of labor. This study will examine this question by looking at the development of industrial groups in China's automobile industry between the late 1970s and the early 1990s and examine the changes that took place in the division of labor among the industry's enterprises.

Williamson's theory of vertical integration provides the key to understand the relationship between the division of labor and the organizational relationship among enterprises [18, Chap. 4]. According to Williamson, where two technologically separable but continuous processes exist, and where the assets of each process are mutually and strongly specified (i. e., are strongly interdependent), should the two processes be carried out by separate enterprises, the transaction cost between the processes will be high; therefore it is better to have the two processes vertically integrated. Conversely, where assets are not very specified, it is better to let the two processes be carried out by separate enterprises, because in this case market transactions can give each party strong incentives without suffering high

<sup>1</sup> Author's interview with members of the State Commission for Restructuring the Economy in March 1992. Based on this criterion, the commission in 1991 recognized the existence of 431 enterprise groups.

transaction costs, and enterprises can realize economies of scale by selling their products to other firms. The reasoning in Williamson's argument, therefore, is that the technological relationship in the production process measured by the degree of assets specification stipulates the organizational relationship among enterprises through transaction cost.

China's policy of forming enterprise groups has in common with Williamson's view that it is necessary to restructure the organizational relationship among enterprises in order to construct a new division of labor. However the organizational relationship among enterprises encouraged by this policy is not simply vertical integration and market transaction, but it also includes intermediate relationships, such as capital-investment relationships and long-term contract relationships among independent enterprises. However it is not clear what sort of division of labor this type of organizational form corresponds to.<sup>2</sup> Through an analysis of China's automobile industry, this study will investigate the rationale of intermediate organizational relationships and at the same time will also examine Williamson's theory.

## II. MARKET STRUCTURE OF CHINA'S AUTOMOBILE INDUSTRY

### A. *Vertically Divided Division of Labor and the Proliferation of Enterprises*

China's automobile industry began restructuring itself at the start of the 1980s through the formation of enterprise groups, the first among China's industries to begin doing so. At the time the productivity of the automobile industry was extremely low. In 1981 the industry employed 904,000 workers (including those employed in two-wheeled vehicle and parts production), and they produced 176,000 four-wheeled vehicles. Japan in 1980 employed 683,000 workers in its automobile industry, and they produced 11,043,000 four-wheeled vehicles.<sup>3</sup> Based on the number of vehicles produced per worker, China's labor productivity was a mere 1/83 that of Japan's. Even taking into consideration the in-house service sectors maintained by firms, a distinctive feature of Chinese enterprises, the low productivity of the industry was clearly evident.

This low productivity arose from the industry's vertically divided division-of-labor system and from the proliferation of automobile manufacturing enterprises. The former was brought in by the Soviet Union when China's automobile industry started up in the 1950s relying totally on Soviet assistance. The First Automobile Works (Diyi qiche zhizaochang)—FAW, now renamed the China First Automobile Group Corporation (Zhongguo diyi qiche jituan gongsi), as its name implied,

<sup>2</sup> Although Williamson recognizes that when the degree of assets specification is of a moderate degree, intermediate organizational forms can be widely observed, he feels that it is difficult to maintain stability in these relationships. This author's thoughts regarding this problem have been presented in Marukawa [13].

<sup>3</sup> Calculated from Zhongguo-qiche-gongye-lianhehui, ed., *1988 Zhongguo qiche gongye nianjian* [1988 China automotive industry yearbook] (Beijing: Jixie-gongye-chubanshe, 1989); also Nissan Motor Co., ed., *Jidōsha sangyō handobukku, 1992/1993* [Automobile industry handbook, 1992/1993] (Tokyo: Kinokuniya-shoten, 1992).

was the first automobile manufacturing enterprise to be set up, and even by the international standards of the time it was a large-scale truck factory. The enterprise produced most of its own parts, but bearings, meters, and other nonspecific components as well as basic materials like steel sheets and window glass were supplied from other firms. During the time of the Great Leap Forward in 1958 and again in 1969–70 when industrial decentralization took place, local governments began to set up their own truck factories resulting in a proliferation of auto manufacturing enterprises. By 1982 there were fifty-eight firms manufacturing four-wheeled vehicles, and their total production came to only 196,304 vehicles. The proliferation of enterprises broke down the division of labor across regions which further increased the trend toward intra-regional and intra-enterprise production that encompassed all the stages of production [3, p. 58] [15, p. 36].

#### B. *The Present Market Structure*

In an effort to reverse the rampant spread of automobile manufacturers and to overhaul the industry's irrational division of labor, the government began promoting the formation of enterprise groups at the start of the 1980s. The government also attempted to centralize the industry by taking automobile firms away from the control of local governments and putting them into enterprise groups that were under the control of the central government. However, the overall economic trend at the time was toward decentralization through policies to reform and open up the economy, and this effort at centralization was frustrated. As a result, since the 1980s the move toward restructuring the industry through enterprise groups and the widespread entry of local governments into the automobile industry have progressed in parallel. In addition, munitions manufacturers who fell on hard times because of reductions in military expenditures turned in large numbers to the production of automobiles and motorcycles.

As a result, the market structure of the automobile industry underwent a great change. In 1978 there were 55 manufacturers producing finished four-wheeled vehicles; by 1992 the number has shot up to 141 indicating that the proliferation of manufacturers had continued unabated. However, by automobile type, for example in the sector for mid-sized trucks with load capacities of around five tons, both FAW and Aeolus Automotive Corporation (Dongfeng qiche gongsi), formerly the Second Automobile Works (Dier qiche zhizaochang), formed enterprise groups and pushed ahead in establishing affiliations with small and medium-sized manufacturers. As a result, by 1992, 98 per cent of the mid-sized trucks were being produced by these two enterprises and their affiliates. On the other hand, in the markets for motorcycles, light trucks with load capacities of 1–3 tons, and light vans where demand greatly expanded, where there was no existing strong manufacturer, and where there were few barriers to entry, there was a great proliferation of firms. Also during the 1980s there was a great increase in the demand for passenger cars. Here however the government placed severe restrictions on entry, and as of 1994 there were only eight enterprises that had gained permission to manufacture cars.

With the restructuring of the automobile industry through the formation of enter-

prise groups, strong manufacturers have now appeared, as can be seen from Table I. However, because of the proliferation of enterprises, there was only a threefold increase in the industry's labor productivity (based on the number of vehicles produced per worker) between 1978 and 1992.

In the following sections three of the big manufacturers, Aeolus Automotive Corporation, FAW, and Jinbei Automobile Company Ltd. (Jinbei qiche gufen youxian gongsi), will be examined along with the enterprise groups that have been formed around them.

### III. ANALYSIS OF THE AEOLUS AUTOMOTIVE GROUP

#### A. *The Structure of Ownership and Control*

##### 1. *Formation of the group*

Among the enterprise groups in China's automobile industry, the earliest to be formed and the one which is organizationally the most advanced is the Aeolus Automotive Group (Dongfeng qiche jituan)—Aeolus group.<sup>4</sup> The group's core enterprise, the Aeolus Automotive Corporation which began operations in 1978, was set up during the time of the "construction of the third front" (*sanxian jianshe*)<sup>5</sup> by the central government primarily to build five-ton trucks. The enterprise's unfavorable location in Hubei Province along with the proliferation around the country at this time of other firms specializing in the same mid-sized trucks compelled Aeolus to seek out tie-ups with firms in other regions from the very start of its operations. Starting in 1979, the central government began a policy of restricting the output of auto manufacturers under the control of local governments, and as a result, these firms fell into extremely difficult straits [6, p. 58] [1; May 3, 1991].

In response, Aeolus tied up with eight other local manufacturers. Through this tie-up Aeolus provided these other firms with truck parts and components preferentially priced at 10 per cent below the market price allowing them to undertake semi-knockdown production. At the same time, by using its preferentially priced components as collateral, Aeolus received acknowledgement from the other firms in the tie-up that 20 per cent of the profits they gained from selling Aeolus trucks would belong to Aeolus. However this 20 per cent was retained in the other firms and became in effect a form of capital investment by Aeolus in the other firms. This tie-up opened the way for the transfer of assembly technology from Aeolus to the

<sup>4</sup> This section is based primarily on information gained from interviews with officials of Aeolus Automobile Corporation during July 1992. Thus the data herein is as of 1992. Works in Japanese dealing with the Aeolus group are: Li Chunli, "Chūgoku jidōsha sangyō ni okeru chūkan soshiki to bungyō kankei" [Intermediate organizations and the division of labor in China's automobile industry], *Chūgoku kenkyū*, No. 22 (Autumn 1991); Wang Jian [16].

<sup>5</sup> From 1964 until the late 1970s, China's relations with the United States and/or the Soviet Union were often severely strained. In response the country undertook construction of a massive industrial base in its hinterlands in preparation for atomic attacks from these two countries. This undertaking was called the "construction of the third front" (*sanxian jianshe*). For details, see Tomoo Marukawa, "Chūgoku no sansen kensetsu" [China's construction of the third front], *Ajia keizai*, Vol. 34, No. 2 (February 1993) and Vol. 34, No. 3 (March 1993).

TABLE I  
THE TOP FIFTEEN ENTERPRISES IN CHINA'S AUTOMOBILE INDUSTRY, 1992

Name	Primary Product(s)	Production Volume (No. of Vehicles)	Sales (10,000 Yuan)
China First Automobile Group Corp.	Trucks	82,460	1,019,551
	Chassis	18,320	
	Passenger cars	15,127	
Aeolus Automotive Corp.	Trucks	97,913	730,623
	Chassis	30,106	
	Passenger cars	801	
Shanghai-Volkswagen Automotive Company, Ltd.	Passenger cars	65,000	710,801
Beijing Jeep Corporation, Ltd.	BJ2020 jeeps	36,244	348,989
	Cherokee jeeps	20,001	
Jinbei Automobile Co., Ltd.	Light trucks	24,855	341,501
	Light buses	8,111	
	Vans	4,715	
Nanjing Automobile Works	Light trucks	43,970	283,203
	Chassis	13,930	
Guangzhou-Peugeot Automobile Works	Passenger cars	15,410	244,438
	Station wagons	4,994	
Tianjin Light Passenger Car Works	Light vans	3,069	207,663
	Passenger cars	30,150	
Beijing Car and Motorcycle Manufacturing Corp.	Light trucks	9,802	169,270
	Chassis	15,177	
Qingling Motors, Ltd.	Light trucks	11,501	155,843
Jianshe Machine Tool Works	Motorcycles	311,854	132,625
Jiangling Automotive Group Corp.	Light trucks	12,731	155,843
	Chassis	632	
Jinan Automotive Works	Heavy trucks	1,708	131,948
	Dump trucks	1,752	
Beijing Engine Plant	Gasoline engines	213,019	129,705
Jialing Machinery Plant	Motorcycles	356,000	120,881

Sources: Zhongguo-qiche-gongye-zonggongsi, Zhongguo-qiche-jishu-yanjiu-zhongxin (China National Automotive Industrial Corporation, China automotive technology research center), ed., *1993 Zhongguo qiche gongye nianjian* [China automotive industry yearbook] (Beijing: Zhongguo-qiche-gongye-nianjian-bianjibu, 1994).

other eight firms, and it also laid the groundwork for a future enterprise group centered on Aeolus.

Another step in the formation of this enterprise group came in 1981 when Aeolus and the other eight firms in the tie-up formed an organization which they called the Aeolus United Automotive Industry Corporation (Dongfeng qiche gongye lianying gongsi). In the beginning the relationship among the member firms was that of equals, but starting in 1983, Aeolus began bringing a number of the other members under its control. By 1987 Liuzhou Automobile Works (Liuzhou qichechang) and five other firms had been transferred from the supervisory powers of the respective local governments and put under Aeolus's administrative supervision. This new arrangement has been called a "close alliance" (*jinmi lianhe*). Eighty per cent of the assets of these transferred enterprises remained state-owned while the other 20 per cent was held by Aeolus, but the government turned the management of its state-owned share over to Aeolus. In 1988 the Hangzhou Automobile Works (Hangzhou qichechang) and the Qingshan Electric Works (Qingshan diangongchang) were merged with Aeolus which acquired 100 per cent ownership of these two firms [24].

The transfer of the above enterprises over to Aeolus took place because the local governments found them very much of a burden to supervise. Generally it was rare for these governments to let go of enterprises under their control. Also within China's planned economy it was difficult for the enterprises under the local governments to remove themselves from the control of these governments because if they did not have their production investment plans incorporated into the state plan via these governments, the enterprises could not acquire funding and raw materials. In order for enterprise groups to expand in the midst of such restrictions, it was necessary to give the enterprise groups themselves authority equal to that of the local governments to supervise other enterprises. In 1987 Aeolus was raised to a status equal with that of a central ministry or a provincial government in its dealing with the State Planning Commission. This measure gave Aeolus the authority to supervise other firms [20, pp. 41–43].

In addition to the enterprises mentioned above, since 1986 Aeolus had also been actively investing capital in numerous other firms. This investing, however, was in actual fact only an arrangement for the distribution of assets and profits agreed upon among the concerned government and enterprise officials since Chinese enterprises did not take the form of joint-stock corporations. A specific example of such an arrangement was the already mentioned Aeolus tie-up with the eight other firms through which it was agreed that Aeolus would acquire a fixed portion of the other firms' capital in exchange for supplying parts and components at preferential prices. There were also cases where Aeolus invested its own capital into partner firms; also when Aeolus switched from producing parts internally to ordering them from outside suppliers, it transferred production facilities and technology to the outside supplier which then were regarded as a capital participation by Aeolus into that firm.

From the original nine enterprises that formed the Aeolus United Automotive Industry Corporation, the number of member firms rose rapidly to 109 in 1984, 202

in 1987, then 301 in 1989. However, Aeolus undertook capital investment into only a portion of these enterprises. For most of the members in the group there was no control or capital participation coming from Aeolus, and they maintained only a loose cooperative relationship with Aeolus.

## 2. *Present conditions*

In September 1992 the Aeolus United Automotive Industry Corporation changed its name to the Aeolus Automotive Group. At the same time it moved further along in its restructuring as an enterprise group. The remainder of this section will look at the steps that took place in the formation of the group's ownership and control structure (see Figure 2).

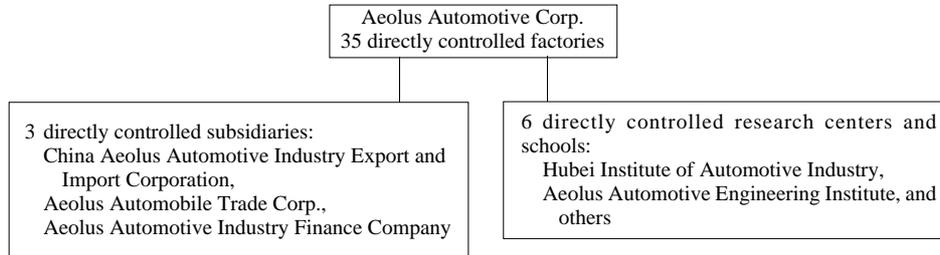
*The first layer.* The membership of the Aeolus group can be separated into four layers in accordance with the strength of control exerted by the Aeolus company itself. The first layer forms the nucleus of the group and is composed of Aeolus itself, trading and sales firms, nonbank financial institutions, research centers and schools under the direct control of Aeolus. There are thirty-five factories directly under the Aeolus parent company. These do not have independent corporate status, but they have been allowed a comparatively large amount of autonomy. If, for example, they fulfill Aeolus's internal production quotas, they can accept production orders from other enterprises, and they can sell parts and components to outside firms. Also transactions among these factories are carried out at Aeolus internal prices, and each factory keeps its own accounts. The amount of profit to be paid by the factories to the parent company is set down in a seven-year contract, and the factories can retain a set percentage of profits that exceed the contractual amount [4, pp. 313–17] [6, pp. 23–28, 41, 45–47].

One would expect a strong interdependent relationship among Aeolus's directly controlled factories, and in accordance with Williamson's theory mentioned in Section I, it would be desirable to operate as a single integrated organization. However, although Aeolus and its directly controlled factories are ostensibly integrated, one can observe among them something approaching a market-transaction relationship which does not concur with Williamson's theory. I have proposed elsewhere that where a close interdependent relationship exists between transacting parties and a mutual trust develops, transaction costs can be lowered, negating the need for integration [13]. This explanation would make it possible to understand the relationship among the Aeolus firms.

Also within this first layer is the Aeolus Enterprise Development Corporation (Dongfeng shiye kaifa gongsi) which has overall control of the more than 200 labor service companies (*laodong fuwu gongsi*) that have been set up by the factories directly under Aeolus. These companies were set up for the purpose of finding employment for the family members of Aeolus employees and for farmers whose land was expropriated to build factories. These companies had been responsible for cleaning the factories and managing the welfare and pension facilities, but recently they have also begun to produce parts and components. According to some reports, these labor service companies now produce 20 per cent of the components and parts going into Aeolus trucks [21; June 28, 1992] [8; May 15, 1991].

Fig. 2. Aeolus Group Structure of Ownership and Control

First layer (5 enterprises, 6 institutions)



Aeolus Enterprise Development Corp.

Second layer (22 enterprises)

- 2 joint ventures with foreign companies:
  - Shenlong Automobile, Ltd. (Aeolus Automotive Corp. 70%, Citroën of France 30%),
  - Aeolus-Thomson, Ltd. (Aeolus Automotive Corp. 60%, Thomson International, Co. 40%)
- 10 administratively controlled or majority controlled enterprises:
  - Aeolus Hangzhou Automobile Corporation, Liuzhou Automobile Works,
  - Yunnan Automobile Works, Xinjiang Automobile Works, Nanchong Engine Plant,
  - Aeolus Hangzhou Heavy Machinery Works, and others
- 2 joint ventures with Hong Kong firms:
  - Xiamen Jinlong United Automotive Industry, Ltd.,
  - Changshu Special-Purpose Vehicle Works
- 8 enterprises with Aeolus capital participation:
  - Yangzhou Passenger Car Works, Shangrao Passenger Car Works,
  - Nanjing Aeolus Special-Purpose Vehicle Works, Anshan Passenger Car Works,
  - Heilongjiang Passenger Car Works, and others

Third layer (23 enterprises)

- Guizhou Automobile Works, Shiyan Axle and Hub Works,
- Hubei Automobile Body Works, and others

Fourth layer (240 enterprises, 2 organizations)

- Hanyang Special-Purpose Vehicle Works, Shanghai Xinhua Automobile Works,
- and others

Outside enterprises associated with the Aeolus group:

- More than 200 cooperating enterprises, 293 technical service stations (plus 130 of their branch offices), 50 sales enterprises

Sources: Author's interview with Aeolus Automotive Corp. officials, July 9, 1992; also [21; Sept. 10, 1992].

Note: The percentages in parentheses are the ratios of capital participation.

*The second layer.* The twenty-two enterprises forming the second layer of the Aeolus group are independent of Aeolus, but the latter maintains a strong grip on these firms through such measures as majority capital participation in them. Eighteen of the twenty-two firms produce finished products which include diesel trucks, buses, special-purpose vehicles such as fire engines, and truck loading cranes. The list also includes passenger cars which are produced by the Shenlong Automobile Corporation (Shenlong qiche youxian gongsi), a joint venture formed

with Citroën of France. This buildup of second-layer firms suggests that Aeolus has been moving forward with a strategy of product diversification through the control of other enterprises.

*The third layer.* There are twenty-three enterprises that make up the third layer. Aeolus has invested in these firms, but the amount is small, and they basically remain under the supervision of their respective local governments. However, Aeolus has required these third-layer enterprises to produce Aeolus group products as their principal output. Aeolus also takes a hand in their production and investment plans and in their business management, and it also assigns its own officials to them. Moreover, the profit of each of these enterprises is divided three ways with a set percentage going to the respective supervisory government, Aeolus, and the concerned third-layer enterprise. There is a comparatively large number of parts suppliers in this layer, and Aeolus's capital participation in most of these enterprises has come through the transfer of equipment and technology when Aeolus switched from producing parts internally to ordering them from outside suppliers.

*The fourth layer.* The enterprises forming the fourth layer are firms having no Aeolus capital participation nor the involvement of any Aeolus officials, and their group membership is only through the continuous business connections they have maintained with Aeolus. There are 242 enterprises and institutions within this layer, of which 162, are parts suppliers. Ninety-two of the enterprises in this layer are located in Hubei Province along with Aeolus. Even though Aeolus does not have any organizational relationship with the enterprises in this layer, through its provision of parts and components for production, Aeolus has built up close cooperative relations with more than a few of these enterprises. Such enterprises have come to depend greatly on Aeolus which has given the latter substantial control over their operations even without Aeolus capital participation.

## B. *Formation of a Division of Labor in Production*

### 1. *Aeolus production system*

Aeolus's end products are trucks and truck chassis, but a large amount of the parts and components for these products are also produced in-house—as of 1992, 58 per cent of the parts for five-ton trucks and 50 per cent of those for eight-ton trucks were manufactured internally by Aeolus itself [21; Sept. 10, 1992] [16, pp. 65–67] [6, pp. 19–20]. Even the manufacturing of parts for the major components was carried out in-house right from the casting and forging stage—75 per cent of the parts for engines, such as castings, pistons, and carburetors, were produced internally. Likewise, chassis parts and pressed parts were produced in-house, while screws, springs, and other standardized parts along with transmissions, meters, radiators, and electrical components were produced by directly controlled Aeolus factories. In addition, the rear support sectors, such as the machine shops that made the specialized machine tools that Aeolus required, the maintenance shops that maintained and repaired the factory machinery, the bit gauge and mold production shops, the power generation plants and the water supply plants, all of these were integrated parts of Aeolus.

## 2. *The production of parts outside of Aeolus*

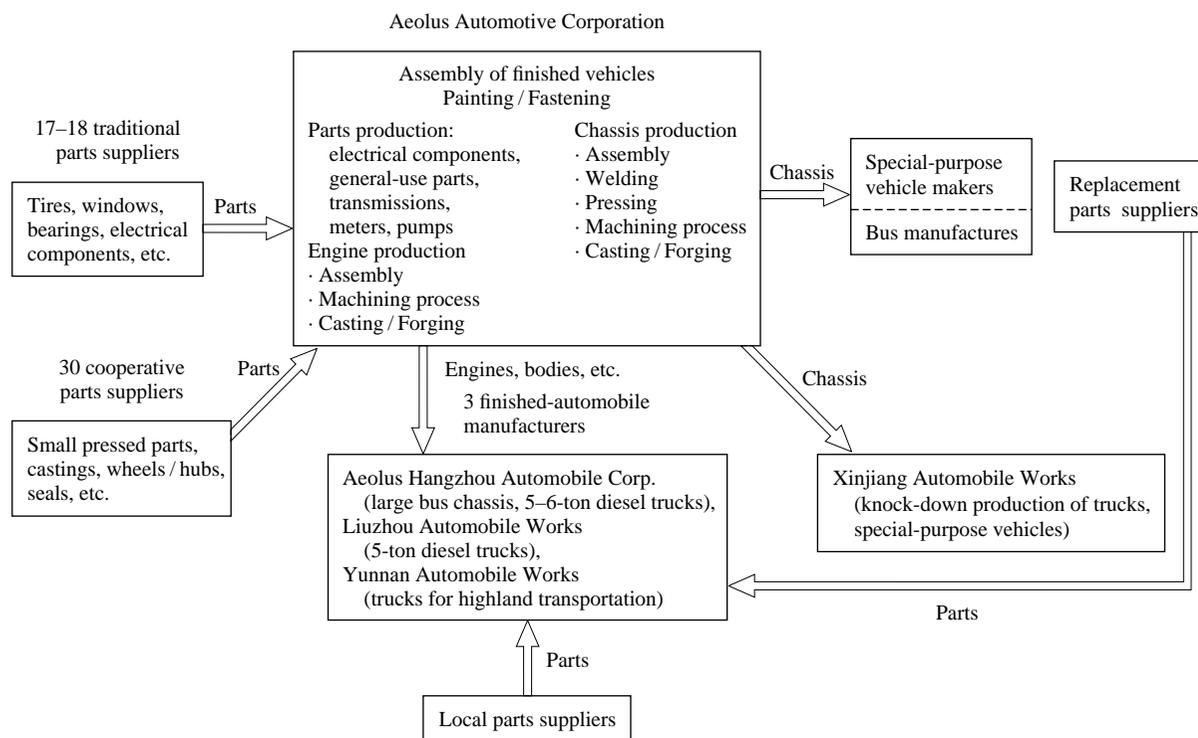
Although the amount of Aeolus in-house produced parts and components remains high, it has declined from the 75 per cent that were being produced internally at the start of the 1980s. Aeolus achieved this reduction by ordering more parts from outside firms during the 1980s. As can be seen from Figure 3, Aeolus's outside parts suppliers can be divided into "traditional parts suppliers" and "cooperating parts suppliers." Within the original vertically divided division-of-labor system, "traditional parts" were those that Aeolus procured from outside firms as determined by the state planning authorities. These parts included such things as tires, window glass, bearings, electrical components, and made up 25 per cent of the parts used by Aeolus. The original supplier producing these parts for Aeolus was set up along with the latter by state authorities, and at the start of operations this supplier was designated as the only one that Aeolus was to deal with. These particular parts and components are nonspecific in their use and can be sold to other manufacturers who need them. As a result, Aeolus's sole supplier frequently broke its contracts and instead sold to other manufactures; it also refused to comply with Aeolus's demands for lower prices. To overcome these difficulties, during the 1980s Aeolus increased the number of parts suppliers it dealt with. By annually changing the percentage of parts it purchases from these different suppliers depending on the quality of their products and how well they adhere to delivery times, Aeolus has been able to instill a sense of competition among these suppliers.<sup>6</sup>

Turning to the "cooperative parts suppliers," these are firms that Aeolus has been fostering as outside suppliers since the 1980s. Aeolus purchases primarily small pressed parts and castings from these suppliers, 671 kinds of parts for its five-ton trucks, and 1,652 for its eight-ton trucks (as of 1992). This has brought Aeolus's in-house production of parts down from 75 per cent to 50–58 per cent [12, p. 26]. The cooperative parts suppliers manufacture specialized parts for Aeolus which can only be sold to Aeolus. Most of these suppliers are located within a 150-kilometer radius of Aeolus. Often they took over the latter's parts production facilities; they have received technological and managerial training from Aeolus and also receive their production materials from that firm. All of these factors have made them greatly dependent on Aeolus. This one-sided business relationship has given Aeolus, with or without capital participation, much more control over these cooperating parts suppliers than it can exert on the traditional parts suppliers.

There is also a difference between the traditional and cooperative parts suppliers in the way Aeolus orders parts and sets prices. With the former orders are placed on a per annum basis, and the suppliers maintain specific amounts of inventories. With the latter Aeolus provides an outline of its annual production plans, then makes carefully set monthly orders. These latter suppliers maintain little in the way of inventories; instead they use a kanban (just-in-time) system, producing parts and shipping them out as needed. Regarding prices, traditional parts and compo-

<sup>6</sup> From interview with officials of Aeolus Automobile Corporation parts section, July 9, 1992.

Fig. 3. Aeolus Automobile Group Division of Labor



Sources: Author's interview with Aeolus Automotive Corp. officials, July 9, 1992; and other sources.

Note: The companies standing below Aeolus Automotive Corp. are ones controlled by Aeolus; those horizontally aligned have an equal relationship with Aeolus. The arrows show the flow of parts and components.

nents are transacted at preferential prices set slightly lower than market prices. This is because Aeolus is a steady buyer from these suppliers; also the supplying of parts to Aeolus is proof of the high quality of their products. For parts from cooperating parts suppliers Aeolus uses an annually set price based on cost plus 8–10 per cent profit. Thus trade in traditional parts is more in the nature of market transactions while that for parts from cooperating suppliers is more in the nature of intra-organizational transactions. This difference correlates with the difference in the extent of supplier dependence on Aeolus.

### 3. *Developing downstream enterprises*

Within the Aeolus group there are a total of eighty-one downstream manufacturers that procure chassis and engines from Aeolus Automobile Corporation and assemble these in trucks, buses, and various types of special-purpose vehicles. Among these downstream firms, Aeolus carried out a large-scale restructuring program based on a strategy of product diversification with Aeolus Hangzhou Automobile Corporation (Dongfeng Hangzhou qiche gongsi), Liuzhou Automobile Works, Yunnan Automobile Works (Yunnan qichechang), and Xinjiang Automobile Works (Xinjiang qichechang), all Aeolus group second-layer firms. Until this restructuring these four firms had been small-scale truck makers. Aeolus first had these firms undertake knockdown production of Aeolus trucks and transferred production technology to them. It then turned its attention to production specialization having Aeolus Hangzhou Automobile Corporation produce large bus chassis and diesel trucks, Liuzhou Automobile Works produce diesel trucks, and Yunnan Automobile Works produce trucks designed for highland transportation. Before these changes, these three firms had produced over 80 per cent of their parts and components in-house. Now these firms perform only the final assembling and the production of chassis and frames. This has reduced their in-house production of parts to under 25 per cent. Engines and transmissions are purchased from Aeolus and other firms within the group while other parts and components are for the most part procured from local suppliers.<sup>7</sup> As for Xinjiang Automobile Works, it receives chassis and parts from Aeolus and carries on knockdown production of trucks.

Reliant on parts and components from Aeolus and producing Aeolus trade-name trucks, the above four firms are very dependent on the Aeolus Automobile Corporation which makes it difficult for independent enterprises to enter this type of operation. This explains why Aeolus has strong control over these firms through its majority holdings. This concurs with the postulation of Williamson's theory.

With the exception of the four firms discussed above, most of the downstream enterprises use chassis received from Aeolus or Aeolus Hangzhou Automobile Corporation to build buses or special-purpose vehicles. In general these enterprises produce vehicles under their own trade names, but the scale of their production is extremely small. For example, most of the thirty bus makers belonging to the Aeolus group produce only a few dozen to a hundred buses a year. As a chassis

<sup>7</sup> From interview with officials of Aeolus Automobile Corporation parts section cited above; [21; June 18, 1992]; [12, pp. 26, 28]; [9; August 24, 1992]; and [23; August 24, 1991].

producer, it would be good if Aeolus itself could enter this field, but this would be difficult because most of the purchasers of buses are the local civil engineering bureaus and transportation offices which buy buses produced by firms under their own control; they do not purchase buses from other firms. Given this state of affairs, Aeolus has been bringing under its control the most promising of these bus makers, and providing a great deal of support to help them consolidate the bus manufacturing industry. Meanwhile Aeolus is awaiting its own chance to enter this field. The situation for special-purpose vehicles mirrors that of buses—a large number of small-scale manufacturers producing a tiny number of vehicles.

### C. *Concluding Remarks*

The above analysis has shown how the Aeolus Automobile Corporation, the Hangzhou Automobile Works, the Liuzhou Automobile Works, and other vehicle manufacturers, who had been producing the same types of trucks separately, came together to form a horizontally divided division of labor under the Aeolus group. This analysis has also shown how Aeolus and its parts suppliers enhanced their relationship through a better division of labor. These developments show that the formation of enterprise groups has worked in a positive way toward reforming China's division-of-labor system. However, the rate of Aeolus's in-house parts production still remains high, and there is still much room in the downstream sector for product diversification; thus restructuring of the automobile industry under the aegis of the Aeolus group can be expected to continue. However, it remains to be seen if the segmentation of the market by administrative organs will be an obstruction standing in the way of the industry's restructuring.

## IV. ANALYSIS OF THE CHINA FIRST AUTOMOBILE GROUP

### A. *Structure of Ownership and Control*

Turning next to an examination of the China First Automobile Group (FAW group),<sup>8</sup> starting in 1980 the First Automobile Works (FAW) began forming loose business alliances with other enterprises; then at the end of 1982 it set up the Jiefang United Automotive Industry Corporation (Jiefang qiche gongye lianying gongsi) that brought together ten automobile firms. Thereafter the number of affiliated enterprises gradually increased, and from 1986 FAW began to bring a portion of these enterprises under its control. This started in May 1986 when the cities of Jilin and Changchun transferred control of the Jilin City Automotive Industry Corporation (Jilin shi qiche gongye gongsi), the Changchun Dongfeng Automobile Works (Changchun Dongfeng qichechang), the Luyuan Engine Works (Luyuan fadongjichang) and the Changchun Gear Works (Changchun chilunchang) over to FAW. By the next year the Dalian Diesel Engine Plant (Dalian chaiyoujichang) and five other firms had come under FAW's control [7, pp. 318–29] [23; Feb. 23, 1987] [22] [14, pp. 89–92]. In July 1992 the Jiefang United Automotive Industry

<sup>8</sup> Except where otherwise noted, this section is based on information from interviews in November 1992 with officials in the Techno-economic policy research division of FAW.

Corporation was renamed the China First Automobile Group (FAW group); its ranks at that time had grown to 149 firms and six institutions.

### 1. *The first layer*

The FAW group can be divided into three layers in accordance with the amount of control that FAW exerts over the group's firms. The first layer which forms the core of the group is structured very much like that of the Aeolus group and as of 1992 was made up of the FAW parent company under which were thirty-nine directly controlled factories, three direct subsidiaries, and three research centers and schools. FAW also had a total of 581 labor service companies which were under the factories and which for the most part were assigned to produce components and parts used by FAW and to provide welfare and other social services within FAW [19, pp. 317–21].

A particular feature of the FAW group is its direct control of eight factories which previously had been autonomous enterprises. The four above-mentioned firms transferred from Changchun and Jilin cities to FAW in 1986 also became directly controlled factories. After the transfer of the four firms, FAW at first preserved their autonomy using them to form a base for manufacturing light trucks through a division of labor with FAW. Since these four firms were originally set up with capital invested by the Jilin and Changchun city governments, at the time of their transfer the assets of each of the firms was counted as the two cities' capital participation in FAW, and an agreement was concluded whereby the two cities would receive dividends from FAW group profits corresponding with the amount of their capital participation. However, after the transfer of the four firms to FAW control, the two city governments continued to interfere with FAW's efforts to restructure the firms, and there continued to be disputes over the distribution of profits. As a result, the arrangements among the contracting parties broke down, and during 1990 and 1991 FAW bought up the four firms from the two cities and took them over directly [21: Dec. 19, 1991; Feb. 20, 1992] [9; July 14, 1993] [17, p. 289].

As noted above, FAW had at first maintained the autonomy of the four firms and had attempted to form with them a mutually dependent division of labor among the stages of the production process. But the creation of highly interdependent relationships ultimately brought the need for organizational integration. Thus the development of the FAW group concurs well with Williamson's theory.

### 2. *The second layer*

The second layer is made up of nine firms over which FAW exerts relatively strong control. FAW has capital subscriptions in two of these firms, the Qingdao Automobile Works (Qingdao qichechang) and the FAW-Volkswagen Automotive Company Ltd. (Yiqi-Dazhong qiche youxian gongsi), a joint venture with Germany's Volkswagen. It also has interests in the management and profits of the Dalian Diesel Engine Plant [7, p. 327]. These three enterprises have been made production centers for passenger cars, diesel trucks, and diesel engines respectively, and they are major participants in FAW's strategy of product diversification.

FAW has no holdings in the other six second-layer enterprises, but it maintains strong control over them through its administrative supervision. With four of these firms, however, the profits they produce are paid not to FAW but to the local governments that originally controlled them. For this reason FAW has no real interest in trying to improve the management of these firms nor has it been positive about including them in its business strategy [14, pp. 96, 100–101].

In February 1995, FAW acquired a 51 per cent equity holding in the Jinbei Automobile Company, Ltd. (which will be dealt with in the next section). This company was originally in the third layer of the FAW group, but with FAW's acquisition of controlling interest, it moved into the second layer. This acquisition by FAW was in response to the government's industrial policy of consolidating the automobile industry, and is aimed at the strategic diversification of the light-truck and bus sectors [23; Feb. 27, 1995] [11, p. 324].

### 3. *The third layer*

The third layer is comprised of 136 firms, universities, and research centers which have no capital participation from FAW nor the involvement of FAW officials in their management. Seventy-six of these firms, or a little over half, are downstream manufacturers of buses and special-purpose vehicles which is different from the Aeolus group where most of the firms in the fourth layer, which corresponds to the third layer of the FAW group, are parts-and-components producers. These downstream-sector manufacturers joined the FAW group because they wanted to have more secure access to a supply of chassis.

#### B. *Formation of a Division of Labor in Production*

##### 1. *FAW production system*

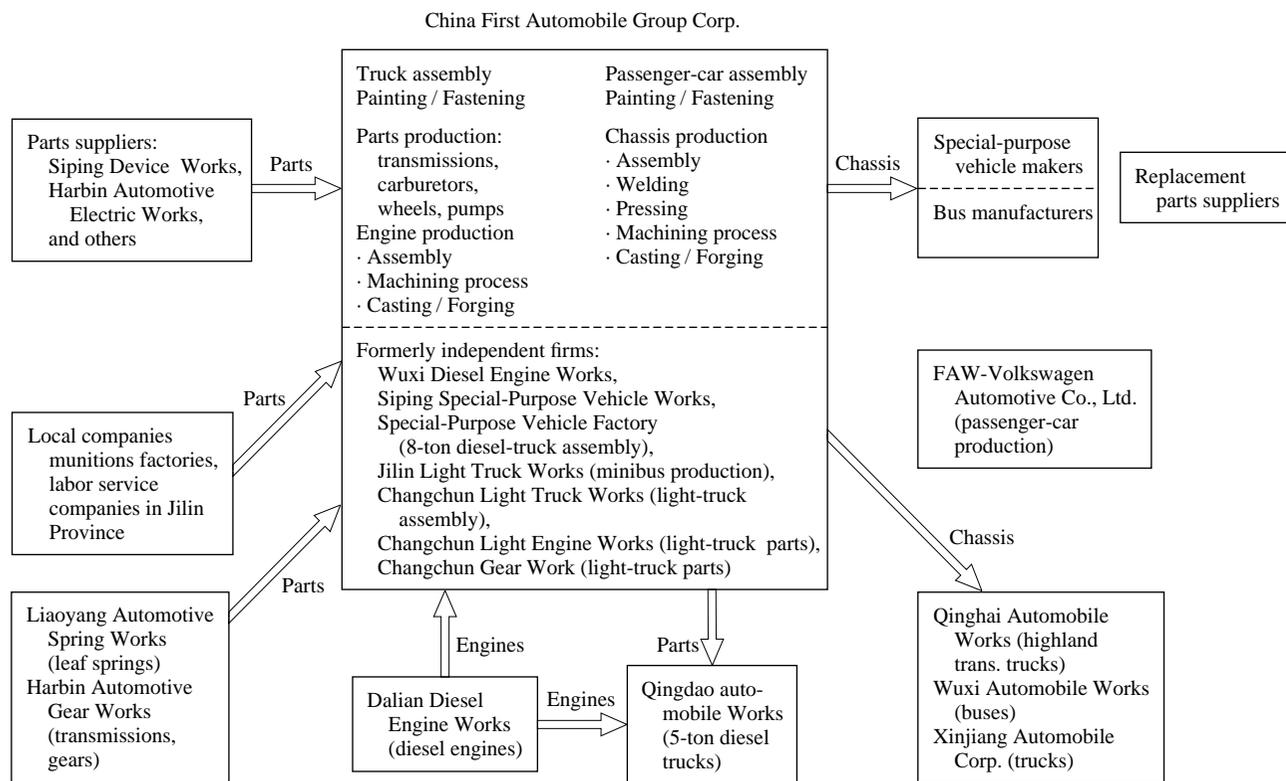
As can be seen from Figure 4, FAW differs from Aeolus in having subsumed a total of five factories assembling finished vehicles. In the production of five-ton trucks, FAW is quite similar to Aeolus in having a large part of the manufacturing process, from much of the parts production all the way to rear support sectors, integrated into the enterprise, although the percentage of parts produced in-house dropped from 50 per cent in 1987 to around 35 per cent in 1992.<sup>9</sup> In the production of light trucks also, FAW produces a large proportion of parts in-house through a division of labor among the four factories transferred from Jilin and Changchun cities and other directly controlled factories.

##### 2. *Division of labor within the FAW group*

Until the 1970s FAW produced 60 per cent of its parts and components in-house and production efficiency was low. During the 1980s, FAW expanded the scale of its parts production by having its directly controlled parts suppliers produce for sales outside the firm. At the same time FAW provided production facilities and

<sup>9</sup> The 1987 figure is from the State Council [14, p. 9]; the 1992 figure is from the interviews with officials of FAW. However, it is questionable if these figures can be compared with those for Aeolus or with international figures.

Fig. 4. China First Automobile Group Division of Labor



Sources: Author's interview with officials of China First Automobile Group Corp.—Techno-economic policy research division, November 27, 1992; and other sources.

Note: Figure 4 is read the same as in the note at the bottom of Figure 3.

technical assistance to local enterprises, munitions factories, and labor service companies in Jilin Province and turned production of such components as clutches, pistons, door locks, and air tanks over to these firms. These measures helped FAW reduce its in-house parts production to 50 per cent by 1987 [14, p. 140]. Such fostering of parts suppliers was the equivalent of the Aeolus group's support to its "cooperating parts suppliers."

The FAW group also has its equivalent of Aeolus's "traditional parts suppliers." And when placing new orders for parts from outside suppliers, FAW also makes it a policy to compare the products of a number of firms; but unlike Aeolus, FAW does not adopt a multiple-sourcing policy to promote competition among suppliers.

As of 1992 the FAW group had in its downstream sector around eighty manufacturers of buses and special-purpose vehicles which accounted for more than half of the firms in the group. FAW provides a stable supply of chassis to its second-layer downstream manufacturers (Figure 4); these firms use only FAW chassis. However, more than seventy third-layer downstream manufacturers use chassis from other firms as well, and FAW does not provide a steady supply, meaning that chassis are supplied only on a spot transaction basis even inside the FAW group.

### C. *Concluding Remarks*

Following the friction it experienced with Jilin and Changchun cities, FAW seems to have learned that it would have to take over or acquire controlling interest in the enterprises that it wanted to restructure in line with its own strategy. FAW is attempting to vertically integrate all of the major sectors which will become important for the strategic development of FAW in the future. Like Aeolus, the FAW group is also moving ahead with restructuring the organizational relationships among its enterprises to cope with the changes taking place within the auto industry's division of labor.

A big difference between the FAW group and the Aeolus group concerns the relationship that FAW has with its intermediate organizations, i. e., with its third-layer enterprises and with a portion of those in the second layer. FAW does not give them an active role to play. In other words, FAW does not try to make active use of the intermediate organizations within the group. If it continues this one-sided pursuit of vertical integration, FAW will become increasingly bloated, and there is the danger of increasing bureaucratic costs inside the firm which Williamson has pointed out. Therefore, it seems that FAW will sooner or later change its organizational strategy, and like the Aeolus group introduce the elements of market transactions into its operations inside the group to revitalize its business performance.

## V. ANALYSIS OF THE JINBEI AUTOMOBILE COMPANY, LTD.

The Jinbei Automobile Company, Ltd. (Jinbei Ltd.) differs from the Aeolus and FAW groups in that it is an enterprise group centered on a holding company having no manufacturing functions. The group consists of the holding company, Jinbei

Headquarters, and more than thirty enterprises which include seventeen factories.<sup>10</sup>

#### A. *Formation of Jinbei Ltd.*

The precursor of Jinbei Headquarters was the Shenyang city government's administrative division overseeing the auto industry, the Shenyang Automobile Industry Corporation (Shenyang qiche gongye gongsi). In 1984, in a trial run at economic reform, the Shenyang city government and the State Economic Commission merged the Shenyang Automobile Industry Corporation with its sixty-six subsidiary firms, separated them from the city government, and set them up as a single independent enterprise. At the time the production operations at the corporation's subsidiaries were in disarray; they were plagued by lax management and poor labor discipline, and production efficiency was extremely bad. Through mergers and the redistribution of equipment and technical personnel, the corporation laid out a division-of-labor system, and had its subsidiaries specialize in specific processes and the production of specific parts. The corporation also experimented with leasing subsidiaries and with letting them go bankrupt.

In 1988 it was changed into a joint-stock company, the Jinbei Automobile Company, Ltd., to eliminate the city government's interference in the corporation's management and to raise capital. Jinbei Ltd. continued with the reorganizing and merging of its subsidiaries, and from 1991 through 1994 it reduced its factories from fifty to the present seventeen factories.<sup>11</sup>

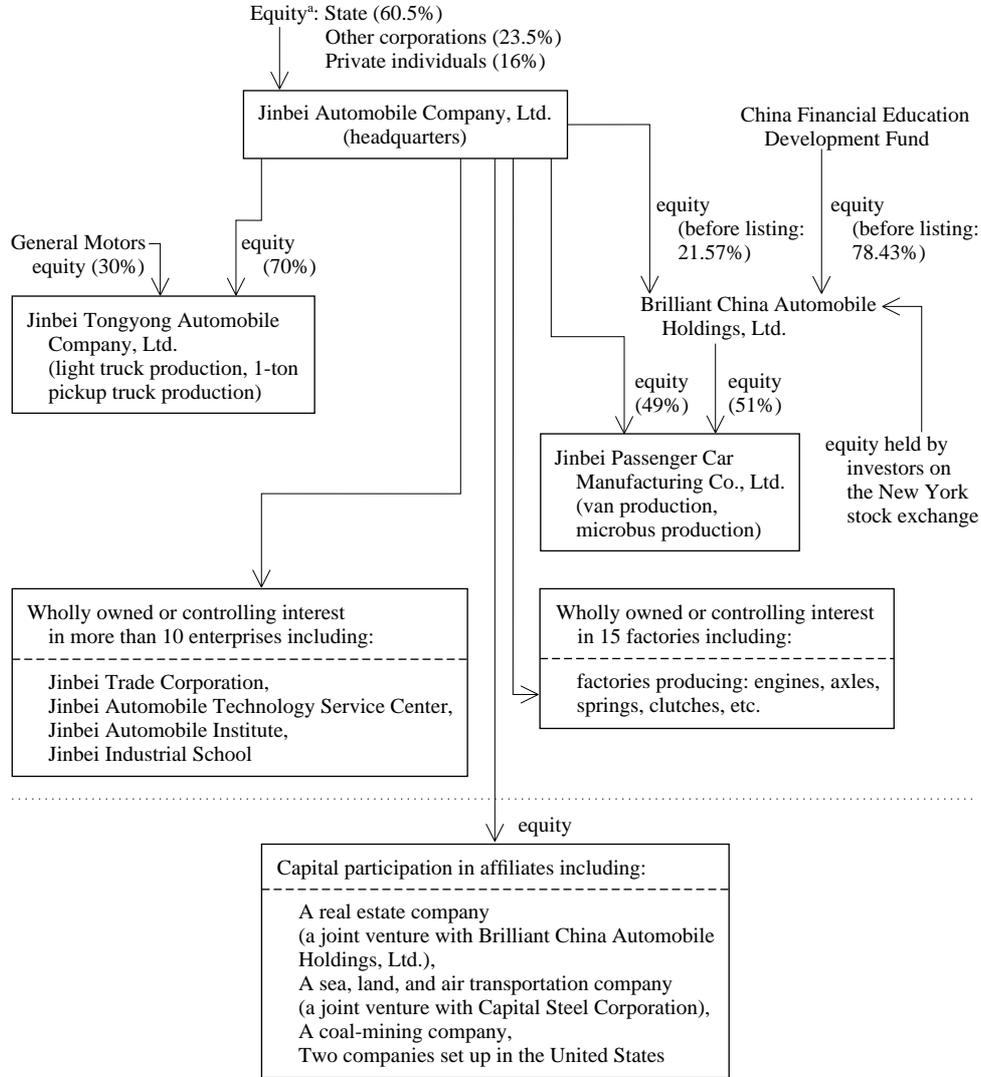
#### B. *Structure of Ownership and Control*

Jinbei Ltd. is formed around Jinbei Headquarters, a joint stock company which wholly owns or has controlling interest in two manufacturers of finished automobiles along with parts suppliers and sales companies (Figure 5). The state owns 60.5 per cent of the equity in Jinbei Headquarters; another 23.5 per cent is corporate-owned; the remaining 16 per cent is held by private individuals. The stock holdings of the state are equal to the value of state investment in Jinbei Ltd., and are the state's equity share in the company. The corporate-owned stock holdings are equal to the value of assets of Jinbei's subsidiaries which were created without

<sup>10</sup> Except where otherwise noted, this section is based entirely on information from interviews in November 1992 and September 1994 with officials of Jinbei Automobile Company, Ltd. The data largely from the 1994 interviews. Within Jinbei Ltd., both the holding company itself and the holding company plus the subsidiaries are called the Jinbei Automobile Company, Ltd. To avoid confusion I call the holding company Jinbei Headquarters and the entire group including the holding company and its more than thirty subsidiaries Jinbei Ltd.

<sup>11</sup> From the 1992 and 1994 interviews; also from: Wang Chi, "Shenyang qiche gongye cunzai de wenti yu chulu—Jinbei qiche gufen youxian gongsi de diaocha" [Problems existing in Shenyang's automotive industry and their solutions—an investigation into Jinbei Ltd.], *Shenyang jingji*, No. 4, 1992; *Jishu shichang bao*, June 10, 1987; Liu Yulan, "Jingji shang duli hesuan; shengchan shang miqie lianhe; chengxiang gongye tongbu fazhan" [Economically independent; closely related in production; synchronous development of urban and rural areas], *Liaoning jingji*, No. 12, 1987; Duan Xinqiang, "Duoleng de 'Zhao Xiyou xianxiang'" [Magnificent 'Zhao Xiyou phenomenon'], *Renmin ribao*, June 17, 1993; Zhao Xiyou, "Gufen jingji yu gufenzhi qiye" [Joint-stock economy and joint-stock companies], *Guanli shijie*, No. 4, 1992.

Fig. 5. Structure of Jinbei Automobile Company, Ltd.



Sources: Author's interview with Jinbei Automobile Company officials in November 1992 and September 1994; and other sources.

<sup>a</sup> In February 1995 the China First Automobile Group Corporation acquired a 51% share in Jinbei.

the investment from the state. These holdings include the assets of collectively owned firms and the assets that state-owned enterprises have accumulated with their retained funds. It also includes the equity acquired by other corporations after the public offering of Jinbei Ltd. stocks. Stocks held by individuals are those purchased by employees and the general public following their public offering [10, pp. 80–82].

In the past, the formulation of overall production planning for Jinbei Ltd. had been in the hands of Jinbei Headquarters. It also drew up the plans for the supply of parts and components from its subordinate suppliers to its factories assembling finished vehicles, and it had sole control over the production, the procurement of materials, and all sales conducted by its subsidiaries. Later Jinbei Headquarters handed over more authority to its subsidiaries and made them more self-reliant. The subsidiaries now carry on transactions directly with one another without going through the headquarters. Also in the past whenever a subsidiary enterprise sustained losses, these were compensated for by Jinbei Ltd. as a whole. But in 1994 Jinbei Headquarters began taking an entirely stockholder's position and demanded that each enterprise improve management through its own efforts. But Jinbei Headquarters still retains authority over the managerial personnel of each enterprise, and if managed poorly, headquarters replaces a subsidiary's managers. Jinbei Headquarters also procures capital from banks and from the stock market on behalf of Jinbei Ltd. as a whole, and then refinance the funds to its subsidiaries.

One of Jinbei Ltd.'s two manufacturers of finished automobiles, Jinbei Tongyong Automobile Company, Ltd. (Jinbei Tongyong qiche youxian gongsi), is a joint venture between Jinbei Headquarters and General Motors of the United States. At present it is building primarily 1.5- and 2-ton trucks, but in the future this venture expects to change over to producing mainly one-ton pickup trucks using technology transferred from GM. The other automobile manufacturer, Jinbei Passenger Car Manufacturing Co., Ltd. (Jinbei keche zhizao youxian gongsi), is a joint venture between Jinbei Headquarters and the Bermuda-registered Brilliant China Automotive Holdings, Ltd (Zhongguo Huachen qiche konggu youxian gongsi). This latter company has every appearance of being a dummy firm set up by Jinbei Ltd. to list stock on the New York exchange and dodge Chinese government controls on such overseas listings [8; Jan. 16, Sept. 15, Oct. 19, Oct. 30, 1992] [2] [9; Jan. 10, 1993].

Along with the above two ventures producing finished automobiles, Jinbei Ltd. also has fifteen parts suppliers; these include a joint venture with a Dutch company making special-purpose pumps, a joint venture with a Japanese firm making propeller shafts, as well as wholly owned subsidiaries producing engines, axles, and springs. Jinbei Ltd. also has a dozen or more nonmanufacturing subsidiaries including the Jinbei Trading Corporation (Jinbei maoyi zonggongsi), the Jinbei Automobile Technology Service Center (Jinbei qiche jishu fuwu zhongxin), a worker training center set up in collaboration with Toyota, the Jinbei Automobile Institute (Jinbei qiche yanjiusuo), and the Automotive Industry School (Qiche gongye xueyuan) [8; Jan. 19, 1993] [5].

### C. *Division of Labor within Jinbei Ltd.*

Jinbei Ltd.'s primary production has long been light trucks and microbuses, and recently it has also started producing vans using technology received from Toyota. In the production of light trucks and microbuses, the manufacturers turning out the finished automobiles have handled pressing, welding, painting, and assembly processes while engines, axles, and transmissions have been produced by Jinbei Ltd.'s own parts suppliers controlled by Jinbei Ltd., and the rate of in-house parts production for the microbus is around 90 per cent. The designing of the major components is done by the Jinbei Automobile Institute, and the parts suppliers simply produce these following the design plans.

Manufacture of vans is still at the knockdown production stage, and other than tires, most of the parts are imported. But in the future most of the production, like that for microbuses, is expected to be taken over by Jinbei Ltd. subsidiaries.

### D. *Concluding Remarks*

From Jinbei Ltd.'s start in 1984 until around 1992, Jinbei Headquarters held strong overall control over the corporation's subsidiaries. It freely reorganized these subsidiaries, using its strong leadership to push ahead with reorganization to create a new division-of-labor system. This reorganization could be carried out because Jinbei Ltd. was such an integrated organization. But since around 1992, Jinbei Ltd. has made its subsidiary firms more self-reliant, and Jinbei Headquarters has turned toward controlling these firms solely through its capital participation and placement of personnel in these subsidiaries. Thus in contrast to the FAW group, Jinbei Ltd. is trying to change from vertically integrated organizations to intermediate organizations linked by equity relationships. The objective is to revitalize the corporation's subsidiary firms by bringing the relationships among the firms closer to market transactions. This effort at restructuring is noteworthy because it runs rather contrary to Williamson's theory.

## VI. CONCLUSION

From the analysis of the preceding three automobile groups, we can see that the formation of enterprise groups in China's automobile industry was both necessary and worthwhile in establishing a horizontally divided division-of-labor system. We can also see that enterprise groups adopted several kinds of organizational arrangements inside the group in accordance with the differences in the division of labor among their enterprises. When the core enterprise seeks to establish a mutually dependent division of labor by reorganizing another enterprise in the group, the tendency is to vertically integrate or take a controlling interest in that enterprise; this tendency is especially strong when the latter's sphere of business is strategically important for the former.

With the Aeolus group or Jinbei Ltd., however, where the formation of a mutually dependent division of labor has for the most part been completed, we can see that efforts are being made to revitalize enterprises by shifting their organizational

arrangement from an integrated one to an intermediate organizational arrangement which introduces market relationships into the group. Besides, the Aeolus group also exhibits another tendency; when an enterprise is extremely dependent on another as are the cooperative parts suppliers on Aeolus, then even if there is no equity relationship between the firms, a close business relationship different from that of a regular market relationship can develop. Such relationships among enterprises cannot be sufficiently explained by Williamson's theory, indicating that the theory needs some further adjustment and fine-tuning.

Looking at the future prospects for China's automobile enterprise groups, one important problem that will affect their development is institutional obstruction mainly from administrative bodies. Chinese business firms are controlled by many central and local administrative bodies, and this factor greatly hinders the expansion of enterprise groups and the promotion of a division of labor within the industry. Were it not for this hindrance, one could expect more vertical integration to take place and enterprise groups could expand their operations more widely and create closer relationships, particularly in the buses and special-purpose vehicle sector. The central government has declared its intent to change over to a market economy and has made it clear that it will continue on its course of creating autonomous, self-reliant business enterprises. But it will not be easy to break down the control that local governments have over their enterprises.

Government policy is another important factor affecting the future of enterprise groups. In July 1994 the central government announced its "Industrial policy for the automobile industry" (Qiche gongye chanye zhengce). This policy calls for the consolidation of the automobile industry into eight-ten groups by the end of this century by giving preponderant support to large-scale manufacturers and enterprise groups; the industry will then be further consolidated into three-four large-scale enterprise groups by the year 2010. This policy will intensify the trend of small and medium-sized manufacturers to join large enterprise groups in order to survive which should add momentum to the formation of enterprise groups. But this may not necessarily further the division of labor within the industry. It is possible that the expansion of enterprise groups could degenerate into formalistic, insubstantial efforts simply to garner preferential policies from the government.

Another factor affecting the future is the government's shift to emphasizing the production of passenger cars. This new emphasis has necessitated the introduction of capital and technology from foreign manufacturers, and there are a growing number of joint ventures with foreign companies to produce passenger cars and their parts and components. The course of development of China's automobile enterprise groups will surely be affected by the strategies of the collaborating foreign automobile manufacturers.

## REFERENCES

1. CHEN QINGTAI. "Zou fazhan qiye jituan de daolu" [Go ahead with developing enterprise groups], *Renmin ribao*, May 3, 1991.
2. *China Daily*, January 16, 1992.
3. Diyi-qiche-zhizaochang-qiye-yanjiu-zhongxin (FAW enterprises research center), ed. *Zhongguo qiche gongye de yaolan—Diyi qiche zhizaochang jianchang 30-zhounian jinian wenji* [The cradle of China's automotive industry—memorial edition on the 30th anniversary of FAW] (Changchun: First Automobile Works, [1983]).
4. Dongfeng-qiche-gongye-lianying-gongsi (Aeolus united automotive industry corporation). "Guanyu jinyibu kuoda zhuanyechang shengchan jingying zizhuquan de zhixing guiding" [Experimental regulations for increasing the autonomy of factories over production and management], in *Qiye jituan de zuzhi yu guanli* [Organizing and managing enterprise groups], ed. Xu Jinfa and Gu Jialin (Hangzhou: Zhejiang-renmin-chubanshe, 1988).
5. FURUSAWA, K. "Chūgoku no kokuei kigyō kaikaku—Kimpai jidōsha to Shuto kōtetsu kōshi" [Reform of China's state-owned enterprises—Jinbei Automobile Company and Shougang Corporation], *Jetro Chūgoku keizai*, February 1993.
6. JIANG YIWEI, ed. *Dier qiche zhizaochang jingying guanli kaocha* [A survey of the management of SAW] (Beijing: Jingji-guanli-chubanshe, 1986).
7. Jiefang-qiche-gongye-lianying-gongsi (Jiefang united automotive industry corporation). "Jiefang qiche gongye lianying gongsi (Yiqi jituan) de jingying guanli" [Management of the FAW Group], in *Qiye jituan de zuzhi yu guanli* [Organizing and managing enterprise groups], ed. Xu Jinfa and Gu Jialin (Hangzhou: Zhejiang-renmin-chubanshe, 1988).
8. *Jingji cankao bao*.
9. *Jingji ribao*.
10. KAJITA, Y. *Chaina uōru* [Chinese wall] (Tokyo: Tsūshō-sangyō-chōsakai, 1993).
11. LI FUGE, ed. *Zhongguo qiye jituan de xingqi* [The rise of enterprise groups in China] (Nanjing: Jiangsu-remin-chubanshe, 1990).
12. LI HUIMIN, and MA YUE. "Yi gaige cu fazhan: Dongfeng qiche jituan shinian licheng" [Promote development through reform: ten years of Aeolus automotive group], *Zhongguo gongye jingji yanjiu*, No. 4, 1991.
13. MARUKAWA, T. *Guanyu qiyejituan zhongjian zuzhi chansheng de lilun yiju* [Theoretical basis of the emergence of intermediate organizations in enterprise groups], *Zhongguo gongye jingji yanjiu*, No. 9, 1992.
14. State Council, Research center for economic, technological, and social development, Research group on technological renovations (Jingji-jishu-shefui-fazhan-yanjiu-zhongxin, Jigaidiaoyanzu), ed. *Yiqi zai gaige kaifang shiqi de jishu gaizao* [Technological renovation of FAW during the reform period] (Beijing: Zhongguo-caizheng-jingji-chubanshe, 1988).
15. TIAN JINGSHAN, and GAO LIPING. "Qiche gongye zai quyue jingji zhong de juji yu kuosan" [Concentration and dispersion of the automotive industry in the regional economy], *Jingji zongheng*, No. 3, 1991.
16. WANG JIAN. "Chūgoku jidōsha-buhin kyōkyū taisei no tokuchō—Tōfū jidōsha kōshi no jirei" [Features of China's automobile parts supply system as exemplified by the Aeolus Automobile Corporation], *Ritsumeikan keieigaku*, Vol. 32, No. 1 (May 1993).
17. WANG SHOUAN, et al. "Qiye jituan fazhan de jiben silu" [Basic ideas to develop enterprise groups], in *Maijin 90-niandai de daqiye* [Large firms thrusting towards the nineties], ed. Wang Shouan (Changchun: Jilin-renmin-chubanshe, 1991).
18. WILLIAMSON, O. *The Economic Institutions of Capitalism* (New York: The Free Press, 1985).
19. XIA YUNHAI. "Lianying shi daxing qiye laodong fuwu gongsi fazhan daolu de xuanze" [Joint management is the way to develop labor service companies under large firms], in *Maijin 90-niandai de daqiye* [Large firms thrusting towards the nineties], ed. Wang Shouan (Changchun: Jilin-renmin-chubanshe, 1991).

20. XU JINFA, and GU JIALIN, eds. *Qiyе jituan de zuzhi yu guanli* [Organizing and managing enterprise groups] (Hangzhou: Zhejiang-renmin-chubanshe, 1988).
21. *Zhongguo jidian bao*.
22. *Zhongguo jixie bao*, June 9, 1988.
23. *Zhongguo qiche bao*.
24. *Zhongguo qiye bao*, July 15, 1991.