POLICY REFORMS AND FOREIGN DIRECT INVESTMENT: THE CASE OF THE CHINESE AUTOMOTIVE INDUSTRY

Hua WANG

The Chinese automotive industry is currently experiencing impressive growth. During the past two decades, the average annual growth rate has been 15 per cent. The total output of motor vehicles ranked 9th in the world in 1999 with 1.8 million units of production. In the Asia region, China has been the second largest car-producing nation after Japan and before Korea since 1997.¹

Till the mid-1990s, the auto industry was highly protected in China. When the government officially announced its "Industrial Policy for the Automotive Industry" in July 1994, it showed its intention to develop and to consolidate China's indigenous automotive industry. This approach was modelled on that of Korean industrial development in the 1970s, while at the same time, the need for funds, technology and management to upgrade the greatly lagging industry, urged the authority to attract foreign direct investment (FDI). However, the operational practices involve a set of limitation measures. The most important obstacles are high tariff and non-tariff barriers, screening, foreign equity limits, and local content requirements.

Multi-national corporations (MNCs) incorporate the Chinese government's trade, investment and industrial policies into their location and production decisions. There is much overlap between the two, but there can also be differences. The unplanned results that neither match the economic theory nor meet the intention of the policymakers drive the Chinese authorities towards a more liberalised regime.

This study assesses the link between policy regulation and the performance of foreign investors in the changing Chinese automotive industry. Beginning with the formulation of open-up policy and the foundation of an automotive industrial policy in China (section I), the FDI inflows in shaping the contemporary auto industry is illustrated in section II. The interaction between the Chinese authorities and foreign investors as the driving force of policy reform is revealed in section III. We try to answer one question: how can Chinese policymakers enhance the positive contribution that MNCs bring to the local automotive base and avoid negative damaging consequences (section IV)?

¹ Fourin, Vol. 9, No. 1, March 1999, p. 3; Lee 2000, p. 66.
BACKGROUND OF OPEN-UP POLICY AND THE FOUNDATION OF AUTOMOTIVE INDUSTRIAL POLICY IN CHINA

Deregulation towards an open economy

China has pursued an open-up policy since the economic reform started in 1978. Concerning the trade regulations, there have been four rounds of significant tariff cuts since the adoption of the Harmonised System (HS) code in 1992. The average tariff rate was reduced from 43.2 per cent in 1992 to about 13 per cent in 1999 (He and Yang 1999). As for the foreign direct investment, the Chinese government is using a forceful combination of carrots and sticks - incitement and limitation of foreign investment in a number of regions and industries (Chen 1997). Since 1993, China has been the second largest FDI recipient in the world and the single largest host country among the developing countries. By mid-1997, about 200 of the world's 500 largest transnational corporations had established operation in China. The success of the open-up policy and the positive effects of FDI has been widely demonstrated (Wei 1995, Kwang and Harinder 1996, Husain and Wang 1996, Chen 1996, and Yang 1998).

Yet, government policies towards trade, investment and industrial development are faced with a number of significant challenges. First, the regional pattern of FDI has created unbalanced development and disparity between the coastal area and inland of China (Sun and Chai 1998). The sectoral selection on foreign investment makes export-oriented industries more competitive than the import-substitution sectors directly under the control of the state (Lemoine 2000). Secondly, China's attractiveness to foreign investors has intensified competition for FDI in the developing countries particularly in Asia (Oman 2000). The total FDI inflow received by ASEAN4 only represented 42 per cent of that in China between 1990 and 1997 (OECD Proceedings 1999a, p. 13). The perceived threat of investment diversion has begun to push ASEAN4 policies in a more liberal direction. For the steady inflow of FDI, the Chinese government is obliged to react to the policy campaign. Most importantly, as China's entry into the World Trade Organization (WTO) looms closer, the policymakers are being subjected to growing pressure for market access to protected and restricted sectors. The process imposes the acceleration on policy reform. All these forces will drive continuous deregulation.

Infant industry argument

There is a long tradition of government intervention in the Chinese automotive industry. The protective regime persisted despite the extensive trade and economic liberalisation in most of the sectors in the late 1990s. It is rooted in the "infant industry" concern.

Several arguments strongly support the idea. Developing countries always have a limited market. To explore economies of scale, domestic firms need an entry barrier placed on foreign counterparts. A certain protection period is necessary for the local carmakers to develop so as to compete with well-financed and technologically advanced MNCs in the future. Since the key carmakers are all state-owned enterprises (SOEs) in China, the government can provide the massive financing necessary to create domestic giants. Components industry is crucial. By keeping car part tariffs high, it is encouraged to set up domestic part supply networks so as to increase inter-industry linkages and the technology
spill over. Without the trade barrier, the risk of being crowded out by the MNCs is high. Chinese car companies might become foreign-part assembly plants. This pattern of industrialisation is neither economically nor politically desirable. These infant industry considerations lead to the adoption of an import-substitution strategy in line with the theoretical approach of Krugman (1995).

The protectionism in China's automotive industry has also been inspired by the pattern of development in Japan and Korea. Both of those two countries demonstrated that active government interventions greatly contributed to the quick expansion of the export-oriented automobile industry (Rennard 1993; Aoki, Kim and Okuno 1996).

Therefore, the automotive industry is the first among Chinese industries to be backed by a formal state industrial policy. It was first formulated in 1987 and modified in 1994. Concerning international trade, high tariffs on the finished-vehicle imports are imposed together with licences and quotas. To maintain indigenous control over the fledging industry, China regulates inward investment in various way: screening, foreign equity limits, local content requirements to narrow the technology gap etc.

FDI IN CHINESE AUTOMOTIVE INDUSTRY

From modest amounts in the 1980s, around 20 joint ventures (JVs) till the end of 1989, FDI inflows in Chinese automotive industry started to accelerate sharply from 1992. The accumulated number of foreign invested enterprises was 120 in 1993 and skyrocketed to 604 in 1998 with the cumulated investment reaching $20.9 billion (MMI 1999).

Pattern of FDI

There are three main patterns for foreign investment in China: equity joint ventures (EJV), co-operative joint ventures (CJV) and wholly foreign-owned ventures (WFO). The EJV is the main pattern of foreign investment. Between 1981 and 1998, among 604 foreign investment companies, 531 (or 87.9 per cent) were EJVs. There were only 36 CJVs and 21 WFOs, which represented 5.9 per cent and 3.4 per cent of the foreign investment respectively.

The domination of equity joint venture is explained by the mandatory equity share regulation, which we will discuss in detail in the third section. In brief, those less regulated industries have a higher proportion of WFO. In the aggregated level of Chinese industries, the WFO reached nearly 37 per cent of the total foreign investment inflows, a sharp contrast to that of the auto sector. For the latter, the proportion of WFO only represented 2.6 per cent of the total inflows. This implies that the degree of intervention in the automotive industry is much higher than the other sectors (Table 1).
### Geographical origin of FDI

A systematic study shows that 466 foreign firms from over 20 countries invested in China in 1981-1996, amounting to $15.43 billion of total investment (Wang, Richet and Wang 2000). JVs with Hong Kong and some other Asian countries accounted for 57.3 per cent of the number of JVs but 30 per cent of that in dollar volume. In reverse European countries representing only 10.5 per cent of JVs had the lion's share (30.5 per cent) in terms of dollar amount. On account of the average scale of investment, Europe was the largest, around $96.0 million, while those with the USA and Japan ranged from $49.6 million to $36.0 million. Joint ventures with Hong Kong were by far the smallest, with an average of $11.4 million, 7 times smaller than the European counterparts. Since the bulk of foreign investments came from Asian countries (regions), the average size of projects at aggregate level remained modest, or $33.1 million during the last one and a half decades (Table 2).

### Geographical origin of FDI

**TABLE 1. - Pattern of FDI inflows in China, national level and automotive industry**

<table>
<thead>
<tr>
<th></th>
<th>National level</th>
<th>Automotive industry</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1996</td>
<td>1981-98</td>
</tr>
<tr>
<td></td>
<td>No. of projects</td>
<td>% of total</td>
</tr>
<tr>
<td><strong>EJV</strong></td>
<td>12,628</td>
<td>51.4</td>
</tr>
<tr>
<td><strong>CJV</strong></td>
<td>2,849</td>
<td>11.6</td>
</tr>
<tr>
<td><strong>WFO</strong></td>
<td>9,062</td>
<td>36.9</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>17</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>24,556</td>
<td>100.0</td>
</tr>
</tbody>
</table>


**Geographical origin of FDI**

**TABLE 2. - Aggregate JV activities in the Chinese automobile industry, 1981-1996**

<table>
<thead>
<tr>
<th></th>
<th>Europe</th>
<th>USA</th>
<th>Japan</th>
<th>HK</th>
<th>Asian</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No. of JVs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>466</td>
</tr>
<tr>
<td><strong>Unit</strong></td>
<td>(10.5%)</td>
<td>(15.5%)</td>
<td>(12.7%)</td>
<td>(37.3%)</td>
<td>(20.0%)</td>
<td>(4.1%)</td>
<td>(100.0%)</td>
</tr>
<tr>
<td><strong>Volume of</strong></td>
<td>4702.0</td>
<td>3571.4</td>
<td>2123.6</td>
<td>1976.6</td>
<td>2653.9</td>
<td>397.1</td>
<td>15430.1</td>
</tr>
<tr>
<td><strong>investment</strong></td>
<td>(30.5%)</td>
<td>(23.1%)</td>
<td>(13.8%)</td>
<td>(12.8%)</td>
<td>(17.2%)</td>
<td>(2.6%)</td>
<td>(100.0%)</td>
</tr>
<tr>
<td><strong>Average scale</strong></td>
<td>96.0</td>
<td>49.6</td>
<td>36.0</td>
<td>11.4</td>
<td>28.6</td>
<td>20.9</td>
<td>33.1</td>
</tr>
</tbody>
</table>

**Note:** The number in parentheses is the percentage term of each item.

**Source:** Wang, Richet and Wang, 2000.
Hong Kong and the other Asian regions and countries (mainly Taiwan, Macao, Singapore, Thailand, and Malaysia) were the main investors in the early stages of the foreign direct investment in China's automotive industry. Their technology is more labour intensive and much easier to transfer for Chinese markets. Reviewing the investment by Asian countries, we can find that they mainly focus on simple components, motorcycle assembling, and special car refitment (like ambulance, police car, or dumper etc.) in small quantities.

The European and American MNCs focused on the passenger car industry. They have taken an oligopolistic position thanks to industrial policy. To boast economies of scale, the number of manufacturers was restricted to six - the "big three plus small three" in the early 1990s. The former referring to the three Sino-foreign joint ventures of Shanghai Volkswagen, First Auto Works Volkswagen (FAW-VW) and Dongfeng Motor Citroën (DFM-Citroën), the latter being the two joint ventures of Beijing Jeep (which involves Chrysler) and Guangzhou Peugeot (which was substituted for by Guangzhou Honda in 1998) plus Tianjing Light Passenger Car which produces Daihatsu-designed cars under licence. In line with the principle of specialisation, "two mini" projects that produces Suzuki and Subaru-designed light passenger cars under Japanese licence have been authorised latterly. They are two SOEs named Chang'an Automobile and Guizhou Aviation respectively. These enterprises form the backbone of the car industry. In 1998, the sales of "big three, small three and mini two" represented 92 per cent of the market share, among which those joint ventures accounted for 69 per cent of the market share (MMI 1999, pp. 5-7). In short, the Chinese car industry is dominated by foreign direct investments.

The contribution of FDI to the industry

The contribution that foreign direct investment has made to the automotive industry during the period since 1981, and especially since 1992, has been important.

First of all, MNCs have been a complementary (but not dominant) source of capital. The net FDI inflows are not as high as we had expected. Between 1981 and 1998 the net foreign capital injected to the automotive industry was only about $4.54 billion, equivalent to 22 per cent of the total investment in the FDI projects (Chinacars Enews 12th October 2000).

Secondly, joint ventures have higher performances than domestic firms. Differences are embodied by the market share and productivity. In 1998, the joint ventures accounted for 57.1 per cent of the total output of vehicles even though the number of joint ventures only accounted for 33 per cent of the total carmakers in China (Table 3). The productivity in those European, American and Japanese joint ventures were 4 times as high as the average industry level, more than five times as high as the SOEs (Table 4). This shows that, as the conventional FDI theory implies, MNCs possess a firm-specific advantage over local ones (Caves 1996, p. 4).

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2 The classification of "big" and "small" mainly indicates the scale of production. All the passenger cars in these two categories equipped with engine over 1.3 litters. The "mini" represents the car of less than one litter engine.
Concerning those financial indicators: the profit per employee, return on assets and return on sales, again, the performance of joint ventures was much better than the SOEs and collectively-owned Chinese firms, but was less good than the "others". Three hypotheses could explain this phenomenon. Firstly, short-term profitability is not the most important target for the joint ventures, which care more about long-term operation. Secondly, there exists transfer pricing. By quoting a higher-than-market price on equipment, CKD and SKD parts and raw materials, foreign firms may be able to by-pass the various regulations on the repatriation of profits, and finally may underestimate the level of domestic earnings. Thirdly, the "others" are ambiguous. According to our estimation, those could be the auto firms in Chinese military sectors, or the firms with mixed properties. In general, we can observe that the performance varies differently between the JVs and domestic firms. The property right, among others, is one of the crucial factors that show the advantage of the foreign invested firms in terms of clear property right definition and control. As to domestic firms, their productivity varies as well due to the different property right arrangement.

### TABLE 3. - Position of joint ventures in the Chinese automotive industry, 1998

<table>
<thead>
<tr>
<th></th>
<th>Volume of production (unit)</th>
<th>Number of firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>JV</td>
<td>Total</td>
</tr>
<tr>
<td><strong>Passenger car</strong>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Big and middle</td>
<td>17,381</td>
<td>22,977</td>
</tr>
<tr>
<td>Light</td>
<td>128,985</td>
<td>179,410</td>
</tr>
<tr>
<td>Compact</td>
<td>227,355</td>
<td>256,638</td>
</tr>
<tr>
<td>Rest</td>
<td>182,996</td>
<td>660,872</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>929,000</td>
<td>1,627,000</td>
</tr>
</tbody>
</table>

**NOTE:** * Data of passenger car comes from MMI, 1999, pp. 5-7.
**SOURCE:** Chinacars Enews, 12th October, 2000.

### TABLE 4. - Performance difference by the nature of the firm, 1997

<table>
<thead>
<tr>
<th></th>
<th>JV</th>
<th>JV with SOE</th>
<th>Collective</th>
<th>Holding</th>
<th>Others</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HK Macao, and Taiwan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Productivity (1,000 yuan/employee)</td>
<td>564.1</td>
<td>271.8</td>
<td>104.1</td>
<td>98.7</td>
<td>130.5</td>
<td>279.0</td>
</tr>
<tr>
<td>Profit/employee (1,000 yuan/employee)</td>
<td>28.2</td>
<td>21.1</td>
<td>1.0</td>
<td>1.6</td>
<td>9.7</td>
<td>29.1</td>
</tr>
<tr>
<td>Return on assets (%)</td>
<td>4.20</td>
<td>6.04</td>
<td>0.50</td>
<td>1.59</td>
<td>3.99</td>
<td>12.54</td>
</tr>
<tr>
<td>Return on sales (%)</td>
<td>5.56</td>
<td>8.62</td>
<td>0.98</td>
<td>1.74</td>
<td>7.26</td>
<td>9.68</td>
</tr>
</tbody>
</table>

**NOTES:** Return on assets = the ratio of profit to the total equity for the year, Return on sales = the ratio of profit to the total sales of the year.
* Joint ventures with other foreign investors besides those from HK, Macao and Taiwan.
**SOURCE:** MMI, 1998, pp. 48-54.
EVOLOVING POLICIES TOWARD GLOBALISATION

The industrial, trade and investment policy of the automotive industry in China has one most important objective: promoting indigenous industry with a harmonised industrial organisation. Early policies have many side effects that lead to unplanned results. Therefore, a certain degree of deregulation toward an open economy and globalisation has taken place since the end of 1990s.

**Trade barrier**

Trade barrier is the most important item of import substitution strategy for the industry. The tariff rate on automobiles was set at 180-220 per cent before 1986. Concerning the non-tariff barriers, China applies restrictive import licensing to a number of product categories including motor vehicles, key parts for vehicles, crane lorries, vehicle tyres, motorcycles, and key parts for motorcycles. The procedures and criteria for the licences are not transparent. As to the import quota, 89 items of automobile products are subject to quotas, which represent 60 per cent of Chinese machinery and electronic products (He and Yang 1999, p. 15). Some other regulations include foreign exchange controls, monopoly of state trading companies, and domestic marketing, as well as standard and technical requirements. Furthermore, only 6 ports in China have been designated for complete car imports (MMI 1995, p. 327).

In contrast to the above policy goal, China's automotive has suffered serious consequences. The import binge lasted till the late 1990s. Between 1980 and 1995, 2.13 million vehicles were imported, of which 1.05 million were passenger cars (including 566 000 units of KD). The expenditure of currencies was $7.48 billion or equivalent to 65.4 per cent of the total national automotive investment during the same period. The high tariffs had led to widespread smuggling at the same time. This largely involves local officials as in the case of Hainan Island. According to Harwit (1995, p. 29), 89 000 vehicles had entered via this island till 1984. A recent government crackdown on smuggling reflects the public pressure over widespread corruption and malfeasance. If including import and smuggling of vehicles, domestic production only accounted for half of the car market (Table 5).

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3 Calculated on the basis of Jiaoche Qingbao (Auto Info), September, 1997, p. 7 and MMI (1999, p. 9).

4 Based in Xiamen, southern part of China in Fujian province, the Yuanhua group smuggled into China cars, crude oil, petrochemicals and other goods worth more than 23 billion yuan (about US$2.67 billion) from 1994 to 1999. More than 200 people, many of them senior members of the city government, have been arrested and several executed (South China Morning Post, March 12, 2001).
TABLE 5. - Structure of the Chinese automobile market, 1993-1997

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Import</td>
<td>310 (57%)</td>
<td>283 (60%)</td>
<td>158 (44%)</td>
<td>76 (28%)</td>
<td>49 (16%)</td>
</tr>
<tr>
<td>Smuggling</td>
<td>100 (19%)</td>
<td>50 (11%)</td>
<td>60 (17%)</td>
<td>50 (18%)</td>
<td>100 (33%)</td>
</tr>
<tr>
<td>Domestic Production</td>
<td>130 (24%)</td>
<td>135 (29%)</td>
<td>145 (40%)</td>
<td>147 (54%)</td>
<td>158 (51%)</td>
</tr>
<tr>
<td>Total</td>
<td>540 (100%)</td>
<td>468 (100%)</td>
<td>363 (100%)</td>
<td>273 (100%)</td>
<td>307 (100%)</td>
</tr>
</tbody>
</table>

**NOTE:** The number in parentheses is the percentage term of each item.


The rents created by the protection measures have ballooned car prices. Enterprises, both domestic and foreign investors, have tended to reap short-term profits. Since the passenger car industry is dominated by the joint ventures, it is evident that foreign investors are sharing parts of the rents behind the high protection. In the case of joint venture Shanghai VW, the domestic sales price in 1993 was around 200 000 yuan per car (and the production cost around 85 000 yuan), which at the official exchange rate doubled the world price (Dic 1997, p. 190). Indicators such as the ratio of the after-tax profits to book value assets also revealed the up-to-normal profit of this protected industry. This ratio was three times that of the manufacturing sector as a whole in 1995. It is remarkable considering that the automotive sector is among the most heavily taxed sectors that should normally have reduced the profit rate (Huang 1997, p. 10).

The protectionist regime has made the proliferation of shoddy car producers in China. The small-scale projects (mostly assembly plants that rely heavily on KD kits) became profitable. Economies of scale are no more a necessary condition for the competition. By 1998, there were still 115 enterprises producing completely built up (CBU) vehicles, 525 factories refitting vehicles, and 1942 factories producing components and spare parts (including tyre and glass). However, the national output of cars in that year was only 1.63 million vehicles, less than the annual output of a moderate automobile company in an industrial country (ex. Renault's output was 1.74 million in 1992). For car production, counter to the "big three, small three and mini two" regulation, the number of producers had increased to, at least, 20 till the end of 1999. Most of those firms established themselves first and pressed the central government to grant approvals. Their products are outside the national auto catalogue, but can still be commercialised under the protected regional market.

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These consequences have directly assessed the failure of the trade barrier measures. Accompanied by the gradual trade liberalisation in overall Chinese economies the policymakers have had to lower tariffs four times (in 1994, 1996, 1997 and 2001 respectively). The tariff on passenger cars with over 1.3 litre engines was 220 per cent before 1986 and is 80 per cent in 2001 (Chinacars Enews 1st Jan 2001). However this rate of tariff reduction in the auto sector is still lower than the average tariff reduction in China. In 1997, when tariffs were reduced by 35 per cent on average, those on cars were cut by only 25 per cent (He and Yang 1999, p. 16).

**Screening**

The approbation of foreign investments must go through a screening agency either on central or on provincial government level, which depends on the nature and the size of the investment. The completely built up passenger car project, the key components project (like motor, ABS, Air bag) and all the investments over $30 million in capitalisation are monitored by the central governmental organs, the State Planning Commission (SPC) and the Ministry of Foreign Trade and Economic Co-operation (MOFTEC). The latter, however, is authorised to review all projects, regardless of size. According to the "Catalogue for the Guidance of Foreign Investment Industries", promulgated by the above organs in 1997, the agency will favour, limit, restrain or prohibit certain sectors. During the process of decentralisation alongside the economic reform, the provincial governments also possess significant controls to review and approve FDI projects below the thresholds of $30 million. The inter-jurisdictional competition for FDI among provinces (Oman 2000) and between the central and provincial government (He and Yang 1999) is one of the main features during the screening process in China. The present threshold of 30 million dollars and the different levels of hurdles between the central and local government have led to reinforcement of rent-seeking behaviour of those world-class automakers and the miniaturisation of the FDI projects.

The larger the foreign investment is, the more rigorous the control and the more complicate the screening process will be. In the case of Guangzhou Peugeot and Shanghai VW, it took 4 and 6 years respectively to conclude the negotiation on the form of mandatory joint ventures. Once those MNCs entered the Chinese market, they have reinforced the bargaining power on the government policies. As He and Yang put it (1999, p. 10), "recently, many FDI companies have joined SOEs in lobbying for protection. They have the incentives to request protection in order to gain an advantage over their competitors outside China, or simply to seek rents from protection. Initially they are free riders. When declining levels of protection begin to affect their profits, they become part of the force against trade liberalisation". Furthermore, cross-provincial protectionism is created under the combining force of MNCs and local government, both of which possess significant controls over the share of automobile joint ventures. For example, Shanghai Volkswagen has succeeded in making the Shanghai municipality forbid other cars from entering the Shanghai taxi market and government purchase plan. The same protection measures are taken by the other joint ventures over the local region. Therefore, the Chinese passenger car market is highly fragmented.

For most foreign investments, the screening process at provincial level is relatively simple and efficient thanks to the Chinese pattern of federalism. As studied by Qian and Weingast (1997), the decentralisation from the control to local government - federalism -
in China is a successful governance structure that increases governmental efficiency and preserves market incentives. Jurisdictional competition among local governments can increase efficiency through sorting and matching (Tiebout 1956). It is also a necessary condition to create thriving markets in the transition economies (Jin, Qian and Weingast 1999). Such an institutional arrangement has reduced the level of the overall regulatory hurdle against FDI inflows through deregulation (for example, by permitting FDI in restricted sectors) or circumvent the existing regulations when central supervision is lax (Huang 1999, p. 15). Table 6 implies that the vast majority of FDI projects are approved at the provincial level with the investment less than $30 million in capitalisation. It is in contrast to the initial policy which emphasises economies of scale. The situation of fragmentation and miniaturisation is therefore reinforced by foreign investment.

### Table 6. - Investment scale of FDI, 1981-1995

<table>
<thead>
<tr>
<th>Number of projects</th>
<th>Europe</th>
<th>U.S.</th>
<th>Japan</th>
<th>HK</th>
<th>Asian</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; $30 million</td>
<td>17</td>
<td>13</td>
<td>11</td>
<td>8</td>
<td>15</td>
<td>1</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>(34.7%)</td>
<td>(18.1%)</td>
<td>(18.6%)</td>
<td>(4.6%)</td>
<td>(16.1%)</td>
<td>(5.3%)</td>
<td>(13.9%)</td>
</tr>
<tr>
<td>&lt;= $30 million</td>
<td>32</td>
<td>59</td>
<td>48</td>
<td>166</td>
<td>78</td>
<td>18</td>
<td>401</td>
</tr>
<tr>
<td></td>
<td>(65.3%)</td>
<td>(81.9%)</td>
<td>(81.4%)</td>
<td>(95.4%)</td>
<td>(83.9%)</td>
<td>(94.7%)</td>
<td>(86.1%)</td>
</tr>
<tr>
<td>Total</td>
<td>49</td>
<td>72</td>
<td>59</td>
<td>174</td>
<td>93</td>
<td>19</td>
<td>466</td>
</tr>
<tr>
<td></td>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
<td>(100%)</td>
</tr>
</tbody>
</table>

**NOTE:** The number in parentheses is the percentage term of each item.

**SOURCE:** Wang, Richet and Wang, 2000.

The restructuring of China's decision-making process on the central governmental level was therefore taken in early 1998. The Ministry of Machinery Industry (MMI), the government organ in charge of the country's auto industry, was dissolved in March 1998 by the 9th National People's Congress along with 14 other State Council (China's cabinet) ministries or commissions. It was replaced by the State Administration of Machinery Industry (SAMI), which has only 95 staff instead of 400 in the old MMI. The simplification of bureaucracy created a somewhat loosened environment on the screening process. In place of SAMI, the other government organs will now pick up the control on investment decision. Together with MOFTEC, the State Economic and Trade Commission (SETC) is to become the industrial and trade policy and regulatory body of the State Council (CBU Enews, July-August, 1998). During the period of the Chinese 10th five-year plan (2001-2005), several measures are taken to lift restrictions on FDI so as to extend the scale of foreign investment in the component industry. Joint ventures will also have more autonomy to decide on new products (CBU Enews, 17th August 2000). In the coming years, the power to approve FDI projects at higher dollar thresholds together with increasing authority might be granted to local governments.
Foreign equity limits

MNCs entering China's completely built up car project and the three key component projects (motors, air bags, and ABS) are limited to the maximum equal stakes of share holding. In the component industry, on the contrary, foreign investors can have total equity control over subsidiaries.

Foreign investors may prefer joint ventures for certain reasons. They find that, even without the institutional restraint, the joint venture is essential. Chinese partners are necessary to help to understand the functioning of the local market and the business norms so as to accomplish goals in the Chinese system. Managing the cross-cultural aspects of relationships is difficult if foreign firms want to exploit the market independently. This pattern of investment can also reduce initial risks. The formation of Shanghai Volkswagen is a typical case to demonstrate their strategies (Jiang and Qiu 1998). No evidence or at least no systematic studies show that the joint venture requirement frustrated the MNCs investment in the case of the Chinese automotive industry. However, such requirement does not achieve the objective of management control and technology enhancement set by the policymakers.

In reality, the majority ownership for a domestic partner does not mean the control of the JV, as shown by some empirical results in developing countries (Beamish, 1988, p. 18). Nearly all the foreign investors have tremendous discretion on the operation of joint ventures, even though they only have minority equity share. Citroën, with 25 per cent of share holding in the joint venture, controls important management activities such as sales, purchasing, finances, as well as technology transfer, production control, and quality control. The same case can be found in most of the joint ventures in this sector.

Different arrangement of ownership structure influences the behaviour of foreign firms in the host country (Gedajlovic 1993). According to Mansfield and Romero (1980), parent firms transfer technology to wholly-owned subsidiaries in developing countries on-third faster, on average, than to joint ventures or licencees. That is to say, the technology transfer is relatively limited under the pattern of joint venture. A firm possessing superior assets will opt for a strategy that enables them to retain tight control over foreign operations in order to protect the value of those assets (Teece 1981). Therefore, joint ventures purchase more components from parent companies. The foreign investors intend to prolong the purchasing period to maximise the profit generated from the transfer pricing. It is a big concern for the Chinese policymakers (Wu 1996, Gan 1997, Wan and Guo 1998). Such phenomenon are wide spread throughout China. The average level of

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6 VW chose Shanghai Automobile Industrial Co. (SAIC) as partner, which has a complete industrial network for the key components. To ensure the foreign currency payment, the Bank of China was invited to become shareholder of the joint venture. Since the SAIC is the automotive group under the jurisdiction of Shanghai municipality, VW thought the local support was not sufficient. To get more tangible and intangible support from the central government, the Chinese National Automobile Industry Co. (CNAIC) became the fourth partner in Shanghai VW. As it was the earliest passenger car project in China, started in the 1980s, it was risky to invest in a forward-integrated sales network by VW itself when the market demand was uncertain. Therefore, VW stated on the joint venture contract that the sales of assembled cars should be the responsibility of one subsidiary of SAIC. This became a risk-free solution for Volkswagen. Since 1990 the market has expanded quickly. Shanghai Volkswagen then developed its own sales network and put it under its control.
technology transfer via FDI is about two years more advanced than the existing Chinese technology base, while the "technology gap" between investing countries and China is commonly perceived to be 20 years (Yong and Lan 1997, Huang 1999).

Even though the foreign equity requirements have the perverse effects, there is no evidence to show that the Chinese authority will lax the control over the CBU vehicle projects and key components projects. The trade-off is between the crowding out of the large local industrial groups and the up-to-date technology transfer. The first is crucial both economically and politically for the policymaker. The joint venture requirement can at least guarantee that domestic firms have half the stake of the market while the wholly-owned foreign firms will most probably eliminate the domestic counterparts. Hence technology transfer becomes a secondary consideration.

**Local content requirement**

The local content and technology transfer requirements are imposed to pursue two of its most important policy goals: a complex industrial development and self-reliance. It had combined with a varied tariff rates being to encourage increasing local contents of assembled vehicles. The tariff on KD kits reduced if local contents are increased. For passenger cars whose local contents exceeded 80 per cent, the tariff rate on imported parts and components is 40 per cent, and for local contents of 60-80 per cent and below 60 per cent, the tariff is 60 per cent and 75 per cent, respectively (Zhang 1997, p. 287). This policy is designed to create technological linkages to the component industry and to ensure the indigenous capabilities of the entire car sector in stead of turning into an industry that only assembles foreign parts. There have been certain successes with this policy.

In the early stage of localisation, the progress in assimilating imported technology, within the exception of Shanghai VW, is unsatisfactory. It took five years for the local contents to reach 50 per cent, and ten years to reach 90 per cent. In the world market the product life cycle of a model is normally around 3-4 years. It is therefore, no wonder that most of the China produced cars are outdated models till the late 1990s.

The beneficial spill-over effects of local content application manifested one and half decades later. The quality of products is generally improved. During the out-sourcing procedure, most of the assemblers issue the Supplier Quality Assurance (SQA) handbooks to ensure the quality of the components. Shanghai Volkswagon formed the "Shanghai Santana Local Content Co-operative (SSLCC)" by bringing together the parts makers, banks, universities, and research institutes (Lee 1997). Being a member of SSLCC means a long-term contract and steady supply of components, which are the key incentives for the component suppliers to execute continuous quality improvement. In the case of Dongfeng Citroën, 58.3 per cent of local component suppliers imported technologies. The part suppliers are getting integrated into a complete manufacturing system, improving the assembler-supplier communication with the standardised quality system. A modern industrial organisation in China's automobile sector is emerging after decades of gradual industrial restructuring. Since 2000, most of the new CBU projects have locally provisioned 40 per cent of components in the first year of production which was the case of General Motors assembling Buick in Shanghai.
The proportion of joint ventures in the component industry had increased constantly during the end of the 1990s. Till 1996, 35 per cent of the local suppliers were joint ventures. The establishment of industrial complexes in China by the MNCs generated follow-the-leader effects. A lot of world-class auto parts suppliers are following the MNCs to the Chinese market: Delphi Automotive Systems, Bosch, Valeo, Siemens, Dana, Allied Signal, Lucas Varity, United Technologies, ITT, TRW, Rockwell, Tenneco, Cooper etc. They have found that it is necessary to invest in upstream and (or) downstream industries in order to supply the complementary services. The Chinese auto component industry will be profoundly recomposed by the presence of foreign parts suppliers.

The success of local content requirement fundamentally depends on the industrial infrastructure of the host country. In China, there are over 1900 factories producing component and spare parts, double the Korean component enterprises. Most of the supplying materials such as resin, rubber and steel can be supplied by the domestic companies. A complete mechanical industry covering metal working, machining, casting and forging provides a solid foundation for the automotive industry compared to the other developing countries. In ASEAN4, the absence of such a supporting industry is a major barrier to the localisation of auto production (Fujita and Hill 1997).

On the other side, the different reactions of the MNCs towards the local content requirement can also make the performance of joint ventures vary. A case in point is the comparison between the success of Shanghai VW and the failure of Guangzhou Peugeot which both started producing cars in the same year. To capture the short-term profitability, the latter preferred to import KD kits and assembly the car in China with little effort in developing local component suppliers. On the contrary, the Shanghai VW adopted a rigorous local content program together with the support from the local authority (Dic 1997, Lee 1997).

Up to today, developing countries such as Argentina, Brazil, Chile, and ASEAN4 maintain local content requirement (OECD 1998, p. 41). This reflects the importance attached to this sector. If there exists some negative relationship between technology transfer requirements and technology inflows as observed by Kokko and Blomström (1995), it is not due to the deficiency of local content policy per se, but the accompanying protectionist measures. The combination of high domestic content requirement and a protected market tends make both domestic suppliers and foreign carmakers highly inefficient. They have less incentive to update the technology.

The achievement in local contents, or mastering production techniques is just the first step in the indigenisation of technology. The present spill-over effect is still limited to the absorption of imported technology, instead of the promoting capability of independent R&D works. Most of domestic component and part suppliers tend to rely on further imports of technology to the Chinese market. The local research capabilities and institutions are weak that they may hinder the creation of indigenous technology capacity.


**IMPLICATION**

The Chinese government is pulling all the levers to promote an indigenous pillar industry through spill over from foreign direct investment. However, the direct results such policies bring about have usually not matched what the policymakers predicted. Three features lead to the failure of policies: the misleading industry orientation (infant status of the sector), the lack of coherence between the policies (between trade and investment, between protection and competition, between production-oriented and market-oriented policies) and the weak institutions to implement policies (Chinese federalism and property right problem).

**The infant industry consideration stagnate the development**

Measures related to infant industry status should be abandoned cause they led to serious consequences: higher protection yields higher profits from price distortion and hence yields greater political bargaining power. Such bargaining power will be exploited to pursue further rents (He and Yang 1999, p. 12). Dic (1997) criticises that the short-termism of the local authority leads to the fragmentation and miniaturisation of the Chinese automobile industry. More precisely, those consequences come from the rent-seeking behaviour of domestic firms and local authorities. The same, foreign investors in auto sectors are more likely to be interested in rent-seeking behind high import barriers than in competing aggressively in the local market (OECD Proceedings 1999a, p. 42). Apart from China, there is similar evidence from contemporary Eastern Europe, where Suzuki (in Hungry) and Fiat (in Poland) have successfully lobbied for continued, even increased trade restrictions to safeguard their small domestic assembly operations, allying with local makers and suppliers to slow the prospects for accession to the European Union (OECD Proceedings 1999b, p. 46).

In fact, the automotive industry in China has stepped out of the infant stage. In 1998, the annual sales of vehicles and motorcycles were over 1.6 million units and 8.86 million units respectively. This did not yet account 2.9 million units of agricultural vehicles of which 469 thousand units were trucks for the agricultural consumers (MMI 1999, p. 151, 270, 278). Considering the volume of production, the Chinese automotive industry should have passed the incipient learning stage.

The Chinese enterprises have undergone 50 years of manufacturing and over two decades of technology importation. They should have been able to mature rapidly if they had been subjected to the rigours domestic and international competition. Presently the national Carmakers on low-end products such as motorcycles and trucks have reached economies of scale. The emerging economic passenger car with the domestic brand selling for between 30 000 - 40 000 yuan ($3 500 - 4 700) might potentially gain comparative advantage in the developing markets through exportation. The Chinese automakers in the passenger car industry have no risk of being crowded out if the foreign equity requirement limit is maintained. Under the intensification of competition, the exit barrier can be reduced so as to eliminate small local firms and reach the goal of industrial policy that is restructuring the industry from the situation of fragmentation and miniaturisation.
The trade and investment policies need to be further adjusted

The trade and non-trade barriers need to be gradually removed. Where the trade distortions tend to be high, the FDI consequently makes less or negative impact on growth in developing countries (World Bank 1991 p. 95, Fry 1993, FIAS 1997, p. 86 and Zhang 2001).

Increasing vehicle imports after trade liberalisation will put pressure on the existing joint ventures who assembly cars in China, and will improve their global competitiveness. The MNCs who have already invested heavily in the Chinese market will confront with intensified competition with the late-comer if the locally produced vehicles have not any advantages as regards models, price, sales networks, components supply and client services. Trade liberalisation will therefore speed up the technology transfer, model variety and price reduction. Vehicle imports and local production are two complementary measures instead of alternative aspects of competition (Aussilloux 1998). What is more, the smuggling will vanish when the tariff barrier become much lower.

The liberalisation will not have a big bang to the existing carmakers in the local market. The case of opening up of the Brazilian automobile industry shows more implications. In the early 1990s, even though the import duties have been reduced in a considerable way, there are still 5 foreign assemblers rivalling in the Brazilian market. The economies of scale are less critical than we imagined. Realising economies of scale in a developed country with a high salary cost might be less profitable than assembling KDs in a developing country where the salary is ten times less than the first. Normally carmakers can economise $50 000-$100 000 per job if they de-locate the activity to a developing county (OECD Proceedings 1999b, p. 48).

Market competition is more important than the protection

State interventions in general have the effect of restricting and limiting market mechanisms. In the case study on the allocation of motor vehicles to rural private consumers in the mid-1980s, Nee (2000) shows how the elimination of a free market creates speculation and the corruption of bureaucrats. To screen out speculators, a series of measures were then taken. The double regulation on the market force and malfeasance increased the regulatory burden of the states. Finally, such negative experiences contributed to the construction of a legal-rational bureaucratic discipline that is pro-market force. As the author indicates, it is also Chinese socialist state initiated the reform towards a market economy. But there is still a long passage to go.

It is very difficult for the policymakers to draw the distinction between legitimate competition and crowding out in practice (Lall 2000, p. 12). Taking the industrial promotion as priority, competition become less important in the practice. It is so crucial that even those domestic firms are not treated equally. State owned enterprises systematically receive preferential support while private firms are discriminated. However the performances of those SOEs are generally poor. That protectionism can only prop up less efficient firms at heavy cost to domestic consumers and economic growth.

At present China lacks an effective competition policy which is an absolute necessity. In the automotive industry, the authorities are not aware of the need for such a policy. Otherwise, it is difficult to explain how the collusion on the minimum selling price
can be permitted till 2000 (MMI 1999). Shifting from selective protection to legitimate competition is one of the principle tasks in constructing the institutional framework of a free market. It requires however sustained regulatory intervention by the state - the construction of an institutional framework for a market economy.

Without the market competition, the performance of FDI can be disappointing. Theoretically, one of the greatest benefits of FDI to the local firms is the injection of competition and technologies that lead to the exit of inefficient enterprises and the raising of efficiency in the industry. The precondition on this conclusion is the existence of a contestable market. If investors are located behind tariff barriers or given quasi-monopoly status in the host country, they tend only to transfer those technologies which are sufficient in order to produce on that un-competitive market (OECD 1998, p. 62). The Brazilian automotive industry in the days of import substitution is a perfect example. If foreign investors face intense competition either from importation or from other investors, they have an incentive to transfer technology in order to be able to compete more effectively (Kokko and Blomström 1995). The rethinking on the importance of market competition will ultimately promote the Chinese automotive industry into a new stage.

Towards the consumers welfare

The welfare of the consumer was traditionally the second objective of government policies under the central planning system in China. In most of the developing countries, the development of industries was the ultimate objective (Branstetter and Feenstra 1999). Such producer-oriented regulation is often at the price of welfare loss of consumers (OECD Proceedings 1998, p. 26). The Indonesian automotive industry is a typical case among others (Fujita and Hill 1997, Okamoto and Sjöholm 1999).

The 1994 auto industrial policy in China for the first time promulgated articles promoting domestic demand. Nevertheless, the policy exhibited some caution and only set up implicit guidelines. It just indicated that measures would be formulated in the future, in accordance with changes in the market and development of the industry (MMI 1995, p. 15). In practice, the Chinese government still hindered the private purchase of cars at that time.

The negligence on the real market structure by policymakers has made the co-existence of over-capacity production and high demand of vehicles. China focused on the introduction of passenger car models for institutional purchase instead of private consumers. The market is therefore limited. But to pursue the theoretical economies of scale, carmakers were in general heavily invested to reach the minimum economic efficiency. Therefore, the over capacity of annual passenger-car production was as much as 100 percent for the year 2000 (CBU E-news, October 1999). In Dongfeng Citroën, the capacity of production is 150,000 units per year however the output was merely 54,000 units in 2000 (Chinacars Enews Feb. 2001). The crux of this problem is the lack of the right product and unrealistic economies of scale. Most of the automobiles and passenger cars defined by the government are still beyond the means of the average consumer in China. The domestic price of cars becomes much higher due to the increased average cost generated by the enormous sunken costs. The heavy taxes and charges during the purchase and use of the vehicle also greatly discourage the potential consumer.
In the mean time, a market of 900 million rural residents has been totally neglected. The demand for farm vehicles has been expanding and 2.9 million were made and sold in 1998 compared to the mere 1.6 million that are considered regular automobiles defined by the government. Farm vehicles are those three-wheel and four-wheel vehicles of 0.5 and 1 tone, but not tractors. They are invariably purchased by individuals and private businesses. Within the 2.9 million units of farm vehicles, 469 thousand units are four-wheel trucks. Those farm vehicle makers are not listed in the national automaker catalogue. Their outputs are not accounted for in the output of the automotive industry. In other words, the actual production of motor vehicles for 1998 can be considered to 4.5 million instead of the 1.6 million units indicated by the official statistics.

An important step that will be taken by the Chinese policymakers is the promulgation of a consumer policy in the year 2001. Such policy is necessary in order to encourage individual purchase and use of automobiles, to do away with regional protectionism, streamline taxes and fees, promote urban transportation and auto financing. Changing the focus of its policies to the demand side seems to be a decisive shift to a market-driven industrial policy (CBU Enews 19th October 2000).

The institutional reform

The Chinese-style federalism, as an intermediate institutional arrangement is not perfect. Nee (2000) documents how the State's capacity to implement market reform was frustrated by local government whose opposition and malfeasance in the early period of reform posed an incorrigible problem to the state. To implement the trade investment and industrial policies, the central government needs not only to bargain with MNCs, but also local governments. This makes the transaction costs considerably high and the implementation of policies less efficient.

The arrangement of property rights is widely recognised as having an important impact on the Chinese economic performance (Jefferson and Rawski 1997, Che and Qian 1998). If the automotive industrial policy was closely modelled on that of Korean pattern (Huang 1997), the Chinese policymakers largely neglected the prominent difference in the microeconomic foundation between these two countries. The state-owned enterprises have the dominant position in China while government participation is absent in Korea. In the mixed economy, there is no clear delineation of public services and business. The ancient Ministry of Machinery Industry was in charge of issuing industrial policies and the auto sector management. At the same time, it claimed the property rights on key vehicle plants, auto part suppliers and commercial companies. Acting as a regulatory agency, the interests of the supervised enterprises were in priority. However, MMI only had partial enforcement power over the auto sector since nine other powerful ministries or agencies also manufacture and assemble vehicles. Under such an institutional framework, conflicts of inter-ministerial rivalries are inevitable. Therefore the industrial policy is hard to

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7 There is no government participation in Brazil either. In India, state shares in the enterprises are pretty low (Mukherjee and Sastry 1996).
8 They are the Ministries of Justice, Transportation, Construction, Chemical Industry, Light Industry, Domestic Trade, Forestry, Civil Administration and Defence (including two corporations with the ministerial rank, General Aviation Corporation and General Aeronautic Corporation and the Department of General Logistics under the Central Military Commission) (MMI 1998 p. 62).
9 This kind of phenomenon can be found in ASEAN4 as well (OECD Proceedings 1999a, p. 28).
implement. The key issue is that various ministries have a residual property right control over the firms.

CONCLUSION

The automotive industry in China has made remarkable progress. The trade, investment and industrial policies are undergoing gradual revision. The evolution from the previous version to the latter reflects the authorities’ changing thinking about regulation failure, the role of state intervention and the prospect for the development of the industry.

Under the opening-up policy and the interaction between foreign investors and policymakers, the central government has been pushed for deregulation. However, compared to other industries, the automotive sector continuously receives high protection, which may perpetuate the inefficiencies in this sector. If China is to join the WTO, it must liberalise further. The challenge to policy-making, during the process of deregulation, is to develop a policy environment which encourages and facilitates trade and FDI inflows, which ensures that the benefits flowing from the foreign investment are shared between the investor and the domestic economy in ways that are acceptable to the mutual advantage of both parties.

Liberalisation of trade and investment, and deregulation of industrial policy however are necessary but not sufficient conditions for the sustainable development progress of the automotive industry. Under the vision of macro-economic reform, the success of the automobile industry depends also on the extend to which China will transform into a market economy and its integration into the world economy. Good governance, effective institutions is fundamental as Huang (1997) puts forward that, "the Chinese government has attempted an Eastern Asian style of policy interventions without having the corresponding institutions to enforce these interventions effectively". Coherent economic policies matters as well. With a basket of policies, some may be inefficient and others may be contradictory to one another. The key to sustained progress is that governments adapt and adjust these policies all along the way.


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