

MARKET OPENING, ENTERPRISE LEARNING AND INDUSTRY TRANSFORMATION – A CASE STUDY OF CHINA’S CAR INDUSTRY¹

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Abstract

On the basis of neo-classical and structural researches upon industrial development and market environment, this paper explores the changes of strategic adjustment and relative competition advantage of multinational enterprises and indigenous firms in auto industry after the WTO accession, and forecasts the future development trend of this industry in terms of the ability of learning and adaptation in indigenous firms. The approach of this research is to utilize the analytic framework of interactive learning and industrial development and consider fully the features of industrial expansion in developing countries.

INTRODUCTION

Mainstream western economists criticize developing countries for protecting their infant industries because they maintain it does not help local enterprises to grow but, on the contrary, lead to low efficiency and resource wastages. Even if the enterprises manage to grow, they can hardly withstand the challenges of international competition. To them, developing countries should not protect their infant industries at all. Instead, those countries should totally liberalize their trade and investment regimes.

On the contrary, structurism (or evolutionary economics) holds that the source of economic development of developing economies mainly comes from acquiring and assimilating advanced international management skills, technology and machinery and equipment manufacturing skills by local enterprises and industries instead of simple capital accumulation. Nelson and Pack (1999) call

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² The opinions expressed in this paper are those of the authors and do not necessarily reflect the views of UNCTAD. The authors remain solely responsible for any shortcomings in this paper.

those arguments “assimilation theories”, and the mainstream one “accumulation theories” (Krugman 1994, 1997, 1998). They have also analysed the impact of multinational enterprises on the learning and innovative abilities of Newly Industrializing Economies (NIEs) (Kim and Nelson 2000). Some young scholars from this school have recently analysed the issue of multinational enterprises and the industrial development of NIEs (Cyhn 2002 and Poon 2002). However, these studies have not taken into account the restrictions placed by the international environment on the capability building within enterprises and the degree and scope of industrial development in developing economies (Fransman 2000:216–225).

Drawn upon the above study on the relations between industrial development and the market environment, this paper argues that the extent and speed of the market opening process of developing countries should match the existing competitive advantage of local enterprises, as well as their adaptability and learning ability. Only by doing so will it be possible for developing countries to maintain a sustainable and healthy development of their industries in the international environment.

For large developing countries, implementing the self-dependent economic development and industrial development models should form the basis of the long-term and healthy development of these countries (Hong Song and Chai Yu 1999). At the heart of self-dependent economic and industrial development is the need to cultivate indigenous firms and enhance their technological, management and product development capabilities. In the course of the self-dependent development of industries in a country, market opening and importing of foreign capital must be in keeping with these capabilities. Only so will it be possible for self-dependent industries to develop healthily. If the market were to open too fast and too profoundly, the adaptability or adjusting capability of local enterprises would be overwhelmed by the strength or competitiveness of multinational enterprises. In this situation local self-dependent industries would suffer and a change could occur whereby the self-dependent model could develop into a dependent development model. At the other end of the scale, if a local market were completely closed, it would not be possible for local industries to go back to a state of self-sufficiency without the assistance of multinational enterprises.

China finally became a WTO member in November 2001 after more than ten years of hard bargaining. As a WTO member, the Chinese Government committed itself to fling its door wide open and liberalize the investment regime. Multinational enterprises and local enterprises have all made dramatic adjustments to their development strategies. Chinese industries and even the whole economy have been subject to stern challenges. This paper tries to analyse this process and its impact, taking the car industry as an example. The structure of the paper is as follows: after the introduction, the paper will give a brief account of the process of the opening of China's auto industry. The paper then analyses how multinational enterprises and local enterprises have adjusted their strategies and compared the strength of multinationals and local enterprises and its impact on the development of China's auto industry. The paper ends with some basic conclusions from the case study.

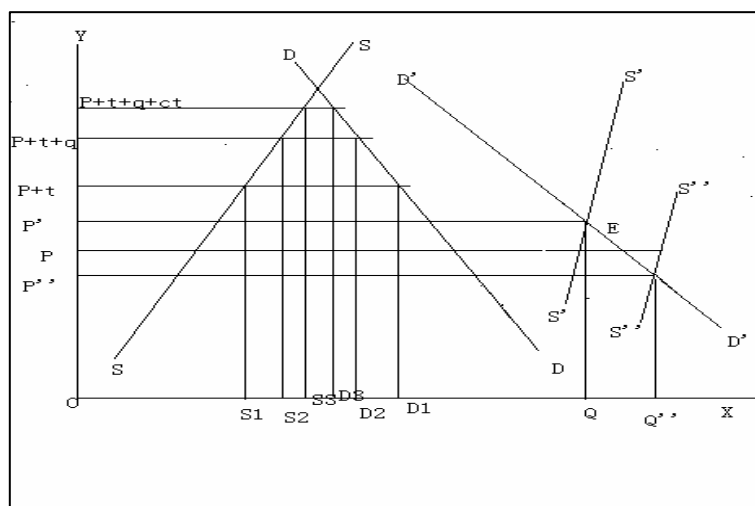
I. OPENING OF CHINA'S AUTOMOTIVE INDUSTRY

China used to have the tariff plus quota system in its automotive industry. As a result of this, the prices of motor vehicles in China were much higher than world prices and the numbers of cars that could be imported was limited. In Figure 1, the world price is P , $P+t$ is the home auto price under the protection of tariffs, $P+t+q$ is the price under the dual protection of tariffs and quotas and license. Correspondingly, the real import is S_2D_2 . In reality, when consumers buy cars they have to pay VAT and consumption tax so the import amount is less than S_2D_2 , it is in fact S_3D_3 .³ Even if we do not take into account the price effect of the import licenses and import amount and other non-tariff quotas,⁴ the auto price in local market is about 1.25–3.45 times the price paid on world markets.

³ Here, the implying assumption is that China is a "small" country in terms of auto import in the world car market; the tariffs and quotas have a direct impact on the price and transferred that effect completely into the price increase at home. This assumption is correct if we take into account the amount of vehicles imported every year by China over the past decade (not more than 200,000 units, averaging about 50,000 a year).

⁴ As deducted by the constant of auto import consolidated tax rate, we calculate the balance of (world price + tariff + VAT (17 per cent) + consumption tax (8, 5 and 3 per cent) as the price effect of import licenses and quotas, the effect is basically around 20 per cent. Source: Calculated by the authors according to the import tariffs of different models of vehicles in 2000.

Figure 1
CHANGES IN CHINA'S AUTOMOTIVE MARKET BETWEEN 2000 AND 2006



Source: Author's graphic illustration of how various factors affect the Chinese car market.

Table 1
COMPARISON OF THE AUTO PRICES IN CHINA AND THE WORLD, 1 JANUARY 2000

	<i>Gasoline of over 3.0L, diesel of over 2.5L</i>	<i>Gasoline of under 3.0L, diesel of under 2.5L</i>
Before 1994	$3.45P+L+Q$	$3.45P+L+Q$
1 April 1994	$2.75P+L+Q$	$2.35P+L+Q$
1 April 1996	$2.45P+L+Q$	$2.25P+L+Q$
1 October 1997	$2.25P+L+Q$	$2.05P+L+Q$
1 January 2000	$2.05P+L+Q$	$1.95P+L+Q$
1 July 2006	$1.25P$	$1.25P$

Source: Computation based on data found on website: www.b-car.com.

Note: Computation: Domestic price = International price P + import tariffs + consumption tax (taken as 8 per cent) + VAT (17 per cent) + L (Licenses) + Q (Quotas).

Over the past few years, China's opening of its auto market has been accelerated. In 1994–2000 tariffs were reduced by 64–68 per cent from 220 per cent to 70–80 per cent. With China's accession to the WTO, great changes have taken place on China's auto market. First, the major factors influencing auto prices such as import tariffs, VAT (value added tax) and consumption tax have been greatly reduced or scrapped altogether and import licenses and quotas were also abolished. The prices, therefore, dropped significantly, from the current $P + t + q + ct$ down to P' (international price plus 25 per cent tariff); in other words the price falls by 2–5 times of that on the world market down to the level or even lower than the international price (that is, P'' level in the Figure 1).⁵ This has the result of bringing the price of cars on the home market into line or on a par with international level. In the two months after November 2001 when China became a WTO member – to 1 January 2002 – tariff for auto import were lowered from 70–80 per cent to 43.8–50.7 per cent, a drop of 36.63–37.42 per cent or 10–15 per cent drop in the ultimate prices.⁶

Second, auto demand grows or rises as per capita income levels and when Government sponsored efforts to encourage car purchases by reducing or even scrapping consumption tax and building roads and parks. The total auto demand curve does not only move outward but also changes in shape, with the demand of low-cost economy cars increasing significantly. There are similarities in auto consumption in the whole world. When a country's per capita income tops US\$1,000, it will support a profitable auto industry; when the per capita income reaches US\$4,000, cars will enter families on a large scale and stimulate a rapid growth of the local auto industry. In 2003 China's per capita GDP was US\$1,000. But as the regional disparities in income are large, in the eastern part of the country per capita GDP reached US\$1,400, while it was only US\$600 in the western part. The per capita GDP of many large cities in China have reached or approached the auto consumption threshold of US\$4,000; for

⁵ If we take the Renminbi's appreciation trend into account, the drop in China's auto prices would be bigger. The initial estimate is that vehicles priced between RMB50,000–RMB80,000 would become the best selling models.

⁶ China became a WTO member on 13 November 2001. In the last two months of 2001 Chinese consumers held onto their savings and waited for China's accession to the WTO. This reflects their concerns on auto prices and on the other hand, they hoped to buy new models of cars.

example in Guangzhou it stands at US\$4,568, in Shanghai at US\$4,500 and in Beijing at US\$3,000.

China is experiencing the fastest economic growth in the world. In 1979–2000, China's GDP grew at an average annual rate of 9.5 per cent and in 2001–2003, growth rate were respectively at 7.3, 7.8 and 9.1 per cent. The plan mapped out by the 16th National Party Congress envisions that growth would quadruple, or grow at an average annual rate of over 7 per cent over the next 20 years. Per capita income levels will rise more quickly to reach US\$4000 or even higher, above the threshold for auto consumption. If we take into account the impact of the Renminbi's appreciation, Chinese families will increasingly begin to purchase cars.

Third, the potential for auto development in China is huge. One of the major salient features of China's auto industry is that the market development is fuelled by official purchases. The public vehicle market differs from the private vehicle market which develops according to market demand. The private vehicle market is dominated by cheap and small cars while China's market as a whole is mainly composed of medium- and high-grade cars. Before China's accession to the WTO, there was virtually no development of the private car market.

Fourth, auto supply will increase rapidly as investment restrictions fall, as well as when examination and approval rights are delegated and when performance requirements in terms of local-content, exports, etc, are scrapped. This point also could be surmised from total sales: In 2001, 2002 and 2003, total sales grew by 18.25 per cent (721,463), 56.08 per cent (1,126,029) and 75.09 per cent (1,971,601), respectively.

From 1994 onwards, China's auto industry has undergone extensive and profound reforms and opening up in preparation for joining GATT or WTO, resulting in a big drop in auto prices. In the context of zero or even negative growth in the global car market, China is of great strategic significance to multinational corporations.

Table 2
TARIFF REDUCTION AND WTO COMMITMENTS MADE BY CHINA FOR JOINING GATT OR WTO¹

Tax Code: motor vehicles for passengers (tax number 87.02 are exceptions) including tourism wagons and racing cars	Spontaneous tariff reduction for joining GATT or WTO					Tariff commitment to WTO concerning auto import							
	Before 1994	1 January 1994	1 April 1996	1 October 1997	1 January 2001	Restrictive tariff at the time of joining WTO	Ultimate restrictive tax rate	Period of implementation	2002	2003	2004	2005	2006
87032130: 1-1.5L (Point ignition engine or gasoline vehicles)	220	110	100	80	70	51.9	25	1 July 2006	43.8	38.2	34.2	30	28/25
87032230	220	110	100	80	70	51.9	25	1 July 2006	43.8	38.2	34.2	30	28/25
87032334	220	110	100	80	70	51.9	25	1 July 2006	43.8	38.2	34.2	30	28/25
87032430	220	150	120	100	80	61.7	25	1 July 2006	50.7	43.0	37.6	30	28/25
87033130: <1.5 (Compression ignition engine or diesel vehicles)	220	110	100	80	70	51.9	25	1 July 2006	43.8	38.2	34.2	30	28/25
87033230	220	110	100	80	70	51.9	25	1 July 2006	43.8	38.2	34.2	30	28/25
87033330	220	150	120	100	80	61.7	25	1 July 2006	50.7	43.0	37.6	30	28/25

Source: Compilation of the Legal Instruments on China's Accession to the World Trade Organization (WTO 2001).

¹ In part.

II. STRATEGIES OF MULTINATIONAL ENTERPRISES AND THEIR IMPACT ON CHINA

China's auto industry was mainly dominated by Sino-foreign joint ventures before China became a WTO member (Table 3). In 2000, there were 13 car makers, eight of which were Sino-foreign joint ventures and five were domestic automakers (FAW Red Flag, Tianjin Xiali and three Alto assembly plants). They produced 12 brands, of which 10 were foreign and two were domestic. The market share of Sino-foreign joint ventures was over 85 per cent.

Under tariff and non-tariff protection measures, the investment by multinational enterprises was typically market-oriented, that is to bypass high import barriers to engage in production and operational activities oriented toward the local markets. The products had already been rejected by developed countries and their technical levels and production equipment were far behind advanced world levels and models remained unchanged for scores of years. However, because of protection and lack of competition, these enterprises occupied a monopolistic position on local markets. Although production reached the requirements of the economy of scale, product prices were still far higher than comparable prices on the international market. In 2000 China exported 523 cars, imported 21,620 units, produced 605,000 cars and sold 617,000 cars, as can be seen exports only accounted for 0.086 per cent of production. With regard to production, Shanghai Santana and FAW Jetta both reached the 100,000 units mark, but their price were 4–5 times those found on international markets. The international market price of the Jetta model was around US\$5,000, but the price of the same car in China in 2000 was as high as RMB160,000, 4–5 times the international price. In 2000, the mainstream model in China was Shanghai Volkswagen's Santana model. This model had originally been launched on international markets in 1971, but in China the same model was produced in 1985. Jetta was the 1985 international model but in China it was launched in 1992. Fukang was the 1991 model internationally but in China it was brought into circulation in 1996; Alto was the 1984 international model but in China it was introduced in 1991. Xiali was 1980 model but in China it was launched in 1986. What is unimaginable is that 30 year-old Santana model accounted for 30.88 per cent of market share in China in 2000.

After China's WTO accession, changes in demand and supply on the auto market led to multinational enterprises making major changes to their investment strategies.

First, market-oriented investments require big adjustments. Multinational enterprises could either gradually withdraw their investment from China and supply China's market by export, or update the existing production base in China by expanding investment, upgrading technologies and equipment and renewing or increasing new products, and so on. In reality, it turns out to be that the multinationals opted for the latter for the following reasons: (1) Although China has committed to lower tariffs, it would take several years to achieve them and import barriers for auto imports would remain high during the period. This situation will pose great difficulties for multinational to implement their export strategy. The result of this is that it is not feasible to export cars to China. (2) Existing foreign direct investment before China's WTO accession is mainly conducted by European and North American multinationals whose production bases remain in their home countries. It is not viable for these enterprises to export vehicles to China from their local territory or from their production bases overseas. (3) The scale and strategic significance of China's market means that exporting cars to China from other areas does not pay off. So, the German Volkswagen enhanced its joint ventures with the FAW and Shanghai Automotive Industry Corp. Group and upgraded their products. On 15 July 2003, Volkswagen announced that it would invest €6 billion in China over the five-year period between 2003–2007 in order to double the production capacity in Changchun and Shanghai and use 60 per cent of this investment to develop and launch new products. Citroen of France also upgraded its cooperation with the Dongfeng Auto Group and an additional investment of RMB1 billion was made in the joint venture Dongfeng Citroen to raise the registered capital of the joint venture up to RMB7 billion. Shenlong Auto is divided in three parts: one is the manufacturing center; the industrial business department (including R&D center); and two marketing centers to commercialize Peugeot and Citroen cars. Following the import of the ZX series common production platform by Shenlong, the joint venture will import another entirely new common production platform. The two platforms will produce both Citroen and Peugeot, with new models to be produced every year. In 2004, the joint venture launched six new models to expand production capacity from the current 50,000–60,000 units to more

Table 3
CHINA'S MAJOR CAR MAKERS IN 2000

<i>Joint venture</i>	<i>Multinationals</i>	<i>Local enterprises</i>	<i>Effective date of contract</i>	<i>Date of production launch</i>	<i>Registered capital (US\$ million)</i>
FAW					
Volkswagen	Volkswagen	FAW	1990 / 11	1991 / 09	53571
Shanghai Volkswagen	Volkswagen	Shanghai Automotive Corp.	1985 / 02	1985 / 09	8889
Shanghai GM	GM	Shanghai Automotive Industry Corp.	1997 / 04	1998 / 12	70000
Shenlong Co.	Citroen	Dongfeng Auto Corp.	1992 / 04	1992 / 05	61643
Beijing Jeep	Chrysler Co.	Beijing Automotive Group	1983 / 06	1984 / 01	14682
Guangzhou Honda	Honda Co.	Guangzhou Auto Industry (Group) Co.	1997 / 11	1998 / 07	
Guizhou Sukaru	Fuji Heavy Industries		1996 / 07		RMB 300 million
Changan Group	Suzuki Co.	Changan group	1993 / 05	1995 / 05	7000
Xi'an Qinchuan	Suzuki Co.	Xi'an Qinchuan		Non-joint venture	
Jiangnan Auto Industry Co. Ltd.				Non-joint venture	
Jilin Jiangbei Machinery Plant				Non-joint venture	
Tianjin Xiali	Charade Co.	Tianjin Automotive Industry Co.		Non-joint venture	
FAW Co. Ltd.				Non-joint venture	

Source: The Association of Chinese Auto Industry.

Table 3
CHINA'S MAJOR CAR MAKERS IN 2000

<i>Equity ratio</i>	<i>Terms of cooperation</i>	<i>Main brand model</i>	<i>Output in 2000</i>	<i>Sales in 2000</i>	<i>Percentage in domestic output</i>	<i>Percentage in domestic sales (not including imports)</i>
40 : 60	25	Jetta, Audi, Bora	110005	111269	18.18	18.03
50 : 50	25	Santana, Passat, Polo	221524	222432	36.62	36.05
50 : 50	30	Buick, Sail	30024	30543	4.96	4.95
26.875 : 73.125	35	Citroen, Picasso, Elysee	53900	52036	8.91	8.43
42.4 : 57.6	20	Cherokee, Challenger SUV	4867	4628	0.80	0.75
50 : 50	30	Accord, Odyssey	32228	32233	5.33	5.22
25 : 75		Sukaru	855	1470	0.14	0.24
49 : 51	30	Alto, Gazelle	48235	47001	7.97	7.62
		(Assembly) Alto, Flyer	5380	5227	0.89	0.85
		Assembling Alto	343	379	0.06	0.06
		Assembling Alto	0	146	0.00	0.02
		Xiali, Xiali 2000	81951	84951	13.55	13.77
		Red Flag	15365	15345	2.54	2.49
			605000	617000	100	100

than 150,000 units, with the ultimate goal of advancing toward more than 300,000 units annually. Daimler Chrysler has a similar strategy.

There is yet another category of enterprises which, very early on, began to implement their investment strategy with a vision of WTO accession. GM of the United States and Honda of Japan are examples of such enterprises. In the joint venture project between GM and SAIC, agreed upon in 1997 but officially launched in 1998, GM controlled 50 per cent of the shares by providing the terms and conditions that other multinationals are reluctant to provide. The terms and conditions of this agreement was that GM would transfer its parts technology to the new joint venture, invest US\$40 million to set up five technical training centers, and relocate some of the Buick designing work in China. Due to the reluctance of Volkswagen to transfer more parts and components production to China, the relationship between Volkswagen and SAIC experienced some strains and stresses in the process of establishing joint venture. Chrysler Co. was unsuccessful in its bid to produce multifunctional vehicles in Zhanjiang City, Guangdong Province. The more cautious Toyota also lost an opportunity to set up a joint venture with SAIC due to its unwillingness to pay the price.

Second, multinational enterprises from Japan and the Republic of Korea have long tried to export products to China and have, consequently not been very active in investing in the country.⁷ Their strategic choice is beyond reproach. (1) Japan and the Republic of Korea are closer to China and it pays off to export their cars to China from their home base. (2) After China's accession to the WTO, China lowered tariffs and non-tariff levels, thereby providing favourable export conditions to these countries. But, their strategy has met stern challenges from multinationals from Europe and the United States, as these companies have gained great market shares and profits by investing in China to supply the local market from their local production plants, and after China's accession to the WTO, they are updating their local production. After a number of years of watching and waiting, Japanese and the Republic of Korea multinationals such as Toyota, Renault-Nissan and Hyundai began to become more active and made their presence increasingly felt. These latecomers

⁷ Strange enough, United States Ford has also adopted this strategy and did not start its joint venture with Chongqing Changan until 2001. But the joint venture is rather small, with an investment of less than US\$100 million.

introduced their entire series and models to China and planned to make a large-scale investment to bring their production scale up to about 300,000–500,000 units in the next five years. Obviously, investing in China has become a leading strategy of multinational enterprises after China became a WTO member.

Third, there are also differences in strategy between new and old multinational enterprises. In a rapidly growing market, multinationals that have just entered into it are seeking to clinch more new market shares by introducing new products and lowering prices and snatching away market shares of the main players. The competition between old and new multinationals on China's auto market is a typical case in this regard. In 2000, German Volkswagen occupied 53.57 per cent of China's auto market. But three years later, the market share dropped to 35.20 per cent.⁸ In 2002, there were more than 200 car models representing 40 brands, with new models accounting for 60 per cent⁹ of market share. Many models have been brought into China in the form of CKD (complete knock down) or SKD (semi knock down).

The basic strategy of multinational enterprises after China's accession to the WTO is to invest or expand their investments in China, and continually bring out new products and even introduce whole series of products to China, as well as lower prices.

III. STRATEGIC ADJUSTMENT OF CHINESE AUTOMAKERS

China's domestic enterprises began to change after its WTO accession. Some medium and small enterprises, such as Chery, Geely, Hafei and Huachen, etc., began to elbow into this industry by way of technical cooperation and joint technical development arrangements. At the same time, new joint ventures were also created on a regular basis, for example Beijing Hyundai, Changan Ford and Tianqi-FAW Toyota. In the face of changing market pattern after China's accession to the WTO, there are two dramatically opposite strategic options for

⁸ This proportion does not account for the impact of imports and exports on market shares and has only been calculated according to the total sales of various automakers. So it overestimated the market shares of Volkswagen in 2002.

⁹ China Association of Auto Manufacturers (2003): *Economic Operation of the Auto Industry in 2002 and Development Analysis for 2003*, p. 8, January.

Chinese automakers. The first one is to enter into joint ventures with as many multinationals as possible with the longest possible cooperation terms, thus forming a pattern of “multilateral tie-up” among local major auto groups and multinationals. The second is to develop independently through joint development and technology imports. Mainstream local carmakers have chosen the first strategy, whereas new and small carmakers have chosen the second one.

Table 4
CHINA'S AUTOMOBILE INDUSTRY: ENTERPRISES AND PRODUCTION

<i>Rank</i>	<i>Enterprises</i>	<i>Production</i>	<i>Share</i>
7	Tianjin Xiali (belonging to FAW)	95 466	4.73
8	Chery (belonging to SAIC)	91 223	4.52
9	Geely Group	71 555	3.54
15	FAW	48 092	2.38
17	Hafei	32 387	1.60
18	Huachen	27 054	1.34
<i>Sub-total for domestic enterprises</i>		365 777	18.12
1	Shanghai Volkswagen	405 252	20.07
2	FAW Volkswagen	302 200	14.97
3	Shanghai GM	206 964	10.25
4	Guangzhou Honda	117 178	5.80
5	Shenlong	105 475	5.22
6	Changan Suzuki	102 083	5.06
10	Guangzhou Nissan	66 139	3.28
11	Hainan Mazda (FAW)	54 824	2.72
12	Beijing Hyundai	54 348	2.69
13	Dongfeng Yueda-KIA	52 017	2.58
14	Tianqi-FAW Toyota	49 534	2.45
16	Nanjing Nanya	37 034	1.83
19	Beijing Jeep	19 441	0.96
20	Changan Ford	18 535	0.92
21	Others	62 074	3.07
<i>Sub-total for joint venture</i>		1 653 098	81.88
Total		2 018 875	100

Source: China Automobile Industry: *Production and Sale News*, January 2004.

Why have large Chinese auto groups opted for such a strategy instead of independent investment expansion? Not only do domestic firms lack this ability, but also they are reluctant to do so. Under high protection, joint ventures could enjoy high profits.

According to FAW's Chief Executive Officer, China's largest motor vehicle producer and the second largest carmaker, the main reason for adopting a joint venture strategy is shortage of funds, outdated technology¹⁰ and an inability to expand on its own. The reason for adopting a joint venture strategy rather than a joint development approach is that FAW's production scale is too small in comparison with the world leading carmakers as its annual output is only 120,000 units. FAW cannot invest in product development as it does not have the same level of resources as multinational carmakers with their capital accumulation of millions of vehicles. In the context of economic globalization, it is possible to follow one's own path when there is a production capacity of several million vehicles. Even with such strengths, it is still necessary to establish joint ventures with foreign companies and participate in the international division of labour and cooperation. FAW's production of trucks ranks third or fourth in the world, but it has no independent product development capacity and technological innovation. This is also reflected in the acquisitions made and expansion undertaken by FAW and SAIC in the past few years. Most of the enterprises acquired by FAW are still products of its joint ventures partners. The only independent brand is Red Flag which does not sell well. The enterprises acquired by SAIC, for example GM Wuling and GM Huayao, all produce GM products.

During our survey, we often asked how long domestic enterprises would fare in joint ventures. Multinationals cooperate in the production of current model, but what about future follow-up models? When will the reliance on multinationals end? FAW's CEO believes that the nature of future technology developments is still hard to determine and that the path leading to the next technological stage has yet to be found. Many other companies are reluctant to deal with these problems. However, from the terms of cooperation of new joint ventures between mainstream local automakers and multinationals, we can gather that they hope to remain tied to multinationals forever. Even when the term of cooperation of 25–30 years has yet to elapse, domestic automakers have been seen to be anxiously seeking to extend the term of continued cooperation. Of course, there are also some automakers that have begun to think about this problem seriously and have begun to undertake some development and technology upgrading. But, is such capacity build-

¹⁰ Interview with FAW CEO by Economic Daily reporter Cheng Yuan, May 2000.

ing matched with the process of presumed market opening? Can Chinese enterprises rely on the capacities needed to confront and compete with multinationals? What do Chinese enterprises have to learn from such institutional arrangement of establishing joint ventures in the name of “using market to exchange for technology”? What will they learn in the future? Nobody has yet taken the trouble to think seriously about such problems. Unfortunately, these problems are those that will determine the orientation of the future development of China’s automotive industry.

Enterprises engaged in independent development are mainly new or small enterprises that have elbowed their way into the auto industry. The reason they have chosen to take the path of independent development of technology and products is that the Government has not allowed them to have access to the auto industry nor set up joint ventures. However, they are attracted by the high profits of the industry and determined to move in and are hence obliged to follow the independent development path. During interviews, CEOs of many independent development enterprises were frank when they said that were they allowed in the past to enter into joint ventures, they would have been willing, and still are ready to do so in the future. They are now still at the stage of learning and growing. Among them, Chery, Hafei and Geely have basically completed the stage and they have now got the benefit of independent development, that is, being able to control brand and technology and the run of the market. Their profits have also grown.

We have also discovered during the interviews that although those enterprises engaged in independent development of products and technology all have the burning desire to enter into joint ventures with multinationals, they do not rule out the opportunities of developing their own brands and are looking forward to them. But they clearly expressed that it would not do to make them give up their brands and independent development ambitions. Joint venture cooperation can only strengthen their capabilities in this regard but not otherwise.

So, in the general environment after China had become a WTO member, Chinese auto makers have all opted for the strategy of entering into joint ventures or importing new models. Even if the enterprises start independent development and have their own brands, they are still ready to enter into joint ventures with multinationals. It

is, therefore, a basic strategic option of Chinese automakers to seek to set up joint ventures and import new models and rely on multinational enterprises.

IV. MARKET OPENING AND THE TRANSITION OF DEVELOPMENT MODEL OF CHINESE CAR INDUSTRY

China's car industry has experienced three stages of development: (1) self-sufficiency; (2) joint venture stage since the beginning of the 1980s; and (3) industry development after WTO accession. The first two stages would give us a background for the last stage which should be the focus of our analysis.

(1) Self-sufficiency stage (before the 1980s)

In the self-sufficiency stage (from the founding of new China in 1949 to the 1980s), the technical and production capabilities of local firms were developed by reverse engineering. Cars were mainly produced by copying existing models as no ties existed between Chinese and foreign enterprises whose products were imitated. China manufactured its Hongqi sedan in this way. In the early 1980s, the domestic auto industry was basically at the development stage of manual and workshop production. In 1980, China produced 5,418 cars and imported 19,570 cars. During this period, exchanges between domestic and foreign enterprises were unidirectional and closed. The domestic car industry failed to overcome the many technological bottlenecks, especially in core technologies.

(2) Before WTO accession

As China adopted its reform and opening up policy, its car industry entered a new development phase by attempting to introduce advanced technologies. However, developed countries, especially Japan, were not interested in China's efforts to introduce new technology. Therefore, from the beginning, the Government had to resort to high tariffs and non-tariff protection measures and develop the industry by establishing joint ventures. During this period, China actually learned in two ways. The first consisted of a strategy featuring a high-starting point, large-scale operations and specialization, examples of this include the Number One Automobile Corporation, based in Changchun, Jilin Province, and the Second

Automobile Corporation, based in Shiyan, Hubei Province. The second strategy consisted of small-scale but fast and accumulative development, as followed by Volkswagen in Shanghai and Honda in Guangzhou. Seen from the actual development result of China's joint ventures, the mode of "small-scale, fast and accumulative development" is more efficient. Apart from the inherent advantages of lesser investment and lower costs, a more important reason is that this development mode is more conducive to improved coordination between multinationals, domestic automakers and parts manufacturers and leads to capacity upgrading. This is manifested in the enhanced localization ratio (Lu 1999).

The interactive learning relationship was established on this basis and it, in turn, pushed forward technological and product upgrading of local components and parts producers. However, the production capacity of the Chinese side in the joint venture automakers did not improve a great deal, particularly in the areas of product development, technological innovation and brand marketing.

(3) The transformation of the auto industry after WTO accession – dependent development

Regardless of whether or not domestic enterprises have the ability to compete with multinationals within China, market opening and strategic adjustment of multinationals and domestic enterprises is bound to take place. First, domestic firms may have more competitive advantages. Second, if they do not have any competitive advantages, these firms must have the potential to catch up with multinationals in the future.

From the perspective of multinationals, after China's WTO accession, there are two principal constraints blocking their development in China: (1) Multinationals must operate in joint ventures and their equity proportion is not allowed to exceed 50 per cent; and (2) A multinational corporation can only establish two joint ventures in China. In spite of these restrictions, the competitiveness of domestic enterprises at the present time still appears to be weak when compared with multinationals.

Firstly, when compared with Chinese enterprises, multinationals enjoy early-mover advantages as reflected in their brands and models, technologies and management. Few possibilities exist for Chinese

enterprises to compete with them. Main local enterprises still hope to rely on joint venture to survive and grow up. Although late-coming small enterprises have been engaged in independent product development, their capabilities are far from mature. These enterprises only entered the car industry in recent years and many of them have not completed the development process of two models (4–5 years).

Secondly, in terms of price, the reduction of tariffs and abolition of non-tariff measures after China's WTO accession have led to a sharp fall in the prices of Chinese auto products. This has been exacerbated by the market competition resulting from the entry of more multinationals. As for the multinational partners of joint ventures, their sale in China's market only accounts for a small part of their global sales, so, the price drop in Chinese car market would have little influence on their global performance.¹¹ But for the Chinese partner in joint venture, market share in China is all they have, so any changes in price will have a strong impact on them. With a decrease in profits, the potential for accumulating capital for future development will be reduced. Therefore, Chinese partners have to depend heavily on joint ventures and the gap between Chinese partners and multinationals will continue to expand on a steady basis. The challenge of price competition is smaller on those enterprises engaged in independent development. They have a measure of autonomy in production and operations and they do not have to pay large fees for the use of technology, brands and patents. So they enjoy price advantages.

Thirdly, in terms of technology, China would lose the possibility of developing car models based on the local market. Multinational enterprises still follow their unique technological development lines according to the requirements of the market and development of their home countries. For instance, European enterprises produce the most differentiated and highest quality cars by manufacturing in line with the characteristics of the European market; United States automakers mass produce cars thereby making them affordable to all; Japan produces energy-efficient small models because of the constraints posed by energy shortages in Japan. China's market is similar to that

¹¹ If we take the example of Volkswagen, we can find that it occupies the largest proportion of market share in China. In 2002, its auto sales in China alone accounted for 18.12 per cent of its total international sales and its market share in China was only 38.5 percent.

of the United States in terms of size and it is also similar to that of Japan in terms of population density, with limited energy supply. Can Chinese carmakers and the auto industry develop unique advantages in line with the environment and characteristics of the Chinese market? Technically, since Chinese enterprises rely almost entirely on importing or purchasing technology, they have little technical innovation and can only follow their counterparts from developed countries.

Can Chinese enterprises build up advantages after the WTO accession? With regard to the potential of Chinese enterprises to catch up with multinationals in terms of technology, especially for those enterprises engaged in independent product development, it is not easy at all. The cultivation of the independent product development capabilities should go through at least two complete product development processes (4–5 years). The biggest risk in product development is that the investment cannot be recalled. If the market opens, home demand for cars may be satisfied with local production by joint ventures plus imports. Obviously, the risk of developing new products by squeezing the market share of multinational enterprises is much higher. The development cost of a single new model is about US\$100 million. If the developed product is not accepted by the market, it would result in bankruptcy for Chinese enterprises. But a large multinational can bear the cost of developing two or three or even more new models. Therefore, the number of Chinese enterprises that could survive and mature in such highly competitive environment would be extremely limited.

Similarly, we could also perhaps ask why China's major joint ventures do not engage in independent product development in the same way as those small local enterprises that have just gained access to the industry. One point of view is that the production scale in major joint ventures is still too small. Another answer from small independent enterprises is quite enlightening. They believe that major Chinese car makers cannot learn how to develop products when entering into joint ventures, nor can they obtain technology. This is determined by the property rights allocation pattern of Sino-foreign joint ventures. In a joint venture, multinational enterprises control technology, the brand, collect royalties, have pricing right, and control the parts and components procurement network, while the Chinese partner has to pay a high-technology user fee, even though the model is not designed for the Chinese market. Second, a joint

venture is only concerned with the manufacturing process of a product, not the R&D. For a joint venture, the foreign partner provides the production system and takes the responsibility of troubleshooting. But Chinese partners do not have the opportunity to become involved in, and to learn from, the whole product development and technological innovation process as other links are conducted outside the joint ventures.

The relationship between interactive learning and industrial growth and the relative competitive edge of local enterprises compared with multinationals are core factors determining the industrial growth patterns of developing countries. Seen from the perspective of the dynamic process of industrial growth, the establishment of the interactive learning relationship between local enterprises and multinationals are of crucial importance. As industries in developing countries and regions start to focus on industrial development, the establishment of the interactive learning relationship is, by nature, a process in which local enterprises, under the protection of local governments, absorb advanced foreign technologies, management know-how and production development capacity, as well as introduce innovations based on their own unique local market and resources environment. Therefore, what needs to be emphasized here is that institutional arrangements are of vital importance to the establishment of an interactive learning relationship between local enterprises and multinationals. However, an indisputable fact is that the Chinese Government has been too lenient with domestic partners in joint ventures as they have not set requirements or targets for those Chinese enterprises in terms of technology, product and market, let alone supervise or encourage those enterprises. The result is that joint ventures mainly depend on the brand and technological advantages of foreign companies to make profit in the market while those domestic enterprises that seriously introduce technologies and make innovations to improve production are at a disadvantaged position, resulting in the phenomenon that domestic enterprises compete fiercely to establish joint ventures with foreign companies.

To sum up, seen from the perspective of the strategic adjustments of multinationals and domestic enterprises after China's WTO accession, changes in their relative competitive edges and the fostering of their learning and adapting to new circumstances, dependence of local enterprises on multinationals has deepened.

V. STRATEGIC COUNTERFACTUAL ANALYSIS FOR INDUSTRY TRANSFORMATION

In this section, we will explore the consequences of industry transformation by means of strategic counterfactual analysis. Our survey showed convincing evidence that if multinational enterprises are nowadays partly replacing domestic firms, they could also substitute domestic firms completely without facing any policy restraint. Two further trends have also been gradually emerging. The first is that multinational enterprises are trying to sweep policy constraints aside and draw themselves closer to wholly-owned enterprises. The second is that these corporations are also trying to set up more producing plants to get around the constraints of two joint venture projects ceiling for each MNE. As was mentioned earlier in this paper there is a clause in the regulation of China which states that no MNE can have more than two enterprises. Finally, by controlling brands, technology, product development and patents, MNEs are gradually crowding out domestic firms and building up a monopoly or oligopoly in the domestic market.

What are the consequences of these developments? One has been an intra-industry impact. Domestic firms are being replaced by multinational enterprises. Joint ventures could take the place of domestic firms, as occurred in the case of Tianjin XiaLi with the result that the equity ratio of domestic firms is reduced. Another consequence is that they have an impact on employment and local resources allocation.

Profit losses

After joint ventures become wholly-owned enterprises, a Chinese partner in joint ventures can no longer enjoy the segment of profits which joint ventures could benefit from because of capital drawback. This could be as much as $97,348 \times 62.47$ per cent = RMB608.13 billion (in 1990 prices).¹²

¹² According to the equity ratio of six joint ventures, we divide total amount of profits and tax (RMB183,042 billion) and get the number of RMB97,348 billion, equivalent to $97,348/183,042 = 53.18$ per cent. Here, we do not consider profits shared by Chinese partners in other joint ventures.

Another reason why profits shared by domestic firms could be partly lost is due to the substitution by multinational enterprises. With regard to two domestic firms, we would lose $19,134 * 55.62$ per cent = RMB10,642 billion. The substitution of multinational enterprises could raise the present domestic profit level, resulting in further profit loss. Based upon the ratio of profit and tax to industrial capital, we estimate the loss as following: (1) If domestic industrial capital is used according to multinational enterprises' ratio of profit and tax, the profit and tax should be 29.52 per cent $* 137,054$ = RMB40,455 billion. (2) Except for a RMB19,134 billion which has been created by domestic firms, there is a remaining RMB21,321 billion, which is equal to a net profit of $21,321 * 55.62$ per cent = RMB11,858 billion.

Unemployment increased

After transition from joint ventures to wholly owned enterprises, Chinese senior managers in joint ventures would be replaced by foreigners. This substitution would mean that job opportunities for the Chinese would be greatly reduced. As a result, employment per capital in domestic firms is higher than that in joint ventures. The forecast is that from the total capital of domestic firms, by the end of 2003 the loss would be $13,705,400 * (1/103.23 - 1/245.72) = 76,991$ per year-per person (Table 5). If other domestic firms such as Hafei, Geely and FAW, etc. are taken into account, the loss should be greater.

Local resources utilization reduced

The import ratio of multinational enterprises is higher than domestic firms. In 2002, based upon the Top 500 export and import enterprises, net imports by the top five joint ventures amounted to US\$2.7 billion which is equivalent to about RMB22.4 billion. In these joint ventures, net imports accounted for 20 per cent of gross industrial output value (Table 6). Estimated from this ratio, after the substitution, just in terms of gross industrial output value from Chery and Geely, net imports would increase by $(4.11055 + 4.3886) * 20.32$ per cent = RMB1,727 billion, which is about US\$0.209 billion. By the end of 2003, the total imports of five joint ventures stood at about $2.7 * 11$ (average production year of joint ventures) = US\$29.7 billion. After the substitution, by the end of 2003, the stock of increased net imports could be about US\$2.3 billion.

Table 5
IMPACT ON EMPLOYMENT

		2002	2001	2000	1999	1998	Total
Shanghai	(1)	3575	3240	3011	2075		11901
GM	(2)	1603705	1114561	1278294	674698		4671259
Shanghai	(1)	10957	10317	10449	10654	8036	50413
Volkswagen	(2)	3326703	2802116	2049882	1834628	1925634	11938962
FAW	(1)	6563	6112	6056	4880	4078	27689
Volkswagen	(2)	1358932	1102 690	1264361	1222492	1220583	6169057
Guangzhou	(1)	2365	2290	1947	1370	1368	9340
Honda	(2)	408634	311862	227085	119742	75891	1143213
Chongqin	(1)	1362	1228	1187	1104	810	5691
Changan	(2)	165986	149656	71176	39259	23539	449615.6
Shenlong	(1)		5133	5248	4787	5541	20709
Fukang	(2)		1766094	1677053	1636596	1445361	6525104
Shanghai	(1)	4151	3176	681			8008
Cherry	(2)	376682	246841	164360			787883.1
Tianjin	(1)		6603	6902	7950		21455
Xiali	(2)		787759	782409	742384		2312551
Total joint ventures	Average Employment		125743	Total Industrial	30897210	Indus-trial capital per person	245.72
Total domestic firms	Per year		29463	capital	300434		103.23

Source: China Auto, various issues.

Notes: (1) Number of employees. (2) Total capital (in RMB10,000s.).

Therefore, under market opening, the substitution of multinational enterprises for domestic firms would result in profit losses, reduced employment and the lowered rate of resources utilization. However, from another angle, if domestic firms were to accelerate the learning process and gradually replace multinational enterprises, the benefits would be remarkable.

Table 6
EXPORT AND IMPORT OF JOINT VENTURES IN 2002
(US\$10,000; US\$1 = RMB8.27)

	<i>Total imports and exports</i>	<i>Exports</i>	<i>Imports</i>	<i>Net import to gross industrial output value (Per cent)</i>
Shanghai Volkswagen	91948	21	91927	21.26
FAW Volkswagen	101557	2451	99106	27.23
Shanghai GM	40893	1406	39487	16.55
Guangzhou Honda	30668	49	30619	18.41
Shenlong Fukang	15064	817	14247	9.06
Total	280130	4744	275386	20.32

Source: The Association of Chinese Auto Industry.

From the above analysis, we know that independent product development capacities could mature within two complete product development cycles, each one lasting between 24 and 28 months. This means that it will take at least 4–5 years to learn to develop a new product independently. After WTO accession, new enterprises entering this industry will reach this stage in 2005 and 2006.

Table 7 shows that if we assume continued growth over the next 5–10 years, multinational enterprises will continue to grow at the same average pace as in the past,¹³ the auto industry in China is expected to continue to expand at two different speeds in the future and the cost of delaying capacity building will be high.

To narrow the distance between domestic firms and multinational enterprises will be a difficult process. Hard learning and capacity building will be needed.

¹³ Considering that by the end of 2003 transnational corporations get their investment back and the price could be lower in recent years, we think this assumption is appropriate.

Table 7
THE BENEFITS OF LEARNING ON DOMESTIC ENTERPRISES

Year	Total profit and tax		Losses under different learning speed	
	Plan I	Plan II	Plan I	Plan II
	If production expands at the speed of 1993-2001	If production expands at the speed of 2001-2003	RMB0.1 billion 5 years after the WTO accession Profit and tax: 1601.88 Profit: 1000.69 Among which enterprises ¹ : 468	RMB0.1 billion 5 Years after the WTO accession Profit and tax: 3794.23 Profit: 2370.26 Among which enterprises: 1110
2003	404.81	404.81		
2007	695.78	3302.14		
2008	796.67	5580.62		
2009	912.18	9431.24	10 years after the WTO accession Profit and tax: 4 644.97 Profit: 2901.71	10 years after the WTO accession Profit and tax: 61189.37 Profit: 38225.00 Among which enterprises: 17896.95
2010	1044.45	15938.80		
2011	1195.89	26936.57		
	The rate of production growth between 1993-2001 (Per cent)	The rate of production growth between 2001-2003 (Per cent)	Production volume in 2003 (in 10 thousands)	Profit and tax index for one unit (in 10 thousands)
	14.5	69	113.71	3.56

Source: Author's calculations.

Note: The benefits from hard learning refer to those profits that have been obtained now, but could have been taken away by multinational enterprises, due to the substitution of multinational enterprises for domestic firms.

¹ The share of foreign enterprises is about 46.82 per cent. See China Association of Auto Manufacturers (2003): *Economic Operation of the Auto Industry in 2002 and Development Analysis for 2003*, p. 8, January.

VI. CONCLUSIONS AND IMPLICATIONS

The following conclusions have been drawn from this case study of China's car industry:

First, Chinese domestic enterprises have vied with one another in order to enter into joint ventures or import new car models in the broad context of China's accession to the WTO. Even enterprises currently engaged in independent development and having their own brands are ready at all times to launch into joint ventures with multinational enterprises. To seek joint ventures, import new car models and to link up with multinational enterprises have become strategic options by domestic enterprises.

Second, with the progress of investment and trade liberalization concomitant with China's accession to the WTO, multinational enterprises have displayed their competition advantages to the full. Domestic enterprises have become increasingly attached to multinational enterprises as investment have expanded, technical levels have enhanced, and an increasing number of new products have quickly found their way into the market and prices of products have dropped.

Third, given the strategic adjustment of multinational enterprises and local firms and the changes in the relative competitive advantage between multinationals and local firms on the local market after WTO accession, China's car industry is being transformed into a dependent development model. In the absence of strong policy changes, what happened in the Latin American car industry could happen once again in China (Jenkins 1984, 1987; Evans 1995 and UNCTAD 2000).

Finally, the following lessons can be drawn from this case study:

First, given the almost unchallengeable competitive advantage enjoyed by multinationals, the development of infant industry and local firms of developing countries must be protected by government policy. Otherwise, infant industries and small firms cannot survive or develop healthily. In this sense, the extent, the scale and speed of trade and investment liberalization must match the capacity of local firms and industries and should be consistent with the learning, adapting and adjusting abilities of local firms and industries. Liberalization that is too rapid, profound, far-reaching would thus

have a disastrous impact on local enterprises. Similarly, applying a “non-discriminatory” principle (National treatment and MFN Clause) to the area of investment where the level of competitiveness is so far apart, results in none other than contain the industries of developing countries.

Second, government or policy protection is only one of the necessary conditions to provide adequate conditions for local industry and firms to develop healthily. Under the market economy, firms will manage to earn money in the easiest and most profitable manner. This is also true for the protected market whereby an enterprise could benefit from market protection and not engage in product development and technological innovations, as well as any other capacity building activities. Therefore, the incentives and encouragements of government policies, internal competition among local firms, and the establishment of the interactive learning relationship between local firms and the multinationals are crucial for local firms and industries to be further developed in the context of closed markets (Evans 1995 and Porter 1990).

In view of this situation, we recommend that in the new round of multilateral trade negotiations, the Government should resolutely and unequivocally oppose the attempt by developed economies to incorporate investment issues into the multilateral trading framework and expand the “non-discriminatory” principle in the multilateral trading system to investments.¹⁴ Auto industry cases show that enterprises of developing economies cannot challenge multinational enterprises without the necessary protection and support of their respective governments. We should not harbor any illusion about this. Our survey and research show that, if there were no requirements for technology transfer from multinational enterprises, joint ventures would be just a producing or assembling unit. It would be very hard for local product development ability to build up. Moreover, the Government should update the industrial policy of the automotive industry and encourage, or even oblige local firms to build their capacity and develop new product and technologies.

¹⁴ Although China’s WTO accession conditions associated to FDI might not be altered in line with the outcome of future multilateral trade negotiations.

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