

---

# How the Chinese government promoted a global automobile industry

---

Wan-Wen Chu\*

---

The claim by China experts that the Chinese state lacks the capability to practice pro-active industrial policy throws China's future into doubt. This article argues the contrary by examining the development of the Chinese automobile industry and the evolution of its industrial policy since 1978. The central state's policy may have been ineffective at first, but continued to improve, layer-by-layer, by taking into account results of local experiments, and being propelled by a strong catch-up consensus providing performance standards to establish national industries. China's learning process thus renders its industrial policy model effective in the long term.

**JEL classification:** L62, N65, O25, P23.

## 1. Introduction

Does the Chinese state have the capability to promote industries successfully? Has it relied upon industrial policies to achieve fast growth since reform began in 1978? Or instead, have industries grown merely from the liberalization of markets and the opening up to foreign direct investment (FDI) as presumed by many free market economists?<sup>1</sup> Has economic decentralization led to self-seeking local governments which rendered the central state powerless to practice industrial policies? Has FDI played a leading role in China's development? Or has the government had effective control over the FDI?

---

\*Wan-Wen Chu, Research Center for Humanities and Social Sciences, Academia Sinica, Taipei, Taiwan 11529. e-mail: wwchu@gate.sinica.edu.tw

<sup>1</sup>Sachs and Woo (2000) call this school of thought the convergence school, which argues that China's successes are the consequences of its institutions being allowed to converge with those of market economies, and favorable outcomes have emerged despite gradualism. This school includes the two authors themselves, Bruno (1994), Fan (1994) and many at the World Bank, among others. Actually, many China observers, who were considered by Sachs and Woo (2000) as belonging to the other school, the experimentalist, now view China as "becoming a normal country" (Naughton, 2007b).

Contrary to the popular belief that China's phenomenal growth has been caused by economic liberalization and not by industrial policies, this article argues that the Chinese state has practiced pro-active industrial policies effectively in a mid-tech sector, the automobile industry. It is true that some of the government's automotive industrial policy, especially that of relying upon foreign joint ventures, were deemed ineffective to promote development. Decentralization, however, allows room for policy experiments by the local governments, and the strong social consensus to catch up with the West propels the central state to continue to improve its policy toward this goal. The main finding is that the industrial policy process in China is a multilayered one, and has to be considered as a whole.

For example, early this century, the unauthorized emergence of Chery Auto, a "state"-owned enterprise (SOE)<sup>2</sup> established and managed by the Anhui provincial government, and its subsequent success made the central government adopt a policy favoring indigenous development. Before then, the state had insisted on promoting joint ventures and forced its major auto SOEs into such deals. The fact, however, that most people in China share the goal of eventually catching up with the West makes this shared goal a *de facto* performance standard for judging policy effectiveness. Once Chery Auto demonstrated that an indigenous firm could succeed, the policy of promoting only joint ventures had to be modified. The nationalist goal is to prove China is on a par with the West, and that requires establishing national champions with global brand names. Performance standards refer to moving China closer to that goal. This "catch-up consensus"<sup>3</sup> propels the central state to improve its industrial policy continuously.

Amsden (2001) illustrates cases in which clearly defined performance standards, such as export and local content requirements, were adopted by the government as the center piece in the control mechanism to discipline capital and to foster industrial growth in the more successful latecomer economies. The case in China is different. The central state had not always been able to devise consistent performance standards to induce satisfactory results at different stages of industrial development. Nonetheless, the fact that there are always critics who judge policy results by the nationalist goal of catching up with the West turns this goal into a performance standard. What distinguishes this performance standard from those in Amsden (2001) is that this is *ex post*, long-term, and enforced by social consensus to monitor the government.

---

<sup>2</sup>In China, SOEs can be owned and managed by the central state and various levels of local governments. For example, in 2005, there were 34,081 industrial SOEs in China, out of which 7339 were managed by the central state, and 26,742 by the locals (from China's State-Owned Assets Supervision and Administration Year book, 2006: 603).

<sup>3</sup>Yao (2008), among many in China, uses the term "growth consensus." However, growth can come from FDI, or joint ventures, or local firms. Promoting growth does not necessarily imply promoting national champions. Thus, it is argued here that "catch-up consensus" is a more appropriate term.

With decentralization, the central state formulates the policy but has to rely upon the local states to implement it. Lacking embeddedness<sup>4</sup> and hence information channels linking with the enterprises, the central state is usually unable to formulate feasible policy and to monitor industrial progress. The locals may go their own way and experiment with other means to reach the goal, while fiercely competing among themselves. Once a local experiment produces a result which brings the industry a bit closer to closing the gap with the West and attaining the goal of establishing national champions with global brand names, the legitimacy of the new model cannot be doubted and it will become the winning model. The central–local relationship makes the policy process more winding, but the “catch-up consensus” propels the central state to revise the policy to adopt better results from local governments’ experiments. China may lack an East Asian type of integrated central economic bureaucracy with embedded autonomy and strong capabilities to formulate and implement industrial policy, but it instead has “a model of industrial policy propelled by the catch-up consensus.”

China has weathered various crises and fluctuations since reform began in 1978. Nonetheless, there have always been many pessimistic assessments of its prospects. For example, for a time, many have thought that post-reform economic decentralization would lead to political disintegration in China. Though the influence of this disintegration thesis has waned recently,<sup>5</sup> due to China’s record of sustained growth, the pessimists continue to thrive.<sup>6</sup>

Post-reform economic decentralization has induced the local governments to aggressively promote local economic development. Some feel that local governments’ profit-seeking represents self-interests and corruption, but most tend to think that these local governments are quite close to the model of the developmental state.<sup>7</sup> Montinola *et al.* (1995) describes such a central–local relationship as market-preserving federalism, Chinese-style. There is, however, less agreement on how to characterize the central state.<sup>8</sup> Economic decentralization has also led to intensified

---

<sup>4</sup>Evans (1995).

<sup>5</sup>Naughton and Yang (2004, Introduction section) examine this disintegration thesis, and the title of their edited volume is, *Holding China Together*.

<sup>6</sup>For example, the title of Pei’s (2006) recent book is “*China’s Trapped Transition: The Limits of Developmental Autocracy*”. Rawski (2001) argues that China’s “cumulative GDP growth during 1997–2001 was no more than one-third of official claims, and possibly much smaller.” Huang (2008) characterizes China’s economy as “. . .crony capitalism built on systemic corruption and raw political power.”

<sup>7</sup>In reviewing the relevant literature, Baum and Shevchenko (1999) classify various characterizations of China’s local governments into four different types: entrepreneurial, clientelist, predatory, and developmental. Blecher and Shue (2001) and Oi (1995) consider local governments in China to be local corporatist states, and Walder (1995) calls them industrial enterprises.

<sup>8</sup>Howell (2006) reviews the recent literature on the Chinese state, and questions the applicability of the concept of developmental state to the Chinese central government.

competition among regions, which often imply chaos and wide spread local protectionism. How does that affect the central state's ability to lead industrial development?

The central government in China does not rely solely on administrative control to keep the local governments in check. The CCP's evaluation, promotion and deployment of its cadres continue to be an important way to carry out the central policy. Huang (1996) and Edin (2003) find that the central state's ability to control is actually strengthened since 1978 due to the reform of the cadre management system. Zhang (2005), hence, states that this reform has successfully solved the balancing problem between economic decentralization and political centralization.

Regarding the central state's ability to do pro-active industrial policies, Naughton (2007a), however, feels that the government lacks policy tools for comprehensive policy planning, and the planning process is easily affected by conflict of interest among different departments.<sup>9</sup> Focusing on deficiencies found in the policy planning and implementation,<sup>10</sup> he claims that China's industrial policy has not been effective, especially that of targeting particular sectors.

There are few studies on industrial policies using detailed industry analysis, with Thun (2006) being an exception. He studies the development of China's auto industry, focusing on how local political and economic institutions affect the outcome of FDI. He finds that the evolution of local institutions shows clear path dependence and has led to wide disparities among different regions in the success of their auto joint ventures.

This article examines the development of the Chinese automobile industry, a major mid-tech sector, and the evolution of the relevant industrial policies in the postreform period. Findings of this study are contrary to the thesis of the ineffectiveness of China's industrial policy advanced by Naughton (2007a) and others. That is, it is found that the Chinese model of industrial policy propelled by the catch-up consensus has successfully promoted a global automobile industry despite earlier mistakes. Section 2 gives a concise history of the development of China's automobile industry. Section 3 chronicles this evolution of the Chinese auto industrial policy since reform. Section 4 discusses the theoretical implications of this case study. The last section contains some conclusive remarks.

---

<sup>9</sup>Actually in one of his previous writings, Naughton (2002) argues that the Chinese bureaucratic system has made considerable progress in its economic planning ability through learning.

<sup>10</sup>In recent years, the National Development and Reform Commission (NDRC), restructured from the former State Planning Commission (SPC), began to provide regulatory guidelines for some sectors in place of direct administrative control.

## 2. Automotive industry development in China

China's automobile industry began long before the reforms of 1978, focusing mainly on trucks. This previous truck production experience was crucial in later advance. However, this article will focus on the development of the passenger car segment, which took place mainly in the reform period after 1978.

During the 30 years prior to reform, central planning determined the pattern of industrial development in China. With the Chinese economy making its transition toward a market system since reform, the legacy of central planning meant that its development path and institutional arrangements have to be very different from those of East Asia and other developing countries. Economic theories hence must be modified considerably when applied to the case of Chinese development.

In the early years, under central planning, China did not have an industrial policy as generally defined in a market economy. It set a goal of rapid catch up and made developing heavy industry a top priority. As central planning gradually gave way to the market since 1978, the seventh five-year plan of 1986 can be viewed as a watershed for the evolution of post-reform industrial policy, when the term "industrial policy" first appeared in the five-year plan, though referring mainly to industrial structure adjustment. In 1988, the government established the Bureau of Industrial Policy. In 1994, it issued an industrial policy framework to set goals for industrial structure adjustment and upgrading, organization, technology, and allocation correspondingly, which remained the policy framework for the 1990s.

This section briefly overviews the development path of China's automobile industry.<sup>11</sup> In the early 1950s, China set up the first auto plant, the first auto works (FAW), in Manchuria, and transferred Russian technology to produce trucks. The "Great Leap Forward" of 1958 created some proliferation of auto assembly operations. In the late 1960s, it established the second auto works (SAW) in the mountains near Wuhan in central China for strategic reasons, to be far from enemy attack, and several heavy vehicle factories, such as Beijing Truck. These investments were simply reproductions of the original Soviet model, and each factory was vertically integrated into parts production. Nonetheless, China has successfully built up a self-reliant truck industry, which was able to fend off foreign competition even after recent market opening. The policy back then was not to develop passenger cars, which was considered bourgeois luxury items, except for a few indigenously developed models produced in small numbers, such as Red Flag (Table 1), to be used as official cars by high-ranking leaders.<sup>12</sup>

Starting in the 1980s, there was an on-going policy debate in the Machinery Industry Ministry (MIM), the ministry in charge of the automobile industry,

---

<sup>11</sup>See Lu (2006); Lu (1999); Gou and Lan (2006); Harwit (1995, 2001); Sutton (2004); and Thun (2004, 2006).

<sup>12</sup>Lu (2006).

**Table 1** China's automobile production, 1955–2006

Year	Production (no. of vehicles)				Share (%)	Annual growth rate (%)	
	Total	Trucks	Commercial vehicles	Passenger cars <sup>a</sup>		Car/total	Total
1955	61	61	–	–	0.00		
1956	1654	1654	–	–	0.00	2611.48	–
1957	7904	6228	–	–	0.00	377.87	–
1958	16,000	12,865	–	57	0.36	102.43	–
1959	19,601	13,613	–	101	0.52	22.51	77.19
1960	22,574	17,148	–	98	0.43	15.17	–2.97
1961	3589	2746	–	5	0.14	–84.10	–94.90
1962	9740	7797	–	11	0.11	171.38	120.00
1963	20,579	16,738	–	11	0.05	111.28	0.00
1964	28,062	20,755	–	100	0.36	36.36	809.09
1965	40,542	26,538	–	133	0.33	44.47	33.00
1966	55,861	34,199	–	302	0.54	37.79	127.07
1967	20,381	10,696	–	144	0.71	–63.51	–52.32
1968	25,100	11,976	–	279	1.11	23.15	93.75
1969	53,100	30,416	–	163	0.31	111.55	–41.58
1970	87,166	47,101	–	196	0.22	64.15	20.25
1971	111,022	58,068	–	562	0.51	27.37	186.73
1972	108,227	60,493	–	661	0.61	–2.52	17.62
1973	116,193	64,383	–	1130	0.97	7.36	70.95
1974	104,771	56,948	–	1508	1.44	–9.83	33.45
1975	139,800	77,606	–	1819	1.30	33.43	20.62
1976	135,200	74,539	–	2611	1.93	–3.29	43.54
1977	125,400	75,920	–	2330	1.86	–7.25	–10.76
1978	149,062	96,103	–	2640	1.77	18.87	13.30
1979	185,700	119,501	–	4152	2.24	24.58	57.27
1980	222,288	135,532	–	5418	2.44	19.70	30.49
1981	175,645	108,261	–	3428	1.95	–20.98	–36.73
1982	196,304	121,789	–	4030	2.05	11.76	17.56
1983	239,886	137,100	6211	6046	2.52	22.20	50.02
1984	316,367	179,846	6990	6010	1.90	31.88	–0.60
1985	443,377	236,934	11,897	5207	1.17	40.15	–13.36
1986	372,753	218,863	9189	12,297	3.30	–15.93	136.16
1987	472,538	299,356	20,461	29,865	6.32	26.77	142.86
1988	646,951	36,400	50,922	36,798	5.69	36.91	23.21
1989	586,936	342,835	47,639	28,820	4.91	–9.28	–21.68
1990	509,242	269,098	23,148	42,409	8.33	–13.24	47.15

(continued)

Table 1 Continued

Year	Production (no. of vehicles)				Share (%)	Annual growth rate (%)	
	Total	Trucks	Commercial vehicles	Passenger cars <sup>a</sup>		Car/total	Total
1991	708,820	452,023	175,742	81,055	11.44	39.19	91.13
1992	1,061,721	626,414	272,582	162,725	15.33	49.79	100.76
1993	1,296,778	774,868	292,213	229,697	17.71	22.14	41.16
1994	1,353,368	785,876	317,159	250,333	18.50	4.36	8.98
1995	1,452,737	721,822	405,454	325,461	22.40	7.34	30.01
1996	1,474,905	688,614	395,192	391,099	26.52	1.53	20.17
1997	1,582,628	659,318	435,615	487,695	30.82	7.30	24.70
1998	1,627,829	661,701	459,025	507,103	31.15	2.86	3.98
1999	1,831,596	756,312	509,179	566,105	30.91	12.52	11.64
2000	2,068,186	751,699	709,042	607,445	29.37	12.92	7.30
2001	2,341,528	803,076	834,927	703,525	30.05	13.22	15.82
2002	3,253,655	1,092,546	1,068,347	1,092,762	33.59	38.95	55.33
2003	4,443,491	1,228,157	1,177,469	2,037,865	45.86	36.57	86.49
2004	5,070,452	1,514,869	1,243,022	2,312,561	45.61	14.11	13.48
2005	5,707,688	1,509,893	1,430,073	2,767,722	48.49	12.57	19.68
2006	7,279,726	1,752,973	1,657,259	3,869,494	53.15	27.54	39.81
2001–2006						23.83	38.43

Sources: 1955–1990: China Automotive Technology and Research Center. [http://www.catarc.ac.cn/ac/zt/qc50n/gn/gn\\_ln.htm](http://www.catarc.ac.cn/ac/zt/qc50n/gn/gn_ln.htm)

1991–2006: *China Automotive Industry Yearbook*, 2007.

<sup>a</sup>The category of the passenger cars here does not include MPV, SUV, and cross passenger cars. The Chinese government used to put these four types of vehicle under the commercial vehicles category, but it changed the classification and included them into that of the passenger cars in 2005. The *2007 China Automotive Industry Yearbook* still uses the old classification as listed above in the table. Using the new system, the volume of passenger cars became 3,941,767, 5,233,029, and 6,381,116 in years 2005, 2006, and 2007, respectively (*FOURIN China Auto Weekly*, January 15, 2008). Thus, the production of passenger cars in China has been increasing by about one million units every year since 2002.

about whether to develop passenger cars. Due to lack of foresight, the automobile industry was not even included in the sixth five-year plan (1981–1985), while at the same time auto imports and smuggling were clearly on the rise (Table 2). Thus, the auto industry was added as a pillar industry in 1986, and a policy direction was set to have “high starting point, mass production, and specialization.” Because the auto

**Table 2** China's vehicle imports and exports, 1953–2006

Year	Imports			Exports		
	Total	Trucks	Cars	Total	Trucks	Cars
1953–1957	56,466	41,334	4067	–	–	–
1958–1962	68,157	54,475	3048	1317	–	–
1963–1965	18,549	6198	4266	2695	–	–
1966–1970	41,200	18,601	949	5952	–	–
1971–1975	97,863	68,815	2317	21,267	–	–
1976–1980	141,926	81,124	20,292	4449	–	–
1981	41,575	20,770	1401	726	–	–
1982	16,077	7730	1101	238	–	–
1983	25,156	8445	5806	1892	–	–
1984	88,743	28,047	21,651	2919	–	–
1985	353,992	11,492	105,775	1659	–	–
1986	150,052	64,570	48,276	4179	–	–
1987	67,182	17,554	30,536	6129	–	–
1988	99,233	14,201	57,433	9159	–	–
1989	85,554	12,587	45,000	2676	–	–
1990	65,430	18,395	34,063	4431	–	–
1991	98,454	18,578	54,009	4108	–	–
1992	210,087	42,005	115,641	6375	2243	914
1993	310,099	72,935	180,717	11,116	4534	2866
1994	283,060	68,269	169,995	18,648	10,234	784
1995	158,115	12,037	129,176	17,747	9070	1413
1996	75,863	6256	57,942	15,112	6256	635
1997	49,039	7424	32,019	14,868	8297	1073
1998	40,216	4373	18,016	13,627	6306	653
1999	35,192	2685	19,953	10,095	3868	326
2000	42,703	3085	21,620	27,136	7093	523
2001	71,398	3138	46,632	26,073	8527	763
2002	128,195	6692	70,329	28,645	10,520	969
2003	171,710	9862	103,017	45,777	26,142	2849
2004	175,654	8078	116,085	136,258	52,796	9335
2005	161,324	3032	76,542	164,258	100,153	31,125
2006	228,440	5581	112,756	332,487	163,038	93,323

Unit: number of vehicles. The vehicle total also includes commercial vehicles, besides trucks and cars.

*Sources:*

Imports: 1953–1982: China Automotive Technology and Research Center. [http://www.catarc.ac.cn/ac/zt/qc50n/gn/gn\\_ln.htm](http://www.catarc.ac.cn/ac/zt/qc50n/gn/gn_ln.htm)

1983–2005: China Automotive Industry Yearbook, 2006.

2006: *FOURIN China Auto Weekly*.

Export: 1953–1991: China Automotive Technology and Research Center. [http://www.catarc.ac.cn/ac/zt/qc50n/gn/gn\\_ln.htm](http://www.catarc.ac.cn/ac/zt/qc50n/gn/gn_ln.htm)

1992–2005: *China Automotive Industry Yearbook, 2006*.

2006: *FOURIN China Auto Weekly*.



industry was clearly in need of foreign technology transfer in the early 1980s, China chose the joint venture route and began to seek out foreign partners. A joint venture agreement with AMC was signed in 1983 to set up the Beijing Jeep Company, followed by Shanghai Auto Industry Corporation (SAIC)-VW (SVW) in 1984, and Guangzhou-Peugeot in 1985. Tianjin Auto Works purchased Daihatsu's Charade technology in 1986.

In 1988, the government proposed a strategy of supporting "three majors and three minors"—with FAW, SAW, and SAIC named as the three majors, and Beijing, Tianjin, and Guangzhou firms as the three minors—to limit the total number of firms, and providing a high degree of protection. Meanwhile, FAW and SAW also shifted to joint venture. In 1992, FAW-VW was established, and SAW and Citroen also set up the joint venture Shenlong.<sup>13</sup> The policy goal of this period focused on market concentration ratios and economies of scale.

In 1987, SVW was ordered to increase its domestic content rate to 40% within 3 years. It achieved 60% in 1990, and 90% in 1997. The Guangzhou-Peugeot venture, established in 1985, turned out to be unsuccessful, and Peugeot withdrew from the joint venture in 1997. In the microcar segment (engine size <1 L), there were Hafei Auto, Changan Auto, Tianjin Charade, etc.

Under the protection of high tariffs and entry restrictions, these joint venture companies priced their cars higher than international levels, and enjoyed high profit rates, while the foreign investors had no incentives to introduce new technology. In 1997, in order to prepare for the entry into the WTO and to promote upgrading, the Chinese government allowed in more foreign investors and demanded they bring in the latest technology, including Shanghai-GM and Guangzhou-Honda. As a result, competition intensified, and foreign investors also sped up technology transfers and car model updates. In 2000, China revised the foreign business law, lifted the domestic content requirement, and relaxed the entry restriction.

Previously, the demand for cars came mainly from official usage,<sup>14</sup> which tended to be not price-sensitive and favor mid-sized cars. Since the 1990s, increasing wealth began to foster a market segment supported by price-sensitive individual consumers, which by 2000 already constituted >50% of the total market. The objective conditions were thereby laid for the new indigenous automakers to emerge. From 2001 onward, on top of the existing joint ventures, indigenous automobile firms started to appear in China, including the state-owned Hafei and Chery, and the privately owned Geely and BYD, and came to occupy a quarter of the car market by 2006.

Car production in China grew by an average of 45% per year from 2002 to 2007, from one million vehicles produced per annum in 2002, rising quickly to almost

---

<sup>13</sup>China Automotive Technology and Research Center, 2003, "A Fifty Year Chronology of China's Automotive Industry," <http://www.chinaauto.ac.cn/zhishi/ZG50DSJ.htm>.

<sup>14</sup>In 1984, the government allowed private individuals to own vehicles for the first time.

five million in 2007 (Table 1).<sup>15</sup> It is estimated to have exceeded 10 million in 2009. Since current income per capita is still low, at US\$ 2000, there is a great deal of room for future growth, so the Chinese market has become a first-tier battleground for all global players.

Truck production in China had a more solid foundation before the reform. Even after China's entry into the WTO, domestic firms still dominate, with over 90% of China's domestic truck market. The car sector is completely different, with only about 5000 cars produced prior to the introduction of foreign investments in the 1980s. The share of cars in total vehicle production in China rose from near zero in the early reform period to over half in 2006 (Table 1), though the capabilities accumulated in truck production before the reform certainly laid the foundation in subsequent car production. The import substitution of car production was undertaken mostly by existing firms which developed before the reform. In other words, changes in China's vehicle industry in the postreform era came mostly from cars, which is also the fastest growing sector in recent years. Therefore all the discussion here will focus on cars, leaving out trucks and other sectors.<sup>16</sup> From here on, autos and cars will be used interchangeably.

### **3. The evolution of industrial policy in the automobile industry**

The East Asian economic development model is known for its pro-active industrial policies, carried out by a competent economic bureaucracy with embedded autonomy and performance standards. The Chinese model obviously differs from the East Asian one in terms of its huge scale and multilevel government structure. Although the central government is responsible for formulating industrial policy, it usually is not in-charge of direct implementation, which is done mainly by the various levels of local government. Therefore policy implementation outcome inevitably involves a central–local relationship. As shown in the East Asian experience, in order to formulate an appropriate and feasible policy, an adequate two-way communication network between the government and business is required, while in the case of China, the multilevel framework inevitably complicates the communication network required. In addition, the government–business relationship in China has an additional layer of complexity because the jurisdiction of a huge number of SOEs also

---

<sup>15</sup>The new classification system put in effect in 2006 includes MPV, SUV, and cross passenger cars in the passenger car category. The figures cited here are taken from the *China Automotive Industry Yearbook* and still uses the old classification as listed in Table 1. Under the new system, the volume of passenger cars became 3,941,767, 5,233,029, and 6,381,116 in years 2005, 2006, and 2007, respectively (FOURIN China Auto Weekly, January 15, 2008).

<sup>16</sup>The three majors remain major producers of trucks and buses.

belongs to different levels of government. All these imply that the central state may lack requisite information to formulate feasible policy and to monitor policy implementation effectively.

Furthermore, China used to align certain central ministries; for instance, the Ministry of Post and Telecommunications and the Ministry of Electronics, with specific industries. With these ministries directly controlling and managing specific industries and the monopolistic SOEs, coordination among central ministries was difficult. During the 1990s, the administrative reform aimed to improve this situation by turning the central departments into more purely administrative units, not responsible for managing the SOEs directly.<sup>17</sup> With regard to competence and embedded autonomy of the economic bureaucracy famous in the East Asian model, China also shows an extremely diverse picture due to its scale and complexity.

The automotive industry was first governed by the MIM, which also directly owned FAW and SAW. The Ministry's auto bureau was branched out to form the China National Automotive Industry Corporation (CNAIC) in 1982, which owned the major SOEs and undertook policy roles as well. Probing a way to better manage both roles at the same time, the government disbanded CNAIC in 1987, only to re-establish it again still under the MIM in 1990. In 1993, the government tried to separate the task of carrying out industrial policy from that of direct management of SOEs, by changing the CNAIC into an industry association. A further administrative reform in 1998 disbanded 15 industry-aligned ministries, and the MIM was restructured into a Machinery Industry Bureau under the State Economic and Trade Commission (SETC). Then in 2003, this part of the SETC merged with the State Development Planning Commission, originally the State Planning Commission, to form the National Development and Reform Commission (NDRC) in 2003. Now the industrial policy bureau under NDRC has an auto section which governs auto related policies. The newly established State-Owned Assets Supervision and Administration Commission (SASAC) manages major SOEs, including the FAW and SAW, from 2003. The state-owned China Automotive Technology and Research Center, which does R&D works, was established in 1985 and came under SASAC in 2003. The semi-official China Association of Automobile Manufacturers handles many of the policy and coordination tasks. All these shifting shows that the central government has been struggling to find a way to better conduct the industrial policy.

Under China's unique central–local structure, except for a few old SOEs like FAW and SAW that were owned and managed by a central ministry directly and some

---

<sup>17</sup>This administrative structure was not altered until the large-scale organization reform in 1998. By then those ministries each in charge of the major industries, including utilities, coal, metals, machinery, electronics, chemicals, post and telecom, minerals and forestry, were disbanded. The only one left was the Ministry of Information Industry, which came from reorganization of the disbanded Ministry of Post and Telecom and the Ministry of Electronics.

SOEs belonging to the defense industry,<sup>18</sup> all other automakers are backed by their local governments, though the degree and form of support may vary by location. The (local-)government–business relationship and the intention and governing ability of the local government may vary greatly over regions. Thus, the extent to which a local government will implement the central government’s relevant industrial policy may also vary by time and location.<sup>19</sup>

### 3.1 *Joint venture-based import substitution*

In the mid-1980s, when the auto sector began to develop by import substitution, the Chinese central government’s policy for autos was reactive, rather than proactive. The MIM simply misjudged how fast a family car would be demanded. Since the late 1970s, auto imports had already begun to increase significantly (Table 2), bringing pressure on the balance of payment and raising the issue of auto import substitution. By the end of 1978, the central government already began to consider introducing foreign technology. While negotiations with prominent international automakers remained in progress, the auto industry was not confirmed as a pillar industry until 1986.<sup>20</sup> During this period, import control was the only way to suppress potential demand, but as soon as the control was relaxed somewhat in 1985, imports surged. What made matters worse was that car smuggling became wide spread and was said to exceed imports by 2-fold.<sup>21</sup> The urgency to stem the inflow of cars probably led the policy makers to seek quick solution in the form of joint ventures, rather than to seek technology transfer through learning. As the CNAIC, then the authority in charge of the automobile industry, said in its 1985 report to the government, “the current situation of severe shortage and insatiable demand for imported autos manifested our lack of foresight.”<sup>22</sup>

To transfer technology from foreign firms, somehow it was decided that forging joint venture was to be the way to achieve that then.<sup>23</sup> For example, in late 1978,

<sup>18</sup>For example, Changan Auto of China South, and Hafei Motor and Jiangxi Changhe Auto of China Aviation Industry Corporation II, among others, all belongs to the state-owned defense industry, run by the military.

<sup>19</sup>Thun (2006).

<sup>20</sup>The seventh five-year plan announced in 1986 named “automotive industry as an important pillar industry, demanded it to follow the principles of ‘high starting point, mass production, and specialization’ to establish backbone enterprises as leaders.” The 1987 Beidaihe meeting of the State Council confirmed FAW, SAW, and SAIC as three sedan production sites.

<sup>21</sup>This, of course, was an informal estimate, cited in Zheng (2007: 56–57). It is, however, considered a probable estimate, being based on new car registrations.

<sup>22</sup>Quotation is taken from Zhao (2000: 126).

<sup>23</sup>Why China opted for joint venture, or, in general, the policy of trading market access for technology, instead of licensing or purchasing technology from abroad, is an important question yet to be addressed.

General Motors among several other foreign auto companies was invited by the MIM to send a delegation to China to discuss cooperation. When GM recommended a joint venture, it had to explain the concept in detail, because then the Chinese “did not understand its (joint venture’s) exact meaning.”<sup>24</sup> The direction of the auto industry policy was initially set to be “high starting point, mass production, and specialization.” The government did not pay too much attention to the development of matching parts, which actually is a key issue in this kind of assembly industry, and only proposed adjusting import tariffs according to the domestic content ratio. The process of policy making appeared to be a learning process.

At that time, invitations for cooperative talks were sent to GM, Ford, Nissan, Toyota, VW, Citroen, Peugeot, Renault, and Fiat. After more than 5 years of negotiation, SAIC signed a joint venture pact with VW, the one which showed most interest, in 1984.<sup>25</sup> Actually, Japanese vehicles were the favorite imports then. Nonetheless, at that time, Japanese car makers preferred selling finished vehicles to China to make investment and transferring technology, and hence did not respond to the request for cooperation. This is a decision they regretted very much years later.<sup>26</sup>

The central government holds an important policy tool, namely the power of approval, especially regarding the introduction of foreign investment, but it has problems restricting actual domestic entries, which could be discerned from its repeated warnings toward the related parties. It also had problems reigning on the local government’s access to bank financing. For example, the State Council issued yet again another *Statement of Stringent Control of Auto Production Sites* in 1988,<sup>27</sup> to prohibit “local governments and departments from negotiating with foreign business . . . without prior approval,” to produce autos under disguise, and to “import knocked-down autos as parts for reassembly via various channels.” The central government could only warn the locals not to undertake such activities without prior approval, or their leaders would be punished and the transgressing project would be scrapped. The *Statement* also reaffirmed the strategy of limiting auto production sites to three major and three minor joint venture factories, restricting entry, and offering high protection.

---

<sup>24</sup>Ming (2006). GM was the first foreign auto firm to visit China to negotiate a deal. Though the supreme leader Deng did support this joint venture, in the end the GM board did not approve the deal. The joint venture contract between SAIC and the German VW was not concluded until 1984.

<sup>25</sup>The process took a long time, because many legal issues had to be tackled and a brand new joint venture law drafted and legislated. Zheng (2007: 52–56) and Harwit (1995: Chapter 5).

<sup>26</sup>Harwit (1995: 39–41).

<sup>27</sup>China Law and Regulation Database, China Law Information Network <http://www.lawon.cn/law/viewDetail.jsp?id=209797>. In 1985, the State Council issued a “circular of approval and transmission of reports by the state planning commission *et al.* on strengthening macro-management and promoting healthy development of automotive industry,” already pointing out the problems of aimless production expansion, multiple external contacts, and unnecessary imports.

At this stage, the authority's idea was to pursue production efficiency by achieving economies of scale.<sup>28</sup> The authority hence wished to have strict control of the number of firms. This mode of thinking was common among policy makers in China at that time, that is they used the number of firms, market concentration ratio, and scale factor as the main control indicators, with entry control being the most important. This power of approval covers both the actual entry and the permission to introduce foreign investment.

Theoretically speaking, it is problematic to try to "manage" the number of firms and concentration ratio *ex ante*, because, under protectionism, the existing firms may not be competitive. To build a factory with economies of scale is vastly different from nurturing a competitive enterprise. The distance between the two, probably reflects the influence of the legacy of the planning era. On the one hand, the authority lacked a clear performance standard, such as export record used in East Asia. On the other hand, the government had strong incentives to continue to protect the existing major SOEs and maintain a significant state share in the national economy.

It should be noted that there occurred a policy debate regarding the model of development at the early stage of policy formation in the 1980s. The State Science Commission favored setting up a brand new enterprise to undertake the car project, while the other parties argued for relying upon the existing SOEs. Besides the Development Research Center of the State Council, the auto policy agency, the CNAIC, was for the latter model. And managers from the FAW and SAW were allowed to plead their cases at policy meetings and influenced the decision. The fact that most people in charge of the auto policy came from FAW originally must have had an impact.<sup>29</sup> It is interesting to note beforehand (to be discussed in Section 3.3) that years later it was the Ministry of Science and Technology to come out and challenge the given auto policy and favor the newly emerged indigenous enterprises. These science and technology central ministries do not directly manage the auto industry and hence are less likely to be "captured" by the industry, and may play the role of monitoring other ministry's auto industrial policy.

As discussed above, at first, the central government proposed a goal of gradually increasing domestic content ratio, but, besides giving administrative orders; in practice, the only incentive it gave was a scheme of tariff protection of domestic contents. In 1987, the state introduced a differential tariff scheme for auto parts. When the localization rate of auto parts reached 40, 60, and 80%, the auto firm could import other (usually key) auto parts at decreasing tariff rates of 37.5, 30, and 20%, respectively.<sup>30</sup> However, the implementation result of this policy varied greatly from

---

<sup>28</sup>Quoted from the "circular about strict control and examination-approval of Sedan and light vehicle projects," issued again by the State Council on February 12, 1993, <http://www.lawon.cn/law/viewDetail.jsp?id=212252>. It also indicated the difficulties of control.

<sup>29</sup>Zhao (2000: 122–129).

<sup>30</sup>Xia *et al.* (2002: 254).

region-to-region, with only Shanghai achieving real localization. If measured by percentage of parts sourced locally (regionally), in 1997, local parts accounted for 90% of the parts used by SVW, compared with 20% in Guangzhou-Peugeot, 15% in FAW-VW, and 20%–30% in Beijing Jeep. Thus, these other assemblers had to be highly dependent on parts purchased from Shanghai.<sup>31</sup>

For this import substitution period, Thun (2006) categorized three types of automotive industry development model in these regions: local developmental state (Shanghai), local *laissez-faire* state (Beijing and Guangzhou), and enterprise leading local state model (Changchun and Wuhan). He believes that, as far as the automotive industry is concerned, the Shanghai municipal government is the only local developmental state, as it uses an industrial policy model similar to the East Asian one to push forward its SVW localization plan. Shanghai was the largest industrial base in China during the planned economy era. Under the central government's close attention and monitoring, it had little local autonomy, but built up a comprehensive economic bureaucracy, which was lacking in most other local states in the early postreform period. This made it possible for SAIC to carry out the localization plan.

According to Lu (1999: 1–3), the localization rate by 1987 of SVW's Santana was a mere 2.7%. The central government told SVW that they had to raise it to 40% within 3 years or close the door. The city government, which owned SAIC, demanded SAIC to raise the goal to 60%, which was attained in time.<sup>32</sup> The city leaders took this project as an opportunity to develop the local economy, and gave it the highest priority. An SVW construction support team was set up to coordinate and control the project directly. Because most parts suppliers were directly owned by SAIC, the overall organization was more rational and complete. The city leaders used vehicle taxes to accumulate a development fund, and provided investment capital and technical assistance to parts suppliers. As a result, from 1987 to 1997, its parts local content rate increased from 2.7% to 92.9%, while the number of local suppliers increased from 18 to 248 (Thun, 2006: 105).

In contrast, Guangzhou and Beijing city governments assumed a *laissez-faire* attitude, and did not actively promote automobile production. In Guangzhou, at the time when land and commercial activities provided better returns, the city leaders did not give auto development projects high priority, and failed to provide an effective coordination to promote a parts suppliers network. Like Guangzhou, Beijing also did not consider automobile development a priority project, though for a different reason, that is, the city officials thought a nation's capital should

---

<sup>31</sup>Thun (2006: 71–72). Here the "local" is defined to be the municipal district governed by the local government in concern. This distinction is important because the Chinese industrial policy is multi-layered, as argued in this article.

<sup>32</sup>Lu (1999) was in charge of SAIC-VW to push the localization, and this collected volume contains various cases of parts localization within the SAIC group.

not emphasize only local economic development. This resulted in a developmental outcome similar to Guangzhou.

The cases of Changchun and Wuhan, where FAW and SAW are located, were yet of a different kind. Both companies were large-scale SOEs with long histories, and answered directly to a central ministry. Local governments had little say in their operations.<sup>33</sup> Unlike the municipality-controlled SAIC, they were under little pressure from the local government and therefore spent little energy nurturing local parts suppliers.<sup>34</sup>

At this initial stage of development of auto assembly production in the 1980s, the industrial policy process of the central government revealed its path dependency of transition from a planned economy regime. Most officials in charge of this industry at this time came from a FAW or SAW background, and no one envisioned the eventual emergence of a mass family car market.<sup>35</sup> They were accustomed to use the planning method to control everything. With regard to how to negotiate with foreign investors, set up a joint-venture enterprise, and cooperate with local governments to foster a supply network, they had to learn step-by-step and were unable to map out adequate policies in a short time.

### 3.2 *Enhancing international competitiveness*

The *Automotive Industry Policy* issued in 1994 formalized the import substitution policy. It aimed to “promote market concentration and industrial restructuring of automotive industry,” and to solve “the problems of too many production sites, indiscreet project approval, redundant investment, and slow localization.” The localization policy stipulates the speed of localization as a condition of approval for second car models and preferential tariff rates for imported parts. The central authorities still promoted joint venture and continued to provide protection by restricting entry,<sup>36</sup> and encouraged “absorbing foreign technology to establish technological capability.”<sup>37</sup>

<sup>33</sup>For example, in 1994, the domestic content ratio of FAW’s Audi and Jetta was 62% and 24%, respectively, and SAW-Fukang’s was 15%, all much lower than SAIC-Santana’s 86% and Tianjin-Xiali’s 84%; even Peugeot had 62% (Long, 1997). Moreover, most of “domestic” parts were sourced from Shanghai area.

<sup>34</sup>The discussion in this section derives much from Thun (2006).

<sup>35</sup>See Zhao (2000: 122). At that time, the demand for cars came mainly from the official sector.

<sup>36</sup>Around 2004, when a new automobile industry policy in response to WTO accession was being discussed, there were heated debates. Some scholars, including Lu Feng, criticized the old policy rather sharply, and said it “tried to emulate the Japanese–Korean model, but ended up as a Brazilian model.” But many thought “the biggest success of 1994 policy was progress made in localization of parts,” without which there can be no indigenous national brands later. Regardless of whether China had the conditions to implement the Japanese–Korean model at that time, the notion that localization laid a foundation for subsequent indigenous development should be a correct statement (Beijing News, May 13, 2004).

<sup>37</sup>Lu (2006: 141) considers this to mean sole reliance upon introduction of foreign technology and exclusion of indigenous development.



By the middle of the 1990s, the auto industry in China had preliminarily reached the goal of import substitution, but many in the government were not satisfied with the outcome. Instead they thought the industry must enhance its international competitiveness to face the challenge of WTO accession. At that time, negotiation for China's entry into the WTO continued in earnest, and the likely impact on Chinese industry became a very important consideration. In addition, the achievements of South Korea's automotive industry also became an important stimulus.

In a report submitted by the Development Research Center of the State Council, *World Trade Organization and China's Auto Industry*, the first sentence claims that South Korean autos "successfully entered US market in large quantity on its 10th anniversary of development," while Chinese autos "remained far away from leaving the country door" >10 years after its start-up. The former, of course, was an exaggeration of Korea's speed of development, only to stress the latter point.<sup>38</sup> This State Council's report summarized Chinese autos' weak competitive position as "outdated products, high prices, and lack of independent R&D ability," and attributed this to too much protection by the import substitution policy, and insufficient private demand. Therefore the solutions should be to gradually introduce competitive mechanisms, encourage family ownership of cars, reform the investment and financing systems, and establish a national R&D center. The report also noted that SVW's success in localization had led its Santana model to grab 48% market share in cars in 1996. Since Santana's performance was clearly below international standards, the market mechanism was urgently in need of change.<sup>39</sup> It should also be noted that mid-sized cars took up 65% of the car products offered in the market in 1995, because the demand came mainly from official usage, not from price-sensitive private individuals (Table 3). Thus, due to lack of foresight, there was no plan to build a national (small) car to cater to the vast domestic market at a relative low income level.

At this stage, none of the existing Chinese automakers or local governments had the ability to lead the changes.<sup>40</sup> It was still up to the central government to drive the next round of industrial upgrading. By then the policy of entering the

---

<sup>38</sup>Quoted from Long (1997). Although South Korea's Hyundai indeed began to sell in the American market in 1985, it already had nearly 10 years of learning and development before it started to develop the Pony independently in 1975. Thus the statement was certainly not true.

<sup>39</sup>For example, the technological features and emission level of Santana were behind the global standard, lacking features such as, fuel injection, ABS, air bags and central locks, etc. (Long, 1997).

<sup>40</sup>The reform of SAIC then was discussed in Thun (2004). SAIC leaders felt the pressure of WTO membership, but the existing organization structure has organizational inertia. Only when the central government changed its policy environment was SAIC forced to restructure and upgrade, to change its original parts supply system that was not organized by efficiency standards. When GM joined Shanghai-GM, it used its global standard as a benchmark to choose China domestic suppliers, thus establishing a new parts sourcing system according to efficiency standards. This in turn forced Shanghai-VW to begin to demand its suppliers catch up with international standard too.

**Table 3** Percentage of privately owned vehicles among China's total nonofficial motor vehicles (%), 1985–2005

Year	Total	Cars and commercial vehicles	Trucks	Other vehicles
1985	8.87	2.43	11.86	
1989	14.30	13.85	15.16	
1990	14.80	14.84	15.60	
1991	15.85	16.39	16.46	
1992	17.09	18.47	17.25	
1993	19.05	20.93	18.76	
1994	21.81	22.48	22.00	
1995	24.03	27.32	22.52	
1996	26.33	29.31	24.83	
1997	29.40	32.95	27.14	
1998	32.11	35.22	30.58	
1999	36.74	41.08	33.78	
2000	38.87	42.76	36.17	
2001	42.77	47.27	39.07	
2002	47.19	51.88	42.02	10.21
2003	51.17	57.20	43.04	11.86
2004	55.00	61.62	45.11	14.13
2005	58.49	64.90	47.31	16.79

Source: *China Statistical Yearbook, 2006*.

Note: Commercial vehicles refer to business vehicles carrying passengers.

WTO and using external constraints to improve competitiveness had gained the upper hand, hence getting ready for WTO accession became an urgent policy mission. In the automotive industry, the central government led the effort to push through the policy recommendations proposed by the above-mentioned State Council report, that is to encourage family ownership of autos, and gradually reduce import tariffs, etc.

Meanwhile, the more important policy action was to allow in more foreign investors. The government still prohibited local entries, showing that it did not consider indigenous development as a way to upgrade the industry. The central government led the negotiation with the major global automakers and stipulated that they bring in the latest technology through joint venture.<sup>41</sup> In this wave of

<sup>41</sup>Thun (2006: 67–68) considers the negotiation tactic used by the central government this time brilliant. It negotiated at the same time with several foreign firms that were eager to enter the China

negotiations, the first and most important case was the joint venture agreement between SAIC and GM signed in 1997, with GM agreeing to inject a large sum of capital, introduce frontier technology, and establish the Pan-Asia Technical Automotive Center. The deal was followed by Guangzhou-Honda (1998), Tianjin-Faw-Toyota (2000), Changan-Ford (2001), Beijing-Hyundai (2002), Brilliance-BMW (2002) and Dongfeng-Nissan (2002), and the Chinese auto market became a global battlefield. Meanwhile, with the growth of consumption power and policy support, the percentage of private demand in overall auto demand increased quickly and reached near 60% by 2005 (Table 3).

In summary, starting from the late 1990s, the central government became dissatisfied with the outcome of import substitution, and made plans to use WTO entry to make changes to improve international competitiveness. Besides trade policy, the most powerful policy tool held by the central government was the authority to approve entry, especially foreign investment. Lured by the huge and rapidly growing Chinese market, various international automakers were eagerly waiting for entry. The central government was obviously more experienced now and, being the single point of contact, able to drive hard bargains this time. This wave of foreign investment indeed infused the latest production and management techniques into China's automotive industry.

### *3.3 Joint venture versus indigenous development*

After this wave of upgrading, the joint venture automakers indeed gained technology upgrade, and competition in China's automobile market intensified. With heightened competition, the foreign partners who control the technology also began to intervene more in managerial decisions in the joint venture enterprises.

After China became a member of the WTO, although it still limited foreign holding in an auto assembly company of up to 50%, it did allow 100% foreign ownership in the auto parts sector. In recent years, almost all the well-known global auto parts manufacturers have made investment in China, greatly improving the technology level of the auto parts industry there.<sup>42</sup> In China's auto parts supply, the percentage of parts produced by foreign-invested firms increased from 17.9% in

---

market, skillfully pitting them against each other, and hence it was able to obtain better terms, among which introducing the latest technology and management skills was an important requirement.

<sup>42</sup>Sutton (2004) studied the auto parts industry of China and India and finds that, if measured by defect rate per million parts (ppm), then the production quality of China's automobile assembly plants and its tier-one suppliers were close to world standards, but the quality of its tier-two and -three suppliers were uneven. He thinks the import substitution period prior to China's entry to WTO has prepared China well for WTO regime.

1999 to 31.5% in 2005.<sup>43</sup> Among the top 100 auto parts firms in China in 2005, 54 of them were foreign-invested enterprises.<sup>44</sup> These developments, along with the emergence of some indigenous automakers, brought the next policy issue to the table, that is, the question of joint venture versus indigenous development.

As in the past, the central government still was unable to control entry of domestic firms. Since it began to promote the auto industry in the mid 1980s, the central government had repeatedly issued circulars to restrict entry and capacity expansion. But when local governments were each pursuing their own development, such a policy was difficult to enforce. According to official statistics, the number of enterprises engaged in automobile assembly remained at about 110–120 for >20 years.<sup>45</sup> But actually in most regions, countless firms had tried to enter one after the other, a fact not captured by official statistics, but rather suggested by the repeated warnings issued by the State Councils year after year (as discussed in Section 3.1). Even in official statistics, only a handful of regions with the least favorable developmental conditions do not have any automobile factories.

### 3.3.1 Emergence of indigenous firms

In regions with more favorable conditions, local governments cooperated with local firms or even took initiatives to set up local SOEs to assemble automobiles. Currently the two most noticeable indigenous firms are Chery Automobile Company of Wuhu, Anhui Province, and Geely Automobile Company of Taizhou, Zhejiang Province.<sup>46</sup> They were, respectively, ranked the fourth and the seventh largest auto group in China in 2007, that is two successful newcomers. In Wuhu, Anhui, the municipal head (CCP party secretary) was the initiator and chairman of Chery, while in Zhejiang, the privately owned Geely was also established with some support of the local government. Both started out without a state production license, and were assisted by their local governments in petitioning the central government for a license later. By then the central government could no longer suppress them in a high-handed fashion. Instead, a central ministry came forward to coordinate a

---

<sup>43</sup>The figure here is a quantity index. If measured by value, then the percentage should exceed 50% (FOURIN China Auto Weekly, December 4, 2006). According to Chen and Zhang (2004), at the end of 2002, China's automobile industry had a total of 631 foreign invested enterprises, 75 of them in assembly and refitting business and 556 in parts and components business.

<sup>44</sup>From Autoweekly, June 23, 2006, available at: <http://www.autoweekly.com.cn/show.asp?ArticleID=25097&Article>.

<sup>45</sup>China Automotive Industry Yearbook, various years.

<sup>46</sup>In 2002, Zhang Xiao-Yu, president of China Association of Automobile Manufacturers, suggested that China's automobile industry has "3+6" key players based on size: the three were the original three majors, and by then Chery and Geely were already included in the six backbone enterprises ("M&A Reshape Automobile Industry," Xinhua News Agency, November 12, 2002, quoted from People.com).

legitimizing solution. But, perhaps more importantly, in coordination with the WTO accession negotiation, the policy thinking was gradually leaning toward relaxing entry restrictions. The fact that the original auto policy team, the Machinery Industry Bureau under SETC, was restructured and disbanded in 2001 may have an impact as well. Thus, in 2001, the state granted car assembly permit to four indigenous firms: Chery, Geely, Hafei, and Brilliance.

Zhejiang is the province with the highest concentration of private enterprises in China. Back in the early 1990s, it already had an industrial cluster of privately owned motorcycle and parts factories. Geely was one of the motorcycle firms.<sup>47</sup> Seeking grander plans, Geely applied for a state permit to build automobiles in 1994, but, of course, was denied. It nevertheless went ahead under the pretense of making motorcycles. With the assistance of the local government, Geely acquired land to set up an automobile production base, and joined forces with several dozen local private enterprises to form a parts supply network surrounding Geely's car assembly plant.<sup>48</sup> In 1997, it acquired a license to produce microcars by buying out the production rights of a nearly bankrupt small van factory in Sichuan. By 1998, it produced its first car, the Geely Haoqing, which was an imitation of the Xiali—then a popular model in China with market share second only to the Santana<sup>49</sup>—and used Xiali-compatible parts and components, with a list price only two-thirds of the Xiali's. This helped to break up the oligopoly of China's auto market. Due to its success, Geely gradually was able to attract many auto industry elites from the major SOEs to join the company.<sup>50</sup> It also had South Korea's Daewoo International to help upgrade its production.<sup>51</sup> It also triggered a wave of investment so feverish that for a while, a popular greeting among Zhejiang's private businessmen was "have you done automobile production yet?"<sup>52</sup> In 2006, Geely's output reached 200,000 cars (Table 4).<sup>53</sup>

<sup>47</sup>See Lu (2006), Mei and Feng (2005), Xin (2006) and Li (2006), etc.

<sup>48</sup>Interviews conducted at Geely, April 3, 2007.

<sup>49</sup>As mentioned earlier, Tianjin Auto Works bought licensed technology from Japanese Daihatsu in 1986 to produce the Xiali (Charade) model of cars, and successfully dominated China's subcompact market during the import substitution period, until the challenge from Geely appeared.

<sup>50</sup>Geely recruited experts from FAW, SVW, and Nanjing Auto, among others. One time a general manager from SVW became a vice president of Geely. It was said that they were attracted by the prospect of making cars of Chinese own design. (Lu, 2006: 113; Zheng, 2007: 220–222).

<sup>51</sup>Daewoo International was spun off from the Daewoo Group after the group went bankrupt in 1999. Many of the technical experts of Daewoo Auto joined Daewoo International and hence played a role in the development of China's indigenous car companies (Zheng, 2007: 223–227).

<sup>52</sup>Fu (2004). Of course, most of them either didn't enter or quickly withdrew, or entered the non-Sedan fringe market such as SUVs.

<sup>53</sup>Geely suffered sluggish sales in 2007 while trying to upgrade its product lines, and had to revamp its strategy. It shows no inclination to modify its ambitions though (FOURIN China Auto Weekly, February 18, 2008).

**Table 4** Car production of Chery, Geely, and other automakers

	Chery	Geely	BYD <sup>a</sup>	FAW-VW	SAIC-VW	SAIC-GM
2001	30,070	21,171	6668	133,893	230,281	58,543
2002	50,398	43,475	17,018	191,695	278,890	111,623
2003	91,223	77,852	20,253	302,200	405,252	206,964
2004	79,565	91,744	17,900	287,117	347,531	251,941
2005	185,588	148,182	11,171	246,184	235,303	331,586
2006	307,232	206,958	60,116	346,787	350,630	374,692
2007	387,880	195,589	100,376	489,821	466,139	447,823
Average annual growth rate, 2001–2007 (%)	60.15	49.66	105.02	27.28	16.97	43.66

Unit: number of vehicles.

Source: Data for Chery, Geely, and BYD are from *FOURIN China Auto Weekly* (March 3, 2008 and February 18, 2008); data for FAW-VW, SAIC-VW, and SAIC-GM are from China Automotive Industry Yearbook, various years.

<sup>a</sup>BYD's new model, F3, came out in late 2005. The production figure before 2005 was that of Flyer, developed by the previous owner Xi'an Qingchuan Auto.

The state-owned Chery was a project established by the CCP Secretary of Wuhu City, Anhui Province.<sup>54</sup> It also had full support of the provincial government. The project planning also took place in the early 1990s, with a preparatory office set up in 1995 under the name of another project. A former Jetta shop floor director of FAW-VW, also originally from Anhui, was invited to take the position of general manager. After buying an engine production line from a Ford UK plant, the construction started in 1997. The first car model was an imitation of Seat, a small Spanish car that shared the same chassis as the Jetta. The molds were designed and built by a Taiwan company.<sup>55</sup> Chery rolled out the first car in 1999. Because these cars were built without a state license, they could only be driven within Anhui Province. Later the central government tried to stop its production. However, a solution was reached after some negotiation, in which Chery conceded 20% of

<sup>54</sup>Tao (2004–2005), Jin (2004), and Lu (2006).

<sup>55</sup>The Asset Industrial Company. See Chen (March 28, 2007). In another article, "Taiwan Inside" (May 24, 2006), Chen described how Taiwanese automakers, because their own indigenous development was discontinued, contributed their accumulated experiences to help Chinese automakers to develop indigenously. Besides Chery, Asset Industrial Co. also helped Geely and other Chinese indigenous automakers to develop molds and car models.

shares to the SAIC Group and became a member of the conglomerate, and obtained their production rights (as well as the SAIC brand).

At that time, Chery was also pushing low-price imitation cars in the low-end market, causing a price revolution and market demand expansion. It enjoyed increasing sales and expanded its facilities at a great speed with full support from the local government. It was able to ramp up quickly because it managed to exploit existing resources to its advantage. It recruited personnel from the major SOEs, sourced parts from the existing parts suppliers at low cost, and utilized help from other low-cost Asian, especially Taiwan, suppliers. In 2006 its output reached 300 000 cars (Table 4), and it began to export to other latecomer countries. Because a group of SAW technical staff joined Chery after SAW switched to the joint venture mode and disbanded its R&D division, it was able to turn out indigenously designed new car models, instead of total imitations, within a few years.<sup>56</sup> Chery's achievements have gradually gained recognition. Not only is it listed officially as a state project, but also it has retrieved its shares from SAIC in 2004 to become an independent enterprise.<sup>57</sup> It is now regarded as a model of indigenous development, and hence gets more and more support from the central government. For instance, in 2005, the Ministry of Science and Technology decided to base the "National Automobile Engineering Technology Research Center of Energy Saving and Environmental Protection" at Chery's Automobile Engineering Research Institute.<sup>58</sup>

Moreover, after these indigenous firms gained recognition in the market place, the central state came to be less stringent in granting entry permits to local firms. For example, BYD, which is China's largest cell phone battery producer, was allowed to buy out a small auto SOE in Shaanxi in 2003 and entered car production. It was able to quickly develop a car, F3, which was an imitation of Toyota's Corolla. In 2007, BYD managed to sell almost 100,000 units of that car model and successfully established itself in the Chinese car market.<sup>59</sup> BYD became better known after famous American investor Warren Buffet bought 10% share of the firm in 2008. Furthermore, some successful indigenous firms in the trucks and utility vehicle sectors, such as the state-owned Anhui Jianhuai Auto, obtained car production

---

<sup>56</sup>Lu (2006).

<sup>57</sup>It is still a state-owned firm managed by the Anhui provincial government.

<sup>58</sup>Prior to that, Chery already obtained approval to set up a post-doctoral scientific research workstation, recognized as a key technology enterprise, and responsible for several national high-tech R&D projects ("the 863 Project"), Xinhuanet, [http://news.xinhuanet.com/auto/2005-06/20/content\\_3109229.htm](http://news.xinhuanet.com/auto/2005-06/20/content_3109229.htm). Chery's Automobile Engineering Research Institute has now nearly 3000 researchers, and R&D expenditure as a percentage of sales revenue is as high as 10% (Tao, 2004).

<sup>59</sup>BYD did not disclose its R&D ratio, saying that it is still devoting resources into initial research while its sales are just picking up. It has set up an R&D center in Shanghai with over 3000 staff members. From an interview of BYD's sales president by Sohu auto, April 20, 2008, <http://auto.sohu.com/20080420/n256404483.shtml>.

licenses in recent years. The largest privately owned pickup producer, Great Wall Auto, also brought out its first passenger car model in 2008.

These newly emerged local firms ramped up their operation at a great speed, as shown by their extraordinary growth rate between 2001 and 2007 (Table 4). It is because they had to compete vigorously with each other and against the incumbents, and to race against time to get a head start and to prove their worth to the authorities in time. They were able to expand quickly by utilizing the industry's accumulated capabilities, that is, experienced personnel and upgraded parts suppliers.<sup>60</sup> For example, that team of former SAW technical staff was able to 'design' a new basic car, QQ, imitating GM's Spark, in 8 month time, so as to allow Chery to beat GM's official launch of Spark in China by half a year. With the price one-third lower than Spark, Chery's QQ outperformed the original since its launch in 2003.<sup>61</sup> Actually, this design team was able to turn out three models for Chery in 2003. Chery also quickly expanded into other product segments in the last few years.<sup>62</sup>

### 3.3.2 Policy debate and revision

These courses of development show that China's auto oligopoly market of the early 1990s apparently was not sustainable. On the one hand, the central government was dissatisfied with the existing development level, and eager to push WTO accession so as to reduce trade barriers, lower the degree of protection, and allow in international competitive pressure to further upgrade the industry. On the other hand, there were all kinds of domestic forces drooling over the growth prospects of this industry, eager to enter to share the profits. In the late 1990s, the central government introduced a new wave of foreign investment. This achieved the objective of enhancing international competitiveness, and enabled the joint venture factories to respond to the changing environment brought by WTO accession. Nonetheless, the success of these newly emerged indigenous firms outside of the state plan directly challenged the central state's past industrial policy of the auto sector. It called into question the validity of the entire policy of "trade-market-access-for-technology," especially the policy of promoting joint ventures instead of indigenous firms and restricting domestic entries.

In the last 10 years, these new indigenous firms successfully introduced low-price imitation cars, targeting the below RMB\$ 30,000 segment, and by the end of 2006 grabbed 26.8% of the entire car market in China (Table 5). Some of them have begun to sell indigenously developed models too. Their success has ignited heated debates about the relevant policy, and led to overall review of the joint venture or the

---

<sup>60</sup>VW claimed that they found parts stamped with VW logo inside Chery's first car, Fulwin. Obviously, Chery sourced parts from FAW-VW suppliers (Lu 2006).

<sup>61</sup>GM considered Chery's QQ copying GM-Daewoo's Matiz, and sued Chery for infringement in 2004. The case was settled out of court in 2005. <http://auto.sohu.com/20051123/n240779176.shtml>.

<sup>62</sup>*Fourin China Auto Weekly*, March 3, 2008.



**Table 5** No. of brands and share of indigenous cars, 2004–2006

Item	2004	2005	2006
No. of car brands in China			
Total	110	115	156
Indigenous brands	27	34	66
Share of indigenous brands (%)	24.55	29.57	42.31
Production of passenger cars (10,000 car)			
Total	248.3	311.8	430.2
Indigenous brands	49.6	74.1	115.3
Share of indigenous brands (%)	19.98	23.77	26.80

Source: *China Automotive Industry Yearbook, 2007*.

“trade-market-access-for-technology” policy. The study which made the most impact was a report done by Feng Lu and Kai-dong Feng of Peking University and commissioned by the Ministry of Science and Technology. Lu and Feng (2004) severely criticized this policy, and argued that the “failure” of the Chinese auto industry was because the government policy did not aim to promote indigenous technology development, but instead focused mistakenly on market concentration ratio and economies of scale, which actually only protected backward vested interests.<sup>63</sup> The Ministry even conducted a “Geely Phenomenon Seminar” in 2004 to praise the virtues of indigenous development.<sup>64</sup> When indigenous auto firms with national brands not merely emerged but demonstrated initial success, the call to develop indigenous technology was naturally able to gain an upper hand in debates. The original rationale for the joint venture policy could only rely on a kind of “necessary evil” argument due to technology backwardness. The argument that

<sup>63</sup>The full report was finally published in Lu (2006), but had been widely circulated since 2004 and an abridged version was published in the local press, that is Lu and Feng (2004). Mei and Feng (2005) is a study of Geely’s indigenous development commissioned by the Ministry of Science and Technology. Both reports stressed that the result of joint venture is that the Chinese auto managers “lost courage and spirit of independent innovation,” that “China’s sedan industry cannot be sustained in the long term without national brands,” and must “rebuild national culture and dignity.” In addition, several other specialists submitted “An Appeal for Building a Strong Automotive Industrial Country,” collectively petitioned for building an indigenous national industry (Beijing Morning Post, June 22, 2006).

<sup>64</sup>Geely Phenomenon—A Seminar on Chinese National Automobile Industry Development Path, October 26, 2005, location: Ministry of Science and Technology. The excerpt of this conference is posted on at: <http://auto.sina.com.cn/news/2005-11-10/1459149758.shtml>. This event is quite unusual in China, because Geely is a privately-owned enterprise.

“China’s auto industry cannot survive in the long term without national brands” is difficult to refute. At the same time, the practice of offering preferential treatment to joint-venture enterprises was also criticized.<sup>65</sup> Note that the criticism came from a central ministry other than the usual one in charge of the auto industrial policy.

So, after the arrival of the new millennium, policy was once again changing course. The old policy of “trade-market-access-for-technology” had to be revised. The new policy began to emphasize indigenous technology development and nurturing of national brands. In the *Automotive Industry Development Policy* issued by NDRC in 2004, the third item listed under policy goals was to “encourage automobile production enterprises to enhance their research and development ability and ability of technical innovation, to actively develop products with indigenous intellectual property rights, and implement branding strategy.”<sup>66</sup> The new entrants like Chery and Geely, once transgressors of the central industrial policy, now receive official recognition and policy support.

Besides encouraging indigenous development and branding strategy, the 2004 policy differs from the 1994 policy in that, in coordination with WTO accession, the new policy abolished the local content and export requirements, and simplified administrative procedures. It also encouraged energy saving and environmental protection, and improves the market environment, but still provided guidance for industrial structure.

The central government still held tight to its most important policy tool, the power to grant entry, so approval was still required to establish a new enterprise. But it had relaxed the control over new projects planned by the existing enterprises, and changed to using a size threshold to restrict entry. Meanwhile, the state continued to focus on industrial structure. The 2004 automobile industrial policy still called for intervention in industrial structure, guiding merger and restructuring, and promoting expansion and strengthening of conglomerates. Alarmed by the looming overcapacity and decreasing concentration ratio of the top three automakers, the NDRC issued a Circular of Opinions about Automotive Industry Structural Adjustment on December 20, 2006.<sup>67</sup> Apparently the authority still treated industrial structure as a “performance indicator,” and tried to “manage” the number of firms according to the supposed scale economy factor. As discussed earlier in Section 3.1, the state tended to protect the existing major SOEs. In a way, the objective of

---

<sup>65</sup>Jin (2004). The income tax rate for foreign and joint venture enterprises was 17.5%, and that for domestic enterprises 33%. In early 2007, a decision was finally made to gradually eliminate this discrepancy on tax rate.

<sup>66</sup>China Automotive Industry Yearbook, 2005.

<sup>67</sup>China Law and Regulation Database, China Law Information Network, <http://www.lawon.cn/law/viewDetail.jsp?id=288648>.

achieving national “greatness” is linked with the state’s desire to avoid bankruptcy of SOEs and its related social problems.

The policy objectives for the automobile industry in the 11th five-year plan (2006–2010) included the usual structural targets,<sup>68</sup> and the authority also continued to push consolidation. In 2007, SAIC acquired Nanjing Auto, and NDRC announced at the signing ceremony that this be the model of “groupization.”<sup>69</sup> It is also reported that the government is pushing Dongfeng to acquire Hafei and other auto related firms from the China Aviation Industry Corporation II, which will focus on airplane production and catching up with Boeing and Airbus.<sup>70</sup>

### 3.3.3 Prospects for further changes

The current automobile industry policy has been revised to “walking with two legs,”<sup>71</sup> that is, while it continues on the path of joint venture cooperation, it also starts to encourage indigenous development. This, however, is clearly not a long-term equilibrium situation. With intensified competition, the foreign joint venture partners have begun to take charge of matters relating to technology, brand, management and market, and marginalized their Chinese partners. They have begun to set up wholly owned subsidiaries including R&D institutions, auto parts firms, auto financing services, and auto investment companies.<sup>72</sup> At the meantime, some Chinese partners of the joint venture have begun to introduce their own indigenously developed car models. The authorities hence can no longer treat joint ventures as a viable policy vehicle. The next round of policy debate and adjustment should not be too far away.

Using the R&D ratio (R&D expenditures as a percentage of sales) to measure the enterprise’s effort on technology development, we can see clearly the difference between joint ventures and indigenous firms. The *China Automotive Industry Yearbook* only provided R&D ratios of the top three conglomerates (Table 6): in 2005, the R&D ratio of the FAW Group was 1.68%, the Dongfeng (originally SAW) Group 0.70%, and the more powerful SAIC Group 2.81%. At the same time, the indigenous Chery has an R&D ratio of around 10%, and Geely 2%.<sup>73</sup> The transnational auto

<sup>68</sup>“The 11th five-year development plan for the auto industry,” Macro China Data Base, July 27, 2007, [http://edu.macrochina.com.cn/Include/ShowNews.asp?text\\_id=s0140798000011000029](http://edu.macrochina.com.cn/Include/ShowNews.asp?text_id=s0140798000011000029).

<sup>69</sup>Beijing Morning Post (December 27, 2007).

<sup>70</sup>Fourin China Auto Weekly, June 23, 2008.

<sup>71</sup>Chen and Zhang (2004: 30).

<sup>72</sup>Chen and Zhang (2004). In an internal publication, officials of the NDRC Industrial Bureau pointed out that the strategic shift of the transnational automobile companies in China is to change their “China strategy” to become a part of global strategy, and change the “cooperative” strategy of joint venture relationship to a “controlling” strategy. Quoted from *Beijing News*, May 13, 2004.

<sup>73</sup>Ma (July 13, 2006).

**Table 6** R&D of China's top three automobile conglomerates, 2005

Company name	Research staff (persons)	R&D expenditure (RMB\$ 10,000)	Sales revenue (RMB\$ 10,000)	R&D intensity (%)
First auto works	2147	125,728	11,889,366	1.06
Tianjin FAW Xiali	225	1,421	671,488	0.21
Tianjin FAW Toyota	–	–	2,064,704	0.00
Dongfeng Motor Group	3485	82,475	11,238,863	0.73
Dongfeng Motor Group (HQ)	933	339	295,483	0.11
Dongfeng Motor Group Co.	1004	64,106	9,542,736	0.67
Dongfeng Chaoyang Diesel Engine Co. Ltd	273	6932	160,615	4.32
Dongfeng Yueda Kia Automobile Co.	63	2293	883,268	0.26
Shanghai Auto Industry Corp. Group	4868	379,221	12,276,378	3.09
Shanghai Volkswagen	700	87,944	2,511,060	3.50
Shanghai General Motors	1018	175,637	4,586,146	3.83
Shanghai GM Wuling	398	32,890	1,000,293	3.29

Source: *China Automotive Industry Yearbook, 2006*.

companies themselves all have high R&D ratios: in 2006, the R&D ratio of Toyota was 4.05%, Honda 5.15%, and GM 3.18%.<sup>74</sup>

In one of its recent directives on the auto industry's structural problem, issued on December 20, 2006, NDRC stipulated that relevant government authorities should include the SOE's ability to do R&D and to promote national brands as important evaluation criteria.<sup>75</sup> Though the 11th five-year plan has been in effect since 2006, which, for the automobile industry, calls for raising the market share of indigenous brands up to 50% by 2010, the specific implementation plan has not been announced.<sup>76</sup> The government faces many difficult issues, including: how to determine the policy mix regarding energy conservation, urban development, and auto industry promotion, and how to push the three majors into developing indigenous brands. The growth of the indigenous brands has also slowed somewhat in 2007, indicating no smooth sailing for the local brands.

Currently there are two different opinions concerning how policy should deal with the coming showdown between domestic and foreign enterprises. One is of the

<sup>74</sup>Quoted from various corporate websites.

<sup>75</sup>[http://www.sdpc.gov.cn/zcfb/zcfbtz/tz2006/t20061226\\_102871.htm](http://www.sdpc.gov.cn/zcfb/zcfbtz/tz2006/t20061226_102871.htm).

<sup>76</sup>See, for example, "The late birth of the 11th five-year development plan for the auto industry," May 30, 2007, *The 21st Century Economic Herald*.

globalist view that the national boundary matters less now. According to this view, shared by the Development Center of the State Council, the traditional protectionist method of nurturing national industry is no longer feasible under the WTO regime, and China must join the global division of labor to enhance its competitiveness. An industry can be called a “national industry” as long as it can achieve national economic growth and employment targets, and not necessarily based on the nationality of the property owner.<sup>77</sup> Another view, exemplified by the Ministry of Science and Technology and Lu Feng’s report discussed earlier, is that technical capability has to be accumulated at the enterprise level, and has to be by nationally owned firms. An underdeveloped country must establish indigenous enterprises in order to control the direction of technology and economic development. Thus, indigenous development and national brands are indispensable.

This debate also echoes two schools of thought about globalization, with the former close to the globalist thesis, and the latter close to the view that national borders still exist after globalization, and only the rules of competition have changed. This debate also involves the future of the state-owned joint venture enterprises, especially the three majors, a complex problem without easy solutions. In its policy directive issued in December 2006, NDRC stated that it would continue walking on two legs, that is, “linking market opening and indigenous development, and promoting development of both joint ventures and Chinese enterprises.”<sup>78</sup> However, it is foreseeable that rapid changes will occur in China’s auto market, and further policy debate and revision is to be expected.

#### 4. Industrial policy, Chinese style

From the development path of China’s automotive industry and the evolution of the related industrial policy, we shall now address the questions raised at the beginning of this article. How to characterize the pattern of industrial policy in China in the postreform period? Has the auto industrial policies been effective since reform? Or had the Chinese auto industry grown by liberalizing markets and opening up to foreign investment as presumed by many economists?

The development of China’s auto industry has sometimes been criticized as the worst example of the policy of “trading market access for technology.” Before the WTO accession, the Chinese auto industry was considered one of the most vulnerable sectors.<sup>79</sup> However, the fact that indigenous firms have emerged recently and quickly captured a quarter of the market in just a few years time, and that central

---

<sup>77</sup>Special Issue Group of Development Research Center of the State Council (2002).

<sup>78</sup>NDRC website: [http://203.207.194.3:82/gate/big5/www.ndrc.gov.cn//zcfb/zcfbtz/tz2006/t20061226\\_102871.htm](http://203.207.194.3:82/gate/big5/www.ndrc.gov.cn//zcfb/zcfbtz/tz2006/t20061226_102871.htm).

<sup>79</sup>Lardy (2002: Chapter 4).

industrial policies have switched to support indigenous development, has significantly brightened up the industry's prospects. By now, few would doubt that the indigenous forces will pose serious challenges to the multinational auto firms not only in the Chinese market but also in the global market in the long term.<sup>80</sup> Therefore, due to the bright prospects, the development can be called a promising success.

What needs to be evaluated now is the role and effectiveness of the industrial policy, which will be addressed below. Some comparative materials will be presented first. The next two sub-sections will discuss, in turn, how Brazil developed its auto industry relying on wholly owned foreign subsidiaries, how South Korea did it by promoting indigenous firms, and how the implications of these strategies differed for the future of the local industry. Then using this comparative perspective, the Chinese experiences will be evaluated in the following sub-sections.

#### 4.1 *The Brazilian case*<sup>81</sup>

It will be useful to do comparisons with the experiences of other latecomer countries. First, let's take Brazil as an example of the Latin American model and compare its development experiences of the automotive industry with that of China, because Brazil, like China, had seriously pushed import substitution in the auto sector. When the Brazilian government promoted import substitution in the automotive industry in the 1950s, it prohibited car imports to provide trade protection, and demanded automakers to increase the local content ratio to 95% and higher. However, as Shapiro (1994) pointed out, under strong US pressure, the Brazilian government, like its Latin American neighbors, had to keep the door open to foreign investment.

Due to the potential size of the local market, the transnational companies were willing to invest, though in wholly owned subsidiaries. They upgraded the simple assembly operations and helped to build a supportive parts industry. Within a few years, they increased the local content ratio to >90%, and the local vehicle production reached almost one million units by the middle of the 1970s. But all the local firms which once participated in the market were eventually weeded out, and the market came to be dominated by three transnational companies—VW, Ford, and GM—with a combined market share of over 90%. In the 1980s, because of a balance of payments problem, the Brazilian government began to promote exports. After this round of export promotion, Brazil managed to export nearly 800,000 vehicles in

---

<sup>80</sup>Chinese automotive exports rose quickly from 27,000 vehicles in 2000 to 615,000 units in 2007. The major items include heavy trucks and small cars of the indigenous firms. See Table 2, and the 2007 figure is taken from <http://edu.macrochina.com.cn/>.

<sup>81</sup>Shapiro (1994).

2007.<sup>82</sup> However, this increase in competitiveness came at the expense of the local parts producers, who were replaced by foreign firms. The Brazilian auto industry became completely dominated by foreign companies.

Such a dilemma left by import substitution industrialization is very similar to the situation of China's automotive industry in the early 1990s, except that in China the market was dominated by joint venture enterprises, not wholly-owned foreign enterprises as in Brazil. This difference influenced the subsequent upgrading process. Brazil is trapped in this development path because its foreign-owned auto firms rely on their parent companies to make decisions, and hence may not respond to local upgrading policies.

In contrast, the Chinese government has insisted foreign holdings in a joint venture not to exceed 50%, hence it has more policy space. Though China was under heavy pressure to relax this restriction during the WTO accession talks, the government did not budge on this point for the case of the auto assembly industry. Moreover, China has also been unique in that it sets a term limit on the joint venture contract,<sup>83</sup> which manifests that it seems to take the joint venture as an intermediate step. Recently, the rapid growth of the Chinese market also provides a huge bargaining chip in negotiations with foreign investors. More importantly, the Chinese central state has consistently demonstrated an impetus to promote upgrading, by continuously revising its policies. Thus, compared with Brazil, the Chinese state has put more restrictions on foreign investment. This could be due to the fact that Brazil and Latin America have been under stronger US influence and had less policy space; or that the Chinese have a stronger consensus to catch up with the West. Either way, the Chinese model displays a stronger developmental orientation than that of the Brazilian.

#### 4.2 *The South Korean case*

The South Korean automotive industry went through an import-substitution stage, since the government announced its first auto promotion program in 1962. At the same time, the government also pushed hard for localization of auto parts.<sup>84</sup> However, the South Korean government quickly shifted toward a policy of promoting indigenous development in 1973, that is, to have nationally owned firms to

<sup>82</sup>ANFAVEA, Brazilian Association of National Automotive Manufacturers' website.

<sup>83</sup>In 1983, the first Chinese law on joint ventures stipulated that the two sides can negotiate a term length between ten to thirty years (available at: <http://www.lawon.cn/law/detail.do?id=2211913>.) The statute, though modified, remains valid today. The author thanks Professor Alice Amsden for pointing out this fact.

<sup>84</sup>“The preferential allocation of foreign exchange was tied to the degree of localization achieved, consequently pushing the domestic content ratio from 21% in 1966 to more than 60% in 1972, and to 92% in 1981” (Kim, 1997: 110). The Chinese government later had a similar program to promote localization of auto parts in the late 1980s.

produce locally designed cars. The policy tools it used were similar to that of Brazil, including import restriction, import privilege based on export performance, and long-term supply of low interest loans, but its achievements went far beyond those of Brazil.

Several features stood out in this Korean success case. One is that Korea pursued a strategy, similar to that of Japan, of nurturing local firms and their independent technological capabilities. Notwithstanding the fact that only the leading Hyundai Motors could be considered to have successfully achieved this aim. Another factor is that, at that time, the government was able to regulate entries to a certain extent by forcing out various small firms and target three to four leading local automakers to be promoted, including Hyundai, Kia, and Daewoo.<sup>85</sup> Moreover, the Korean government also consistently adopted export records as a performance standard. Its domestic market is too small to adequately support South Korea's ambition to build a world-class automobile industry. The Korean automakers had to rely heavily upon exports, and hence were hit particularly hard by the East Asian financial crisis (resulting in Daewoo being acquired by GM, and Kia merged into Hyundai).

Though Hyundai Motor's global position is not yet rock solid, the current situation still shows a distinct possibility that South Korea's automobile industry will succeed. Such a prospect is not present in the other latecomer countries like Brazil. Besides, relying on such industrial policy, South Korea has become the only latecomer so far that has successfully built national brands (such as Samsung, LG Electronics, and Hyundai Motor) that ranked among the top 100 global brands.<sup>86</sup>

The development of Korean auto industry obviously was patterned after that of Japan, which started long before South Korea. Japan's automobile industry produced trucks before WWII, but caught up with the West in car production after the war. It essentially relied upon a strategy which was later copied by South Korea, that is, promotion of indigenous development.<sup>87</sup> Japan now has the most successful auto industry in the world. Cusumano (1985) contrasted Toyota's more self-reliant development strategy with that of Nissan, which relied more on wholesale introduction

---

<sup>85</sup>When the auto promotion program began in 1973, there were four targeted firms, but reduced to three in 1976. Asia Motors was among the four. It began to assemble Fiat cars in 1969, but did not do well in the government's national car program and was hence ordered to be merged into Kia in the late 1970s. During the second oil crisis, the Korean government planned to have only one carmaker, by merging Hyundai with Daewoo-GM and forcing Kia to focus on trucks, but failed in its attempt for GM refused to bow out and Hyundai wanted remain independent. Unlike Hyundai Motors, Daewoo entered a joint venture with GM in 1972, but continued to be constrained by the tie-up and bought out GM's share in 1992. Daewoo nonetheless had always trailed behind Hyundai, went bankrupt after the Asian financial crisis, and was eventually bought out by GM in 2002 (Amsden, 1989; Kim, 1997; Xia *et al.*, 2002).

<sup>86</sup>"The top 100 global brands 2006," Businessweek, August 17, 2006. <http://www.bwnt.businessweek.com/brand/2006/>.

<sup>87</sup>Johnson (1982).



of foreign technology and did less adaptation. A highly comparable comparison was made between Hyundai and Daewoo-GM by Kim (1997). In both cases, the one which adopted the more independent approach performed much better than the other one. Japan's automotive industry development started long before South Korea's, but the way its auto sector caught up with the West after WWII is similar to the South Korean case.

Both Japan and South Korea adopted a strategy of indigenous development in developing their auto industries. The leading firms resisted foreign equity participation, and relied upon technology purchase and learning. There was a high degree of consensus to support the government's industrial policy favoring indigenous firms rather than joint ventures. By comparison, in China, there were more disagreements in terms of development strategy in every turn of policy change, which will be discussed later.

### 4.3 *Some Chinese special characteristics*

This article addresses the question whether China can promote industries effectively, and proposes a hypothesis different from those discussed above.

The hypothesis proposed is as follows. With decentralization, the central state has to rely upon the local states to implement it, and hence is usually unable to formulate feasible policy and to monitor industrial progress. The locals often make experiments while competing to promote local development. However, the results of the industrial policy are always open to criticism, judged by the performance standard based on the strong catch-up consensus. Whenever the policy results are deemed short of building up national industries and champions, the policy can be challenged by various parties and public opinion. If a local experiment produces better results, the legitimacy of the new model will be hard to deny. China lacks an East Asian type of integrated central economic bureaucracy with embedded autonomy and strong capabilities to formulate and implement industrial policy, it instead has "a model of industrial policy propelled by the catch-up consensus."

The framework under which the Chinese government conducts industrial policy differs from that of the East Asian one in at least two ways. One concerns the multilayered policy process in China. Another has to do with the legacy from the economic planning era.

Due to China's vast scale, the government-business relationship has to be multi-layered. The policy responsibilities are shared among various central agencies, local governments, and SOEs. Auto companies, mostly SOEs, come under jurisdictions of different central ministries and local governments. The central state's main responsibility lies in formulating policy. It does not interact with most firms regularly, and lacks "embeddedness," that is information channels linking with the industry, which renders it often unable to formulate feasible policy and to monitor progress. The policy tools it has are limited, including mainly the right to approve investment

and allocate resources. The performance standards it adopted used to include mainly structural indicators such as scale and concentration ratio, but now also R&D ratio, branding, and capacity utilization rate.<sup>88</sup>

Each of the local governments tends to pursue its own development with varying results. To make the collective outcome of their activities beneficial to overall development, it will always require the central state's regulation and coordination *ex ante* and *ex post*. This kind of industrial policy process is necessarily winding. In the next round of policy revision process, relevant players will engage in interactions and bargaining with the central state, and this process itself is also a process of communication and discussion.

China's planned economy had left a unique legacy, greatly affecting the structure, mode of operation, and policy beliefs of its bureaucracy, which meant they must learn gradually how to operate in a market economy and constantly revise policy. The framework for conducting industrial policy can scarcely be considered stable. The Chinese central bureaucracies have undergone numerous rounds of large-scaled restructuring since reform, and one more round took place in 2008.

More importantly, SOEs still account for the major share of the auto industry in China. To keep these SOEs afloat remains to be the government's objective, for fear of aggravating social problems. From this perspective, it is easier to understand why the central government may tend to treat market structure as the major indicators, try to restrict domestic entries, and fail to adopt more suitable standards to promote better performance. Lu (2006: Chapter 5) severely criticizes this policy, arguing that the government simply wanted to protect the vested interests. However, the fact that penalizing the problemed firms will increase the state's burden most likely will influence policy making.

Japan and South Korea have used the export record as a performance standard to good effects. The reasons why China did not adopt this standard could be due to its relatively low level of development in car production, and the difficulties the central state might have in implementing it. Once China adopted the joint venture approach to promoting car production, promoting exports of cars obviously has to be coordinated with the multinational parent firm, and hence difficult to implement.

China also differs from Japan and Korea in that it always has internal disputes about the long-term development goal and the way to achieve the goal. The latter two did not have as much internal disagreements over the need to support national industry, develop indigenous technological capability, and nurture national champions. They also both used the export record as a performance standard. By comparison, in China, there are simply many more units with varying interests involved in the policy process.

---

<sup>88</sup>In its directive issued on December 20, 2006, NDRC stipulated that the auto firm will be allowed to expand, if its capacity utilization rate exceeds 80%, and its sales >100,000 vehicles. See footnote 78.

Challenges to given policies may come from several sources. Unsatisfactory industry performance will put pressure on the central agency in charge of industrial policy. Criticism may come from the central authority, other agencies, and the public opinion. Protection and growth prospects attract various local players to enter the industry, with or without state sanction. If any local produces better results, the critics united with the locals will intensify their criticism. The given policy has its proponents as well, including the promoters and the beneficiary. Whether any existing policy will be altered depends upon the bargaining among related parties and the legitimacy of the objectives involved.

In China, there is strong nationalist feelings and hence strong consensus to support efforts to catch up with the West, though less agreement in the actual ways to achieve it. Therefore, in the long run, performance lies in realizing nationalism and catching up with the West, and hence performance standard entails the establishment of national industries, nationally owned enterprises and brands, and national champions.

In sum, during the 1990s, import substitution gave rise to the market dominance of SVW's Santana, which had out-dated model but achieved high localization ratio in a protected market. This result was challenged for its lagging behind the West, and for the lure of having a share of the profits. The central government pushed for more joint ventures, but impatient local entrants challenged the upgrading plan. Once Chery and other challengers made progress in the market, the fact they progressed closer to the nationalist goal made their legitimacy hard to be denied.

#### 4.4 Effectiveness of industrial policy

How can the effectiveness of the Chinese automotive industrial policy be evaluated? Few, if any, claim the policy a success, and some even consider it to be the representative case of the failure of the "trade-market-access-for-technology" policy.<sup>89</sup> However, is the policy totally ineffective?

Naughton (2007a) thinks that China's industrial policy especially that of sector targeting was hardly effective in general. There is no comprehensive planning mechanism, and the planning process suffers from conflicts of interest, and could hence achieve little. Thun (2006) also considers the central government policy ineffective, though from a different angle. The ineffectiveness is due to local governments' path dependency, which makes them react differently to the central policy. In other words, most local governments may not implement the central government's policy. Therefore, they will not necessarily follow the exemplary model, as predicted by the authors of the "Chinese Style Federalism" thesis,<sup>90</sup> which argues that local

---

<sup>89</sup>Lu (2006).

<sup>90</sup>Montinola *et al.* (1995).

governments may imitate the behavior pattern of the better performer to make the federal system market preserving and hence growth promoting.

Differing from these authors, this article argues that, to evaluate the effectiveness of the industrial policy, it is necessary to take the policy process as a whole. The central government's industrial policy seemed ineffective at almost every turn. The government's initial policy of relying upon the international joint ventures was especially problematic in terms of increasing the technological capabilities of the joint venture Chinese partners. However, each time, the policy was subsequently revised and improved, and the industry had moved closer toward the goal of building up the auto sector as a national industry. Therefore, taking the multilayered policy process as a whole, the ever adaptive long-term policy effort cannot be called ineffective.

Naughton's (2007a) view may be true relating to particular central government's policy, but failed to capture the bigger picture. Thun's (2006) story of the path dependence of the local governments certainly was very real; however, it is only a part of the total policy cycle, not the whole story. The entire evolutionary course is a circular process of policy formulation, then implementation and violation, followed by review, bargaining and revision, and that repeats itself again. It is true that the local governments may often violate the central policies. However, as long as the central government will follow the lessons learned from these uncontrolled experiments, the central policy will inevitably improve in the process, and hence should not be considered as totally ineffective. Differing from the "Chinese style federalism" thesis, this article argues that other local governments may not have the will and ability to emulate the success cases. For the system to be growth promoting, it requires that the central state recognize and adopt the more innovative local model and adjust its policy accordingly. The finding here also modifies Amsden's thesis (2001), for the performance standard here differs from those in her book in that this is *ex post* and long term.

In the past, the way the Chinese central government formulated its auto industrial policy indeed revealed its lack of understanding of the law of the market, a gap between policy blueprint and market reality, insufficient policy tools, and even bureaucratic indolence and influence of the socialist legacy. At the implementation level, the local governments, various departments, and enterprises all had their own interests and countermeasures. The formulation and implementation of such industrial policy are quite different from that of the more coherent East Asian model.

However, different countermeasures by different local governments can also be viewed as a kind of room for experiments. When faced with varying outcomes of local experiments, the central government can choose the "better" one as the basis for the next round of policy revision. The criteria for deciding which one is "better" is a result of debates and bargaining about visions and interests among various players. It must be noted here that this room for experiments exists not by design, but is itself an outcome of the political process.

Although many policies seem infeasible or nonenforceable, and hence are deemed ineffective, each time a new policy still poses general constraints on local governments and enterprises. The central government controls the commanding height of ultimate authority, including the power to approve domestic and foreign investment, loans, imports and export, land acquisition, business registration, and stock issuance. In coordination with the policy direction at the time, this authority ultimately can still have key effects.

In this policy process, because all parties have a high degree of consensus on pursuing China's long-term development (as well as catching up with the West), this goal becomes an effective performance standard for examining the policy outcomes, and drives continuing policy revision to achieve this common goal. More and more, it is getting clearer that the performance standard entails the establishment of national industries.

Success of an industrial policy hinges on whether it aims for overall long-term development of the particular industry, overcoming considerations of short term and particular interests, as the famous "embedded autonomy" of the East Asian states manifested. In the past 30 years, although many had quite different opinions about how to achieve this goal, the long-term objective served as a criterion to judge the effectiveness of the policy, enabling this model of continuous policy revision to work. In other words, the central government could rely on holding the commanding height of ultimate authority, and on a high degree of consensus on catching up with the West, to realize an industrial policy model of continuously revising policy according to actual local implementation results.

## 5. Conclusion

Regarding the question of whether China can promote industries effectively, this article proposes a hypothesis that answers positively to the question. In the case of the automotive industry, despite earlier mistakes, the outcome of a few rounds of industrial policy can be called a promising success. The progress was achieved mainly because there is a mechanism to propel the central state to continuously evaluate and face up to policy effects, to find ways to build up national industries and narrow the gap with the West, to take local experiments into consideration, and to correct past mistakes. This is also the basis for optimism regarding the future advancement of this industry.

However, the effectiveness of such an industrial policy model apparently will vary with the characteristics of the industry. An industry of medium technology level, such as automobiles, should be more compatible with China's current comparative advantage in development. Such an industry requires only a medium level of technology, can take advantage of a vast domestic market, and some labor intensive production processes. Besides, China has already built up a considerable foundation.

If applied to a high-tech industry, such a policy model probably will not achieve good results, because the characteristics of this industry do not conform to these conditions.

Moreover, it requires a high degree of public attention and participation from all related parties to render this policy model effective. The auto industry is of paramount importance in terms of production value, employment, and national prestige. Thus, various local governments and enterprises have been keen to be part of the action. Its related policy issues have always gotten wide attention and aroused heated debates in the public sphere. For industries with much less importance, the relevant policy process may not get enough attention to ensure good results. Monitoring of industrial policy in those sectors may require other mechanism.

China is too large to have an integrated central bureaucracy which has East Asian style of embedded autonomy. The state's developmentalism has to be manifested in a long-winding multilayered policy process. It takes participation of various related parties in competition of real gains and policy ideas, to drive the policy process toward the common goal of catching up with the West. Thus, it is proposed here to call this process "a model of industrial policy propelled by catching-up consensus." Catching-up means building up national industries and national champions. Catching up consensus is more appropriate than the "growth consensus" commonly used in China, because growth can come from either foreign or domestic firms, while catching up clearly refers to building up national industries. That is, catching up reflects the common goal based on nationalism much more clearly.

Moreover, contrary to the mainstream view, this article has shown that the development of the Chinese auto industry had strongly relied upon the state's interventionist policies, not upon mere market liberalization or FDI. It is true that the state has used the trade and FDI policy to suit its purposes. Nonetheless, whenever the policy, especially that of relying upon the foreign joint ventures, was considered inadequate to promote competitive national industries, the state was forced to change its trade and FDI policy. That is, the state employed its trade and FDI policy to pursue its developmental goal.

## **Acknowledgements**

The author is thankful for the valuable comments of Prof. Alice Amsden, Prof. Henry Wan, Prof. Zhiyuan Cui, Prof. Yang Yao, Prof. Jun Zhang, and Prof. Tian-biao Zhu, and for research assistance provided by Sophy Yang, Canna Ya-shiun Sun and Jia-wei Chang. The author also expresses her gratitude toward Mr Liang-rong Chen, and Vice President Chen Chih-hua, Manager Li Wen-chih, and Chief Engineer Peng Chin-teh of Taiwan's Asset Industrial Company for their generous help. This work was supported by Academia Sinica and the National Science Council (NSC-95-2420-H-001-032-MY3).

## References

### In Chinese

- Autoweekly* (2006), 'China's top 100 auto parts firms in 2005,' *Autoweekly*, 23 June 2006, <http://www.autoweekly.com.cn/show.asp?ArticleID=25097&Article>.
- Beijing Morning Post* (2006), '13 old men collectively appeal to build a strong automotive industrial country,' *Beijing Morning Post*, 22 June 2006, People.com.
- Chen, J.-G. and Y.-X. Zhang (2004), 'China's automobile industrial policy and development strategy,' *Economic Theory and Business Management (Jingji Lilunyu Jingji Guanli)*, **12**, 26–30.
- Chen, L.-R. (2006), 'Taiwan inside,' *CommonWealth Magazine (Tianxia Zazhi)*, 24 May 2006, 347.
- Chen, L.-R. (2007), 'Demystify chery's success,' *CommonWealth Magazine (Tianxia Zazhi)*, 28 March 2007, 368.
- China Automotive Technology and Research Center (2003), 'A fifty year chronology of China's automotive industry,' <http://www.chinaauto.ac.cn/zhishi/ZG50DSJ.htm>.
- China Automotive Technology and Research Center (2005–2007), *China Automotive Industry Yearbook*. China Association of Automobile Manufacturers: Beijing.
- Fu, B.-S. (2004), 'Zhejiang: 40 private enterprises vie for automobile assembly,' *For the Public Good (Nanfengchuang)*, **3**, 66–67.
- Gou, H.-P. and Z.-J. Lan (2006), 'Current status and future trend of auto parts industry,' *Auto Industry Research (Qiche Gongye Yanjiu)*, **8**, 12–17.
- Jin, L.-Z. (2004), 'Our automotive industry must take the correct road of indigenous development – Chery's achievement and revelation,' *Macroeconomic Research (Hongguan Jingji Yanjiu)*, **9**, 10–12.
- Li, F. (2006), 'I know which road Geely's Li Shu-Fu should take,' *Economic Perspective (Jingji Shejiao)*, **5**, 24–28.
- Long, G.-Q. (1997), 'WTO and China's Sedan industry,' *Review of Economic Research (Jingji Yanjiu Cankao)*, **43**, 2–43.
- Lu, F. and K.-D. Feng (2004), 'Making China's own car,' *Business Watch Weekly (Shangwu Zhoukan)*, 20 March 2004, 26–59.
- Lu, F. (2006), *Moving Toward Independent Innovation: In Search of China's Source of Strength*. Guangxi Normal University Press: Guilin, Guangxi.
- Lu, J.-A. (ed.) (1999), *One Step Ahead: Cases of Sontana Localization*. Shanghai Finance University Press: Shanghai.
- Mei, Y.-H. and K.-D. Feng (2005), 'Jeely phenomenon – a study report about Jeely's autonomous car manufacturing,' *China Soft Science (Zhongguo Ruankexyue)*, **11**, 6–15.
- Ming, H. (2006), 'Deng Xiao-Ping and the development of China's automotive industry,' *Perspectives on Party History (Dangshi Zonglan)*, **12**, 13–17.

- State-Owned Assets Supervision and Administration Commission (2006), *China's State-Owned Assets Supervision and Administration Yearbook 2006*. SASAC: Beijing.
- Special Issue Group of Development Research Center of the State Council (2002), 'Development strategy and policy research of China's automotive industry under new situation,' *Review of Economic Research (Jingji Yanjiu Cankao)*, **1**, 2–47.
- Tao, J.-Q. (2004–2005), 'Chery automobile company series report 1–5,' *Chinese Times (Shidaichao)*, 2004/23–2005/03.
- The Beijing News* (2004), 'After ten years, new auto industrial policy to be unveiled this month,' *The Beijing News (Xinjingbao)*, 13 May 2004, [http://auto.scol.com.cn/html/2004/05/002001001\\_423348.htm](http://auto.scol.com.cn/html/2004/05/002001001_423348.htm).
- Xia, D.-W. et al. (2002), *The Automobile Industry: Technological Progress and Industrial Organization*. Shanghai University of Finance & Economics Press: Shanghai.
- Xin, H. (2006), 'Create Chinese national car brand by innovative spirit,' *Science-Technical For Small- and Medium-Scaled Businesses (Zhongxiao Qiyekeji)*, **7**, 6–7.
- Zhang, J. (2005), 'Economic development in China: competition for growth,' *World Economic Forum (Shijie Jingji Wenhui)*, **4**, 101–105.
- Zhao, Y. (2000), *An Empirical Analysis of China's Industrial Policy*. Social Sciences Academy Press: Beijing.
- Zheng, Z.-S. (2007), *Auto Madman Li Shu-Fu*. China CITIC Press: Beijing.

## In English

- Amsden, A. H. (1989), *Asia's Next Giant: South Korea and Late Industrialization*. Oxford University Press: Oxford.
- Amsden, A. H. (2001), *The Rise of the "The Rest": Challenges to the West from Late-Industrializing Economies*. Oxford University Press: Oxford.
- Baum, R. and A. Shevchenko (1999), 'The state of the state,' in M. Goldman, and R. MacFarquhar (eds), *The Paradox of China's Post-Mao Reforms*. Harvard University Press: Cambridge, MA.
- Blecher, M. and V. Shue (2001), 'Into leather: state-led development and the private sector in Xinji,' *The China Quarterly*, **166**, 368–393.
- Bruno, M. (1994), 'Our Assistance Includes Ideas as well as money,' *Transition*, **5**(1), 1–4.
- Cusumano, M. A. (1985), *The Japanese Automobile Industry*. Harvard University Press: Cambridge, MA.
- Edin, M. (2003), 'State capacity and local agent control in China: CCP cadre management from a township perspective,' *The China Quarterly*, **173**, 35–52.
- Evans, P. (1995), *Embedded Autonomy: States and Industrial Transformation*. Princeton University Press: Princeton.
- Fan, G. (1994), 'Incremental changes and dual track transition: understanding the case of China,' *Economic Policy*, **19**(Supp), 99–122.



- FOURIN China Auto Weekly (2006), 'Statistical data on 150 auto parts manufactured in China,' *FOURIN China Auto Weekly: Tokyo*, 4 December 2006.
- FOURIN China Auto Weekly (2008), 'Industrial and market forecast for 2008,' *FOURIN China Auto Weekly: Tokyo*, 15 January 2008.
- FOURIN China Auto Weekly (2008), 'Geely Auto: Automaker shifting strategy to revive sales,' *FOURIN China Auto Weekly: Tokyo*, 18 February 2008.
- FOURIN China Auto Weekly (2008), 'Geely Auto: Automaker shifting strategy to revive sales,' *FOURIN China Auto Weekly: Tokyo*, 18 February 2008.
- FOURIN China Auto Weekly (2008), 'Chery Auto: Automaker diversifies lineup and partners,' *FOURIN China Auto Weekly: Tokyo*, 3 March 2008.
- FOURIN China Auto Weekly (2008), 'Hafei: Automaker's survival depends on cooperation with Dongfeng,' *FOURIN China Auto Weekly: Tokyo*, 23 June 2008.
- Harwit, E. (1995), *China's Automobile Industry: Policies, Problems, and Prospects*. M.E. Sharpe: Armonk, New York.
- Harwit, E. (2001), 'The Impact of WTO membership on the automobile industry in China,' *The China Quarterly*, **167**, 655–670.
- Howell, J. (2006), 'Reflections on the Chinese state,' *Development and Change*, **37**(2), 273–297.
- Huang, Y. S. (1996), 'Central-local relations in China during the reform era: the economic and institutional dimensions,' *World Development*, **24**(4), 656–672.
- Huang, Y. S. (2008), *Capitalism with Chinese Characteristics: Entrepreneurship and the State*. Cambridge University Press: Cambridge.
- Johnson, C. (1982), *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*. Stanford University Press: Stanford.
- Kim, L. (1997), *Imitation to Innovation: The Dynamics of Korea's Technological Learning*. Harvard Business School Press: Cambridge.
- Lardy, N. R. (2002), *Integrating China into the Global Economy*. Brookings: Washington, DC.
- Ma, J. (2006), 'China's Value-added Exporters,' *Deutsche Bank Research Report*, 13 July 2006.
- Montinola, G., Q. Yingyi and B. R. Weingast (1995), 'Federalism, Chinese style: the political basis for economic success,' *World Politics*, **48**(1), 50–81.
- Naughton, B. (2002), 'China's economic think tanks: their changing role in the 1990s,' *The China Quarterly*, **171**, 625–635.
- Naughton, B. (2007a), 'China's State Sector, Industrial Policies and the 11th Five Year Plan, testimony before the US-China economic and Security Review Commission Hearing on the "Extent of the government's control of China's economy and implications for the US",' May 24, 2007.
- Naughton, B. (2007b), *The Chinese Economy: Transitions and Growth*. MIT Press: Cambridge.
- Naughton, B. and D. L. Yang (eds) (2004), *Holding China Together: Diversity and National Integration in the Post-Deng Era*. Cambridge University Press: Cambridge.

- Noble, G., J. Ravenhill and R. F. Doner (2005), 'Executioner or disciplinarian: WTO accession and the Chinese auto industry,' *Business and Politics*, 7(2), 1–33.
- Oi, J. (1995), 'The role of the local state in China's transitional economy,' *The China Quarterly*, 144, 1132–1149.
- Pei, M. (2006), *China's Trapped Transition: The Limits of Developmental Autocracy*. Harvard University Press: Cambridge.
- Rawski, T. (2001), 'What is happening to China's GDP statistics,' *China Economic Review*, 12, 347–354.
- Sachs, J. D. and W. T. Woo (2000), 'Understanding China's economic performance,' *Journal of Economic Reform*, 4, 1–50.
- Shapiro, H. (1994), *Engines of Growth: the State and Transnational Auto Companies in Brazil*. Cambridge University Press: New York.
- Sutton, J. (2004), 'The auto-component supply chain in China and India, a benchmark study,' *Discussion Paper*, London School of Economics, <http://eprints.lse.ac.uk/2292/>.
- Thun, E. (2004), 'Keeping up with the Jones: Decentralization, policy imitation, and industrial development in China,' *World Development*, 32(8), 1289–1308.
- Thun, E. (2006), *Changing Lanes in China: Foreign Direct Investment, Local Governments, and Auto Sector Development*. Cambridge University Press: Cambridge.
- Walder, A. G. (1995), 'Local governments as industrial firms: an organizational analysis of China's transitional economy,' *The American Journal of Sociology*, 101(2), 263–301.
- Yao, Y. (2008), *The Disinterested Government: An Interpretation of China's Economic Success in the Reform Era*, China Center for Economic Research, Peking University: Beijing.