Intensive Revision

L2 – CSQ – Cost of Production/Market Structures – Q2

**China’s Automobile Industry**

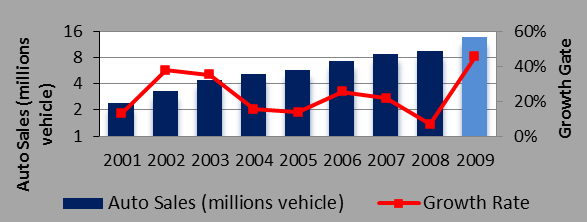
**Extract 1: China’s Fast Developing Automobile Industry**

In 2009, China became the world’s largest auto producer and the world’s largest automotive market. Thanks to China’s sound economic fundamentals and state-oriented preferential policies, the development of the Chinese automobile industry is good and has the potential for further strong development. China has been achieving a remarkable annual GDP growth of 10% over the last two decades. The new rich and middle classes are willing to purchase vehicles as they are largely reflective of high social and economic status. In addition, the government has effectively stimulated domestic vehicle demand by implementing various policies to expand vehicle production, boost domestic consumption and speed up the development of alternative fuel vehicles. The government’s stimulus packages in 2009, such as lower purchase tax on small-engine cars below 1.6 litres and a 5-billion yuandirect subsidies for peasants to purchase minivans and light trucks, have boosted consumers’ spending on new vehicles.

China’s automobile sector is and has been one of the main stays of the Chinese economy. The auto sector has strong linkage with more than 100 upstream and downstream industries, including steel, plastic, aluminium, glass and rubber. Their combined industrial output could amount to around 4 trillion yuan.

Adapted from *Background Brief No. 500, 14 Jan 2010, East Asian Institute, NUS.*

**Figure 1: China’s Auto Sales, 2001 - 2009**

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*Source: China Association of Automotive Manufacturers*

**Extract 2: Mergers and Acquisitions - A Key Development Strategy**

One weakness of the Chinese automobile industry is regional production fragmentation. There are more than 120 vehicle makers, which are almost equal to the combined figures of all auto enterprises in Europe, Japan and the U.S.A. Most of these firms suffer from weak competitiveness and low production capacity. Shanghai Automotive Industry Corporation Group (SAIC), First Automobile Works Co., Ltd (FAW) and Dongfeng Motor Corporation (DFM) are the top three vehicle producers. However, they shared less than 50% of overall auto sales in 2008. The Chinese government is thus pushing for mergers and acquisitions in the automotive industry which will support the emergence of a few leading national companies. The auto sector is an industry that enjoys economies of scale. Mergers and acquisitions can therefore substantially reduce the production cost per vehicle.

Adapted from *Background Brief No. 500, 14 Jan 2010, East Asian Institute, NUS*

**Extract 3: When will China produce a car brand people want to drive?**

Until the late 1970s China was making fewer than 3,000 passenger cars a year. In 1989 it exported just 6 cars. Now, its motor industry supports millions of jobs. Last year they exported almost 900,000 cars. However, this is not a fantastic success when measured against the Chinese government’s ambitions. The Chinese state planners had intended, by 2010, to have “three or four large, globally competitive auto firms” like America and Japan, and for these to have their own successful brands and technology. However, even the most innovative of China’s independent automakers have relied heavily on copying, cost control and public relations to give the appearance of innovation.

Japan and South Korea got their car-making industries going by shutting foreigners out of their domestic markets, giving domestic brands a captive audience to practise on. China let in the foreign carmakers, but on condition that they worked with local partners. The idea was that the Chinese makers would by now have learned the knack of producing world-beating cars, and presumably be in a position to dump their foreign partners. However, this hasn’t quite happened.

Surveys of foreign- and Chinese-branded cars’ mechanical faults show that the local brands are increasingly able to meet the safety standards of the western markets but changing motorists’ perceptions of the inferiority of domestically branded goods will take time. To catch up with their foreign rivals, some of the big Chinese makers are resorting to acquisitions to obtain foreign technology. Shanghai Automotive Industry Corporation Group (SAIC) bought some remnants of Rover, Britain’s former state carmaker, and is using its designers to create promising new models. Geely bought Volvo from Ford, and can now combine its own Chinese market access and strong supply chain with Volvo’s technology and image-making savvy.

However, while Chinese-branded cars may be getting better; but so are foreign ones. The rich world’s carmakers are loading their models with ever fancier navigation, entertainment and safety gear. Meanwhile the global giants’ adoption of standard “platforms”, on which a wide range of models can be built, combined with China’s rising wage bills, mean that Chinese makers’ cost advantages are fading.

Adapted from *The Economist, 5 May 2012*

**Extract 4: China’s support programmes for automobiles and auto parts**

Through a sophisticated web of policies to nurture and support its automotive industry, the Chinese government has played a central role in the growth of China’s automotive industry, and it will continue to do so in the coming years.

Under its national high-technology research and development program, the government invested nearly RMB 5.6 billion (US$872 million) in new energy vehicle technologies from 2002 through 2010. In its 2009 stimulus plan, the government allocated another RMB 10 billion (US$1.5 billion) for the development of key automotive parts and technologies, including but not limited to new-energy vehicles. From 2011 through 2020, the government plans to invest at least RMB 115 billion (US$18 billion) to build up its energy-saving and new-energy automotive industry, nearly half of which will subsidize the development and industrialization of core technologies. New energy vehicles include battery-powered electric cars and plug-in hybrid vehicles. In addition, vehicle and parts makers enjoy access to a broad array of subsidies. The government targets specific automotive components and technologies as encouraged national projects, and producers of products listed in these catalogues enjoy reductions in the corporate income tax rate of 50 percent, subsidized credit from state-owned banks and many other benefits. However, these policies violate China’s international trade obligations as define by the World Trade Organisation.

*http://*[*www.stewardlaw.com*](http://www.stewardlaw.com), January 2012

**Extract 5: Car sales blamed for pollution**

Vehicle exhaust emissions have become the main contributor to worsening air pollution in big Chinese cities as the country undergoes a surge in car sales. In the Ministry of Environmental Protection’s 2010 report on pollution caused by China's vehicle exhaust emissions, the car sales bonanza has been blamed for the devastating air quality in most cities. The report said air pollution problems, ranging from acid rain, haze and photochemical smog, became more frequent in some regions. “All the problems are closely related to vehicle exhaust emissions, including nitrogen oxide and other small particles,” it said.

Adapted from *Wang Qian (China Daily),* 5 Nov 2010

**Questions**

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| --- | --- | --- |
| (a) | i) With reference to Figure 1, describe the trend of China’s automobile sales during the period 2001 to 2009. | [2] |
|  | ii) Using relevant economic concepts and the data, account for the change in China’s automobile sales in 2009. | [6] |
| (b) | Explain **two** barriers faced by the Chinese automobile manufacturers in penetrating the global automobile market. | [4] |
| (c) | Discuss the effectiveness of mergers and acquisitions by the Chinese automobile manufacturers to increase their share of the global automobile market. | [8] |
| (d) | Examine the arguments for and against the Chinese government’s continued support of the growth of the country’s automobile industry. | [10] |

**Total: 30m**

**Suggested Answers**

**ai)** **With reference to Figure 1, describe the trend of China’s automobile sales during the period 2001 to 2009**. [2]

China’s automobile sales have increased during the period of 2001 to 2006. It increases at an increasing rate from 2001 to 2002, 2005 to 2006 and 2008 to 2009 but increasing at a decreasing rate for other time periods during the period from 2001 to 2009.

**aii)** **Using relevant economic concepts and the data, account for the change in China’s automobile sales in 2009. [6]**

Sharp increase in 2009 (40%)

DD-side

* Rising income (extract 1)
  + Rising income from the country’s rapid economic growth (1m) led to increase demand for cars by households due to increased ability to afford
  + The new rich and middle class perceive it as status symbol or luxury good. This means Ey>1 where a rise in income will cause more than proportionate rise in demand.
* Change in taste (as income rise) where cars are perceived as status symbol, increase in willingness to pay.
* Direct subsidies to peasants (extract 1), i.e. transfer payments, enabled many households to afford vehicles thereby increasing demand
* The rise in DD will place upward pressure on car prices thus inducing rise in Qty of cars supplied and hence sold.

SS-side

* Cuts in indirect taxes for small cars [Extract 1] led to fall in MC of production and hence a rise in supply.
* The rise in SS leads to lowered market prices, increasing HH’s ability to afford cars.
* The resulting rise in sales would be higher the more price elastic is the demand for cars.

**b) Explain two barriers faced by the Chinese automobile manufacturers in penetrating the global automobile market. [4]**

* Real product differentiation and product proliferation that involve research and development (extract 2). Research and innovation require time and money. Chinese car-makers being relatively new comers in the industry are behind their western counter-parts in R&D.
* EOS (extract 3). Chinese car makers are small. This limits their ability to enjoy EOS. To price their cars as competitively as the foreign large car makers, they have to ensure tight profit margins which to some extent limits their R&D efforts.
* Trade barriers (extract 3). E.g. Korea and Japan had used trade barriers to protect their infant car industries from foreign competition.
* Western markets’ safety standards (extract 2). This serves as non-tariff barriers to imported cars from China. E.g. Failure in European crash tests by Chinese brands means that they are not allowed to sell in European markets.
* Product recognition from successful branding of European / US /Japanese cars (e.g. para 1 of extract 2 which says US and Japan have their own successful brands). This means Chinese car makers will have to spend heftily on advertising.

**c) Discuss the effectiveness of mergers and acquisitions by the Chinese automobile manufacturers to increase their share of the global automobile market. [8]**

* Currently, although Chinese car makers are increasingly exporting their output, their foothold in the global auto market is still very small. They are turning to **mergers and acquisitions.**
* A merger is a combination of two companies to form a new company, while an acquisition is the purchase of one company by another in which no new company is formed.
* **Mergers** will overcome the current fragmented nature of the Chinese auto industry thus enabling the local firms to enjoy scale EOS (extract 3). These include technical EOS like cost savings obtained from use of large automated assembly plants and cost savings from sharing costs of R&D.
* The need to tap into EOS is all the more pressing as the rise in wage bills in (extract 4) suggests that China’s competitive advantage derived from cheap labour is fading.
* The combined profits will provide the firm with more financial ability to engage in R&D, which is a pressing need given the high quality foreign cars that the local manufacturers have to compete against and the high safety standards (extract 4) that the local manufacturers need to meet in foreign markets.

However, 1 limitation of mergers is possible clash in working culture. This may result in productivity losses which will actually drive up unit production cost.

* **Acquisitions** of foreign car companies will enable the Chinese firms to acquire the needed technological know-how for them to compete more effectively with the foreign car-producers. Currently, local consumers still prefer foreign brands. Extract 2 notes that China’s top 3 local automakers have less than 50% of overall auto sales in 2013, showing that local automobiles are not as preferred by the Chinese themselves, probably due to the poorer quality of the local cars.
* This is a better strategy than joint ventures with foreign car companies which has yielded limited technological transfer (extract 3).
* By buying a car maker of reputation, it could help Chinese makers shed motorists perception of Chinese cars being of poor quality.
* This is also better than copying (extract 3) because copying is likely to result in expensive legal law suits by the foreign car makers for infringement of copyright or calls by foreign car makers for their govts to impose protectionism as retaliatory measures.
* 1 limitation is that the foreign governments may not allow their iconic car manufacturers be bought over by a Chinese car manufacturer.
* Also, the talent (e.g. car designers) of the acquired firm must not jump ship. However, this problem may be avoided with adequate remuneration.
* Foreign car makers are making concurrent advances in technology (last para, extract 3). Thus, the new improved automobiles made as a result of the M&A may still lag behind that of the other car makers

Overall conclusion

M&A should be a rather effective approach as it would address the particular obstacles faced by the Chinese auto industry in competing with foreign makers. It will enhance the cost efficiency of the industry and the real and imaginary differences the cars produced in China. Managerial diseconomies from expansion in firm size can be avoided over time as the firms adapt. However, as other car makers are also engaging in R&D, the overall success would depend on whether the M&A enable the Chinese makers to jump ahead of the race for improved cars.

**d) Examine the arguments for and against the Chinese government’s continued support of the growth of the country’s automobile industry. [10]**

Identify ways in which the Chinese govt has supported the country’s auto industry - cuts in indirect tax and transfer payments to peasants, investment in clean technology, subsidies to local car manufacturers, cheap loans

**Yes**

1. It is one of the key drivers of the country’s growth (extract 1)

* There is huge potential for growth. As households income rise further, DD for cars will rise further. More cars need to be produced to meet the aspirations of the households.
* The auto industry has various links to other industries. So any new investment in this industry will result in significant multiplier effects on the country’s GDP.
* Economic growth is desirable as it will increase material SOL.

1. Supporting the local auto industry through subsidising the cost of production of local cars help to keep price of cars low. This enables more people in China to own cars, thus enhancing their material SOL.
2. The auto industry in China is still an infant industry.

* Govt support will enable the local car makers to expand and reach a scale that will enable them to compete effectively in global markets.
* The usefulness of govt support can be somewhat co-related with the Japan and S Korea experience where Japanese protection enabled their car industries to take off (refer to extra 2’s 2nd para).

1. Investment in green technology for car production is expensive and requires long gestation period. Moreover green technology has positive externalities, govt assistance is thus needed to increase R&D in this area.

**No**

1. Rising car production has contributed to rising pollution and congestion which creates negative externalities (extract 4)

* By encouraging car ownership (e.g cuts in indirect tax and transfer payments to peasants), the govt is creating more welfare loss in the car market. A diagram showing a bigger triangle of welfare loss may be drawn.
* This lowers non-material SOL.

1. The provision of assistance to the car industry constitutes industrial policy\* - defined as attempt by the govt to promote the growth of particular industrial sectors or companies.

* A theoretical argument against the adoption of industrial policy is that it tends to develop in the latter a crutch mentality and the motivation to enhance efficiency will be reduced.
* However, if it is in step with the country’s comparative advantage, industrial policy can succeed. ‘Does China potentially has CA in vehicle production?’
  + The data (extract 4) suggests that China hasn’t quite acquired CA yet.
  + That being the case, continued assistance of the local car firms will result in welfare loss as resources end up diverted away from other areas that China ought to be focusing given its CA based on its factor endowment.

1. Continued support of the auto industry will ire China’s trade partners as such support goes against China’s obligations as a member of WTO (extract 3). The China’s trade partners may thus apply unilateral trade sanctions on China’s exports.

**Evaluation and Conclusion**

The govt need to weigh the benefits (economic growth) against the costs (decline in non-material SOL and possibly allocative inefficiency encouraged by govt support). Also, whether the govt should continue helping depends on the type of assistance. Where the assistance is in the area of investment in green technology in vehicle manufacturing (as seen in extract 3), then the benefits are more likely to outweigh the costs and the govt should provide the support.