



PERSONAL CARS AND CHINA (2003)

China has one of the fastest-growing fleets of automobiles in the world. In 2001 it had 18 million vehicles, including 5 million cars. In its 2001-2005 five-year plan, the Chinese government stated that its immediate goal was to produce over 1 million cars a year. The plan called for major restructuring of the industry and encouraged car companies to produce a Chinese economy car with a 1.3-liter engine that meets Chinese emissions and fuel economy standards and can be purchased for less than RMB80,000 (\$9,800). This joint report with the Chinese Academy of Engineering identifies potential impacts of and strategies for implementing this plan.

POTENTIAL IMPACTS

A rapid increase in the number of cars in China has benefits and drawbacks. In the short term, a more mobile population will have greater choices in housing, employment, shopping, and leisure. However, poorer air quality, more auto accidents, and increased congestion will negatively affect urban residents. In the longer term, cities may expand as populations move outward from the city center, causing hardships for those without automobiles and additional costs on the government for roads, services, and public transport. In rural areas, there will be new opportunities for employment and other economic benefits with little added congestion or pollution, while local governments will have increased responsibilities for traffic management, regulation, and enforcement. The average cost of new cars will increase as national performance standards on emissions, efficiency, fuel quality, and safety are applied. Finally, as energy consumption rises, China will become more dependent on imported petroleum.

ACHIEVING INDEPENDENCE

The Chinese automotive industry faces significant challenges in achieving independence. It needs to adjust to the effects of China's membership in the World Trade Organization (WTO), which may challenge the growing Chinese market as foreign automobile manufacturers and importers are allowed to enter China.

COMPETITIVENESS

To achieve long-term competitiveness in the world marketplace, China needs to contribute to emerging technical developments. The challenge will be to maintain a balance between short-term and long-term needs, as the industry cannot become competitive by concentrating research within one time period. Meanwhile, it should develop partnerships with foreign producers that offer its companies access to new technologies.

Vehicle sales are a lower share of the fleet. Chinese policy makers recently have set rules calling for vehicles to be retired at a certain mileage and age, but these rules seem to reflect safety and emissions standard objectives rather than economic considerations (China Online News, 2000a).⁹

TABLE 2-1 National Vehicle Fleet Projections for Three GDP Growth Rates, China (millions of vehicles)

Year	Cars	Motor Vehicles
10 percent GDP growth		
2005	07.9	026.4
2010	13.9	042.5
2015	24.4	068.4
2020	43.1	110.2
8 percent GDP growth		
2005	07.2	024.5
2010	11.4	036.0
2015	18.0	052.9
2020	28.5	077.8
6 percent GDP growth		
2005	06.6	022.7
2010	09.3	030.4
2015	13.2	040.7
2020	18.7	054.5

NOTE: Projections (in millions of vehicles) assume that motor vehicle growth is the same as income growth and that car growth is 1.2 times income growth. GDP = gross domestic product.

SOURCE: Calculated by G. Ingram based on data in China State Statistical Bureau (2002).

RESEARCH AND DEVELOPMENT

China is not independent enough to develop world-class vehicles. It spends a smaller percentage of its GDP on automotive research than any other automobile-exporting country and has limited trained human resources available. In addition, joint ventures with producers do not encourage the transfer of technology to Chinese partners. The Chinese automotive industry needs to exchange ideas about the most promising technologies with other countries and invest in technologies such as advanced gasoline and diesel power trains, the application of sophisticated electronic controls, emissions control technologies, the use of new materials, and the application of complex engineering methods to optimize vehicle performance.

RECOMMENDED ACTIONS

To meet the challenges presented by the growing number of cars and the environmental and social consequences, as well as China's entry into the WTO and the restructuring of its industry, the Chinese government and the automotive industry should consider the following key actions:

- The government should establish national standards for vehicle emissions, fuel efficiency, and safety on par with European standards for vehicles and fuels by 2010. This will entail reducing sulfur content of fuel, construction of new refineries, improved production efficiencies, and expanded foreign partnerships.
- State-owned motor vehicle enterprises should be restructured so they are more competitive in the world marketplace.
- The government and automotive industry should help develop the industry's capabilities through, for example, jointly funding government-industry R&D projects.

- The government should organize and support government laboratories and academic institutions pursuing next-generation automotive technologies, with industry participation, and should expand its support for academic programs that train students in automotive research and technology.
- Ways to improve the sharing of intellectual property should be identified, such as restructuring joint ventures to allow Chinese partners to participate more fully in R&D.
- The highest growth sector in the vehicle market is likely to be the small “China car” described in the 2001-2005 plan. It should allow high fuel efficiency, while providing reliable, comfortable, and safe transportation at an affordable cost.
- National, regional, and municipal governments should provide the necessary infrastructure for the expected increase in the number of vehicles.
- Public transportation should be convenient, comfortable, sufficiently widespread, safe, and affordable. China must maintain a balance between public transportation, nonmotorized vehicles, and private cars to ensure that the nondriving public is served adequately.

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