China, Cars and Carbon

by

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The number of privately owned cars in the Peoples' Republic of China grew at a rate of 69 percent during the first three quarters of 2003. Fast growth of the transportation sector provides cause for optimism on behalf of U.S. and Chinese car producers, yet reason for concern regarding rapidly increasing emissions of climate-changing greenhouse gases.

China's aggregate Gross Domestic Product has grown at a staggering rate of 8.0 percent a year since the beginning of economic reforms in 1979. Accompanied by a rapidly growing population, this translates to an average growth rate of per capita income of 6.6 percent. And there are no signs of a slowdown, with an anticipated year-end growth rate of 8.6 percent for 2003. Large deposits of high sulfur coal in the central and northern provinces provided fuel for the initial vast expansion of heavy industry. A rapid expansion of the manufacturing sector is often accompanied by deterioration of environmental quality. Ambient levels of particulates, SO_2 and NO_x in some cities are an order of magnitude above World Health Organization safety margins (e.g. Taiyuan and Lanzhou).

In addition to emissions of pollutants posing a direct health hazard to the urban population, emissions of greenhouse gases (GHGs) have skyrocketed over the past decade and China is anticipated to surpass the United States as the main emitter of CO_2 by the year 2020. China has signed and ratified the Kyoto Protocol, which regulates the emissions of greenhouse gases, as a developing country, exempting it from binding reductions in emissions. Any potential restrictions on greenhouse gas emissions from developing countries are closely tied to the argument that cutbacks should be specified from predicted emissions at a level of income similar to that of a developed country. This moves uncertainty over the path of future emissions into the spotlight.

Emissions of climate-changing GHGs in developed countries come from three major sources: Roughly 30 percent of U.S. emissions stem from transportation, 46 percent from industrial production and commercial uses, 19 percent from residential uses and the remainder from agriculture.

Estimates of GHG emissions from the Chinese transport sector currently range somewhere between eight and ten percent. This number is expected to grow quite rapidly with the rapid onset of motorization of China's population. Figure 1 shows the number of passenger cars relative to the total and driving age population for the U.S., China and Japan. Due to size and resource constraints it is unlikely that car ownership rates will reach European or U.S. levels. However, ownership rates at an order of magnitude lower would still have drastic consequences on the emissions of GHGs.

China's Market For Cars

China has a very short history of private car ownership. Until five years ago, the majority of cars were owned by the state or companies. Over the past ten years, private car ownership has increased eightfold to roughly 11 million cars at the end of August of this year. This development is consistent with a classical threshold model, whereas if per capita income rises above a certain level, individuals start purchasing high-price durable goods such as cars.

The average income of several coastal cities has reached the rule of thumb level of $4000, which is thought to be the threshold. The number of privately owned cars sold in China has grown by 69 percent over the first three quarters of 2003, which is up from an average growth rate of 26 percent for the

Figure 1: Ratio of Passenger Cars to Population

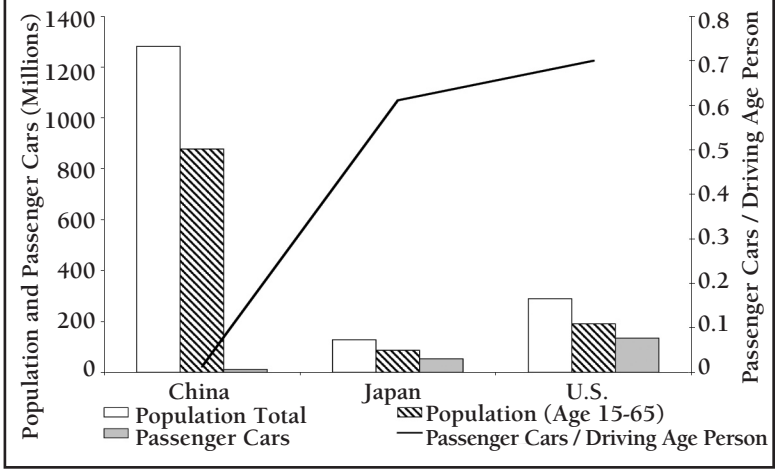
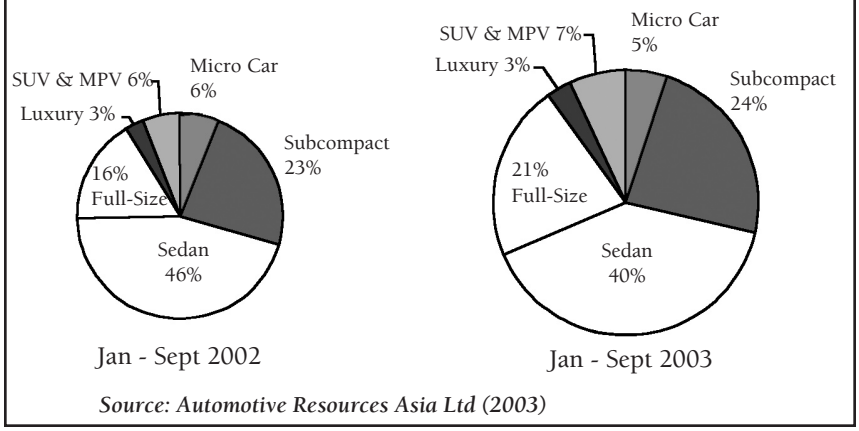


Figure 2: Market Share of Cars by Type



Source: Automotive Resources Asia Ltd (2003)

years 1996-2000. This acceleration in the adoption of privately owned cars has sparked a "gold-rush mentality" which manifests itself in tremendous investments on behalf of European and American car makers in on-the-ground production capacity through joint ventures with local manufacturers. These joint ventures are currently supplying roughly 90 percent of the new cars bought—largely due to import restrictions. Automotive trade publications in Europe and the U.S. expect China to be the world's largest market for cars in years to come. Volkswagon for the first time sold more cars in China than in Germany this past year. In times of excessive growth, expectations of future growth are often inflated resulting in over-investments in capital stock and an overheating of the economy. In the case of China, there are several other forces driving the recent acceleration in car sales, which may lead to dangerously optimistic predictions for the future market size using a simple threshold model. Producers adopting a dual strategy, targeting the Chinese market as well as using China as a production platform for supplying the world market, are most likely to be successful in the long term.

Price Stability

Before ascension to WTO membership, China's market was protected by large import tariffs. In 2002 tariff rates for cars with engines over 3.0 liters were cut from 80 percent to 50.7 percent. The tariff for smaller vehicles dropped from 70 percent to 43.8 percent. If China keeps its commitment to WTO, it will drop the import tariff to 25 percent by 2006. The recent drop in tariffs has sparked a price war in China, with compact car prices dropping rapidly. FIAT has cut the price of its most popular compact models by roughly ten percent to keep up with competition. Price competition is especially heated in the low-cost compact car market. Honda is just one of the entrants in this market, pushing its compact FIT.

The effect of dropping sticker prices may be amplified by future promotions of zero-percent interest loans, further reducing the opportunity cost of owning a car. Assuming stable prices for gasoline, the real price of owning a car is likely to decrease until China meets its WTO commitment. Since China has limited domestic oil reserves, any growth in technology using oil as its input will have to rely on imports or locally refined product. The nine percent increase in oil imports this year compared to 2002 may be a sign of things to come. Unless refinery capacity matches the growth in demand, gasoline prices are likely to rise in the medium term. Decreasing sticker prices seem to have a two-fold effect, as Figure 2 demonstrates. Subcompacts have maintained their market share, yet the share of full-size sedans getting fewer miles to the gallon has increased by six percent at the cost of regular sedans. It is noteworthy that this substitution is taking place in the higher-end market but not at the low end.

Developed Credit Markets

Only 15 to 20 percent of all cars currently sold in China by General Motors are financed through car loans, with 15 percent being the national average. The remainder of the cars is paid in full at the time of purchase. This compares to a financing rate of roughly 85 percent for all GM cars sold in the U.S., 70-80 percent in Germany and the UK, and an average of 70 percent in the entire developing world. This low borrowing rate is simply due to the historical lack of a borrowing culture in China, both on the supply and demand side. Several insurers guaranteeing car loans to bank lenders have recently suspended these policies, due to the large share of non-performing loans.

In an effort to provide more liquidity, the central state government has just announced the official rules for entrants into the private car-financing business. Under these rules, non-bank companies must maintain registered capital of 300 million Yuan (U.S. $35 million), minimum assets of 4 billion Yuan (U.S. $480 million) and show an annual income of at least 2

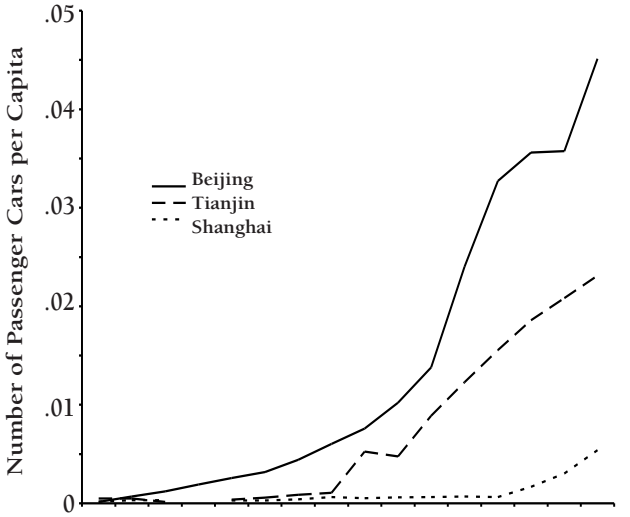
billion Yuan (U.S. $235 million). These requirements restrict the market to big players for now. Ford and General Motors have already submitted applications to set up financing branches. The profitability of these operations will largely depend on loan volume, the ratio of non-performing loans (NPLs) and the interest rate charged. The latter two aspects provide some reason for concern. Interest rates are not allowed to float under current regulations and the ratio of NPLs for individuals with no existing credit history adds to uncertainty about the potentially large number of NPLs. More liquid credit markets will certainly increase car purchases, yet the impact may be smaller than expected in the short run since borrowing has a somewhat negative connotation in Chinese culture.

Government Policy Intervention

There are signs that the government will take measures to prevent overheating of the automotive industry. The National Development and Reform Commission has signaled concerns about fluctuating demand due to "energy supply, environment and transportation problems." They further expressed concerns about "blind investment generating excessive vehicle capacity." Early drafts of legislation indicate that the state will attempt controls of vehicle manufacturing capacity by treating completely "knocked down" components as imports, subject to tariffs. Foreign producers have not yet voiced opposition to these measures, but if implemented, they would grant a large advantage to purely Chinese-manufactured automobiles. A draft of the legislation shown to Reuters implies that this measure "would ensure locally developed cars command half the market by 2010 and discourage the use of imported parts." Whether these regulations will be legal under existing WTO regulations is questionable.

Signs that the central government is moving to dampen the excessive growth are increasing. *The New York Times* reports that China has announced legislation imposing more stringent fuel efficiency standards than are currently in place in the U.S. This legislation will further the adoption of subcompact and compact cars, which are mainly produced in China, since most imports are SUVs and luxury cars. These regulations are not empty threats. As Figure 3 shows, the provincial government in Shanghai has successfully kept down the number of vehicles—reflected in a much lower rate of per capita ownership compared to Tianjin and Beijing (which have similar levels of income). Increasing urban air pollution may increase government efforts to limit the number of cars as well as increase fuel efficiency of existing cars.

Figure 3: Private Car Ownership Rates in Three Coastal Provinces



Source: State Statistical Bureau (2003)

Conclusion

The number of passenger cars in China will certainly increase in the near future, but it is questionable whether current growth trends can be sustained for more than a few years. The central government favors all-Chinese-produced, compact, low-emissions vehicles. In the short run, these vehicles will be produced by joint ventures between the U.S., European, Japanese and Korean carmakers, and local joint venture partners. In the long run, growth of the market for passenger cars is likely to slow down, with most industry watchers such as KPMG warning of a plateau and excess capacity as soon as 2005. For the joint venture car manufacturers with on-the-ground production capacity, this poses a strategic challenge. In order to ensure success in the long run, a strategic reorientation to use China as a production platform for global markets – much as VW and Audi are doing – is likely to be a successful hedge against a potential slowdown and further deterioration of car prices in China.

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