Geo Factsheet

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The Global Environmental and Economic Impact of the Rise of China

Introduction

The scale of economic growth in China *(Fig. 1)* in recent years has been so significant that the country has been dubbed 'the new workshop of the world', a phrase first applied to Britain during the height of its industrial revolution in the 19th century. This rapid industrialisation has not only had a phenomenal effect on China itself but it has also impacted significantly on the rest of the world. This Factsheet examines the global economic and environmental consequences of the dramatic transformation of the Chinese economy.

The World's New Economic Growth Engine?

China is the world's fastest growing economy *(Fig. 2)*. It has achieved economic growth of about 9% a year for more than 25 years, the fastest growth rate for a major economy in recorded history. Many economists argue that strong Chinese economic growth was the main factor behind the world as a whole escaping recession after the American stockmarket fall in 2000-01. One projection is that China's economy will overtake Japan's by 2015 and the USA's by 2039. By 2050 it is expected that China will be the world's largest economy by a significant margin *(Fig. 3)*. The following are among China's recent economic achievements:

- It has passed Japan as the country that has the largest trade surplus with the USA. In 2003 this amounted to $59 billion.
- In 2004, exports rose by 35% to $593 billion, while imports grew by 36% to $561 billion.
- It is the second largest holder of foreign exchange reserves after Japan.
- Half of the world's clothes and a third of its mobile phones are made in China.
- China is now the world's No.1 market for mobile phones and the second largest market for computers.
- In 2004, foreign direct investment in China amounted to $64 billion *(Fig. 4)*, making it the second largest recipient of FDI in that year.
- In 2003 China sold $440 billion worth of goods to other countries.
- In 2004, Wal-Mart (the world's largest TNC) imported $18 billion of goods from China. Eighty percent of Wal-Mart's 6000 suppliers are from China.
- China accounted for one-third of the rise in daily global oil consumption in 2003 and 2004. Its demand for minerals led to a huge rise in profits for major mining TNCs.

Fig. 1 China.

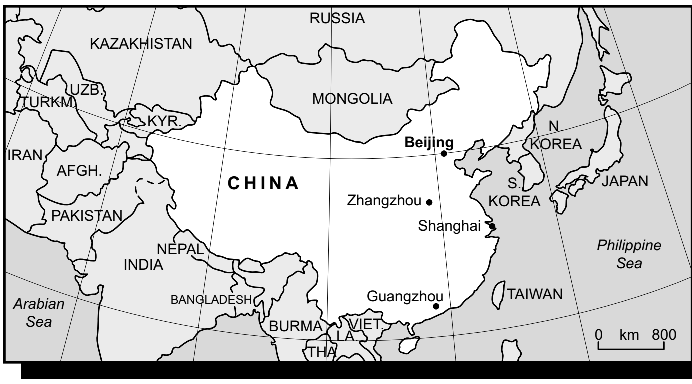


Fig. 2 Annual average GDP growth, 1993 - 2002.

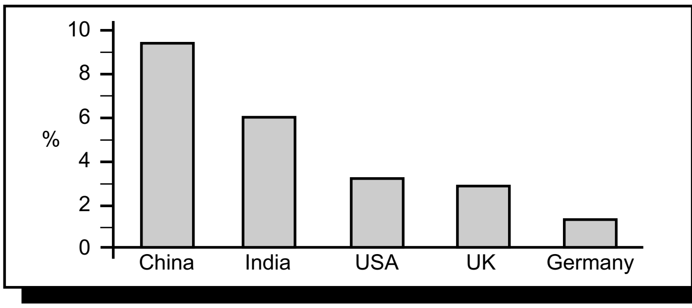


Fig. 3 The largest economies in 2050.

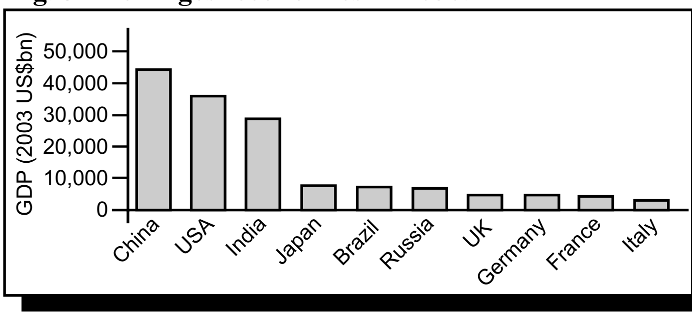
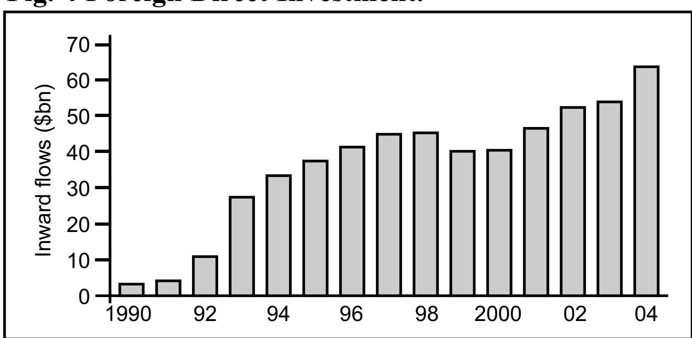


Fig. 4 Foreign Direct Investment.



In the next few years it is expected that China will achieve even more benchmarks. According to the United Nations, Chinese will surpass English as the most-used language on the Internet in 2007, and by the end of the present decade China will produce more Ph.D.s than the USA. China will host the Olympic Games in 2008, a key event in presenting a new, modern image to the outside world. China's position in the global tourism industry is growing rapidly. China now represents 9% of the worldwide tourist market. The World Tourism Organisation forecast that China will receive 230 million tourists annually by 2020 which would make it the world's top tourist destination.

The Costs and Benefits of Chinese Economic Growth

Has the rapid development of China delivered more costs than benefits to the outside world or has the reverse been true? A report by the large financial organisation Morgan Stanley estimates that:

- Low-cost imports from China have saved US consumers more than $600 billion over the last decade.
- It has saved American manufacturers even more. The ability to purchase low-cost Chinese components has been a major factor in helping US firms to keep costs down and remain competitive.
- This has resulted in a low rate of inflation which has allowed very low interest rates in the USA.
- In turn this has made it easier for individuals to buy houses and for companies to invest.

Such benefits have also accrued to other countries too, for example the UK. One of the main reasons why manufactured goods such as televisions, DVD players and digital cameras are so low in price in real terms (accounting for inflation) compared to five years ago is low-cost, huge scale production in China. So, it can be argued that in some ways at least the quality of life in the UK, USA and other countries has been improved by the low prices of Chinese goods. Also, as incomes rise in China and its middle class grow in number, China is importing more and more goods and services from other countries *(Fig. 5)*. In fact, many countries sell more to China than they buy from it *(Fig. 6)*. Trade between China and the ten members of ASEAN (Association of Southeast Asian Nations) grew by 30% in 2004 to $106 billion. The EU's exports to China have risen sixfold in the last 15 years.

Exam Hint: Always keep up to date. The so-called 'bra-wars' of 2005, where a quota system was imposed on Chinese textiles led to all sorts of discussions on free trade.

Fig. 5 Different countries imports of goods as a percentage of world goods imports 2003.

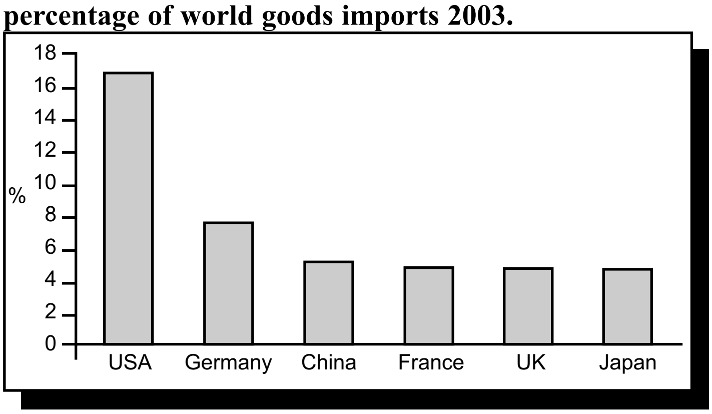
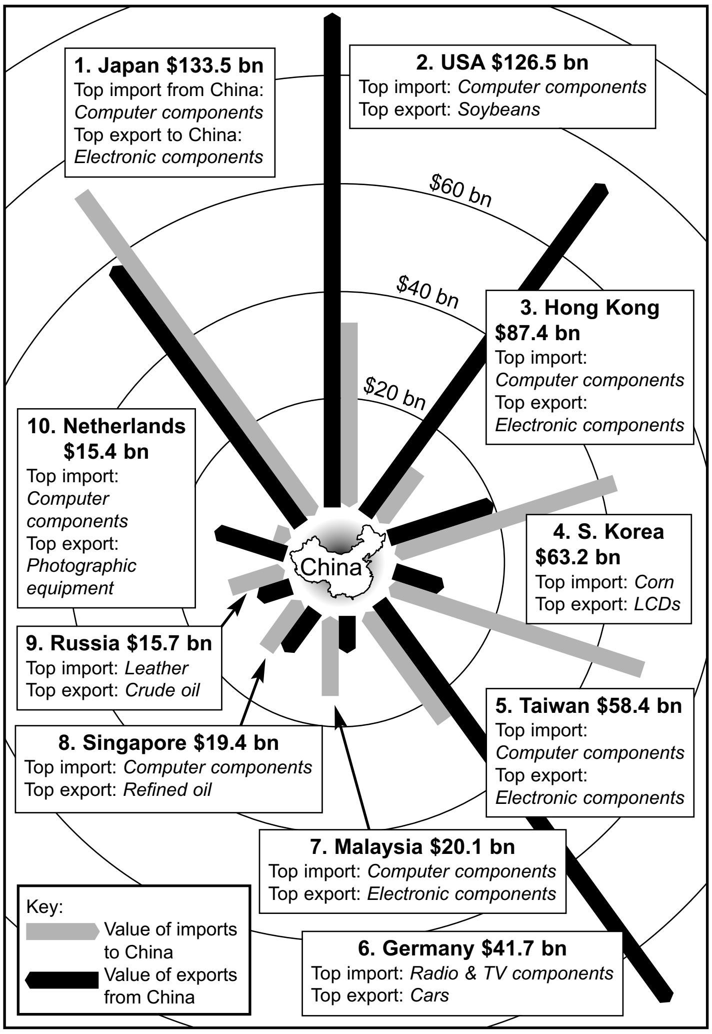


Fig. 6 China's top ten trading partners in 2003.



However, there are considerable concerns about China's phenomenal development. These include the following:

- Job losses in traditional industries in MEDCs which cannot complete with low-cost Chinese production. China is now the major force in the global shift (filter-down) of manufacturing industry. Also many LEDC countries trying to develop industries such as textiles just cannot compete with the might of China.
- Large increases in the global price of raw materials due in large part to the rapidly increasing demand from China, e.g. oil price rises.
- Rapidly increasing foreign direct investment (FDI|) in China has drawn investment away from other countries. For example, 23,000 Japanese companies are now operating in China, because to remain competitive they have to manufacture where production costs are lowest.
- Balance of payments concerns in some countries as they import far more from China than they export to it. The USA in particular has argued that the Chinese currency (the renminbi), is too low in value, thus giving it too much of an advantage in exports (by making them very cheap indeed). In May 2005 the US Treasury told China to revalue its currency by at least 10% against the dollar to prevent protectionist legislation in the US Congress.
- Significant environmental concerns as China uses more and more energy to fuel its economic expansion. Coal is China's main domestic source of energy. It is also the most polluting form of energy.
- Concerns that an economically stronger China will flex its political/military muscles more than it has in the past.

Growing Demand for Raw Materials – Pushing Up Commodity Prices

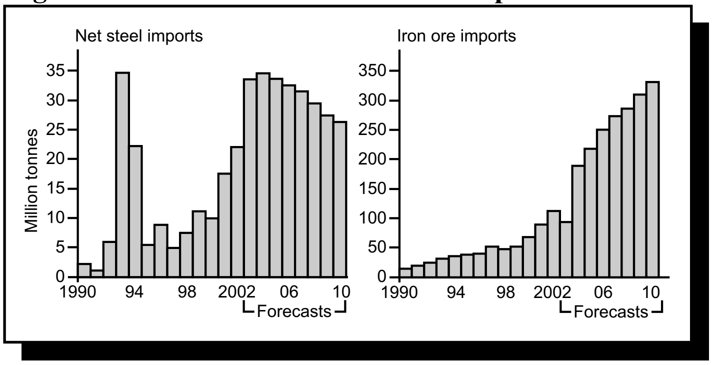
China has required huge raw material inputs to feed its rapidly expanding industries *(Fig. 7)*. A high percentage of these raw materials have to be imported. Rapidly increasing Chinese demand is one of the main reasons why commodity prices (oil, copper etc.) have been so high recently. For example, in March 2005 crude oil was trading at well over $50 a barrel, more than double the price level of two years previously and still it rises. The question that some economists are asking is "Is this a short-term boom with for example, commodity prices falling back in the next few years or are we in the early stages of a new **"super cycle"**, a period of rapid and sustained economic growth that started in 2002?" Those who feel that a 'super cycle' is possible or probable see China as the catalyst for this process. If commodity prices stay high then this will justify an even higher level of raw material exploration and exploitation in the coming years. It is not by chance that so many new mining companies have floated on the London Stock Exchange in the last two years. Exploration is occurring in a number of areas which were once considered too costly or risky to develop when energy prices were lower.

Previous super cycles occurred:

- In the late 1880s and early 1890s, driven by the industrialisation and urbanisation of the USA.
- In the late 1940s and 1950s, powered by the post-war reconstruction of Europe
- In the 1960s and early 1970s, driven by the resurgence of the Japanese economy.

China is the world's largest producer of coal, steel and cement. At 220 million tonnes in 2003, China produced more steel than the USA and Japan combined. In addition, China had to import an extra 40 million tonnes to satisfy domestic demand *(Fig. 8)*. Although China is the world's largest coal producer it may well become a net importer within a few years as demand continues to grow significantly. The country is the second largest consumer of energy and the second largest importer of oil after the USA, surpassing Japan in 2003.

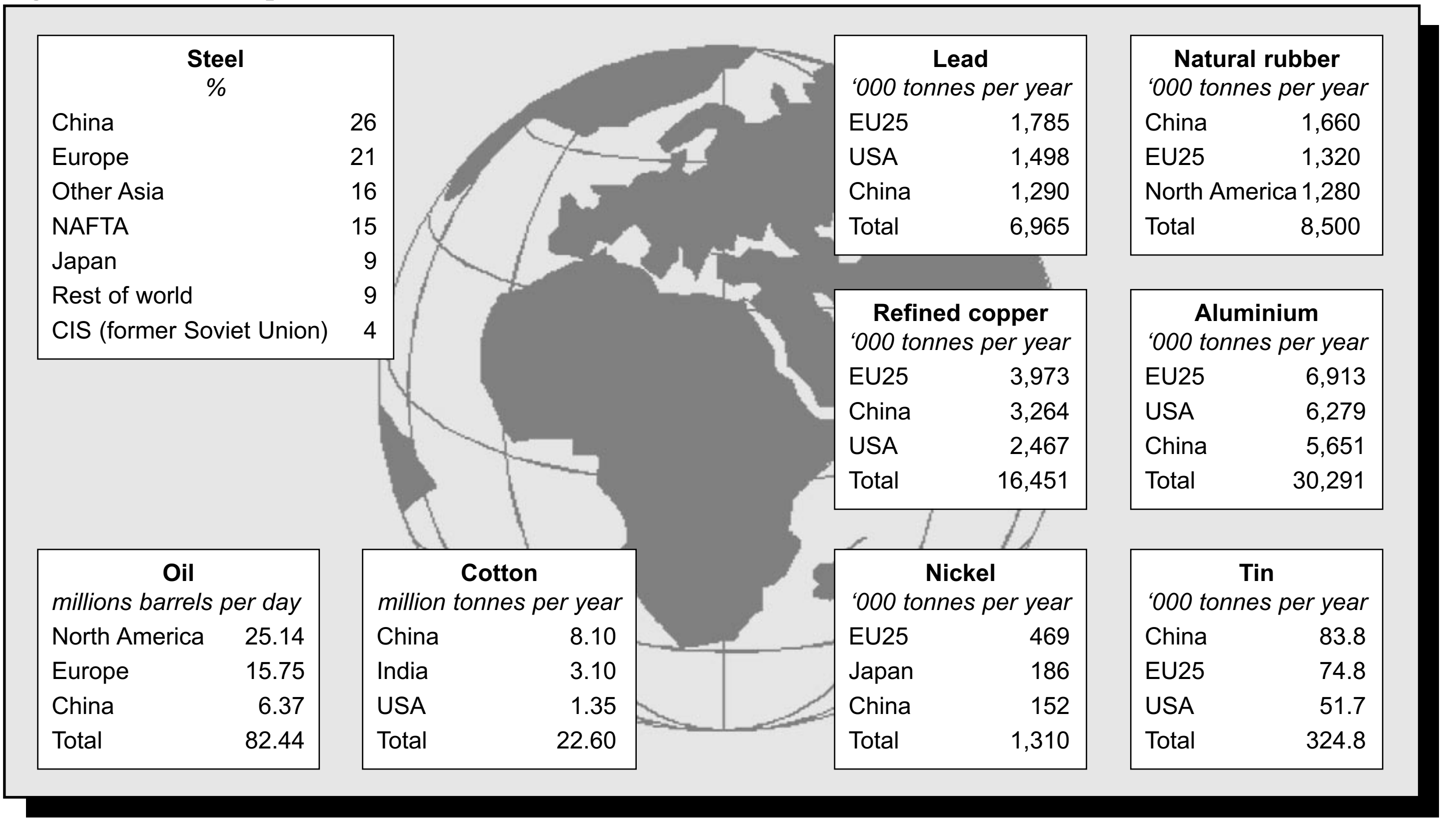
Fig. 8 China - net steel and iron ore imports.



China is the world's second largest nickel consuming country with an estimated demand of 140kt in 2004. Domestic production is just over half of this figure. China is and will remain heavily dependent on imported nickel for stainless steel, plating and other uses. By 2010, its annual import requirement could exceed 200kt.

The huge demand for raw materials in China has been a major factor in pushing up shipping freight rates to new levels with the world's ocean-going bulk carrier fleet operating at almost full capacity. Combined with higher commodity prices there is concern that this might filter through to higher global inflation.

Fig. 7 World consumption.



Steel %	
China	26
Europe	21
Other Asia	16
NAFTA	15
Japan	9
Rest of world	9
CIS (former Soviet Union)	4

Lead *'000 tonnes per year*	
EU25	1,785
USA	1,498
China	1,290
Total	6,965

Natural rubber *'000 tonnes per year*	
China	1,660
EU25	1,320
North America	1,280
Total	8,500

Refined copper *'000 tonnes per year*	
EU25	3,973
China	3,264
USA	2,467
Total	16,451

Aluminium *'000 tonnes per year*	
EU25	6,913
USA	6,279
China	5,651
Total	30,291

Oil *millions barrels per day*	
North America	25.14
Europe	15.75
China	6.37
Total	82.44

Cotton *million tonnes per year*	
China	8.10
India	3.10
USA	1.35
Total	22.60

Nickel *'000 tonnes per year*	
EU25	469
Japan	186
China	152
Total	1,310

Tin *'000 tonnes per year*	
China	83.8
EU25	74.8
USA	51.7
Total	324.8

Domination of Low Cost Manufacturing: Speeding Up Global Shift

China now manufactures two-thirds of the world's photocopiers, microwave ovens, DVD players and shoes. It makes an even higher proportion of the world's toys. Its low-cost production on a massive scale and over a wide range of products has speeded up the global shift of manufacturing from MEDCs to NICs/LEDCs. However, it is not just MEDCs which have felt the sting of Chinese competition. For example, footwear producers in Brazil have been finding it increasingly difficult to compete with cheap Chinese imports. One consequence has been for Brazilian companies to shift domestic production form the Southeast of Brazil to the Northeast because wages are significantly lower in the latter region. Industries in many countries have had to change the ways they operate to withstand competition from Chinese imports.

Foreign investment has played a much more important role in China's industrialisation than that of Japan or South Korea in earlier years. For example, nearly all of China's big car firms are in partnership with large foreign TNCs. Some economists hail China's success in attracting so much foreign direct investment but others argue that China has become too dependent on foreign TNCs for continued growth. According to Chinese government data, over half of its trade is accounted for by foreign-invested firms in China.

An increasing number of Chinese manufacturers are seeking to become global players, backed by the "Go Global" policy of the Chinese government. Some commentators have drawn parallels with the strong emergence of international Japanese brands in the 1970s and 1980s. However, sceptics argue that Chinese manufacturers remain technical followers rather than leaders. Although the names and brands of Chinese companies are beginning to be known around the world they have along way to go to match Asian rivals such as Japan and South Korea and the large North American and European TNCs. China's most impressive companies are in the energy and minerals sector *(Table 1)*. The three big oil companies, PetroChina, Sinopec and CNOOC have invested heavily overseas. However, the total outward foreign direct investment of Chinese companies in 2003 was just $2.9 billion compared the $54 billion that flowed into China in the same year. As a recent article in the Economist stated (8/1/05), "The global footprint of Chinese companies is still rather faint". However, this could change significantly in the future.

Table 1 The largest Chinese companies in 2003.

Company	Sector	Revenue $bn	Net income $bn
PetroChina	Oil/gas	36.60	8.39
Sinopec	Oil/gas	51.10	2.60
CNOOC	Oil/gas	4.93	1.39
Baosteel	Steel	5.31	0.84
Chalco	Aluminium	2.80	0.43
Lenovo*	PCs	2.97	0.14
SAIC	Cars	0.83	0.18
TCL	TVs/Electronics	3.40	0.07
Haier	White/brown goods	9.70	n/a
Wanxiang	Car parts	2.00	n/a
Huawei	Telecoms equipment	**5.00	**0.30

** Year to March 2004   **2004 estimate*

A Growth Market for Foreign TNCs

A survey by the American Chamber of Commerce in 2003 found that most US companies were very happy about their operations in China. For example, Coca Cola boasts a 55% share of China's soft drink market, having been profitable in China since the mid-1990s. KFC and Pizza Hut dominate the fast-food sector with KFC making almost as much money in China as it makes in the USA.

The growth of China as a consumer market has been largely due to the rapid expansion of the middle class which now numbers about 100 million people. This population is located mainly along the east coast and along the Yangtse River. Its spending power is a target for both domestic and foreign companies. For example, for the Japanese company Olympus the digital camera market in Japan is nearing maturity as almost half of the Japanese population now own digital cameras. In contrast the Chinese market is still in the very early stages of digital ownership. This is the same situation for so many other products. This is why so many foreign companies are now operating in China or are planning to do so in the near future.

Fig. 9, the product life cycle, shows how sales of a product in a country or wider region change over time. As incomes rise significantly in China, many people are for the first time able to afford products which the great majority of people own in MEDCs. Thus, for China, such products are in stages 1 or 2 of the product life cycle. This is certainly the case with cars *(Fig. 10)*. Companies are very eager to enter markets where there is strong potential for rapidly increasing sales.

Fig. 9 The product life cycle.

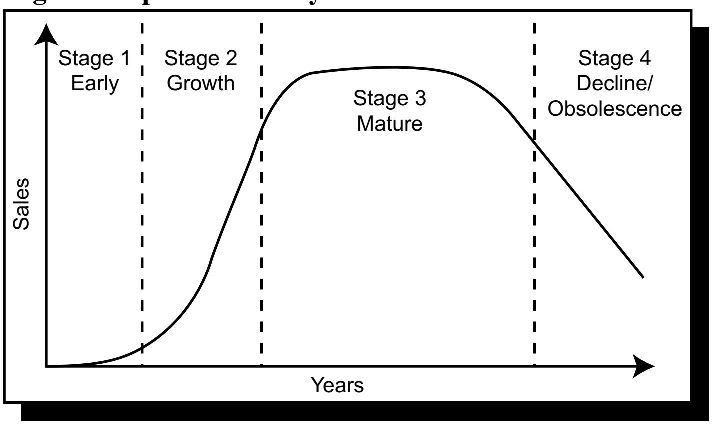
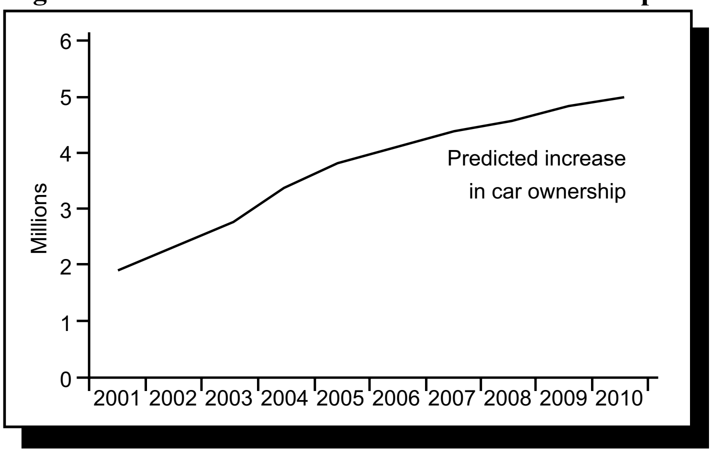


Fig. 10 Predicted increase in Chinese car ownership.



Environmental Impact

As countries industrialise and impact increasingly on their environments, public concern grows and governments are forced to take action. In China the environmental movement is growing rapidly in response to heightened levels of pollution. According to government statistics, China now has more than 2,000 nongovernmental environmental groups. Partly as a result of increasing environmental awareness in the country China's State Environmental Protection Administration has been given more real government backing to tackle the polluting ways of China's largest enterprises. The scale of pollution in China has a global impact. Even with only 20 million vehicles, China is already the world's second biggest producer of greenhouse gases, due to largely to the burning of fossil fuels in industry and energy production.

After suffering a series of environmental problems due to deforestation, some involving major loss of life, the Chinese government has acted to protect its own forests. However, one major side-effect of this welcome policy has been to increase demand for imported forest products. China is second only to the USA in wood consumption and it is only a matter of time before it becomes the world's largest consumer. According to the World Wildlife Fund, China will be able to meet only half of its demand for wood from domestic forests by 2010.

The global timber industry is big business and much illegal logging is taking place to satisfy increasing demand. The British-based Environmental Investigation Agency (EIA) claims that China is the largest buyer of stolen timber in the world. The EIA has recently focussed its efforts on the smuggling of illegally-logged timber from Indonesia to China, describing it as "the world's biggest timber smuggling racket". This trade figured prominently in the news media in Britain in May 2005. The EIA says it has uncovered a merbau trade route controlled by crime syndicates which sends 20 shiploads a month to China from Indonesia. Although the smugglings of merbau logs between Indonesia and China is against the laws of the two countries, effective action to stop this trade has yet to be implemented. According to the EIA the crime syndicates pay bribes of over £100,000 a shipment to ensure the logs can leave Indonesian waters. Much of this illegal timber is destined for Zhangjiagang, China's biggest timber port located about 50km north of Shanghai. After arrival at Zhangjiagang, much of the timber is taken to the nearby town of Nanxun, the wooden-flooring centre of China. Nanxun boasts more than 200 sawmills and 500 wood product factories

The conservation group WWF estimates that China imports more than 100 million cubic metres of wood a year with over a quarter of this total illegally felled in eastern Russia, Brazil, Southeast Asia and Africa. However, the problem of illegal timber imports is not confined to China as environmental groups have also traced the trade to Europe, the USA and Japan.

Political Repercussions

According to an article in Newsweek (March 28th 2005), "In November (2004), Japan chased a Chinese sub out of its territorial waters, near a disputed and gas-rich area of the East China Sea. Almost as soon as Beijing apologised for that incident, a Chinese research vessel intruded into Japanese waters, apparently surveying the seabed for oil and gas deposits". China is in dispute with a number of its Asian neighbours about territorial waters and isolated island groups which have potential raw material and strategic implications.

There can be little doubt that China is seeking to increase its political influence in raw material rich countries. China has been particularly active in Africa in recent years. For example:

- China is rebuilding the railway system in Nigeria, Africa's largest oil producer
- In Zambia, Chinese companies own one of the country's largest copper mines
- In Rwanda, Chinese companies have paved more than 80% of the main roads.

The Future

It has been predicted that by 2050 the Chinese economy will be considerably larger than the US economy. This will have considerable global implications. Over the next 15 years it is likely that the demand for oil will grow at up to 3% a year, double the average for the last 20 years. However, there is concern that despite the increase in investment in recent years the oil industry and other commodities will struggle to meet the pace of rising demand. This points to higher costs of motoring, energy production and other factors affecting the quality of life. If it is felt that the benefits of Chinese economic development have so far outweighed the costs, opinion might be reversed in the future.

According to the business section of the Independent newspaper (15/3/05), looking at the next 30 years or so, "Economic power will shift eastwards more dramatically than anything Western business imagines. It will be vibrant China and India that will bail the West out of the economic malaise of an ageing population. To get there, Western companies need to invest billions more than planned on extracting resources to feed the emerging industrial engine of the East".

Further research

The most useful research comes from business magazines such as The Economist, The Financial Times, Fortune, Business Week etc. Always try to keep up to date on the very fast moving topic.

Acknowledgements

This Factsheet was researched by Paul Guinness, who works at Kings College School Wimbledon and is a well-known author.

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