

## Strong Demand Growth in China Keeping Crude Oil Prices High

### PRICE DIFFERENTIALS BETWEEN OIL GRADES VERY WIDE AT TIMES

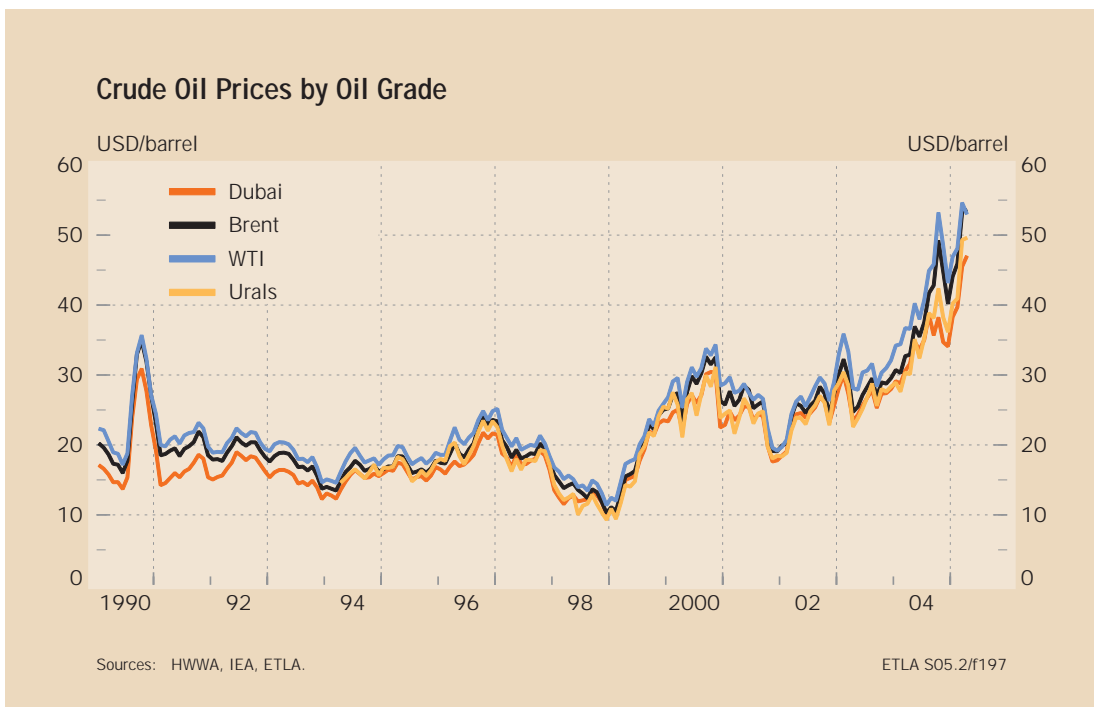
Crude oil prices rose substantially during 2003-2005. The price of Brent crude fluctuated between USD 40-50 per barrel (around 159 liters) last winter, reaching its highest average monthly level in March. At that time, the average price rose above 53 dollars a barrel. Price differentials between oil grades have fluctuated strongly along with the rise in oil prices. The prices of light, low-sulfur grades (for example, the American WTI and North Sea Brent grades) have, at times, risen much faster than those of so-called heavy crude grades that contain higher sulfur content. For example, the price of the Russian Urals blend, a heavy grade, has occasionally been almost 7 dollars lower per barrel than Brent. The Brent-Dubai grade price



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differential reached a peak of 10 dollars recently. Growing price differentials have stemmed from tighter environmental regulations, which have boosted demand for lighter oil at the cost of heavier oil grades.



## SEVERAL FACTORS HAVE BOOSTED CRUDE OIL PRICES

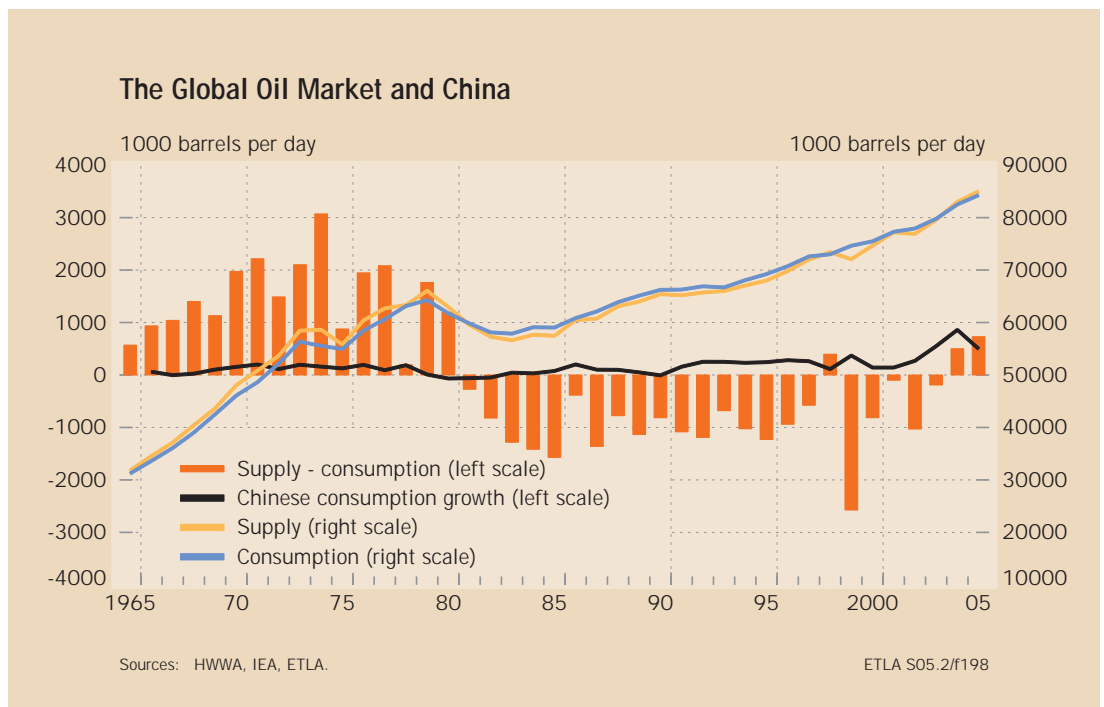
The supply of crude oil has been hampered in recent years by political difficulties in many oil-producing countries such as Nigeria, Venezuela and Russia, in addition to the war in Iraq. OPEC production cuts, the last of which was decided on in February 2004, also raised pressure on oil prices. Since then, production quotas were raised in the summer and autumn of 2004, and in March of this year. In addition, OPEC countries have produced oil in excess of quota limitations.

From the early 1980s to 2004 (with the exception of 1998), oil demand increased at a faster pace than supply, pushing oil inventories to exceptionally low levels in 2004 and reducing nearly all of the available spare production capacity. According to the International Energy Agency (IEA), the world oil market situation eased in 2004 and in the beginning of 2005, when inventories rose at least in the industrialized countries. Nevertheless, the rate of in-

crease in oil prices accelerated. These steep price increases can be explained by the considerable heightening of geopolitical uncertainties, increased market speculation related to these uncertainties and the low level of spare production capacity, as well as stronger-than-expected demand growth in China and other developing economies.

## CHINA HAS BEEN THE DRIVER OF OIL MARKET DEVELOPMENTS IN RECENT YEARS

Oil demand in China and India expanded during the oil crises of the 1970s, unlike demand developments in industrialized countries. Rising demand was met with these countries' own production. China was self-sufficient in providing for its oil needs until 1993, when it became a net importer of oil. In the beginning of the 1980s, Chinese oil demand fell sharply in response to the economic reforms implemented at the time. Towards the end of the decade, and in the 1990s, however, growth in oil demand accelerated appreciably in the wake of surging industrial production. In 2003-2005,



demand growth accelerated remarkably in response to vigorous growth in industrial production and transportation.

In 1990, Chinese oil demand stood at a level slightly less than 25 percent higher than that prevailing in 1978, the year economic reforms were introduced. By the year 2000, however, demand was already 2.5 times higher and in 2004 already 3.5 times higher than in 1978. For purposes of comparison, Japanese oil demand remained roughly unchanged during 1978-2004, while demand in the Euro Area countries rose only marginally. Even U.S. demand rose by only 9.4 percent over this period. Indian demand, on the other hand, increased slightly more than 4-fold. Fueled by demand growth in developing countries, total world demand increased by a factor of 1.3 over the same period.

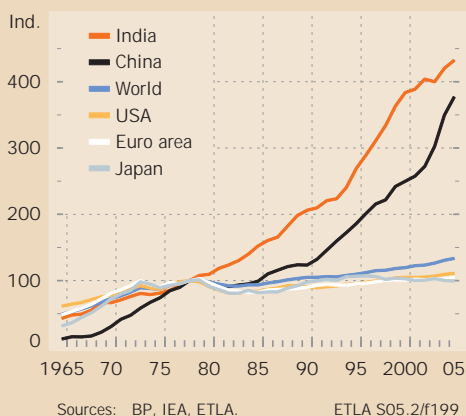
Despite its buoyant demand growth, China still accounted for only 7.7 percent of world oil demand in 2004, according to British Petroleum (BP). This reflects the undeveloped nature of the economy, for which reason demand has started to grow from an extremely low level. Per capita oil consumption in China stood at

only 0.7 barrels in 1978, and China's share of world oil consumption was only 2.9 percent. In the EU countries, per capita consumption stood at 14 barrels, while in the U.S. it was higher at 27 barrels per annum. By 2004, per capita oil consumption in China had risen to 1.8 barrels.

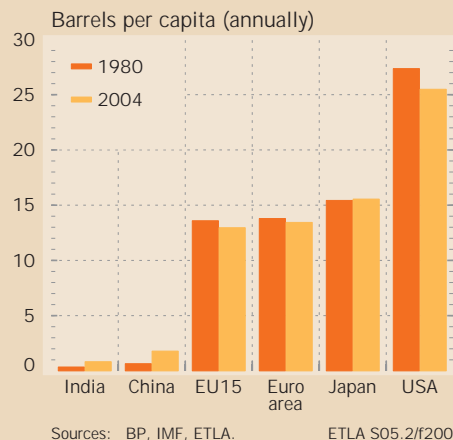
China's consumption share per se is not considerably high, nor would it seem to suggest dominance by the country in world oil markets. However, consumption growth was so strong in 2003-2005 that it tightened the world oil market considerably. In 2004, China accounted for as much as a third of the increase in world oil consumption. Demand growth that year was also driven by increased usage of oil in energy production due to stoppages in electricity generation among other things.

Chinese oil consumption is expected to continue to increase rapidly, since economic growth is very energy-intensive in that country. China's oil intensity will also be lifted in coming years by rapid growth in automobile ownership, which will boost demand particularly for gasoline and, as a result, also light oil grades.

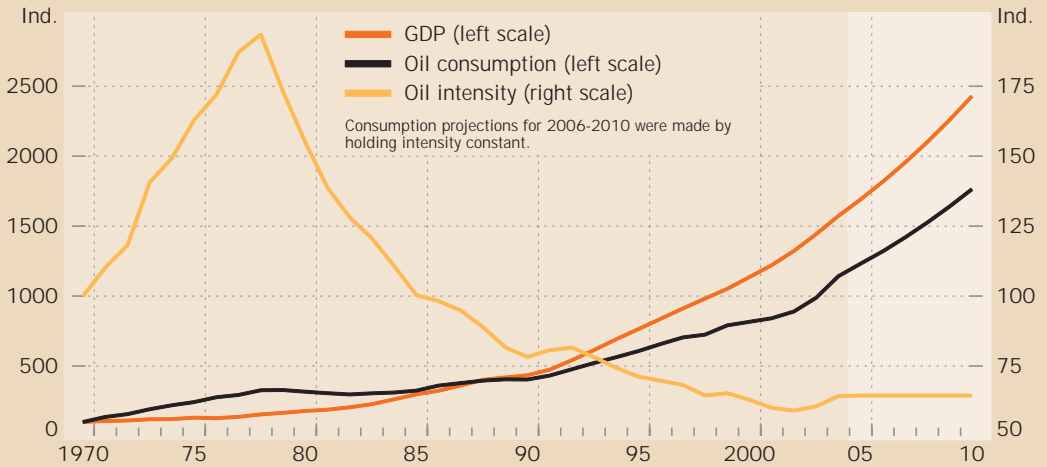
**Crude Oil Demand in Selected Regions (1978=100)**



**Per Capita Consumption of Crude Oil**



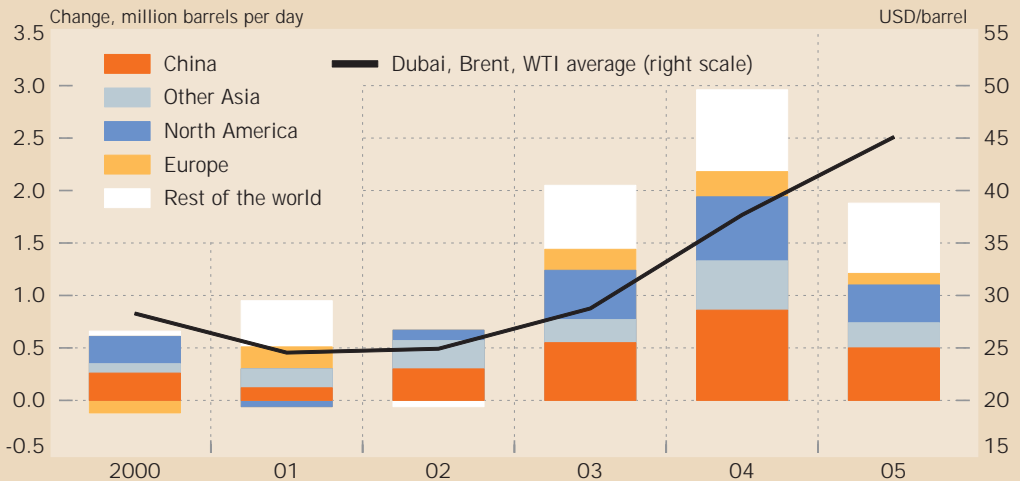
## Chinese GDP and Demand for Crude Oil (1970=100)



Sources: BP, IEA, ETLA.

ETLA S05.2/f201

## Growth in World Oil Demand by Region and Price of Crude Oil



Sources: IEA, ETLA.

ETLA S05.2/f202

**CHINA HIGHLY DEPENDENT ON IMPORTED OIL**

China imports about a third of its oil needs, even though the country was the world's sixth largest oil producer in 2003 according to BP. China's dependency on imported oil will inevitably continue to increase as a consequence of the country's low oil reserves. In 2003, China's proven oil reserves were, according to BP (2004), only a couple of percent of total world proven oil reserves. At current rates of consumption, they would last only 20 years. According to EIA (2004), one of major problems is that China's refining capacity is not suitable for refining heavier Middle Eastern oil grades high in sulfur content. Nevertheless, several Chinese refineries are being upgraded to make them more suitable for refining heavier, so-called more sour grades of Middle Eastern crude oil. In 2003, Middle Eastern oil accounted for around half of China's crude oil imports, according to foreign trade statistics (China 2005).

China is very vulnerable with respect to securing sufficient crude oil to meet its needs because a large share of its oil imports comes from the politically unstable Middle East. Indeed, China is attempting to build strategic petroleum reserves. As is the case with other raw materials, Chinese efforts to secure sufficient levels of oil have been made by increasing their ownership in global oil reserves, similar to India's strategy (see, for example, EIA 2004). Efforts to reduce oil dependency are also being made by increasing consumption of other energy sources, such as coal and nuclear power.

Oil consumption will increase rapidly in the future in response to growth in energy-intensive production and significant growth in the car

stock. Energy conservation measures (such as energy taxes) have so far been barely implemented in developing countries, and incentives to curb demand are still weak. In addition, gasoline prices are kept low in many countries through various support measures.

**CONCLUSIONS**

It appears that oil market instability is here to stay, and crude oil markets will remain tight on average over the long term. Demand will grow so strongly in developing countries, particularly in China, that supply increases will keep spare production capacity very limited and inventories will remain low. This means that the equilibrium price of crude oil has risen permanently in response to increasing demand. Supply has not been able to meet the pace of growth in demand.

Industrialized countries are able to adjust more to higher oil prices compared to developing countries (Euroframe 2005), however, thanks to, for example, the decline in their oil intensities since the oil crises of the 1970s (Suni 2004 A). Developing countries face greater difficulties because energy is used more inefficiently. If crude oil supply peaks only in 20-30 years, oil adequacy will be sufficient. Political instabilities in the Middle East, however, pose significant risks.

Oil demand will continue to increase rapidly for a long period of time, even if the relative importance of oil in total output declines. Rising oil prices, and wide swings in prices, will make the improvement of energy efficiency and development of alternative energy sources one of the world's leading areas of growth in the future.

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