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Research Centre
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KA-FU WONG

LONG LINES, LOST PROFITS: CHINA'S REGULATED FUELS MARKET

Hong Kong-based investment banking analyst Steven Chan travelled to the mainland province of Guangdong late in the summer of 2005 to tour new service stations built by a Chinese-Western oil joint venture. Concerned by reports of long lines at the pump in Shenzhen, his driver opted to fill the tank with “expensive” Hong Kong gas [see **Exhibit 1**] before crossing the border. Prices of crude oil, unregulated in China, had recently increased far more than government-guided gasoline and diesel prices, squeezing the margins of local refiners. Rumour had it that independent stations were having trouble getting supply, and “black market” trade was active. As they made their way up the Hong Kong–Guangzhou highway, Steven questioned the Western oil firm’s strategy of aggressively entering a price-controlled market.

Supply and Demand

China was the top oil producing country in Asia and the fifth largest in the world with an estimated 2005 production rate of 3.6 million barrels per day from 18.25 billion barrels of proved crude oil reserves.¹ China was also the world’s second largest consumer of oil behind the United States. A net importer since 1993, its daily use was over 6 million barrels.² The International Energy Agency estimated China’s oil consumption—driven by transport demand—would increase 3.4% annually to 13 million barrels per day by 2030, while its domestic supply would decrease 1.5% annually resulting in shortfalls of up to 11 million barrels per day [see **Exhibits 2 to 3**]. China’s demand for refined oil products more than doubled to 5.6 million barrels per day between 1990 and 2003. Over the same period, demand for gasoline and diesel fuels increased from nearly 1 million to 2.7 million barrels per day [see **Exhibit 4**]. The transportation, industrial and agricultural sectors accounted for 41%,

¹ Oil & Gas Journal, “Worldwide Look at Reserves and Production”, December 19th 2005.

² U.S. Energy Information Administration, “China Country Analysis Brief”, August 2005.

Mark Grant Stimson prepared this case under the supervision of Dr. Ka-fu Wong for class discussion. This case is not intended to show effective or ineffective handling of decision or business processes.

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22% and 18% of diesel consumption respectively.³ China had 25 million cars and trucks on the road in 2004, a number anticipated to reach 100 million within a decade.⁴

Industry History

China was home to the “world’s first commercial hydrocarbon field” located in the central Sichuan Basin.⁵ Although wells had been drilled with brass tipped bamboo poles as early as 300 BC, a domestic petroleum industry was slow to develop.⁶ Foreign firms such as Standard Oil and Asiatic Petroleum—a Royal Dutch, Shell and Rothschilds partnership—supplied much of the country’s oil until the establishment of the People’s Republic of China (“PRC”) in 1949. Shortly after “liberation” of the north-western Yumen oilfield, responsibility for expanding China’s limited production was placed under control of the Fuel Industry Ministry and later the Petroleum Industry Ministry. Discovery of the north-eastern Daqing oil region in 1959 helped provide enough reserves to maintain oil self-sufficiency until the early 1990s.

China’s modern oil and gas industry began to take shape in the 1980s with the establishment of three national petroleum companies. China National Petroleum Corporation (“CNPC”) and China National Offshore Oil Corporation (“CNOOC”) were responsible for upstream exploration and production, while China Petrochemical Corporation (“Sinopec Group”) focused on downstream refining, marketing and distribution. As well as operationally, the firms were divided regionally with CNPC focused on the north—where much of China’s onshore oil reserves were located—while Sinopec focused on the south. Around the same time, foreign investment was welcomed back with overseas oil companies participating primarily in exploration and production partnerships with national firms.

The industry was restructured in the late 1990s in an attempt to eliminate sector monopolies. Competing, vertically integrated firms were created—each with its own upstream and downstream operations—by swapping production and refining assets between CNPC and Sinopec Group. The balance was not perfect, however, as each company retained much of its original operational and regional weight.

State Oil Companies

As analysts and investors we sometimes view Asia’s national oil companies as state-owned-enterprise arms of the State, and sometimes as profit-motivated corporate entities.⁷

- Citigroup Research

By 2005, two state-controlled companies dominated China’s onshore oil production, refining capacity, wholesale fuels market, and owned over half of its 80,000-odd service stations—the remaining were held by various local governments and independent operators.

PetroChina

PetroChina Company Limited was one of the world’s largest oil and gas companies, and was ranked ninth in Petroleum Intelligence Weekly’s Top 50 company rankings [see **Exhibit 5**]. Headquartered in Beijing, the company was established in 1999 as part of the restructuring of

³ National Bureau of Statistics, “China Statistical Yearbook 2005”, (www.stats.gov.cn).

⁴ Economist Intelligence Unit, “Business China—China: Running towards Empty”, August 30th 2004.

⁵ Oil & Gas Investor, “China”, June 2005.

⁶ Shell China, “The Story of Shell in China”, August 2004: “...rather than oil or gas, the objective of the search was brine...”

⁷ Citigroup, “Sinopec: Waiting for Price Rises & Tax Rebates, They Should Come”, October 28th 2005.

its state-owned parent the CNPC. In 2000, PetroChina publicly listed 10% of its shares on the Hong Kong and New York stock exchanges, raising US\$3.89 billion and attracting influential overseas investors. British Petroleum was a large purchaser of the IPO, eventually selling for an estimated US\$1 billion profit. Famed American investor Warren Buffet's holding company, Berkshire Hathaway, held 13.3% of its H-shares⁸ outstanding (1.3% of total) at year end 2004.

Company revenues were US\$46.9 billion in 2004 with an operating income of US\$17.7 billion and net income of US\$12.4 billion [see **Exhibit 6**]. The high-margin upstream exploration and production business segment accounted for 12% of external sales,⁹ while the low-margin downstream refining and marketing segment accounted for 70%.

PetroChina held proved reserves¹⁰ of 10.9 billion barrels of oil and 44.6 trillion cubic feet of natural gas, most of which were located in northern and western China. In 2004, the company produced 2.1 million barrels of oil per day and 2.3 billion cubic feet of natural gas per day, realising average prices of US\$33.88 per barrel of oil and US\$2.55 per thousand cubic feet of natural gas. It supplied 82% of its crude oil production to its own refineries, 11% to Sinopec, 4% to regional refineries, and exported the rest [see **Exhibit 7**]. The company's largest producing property at Daqing had become a mature source of oil like the fields of Texas, pumping 90% water in some areas.¹¹ Extracting crude oil was becoming more difficult and costly, highlighted by a 10% increase in lifting costs¹² to US\$4.61 per barrel in 2004.

PetroChina's 25 refineries, located throughout the north, processed 1.9 million barrels of crude oil per day in 2004. Output for the year totalled 74 million tonnes of a wide range of refined petroleum products including: gasoline, diesel, kerosene, fuel oil, naphtha, asphalt, lubricants and paraffin. Approximately 58 million tonnes of gasoline and diesel fuel were produced, and 65 million tonnes were sold through the company's wholesale (35m tonnes) and retail (30m tonnes) distribution channels. Average realised selling prices for gasoline and diesel were 3,543 and 3,165 Chinese Renminbi¹³ ("RMB") per tonne respectively.

PetroChina's 17,403 service station network—14,309 owned and operated, 2,937 franchised and 427 wholly or jointly owned by CNPC—provided it with a 29% retail market share. Primarily located in the north, the company made efforts to expand in the relatively high demand south and east, investing approximately RMB 7 billion in the region. Over 60% of the company's 2,276 newly acquired or constructed service stations were located there.

Sinopec

China Petroleum & Chemical Corporation ("Sinopec") was China's largest producer and distributor of gasoline and diesel fuel, as well its largest publicly listed company.¹⁴ Established in February 2000 by its state-owned parent China Petrochemical Corporation, approximately 32% of its shares were offered on the Hong Kong, New York and London stock exchanges in October 2000, raising US\$3.4 billion [see **Exhibit 8**]. The top three Western oil companies BP, Exxon and Shell, were strategic investors in the IPO.

⁸ H-shares are freely tradeable shares in PRC companies offered to overseas investors.

⁹ External sales are made to outside customers. Internal or inter-segment sales are made within the same company. Crude oil supplied by a company's exploration and production division to its own refineries for processing is accounted for as internal sales.

¹⁰ The Securities and Exchange Commission defined "proved oil and gas reserves" as estimated quantities of crude oil, natural gas and natural gas liquids which geological and engineering data demonstrate with reasonable certainty to be recoverable in future years from known reservoirs under existing economic and operating conditions.

¹¹ Forbes, "Getting with the Drill", April 18th 2005.

¹² "Lifting costs", also known as "production costs", are costs incurred in operating and maintaining wells.

¹³ The Chinese Renminbi to US Dollar exchange rate was RMB 8.2765 to US\$1.00 on December 31st 2004.

¹⁴ Based on 2004 revenues.

Company revenues were US\$74.9 billion in 2004, with an operating income of US\$7.6 billion and net income of US\$4.4 billion. High-margin upstream exploration and production accounted for 4% of external sales, while the low-margin downstream refining and marketing/distribution segments accounted for 11% and 55% of external sales respectively.

Sinopec held proved reserves of 3.3 billion barrels of crude oil and 3 trillion cubic feet of natural gas. In 2004, the company produced 749 thousand barrels of oil per day and 567 million cubic feet of natural gas per day. Two-thirds of the company's production came from its Shengli field located in China's eastern province of Shandong. Average realised prices were US\$33.28 per barrel of oil and US\$2.11 per thousand cubic feet of natural gas. Average lifting costs were US\$6.72 per barrel.

Sinopec was the world's fourth largest refiner with a 2.9 million barrel per-day capacity.¹⁵ The company's 26 refineries accounted for nearly half of China's total domestic distillation capacity. In 2004 it processed 133 million tonnes of crude oil, producing 115 million tonnes of refined products including: diesel (51m tonnes), gasoline (24m tonnes), light chemical feedstock, fuel oil, liquefied petroleum gas, kerosene (including jet fuel) and lubricants. Only 21% of crude oil refining inputs were sourced internally, while 66% were imported.

Sinopec "dominated" China's eastern and coastal areas, which accounted for 74% of the country's petroleum demand.¹⁶ Over 27 million tonnes of gasoline and 61 million tonnes of diesel were sold in 2004 at average realised prices of RMB 3,762 and RMB 3,215 per tonne respectively. Retail accounted for 67% of gasoline and 49% of diesel sold. Sinopec's retail distribution network totaled 30,352 service stations, 3,482 of which were franchised.

Pricing Policy¹⁷

International oil prices broke through US\$67 a barrel on Friday, putting pressure on mainland refiners to stop supplying petrol, particularly the lowest grade fuel, to consumers because they are losing money under the mainland's controlled pricing system.¹⁸

- South China Morning Post, August 16th 2005

Though the PRC stopped regulating crude oil prices in March 2001, control of gasoline and diesel fuels continued. Historically, the State Development Planning Commission ("SDPC") directly set refined product prices; however, adjustments were infrequent and did not reflect international market volatility.¹⁹ A move towards pump price liberalisation was made in June 1998 when international prices were at 10-year lows and product smuggling was on the rise.²⁰ The government began to determine retail "guidance prices" for gasoline and diesel based on Singapore free-on-board²¹ trading prices plus transportation costs, taxes and retail margins. Companies were allowed to compete by setting their retail prices within a $\pm 5\%$ range of regional guidance. Wholesale prices were set at least 5.5% below each company's declared retail price. Internal company sale prices were not regulated. Changes in the guidance price were made upon request of the national oil companies, though only after Singapore prices had

¹⁵ Petroleum Intelligence Weekly, "PIW's Top 50: How the Firms Stack Up", December 12th 2005.

¹⁶ Morgan Stanley, "China Petroleum & Chemical: 3Q Results", October 28th 2005.

¹⁷ "Pricing Policy" information compiled from Sinopec and PetroChina "SEC form 20-F" annual reports, unless otherwise noted.

¹⁸ South China Morning Post, "Fuel Shortage Shuts Half Shenzhen's Pumps", August 16th 2005.

¹⁹ Deutsche Bank, "PetroChina: The Re-Rating Has Begun", July 10th 2000.

²⁰ Asian Wall Street Journal, "China Sets Prices for Oil Products Based on International Standards", June 8th 1998.

²¹ Free-on-board: "FOB prices exclude all insurance and freight charges ... effectively priced at the loading port" (platts.com).

increased by 5%. Adjustments remained infrequent until June 2000, when the SDPC began publishing retail guidance prices on a monthly basis.

Certain government and institutional customers were assured minimum supplies and received “special customer prices” based on import parity. No mark-ups were allowed on sales to the military or national reserves, though 5% premiums could be charged to airlines and railways.

New Pricing Scheme

Dubbed “China’s new secret oil product price scheme” when announced in October 2001, restrictions on selling within a set range of government benchmarks remained, although the rules determining published guidance became less transparent and company retail pricing became more flexible.²² The National Development Reform Commission (“NDRC”), successor to the SDPC, began to intermittently publish retail gasoline and diesel guidance prices. These were now based on a weighted average of Singapore, Rotterdam and New York free-on-board trading prices, with additions made for transportation costs, taxes and suggested retail margins [see **Exhibit 9**]. Subject to revision and not made publicly available, it was guessed that the reference weightings were 60% Singapore, 30% Rotterdam and 10% New York.²³ Adjustments were meant to be made when average prices fluctuated 8% beyond the previous posted guidance, though changes were at the discretion of the NDRC. Companies were permitted to set their retail prices within a $\pm 8\%$ range of the published guidance prices. Wholesale prices initially remained set at least 5.5% below retail, though were later moved to a 4.5% discount in 2005. The new 8% premium also applied to special customer prices.

Using the government July 2005 posted diesel price as a guide, Sinopec and PetroChina could charge retail customers up to RMB 4.00 per litre at the pump and as low as RMB 3.40. Independent retailers, also restricted by the guidance price, may have to pay as much as RMB 3.80 per litre to acquire product from wholesalers [see **Exhibit 10**].

Price Parity Breakdown

While designed to move in line with international markets, albeit with some lag time, the system was criticised for not fully reflecting price increases.²⁴ Price parity was maintained until the outbreak of SARS in 2003, after which the government sought to shield the recovering economy from inflationary pressure.²⁵ Though adjustments were made at various times throughout the year, the mechanism failed to keep pace with the rapidly fluctuating global crude oil and refined product costs experienced in 2005 [see **Exhibits 11 to 12**]. NDRC retail gasoline guidance prices were raised only 15%, compared with international crude oil and gasoline spot price increases of over 30% [see **Exhibits 13 to 14**]. In this environment, exploration and production businesses prospered, selling crude oil at international prices, while refining businesses were unable to pass higher feedstock costs on to consumers. Illustrating the “squeeze”, Sinopec’s refining margin—refined product sale prices minus crude oil feedstock costs—decreased from US\$3.86 per barrel in 2004 to US\$1.48 per barrel in the first three quarters of 2005.

According to the International Energy Agency, “China’s administered retail prices relative to the international market had encouraged oil product exports and discouraged imports.”²⁶ Net imports of crude oil decreased from 2.3 million barrels per day in 2004 to 1.95 million barrels per day in August 2005; while daily net imports of diesel turned to net exports of 71 thousand

²² Salomon Smith Barney, “PetroChina”, October 18th 2001.

²³ Solomon Smith Barney, “PetroChina”, October 18th 2001.

²⁴ Platt’s Oilgram News, “China to Reform Product Pricing Scheme”, November 1st 2005.

²⁵ Credit Suisse First Boston, “Asian Oil & Gas Sector: Government Cuts Domestic Gasoline Price”, May 25th 2005.

²⁶ International Energy Agency, “Oil Market Report”, November 10th 2005.

barrels by summer's end [see **Exhibit 15**]. In an attempt to alleviate shortages, the government pressured the state-controlled oil companies and eliminated tax rebates on refined product exports.²⁷

World Trade Organization

China's accession to the World Trade Organization ("WTO") on December 11th 2001 helped open its refined products market to foreign competition. Once restricted to local companies, retail distribution was "liberalised" in December 2004 with wholesale distribution scheduled to open in December 2006. Import quotas were also scheduled to be phased out and tariffs reduced. However, product pricing remained under government control [see **Exhibit 16**].

Even with the elimination of sales barriers, PetroChina and Sinopec would continue to dominate China's wholesale market, fuel storage and transportation infrastructure, placing independent retailers at a severe disadvantage.²⁸ Even though major Western oil companies such as BP, Exxon, Royal Dutch Shell and Total were making inroads into the market, analysts believed they would continue to operate in conjunction with national companies in order to benefit from their extensive distribution networks.²⁹ Though soon welcome to enter the wholesale market, foreign firms would remain dependent on state-controlled firms for supplies, as direct imports would not be allowed.³⁰ Four state trading companies—Sinochem, Unipet (Sinopec), China Oil (CNPC) and Zhuhai Zhenrong—were responsible for most of China's crude oil and refined products imports.³¹

The gradual phase-in schedule towards full market liberalisation negotiated under WTO provided domestic companies time to prepare for foreign competition. Operational and marketing skills were gained through joint ventures with major overseas oil firms, service station networks expanded and choice locations secured.

Scramble for Market Share

*Sinopec and PetroChina have duly bought many thousands of petrol-selling outlets across the country, pushing prices for prime sites to ridiculous heights: some have sold for as much as \$1m each, probably twice as much as their true worth.*³²

- The Economist

Sinopec and PetroChina fought damaging price wars in the late 1990s until government price controls were imposed.³³ Each sought to consolidate market share in key regions and push out the competition. The "real prize" was the south, where stations were estimated to generate retail margins 30% higher than those in the north.³⁴ Domestic competition became "cutthroat" with national players accused of both restricting supply and increasing prices of wholesale products sold to independent retailers.³⁵

²⁷ International Energy Agency, "Oil Market Report", November 10th 2005.

²⁸ Platt's Oilgram News, "Few Signs of China Opening Oil Imports", November 21st 2005.

²⁹ JP Morgan, "Weighing the Options: PetroChina, CNOOC and Sinopec", March 9th 2005.

³⁰ Economist Intelligence Unit, "China Hand—Industry & Energy: Foreign Investment in the Energy Sector", January 1st 2005.

³¹ Platts, "Energy in China: WTO's Impact on China's Oil Trade", (www.platts.com).

³² The Economist, "Pump Action", June 21st 2001.

³³ McKinsey Quarterly, "Roadside Retail in China", 2002, Number 3.

³⁴ Deutsche Bank, "PetroChina: The Re-Rating Has Begun", July 10th 2000.

³⁵ Credit Suisse First Boston, "China Petroleum & Chemical: Regulator's Will", September 2nd 2005.

Foreign oil and gas firms added to their sizable upstream investments—the Shell Group alone spent US\$800 million on exploration and production in China since the early 1980s—by betting on the country's retail fuels market. The global majors formed partnerships with China's national firms in an attempt to gain a foothold in the country's most desirable markets.

British Petroleum (United Kingdom)

Selling retail fuel in China since 1996, British Petroleum (“BP”) operated nearly 600 joint venture service stations by 2005. Agreements with Sinopec and PetroChina were signed in 2004 to “acquire, build, operate and manage” 500 stations with each company by 2007. BP–Sinopec (60% owned by Sinopec) was to invest RMB 2.2 billion in the eastern coastal province of Zhejiang, south of Shanghai, specifically in the cities of Hangzhou, Ningbo and Shaoxing. BP–PetroChina (51% owned by PetroChina) was to invest RMB 4.8 billion throughout the southern coastal province of Guangdong. By the end of 2004, BP–PetroChina already owned and operated 395 stations. To illustrate the size of BP's China expansion, its plans called for nearly as many stations as in its UK-home retail network.³⁶

In the fall of 2005, the Financial Times reported that BP and Sinopec had been holding “extensive top-level” partnership talks. As one BP executive put it, “Lord Browne [BP's chief executive] has big ambitions for China. China needs the feedstock, BP has got it and BP wants access to the market.”³⁷ Some believed that a successful deal would signal further liberalisation of the refined products market.³⁸

Royal Dutch Shell (The Netherlands)

Entering as a supplier of kerosene in the 1890s, Shell had 30 oil depots and 1,000 filling stations located throughout China by 1948, but turned over its assets to the government in the early 1950s.³⁹ The company re-entered the retail fuels market in 1996, opening a service station in Guangdong, then expanding to Beijing, Tianjin, Nanjing and Wuhan. A joint venture with Sinopec was signed in May 2004 to develop a network of 500 service stations in the eastern coastal province of Jiangsu, north of Shanghai. Sinopec was 60% owner and exclusive fuel supplier to the RMB 1.6 billion co-branded project. Sinopec–Shell planned to acquire or lease approximately 400 service stations from Sinopec's existing network and to develop new sites. Both companies agreed to not compete in areas jointly covered.

TOTAL (France)

Total added to its small but established retail presence in Wuhan (central province of Hubei) in October 2004 by entering into a RMB 900 million joint venture with Sinochem Corporation—a firm which specialised in oil refining, logistics and trading—to set up a network of 200 service stations in the north-eastern municipalities of Beijing and Tianjin, and provinces of Heibei and Liaoning. Another partnership was formed between the two in September 2005 for RMB 800 million to set up 300 services stations in the eastern provinces of Jiangsu, Zhejiang and the municipality of Shanghai. Sinochem controlled 51% of both deals. Upon receiving government approval for the creation of Total–Sinochem in March 2005, Total announced a “medium term objective of creating an integrated refining and marketing organization in Northern China.”⁴⁰

Total was a party, with Sinochem and CNPC, in China's first foreign joint venture refinery—an export-oriented operation—located in the north-eastern coastal city of Dalian. The

³⁶ The Economist, “Pump Action”, June 21st 2001.

³⁷ Financial Times, “BP Seeks Strategic China Link”, October 13th 2005.

³⁸ JP Morgan, “Sinopec Corp: Potential Deal with BP Could Be Big Positive for Sinopec”, October 13th 2005.

³⁹ “Looking to the Long Term: The Story of Shell in China”, Shell Companies in China, August 2004.

⁴⁰ Total S.A., “Chinese Authorities Approve Total Sinochem Joint Venture”, March 25th 2005.

company was the only foreign firm with a “substantial” presence in China’s refining industry.⁴¹ While there were no express general restrictions on foreign investment in domestic refining, construction and expansion projects were subject to government approval.

Exxon Mobil (United States)

Exxon Mobil entered into an agreement with Sinopec in September 2000 to develop a 500–service-station joint venture in Guangdong. The company also commenced a feasibility study with Sinopec and Saudi Aramco (Saudi Arabia) in August 2004 to operate 600 service stations throughout the south-eastern coastal province of Fujian. The joint venture was to be 55% owned by Sinopec, with Exxon Mobil and Saudi Aramco evenly splitting the rest. Fuels marketed through the stations were to be supplied by a related RMB 29 billion Fujian refinery expansion project.

Chevron (United States)

Chevron legacy companies—Standard Oil of California and Texaco—operated service stations in China during the 1920s and 1930s. The company returned to the retail market in 1982 with the opening of its first service station in Shenzhen, and later expanded to a network of 40 plus stations located throughout the southern provinces of Guangdong, Fujian and the special administrative region of Macau.

In January 2005, red chip⁴² commodities firm CITIC Resources agreed to purchase a 50.5% stake in Chevron’s local service station operating company, Caltex South China Investments Limited, for approximately RMB 370 million. Caltex’s China manager stated that “the main consideration for introducing CITIC’s investment is not its cash, but, rather, its connections on the mainland”; an April 2004 government rule allowed foreign firms no more than 30 majority-owned stations.⁴³ One hundred new stations were expected to be added with management estimating an average RMB 5 million capital expenditure for each.⁴⁴

Compensation

To protect the poor and hold back inflation, governments across Asia, including China, have either subsidized fuel prices by using their own budgets, or worse, kept them low by twisting retailers’ arms.⁴⁵

-Petroleum Economist

Fixing retail prices below market rates became increasingly expensive to maintain, prompting various forms of action. In 2004, fuel subsidies cost Indonesia US\$7.4 billion (3% of GDP) and Malaysia US\$1.3 billion.⁴⁶ As oil prices continued to climb throughout 2005, Indonesia’s wholly state-owned firm—PT Pertamina, which controlled the country’s entire oil and gas industry—requested that its fuel subsidy allocation be increased to US\$11 billion. This prompted the government to raise fuel prices by an average of 125% in October of that year.

In China, the state companies’ refining operations performed poorly during the first half of 2005. PetroChina reported refining and marketing operating losses of US\$719 million, and

⁴¹ Petroleum Economist, “Majors Cast their Eyes East”, December 2005.

⁴² A “red chip” is a company listed on the Hong Kong Stock Exchange controlled by mainland China shareholders. The state-owned CITIC Group (formerly the China International Trust and Investment Corporation) indirectly controlled 60% of CITIC Resources shares outstanding. Red chip companies are not Mainland-registered.

⁴³ South China Morning Post, “Oil Major Pushes China Expansion”, January 15th 2005.

⁴⁴ JP Morgan, “CITIC Resources Holdings Limited: Company Visit Note”, April 14th 2005.

⁴⁵ Petroleum Economist, “China: Fuel Shortages Prompt Rethinking on Oil Pricing”, October 2005.

⁴⁶ Asian Development Bank (2005) “Outlook 2005 Update”.

Sinopec reported refining losses of US\$157 million [see **Exhibit 17**]. Sinopec's chief financial officer admitted that profits had been shifted from the oil production and marketing and distribution segments in order to cut refining losses.⁴⁷ Citing a "distortion of the correlation of domestic refined oil product prices and crude oil prices", China Petrochemical Corporation (Sinopec Group) announced receiving a one-off government compensation payment of US\$1.2 billion on December 27th 2005.⁴⁸

Closing Thoughts

How much longer will China's government regulate the wholesale and retail prices of gasoline and diesel? When will the oil industry be fully liberalised? What affect will the transition have on the profits of domestic and foreign companies? These are questions that analysts like Steven Chan need to answer in order to assess the risks and opportunities associated with the opening of China's refined products market.

⁴⁷ South China Morning Post, "Sinopec Sees Pricing Deal Soon", August 30th 2005.

⁴⁸ Sinopec Corp., "Announcement of One-off Governmental Compensation", December 27th 2005.

EXHIBIT 1: WORLD RETAIL FUEL PRICES

(US\$ per litre)

Country	Diesel					Super Gasoline				
	1995	1998	2000	2002	2004	1995	1998	2000	2002	2004
China	0.24	0.25	0.45	0.37	0.43	0.27	0.28	0.40	0.42	0.48
Hong Kong	0.74	0.85	0.80	0.77	1.00	1.19	1.36	1.46	1.47	1.54
United States	0.33	0.27	0.48	0.39	0.57	0.34	0.32	0.47	0.40	0.54
Canada	0.36	0.39	0.47	0.43	0.68	0.45	0.41	0.58	0.51	0.68
Indonesia	0.20	0.07	0.06	0.19	0.18	0.44	0.16	0.17	0.27	0.27
Malaysia	0.26	0.17	0.16	0.19	0.22	0.42	0.28	0.28	0.35	0.37
World Crude Oil Price	n/a	0.08	0.20	0.16	0.27	n/a	0.08	0.20	0.16	0.27
"Normal Sales Price" (excluding fuel tax) ¹	n/a	0.18	0.30	0.31	0.47	n/a	0.21	0.32	0.32	0.44

¹ "Normal Sales Price" is the price of petroleum fuel if it were sold at service stations like mineral water (i.e. no specific fuel related taxation added).

Notes: 1 US Gallon = 3.785 Litres; 1 Barrel of crude oil = 159 Liters

Source: Adapted from the German Technical Corporation "International Fuel Prices" 1999, 2001, 2003, 2005 Editions (www.international-fuel-prices.com).

EXHIBIT 2: WORLD OIL SUPPLY AND DEMAND**Economic Growth Assumptions**

	1971- 2002	2002- 2010	2010- 2020	2020- 2030	2002-2030
World	3.3%	3.7%	3.2%	2.7%	3.2%
United States and Canada	3.1%	3.1%	2.3%	1.8%	2.3%
China	8.4%	6.4%	4.9%	4.0%	5.0%

Oil Demand (million barrels per day)

	2002	2010	2020	2030	2002-2030*
World	77.0	90.4	106.7	121.3	1.6%
United States and Canada	20.7	23.2	25.8	27.6	1.0%
China	5.2	7.9	10.6	13.3	3.4%

Oil Supply (million barrels per day)

	2002	2010	2020	2030	2002-2030*
World	77.0	90.4	106.7	121.3	1.6%
United States and Canada	10.1	10.6	8.7	7.2	-1.2%
China	3.4	3.3	2.7	2.2	-1.5%

*Average annual growth rate

Source: Adapted from the International Energy Agency, "World Energy Outlook 2004".

EXHIBIT 3: WORLD OIL TRANSPORT DEMAND

	Oil Demand (Mtoe ¹)					Growth Rates (per annum)				
	1971	2002	2010	2020	2030	1971-2002	2002-2010	2002-2020	2002-2030	
World										
Total	1,893	3,041	3,610	4,326	5,005	1.5%	2.2%	2.0%	1.8%	
Transport	797	1,737	2,120	2,621	3,110	2.5%	2.5%	2.3%	2.1%	
United States and Canada										
Total	708	915	1,028	1,151	1,247	0.8%	1.5%	1.3%	1.1%	
Transport	391	652	742	847	929	1.7%	1.6%	1.5%	1.3%	
China										
Total	38	204	301	426	563	5.6%	5.0%	4.2%	3.7%	
Transport	8	80	129	204	296	7.7%	6.2%	5.4%	4.8%	

¹ mtoe = million tonnes of oil equivalent, 1 mtoe = 7.5 mboe (million barrels of oil equivalent)

Source: Adapted from the International Energy Agency, "World Energy Outlook 2004".

EXHIBIT 4: CHINA OIL PRODUCT DEMAND

<i>(million barrels per day)</i>								
	1990	1995	2000	2001	2002	2003	2004	
China								
Oil Supply	2.8	3.0	3.2	3.3	3.4	3.4	3.5	
Oil Demand	2.3	3.3	4.6	4.7	5.0	5.6	6.4	
Demand by Product								
Gasoil*	0.6	0.9	1.4	1.5	1.6	1.7	n/a	
Motor Gasoline	0.4	0.7	0.8	0.8	0.9	1.0	n/a	
Jet/Kerosene	0.1	0.1	0.2	0.2	0.2	0.2	n/a	
Residual Fuel Oil	0.6	0.7	0.7	0.7	0.7	0.8	n/a	
Other Products	0.3	0.4	0.6	0.6	0.7	0.8	n/a	
Naphtha	0.2	0.3	0.5	0.5	0.6	0.6	n/a	
LPG	<u>0.1</u>	<u>0.2</u>	<u>0.4</u>	<u>0.5</u>	<u>0.5</u>	<u>0.6</u>	<u>n/a</u>	
Total	2.3	3.3	4.6	4.7	5.0	5.6	n/a	

*"Gasoil" defined by the IEA as "diesel, light heating oil, and other gasoil"

Source: Adapted from the International Energy Agency (2005) "Oil Market Report: Annual Statistical Supplement for 2004 and User's Guide".

EXHIBIT 5: WORLD'S TOP 10 OIL AND GAS FIRMS

Company	PIW Rank	Country	State Ownership	Liquids		Natural Gas		Product Sales 1,000 b/d	Refining Capacity 1,000 b/d	Revenues US\$ million	Net Income US\$ million	Total Assets US\$ million	Employees
				Reserves million bbl	Output 1,000 b/d	Reserves Bcf	Output MMcfd						
Saudi Aramco	1	Saudi Arabia	100%	262,700	9,830	238,400	6,190	2,522	2,350	122,000	n/a	n/a	53,954
ExxonMobil	2	US	0%	11,651	2,571	60,362	9,864	8,210	6,371	270,411	25,300	195,256	85,900
PDV	3	Venezuela	100%	77,140	2,600	150,043	4,000	2,610	3,092	67,500	4,050	n/a	37,006
NIOC	4	Iran	100%	132,500	4,081	970,800	8,269	1,751	1,474	72,500	n/a	n/a	115,000
BP	5	UK	0%	9,934	2,531	48,507	8,503	6,398	2,823	286,836	17,262	194,630	102,000
Shell	6	UK/Netherlands	0%	5,503	2,333	40,566	8,808	7,600	4,267	270,843	18,183	192,811	112,000
Total	7	France	0%	7,003	1,695	22,785	4,894	3,018	2,692	156,673	11,973	111,795	111,101
Chevron	8	US	0%	8,140	1,737	19,675	3,958	3,908	2,212	147,772	13,328	91,208	56,534
Pemex	9	Mexico	100%	14,803	3,754	14,807	3,363	1,542	1,707	69,663	(2,263)	84,114	137,722
PetroChina	9	China	90%	11,019	2,124	44,645	2,786	1,754	2,114	47,118	12,421	73,605	424,175
Sinopec	28	China	55%	3,267	749	3,033	566	1,891	2,865	74,888	4,747	57,273	389,451

Notes: bbl = barrels; b/d = barrels per day; bcf = billion cubic feet; mmcf/d = million cubic feet per day

Source: Adapted from Petroleum Intelligence Weekly, "PIW's Top 50: How the Firms Stack Up", December 12th 2005.

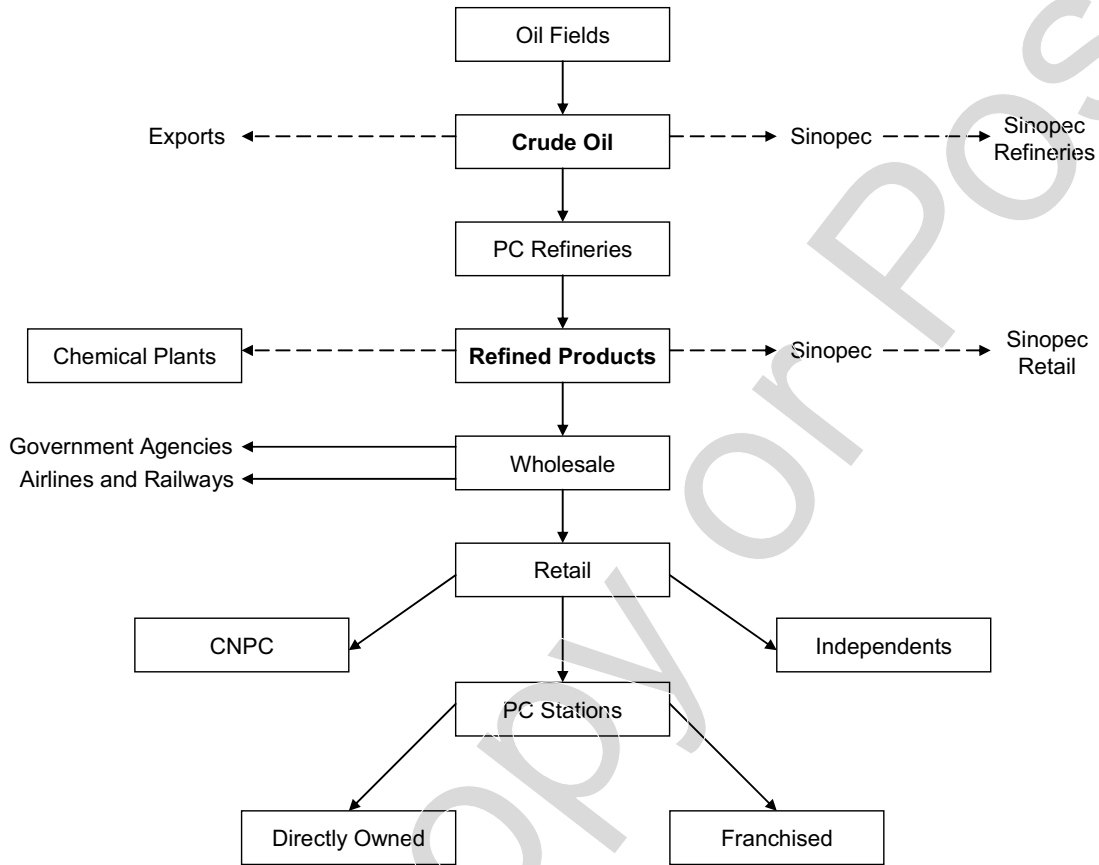
EXHIBIT 6: ANNUAL SEGMENT FINANCIAL INFORMATION

	Sales and Operating Revenues		Operating Expenses		Operating Income		Operating Margins	
	2003	2004	2003	2004	2003	2004	2003	2004
PetroChina (RMB in billions)								
Exploration and production	177,271	222,305	84,901	96,734	92,370	125,571	52%	56%
Refining and marketing	223,584	295,598	218,549	283,617	5,035	11,981	2%	4%
Chemicals and marketing	39,211	57,179	38,170	49,524	1,041	7,655	3%	13%
Natural gas and pipeline	15,067	18,255	13,145	15,720	1,922	2,535	13%	14%
Other	----	----	1,182	1,156	(1,182)	(1,156)	n/a	n/a
Inter-segment sales	(151,354)	(204,704)	(151,354)	(204,704)	n/a	n/a	n/a	n/a
Total	303,779	388,633	204,593	242,047	99,186	146,586	33%	38%
Sinopec (RMB in billions)								
Exploration and production	70,262	85,306	51,102	59,692	19,160	25,614	27%	30%
Refining	273,773	358,273	267,700	352,330	6,073	5,943	2%	2%
Marketing and distribution	241,360	346,426	229,417	331,710	11,943	14,716	5%	4%
Chemicals	103,840	144,693	100,297	125,972	3,543	18,721	3%	13%
Corporate and others	65,196	82,224	67,032	84,149	(1,836)	(1,925)	n/a	n/a
Inter-segment sales	(305,430)	(397,139)	(305,430)	(397,139)	n/a	n/a	n/a	n/a
Total	449,001	619,783	410,118	556,714	38,883	63,069	9%	10%

Note: 8.2765 RMB = 1 US\$ on December 31, 2004.

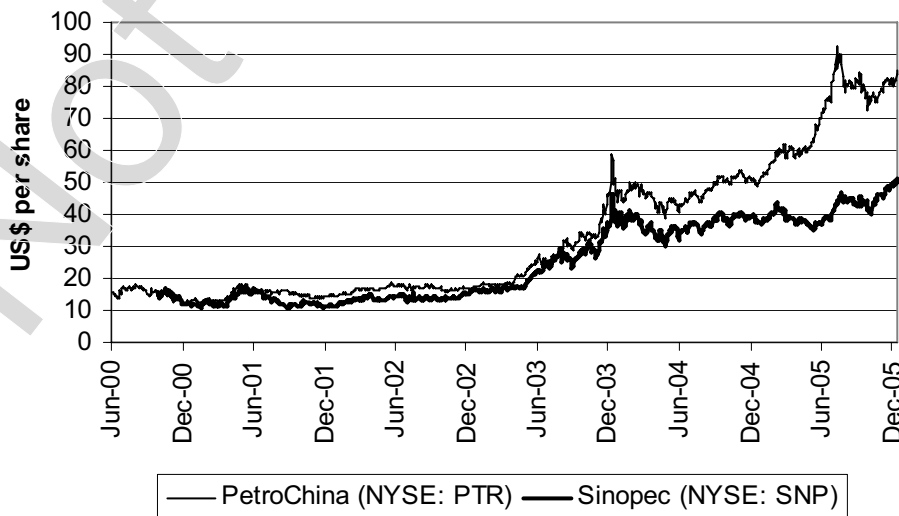
Source: SEC forms 20-F "Annual and Transition Report of Foreign Private Issuers", (www.sec.gov).

EXHIBIT 7: PETROCHINA OIL FLOWCHART



Source: Adapted from Deutsche Bank, "PetroChina: The Re-Rating Has Begun", July 10th 2000.

EXHIBIT 8: STOCK PRICE PERFORMANCE

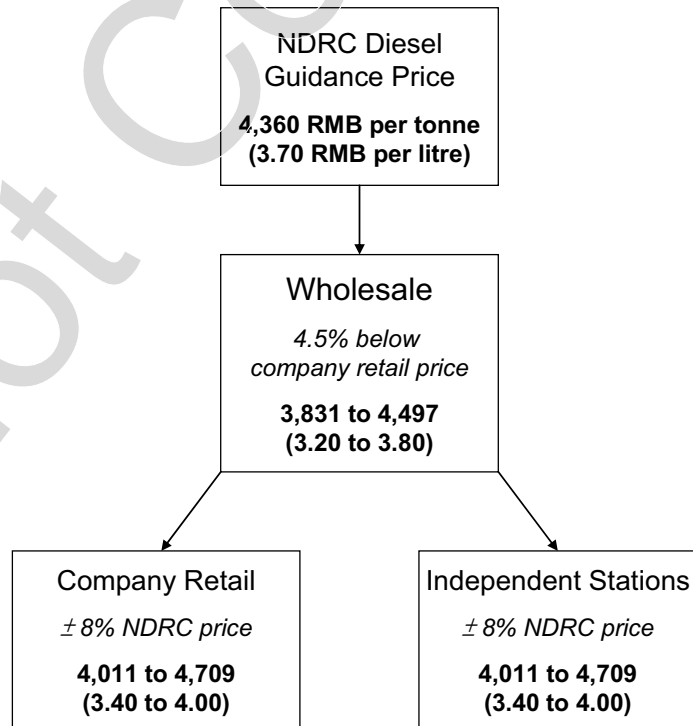


Source: Yahoo Finance.

EXHIBIT 9: FORMULA FOR PRC DIESEL PRICE

	<u>US\$/barrel</u>	<u>RMB/tonne</u>	<u>Notes</u>
Weighted average price	68.4	4,162	<i>Previous months weighted average price of diesel from Singapore, Rotterdam and New York.</i>
Shipping Cost	1.5	91	
Import Tariff (6%)	4.2	255	<i>5% for gasoline</i>
Consumption Tax	1.96	119	<i>RMB 277 per tonne for gasoline</i>
Value Added Tax (17%)	12.9	787	
Port Handling Fee	0.8	50	
Suggested Retail Margins	<u>8.2</u>	<u>500</u>	<i>RMB 550 per tonne for gasoline</i>
Diesel Guidance Price	98.1	5,965	

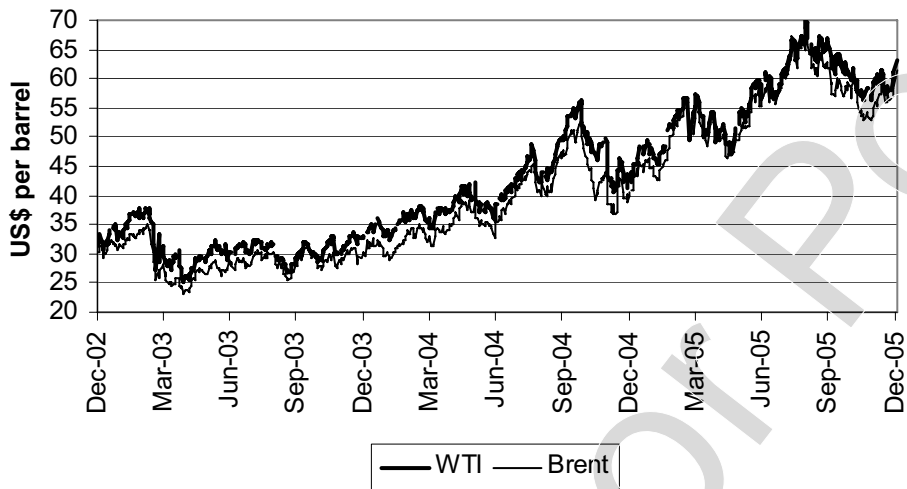
Source: Adapted from Morgan Stanley, "China/India Oil & Gas: A Tale of Two Countries", September 20th 2005.

EXHIBIT 10: WHOLESALE-RETAIL PRICING EXAMPLE

Notes: Based upon July 2005 posted diesel guidance price; 1 tonne of gasoil/diesel = 1192 litres.

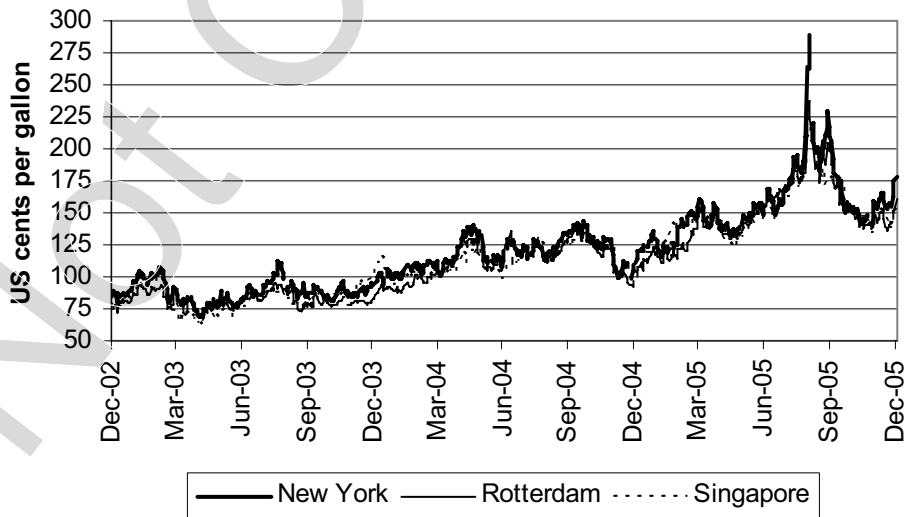
Source: Company Reports.

EXHIBIT 11: CRUDE OIL SPOT PRICES FOB

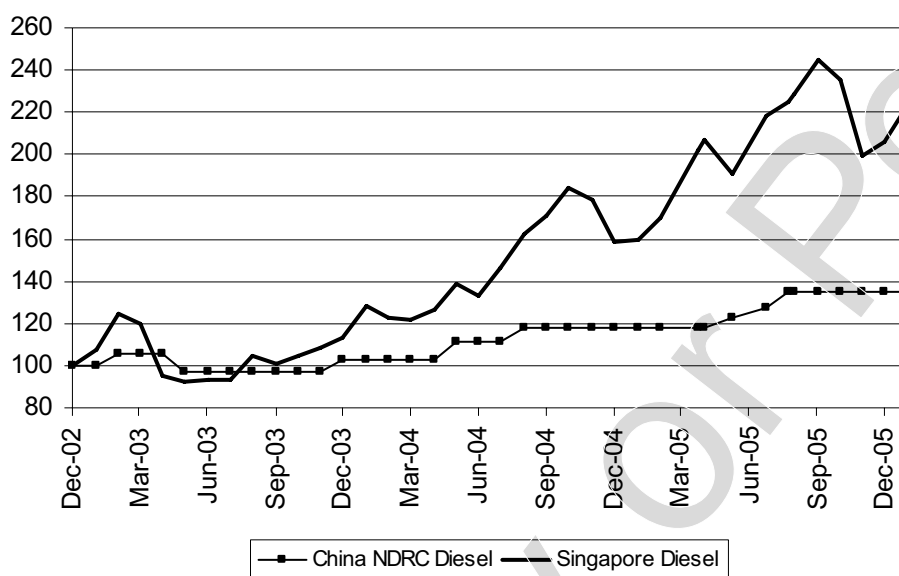


Source: US Energy Information Administration, "Petroleum Navigator" (www.eia.doe.gov).

EXHIBIT 12: REGULAR GASOLINE SPOT PRICES FOB



Source: US Energy Information Administration, "Petroleum Navigator" (www.eia.doe.gov).

EXHIBIT 13: NDRC DIESEL GUIDANCE VERSUS SINGAPORE DIESEL

Note: Prices at December 2002 = 100

Source: US Energy Information Administration, Company Reports.

EXHIBIT 14: NDRC PUBLISHED RETAIL MEDIAN PRICES

	RMB per tonne		Price Adjustment	
	Gasoline	Diesel	Gasoline	Diesel
Oct-01	3,333	3,002		
Nov-01	2,973	2,642	-10.8%	-12.0%
Jan-02	2,712	2,420	-8.8%	-8.4%
Mar-02	2,842	2,550	4.8%	5.4%
Apr-02	3,102	2,790	9.1%	9.4%
May-02	3,342	3,030	7.7%	8.6%
Oct-02	3,542	3,220	6.0%	6.3%
Feb-03	3,732	3,390	5.4%	5.3%
May-03	3,442	3,130	-7.8%	-7.7%
Jul-03	3,532	-	2.6%	-
Dec-03	3,732	3,310	5.7%	5.8%
Mar-04	4,032	-	8.0%	-
May-04	-	3,590	-	8.5%
Aug-04	4,272	3,810	6.0%	6.1%
Mar-05	4,572	-	7.0%	-
May-05	4,422	3,960	-3.3%	3.9%
Jun-05	4,622	4,110	4.5%	3.8%
Jul-05	4,922	4,360	6.5%	6.1%

Source: PetroChina forms 20-F and Sinopec news releases.

EXHIBIT 15: CHINA CRUDE OIL AND PRODUCT TRADE

	2003		2004		1Q05		2Q05		3Q05		Jul-05		Aug-05		Sep-05	
	<i>(thousand barrels per day)</i>															
Net Imports/(Exports) of:																
Crude Oil	1,664	2,346	2,305	2,541	2,294	2,421	1,950	2,517								
Products & Feedstocks	442	661	501	375	446	378	353	613								
Gasoil/Diesel	(28)	43	(6)	(27)	(40)	(24)	(71)	(24)								
Gasoline	(175)	(125)	(151)	(161)	(155)	(155)	(233)	(74)								
Heavy Fuel Oil	407	506	480	395	397	402	374	416								
LPG	202	201	200	179	216	175	232	242								
Naphtha	(22)	(33)	(49)	(67)	(25)	(25)	(47)	(2)								
Jet & Kerosene	1	16	6	5	3	(16)	25	1								
Other	58	52	22	51	50	21	75	54								
Total	2,106	3,008	2,807	2,916	2,740	2,799	2,304	3,130								

Source: Adapted from the International Energy Agency, "Monthly Oil Market Report", November 10th 2005 (www.oilmarketreport.org).

EXHIBIT 16: CHINA OIL PRE- AND POST-WTO

	Pre-WTO	Post WTO
Refining		
Refining Facilities	Open to Foreign Entities	Open to Foreign Entities
Wholesale and Retail Distribution		
Retail	Restricted to Local Companies	Liberalised in Dec 2004
Wholesale	Restricted to Local Companies	Will be liberalised in Dec 2006
Tariff Reduction		
Crude oil	6%	Zero
Gasoline	9%	5%
Diesel	6%	6%
Kerosene	9%	9%
Fuel oil	6%	6%
LNG	6%	5%
Lubricating oil	9%	6%
Relaxation on imports of oil products		
Crude oil imports	Quota System of 7.2m MT	+15% per year next 10 years
Refined oil imports	Quota System of 4m MT	+15% per year until 2004
Pricing of oil products		
Crude oil	Follow Int'l Benchmarks	Follow Int'l Benchmarks
Refined oil	Regulated by NDRC	??

Source: Adapted from Morgan Stanley, "China/India Oil & Gas", September 20th 2005.

EXHIBIT 17: FIRST HALF SEGMENT FINANCIAL INFORMATION

	Sales and Operating Revenues		Operating Expenses		Operating Income		Operating Margins	
	1H04	1H05	1H04	1H05	1H04	1H05	1H04	1H05
PetroChina (RMB in billions)								
Exploration and production	99,526	143,895	46,825	59,202	52,701	84,693	53%	59%
Refining and marketing	137,491	200,883	128,507	206,832	8,984	(5,949)	7%	n/a
Chemicals and marketing	25,434	37,035	23,481	31,279	1,953	5,756	8%	16%
Natural gas and pipeline	8,917	11,874	7,684	10,396	1,233	1,478	14%	12%
Other	---	---	0,615	0,441	(0,615)	(0,441)	n/a	n/a
Inter-segment sales	(92,964)	(141,198)	(92,964)	(141,198)	n/a	n/a	n/a	n/a
Total	178,404	252,489	114,148	166,952	64,256	85,537	36%	34%
Sinopec (RMB in billions)								
Exploration and production	37,236	48,023	26,716	30,228	10,520	17,795	28%	37%
Refining	161,234	210,969	156,947	212,265	4,287	(1,296)	3%	n/a
Marketing and distribution	158,235	208,616	149,666	201,973	8,569	6,643	5%	3%
Chemicals	65,228	86,016	59,223	75,201	6,005	10,815	9%	13%
Corporate and others	36,827	53,493	37,646	53,768	(0,819)	(0,275)	n/a	n/a
Inter-segment sales	(179,315)	(238,663)	(179,315)	(238,663)	n/a	n/a	n/a	n/a
Total	279,445	368,454	250,883	334,772	28,562	33,682	10%	9%

Note: 8,2765 RMB = 1 US\$ on June 30, 2005.

Source: Interim Financial Reports (www.hkex.com.hk).