

# A STUDY OF RESTRUCTURING IN THE CHINESE PETROLEUM SECTOR

by

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at the

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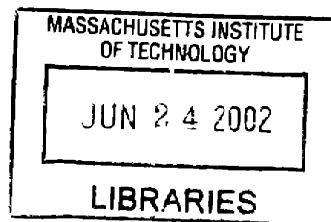
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## **Abstract**

China's oil industry has experienced fundamental changes since 1988. China's oil market will be open to foreign companies just a few years after its entry into the WTO in the end of 2001. The three national petroleum companies had been privatized and listed in overseas capital market exchanges during 2000~2001.

This thesis reviews the restructuring process at both industry level and company levels. At the industry level, it summarizes what has been done since 1988 by the Chinese government, and how entry into WTO will influence the industry. At the company level, it reviews how the national oil companies were reorganized, restructured, and privatized.

The thesis also paints a picture of the current competitive situation in the China oil industry, and explores how the three Chinese oil companies initiated a series of internal re-structurings after their listing in order to achieve a better positioning in the new competition context.

The thesis also studies how the companies perform in a changed industry environment. It discusses the learning process that happened on both sides – the companies and the capital markets. It also analysis what impacts the capital markets have had on the three previously state-owned companies.

Thesis Supervisor: D. Eleanor Westney  
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## CHAPTER 1: INTRODUCTION

### 1.1 Introduction to China oil industry

China is the world's second largest consumer of primary energy. It consumed 753 million tons<sup>1</sup> of oil-equivalent, ranking just behind the U.S. On a per capita basis, however, China still ranks among the lowest in the world, at 0.59 tons of oil-equivalent, compared with 1.72 tons in Malaysia and 4.0 tons in Japan and South Korea. China's energy consumption has two unique characteristics: high dependence on coal (67% in 2000) and low usage of natural gas (2.9% in 2000).

The quick economic development in China's economy has resulted in an increasing shortage of oil. China had become a net import country for oil and oil products since 1993, and a net crude oil importer since 1996, as shown in Table 1-1.

Table 1-1: China Crude Oil Production, Consumption and Net Import (Export) (in mm tons)

<u>Year</u>	<u>Consumption</u>	<u>Production</u>	<u>Net Import (Export)</u>	<u>Prod./Consump.</u>
1990	117.6	138.3	-21.1	118%
1991	123.6	141.0	-16.6	114%
1992	132.3	142.1	-10.2	107%
1993	138.3	145.2	-3.8	105%
1994	140.2	146.1	-6.2	104%
1995	148.9	150.1	-1.8	101%
1996	158.7	157.3	2.3	99%
1997	173.7	160.7	15.6	93%
1998	174.0	161.0	11.2	93%
1999	189.7	160.2	29.4	84%
2000	222.1	162.3	59.8	73%
2001	217.6	164.9	52.7	76%

Source: China Statistical Yearbooks (1993~2000); China Statistical Abstract (2000); BP Amoco; International Petroleum Economics (2001-2002)

The crude oil imports in 2000~2001 were 32~28% of the total crude consumption, and the foreign currency expenditures for the net imports of crude oil and oil products were US\$ 14.3 billion in 2000 and 11.9 billion in 2001, as shown in Table 1-2.

---

<sup>1</sup> a ton = a metric ton.

Table 1-2: Oil import and export 1999-2001

	<b>1999</b>		<b>2000</b>		<b>2001</b>	
	mm tons	billion US\$	mm tons	billion US\$	mm tons	billion US\$
Import						
Crude oil	36.6	4.64	70.2	14.86	60.3	11.67
Oil products	20.8	2.70	18.0	3.66	21.4	3.77
Export						
Crude oil	7.2	0.75	10.4	2.12	7.6	1.39
Oil products	6.5	1.10	8.3	2.11	9.2	2.13
Net Import						
Crude oil	29.4	3.9	59.8	12.7	52.7	10.3
<u>Oil products</u>	<u>14.3</u>	<u>1.6</u>	<u>9.7</u>	<u>1.6</u>	<u>12.2</u>	<u>1.6</u>
Total	43.7	5.5	69.5	14.3	64.9	11.9

Source: International Petroleum Economics, No.4, 2000; No.3, 2002

It is estimated by many institutions that China's crude import will continue to increase. Even by the conservative estimation, the import amount of crude oil will be around 120mm tons by 2010, and 200mm tons by 2020, indicating the import/consumption ratio of around 40% by 2010 and 50% by 2020<sup>2</sup> & <sup>3</sup>.

The relatively low consumption of natural gas primarily results from China's historic reliance on coal and lack of the infrastructure needed to transport gas from gas fields to end-users. The largest potential natural gas market in China lies along its coastal region, the area with the highest forecast gas demand and the highest GDP growth rates.

China's government actively promotes the use of natural gas as an alternative fuel, particularly as a substitute for coal in power generation. Based on its GDP and primarily energy-driven growth models, the U.S. Energy Information Administration projected natural gas consumption in China to grow at a compound annual rate of 14.4% over 2001~2010 to a level of 3,900 bcf in 2010. China's total gas production for 1999 was only 890 bcf. China government projects the domestic gas production will grow at an

<sup>2</sup> Zhou Fengqi. "The Outlook of Oil Demand and Supply in China and The Suggestions." International Petroleum Economics. No.5, 2001.

<sup>3</sup> Li Xiadi. "Building Multi-Cooperation and Securing Oil Supply." International Petroleum Economics, No.3, 2002.



annual compound rate of approximately 10% over 2001~2010, reaching 2,536 bcf for 2010, which is approximately 35% below the projected demand.<sup>4</sup>

There are three facts that have strongly influenced the world oil industry since 1998:

- (1) The globalization of world economy.
- (2) The rapid development in IT and networks.
- (3) The volatility of oil prices. The crude oil price was around \$25 in 1996, dropped to \$10.4/bbl in 1998 that was the lowest since 1979, and then climbed to more than \$30 by the end of 1999, which was the highest over decade.

There are two noticeable changes in world oil industry responding to the above changes:

- (1) Privatization of many national oil companies.
- (2) Merging & Acquisition among large oil companies.

Table 1-3: Privatization of National Oil Companies

<u>Company</u>	<u>Year</u>	<u>Nationality</u>
TOTAL	1986	France
British Petroleum Co plc.	1986	United Kingdom
British Gas plc.	1986	United Kingdom
OMV AG	1987	Austria
Repsol SA	1989	Spain
YPF SA	1993	Argentina
PTT Exploration & Production Public Co Ltd	1993	Thailand
ENI SpA	1995	Italy
Petroleo Brasileiro SA (Petrobras)	1997	Brazil
PetroChina Co Ltd PetroChina)	2000	China
China Petroleum & Chemical Corp (SINOPEC)		China
CNOOC Ltd	2001	China
Statoil ASA	2001	Norway
LUKoil - JSC Oil Co LUKoil	2001	Russia
PTT pcl	2001	Thailand

Source: CSFB

There has been a wave of privatization of state-owned oil companies since mid-1980s as shown in Table 1-3. The market has seen the success of privatization in the cases of TotalFina, ENI, Elf, Repsol and TPF, in terms of improved efficiency.<sup>5</sup>

<sup>4</sup> CNOOC Ltd. IPO Prospectus. Feb. 2001.

The world oil industry has experienced a decreased global concentration since World War II, and it is far less concentrated today than it was 50 years ago.<sup>6</sup> However, the wave of merging & acquisition by large oil companies over the world since 1998 has rewritten almost all the names of the largest players in this industry, with Shell and ENI as the only exceptions, as shown in Table 1-4. This M&A trend has been driven by resource seeking and market-expanding strategies. The philosophy of “the larger, the stronger” has been dominating this industry. Expanding the scale has been seen as an effective strategy of oil companies to diversify the huge risks in technology, economics, politics, and environment.<sup>7</sup>

Table 1-4: The M&A cases for large oil companies in 1988–2000

<u>Cases</u>	<u>Announce time</u>	<u>Transaction value (US\$b)</u>	<u>New name</u>
The merging of BP and Amoco	11 Aug. 1998	48.2	BP-Amoco
The merging of Total and Fina	30 Nov. 1998	13.0	Total-Fina
The merging of Exxon and Mobil	1 Dec. 1998	77.2	Exxon-Mobil
The acquisition of Arco by BP-Amoco	1 Apr. 1999	27.0	bp
The acquisition of YPF by Reposal	24 Jun. 1999 (finish)	13.1	Reposal-YPF
The acquisition of Elf-Aquitaine by Total-Fina	13 Sep. 1999	55.0	Total-Fina-Elf
The merging of Chevron and Texaco	15 Oct. 2000	35.3	Chevron-Texaco
The merging of Phillips and Conoco	18 Nov. 2001	35.0	Phillips-Conoco

Source: World Petroleum Industry, No.6, 2001

In China, the oil industry had long been highly controlled by the government. During the fifty years before 2000, only a few designated State-Owned Enterprises (SOEs) could pursue exploration and production (E&P) business for crude oil and natural gas, as well as the refining and petrochemical operations. China’s government undertook a big reorganization for the oil industry in 1998, which formed the two integrated national oil companies -- **CNPC** and **Sinopec Group**. After that, each of the two, as well as another state-owned E&P company – China National Offshore Oil Corporation (**CNOOC Group**), conducted a restructuring within their group, forming a core business subsidiary.

<sup>5</sup> CSFB. “Enter the Dragons.” 29 Sep. 1999.

<sup>6</sup> Pankaj Ghemawat and Faiborz Ghadar. “The Dubious Logic of Global Magamergers.” Harvard Business Review, July-August 2000.

<sup>7</sup> Jiang Xuefeng, Zhu Jianjun. “The Larger, The Best?” China Petroleum, Dec. 2001.

Then each of the three newly formed subsidiaries launched an Initial Public Offering (IPO) and publicly listed themselves. These reorganizations and restructurings resulted in today's three listed Chinese companies -- PetroChina Company Limited (**PetroChina**), China Petroleum & Chemical Corporation (**Sinopec**), and CNOOC Limited (**CNOOC**). The profiles of the three listing companies are shown in Exhibit 1. Table 1-5 shows the time line of the key events in China oil industry since 1982.

There are some other Chinese oil companies, smaller than the three above, that had been listed in domestic or overseas capital markets before 1998. However, all of them had been packed into PetroChina or Sinopec during the reorganization and the restructuring thereafter, and so that they had become the subsidiaries of one of the two majors.

Table 1-5: Time line of the events in China's oil industry

1982	Set up of China National Offshore Oil Corporation (CNOOC group)
1983	Set up of China Petrochemical Corporation (Old Sinopec)
1988	Abolish the Ministry of Petroleum, and Establish China National Petroleum Corporation (Old CNPC)
1988	Establish the Ministry of Energy
1993	Abolish the Ministry of Energy
1993	China became net importing country of petroleum (including crude oil and oil products)
1996	China became net importing country of crude oil
1997	Set up of China National Star Petroleum Corporation (CNSPC) and Reorganization of CNPC Group and Sinopec Group
1998	Establish the State Bureau of Petroleum and Chemical Industries (SBCPI)
Aug.1999	Set up of CNOOC Limited (CNOOC)
Nov.1999	Set up of PetroChina Company Limited (PetroChina)
Feb.2000	Set up of China Petroleum & Chemical Corporation (Sinopec)
Feb.2000	CNSPC was merged by Sinopec Group
Apr.2000	IPO of PetroChina
Oct.2000	IPO of Sinopec
Feb.2001	IPO of CNOOC
Feb.2001	Abolish the SBCPI
Apr.2001	Sinopec issued A-share and purchased CNSPC from Sinopec Group

**PetroChina** is the largest oil and gas producer in China, accounting for 68% of the nation's total crude oil production and 71% of its natural gas production in 2001, as well as 76% of its aggregate reserves. It was the ninth petroleum company in the world in 2000, and the fifth in listed petroleum companies, ranked only behind ExxonMobil,

Shell, BP and TotalFinaelf.<sup>8</sup> The company was listed on New York Stock Exchange (NYSE, by ADRs) and Hong Kong Stock Exchange (HKSE) in April 2000. It is the first listed integrated oil company in Asia-Pacific area. CNPC owns 90% of its interest.

**Sinopec** is the largest refining, petrochemical, and marketing player and the second largest oil producer in China. It is also the fourth largest refining and marketing operator and the fifth largest chemical producer in the world. Its crude oil and natural gas production accounted for 23.7% of the nation's total oil production in 2001. The firm owns crude oil refining capacity of 130 million metric tons per year (tpy), representing about 52% of total domestic refining production in 2001. The company was listed on HKSE, NYSE (by ADRs), and London Stock Exchange (LDSE, by ADRs) in October 2000, and on Shanghai Stock Exchange (SHSE, by A-share) in August 2001. Sinopec Group owns 54.8% of its interest.

**CNOOC** is the third oil company in China. Unlike the above two majors, it is an exploration and production (E&P) company that addresses the upstream oil business only. It is a dominant petroleum producer in China offshore area. The company produced 8% of the nation's petroleum production in 2001. It was listed in NYSE (by ADRs) and HKSE in February 2001. CNOOC Group holds 70.6% of its total interest.

The three petroleum and petrochemical groups (CNPC, Sinopec Group, and CNOOC Group) have a heavy weight in China's economy. Together they contributed 32% to the total profit of the national industrial enterprises in 2001 (as shown in Table 1-6), and employed 2.7 million people as of the end of 1999. Sinopec and PetroChina ranked as No.1 and No.2 among listed Chinese companies according Fortune magazine, ranked by sales revenue in 2000 (322.9 and 242 billion RMB).<sup>9</sup>

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<sup>8</sup> Listed by Petroleum Intelligence Weekly, Dec17, 2001.

<sup>9</sup> Fortune Magazine (Chinese version), 25 Dec. 2001.

Table 1-6: The profit in 2001

	<b>Profit in 2001</b>	
	<u>billion RMB</u>	<u>Percentage</u>
State-owned Industrial Enterprises in total	233.0	100%
CNPC	53.0	22.7%
Sinopec Group	12.8	5.5%
<u>CNOOC Group</u>	<u>9.6</u>	<u>4.1%</u>
The three Groups	75.4	32.4%

Source: Petroleum Management, No.3, 2002

China's oil industry has been going through a fundamental change since 1988. The change has been extremely radical, particularly in the context of the relative slow pace of reform elsewhere in Asia's large state-owned petroleum companies.

If we put this change in the time axis of China economic reform, which started from late 1970s, we could see this happened after many reforms had been carried out. It was a reform that followed to all those reforms in agriculture, light industries, and commercial industries, and it could be seen as the start of the reform in the nation's heavy industry. The petroleum industry, along with other resource development firms, steel makers, machine builders, auto and truck manufactures, is the area where China's government had not made fundamental changes during China's first twenty years of reforms. That is due to their key functions of providing basic industrial inputs for the economy, employment and social welfare for the vast majority of China's urban workers, as well as the bulk of fiscal revenues for most governmental levels, even though the government had long been aware of these firms' problems in general – overstaffing, low productivity, ever-declining profit performance.<sup>10</sup> Therefore, the recent reorganization in oil industry and the privatization of all the three Chinese oil companies indicated that China's economic reform is approaching one of the few remaining areas that had long been seen as most tough to reform.

<sup>10</sup> Edward S. Steinfeld. "Forging Reform in China – The Fate of State-Owned Industry." Cambridge University Press, 1998.

## **1.2 Objective of this thesis**

This thesis reviews China oil industry at both the industry level and the company level, studies the complementarity & competition among the three oil companies, and the changes inside these companies. It explores the following questions:

- (1) What have been done since 1988 by the Chinese government as well as by those Chinese oil companies?
- (2) What has been changed?
- (3) What is the competitive situation now in China's oil industry?
- (4) Has the privatization made visible or even fundamental changes to the three previous SOEs?

## **1.3 Data sources**

The data necessary for the study are obtained from published government documents, company reports, investment bank research reports, news releases, books and papers, as well as interviews with managers of the companies by the author. When there are two sets (IAS and US GAAP) of financial figures, the IAS data is given priority in the presentation.

## **1.4 Thesis outline**

The first chapter introduces briefly China oil industry and the three oil companies.

The second chapter reviews the reorganization of China's oil industry in 1988, the restructuring thereafter within CNPC and Sinopec, as well as the three new oil companies from their foundation to public listing. In general, this chapter identifies the three main actors on the platform of China's petroleum industry since the beginning of the new century.

The environment changes are reviewed in chapter 3. It addresses all the key changes in the environment of oil companies in China: (1) the price regimes for crude oil, for natural gas, and for oil products; (2) the effects of WTO entry on each segment of China's petroleum industry; (3) the amendment to the two regulations that control the cooperation with foreign companies for exploration and production in onshore or offshore China; and (4) the new relationship with technology services.

Chapter 4 discusses the new competitive relationship among the three listing oil companies. Each of the key competition fields is reviewed, including resources of crude oil and natural gas, petroleum production growth, market (oil products retail and natural gas), and stock performance.

Then the changes inside the three companies are explored in Chapter 5 to find what they have done in the competition environment. Four areas are particularly explored. First is capital structure --the cash flow tables and balance sheets of the three companies are analyzed to see whether and how the issue of new shares to public shareholders had improved their capital structures. Second is company strategy: each of the three companies' issues, intentions and strategies were reviewed. Third is the effort at cost control – to see what the two majors have been doing to cut their high costs. The final area is corporate governance – to see whether the public listing has changed the company, and what has not been changed.

Finally, the chapter 6 concludes the study of this thesis.

## **CHAPTER 2: THE CHANGED ACTORS**

### **2.1 Before the reorganization**

During 1978~1998, the oil industry in China was organized into upstream, refining/petrochemicals, and import/export. Each of the three areas was originally part of a central government ministry, and each groups had become a state-owned corporation in 1980's. Before the reorganization in 1988, the industry was segmented as follows:

- (1) Upstream (onshore) – China National Petroleum Corporation
- (2) Upstream (offshore) – China National Offshore Oil Corporation
- (3) Upstream (onshore and offshore) -- China National Star Petroleum Corporation
- (4) Refining and petrochemicals – China Petrochemical Corporation
- (5) Import and export – China National Chemical Import & Export Corporation

China National Petroleum Corp. (**Old CNPC**) was established in 1988 to take over the onshore oil and gas exploration and production entities formerly under the administration of the Ministry of Petroleum Industry.

China National Offshore Oil Corp. (**CNOOC Group**) was set up in 1982 by Chinese government under the Regulations of the People's Republic of China on Exploitation of Offshore Petroleum Resources in Cooperation with Foreign Enterprises, whereby CNOOC Group assumed overall responsibility for the administration and development of PRC offshore petroleum operations with foreign oil and gas companies.

China National Star Petroleum Corp. (**CNSPC**), another state-owned oil company set up in 1997 by Chinese government, was separated from the former Ministry of Geology and Mineral Resources (MGMR), and focused on upstream oil activities, both onshore and offshore. It was the least national oil producer, compared with CNPC and CNOOC, which accounted for only 0.5% and 4% of total national oil and gas production respectively in 1998.



China Petrochemical Corp. (**Old Sinopec**), established in 1983, was primarily responsible for the development and administration of refining and petrochemical industry in China, including formulating industrial policies for the refining and petrochemical industry and supervising the construction and operation of refineries.

China National Chemical Import & Export Corp. (**Sinochem**) was a state-owned trading company focus on the import and export of crude oil, oil products, petrochemicals and chemicals. It was established in 1950.

## **2.2 The reorganization in 1998**

In March 1998, China's government adopted a reorganization plan for the oil and gas industry with the intention of (1) separating the industry administrative functions from the business management functions of Old CNPC and Old Sinopec; (2) improving the efficiency and competitiveness of reformed CNPC and Sinopec Group.

This reorganization transformed the onshore portion of the oil and gas industry from a functionally to a geographically structured industry. The reorganization created two nationwide vertically integrated oil and gas companies and thereby increased competition in this industry. This was achieved by an asset exchange transaction, which became effective on June 1, 1998. CNPC transferred to Sinopec Group six crude oil and natural gas production enterprises located in southern China, while Sinopec Group transferred to CNPC 15 refineries and petrochemical plants located in the northeastern, northern and western regions of China. As part of this reorganization, local governments transferred provincial and municipal petroleum distribution companies to CNPC and Sinopec: 15 to CNPC and 19 to Sinopec. In addition, two crude oil and natural gas production, refining and petrochemical enterprises under the administration of the Ministry of Chemical Industry and a local government were also injected into CNPC. These asset injections were also made primarily along regional lines. After the completion of this restructuring, CNPC, the former onshore upstream monopoly, owns production assets primarily located

in the northern China, while Sinopec Group, the former downstream monopoly, has production assets primarily located in the eastern and southern regions of China.

In March 1998, the State Bureau of Petroleum and Chemical Industry (**SBPCI**) was established as part of the China's ministerial restructuring to administer China's petroleum and chemical industries and supervise sector regulation for a three-year period. After the reform of CNPC and Sinopec Group, all the industry administrative functions previously held by Old CNPC and Old Sinopec, as well as those of previous the Ministry of Chemical, were transferred to SPCIB. SPCIB reported to the State Economic and Trade Commission (SETC) under the State Council. The organization was disbanded at the end in February 2001 and all its administration functions were transferred to SETC as scheduled by the government in 1998.

CNOOC, the majority offshore portion of the industry, was totally unchanged during 1998 reorganization. CNSPS was once considered dissolving in 1998 by the government. This had not become an actuality after the strong opposition by the company. However, it was at last merged into Sinopec Group in February 2000.

### **2.3 The restructuring for public listing**

Almost immediately after the above reorganization, each of the three state owned oil enterprises -- the reformed CNPC and Sinopec Group, as well as CNOOC Group, launched their restructuring for packing their core business into a subsidiary that was going to be listed. Their restructurings were completed in 1999~2000 as indicated by the establishment of the three to-be-listing companies. Table 2-1 presents the assets and the focus of each of the three companies.

Table 2-1: The assets, debt, and employees at the time of IPO

<p><b>PetroChina</b></p>	<p>Main assets and interest:</p> <ul style="list-style-type: none"> <li>• 13 crude oil and natural gas exploration and production enterprises and one exploration unit</li> <li>• 15 refining and petrochemical production enterprises</li> <li>• 21 marketing companies</li> <li>• One pipeline transmission company</li> <li>• Two research institutions</li> <li>• Production sharing contracts</li> </ul> <p>Debt: RMB 144.4 billion</p> <p>Employees: 480,000</p>
<p><b>Sinopec</b></p>	<p>Main assets and interest:</p> <ul style="list-style-type: none"> <li>• Equity in 13 listed subsidiaries</li> <li>• Six oil fields</li> <li>• 24 refinery and petrochemical enterprises, including ten of the aforementioned listed subsidiaries</li> <li>• 22 sales enterprises</li> <li>• One pipeline enterprise</li> <li>• One import and export company</li> <li>• Six research organizations</li> </ul> <p>Debt: RMB 89 billion (excluding RMB 35.56 billion interest free loan)</p> <p>Employees: 510,000</p>
<p><b>CNOOC</b></p>	<p>Main assets and interest:</p> <ul style="list-style-type: none"> <li>• 37 production sharing contracts and one geophysical survey agreement</li> <li>• Eight independent development and production projects</li> <li>• A 30% interest in Shanghai Petroleum and Natural Gas Company</li> <li>• The land use rights to terminal facilities for offshore crude oil and natural gas production</li> </ul> <p>Debt: RMB 9.1 billion</p> <p>Employees: 1,010</p>

\* Data of debt and employees are on 31 Dec. 1999

Sources: Company F-20, IPO prospectus

### 2.3.1 The foundation of PetroChina

PetroChina was set up by CNPC on November 5, 1999. It was transferred by CNPC the assets, debt, and employees as shown in Table 2-1 above. CNPC retained almost all of the social and ancillary service operations. In addition, it retained five chemical

production facilities, certain other assets, and around one million employees relating to its remaining business and operations. CNPC also retained all its overseas oil business.

Being an integrated petroleum company, PetroChina is engaged in:

- (1) Exploration, development, and production of crude oil and natural gas.
- (2) Refining, transportation, storage and marketing of crude oil and oil products.
- (3) Production and sales of chemicals.
- (4) Transmission, marketing and sale of natural gas.

### **2.3.2 The foundation of Sinopec**

Sinopec was established on February 25, 2000 by Sinopec Group. By the reorganization agreement effected from December 31, 1999, Sinopec Group transferred to Sinopec most of its petroleum and petrochemical operations and assets as shown in Table 2-1.

Sinopec group, like CNPC, retained most of the social and ancillary service operations. It also retained certain production assets, including certain petrochemical facilities, small capacity refineries and retail service stations, such as six refining and petrochemical complexes, 16 individual production plants and approximately 2,700 retail service stations. Among its total employees of 1,220,000, Sinopec Group transferred 510,000 to Sinopec and retained the other 710,000.

A big action in the restructuring was the loan restructuring for Sinopec. There were four special arrangements. (1) A total of RMB 30.1 billion loans previously held by a few domestic banks and invest institutions, all state-owned, were transformed to common shares of Sinopec, which was 31.5% of total interest of the company before IPO and held by four state-owned financial institutions,<sup>11</sup> (2) RMB 13.1 billion of debts to third parties were assumed by Sinopec Group for nil consideration, (3) RMB 5,847mm of debts to

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<sup>11</sup> China Development Bank, China Cinda Asset Management Corp., China Orient Asset Management Corp., and China Hua Rong Asset Management Corp.

third parties were assumed by Sinopec Group in consideration for Sinopec transferring an equivalent amount of receivables to Sinopec Group, and (4) A total of RMB 35,561mm of Sinopec's debts, which included RMB 21,262mm of the company's debts to third parties, were assumed by Sinopec Group, in exchange for an equivalent amount of 20-year-interest-free subordinated loan from Sinopec Group. Together these special deals reduced a total of RMB 84.6 billion debts and left only RMB 91.8 billion of total debts for Sinopec by the end of 2000,<sup>12</sup> they had significantly lowered Sinopec's leverage.

Sinopec supplied 20% of the total petroleum production and about 52% of total domestic refining production in both 2000 and 2001. The company has crude oil refining capacity of 130 million metric tons per year (tpy). It also accounts for about 47% of ethylene production and controls about 40% of the national retail fuel market in China. The company covers similar business segments as PetroChina, but with assets and principal markets focused in the Eastern, Southern and central areas of onshore China.

### **2.3.3 The foundation of CNOOC Ltd.**

Incorporated in Hong Kong in August 20, 1999, CNOOC is the third petroleum company in China, and also one of the world's largest independent E&P companies. Different from the other two majors, it is engaged only in upstream business of petroleum industry.

Under the reorganization, which became effective as of October 1, 1999, CNOOC Group transferred all of its then current operational and commercial interests in its offshore petroleum business to CNOOC. As a result, CNOOC and its subsidiaries became the only vehicle through which CNOOC Group engages in petroleum exploration, development, production and sales activities both within and outside of China.

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<sup>12</sup> Sinopec 20-F, 2000.

The main assets and interests relating to the offshore petroleum business transferred to CNOOC by CNOOC Group in the reorganization are listed in Table 2-1. CNOOC Group had retained its oil services related business, as well as its non-E&P-related commercial business including a proposed petrochemical project in Guangdong Province, a proposed fertilizer plant in Hainan Province, and a proposed liquefied natural gas project in Guangdong Province.

Additionally, CNOOC was established as a Hong Kong registered company, instead of registered in the mainland China as PetroChina and Sinopec were. This made the company a red-chip company instead of a H-share company.

## 2.4 The public listing of the three companies

Approved by Chinese government, all the three newly set companies launched their IPO between 2000~2001. Table 2-2 presents the main features of the IPO of each of the three companies.

Table 2-2: The three companies' IPO and equity structures

	<b>PetroChina</b>	<b>Sinopec</b>	<b>CNOOC</b>
<b>Code</b> New York Stock Exchange	PTR	SNP	CEO
Stock Exchange of Hong Kong	857	386	883
London Stock Exchange		SNP	
Shanghai Stock Exchange		600028	
Public Listing Date	4/6-7/2000	10/18-19/2000	2/27-28/ 2001
IPO Price (HK\$ / Share)	1.28	1.61	6.01
Issued new shares at IPO (thous.)	15,824,176	15,102,439	1,656,589.90
Sold old shares (thous.)	1,758,242	1,678,049	200,000
Private placed new shares (thous.)			557,576
Issued new A-share (thous.)		2,800,000	
Total Shares at 31Dec 2001 (thous.)	175,824,176	86,702,439	8,214,166
Total net proceeds from issue stocks (mmUS\$)	2,456	4,345	1,675
Interest percentage at 31Dec 2001	100%	100%	100%
State-owned shares:	90%	77.42%	70.60%
Held by the parent company	90%	55.06%	70.60%
Held by other state-owned institutions		22.36%	
Public Holding:	10%	22.58%	29.40%
H shares and ADRs	10%	19.35%	29.40%
A shares		3.23%	

Source: Company data

#### **2.4.1 CNOOC's first launch – a failed try**

On September 27, 2000, CNOOC, with its good quality assets, straight story and management's confidence for the global offering, launched its IPO from Hong Kong, with the price range of HK\$8.58~9.75 / share. Solomon Smith Barney and Bank of China International took the role of joint leaders of the syndicate underwriters. The market responded well to the story and the management during the road show. However, the momentum did not increase as the road show continued. With few orders received, the company had to announce the delay of the IPO on October 14, 2000.

The company believed the failure was caused by the failure to understand each other --- the company and the capital market, which could be illustrated as magnified China risk, lack of pre-marketing, and the over-optimistic pricing.

#### **2.4.2 PetroChina's IPO – a risky jump**

PetroChina had had an ambitious IPO plan for releasing more than 30% of interest and target proceeds at US\$ 8~10 billion.<sup>13</sup> With the lessons drawn from CNOOC case, and prudent pre-marketing, they finally set the goal at issue 10% of the total shares, with the price range of HK\$1.23~1.49 / share, implied a total proceeds of around US\$ 3 billion in March 2000 when launching its IPO.

In addition to the concern of China risk as CNOOC had faced, PetroChina's IPO encountered strong opposition from some U.S. NGOs for political reasons. This led CNPC to retain all its overseas oil business instead of merging it into PetroChina as previously planned.

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<sup>13</sup> Shan Lianwen. "A Case Study of CNOOC's Overseas Listing." 27 May 2001.

PetroChina adopted a strategy of introducing a large amount of investment from strategic investors. The total orders from these strategic investors contributed 32% of the new issue. BP Amoco, among them, agreed to purchase 20% of the global offering shares, with investment up to US\$ 1 billion.

After overcoming all the difficulties, PetroChina finally acquired orders that were a little bit more than just cover the total offering shares (1.3 times). The company issued 15,824,176,000 new shares, while its parent company sold 1,758,242,000 shares at the same time. With IPO price of HK\$1.28/share, the company acquired US\$2,456 mm of net proceeds. Its ADRs and H shares were listed in NYSE and SEHK on April 6 and April 7, 2000 respectively. After IPO, CNPC, its parent, owns 90% of the company's interest. Table 2-2 shows its IPO data and equity structures.

### **2.4.3 Sinopec's IPO – a go through process**

Having learned lessons from both CNOOC and PetroChina, Sinopec stretched the use of introducing strategic investors in its global offering. Exxon-Mobil, Shell, BP Amoco had all agreed before the IPO road show to purchase Sinopec's global offering of shares up to US\$1,000mm, 430mm, and 400mm, respectively. Sinopec committed to the deal of establishing a joint venture engaged in the retail of oil products with each of Exxon-Mobil (in Fujian and Guangdong provinces), Shell (in Jiangshu province), and BP-Amoco (in Zhejiang province). Each of the JVs targeted owning 150 gas stations in the first year and would rise to 500 within three years. Other corporate investors included ABB, Cheung Kong and some other HK big firms. The total agreed purchase shares by these strategic investors was as high as 60% of the total global offering, only 40% needed to find investors in capital market during the IPO road show.

Sinopec launched its road show for IPO on September 23, 2000. The market responded quite well, the final order book had 2.3 times of the total offering volume. It issued 15.1



billion of new shares (H share) with the price of HK\$1.61/share, raised US\$2.94 billion of net proceeds.

Sinopec was listed on SEHK, NYSE and LDSE (by ADRs) on October 18~19, 2000. It was the first Chinese enterprise to be listed on three overseas stock exchanges simultaneously.

In July 2001, Sinopec issued 2.8 billion new shares (A-share) in domestic market, getting RMB11.6 billion of net proceeds. It has been the largest issue size on the mainland stock market up to now. The issue price per A-share was RMB 4.22, treble of the trading price of its H-share at the time (HK\$1.31~1.42). The A shares were listed on Shanghai Stock Exchange (SHSE) on 8 August 2001. There was an RMB 6,446mm of the acquired net proceeds being used for the purchase of the CNSPC from Sinopec Group. After the issue of A-share, Sinopec Group, the parent, owns 54.8% of Sinopec's interest.

#### **2.4.4 CNOOC's second launch – a success IPO**

After an unsuccessful trying of IPO in October 1999, CNOOC did all it could do to maximize the probability of success in its next IPO launch:

- (1) Achieved better performance in 1999-2000 than estimated in October 1999 during the first IPO trying.
- (2) Achieved a private placement in the first half of 2000, issuing a total of 557,575,755 new shares to eight strategic shareholders (outside of China mainland), acquiring US\$455.3 mm of net proceeds.
- (3) Aligned with Shell before the second launch of IPO for its commitment of US\$200~300mm of purchase of CNOOC's new shares.
- (4) Reset the syndicated underwriter, appointed Merrill Lynch, CSFB and BOCI as the joint-global-coordinators, and made sure a full pre-marketing was done before the second launch.

In February 2001, CNOOC launched again its IPO, issuing 1,656,589,900 new shares at the price of HK\$6.01 and obtaining US\$1.22 billion of net proceeds. This time, the company acquired a big success in terms of achieving a subscription level of 5.6 times (demand / offered). It was listed on NYSE and SEHK on Feb.27<sup>th</sup> and 28<sup>th</sup>, 2001. The price rose 16.5% from the issue price in the first trading day in HKSE, against an overall downward trend of all the relative market indexes. CNOOC's IPO had been awarded as "The Deal of The Year" by «CFO», and "The Asia-Pacific Deal of the Quarter" by «International Equity Review» in 2001

#### 2.4.5 Enlisted into stock indexes

The three listing companies have all been enlisted into some stock indexes as shown in Table 2-3. All the three companies have been included in the Morgan Stanley China Index, with the weight of 6.6%, 1.6% and 2.2% respectively as of February 28, 2002. CNOOC was also enlisted in Hang Seng China Index in June 2001, and Hang Seng Index on July 31, 2001. It is currently the only company representing the oil and gas sector among the 33 Hang Seng Index constituents. Its weight is 2.367% in Hang Seng Index and 9.607% in the Red Chip Index.

Table 2-3: Stock indexes inclusion

	<b>PetroChina</b>	<b>Sinopec</b>	<b>CNOOC Ltd</b>
Index	MSCI China	MSCI China	MSCI China
Enlisted since	May 2000	May 2001	May 2001
Weighting on Feb 28, 02	6.6%	1.6%	2.2%
Index			Hang Seng Index – Red Chip Index (HSCCI)
Enlisted since			June 2001
Weighting on Feb 28, 02			9.607%
Index			Hang Seng Index
Enlisted since			July 2001
Weighting on Feb 28, 02			2.367%

#### 2.5 Summary

In a time span of only three years, China had completed the reorganization of the oil industry and the privatization for all the three national petroleum companies. The half-

century history of state-owned oil industry had been ended in the last year of last century. There are now three new actors, two integrated and one E&P, in the newly renovated platform of China oil industry. The previous three state-owned oil companies had become the parent companies of the three new actors separately.

By the reorganization of the onshore oil industry, the industry administrative function had been separated from the two state-owned enterprises – CNPC and Sinopec Group. The newly established three Chinese oil companies had all been publicly listed, and now as important parts of Hong Kong stock market.

The three new companies have released their interests to public shareholders for 10% (PetroChina), 22.58% (Sinopec) and 29.40% (CNOOC) respectively, acquiring a total net proceeds of US\$8,476 million from capital market, including US\$7,069mm from overseas capital market and RMB11.65 billion (US\$1,407mm) from the domestic capital market.

## **CHAPTER 3: THE CHANGED ENVIRONMENT**

This chapter covers the changing environment for China's Petroleum companies, including changes in price regimes, the impact of China's entry into the World Trade Organization (WTO), regulatory changes, and the changing structure of support services.

### **3.1 The price regimes**

There are special price regimes for crude oil, natural gas and oil products (gas and diesel). For chemical products, the producers can set prices except for fertilizer and material for agricultural film that have the guidance prices set by the State Development Planning Commission (SDPC).

#### **3.1.1 The price regime of crude oil**

Prior to June 1, 1998, the crude oil produced onshore China was priced by the Chinese government and did not reflect crude oil price fluctuations in international markets. However, there has been no government control of offshore oil prices. Since 1982, the prices for crude oil produced by CNOOC Group and its foreign partners from offshore operations have been negotiated between the producers and the purchasers based on international market prices.

Since June 1, 1998, the government relaxed its control over prices of crude oil by generally allowing producers and buyers to negotiate prices. SDPC publishes monthly a benchmark price for a number of crude oil grades based on an average of the daily FOB Singapore prices for the previous month, plus the amount of import duty (RMB 16 per ton, which has been abolished since January 1, 2002). Old Sinopec (the largest purchaser) and CNPC (the largest seller) negotiated for a premium or discount from the applicable benchmark price (published by SDPC) reflecting transportation costs and oil quality to reach a trading price. The negotiation is based on the principle that the prices of onshore

crude oil produced in China as delivered at any refinery should generally be at the same level as those of imported crude oil of similar grade as delivered at the same refinery. The SDPC would mediate and make a decision on the amount of premium or discount if the two majors cannot reach an agreement themselves.<sup>14</sup>

Since the establishment of PetroChina and Sinopec, the two new names have replaced CNPC and Old Sinopec for price negotiations. They negotiate the price for the crude oil traded between them. For example, on July 25, 2000, they reached an agreement for pricing crude oil supplied to each other. This agreement specified that if international benchmark crude prices go above US\$30/bbl, there will be a discount of US\$0.46/bbl (Rmb28/tonne) applied to the median price (import-parity price), and that if the international benchmark crude price falls below US\$30/bbl, the premiums/discounts will be re-negotiated.

### **3.1.2 The price regime of natural gas**

Natural gas price in China has long been controlled by the government. Before 2002, the prices of natural gas were determined by three components: wellhead price; pipeline transportation tariffs, and purification fee. **Wellhead price** varies depending on whether or not the natural gas sold is within the government formulated natural gas supply plan. For natural gas sold within the supply plan, the SDPC fixes wellhead prices according to the industry that the customer is involved in. For natural gas sold outside of the supply plan, the SDPC publishes a median guidance wellhead price with allowable upward or downward adjustments of 10 percent by the natural gas producers. The natural gas producers negotiate the actual wellhead price with commercial natural gas users and municipal governments within the adjustment range. The natural gas producers submit to the SDPC for examination and approval proposed pipeline **transmission tariffs** based on the capital investment made in the pipeline, the depreciation period for the pipeline, the

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<sup>14</sup> PetroChina IPO Prospectus, Apr. 2000.

ability of end users to pay and the producer's profit margin. The **purification fee** is set by producers based on the cost of natural gas purification, and it must be approved by the SDPC.

In January 2002, the SDPC decided that effective January 1, 2002, the purification fee for domestic natural gas charged after the wellhead price would be integrated into the consolidated ex-factory price and increase the price by RMB 0.03 (US\$0.0036) per cubic meter. Both PetroChina and Sinopec stated that their companies would benefit from this reform.<sup>15</sup>

For natural gas produced by CNOOC and its foreign partners from offshore operation, the prices are negotiated between the producers and the purchasers and are set based on the thermal value and the composite alternative energy's prices.

### **3.1.3 The price regime of oil products**

Prior to June 1, 1998, the gasoline and diesel prices were directly set by the Chinese government and adjusted infrequently. The price setting of kerosene, heavy oil used as fuel, and light oil for chemical use were open to producers except for military use. Since June 1, 1998, SDPC began determining and publishing the pricing guidelines for retail sales of gasoline and diesel for each province of China. The pricing guidelines were adjusted four times under this policy during June 1, 1998 and 1 June 2000.

Beginning June 1, 2000, SDPC started to determine prices monthly and to publish the retail median guideline prices of gasoline and diesel, benchmarked to Singapore FOB prices, to better reflect prevailing international market prices.<sup>16</sup> On 15 October 2001, SDPC issued an amended petroleum products pricing regime.<sup>17</sup> Comparing to the

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<sup>15</sup> Companies announcements, 23-24 Jan. 2002.

<sup>16</sup> Sinopec IPO Prospectus, 2000.

<sup>17</sup> International Petroleum Economics, Nov. 2001.

previous regime, the new regime, effective on October 17, 2001, has some differences and they are as follows:

- (1) It uses the weighted average of Singapore (~60%), New York (~30%), and Rotterdam (~10%) prices as the benchmark for setting the state guidance price, instead of benchmarked to FOB Singapore only.
- (2) Product prices will be adjusted only when the three markets' weighted average falls out of an unspecified "certain level", instead of adjusting monthly.
- (3) The permitted pricing range in which PetroChina and Sinopec set their retail prices is expanded from  $\pm 5\%$  to  $\pm 8\%$  of published pricing guidelines.
- (4) Finally, the pricing is linking to domestic market situation to bring down the volatility of the prices.<sup>18</sup>

The goal of the new regime is to decrease the frequency of price adjustments and reduce the range of each adjustment, to stabilize the operating environment for oil-related firms. The new regime is expected to benefit PetroChina and, notably, Sinopec. The amended price regime for oil products is still an interim to the final stage of forming the price by market competition, which is a common view shared by the two majors and the government officials.<sup>19</sup>

## **3.2 WTO effects**

### **3.2.1 Changes on tariffs and non-tariff barriers**

China's entry of WTO on December 11, 2001 changed the oil industry by reducing tariffs, abolishing non-tariff barriers, and opening (gradually) of distribution. Table 3-1 shows the tariff reduction, while the scheduled oil market opening is shown in Table 3-2. These changes have different effects on segments along the production chain.

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<sup>18</sup> CSFB Equity Research, 5 Dec. 2001.

<sup>19</sup> Chai Wei. "Stabilizing Oil Products' Price." China Petroleum, Dec. 2001.

Table 3-1: Tariff reductions after the entry of WTO

	<b>Previous tariff</b>	<b>Reduced to</b>	<b>Effective year</b>
Crude oil	16 (RMB/ton)	0	2002
Gasoline	9.0%	5.0%	2002
Diesel	6.0%	6.0%	No change
Fuel oil	6.0%	6.0%	No change
Kerosene	9.0%	9.0%	No change
Lube oil	9.0%	6.0%	2002
Heavy oil	12.0%	6.0%	2002
Intermediate feedstock	8.0~14.0%	2.0~7.0%	7 yr phase (2002~2008)
Synthetic fibre	11.0~21.0%	5.0%	7 yr phase (2002~2008)
synthetic resin	16%	6.5%	7 yr phase (2002~2008)

Source: International Petroleum Economics, Jan. 2002;  
Deutsche Bank Research Report, 15 Jan. 2002;  
SSB Research Report, 17 Dec.2001

Table 3-2: Scheduled opening of oil market of China

2002
Non-state designated companies <sup>20</sup> allowed to import 7.2m tons of crude oil
Non-state designated companies allowed to import 4.0m tons of refined oil
Abolish quota on Synthetic fibre (since December 2001)
Abolish quota on fertilizer
2003
Non-state designated companies allowed to import at least 8.28m tons of crude oil
Non-state designated companies allowed to import at least 4.6m tons of refined oil
Imports of at least 16.58m tons of refined oil allowed
2004
Abolish quota on refined oil imports
Abolish quota on synthetic rubber
2005
Retail market of oil products opened to foreigners
2007
Wholesale oil market opened to foreigners

Source: Source: International Petroleum Economics, Jan. 2002;

### 3.2.2 Changes and Impacts in Crude oil segment

In the crude oil segment, the key changes are:

- (1) Tariffs on crude are reduced from RMB16/ton (US\$0.26/bbl) to none since January 1, 2002.
- (2) Non-state-designated traders are allowed to import 7.2m tons of crude in 2002, with a 15% annual growth rate until reconsideration in 2012.

<sup>20</sup> The state designated traders for crude oil as well as oil products are: Chinaoil (CNPC's subsidiary); Unipecc (Sinopec's subsidiary); Sinochem; and another state-owned trading company named Zhuhai Zhenrong.



- (2) Non-state-designated traders are allowed to import 7.2m tons of crude in 2002, with a 15% annual growth rate until reconsideration in 2012.

The impacts of these changes are fairly easy to predict. China had imported 70.2 mm tons and 60.3 mm tons of crude oil in 2000 and 2001 respectively, or around 30% of its total domestic consumption. With the crude oil price in China is linked to international prices and the increasing shortage of domestic supply, the opening of trading rights and the elimination of tariffs on crude should not have significant impacts on the country's E&P segment. The reduced tariffs of RMB1.1 billion for 70mm tons of imported crude oil will mainly benefit Sinopec since it is the largest crude importer in China.

### **3.2.3 Changes and Impacts in Refining and Marketing segments**

The changes in the refining and marketing segments are more extensive:

- (1) Tariffs for gasoline and lubricating oil have been lowered from 9% to 5% and 6% respectively since January 1, 2002 (while tariffs for diesel and kerosene unchanged at 6% and 9%).
- (2) The import quota for oil products (including fuel oil) is 16.58mm tons in first year, with quota increases of 15% each year thereafter until the quota is abolished in 2004.
- (3) Non-state-designated traders are allowed to import 4m tons of refined products in 2002, growing at an annual rate of 15% until reconsideration in 2004.
- (4) Retail oil product markets are scheduled to open three years after WTO entry. Foreign companies are allowed to add up to 30 stations per year in certain markets (subject to licensing) before the markets open. However, foreign companies are allowed to enter the storage business via joint ventures with PetroChina and Sinopec starting this year.
- (5) The wholesale market of oil products as well as crude oil will be fully accessible by foreign companies five years after WTO entry.

The lower tariffs and rising imports will lead to further pressures on margins downstream, especially with imports from Taiwan, Korea and Singapore. Sinopec will suffer more than PetroChina for its downstream-skewed operation. The delayed retail access of foreign companies avoids immediate shocks to the marketing distribution segment in China. However, in long run, China's huge gas retail market will be highly competitive.

### **3.2.4 Changes and Impacts in Chemicals segment**

In chemicals segment, the key changes are:

- (1) Tariffs for synthetic resins will gradually fall from 16% in 2001 to 6.5% by 2008, and for synthetic fibre will gradually decrease from 11%~21% in 2001 to 5% by 2004.
- (2) The quota for synthetic fibre had been eliminated immediately after the entry into WTO. The quota for fertilizers was eliminated in 2002, and will be eliminated by 2004 for synthetic rubbers.
- (3) For chemicals, the retail market will be open to non-state entities and foreigners by 2004, and the whole market will be open to them by 2007.

The impacts on Chinese chemical producers will be significant. Most of them have vintage plants now with less scale and higher cost, especially to PetroChina's chemical assets.<sup>21</sup> The cost of upgrading and falling tariff protection will press those companies in this segment into a severe situation.

### **3.2.5 Summary**

China's entry of WTO leads to a gradual oil market liberalization, and forces an ongoing operational restructuring and efficiency improvement. The most significant impacts will

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<sup>21</sup> Morgan Stanley Equity Research, 12 Dec. 2001.

be in the downstream instead of upstream, and heavy competition will occur in the markets for oil products and chemicals after 2003 when the quota on refined oil imports abolished in 2004, the retail market of oil products opened in 2005, or the wholesale oil market opened in 2007.

### **3.3 The revises of the two regulations**

#### **3.3.1 The two regulations**

There are two fundamental regulations that govern the petroleum cooperation with foreign companies in China. The first one is THE REGULATIONS OF THE PEOPLE'S REPUBLIC OF CHINA ON EXPLORATION OF OFFSHORE PETROLEUM RESOURCES IN COOPERATION WITH FOREIGN ENTERPRISES (the **Offshore Regulation**), promulgated in Feb 10, 1982, for encouraging foreign companies' participation in offshore petroleum industry. It granted to CNOOC group the exclusive right to enter into joint cooperation arrangements with foreign enterprises for offshore petroleum exploration and production. Under this regulation, CNOOC group had signed 149 contracts/agreements with 70 oil companies from 18 countries/areas up to September 30, 2001.

The second one is THE REGULATIONS OF THE PEOPLE'S REPUBLIC OF CHINA ON EXPLORATION OF ONSHORE PETROLEUM RESOURCES IN COOPERATION WITH FOREIGN ENTERPRISES (**Onshore Regulation**), promulgated in early 1990s, for encouraging foreign companies' participation in onshore petroleum industry. It granted to CNPC the exclusive right to enter into joint cooperation arrangements with foreign enterprises for onshore petroleum exploration and production.

### 3.3.2 The revisions

It is necessary to revise the two regulations for WTO entry, and also for the changed institutions related to petroleum industry, both in government and in companies. The state council published the two revised regulations on September 23, 2001 (for Onshore Regulation) and October 10, 2001 (for Offshore Regulation) separately, after five years work.

The main changes made to the two documents are:

- (1) Expanded the exclusive right to allow both CNPC and Sinopec Group to enter into joint cooperation with foreign enterprises for onshore petroleum exploration and production, instead of CNPC only. However, the exclusive right for corporation with foreign enterprises in offshore petroleum is still granted to CNOOC only.
- (2) Abolished the restrictions in the previous regulations for foreign contractors in the execution of petroleum contracts to comply with WTO agreement, including the liability of transfer technology to Chinese partners, the preferential employment of Chinese people, the preferential use of Chinese manufacturers and service suppliers, the preferential adoption of equipment and materials produced in China.
- (3) Increased the ways for the sale of shared crude oil into China's market by foreign contractors produced from the contract blocks. Crude oil should now be purchased by the Chinese partners in general, or by other ways as agreed by the two parts of the petroleum sharing contracts (PSC).<sup>22 & 23</sup>

The three listing Companies do not have the right to enter into production sharing contracts (PSC) directly with foreign oil and gas companies under existing PRC law. How they enter such cooperation then? As authorized by the two regulations, the PSC with foreign firms will still be signed by one of the three state-owned companies -- either CNPC or Sinopec Group for onshore blocks, or CNOOC Group for offshore blocks.

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<sup>22</sup> International Petroleum Economics, Jan. 2002; Nov. 2001.

<sup>23</sup> Liang Zhili. "The Preparation for the WTO Entry." China Petroleum, Dec.2001.

After that, the state-owned company will, subject to approval of the MOFTEC, assign to its listing subsidiary, the sole vehicle through which it carries out E&P business in China, for all of its commercial and operational rights and obligations under the signed PSC.

### **3.4 Changed relationship with service sections**

Before the restructuring for public listing, most subsidiaries of CNPC or Sinopec group were organized by location, instead of by function. For example, a typical CNPC subsidiary at the time was an administration bureau and would cover oil and gas E&P business, technology service, logistic, and social activities.

The main local subsidiaries within CNOOC Group, such as the Bohai Oil Company, Southwest China Sea Oil Company, used to have the same organization structure as those in CNPC. Since 1993, CNOOC Group has separated the three different businesses --- E&P, technology services, social services, each with its own organization, budget and account book. The services supplied by technology service subsidiaries to the E&P subsidiaries had been based on outsourcing contracts.

After the restructuring in 1999-2000, CNPC, Sinopec Group, and CNOOC Group, with similar principles, retained the following business:

- (1) Technology services such as geophysical exploration services, seismic data processing, well drilling, well logging, well survey, well cementation, test of production facilities, and equipment maintenance.
- (2) Ancillary business such as design, construction, installation, manufacturing of production facilities and equipments, wharf, warehousing/storage, and catering.
- (3) Utility services such as electricity, water, telecommunication, heat supply, accommodation.
- (4) Social services such as utilities, education primary and middle schools, kindergarten, and adult education), health care, transportation, security and fire services.

The service segment of CNPC will continue to provide facilities and ancillary services to PetroChina after the restructuring, while both Sinopec and CNOOC have similar situations. To each the three oil companies, some of the services may not be available from independent third parties or on comparable terms. To some of the service branches, the listed oil company that used to be within one company with them is still their sole customer.

There are two substantial changes to the relationship between a listed oil company (PetroChina, or Sinopec, or CNOOC) and a service supplier under its parent company. (1) The service supplier had become separate independent entities after the restructuring within the group, any new contract for technical services should be in principle acquired by an open bidding process instead of assigned by the bureau or the group, the terms, and prices provided by such suppliers should be of competitive. (2) The prices for the provision of the technical services will depend more on market instead of decided by the bureau or the group.

More than that, for avoiding the related party transaction unfavorable to the listed company that might hurt the interests of public shareholders, the listed companies are required, under the listing rules of the HKSE and subject to the nature and the value of the transactions, to disclose and to obtain prior approval of independent non-executive directors on the board of directors for each connected party transaction exceeding the segmented values that have been previously waived by HKSE.

CNOOC Group reorganized its ten technology service subsidiaries into three companies during 2000-2001. Among them, the Offshore Oil Engineering Co. Ltd. had issued 80mm A-shares and listed in Shanghai Stock Exchange in January 2002. Another one, the China Offshore Oil Service Co. Ltd, is intending to launch its IPO and list in HKSE in 2H 2002. Such a tendency will certainly influence the relationship of the E&P side and the service side under CNOOC Group to be more commercialistic.

Within CNPC and Sinopec Group, there have been shocks resulting from the separation of the E&P section from the technology service section, after about forty years of being in one family. For PetroChina, Sinopec, and CNOOC, there are more than commercial interests that need to be accounted for in dealing with the service suppliers that are under the same group with the company. Some historical or cultural factors would affect the deal, or even conflict with the commercial interest of the company. That is why the so-called related party transactions are not only managed by both parties of the deal, but also by other stakeholders such as public shareholders and stock exchange monitors. The intent is to avoid the company making related party transactions that are unfavorable to public shareholders. The three oil companies have to trade-off between market regulations and some historical/cultural factors. This is a new situation to all of them.

### **3.5 Summary**

Against the background of wide restructuring in world oil industry, China oil industry environment has had significant changes since 2000. The price regimes for crude oil, natural gas, and oil products have been relaxed to be market oriented. The tariffs have been decreasing and the non-tariff control is subjecting to an abolishing process due to the entry into the WTO. The relationships between the oil section and the service section within one group have changed to be more commercialistic. All these changes, put together, widely and fundamentally changed the platform and the rules for oil players in China, made the China's oil industry more open to competition and to foreign enterprises. These changes will definitely and deeply influence the long run of the industry. A stronger competition can be expected in this industry.

Such a quick and fundamental change shows the determination and ability of China to restructure the oil industry for the entry of WTO, as well as for enhancing the competitiveness of the Chinese oil companies.

## **CHAPTER 4: FROM COMPLEMENT TO COMPETITION – THE NEW RELATIONSHIP AMONG THE THREE MAJORS**

### **4.1 The competition resulting from re-structuring**

Before the reorganization in 1988, the relationship among the three Chinese companies – CNPC, Sinopec Group, CNOOC Group – was complementary instead of competitive. Both CNPC and CNOOC Group were petroleum suppliers of Sinopec Group. CNPC and CNOOC Group were separated between onshore and offshore by the coastline to avoid resource competition, while the shortage for petroleum in China's oil market let the two oil suppliers easily sell all of their output. This meant no competition in the oil market between the two suppliers. Furthermore, the government set the prices for crude oil produced by CNPC. The three SOEs lived like family members, each with a special function. This was a typical and traditional picture in a planned economy.

The picture changed after the reorganization and restructuring in 1988. The newly established PetroChina, Sinopec and CNOOC were market oriented listed companies with somewhat similar business segments or markets.

The competition of the three majors in different segment is mainly focused on:

- (1) E&P segment– competition for resources, natural gas market and cost. The domestic market for crude oil is still not an issue, since the wholesale of crude oil by foreign companies will not be allowed until 2007, and the crude oil price with international market price as benchmark could also reduce the competition from imports.
- (2) Marketing and distribution segment – competition for market share.
- (3) Refining segment– competition for raising capacity utilization and earning ability.
- (4) Chemicals segment– competition for survive and earning ability.



Not all the three firms take part in competition in all the above segments. The players in each of the four segments are shown as below.

Upstream	<i>PetroChina</i> <i>Sinopec</i> <i>CNOOC</i>	Crude Oil	<i>PetroChina</i> <i>CNOOC</i>
Downstream	<i>Sinopec</i> <i>PetroChina</i>	Gas Retail	Petrochemical <i>PetroChina</i> <i>Sinopec</i>

The relationships among the three listing companies are complex. In the crude oil segment, the three players have a basically complementary relationships. As the leading refiner in China, Sinopec is the largest customer of PetroChina and CNOOC for purchasing crude oil produced by them. However, Sinopec is also the sole competitor of PetroChina for resources in China (see 4.2.2). Sinopec and PetroChina competed with each other in the market of oil products and petrochemicals (see 4.4.1). While in the natural gas market of coastal area, PetroChina and CNOOC could be complementary and/or competitors in the coming years (see 4.4.2). In addition, they encounter competition in capital markets as they are basically in the same industry and the same market (see 4.5).

In 2000, PetroChina produced 765mm barrels of crude oil, and process (refining) 547mm barrels of crude oil. There was a 28% of its crude oil production selling to Sinopec. CNOOC and its foreign partners sold about 70% crude oil from offshore China (80mm barrels) to Sinopec in 2000. Sinopec processed 104.9 mm tons of crude oil in 2000 (with refinery utilization rate of 81%). Of the volume, 26% came from its own oil fields, 15% from PetroChina, 5% from China offshore, and 54% from import. Therefore, there is a high system lock-in situation among the three companies in terms of crude oil production and processing, yet accompanied with severe competition in a some segments (such as the retail of gas and petrochemicals). Some most important competition among them in a few aspects, such as resources, market, and stock performance, are addressed in the following sections.

## **4.2 The competition for resources**

Owning and maintaining a reasonable reserve-production ratio is one of the key competitive advantages for an oil and gas production company. The benchmark of this ratio in 2000 is shown in Exhibit 2.

The competition for petroleum resources consists of:

- Acquiring exploration blocks with high potential prospect
- Exploration budget
- Exploration technology and success rate for exploration wells
- Commercial value of the reserves found by exploration

### **4.2.1 Exploration and Production license**

Applicants for exploration licenses in China must first register the blocks in which they intend to engage in exploration activities, no matter onshore or offshore, with the Ministry of Land and Resources of PRC (**MLR**). MLR has the authority to grant exploration licenses and production licenses on a competitive bidding or other basis it considers appropriate. Applicants for these licenses must be companies approved by the State Council to engage in oil and gas exploration and production activities. Currently, only PetroChina, Sinopec, and CNOOC (via CNOOC group) are the qualified applicants.

The holder of an exploration license enjoys an exclusive right for exploration in the block, and is obligated to make a progressive annual minimum exploration investment relating to the exploration blocks, and pay an annual exploration license fee. The maximum term of an exploration license is 7 years. The exploration license may be renewed twice with each renewal for a two-year term.

At the exploration stage, an applicant can also apply for a progressive exploration and production license that allows the holder to test and develop reserves not yet fully proved.

The progressive exploration and production license has a maximum term of 15 years. Upon the reserves becoming proved for a block, the holder must apply for a full production license in order to undertake production. A full production license has a maximum term of usually 30 years and is renewable.

#### **4.2.2 Area control and competition**

The two regulations as introduced in 3.3 authorized the right of cooperation with foreign companies for exploration to CNPC and Sinopec group in onshore China, and to CNOOC group in offshore China. For independent exploration, each of the three players has the right to apply a license to any unregistered blocks without any geographical restrictions. However, the real control of exploration area is generally outlined by the history and the reorganization in 1988. Excepting a few cases, PetroChina has a general control in north and west of the onshore, Sinopec has a general control in south and east of mainland, and CNOOC has a general control in Offshore China.

PetroChina has not applied for any exploration license in offshore and vice versa for CNOOC in onshore. They also don't have the intention of doing so in the near future. While the Sinopec may have the interests of expanding its exploration to offshore, considering its low self supply of crude oil, and its acquired offshore oil operation experience from CNSPC and some oil fields within Shengli's shallow water area (less than 5 meters deep of water). Therefore, the competition for onshore resources exists only between PetroChina and Sinopec, while the competition for offshore resources exists between CNOOC and Sinopec.

PetroChina has the absolute advantage for onshore oil exploration. It owns oilfields that account for 74% of the total oil production from onshore in 2001, and all the most promising onshore resource areas located in the western area (Xinjiang and Qinhai).

Sinopec currently explores for, develops and produces crude oil and natural gas in 13 provinces in China. As of December 31, 2000, it had six oil and gas fields. The Shengli field in Shandong province is the second largest oil field in China and accounted for 70% of Sinopec's total production in 2001.<sup>24</sup> Sinopec has a comparatively weak position in resource competition. Southern China contains over 40 sedimentary basins, but many of which have not been explored to anywhere near the required level.<sup>25</sup> The acquiring of CNSPC in 2001 made an increase of 21% for Sinopec's proved reserves (see Exhibit 3). The company expects to find new reserves both in existing production areas (located in south east China) and in the new exploration area that is mainly in the western China.

CNOOC has the absolute advantage in China's offshore oil exploration. It holds all licensed blocks with only two exceptions. The first exception is Pinghu gas field, which is owned by a joint venture that CNOOC owns 30% interest. The second one is Xihu trough area that is shared equally by Sinopec and CNOOC. As of the end of 2000, CNOOC has the licensed area (independently or cooperatively) covering approximately 46% of the total area in offshore China that might be explored with the current technology.<sup>26</sup> It also has most exploration data for offshore and almost all the existing offshore petroleum operation facilities. In addition, CNOOC Group owns the strongest domestic service companies for offshore petroleum operations.

### **4.2.3 Overseas development**

Given the increasing importation of crude oil, Chinese oil companies would be more interested in investing directly in overseas oil fields. All three companies have shown interest in acquiring resources outside of China. Each of them has set up an international subsidiary. There are now four Chinese companies addressing international oil exploration and production business as shown below:

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<sup>24</sup> International Petroleum Economics, Mar. 2002.

<sup>25</sup> CSFB. "Enter the Dragons." 29 Sep. 1999.

<sup>26</sup> CNOOC 20-F, 2000.

- CNPC: China National Oil Development Corp. (CNODC)
- PetroChina: PetroChina International Co. Ltd.
- Sinopec: China Petrochemical International Co. Ltd.
- CNOOC: CNOOC International Ltd.

CNPC, via CNODC, started its overseas oil activities in 1993 in Thailand. It has also entered Canada, Peru, Venezuela, Sultan, Papua New Guinea, Iraq, Kazakhstan, Russia, and Turkmenistan since then.

PetroChina International Co Ltd. has just been set up in January 2002 by PetroChina as a new foreign trade arm. On April 15, 2002, PetroChina announced a US\$ 216mm acquisition of Devon Energy's Indonesian oil and gas operations, which will be the first overseas assets of PetroChina and will be adding 17,100 BOE/D share production to the company in 2002.<sup>27</sup>

By an asset swap in June 2000 with Sinopec Group, Sinopec acquired overseas investments and the majority interest in China Petrochemical International Company. Sinopec is targeting areas of the Middle East, western Africa, northern Africa and Russia. It signed an exploration agreement in Iran in 2001.<sup>28</sup> However, Sinopec does not have any significant overseas oil investment for the time being.

CNOOC launched its overseas oil activities in 1993. Until the end of 2001, its only overseas oil production came from Malacca Strait in Indonesia, where the company acquired 39.51% interest in a production sharing contract. CNOOC shared 0.9 mm barrels of net crude oil production in 2000 from this contract, and had net proved reserves from this property of 9.5 mm barrels of crude oil as of the end of 2000. The company has also invested some funds with other oil players in the Gulf of Mexico and Burma for exploration, but without commercial findings. In January 18, 2002, the company

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<sup>27</sup> Company announcement, 15 Apr. 2002.

<sup>28</sup> Petroleum Enterprise Management, No.7, 2001.

announced a US\$ 585 million acquisition of 9 Repsol subsidiaries that owned interests in five oil and gas properties in Indonesia. The acquisition made CNOOC the largest offshore oil producer in Indonesia. Estimated net working interest proved reserves to be acquired total approximately 360 mm barrels of oil equivalent, which increased CNOOC's reserves by an excess of 21% on a working interest basis.<sup>29</sup> The acquisition would give CNOOC an immediate incremental net working interest production of more than 35mm BOE, raising its 2002 production target for around 1/3 (from 95 mm BOE to 130 mm BOE).<sup>30</sup> Table 4-1 listed overseas share production of the Chinese oil companies.

Table 4-1: Overseas net share products

	<u>1999</u>	<u>2000</u>	<u>2001</u>
<b>CNODC</b>			
Crude oil (thous. tons / annum)	na	5,050	8,310
Natural gas (mm cf / annum)	na	477	577
<b>CNOOC International Ltd.</b>			
Crude oil (mm bbls / annum)	1.12	0.90	na
China Petrochemical International Co. Ltd.	0	0	0

Source: Company data

#### 4.2.4 Reserve replacement

As showed in Table 4-2, the most noticeable reserve increases since 1998 is the increases

Table 4-2: Proved reserve replacement

	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
<b>PetroChina</b>				
Crude oil	142%	117%	104%	90%
Natural gas	931%	438%	1326%	734%
<b>Sinopec</b>				
Crude oil	na	183%	129%	117%
Natural gas	na	361%	370%	190%
<b>CNOOC</b>				
Crude oil	na	203%	120%	136%
Natural gas	na	14%	-14%	97%

Source: see Exhibit 3

<sup>29</sup> Merrill Lynch Equity Research, 18 Jan. 2002.

<sup>30</sup> Salomon Smith Barney Equity Research, 21 Jan. 2002.

of PetroChina's natural gas reserves. The replacement ratios for crude oil to each of them were just around 100% in recent years, which could not satisfy their desire of raising production in the future. This fact could explain their urgent intentions for acquiring overseas reserves.

### 4.3 The competition for petroleum production growth

During the 1998~2001 period, PetroChina achieved continuous growth in natural gas production, but slowly decreased in crude oil production. Sinopec had a jump on production in 2001, mainly from the merging of CNSPC. CNOOC had significant growth in crude oil production since 2000. Table 4-3 shows their petroleum production during 1998~2001.

Table 4-3: Crude oil and natural production growth

	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	
<b><u>PetroChina</u></b>					
Crude oil	-0.4%	-0.6%	-1.3%	-0.2%	
Natural gas	7.7%	6.8%	15.6%	11.5%	
Total of oil and natural gas	0.0%	0.0%	0.2%	0.9%	
<b><u>Sinopec</u></b>					
Crude oil	-1.7%	-3.7%	2.4%	8.8%	(Excl. CNSPC) 0.2%
Natural gas	-1.8%	-3.0%	2.2%	103%	15.1%
Total of oil and natural gas	-2.0%	-4.7%	2.0%	14.4%	0.8%
<b><u>CNOOC</u></b>					
Crude oil	0.8%	-0.7%	18.1%	10.9%	
Natural gas	16.1%	10.4%	-3.1%	-1.5%	
Total of oil and natural gas	2.8%	0.9%	14.6%	9.2%	

Source: see Exhibit 4

Based on the huge natural gas resource found in the northwestern region of China, PetroChina schedules to increase natural gas supply for 12 bcm per year by the east-west pipeline project by 2005.

Sinopec intends to have 550 mm tons of recoverable reserves, 40 mm tons of crude oil production and 10 bcm of natural gas production by 2005.

CNOOC has an ambitious development schedule in the next five years. It is going to accelerate the development of its large undeveloped reserves in offshore China, which will make the company sustain a high growth rate. It plans to increase production by 21% in 2002, and its 2002-2005 forecasted CAGR is 19%, versus around 9% for comparable group averages.<sup>31</sup> This momentum is unmatched by any other global E&P companies. The target of crude oil production in offshore China is 30 mm tons by 2005.<sup>32</sup>

#### **4.4 The competition for product market**

##### **4.4.1 The competition for retail market of oil products**

Immediately after their reorganization in 1988, both PetroChina and Sinopec have been aggressively expanding in the retail market to capture market share and value. By 1998, there had only 20% market share and less than 20% of the gas stations in the mainland were held by CNPC and Sinopec Group. After only three years, PetroChina and Sinopec controlled half of the total 80,000 gas stations in China and 66% of the retail market for gas and diesel in China by the end of 2001.<sup>33</sup> Their share in the retail market in 2001 is shown in Table 4-4. A noticeable fact is that PetroChina has a dominant control in the Northern area, while Sinopec has a similar position in the Southern area.

Within three or five years after entering WTO, the retail market and the wholesale for oil products will be opened to foreign companies. PetroChina and Sinopec have been taking the time before this to expand their gas distribution network quickly, with the support of Chinese government. SETC announced in July 2001 that CNPC and Sinopec Group were assigned as the only organizations in charge of building new gas stations.

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<sup>31</sup> CSFB Equity Research, 22 Jan. 2002.

<sup>32</sup> The State Economic and Trade Commission of China. "The 10<sup>th</sup> Five-Year Plan of China Petroleum Industry." 25 June 2001.

<sup>33</sup> Zhang Jiwei. "Watching The Gas Stations in China." Petroleum Management, No.3, 2002.



Table 4-4: Oil products retail market

<u>Gas stations</u>	<u>PetroChina</u>			<u>Sinopec</u>		
	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
owned	1,879	4,683	6,524	11,374	20,259	24,062
aligned	4,941	6,667	5,578	na	5,234	4,184
Total	6,820	11,350	12,102	11,374	25,493	28,246
YOY	na	66%	7%	na	124%	11%

**Shares of retail market (gas and diesel) by the end of 2001**

	<u>China</u>	<u>Southern area</u>	<u>Northern area</u>
PetroChina	21%	9%	65%
Sinopec	45%	57%	4%
Others	34%	34%	31%
Total China	100%	100%	100%

Source: Petroleum Management, No.3, 2002; ML research, 2 April 2002; Company report 2001

The two majors have been competing most heavily in the Southern area, which represents 80% of the national retail market. PetroChina has almost doubled its gas stations (by building, purchasing, or aligning) during 2000~2001, and plans to add over 8,000 new ones to bring the total number of gas stations to 20,000 by 2005, with an investment of RMB22 billion.<sup>34</sup> Sinopec owned only 8,000 gas stations in 1998, and increased to 24,200 by 2001 and aligned another 4,000. The company holds 57% of the market share in the Southern area now, and intends to rise it to 70~75% with the increase of its controlled gas stations to a total of 30,000 by 2005 (owning 24,000 and aligning 2,000).<sup>35</sup>

Encouraged by the entry into WTO, many global oil majors have also taken part in the competition for oil retail market in China by setting joint ventures before the retail market is completely opened up. Exxon-Mobil, Shell, bp had all purchased Sinopec's stocks in its IPO. Sinopec agreed to set a joint venture with each of them as return. The JVs will build or acquire 500 gas stations within three years (2001~2003) in each of Guangdong (Exxon-Mobil), Jiangshu (Shell) or Zhejiang (bp).<sup>36</sup> In addition, bp aligns with PetroChina in Guangdong and Fujian to set up hundreds of gas stations.<sup>37</sup>

<sup>34</sup> Huang Yan, Vice-Chairman and President of PetroChina Company Limited, August 2001.

<sup>35</sup> Petroleum Management, No.3, 2002

<sup>36</sup> Li Yizhong, Chairman of Sinopec, May 7-10, 2001.

<sup>37</sup> Zhang Fengsheng. "A Study to The Marketing Strategies of International Petroleum and Petrochemical Companies." International Petroleum Economics, No.8, 2001.

Aside from the competition, the two majors also cooperate in retail market. On Feb. 11, 2002 Sinopec and PetroChina announced that they had entered into a cooperation agreement. According to it, Sinopec will make continuous efforts on reducing the import crude and increasing domestic crude procurement; the two groups will jointly control the refining throughput and promote the refined oil products price to the reasonable level; they'll continuously take measures on controlling the total supply volume, emphasizing on product mix adjustment to keep the refined oil products' inventory maintaining at a reasonable level while securing stable supply; and they'll enhance their cooperation on managing and securing the market order for refined oil products.

#### **4.4.2 The competition for natural gas market**

The coastal area of east China is the most developed and the largest potential natural gas market in the mainland. It is now the target market of natural gas projects launched by PetroChina or CNOOC from three sources: western of the mainland, offshore China, importing liquefied natural gas (LNG).

The East –West pipeline is designed to provide natural gas supply at 12 bcm per annum for 20 years by a pipeline of 1016mm diameter and longer than 4,000km. The target gas markets are located in the Yangtze delta region as well as areas along the pipeline route. This project has a highly important strategic meaning to China for developing the western areas and improves the energy structure in the eastern area. The project was launched in March 2000. The full construction will be commenced in the first half of 2002. The project will supply gas to Shanghai area in early 2004. As of February 2002, PetroChina had entered into 45 letters of intent with downstream customers with projected gas consumption of 0.8 bcm in 2003, 8.3 bcm in 2005 and 12.3 bcm in 2008. It works now with foreign partners to jointly develop downstream gas markets so as to execute take-or-pay gas sale contracts with the customers in the first half of 2002. PetroChina had selected the consortium led by Shell for negotiations. An Interim

Agreement had been reached between them. They are now in the process of preparing and negotiating the Joint Venture Framework Agreement for the Project.

To explore and develop the offshore natural gas is a key strategy of CNOOC. The company is planning to supply natural gas to Shandong province and Tianjin city from Bohaibei, to Jiangsu, Zhejiang and Fujian provinces and Shanghai city from East China Sea, to Guangdong and Hainan provinces and Hong Kong from South China Sea.

The first imported LNG facility of China mainland will be located in Guangdong province, which CNOOC Group is currently engaged. CNOOC Group has granted CNOOC the option to acquire the interest that CNOOC Group hold in this project, which is 33% of the total ownership. The project consists of a receiving terminal and trunk line, with estimated investments of RMB 5.1 billion. Some other coastal provinces, Zhejiang, Jiangsu, Fujian and Shanghai are currently studying building LNG facilities to support their urgent demand for clean energy due to the high economic growth and the increasing environment pressure.

It is expected by the government that the natural gas supply from different sources will complement the total supply in coastal provinces, and each of them will benefit from the quick development of the market. This is true. However, there is also a probable situation that the natural gas from the three sources will compete with each other in the coastal market. Many factors, such as the time and the amount of proved natural gas reserve in the western area or offshore, the real demand, the schedule of infrastructure construction in both upstream and downstream, and also the competition of the natural gas prices and some other economic policies (such as the related taxes), will interact to determine the relationship among the three sources. The first mover may enjoy the lock-in advantage, but would also undertake the big risk of long-term recovery for its capital investments. The undeveloped market of coastal area has huge potential commercial opportunity, but the infrastructure has to be built in a large scale and match the schedule of upstream

project. All these uncertainties and challenges make the relationship of the three sources of natural gas an ongoing concern.

#### 4.5 The competition for stock performance

The three companies have often been compared with each other by the market (investors, researchers, banks), based on the concepts that, aside from some differences, they all belong to oil industry, having similar operation environment in general, and privatized in same time period.

The stock price performances of the three companies since each of their listing to 28 March 2002 are shown in Exhibit 6. During the period, PetroChina had been the market perform of H-share index (Exhibit 6-A), Sinopec had underperformed H-share index and lower than its IPO price (HK\$1.61, see Exhibit 6-B), CNOOC had outperformed both Red-chip index and H-share index (Exhibit 6-C).

Stock performance is the most visible pressure the public shareholders put on the management of listed companies. Table 4-5 shows an example of how the market evaluates the three companies via different ratios of Price/CF, EV/EBIDAX, or P/E. To the management, it is often the main indicator of the market's recognition to their ability. The stock performance of a company versus its competitor's creates a new challenge to the management of all the three companies after they jumped into the equity market.

Table 4-5: Earnings Multiples

	Price (HK\$) (15/04/2002)	Price/Cash Flow (2002E)	Enterprise Value / EBIDAX (2002E)	P/E (2002E)
PetroChina	1.59	3.7	4.7	8.8
Sinopec	1.39	3.3	4.5	10.2
Emerging Integrated Average		5	5.3	8.7
Global Integrated Average		6.6	7.3	14.1
CNOOC	9.6	6.1	5.0	
Asia-Pacific E&P Average		5.4	4.4	
Global E&P Average		5.6	6.1	

Source: CSFB Research, 16 April 2002

In addition to the pressure of improving the operational efficiencies, the capital market has also impacted the companies deeply in investor relations. This is totally a new issue compared to the previous SOEs, and is also a have-to-undertake competition. The market has seen the three companies achieving a big progress in this issue by their news release, publication of annual and interim results, set up the access to company's information for investors, etc. In the ranking by 《Asiamoney》 in December 2001 for Overall Best Investor Relations, PetroChina, CNOOC, and Sinopec took the position of 2<sup>nd</sup>, 3<sup>rd</sup>, and 6<sup>th</sup> respectively. The transparency they have today would be totally impossible if they were still SOEs.

In December 2001, CNOOC was rated by 《Asiamoney》 as 1<sup>st</sup> for the Overall Best Managed Company 2001 in China, while PetroChina took the 3<sup>rd</sup> position and Sinopec located in 6<sup>th</sup> of this award (Exhibit 7). The CEO of CNOOC, Mr. Wei Liucheng, was voted as one of the twenty-one “THE LEADERS OF CHINA ENTERPRISES 2001” by 《China Enterprisers》 in December 2001.

The capital market has also learned to identify and evaluate Chinese listed companies. As shown in Exhibit 6-D, it seems the market could not distinguish among the three companies until August 2001 (six months after CNOOC's listing and 10 months after Sinopec's listing). The stock prices of the three firms had gone together, up or down. After a learning period, the market began to find difference among the three players. There is another example of the learning process by the market. When CNOOC took its first global offering in October 1999, there were few investors would like to accept the offering price ranged HK\$ 8.58 ~ 9.75 per share (US\$ 22~25 per ADS), and the company had to reduce the price range to HK\$ 5.19 ~ 6.47 when it launched the second global offering in February 2001. However, after 12 months of listing, CNOOC's stock price entered the range it had offered to the market in 1999, as shown in Exhibit 6-E. This indicates the acknowledgement of the company's value by the market.

## 4.6 Summary

The relationship among the three companies is substantially different from that which had existed for decades among the previous three SOEs. It has changed from complementary to competitive (yet with some complementary aspects remaining).

The main competitions among the three companies now are:

- (1) Competition for resources. It exists in the onshore sector between PetroChina and Sinopec. PetroChina and CNOOC have a dominant advantage in onshore and offshore E&P business respectively. The resource-seeking drives them go abroad.
- (2) Competition for petroleum production growth. PetroChina plans to acquire growth in natural gas via west-east trunk, while CNOOC has scheduled a high growth in crude oil by its large development of oilfields in China offshore.
- (3) Competition for retail market of oil products. It exists mainly between PetroChina and Sinopec before the open of the market by 2004.
- (4) The complementary or competition of different sources of natural gas in the market of coastal area is an ongoing concern.
- (5) Competition for the performance in capital market. CNOOC has shown the best performance among the three so far. All the three has been learning from capital market. Investor relations have changed most noticeably for all of them. The capital market has also been learning to distinguish among the three Chinese oil companies. It took about six months after CNOOC's listing for the market to recognize differences among the three new actors, and 12 months after its listing (in February 2002), the investor began to accept CNOOC's stocks at the price range that the company had offered to them in October 1999.

## **CHAPTER 5: CHANGES INSIDE THE COMPANIES**

### **5.1 The changes inside**

The nature of the three companies as public listing company determines their roles as market competitors. The changed environment sets the rules of competition in China's oil industry. The changed relationship from complementary to competitive among the three players presses each of them to generate necessary inside changes to run quickly in the game. Each of them now needs to have a strong financial status to sustain its growth, to have wise and productive strategies to guide its growth, to urge the managers run the firm efficiently and show their ability in not only the production management, but also the business operation as a whole.

This chapter explores what they have done since their public listing. What are the changes inside the firms? The following sections discuss the significant changes in four particular areas: capital structure, strategy, cost control, and corporate governance.

### **5.2 Capital structure**

#### **5.2.1 PetroChina's capital structure**

With a strong cash flow from operations in 2000 due to higher-than-expected oil prices, as well as IPO proceeds, the company's debt-to-capital ratio decreased from 40.2% at the end of 1999 to 25% at the end of 2000, and down further to 24% in 2001. The total debt also decreased sharply from RMB 144.4 billion to 68.5 billion, as shown in Table 5-1.

We can check the effect of IPO proceeds on the capital structure by comparing the results at the end of 2000 with the pro forma without-proceeds situation, as showed in Table 5-2. The pro forma results of the financial leverage are quite close to that of real situation, indicating that the fall of the financial leverage in 2000 mainly resulted from operations

instead of IPO proceeds. Of the 15.2 percentage decrease (from 40.2% to 25.0%) in debt-to-capital ratio, IPO proceeds contributed only 1.4 percentage (26.4% - 25%), or 9% of the total decrease.

Table 5-1: PetroChina's capital structure (billion RMB)

	<u>1998 CNPC)</u>	<u>1998 PF</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
Cash (Incl. cash equiv. & S-T inv.)	na	15.1	19.3	23.9	25.9
Total debt	162.1	168.8	144.4	92.4	88.6
Equity (Incl. minority interests)	240.6	81.9	214.6	278.0	293.6
Capital (Total debt + Equity)	402.7	250.8	359.0	370.4	370.4
Total assets	506.9	315.1	411.3	428.1	460.9
Proceeds from stock issue, net	0.0	0.0	0.0	20.3	0.0
Capex and acquisition	na	43.4	62.5	59.8	61.2
Debt-to-capital ratio	40.3%	67.3%	40.2%	25.0%	23.9%
Debt-to-assets ratio	32.0%	53.6%	35.1%	21.6%	19.2%

Note: The financial figures of 1998 for CNPC are based on Chinese accounting standards.  
Source: Company data

Table 5-2: The results in the end of 2000 vs. the pro forma of without-proceeds

(billion RMB)	<u>1999A</u>	<u>2000A</u>	<u>2000 Pro forma without IPO Proceeds</u>
IPO proceeds	0.0	20.3	0.0
Cash & cash equiv.	19.3	23.9	3.5
Total debt	144.4	92.4	92.4
Equity (Incl. minority interests)	214.6	278.0	257.6
Capital	359.0	370.4	350.0
Total assets	411.3	428.1	407.7
Debt-to-capital ratio	40.2%	25.0%	26.4%
Debt-to-assets ratio	35.1%	21.6%	22.7%

## 5.2.2 Sinopec's capital structure

Table 5-3 shows the capital structure of Sinopec during 1998~2001. As introduced in 2.3.2, there were a total of RMB 84.6 billion debts cut by transforming to common shares or assumed by the parent company or free of interests, left only RMB 91.78 billion of total debt for Sinopec in the end of 2000. This reduction of debt was 380% of the net proceeds from its IPO (RMB 24.3 billion), indicating that debt restructuring played a more significant role than the IPO in reducing Sinopec's financial leverage.



Table 5-3: Sinopec's capital structure

(billion RMB)

	<b>1998(Sinopec Group)</b>	<b>1998PF</b>	<b>1999PF</b>	<b>2000</b>	<b>2001</b>
Cash (Incl. cash equiv. & S-T inv.)	na	37.36	25.86	41.13	22.85
Total debt	159.0	164.07	124.64	91.78*	79.16*
Equity (Incl. minority interests)	181.4	87.28	109	152.85	162.45
Capital Employed (Total debt + Equity)	340.4	251.35	233.64	280.19**	241.61**
Total assets	427.4	312.23	276.91	347.41	360.29
Proceeds from stock issue, net	0	0	0	24.3	11.65
Capex and acquisition	na	34.3	33.9	43.5	58.8
Debt-to-capital ratio	46.7%	65.3%	53.3%	32.8%	32.8%
Debt-to-assets ratio	37.2%	52.5%	45.0%	26.4%	22.0%

\* excluding the RMB 35,561mm of interest free loans from Sinopec Group.

\*\* including the RMB 35,561mm of interest free loans from Sinopec Group

Note: The financial figures of 1998 for Sinopec Group are based on Chinese accounting standards.

Source: Company data

Table 5-4 also explains that IPO proceeds in 2000 had only a little contribution to the fall of the company's financial leverage. Of the 20.5 percentages decrease (from 53.3% to 32.8%) in the debt-to-capital ratio, the IPO proceeds explained only 3.1 percents (35.9% - 32.8%), or 15% of the decrease. Sinopec's improvement in capital structure was mainly (85%) due to the debt restructuring and operation cash flow instead of IPO proceeds.

Table 5-4: The results in the end of 2000 vs. the pro forma of without-proceeds

(billion RMB)	<b>1999PF</b>	<b>2000A</b>	<b>2000 Pro forma without IPO Proceeds</b>
IPO proceeds	0	24.3	0
Cash & cash equiv.	25.86	41.13	16.83
Total debt	124.64	91.78	91.78
Equity (Incl. minority interests)	109.00	152.85	128.55
Capital	233.64	280.19	255.89
Total assets	276.91	347.41	323.11
Debt-to-capital ratio	53.3%	32.8%	35.9%
Debt-to-assets ratio	45.0%	26.4%	28.4%

### 5.2.3 CNOOC's capital structure

CNOOC took a private placement in 2000, and made a public offering in 2001. Its capital structure improved significantly during the two years, as shown in Table 5-5. The debt-to-capital ratio lowered from 54.3% to 31.5% during 2000, and went further down to 11.9% at the end of 2001, making the company had a robust financial situation.

Table 5-5: CNOOC capital structure (Hong Kong GAAP; mm RMB)

	<u>1998 CNOOC group</u>	<u>1998 PF</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
Cash (Incl. cash equ. & S-T inv.)	4,305	426	879	6,522	17,340
Total debt	10,128	10,030	9,945	7,402	4,488
Equity	21,212	6,359	8,384	16,122	33,331
Capital (Total debt + Equity)	31,340	16,389	18,329	23,524	37,819
Total assets	32,670	21,325	26,169	32,597	44,320
Proceeds from stock issue, net	0	0	0	3,770	10,102
Capex and acquisition	3,577	3,576	4,070	4,404	4,343
Debt-to-capital ratio	32.3%	61.2%	54.3%	31.5%	11.9%
Debt-to-assets ratio	31.0%	47.0%	38.0%	22.7%	10.1%

Note: The financial figures of 1998 CNOOC Group are based on Chinese accounting standards.  
Source: Company data

By using a pro forma analysis as listed in Table 5-6, we can find that the net proceeds from issuing new shares during 2000~2001 explains only 6.8 percents (18.7% - 11.9%), or 35%, of a total 19.6 percentage decrease (31.5% - 11.9%) in debt-to-capital ratio. Therefore a 65% of CNOOC's debt ratios decrease during 2000~2001 came from its strong operation cash flow.

Table 5-6: CNOOC's results in the end of 2001 vs. the pro forma of without-proceeds (mm RMB)

	<u>1999A</u>	<u>2000A</u>	<u>2001A</u>	<u>2001 Pro. forma excl. proceeds from issue</u>
Net proceeds from issue new shares	0	3,770	10,102	0
Cash & cash equiv.	879	6,522	17,340	3,468
Total debt	9,945	7,402	4,488	4,488
Equity	8,384	16,122	33,331	19,459
Capital	18,329	23,524	37,819	23,947
Total assets	26,169	32,597	44,320	30,448
Debt-to-capital ratio	54.3%	31.5%	11.9%	18.7%
Debt-to-assets ratio	38.0%	22.7%	10.1%	14.7%

Source: Company data

With the high production growth (14.6% in 2000 and 9.2% in 2001, see Exhibit 4), and the strong oil price, CNOOC acquired strong operation cash flow during 2000~2001, which resulted in the big decrease on its financial leverage within the period.

## 5.2.4 Summary

The capital structures of the three companies had all been improved significantly after their restructuring and issuing new shares in 2000~2001, as summarized in Table 5-7. However, by analysis, we found that in lowering their high debt ratios since the end of 1999, the IPO (and private issue in CNOOC case) proceeds could explain only 9% for PetroChina (in 2000), 15% for Sinopec (in 2000), and 35% for CNOOC (during 2000~2001). The higher oil price during the periods, as well as the production growth in CNOOC's case, explained the main reasons for PetroChina and CNOOC, while the debt restructuring before IPO contributed most to the improvements in Sinopec's debt ratios.

Table 5-7: Summary of debt-to-capital ratios of the three companies

	(the parent groups)	The listed companies			
	<u>1998</u>	<u>1998 PF</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
PetroChina	40.3%	67.3%	40.2%	25.0%	23.9%
Sinopec	46.7%	65.3%	53.3%	32.8%	32.8%
CNOOC Ltd.	32.3%	61.2%	54.3%	31.5%	11.9%

## 5.3 Company issues, intentions and strategies

The issues, intentions, and strategies summarized in this sector for the three companies are based on a study to their IPO prospectus, annual reports and news release that are publicly available from their web sites.

### 5.3.1 PetroChina

As shown in Table 5-8, there are apparently big issues in PetroChina's business of natural gas, R&M and chemicals. All the three segments had almost zero or even negative contribution to the company in terms of operating income, even though their sales are 54%~57% of the total sales of the company during 1999~2000.

Table 5-8: PetroChina operating revenue and operating income by segment

	Operating revenue (%)		Operating income (%)	
	1999	2000	1999	2000
Exploration & Production	42.5%	45.9%	108.5%	110.9%
Refining & Marketing	45.3%	43.2%	-1.0%	-10.2%
Chemicals	9.8%	9.0%	-3.6%	0.1%
Natural Gas	2.3%	1.9%	-0.9%	0.0%
Others	0.1%	0.0%	-3.0%	-0.8%
Total	100%	100%	100%	100%

Source: Company 20-F

Issues in crude oil E&P segment:

- high production cost (see Exhibit 2)
- no production growth. Its crude oil production had been decreased during 1998~2001 (see Exhibit 4)

Issues in natural gas segment:

- huge newly discovered reserves need to be developed (see Exhibit 3)
- long distance between the potential market and the newly found reserves, low infrastructure existed in the potential market
- gas price for existing supply is low
- low price of coal restricts the price of new gas supply

Issues in R&M segment:

- suffering losses
- low efficiency of assets
- over capacity on simple products
- low retail market share
- high cost in processing, transportation and sales

Issues in chemical segment:

- suffering losses
- high costs

- lack of product focus, over-diversified product portfolio, existing unprofitable or marginal products.
- under-economic-scale plants and facilities

PetroChina has the intentions as below:

- finding successive crude reserves to keep its crude production level
- aggressively develop natural gas
- improve the performance of each segment, especially in downstream business

PetroChina's strategies can be summarized as below:

Strategies	Thrusts
1. Improve performance of E&P	<ul style="list-style-type: none"> <li>• Use new theory and technology to find more reserves in the old fields</li> <li>• Increase investment on the three strategic successive resource areas – Erdos basin, Zhunger basin and the southern of Songliao basin</li> <li>• Reduce lifting cost</li> <li>• Layoff</li> <li>• Strict capital management</li> <li>• Expand into overseas E&amp;P</li> </ul>
2. Integrate refining and marketing assets and business	<ul style="list-style-type: none"> <li>• Reduce processing capacity through selected plant and facility closures, thereby improving capacity utilization and exploiting economies of scale</li> <li>• Adjust product structure to better fit the needs of the market and undertaking selective debottleneck projects</li> <li>• Redesign the integrated operations of the production, transportation and storage of refined products</li> <li>• Reduce costs of processing, transportation and sales</li> </ul>
3. Improve the performance of the chemical segment	<ul style="list-style-type: none"> <li>• Focus on key products</li> <li>• Reduce processing cost and overhead cost; improve investment discipline</li> <li>• New investment for longer term subject to strict return criteria</li> </ul>
4. Aggressively invest in natural gas business	<ul style="list-style-type: none"> <li>• The west-east gas trunk to expand natural gas market</li> <li>• Intensify marketing efforts</li> <li>• Focus exploration and development efforts on the large natural gas discoveries in the Sichuan Shanganing, Tarim and Qaidam basins</li> <li>• Reduce production cost and increase the sales price for existing gas supply</li> </ul>
5. Centralizing financial management	<ul style="list-style-type: none"> <li>• Set explicit financial targets for each business segment</li> <li>• Focus on enhancing returns through earnings and cash flow growth and higher capital efficiency</li> <li>• Put in place an incentive system for management based on achieving these targets</li> <li>• Upgrade management information system to fit its new return-based strategy</li> <li>• Pursue a capital structure and financial ratios in line with global peers</li> </ul>

### 5.3.2 Sinopec

Sinopec's operating income is more balanced than PetroChina, yet it suffered a sharp decrease in 2000 in the operating income of the downstream segments, as Table 5-9 shows.

Table 5-9: Sinopec operating revenue and operating income by segment

<u>Segments</u>	<u>Operating revenue(%)</u>		<u>Operating income (%)</u>		
	<u>1999</u>	<u>2000</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
Exploration & Production	9%	10%	25%	71%	85%
Refining	39%	42%	39%	4%	8%
Marketing & Distribution	34%	32%	17%	18%	9%
Chemicals	18%	11%	24%	7%	-3%
<u>Others</u>	<u>0%</u>	<u>5%</u>	<u>-5%</u>	<u>-0.3%</u>	<u>1%</u>
Total	100%	100%	100%	100%	100%

Source: Company 20-F; ML research, 2 Apr. 2002

Issues in E&P segment:

- highly dependent on Shengli's reserve and production, as shown in Table 5-10
- high production cost (see Exhibit 2)
- need for more growth ( see Exhibit 4. The annual growth for 1998, 1999, and 2000 was -2%, -4.7%, and 2% respectively. The 14.4% growth in 2001 mainly comes from the acquisition of CNSPC. Excluding the production of CNSPC, the growth in 2001 would be only 0.8% )

Table 5-10: Shengli's percentage as of the total of Sinopec in 2000

	<u>Crude</u>	<u>Natural gas</u>	<u>Consolidated</u>
Total proved reserves	73%	30%	71%
Production for the period	77%	30%	74%

Source: Company data

Issues in Refining segment:

- highly (around 70%) depend on purchase from outside for crude oil, more than half by importing (see Table 5-11)
- volatile cracking margin in Asia market (see Exhibit 5)

- overcapacity of refinery in Asia and the gross margin in this area down from the highest in early 1990s to the lowest in 2001, comparing to other areas of the world<sup>38</sup>
- high processing cost (see Table 5-14)
- update in technology

Table 5-11: Sinopec's refining capacity utilization and crude oil supply

<b><u>Refining Capacity Utilization</u></b>	<b><u>1999</u></b>	<b><u>2000</u></b>	<b><u>2001</u></b>
Primary distillation capacity (mm tones / year)	130.3	130.3	129.7
Crude oil throughputs (mm tons)	88.2	104.9	101.1
Capacity utilization	67.7%	81.0%	77.9%
<b><u>Crude oil supply segment</u></b>	<b><u>1999</u></b>	<b><u>2000</u></b>	<b><u>2001</u></b>
Internal supply	31%	26%	31%
Purchase from PetroChina	23%	15%	14%
Purchase from CNOOC Ltd. And others	8%	5%	7%
Domestic Subtotal	62%	46%	52%
<u>import</u>	<u>38%</u>	<u>54%</u>	<u>48%</u>
Total	100%	100%	100%

Source: Company 20-F, Interim report

Issues in Marketing & Distribution segment and Chemical segment:

- the open of the oil products market to foreign companies under WTO agreement
- PetroChina's expanding in the retail market of southern China area
- diverge in strategy, investment decision, information system in its subsidiaries

Sinopec has the intentions as below:

- increase the self-supply of crude oil
- maintain its dominant position in southern China's retail market of oil products
- improve the performance of each segment

<sup>38</sup> Zhu He. "The Reports of 6<sup>th</sup> Asian Oil and Gas Conference." International Petroleum Economics, No 8, 2001.



Sinopec's strategies can be summarized as below:

Strategies	Thrusts
1. Expand marketing	<ul style="list-style-type: none"> <li>• Increase gas stations aggressively</li> <li>• Increase the proportion of selling own products</li> <li>• Increase sale volumes per station</li> <li>• Build bulk storage sites and transportation pipelines</li> <li>• Establish efficient direct and wholesale network for chemicals, promote B2B</li> <li>• improve information system and dynamic research</li> </ul>
2. Enlarge resources	<ul style="list-style-type: none"> <li>• Diversify import crude oil by areas, products, and channels</li> <li>• Selectively expand exploration, enhance exploration in west area</li> <li>• Expand corporation with foreign companies for onshore China E&amp;P</li> <li>• Launch overseas oil E&amp;P</li> </ul>
3. Reduce cost	<ul style="list-style-type: none"> <li>• Review over company to identify and close unprofitable or marginal operations</li> <li>• Raise utilization and efficiency of existing distillation capability</li> <li>• Focus on higher margin products</li> <li>• Layoff</li> <li>• Reduce material and energy consumption</li> <li>• Cut G&amp;A expenses</li> <li>• Promote e-commerce</li> <li>• Advance information system</li> </ul>
4. Capital discipline	<ul style="list-style-type: none"> <li>• Centralize investment decision and capital allocation</li> <li>• Evaluate investment primarily on company-wide cost of capital</li> <li>• E &amp; P - explore replacement reserves</li> <li>• Refining - expand high-sulfur crude processing capacity and build additional pipelines</li> <li>• Marketing - acquire retail stations and storage facilities</li> <li>• Chemicals – revamp and upgrade ethylene plants, optimize product structure</li> </ul>

### 5.3.3 CNOOC

Comparing with PetroChina and Sinopec, CNOOC has good growth momentum, fewer employees, and better operation performance, yet it has its issues as below:

- too small a share in crude oil and natural gas market of China (11% and 15% separately in 2000)<sup>39</sup>
- may not catch the first mover's advantage in the emergent natural gas market in Yangtze delta region, if not acquire substantial new reserves of natural gas soon

CNOOC's has the intentions as below:

- increase oil production quickly
- enhance exploration, especially for natural gas in south China sea and east China sea

CNOOC's strategies can be summarized as below:

Strategies	Thrusts
1. Increase production	<ul style="list-style-type: none"> <li>• Accelerate the development of its net proved undeveloped reserves</li> <li>• M&amp;A</li> </ul>
2. Add reserves	<ul style="list-style-type: none"> <li>• Independent exploration and PSC</li> <li>• M&amp;A</li> </ul>
3. Increase Capex for natural gas	<ul style="list-style-type: none"> <li>• Accelerate developing east China sea natural gas fields</li> <li>• South China sea exploration</li> <li>• LNG project</li> <li>• Invest to overseas gas field supplying natural gas to Guangdong LNG project</li> <li>• Natural gas transmission and distribution system in China's coastal provinces</li> </ul>
4. Continually improve operational efficiencies	<ul style="list-style-type: none"> <li>• The utilization of technology</li> <li>• Renew employment and incentive system</li> </ul>

<sup>39</sup> CNOOC Ltd. IPO Prospectus, Feb. 2001.

## 5.4 The efforts in cost control

High cash cost implies high sensitivity to oil prices in E&P segment of oil industry. The lifting costs in 2001 for each of the three companies were: US\$6.15/boe for Sinopec, US\$4.38/boe for PetroChina, and US\$3.01 for CNOOC, as shown in Table 5-12. In refining and chemical segments, the 2001 EBIT margins of PetroChina and Sinopec have been estimated as the lowest in Asia.<sup>40</sup> Therefore, both of them face big pressures for reducing costs.

Table 5-12: Lifting and Production Costs 1999-2001E

US\$/bbl	2000A	2001E
Lifting Cost	2.99	3.01
<u>Prod. Tax and other</u>	<u>2.09</u>	<u>1.94</u>
Total cash	5.08	4.95
<u>Total non-cash</u>	<u>3.76</u>	<u>3.44</u>
<b>CNOOC Total</b>	<b>8.84</b>	<b>8.39</b>
Lifting Cost	4.68	4.38
<u>Prod. Tax and other</u>	<u>1.68</u>	<u>1.38</u>
Total cash	6.36	5.76
<u>Total non-cash</u>	<u>3.23</u>	<u>3.00</u>
<b>PetroChina Total</b>	<b>9.59</b>	<b>8.76</b>
Lifting Cost	6.63	6.15
<u>Prod. Tax and other</u>	<u>5.24</u>	<u>2.40</u>
Total cash	11.87	8.55
<u>Total non-cash</u>	<u>2.96</u>	<u>2.95</u>
<b>Sinopec Total</b>	<b>14.83</b>	<b>11.50</b>

Source: SSB research (12/13/02); ML research (4/2/02);  
Company data

### 5.4.1 PetroChina's four-year-cost-cutting target and implement

PetroChina has scheduled to decrease its high production cost, both in upstream and downstream. When in IPO (Apr. 2000), the company announced its four-year (1999~2002) cost cutting target. Comparing with 1988, it planned to cut cost of RMB 9 billion in 2002, and the lifting cost would down from \$5.05/b in 1998 to \$4.15/b in 2002, as shown in Table 5-13.

<sup>40</sup> CSFB Equity Research, 22 Aug. 2001.

Table 5-13 : PetroChina's four-year-cost-cutting target and implement

	<b>Target by 2002</b>	<b>Implemented by 2001</b>			
	<b>(Billion RMB)</b>				
E & P segment	6.0	75%			
R & M segment	1.3	89%			
<u>Chemicals segment</u>	<u>1.2</u>	<u>88%</u>			
Total cost cut	9.0	79%			
	<b>Target by 2002</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Lifting cost (US\$/bbl)	4.15	5.05	4.76	4.68	4.376
Processing cost (RMB/ton)	139	na	na	141	138

Source: Company data; Petroleum Enterprise Management, Aug. 2001; CSFB Report (12/5/01)

The company has learned from the capital market's responses to their cost-cutting performance. When the company announced the interim results in August 2000, with the net income as high as 80% of the year target, instead of a positive response, the stock price went down after the release. The primary reason was the lifting cost of \$4.88/b at first half of 2000 being higher than the promised \$4.69 by the company earlier in the year. It seems the investors sometimes don't buy the realized earning growth resulting from higher-than-expected oil price. They would, instead, see the cost control ability as one of the key indicators of the competitiveness of an oil company. In April 20, 2001, when the company released the annual results of 2000, it had satisfied the goal of the lifting cost (\$4.69 for the year) with a record of \$4.68/b, and a strong positive response was seen in its stock price for going up by 25% (from HK\$1.46 to HK\$1.82) in the four weeks thereafter.

The company made a big effort to cut down the cost during 2000-2001, including:<sup>41</sup>

- Enhance incentive system. The actual-vs-budget results of each operating unit would be related to the payoff of the staffs within the unit
- Cut one level of operating management in almost all of its operation subsidiaries in E&P segment

<sup>41</sup> Petroleum Enterprise Management, July. 2001.

- Dependent more on R&D. for example, the production from old wells increased in 2000 compared with 1998, even though the enhanced recovery measures to old production wells decreased by 30% in terms of the expenses
- Dispose of inefficient manufacturing facilities in its refining and chemical manufacturing plants
- Launch a large scale layoff (see 5.4.3)

#### 5.4.2 Sinopec's cost reduction

Sinopec has also taken many measures to reduce its high cost, especially on refining processing cost, which had been cut down 25% in 2000 (per unit), as can be seen in the table below.

Table 5-14: Sinopec's cost

	<u>1998PF</u>	<u>1999PF</u>	<u>2000</u>	<u>2001</u>
Finding and development costs (US\$/bbl)	3.69	2.88	na	na
Petroleum production cost (US\$/bbl)	6.61	6.57	6.63	na
Crude oil lifting cost (US\$/bbl)	na	na	6.21	6.15
Refining cash operating cost (US\$/bbl)		2.87	2.14	2.07
Gross refining margin (US\$/bbl)		na	3.60	3.57
Marketing cash operating cost (US\$/ton)		21.4	21.9	19.7

Source: Company data

The company had planned to reduce its cost for a total of RMB 2.19 billion in 2001, and the result surpassed the goal as shown in Table 5-15. The company is continue to reduce the total cost for a RMB 2.5 billion in 2002.<sup>42</sup>

Table 5-15: Sinopec's cost reduction for 2001 by segment (RMB mm)

	E&P	Refining	Marketing	Chemicals	Total
Planning	450	640	610	490	2,190
Actual					2,281

Source: Company data

<sup>42</sup> Sinopec Annual Report 2001

### 5.4.3 The two majors' layoff

Both PetroChina and Sinopec announced a layoff plan in 2000. They adopted a voluntary redundancy package for the plans. The companies would pay the employee retired under this package a one-time provision that is equal to 2.5-month wages for each of his/her service years.

PetroChina planned to cut 50,000 jobs out of its 480,000 staff during 2000~2004, a 10.4% decrease of its employees. The goal had been achieved three years ahead of the schedule, as shown in the Table 5-16. After that, the company recently said it would cut further 4,500 employees in 2002.<sup>43</sup>

Table5-16: PetroChina's layoff

	<u>Full plan</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002E</u>
Employee terminated	50,000		-38,400	-19,800	-4,500
End of year employees		480,012	441,612	422,554	418,000
Total provision -- cash cost (RMB mm)			3,180	1,513	

Source: Company data, Bloomberg(Mar.20, 2002)

Sinopec launched its layoff program in 2001 that was more ambitious than PetroChina's program. The company scheduled to layoff 20% (100,000) of its 510,000 employees over five years. This was expected to result in an annual savings of RMB1.08b. In the first year (2001) of the program, the company scheduled to have 27,000 employees adopting the retirement package, while the outcome was 68,000 (see Table 5-17). The provision in 2001 for the lay off was RMB 2,546mm, and the expected annual cost saving from it would be RMB 1,570mm.<sup>44</sup> The program is expected to continue cutting 20,000 employees in 2002.

Along with the two companies' layoffs were larger job cuts in both of their parent companies. CNPC cut 210,000 jobs in 2000. Sinopec Group, with the labor cost accounting for about 9% of its total cost, much higher than the average 5% for its global

<sup>43</sup> Huangyan, the president of PetroChina.

<sup>44</sup> PetroChina Annual Report 2001.

peers, planned to decrease 180,000, out of its 710,000 staff (excluding those employed by Sinopec), within five years since 2000, including the transfer of 350 hospitals and 370 primary and middle schools to local societies.<sup>45</sup>

Table 5-17: Sinopec's layoff

	<u>Full plan</u>	<u>2001</u>	<u>2002E</u>	<u>2003E</u>	<u>2004E</u>	<u>2005E</u>
Beginning of year employees		510,000	442,000	422,000	na	na
Employee terminated	(100,000)	(68,000)	(20,000)	na	na	na
End of year employees		442,000	422,000	na	na	410,000
Total provision -- cash cost (RMB Mils.)	4,500	2,546				

Source: Company reports

#### 5.4.4 CNOOC's low cost strategy

As early as 1980s, CNOOC Group began to address a low cost strategy. In 1998, the group saw the benefit of this strategy when it kept a positive net income with the oil price lower than US\$13 /bbl in the year, while most oil producers in the world encountered negative profit for the year. The company is by far one of the lowest-cost operators in the global E&P peer group. (see Exhibit 2 and Exhibit 8). CNOOC does not have much room in cost reduction. What the company intends to do is to sustain its low cost advantage and high efficiency (see Exhibit 8) in the future.

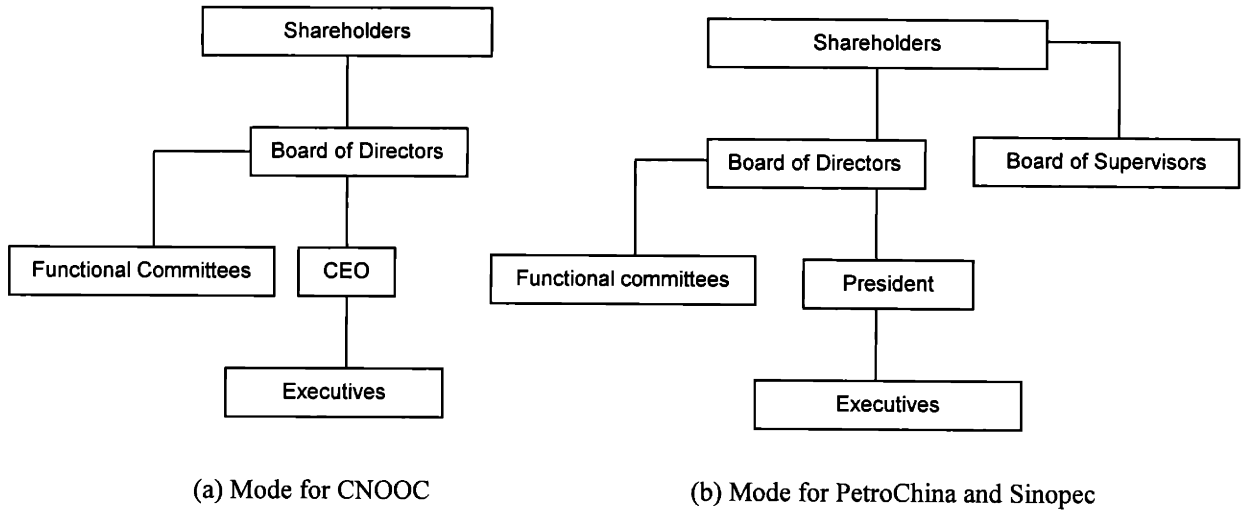
### 5.5 Corporate governance

#### 5.5.1 The corporate governance structures

The three companies adopt two different modes of corporate governance structure, as shown in Figure 5-1. The mode adopted by CNOOC is widely used in US, while the mode used by PetroChina and Sinopec is more like what adopted by many Japanese companies.

<sup>45</sup> Li Yizhong, the Chairman of Sinopec, May 10, 2001 and May 16, 2001

Figure 5-1



Source: Company websites, IPO prospectuses

In all the three cases, we can find by observation that these state-controlled listing companies share some characteristics as follows:

- (1) It is controlled by the state-owned parent company. The listed company has a parent company that holds more than 50% interest of the listed company and is owned by the government. More than half of the seats in the board of directors are occupied by members from such a parent company.
- (2) The board does not have the function of hiring and firing the CEO (or the president in the cases of PetroChina and Sinopec) for the company, even though people would be nominated as the CEO (or the president) of the firm only after the board approved the nomination. The CEO (or the president) is in fact nominated by the parent company. This means that the traditional most important and most challenging responsibility of the board – to find/hire/evaluate/fire the CEO for the company – does not exist in such a board.
- (3) The Chairman of the board of directors is also the president of its parent company.



### 5.5.2 Set or not set CEO

In the case of CNOOC, the Chairman is also the CEO. While in the cases of PetroChina and Sinopec, they don't have a position of CEO. It would of course not be a casual decision for not appointing a CEO for the firm. On the other hand, we should see this as a trade-off between the capital market's expectation and the firm's actual situation.

In a traditional state-owned Chinese company, the responsibility of the business of a firm should be collectively taken by the top executives. If one person for whatever reasons has a dominant control in the firm, it would usually be criticized, at the time or thereafter, by his colleagues as well as by the government. There has not been any CEO, at least in terms of the name, for all the state-owned Chinese companies, and also for all the domestic listed companies. The word "CEO" is a new concept to Chinese companies as well as to the government. It exists in China only for some Sino-foreign enterprises and overseas listed companies.

Each of the domestic listed companies in China has a Chairman of the board of directors, and a president. Based on a study, these companies can be identified as one of the three kinds as follows: (1) The Chairmen is also the president. There are 20.9% Chinese listing companies belong to this mode, and the Chairman & President is in fact the CEO in such case; (2) The Chairman is separated from the president, and he does not work full-time for the company. 34.3% of Chinese listing companies are set in this way, and the president is very like CEO in such case; (3) The Chairman is separated from the president, but he is full-time working for the company. 44.8% of Chinese listing companies adopt this mode, and usually the Chairman has more power than the president in such case.<sup>46</sup> We can see the last mode is exactly the case for PetroChina and Sinopec.

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<sup>46</sup> Guiwei. "To Make Clear the Difference Between the CEO and the President." *The Management in China and Overseas*, 14 Apr. 2002.

After studying the function of a CEO carefully, many Chinese firms find that it's better not to introduce this new position into their organization, since that would result in a power distribution to a situation that is not familiar to the management. Too many people are not comfortable in granting such power to one person. Additionally, the big responsibility of this job is compensated by high pay. If the firm does not pay enough, few qualified candidates would like to take the job. Raising pay to competitive levels will make people feel more uncomfortable since the income will be seen as too high by Chinese standards. So the reasons for not establishing, at least not now, a CEO position in many Chinese listed companies have roots in the history, the culture, and the actual context. For PetroChina and Sinopec, they must feel more comfortable and believe it would be more acceptable to the environment without a CEO.

Then why CNOOC has a CEO? Why has it chosen a structure more like a western company instead of a structure like most other Chinese companies? In my opinion, it is based on the confidence of its controlling shareholder ---- the parent company. They believe such a structure could make the company more efficient and more easily understood by the overseas investors. They made the decision also based on the history, the assets, the management, the culture and the developing strategy of the firm.

So, I am not arguing which mode in Figure 5-1 is better than the other one. The right choice should be highly dependent on the context. However, I do believe things will continue to change, and the change will be in general from having no-CEO to having a CEO for most Chinese listed companies.

### **5.5.3 The changed and unchanged things**

What changed for these companies in terms of corporate governance is summarized below:

- (1) The government is not the only shareholder.

- (2) Almost all of the branches of PetroChina and Sinopec are no longer legal entities, so that they don't have the power of decision-making on investing and financing. This is different from the past when they were under CNPC or Sinopec Group before the restructuring in 1999.
- (3) Their performances have to be audited by an independent accounting agency.
- (4) They have to submit formal annual reports to the stock market authorities where they listed, and to their public shareholders.
- (5) It is a necessary to keep a good relationship with public shareholders.
- (6) Economic performance is much more important to the management now than when it was a SOE.

These items would lead the firm to be more profit oriented and more transparent.

What has not changed in these companies in terms of corporate governance could be listed as below:

- (1) The government, as the largest shareholder, has still a dominant control over a listed company via its parent company.
- (2) The parent company continues to be able to exercise all the rights of a controlling shareholder, including electing the directors and voting to amend the articles of association.
- (3) The senior managers are in fact nominated by its parent company.

These unchanged factors determine that the government's concern would be important to the top executives.

Therefore, the corporate governance in these Chinese listed companies has been changed to some extent, yet with reservations. By the analysis above, we can see the main changes in corporate governance are in the monitoring from outside, not in decision-making. Corporate governance is something related to history, culture, and even political concerns. As a report<sup>47</sup> by World Bank and IFC said, in China, the importance of the

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<sup>47</sup> World Bank and IFC. "Corporate Governance and Enterprise Reform in China." Going to be published.

current policy focus on corporate governance extends beyond immediate efficiency considerations. China's transition to a market economy is incomplete and will remain so if preserving the dominance of state ownership is an overriding concern. China's current focus on corporate governance can be viewed as the prelude to the final stage of China's transition to a market economy.

However, the incompleteness in market economy does not automatically mean inefficiency or less efficiency for a state-controlled listed company, just as a complete market economy does not automatically mean high efficiency to a listed company. Other variables would join the determination for how the efficiency of the corporate governance could be. We can find such examples among the state-controlled-listed companies (as in Exhibit 7) and also from comparing these kinds of companies with those fully diversified listed companies (as in Exhibit 2).

## **5.6 Summary**

Each of the three companies has quickly acted to generate inside changes to compete better.

They improved the capital structures after the restructuring, which have been mainly by strong operation cash flow (as in PetroChina and CNOOC), or mainly by debt restructuring (as in Sinopec). In all the three cases, proceeds from global issue of new shares did not make big contribution for their decrease of debt leverage.

They have all developed their own strategies based on the environment factors, as well as their own advantages, issues, and intentions.

PetroChina and Sinopec have tried very hard to decrease operating costs. Both of them launched an aggressive layoff program to cut 50,000 and 100,000 jobs within a few years. CNOOC is continuing to keep its low cost advantage.

The corporate governance in the three firms had been changed as required for public companies. Their parent companies still have a dominant control over them. The most important changes are the outside monitoring and investor relationship, not the decision-making system. The different choices to set or not set CEO in the three firms reflect the differences in their history, assets, management, culture, and the developing strategy.

## **CHAPTER 6: CONCLUSION**

China's oil industry has experienced fundamental changes since 1988. The three national petroleum companies have been restructured and privatized. Some of the key policies for the industry have been adjusted to create or suit the competitive environment. The publicly listed Chinese oil companies have to adopt a different and more commercial business way to deal with the oil service firms, which used to be in the same company with them. The relationship among the three oil companies changed from complementary to competitive (yet with some complementary aspects remaining). The three companies have restructured themselves in many ways and have been quickly learning for enhancing their competitiveness.

For a previous SOE, the privatization does not necessarily indicate a quick and overall improvement in its competitiveness. There is a learning process for each of them. The companies started to learn the capital market since the preparation of their IPO, yet they should learn more after their listing. The capital market imposes influences on the companies in the following aspects: profit orientation, corporate governance, capital structure, benchmarking analysis, investor relations, and their incentive system. They have to learn as quickly as they can, since the market continues reviewing their performances.

The learning ability of a privatized company will determine the speed of its improvement on efficiency. The learning ability of a firm depends on many elements of the organization. Some elements would be fundamental for the learning ability of a firm, such as the company's culture that formed in its history, the incentive system, and the vision of its leaders, these are not easy to change in a short periods. Until now, CNOOC has shown that it is the fastest learner among the three. They derive these benefits from its high quality of assets, high growth prospect, fewer employees, longer cooperation experience with foreign companies, and its good management.

The capital market has also been learning to identify and evaluate Chinese listed companies. One example is that CNOOC's stock price entered, after 12 months of its listing, the range the company had offered to the market in 1999, indicating the acknowledgement of the company's value.

Looking forward, the most challenging issue for the three companies would be:

- (1) Cost reduction, especially for PetroChina and Sinopec.
- (2) Market competition, especially for PetroChina and Sinopec in downstream segments.
- (3) Multi-national management. None of them have much experience or advantage in overseas business.
- (4) Human resource competition. This will become increasingly challenging with China's entry into WTO and more foreign companies enter or expand in China.

The restructuring and privatization in China's oil industry have put all the three previous SOEs in the capital market now. They have to play within the market rules and meet the challenges on a global platform. In general, this helps them to become real market players. They may take the advantages of accessing capital market to get growth. However, they have to satisfy investors' expectations and not to underperform in long term to avoid being out of the game.

I wish all of them well.

## Exhibit 1 -- The Profiles of the Three Companies

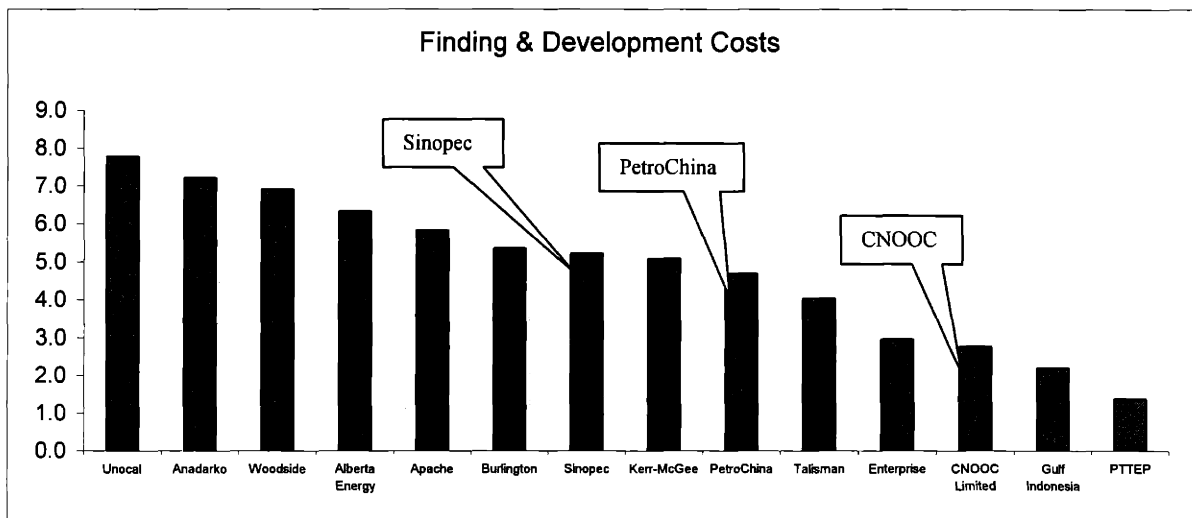
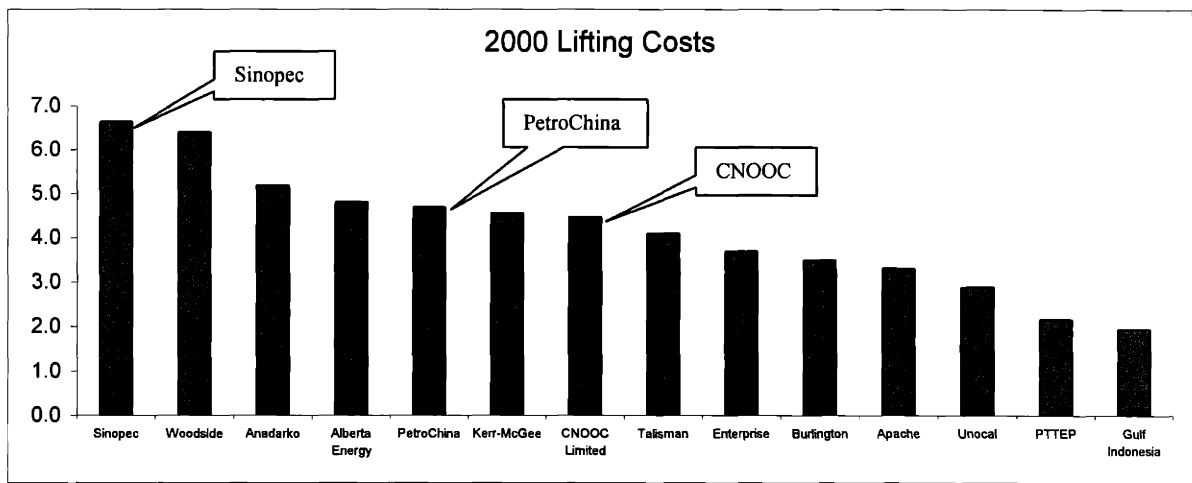
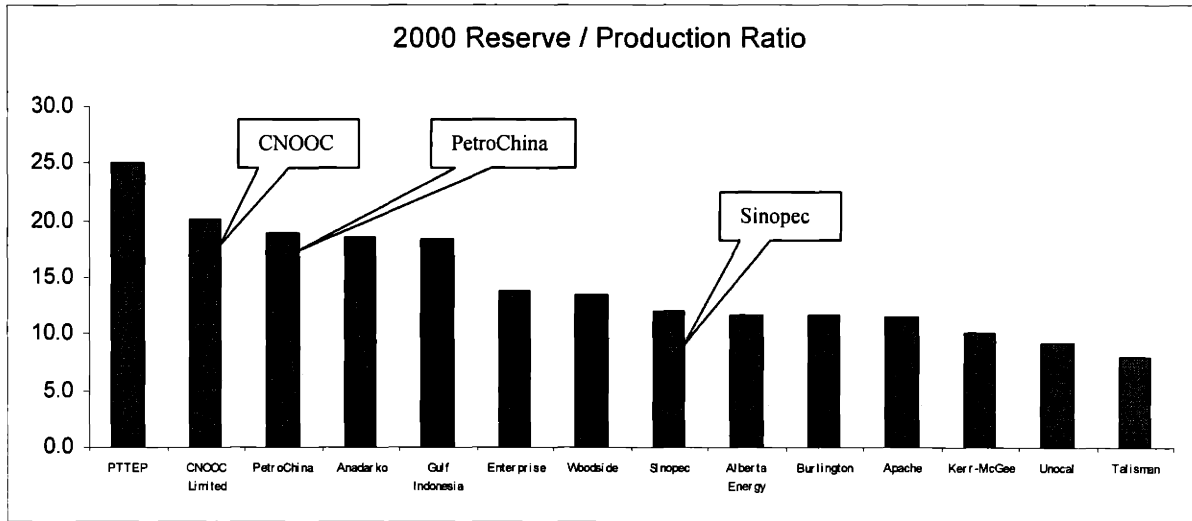
	PetroChina	Sinopec	CNOOC Ltd
Code: New York Stock Exchange	PTR	SNP	CEO
Hong Kong Stock Exchange	857	386	883
London Stock Exchange		SNP	
Shanghai Stock Exchange		600028	
Public Listing Date	4/6-7/2000	10/18-19/2000	2/27-28/ 2001
IPO Price (HK\$ / Share)	1.28	1.61	6.01
Total Shares at 31Dec 2001 (in thousands)	175,824,176	86,702,439	8,214,166
Public Holding at 31Dec 2001	10%	22.6%	29.4%
Recent Price ( 15/04/02, HK\$)	1.59	1.39	9.60
Market Cap (15/04/02, billion US\$)	35.78	15.45	10.12
Total Assets (12/31/01, billion US\$)	55.7	43.5	5.4
Equity (12/31/01, billion US\$)	35.4	16.8	4.0
Sales Revenue (2001, billion US\$)	28.9	38.5	2.5
Net Income (2001, billion US\$)	5.65	1.94	0.96
Total petroleum production in 2001 (mm BOE)	857.4	296.3	95.4
Primary distillation capability (mm tons /annum in 2001)	97	130	none
Gas station (owned andaligned,12/31/01)	12,102	28,246	none
Employee (12/31/01)	422,554	422,000	1,000
Enlisted in the Indexes of	MSCI China	MSCI China	MSCI China Heng Shen China Heng Shen
Credit Rating (at the end of 2001) Standard & Poors Moody	BBB	BBB	BBB Baa2

Source: Company data



## Exhibit 2 -- Operating Benchmark

(Source: CSFB)



### Exhibit 3 -- Reserve replacement and Reserve-production ratio

<b>PetroChina</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Proved reserves (developed & undeveloped)				
Crude oil (mm bbls)	10,865	10,999	11,032	10,959
Natural gas (bcf)	22,337	24,602	32,533	36,103
<b>Total (mm BOE)</b>	<b>14,588</b>	<b>15,100</b>	<b>16,454</b>	<b>16,976</b>
Proved reserve replacement				
Crude oil	142%	117%	104%	90%
Natural gas	931%	438%	1326%	734%
Weighted average ratio based on BOE	235%	158%	255%	161%
Reserve / production (years)				
Crude oil	13.9	14.2	14.4	14.4
Natural gas	54.6	56.3	64.4	64.1
Weighted average ratio based on BOE	na	17.8	19.4	19.8
<b>Sinopec</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Proved reserves (developed & undeveloped)				
Crude oil (mm bbls)	2,679	2,881	2,952	3,215
Natural gas (bcf)	577	782	999	3,488
<b>Total (mm BOE)</b>	<b>2,775</b>	<b>3,011</b>	<b>3,118</b>	<b>3,796</b>
Proved reserve replacement				
Crude oil	na	183%	129%	117%
Natural gas	na	361%	370%	190%
Weighted average ratio based on BOE	na	193%	141%	na
Reserve / production (years)				
Crude oil	10.7	11.9	11.9	na
Natural gas	7.1	9.9	12.4	na
Weighted average ratio based on BOE	10.4	11.9	12.0	na
<b>CNOOC</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Proved reserves (developed & undeveloped)				
Crude oil (mm bbls)	1,176	1,242	1,216	1,246
Natural gas (bcf)	3,396	3,321	3,250	3,248
<b>Total (mm BOE)</b>	<b>1,743</b>	<b>1,795</b>	<b>1,757</b>	<b>na</b>
Proved reserve replacement				
Crude oil	na	203%	120%	136%
Natural gas	na	14%	-14%	97%
Weighted average ratio based on BOE	na	na	na	131%
Reserve / production (years)				
Crude oil	18.3	19.5	16.1	14.9
Natural gas	50.2	44.5	45.0	45.6
Weighted average ratio based on BOE	23.1	23.6	20.1	na

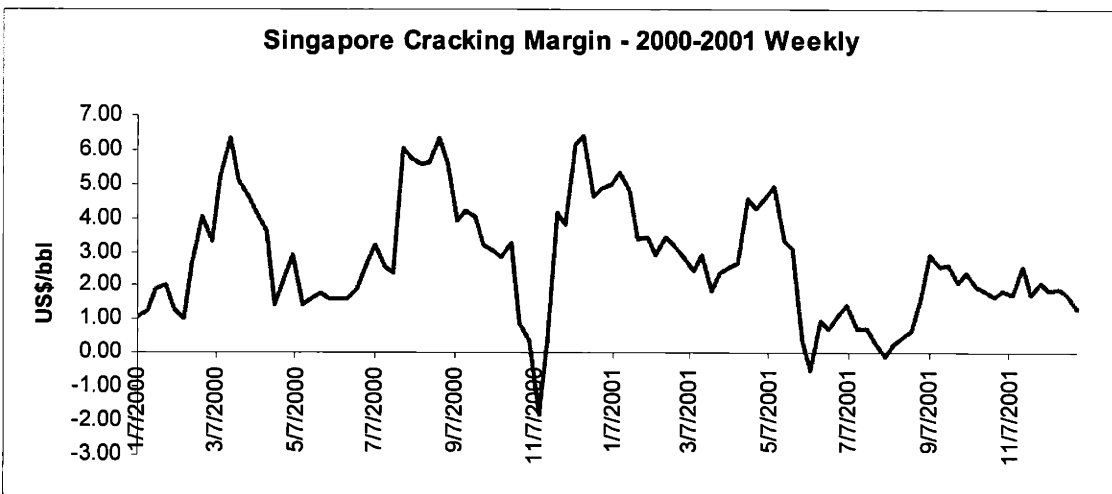
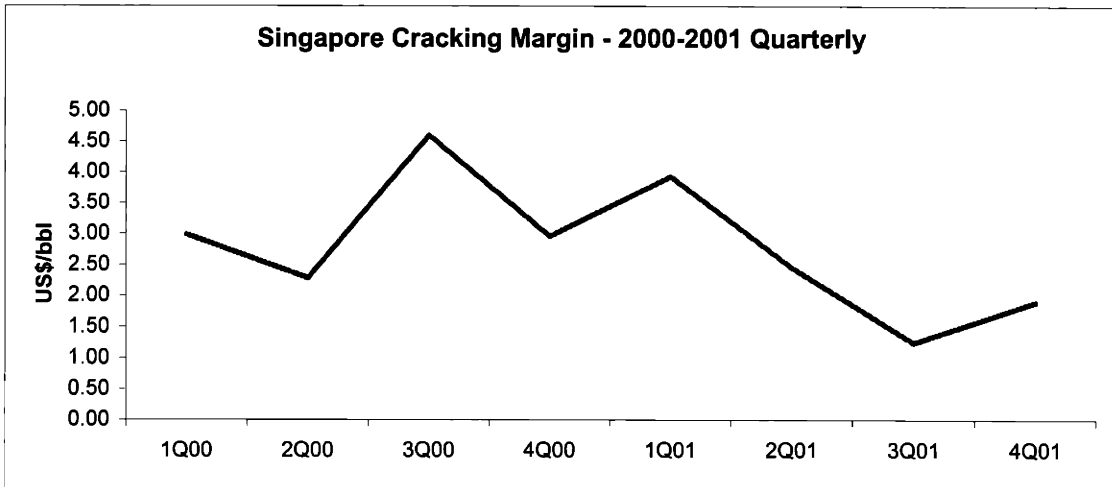
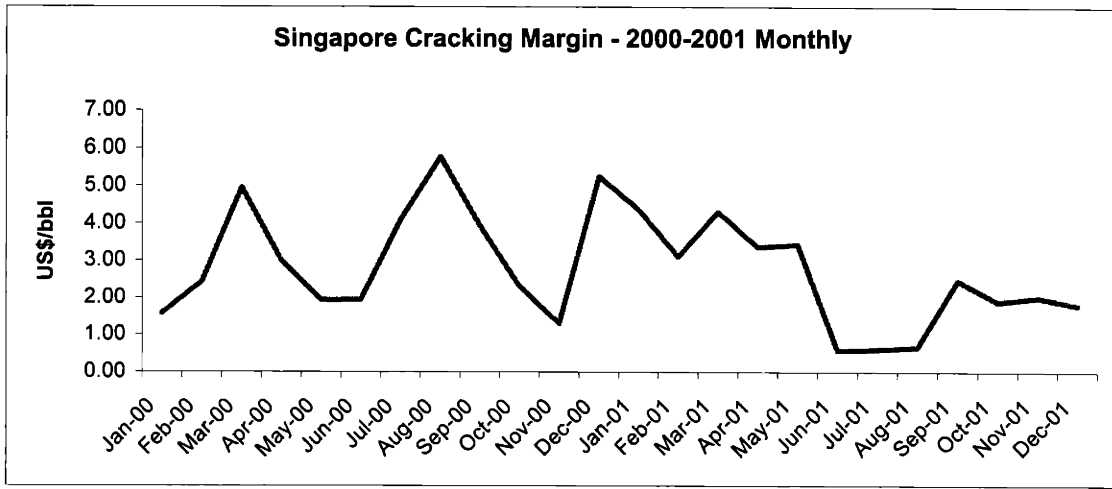
Source: Companies' IPO prospectus, F-20 (2000)

## Exhibit 4 -- Production Data

<b>CNOOC</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Crude oil (mm bbls / annum)	64.2	63.8	75.3	83.5
Annual Growth	0.8%	-0.7%	18.1%	10.9%
Natural gas (bcf / annum)	67.6	74.6	72.3	71.2
Annual Growth	16.1%	10.4%	-3.1%	-1.5%
Total production (mm BOE)	75.5	76.2	87.3	95.4
Annual Growth	2.8%	0.9%	14.6%	9.2%
Net production from independent operation	32.3%	42.1%	51.0%	42.4%
Net production from PSC	67.7%	57.9%	49.0%	57.6%
<b>PetroChina</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Crude oil (mm bbls / annum)	780.2	775.2	765.2	763.5
Annual Growth	-0.4%	-0.6%	-1.3%	-0.2%
Natural gas (bcf / annum)	409.2	437.1	505.3	563.5
Annual Growth	7.7%	6.8%	15.6%	11.5%
Total production (mm BOE)		848.0	850.0	857.4
Annual Growth			0.2%	0.9%
Primary distillation capability (mm bbls / day)	2.03	2.03	1.92	1.95
Crude oil throughputs (mm day/day)	1.27	1.38	1.50	1.55
Crude oil distillation capacity utilization rate	63%	68%	78%	80.3%
Principle refined products output (mm tons)	42.2	47.3	50.1	46.5
(Diesel+Gasoline+Fuel oil+Jet fuel and kerosene)				
Basic petrochemicals (mm tons)	2.20	2.54	2.83	na
Ethylene	1.27	1.35	1.50	1.57
Propylene	0.66	0.92	1.13	na
Benzene	0.27	0.27	0.2	na
<b>Sinopec</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>
Crude oil (mm bbls / annum)	250.8	241.5	247.4	269.2
Annual Growth	-1.7%	-3.7%	2.4%	8.8%
Natural gas (bcf / annum)	81.0	78.6	80.3	162.8
Annual Growth	-1.8%	-3.0%	2.2%	102.7%
Total production (mm BOE)	266.5	254.0	259.0	296.3
Annual Growth	-2.0%	-4.7%	2.0%	14.4%
Primary distillation capability (mm tons / annum)	126.8	130.3	130.3	129.7
Crude oil throughputs (mm tons)	78.9	88.2	104.9	101.0
Crude oil distillation capacity utilization rate	62.2%	67.7%	80.5%	77.9%
Principle refined products output (mm tons)	51.7	60.5	68.6	68.7
(Diesel+Gasoline+Fuel oil+Jet fuel and kerosene)				
Basic petrochemicals (mm tons)				
Ethylene	na	2.05	2.17	2.15
Propylene	na	2.12	2.28	na
Benzene	na	0.86	0.89	na

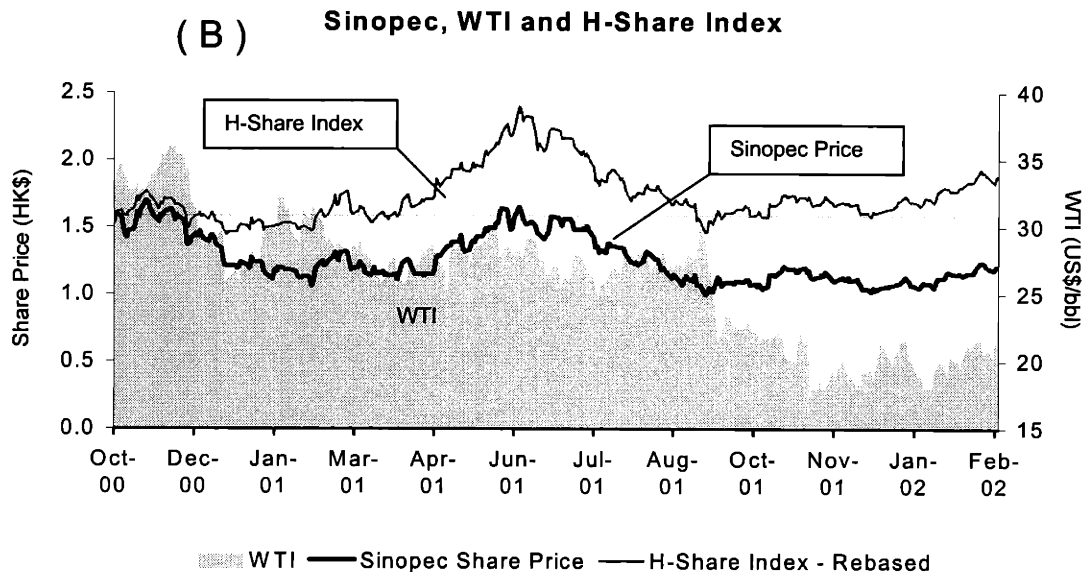
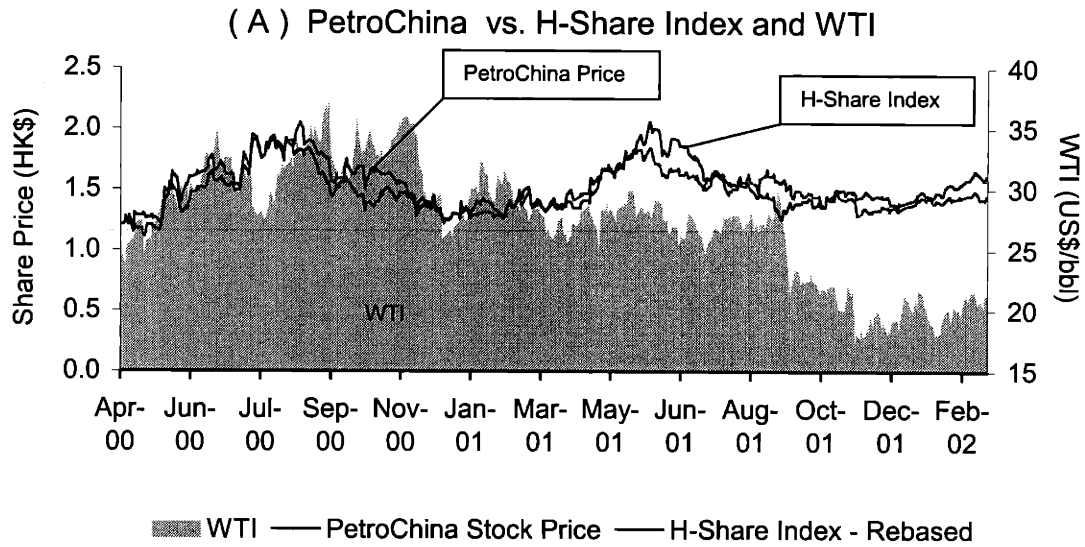
Source: Company IPO prospectus (p165) and F-20;  
 CSFB, China Oil and Gas Date Book, 5 December 2001.  
 International Petroleum Economics, No.3, 2002

**Exhibit 5 -- Singapore Cracking Margin - 2000~2001**



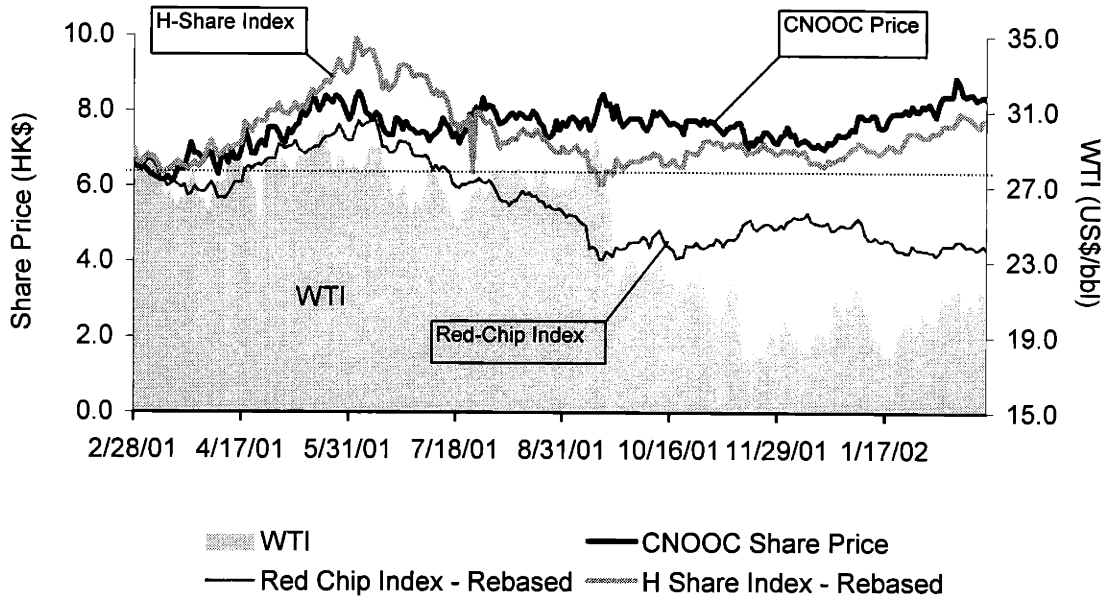
Source: CSFB

**Exhibit 6 -- Stock Performances**

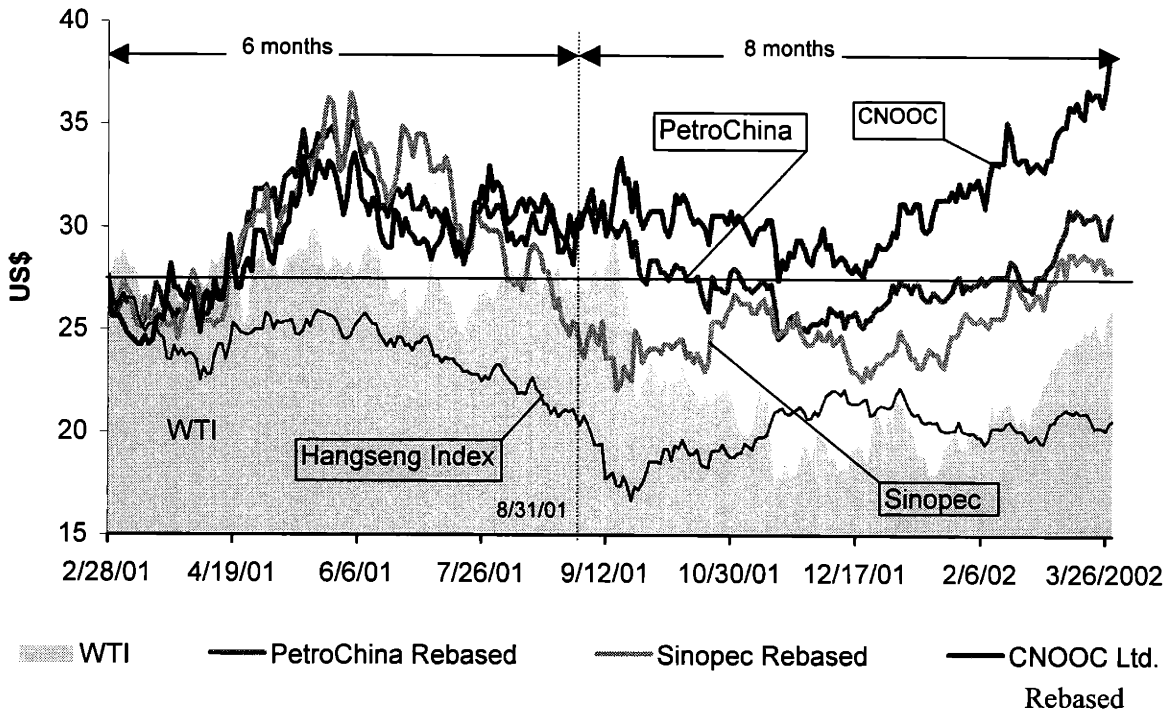


**Exhibit 6 -- Stock Performances (continues)**

**( C ) CNOOC Ltd., H Share Index, Red Chip Index and WTI**

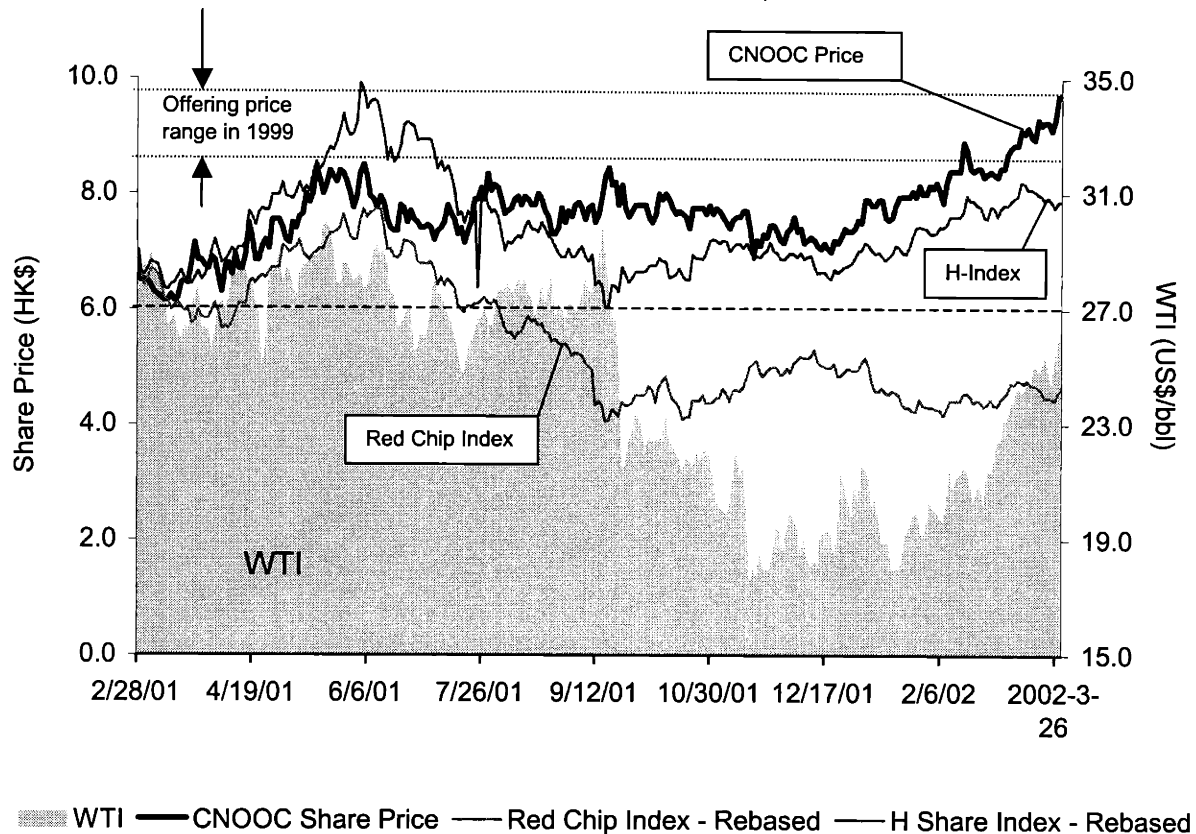


**( D ) PetroChina, Sinopec, CNOOC Ltd., WTI and Hangseng Index**



**Exhibit 6 -- Stock Performances (continues)**

( E ) CNOOC Ltd., H Share Index, Red Chip Index and WTI  
(2/28 /2001 ~3/26/2002)



Source: Thomson Financial Datastream, Company Data, CSFB

## Exhibit 7 -- Awards by Asiamoney

### Overall Best Managed Company 2001 / China

<u>Position</u>	<u>Firm</u>	<u>Score</u>
1	CNOOC	73
2	Legend	65
3	PetroChina	48
4	Huaneng Power	47
5	China Mobil	43
6	Denway Motors	21
6	Sinopec	21
6	Zhejiang Expressway	21
9	China Resources Enterprises	19
10	AsiaInfo	16
11	China Merchants	14
12	UTStarcom	12
13	Shanghai Industrial	11
14	TravelSky	9
15	China Unicom	8
16	Beijing Datang Power	6
17	Chaoda Modern Agriculture	5
18	China Evenbright	4
18	China Vanke	4
18	Xinao Gas	4

### Corporate Governance

<u>Position</u>	<u>Firm</u>	<u>Score</u>
1	CNOOC	21
2	Legend	15
3	PetroChina	13
4	Huaneng Power	12
5	China Mobil	10

### Overall Best Investor Relations

<u>Position</u>	<u>Firm</u>	<u>Score</u>
1	Legend	60
2	PetroChina	46
3	CNOOC	30
4	China Mobil	26
5	Denway Motors	16
6	Sinopec	15
7	China Unicom	14
8	Huaneng Power	13
8	Shanghai Industrial	13
8	Zhejiang Expressway	13

Source: Asiamoney, December 2001



## Exhibit 8 -- CNOOC's Efficiency and Benchmarking

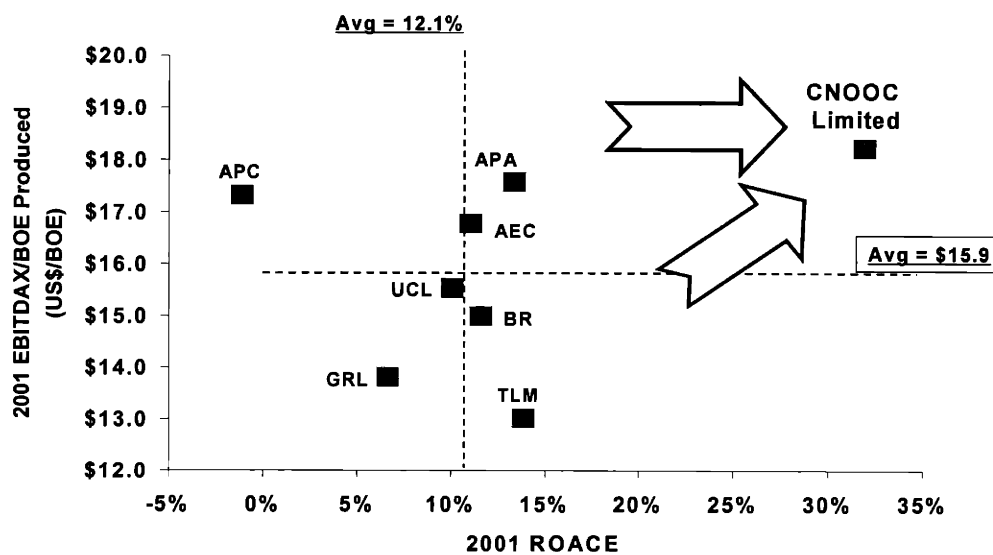
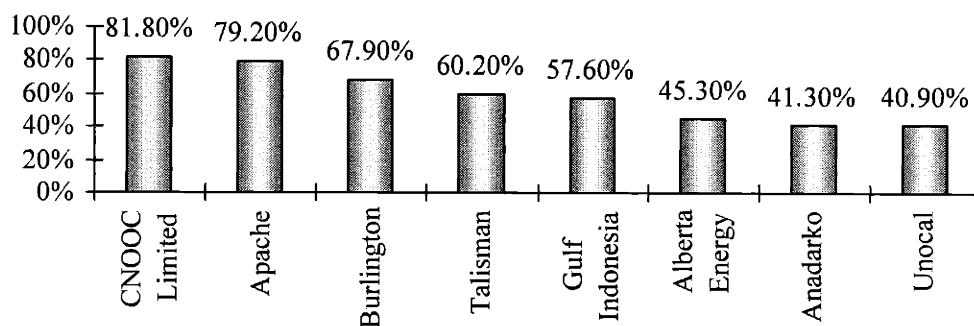
(Source: CNOOC)

### CNOOC's Production Cost (1997~2001)

	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>
Operating Cost	3.06	3.13	2.99	2.99	3.01
Production Taxes	0.97	0.61	0.93	1.45	1.14
DD&A	3.39	3.13	3.84	3.62	3.32
Dismantlement & Site Restoration Allowance	0.95	1.04	0.83	0.14	0.12
<u>SG&amp;A</u>	<u>0.33</u>	<u>0.3</u>	<u>0.29</u>	<u>0.64</u>	<u>0.8</u>
<b>Total Production Cost</b>	<b>8.70</b>	<b>8.21</b>	<b>8.88</b>	<b>8.84</b>	<b>8.39</b>

Source: Company Data

### 2001 EBITDE Margin



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