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China's Port Logistics Industry The Nanjing Ports

"Enough shovels of earth -- a mountain. Enough pails of water -- a river"
 -Chinese Proverb

Over the next several months, ChinaVest will continue to provide summary research on the logistics infrastructure in China. Our firm, a merchant bank based in Shanghai, has been operating in greater China since 1981. ChinaVest has a strong connection to the logistics industry. We have owned logistics companies (such as TAIT and Santa Fe). We have also distributed products in China (Evian, Heineken). In addition, ChinaVest has been the M&A advisor to a number of multinational firms that utilize China's interconnected system of ports, highways and rail.

China's Yangtze Inland Ports:

This report on the port of Nanjing—南京--(pronounced nan-JING) is the fifth in our installment of ports along the Yangtze River. In our first research report (May 2007), we highlighted the general dimensions of the port industry in China. We then began a more thorough analysis of China's inland waterway system and studied the Port of Taicang and Nantong (August 2007), Changshu and Zhangjiagang (January 2008), and more recently, Yangzhou and Zhenjiang (April 2008).

When we discuss inland waterways in China, we refer essentially to one river, the 4,000 mile Yangtze, which hosts roughly 80% of China's inland waterway shipping. The population that resides along this river is roughly the size of the European Union.

Figure 1: THE YANGTZE RIVER—A CLOSER LOOK



The Yangtze is the world's third longest river. Its path slices through the middle of China, beginning in the Kunlun Mountains in the western part of the country, winding its way eastward, and opening up into the East China Sea. Major inland trade is confined between the Port of Chongqing and the Port of Shanghai, and the highest volume occurs between Nanjing and Shanghai. Chongqing lies directly in the center of China while Shanghai is located in the Yangtze Delta, where the river meets the East China Sea.

Inland cities located west of Nanjing have historically been more economically depressed than the seaport cities of the eastern coast. Given recent increases in the price of labor along the heavily urbanized coast, second-tier cities in Central China are now attracting new waves of investment. The labor differential, however, still remains quite high. Hourly manufacturing wages in Chinese urban areas are US\$1.19 per hour while compensation for TVE's (towns and village enterprises) is US\$0.45 per hour¹. Though this may seem relatively insignificant compared to the average US\$23 per hour manufacturing labor rate in the United States, it makes a tremendous difference in many low-margin industries.

In recent years, those central cities with ports along the Yangtze have been investing billions in infrastructure in order to attract factories, companies and investors. Manufacturing hubs have sprung up along the river in large numbers, surrounding the ports for easy accessibility. The focus of this report is on the port of Nanjing: inland and west of Shanghai, but nevertheless, the gateway to the world.

The City of Nanjing:

Nanjing, the capital city of Jiangsu Province, is located along the Yangtze River at the center of the Lower Yangtze plain. It is the most westerly city within the Yangtze River Delta, and as such, it serves as a crossroads between the Delta and the nearby Provinces of Anhui and Jiangxi. Nanjing has historically been one of China's most important cities. In the 14th-15th centuries it was supposedly the largest city in the world (with a population of over 450,000 in 1400). Today, Nanjing is a sprawling metropolis with a population of approximately 6 million.



¹ Erin Lett and Judith Banister, "Labor Costs of Manufacturing Employees in China," Monthly Labor Review (November 2006): 40.

Nanjing, whose name literally means “southern capital,” served as China’s capital city during a number of historical periods. It is listed as one of the “Six Ancient Cities” of China. Since the 3rd century AD, Nanjing has been the seat of power of roughly 10 dynasties (or regimes)—including the Eastern Wu, Qi, Song, Liang, Chen, Southern Tang, and early Ming. It was also briefly named the capital of the nascent Republic of China in the early 1900’s. In 1937, the Japanese army occupied Nanjing and carried out a systematic massacre of its residents, an event that is still a source of strain between the two nations. In 1949, after the establishment of the People’s Republic of China, Nanjing initially became a province-level municipality. Later, it became the capital of Jiangsu Province.

Nanjing is situated about 275km northwest of Shanghai. It is an important regional transportation hub in the Yangtze River Delta, and is well-connected by over 60 state and provincial highways to all parts of China. Nanjing is also the final destination point of the “Shanghai-Nanjing Highway.” This important East-West thoroughfare connects a number of major industrial cities in the Lower Yangtze plain, such as Hangzhou, Hefei and Suzhou. From a North-South perspective, the “Beijing-Shanghai Railway” crosses the Yangtze River at the 6,772 meter (22,212 feet) long Nanjing Yangtze River Bridge (the first bridge ever constructed across the river). Nanjing “Lukou International Airport” is about 35 km from downtown Nanjing and has one of the most important cargo transport facilities in eastern China.

Figure 2: NANJING —A CLOSER LOOK



Nanjing is an industrial city. Its four principal industries include automobile manufacturing, steel production, petrochemicals, and electronics. By the end of 2007, the city’s GDP reached RMB 327.5 billion (approximately US\$47 billion), having experienced double-digit annual growth rates since 2001.

Starting in the late 1990s, Nanjing established four economic development zones: (1) Jiangning Development Zone, (2) Jiangning-Yangtze River Development Zone, (3) Nanjing Chemical Industrial Park, and (4) Nanjing High-tech Development Zone.

The Jiangning Development Zone is mainly focused on automobile manufacturing and electronics. During the last few decades, the zone attracted over 1,800 foreign direct investment projects with an aggregate value of over US\$4 billion. Overall, Nanjing is home to 36 Fortune 500 multinational corporations including: Ford, Mazda, Hitachi, Motorola, Siemens, and Ericsson. The figure below provides a geographical perspective of Nanjing.

Figure 3: NANJING —A GEOGRAPHICAL PERSPECTIVE



Port of Nanjing:

Nanjing is the largest inland port in China, and the largest river port in all of Asia. The harbor area extends a total length of 200+ km, and has more than 300 jetties of different sizes. There are roughly 230 total berths, including 35 berths for ships with tonnage of more than 10,000. The warehouse area totals about 800,000 square meters, and there is dedicated railway line of about 2 km (10,000m for loading and unloading). Nanjing has the largest petroleum shipping jetty, the largest coal facility, and the largest foreign trade shipping dock along any river in China. The Nanjing Port is also navigable year-round for ships as large as 35,000-tons. Given physical constraints, however, such as a 12 meter depth, Nanjing is not (yet) able to handle extremely large oceangoing vessels.

Like most of the ports in China, Nanjing is not simply one large, all-encompassing port but rather a series of many facilities located on the north and south bank of the Yangtze River. In total, the Nanjing Port includes 14 areas:

6 Public Areas

- 1) Xiaguan: Located on the south bank of Yangtze River; shoreline of 6.7 km; 11 berths; processing capacity of 3.16 million tons per year
- 2) Shang Menyuan: Located on the south bank of Yangtze River; shoreline of 4.8 km; 29 berths; 11.94 million tons per year
- 3) Xin Shengwei: Located on the south bank of Yangtze River; shoreline of 3.9 km; transportation of foreign (imported) goods and automotive-related; 21 berths; 9.71 million tons per year
- 4) Longtan: Located on the south bank of Yangtze River; mainly container transport; 32 berths; 2.75 million tons per year
- 5) Pukou: North shore of the Yangtze River; shoreline of 4.7 km; mainly focused on coal transport and internal trade; 21 berths; 12.86 million tons per year
- 6) Yizheng: North shore of the Yangtze River; shoreline of 12 km; petroleum transportation; 18 berths; 27.2 million tons per year

3 Industrial Areas

- 1) Banqiao: South bank of Yangtze River; port shoreline of 5.6 km; mainly used to service Meishan Iron and Steel, Hua Ren Coal Generator; 20 berths; 9.41 million tons
- 2) Xixia: South bank of Yangtze River; port shoreline of 7.8 km; 26 berths; processing capacity 13.73 million tons per year
- 3) Dachang: North bank of Yangtze River; port shoreline of 8.6 km; focused on iron and steel, petrochemical, power supplies, and other enterprises; 47 berths; 24.61 million tons per year

5 Planned Areas (including the areas under construction)

- 1) Tongjing: South bank of Yangtze River; planned shoreline of 6.8 km; expected capacity of 11.9 million tons
- 2) Ma Dugang: North bank of the Yangtze River; planned shoreline of 2.8 km; 14 berths; expected capacity of 11.2 million tons
- 3) Qiba: North bank of Yangtze River; planned shoreline of 13.4 km; 49 berths; expected capacity of 24.6 million tons
- 4) Xiba: North bank of Yangtze River; planned shoreline 8.1 km
- 5) Mei Zizhou: Planned port shoreline 4.7 km; 15 berths; expected capacity of 8.2 million tons

Given its geography, Nanjing is a natural trans-shipment hub for the much larger Port of Shanghai. But Nanjing is also a major international cargo destination for Asia Pacific carriers. Every month over 30 container shipping lines leave directly for Hong Kong, Japan and Korea.

Over the past five years, the Port of Nanjing has experienced tremendous growth. As a point of reference, after the seven years of double-digit growth, Nanjing's container capacity hit over 1 million TEU's in 2007, a remarkable achievement for an inland river port. The figures below highlight China's top 10 river ports, based on container volume (TEU's) as well as the historical and projected container throughput of the Port of Nanjing.

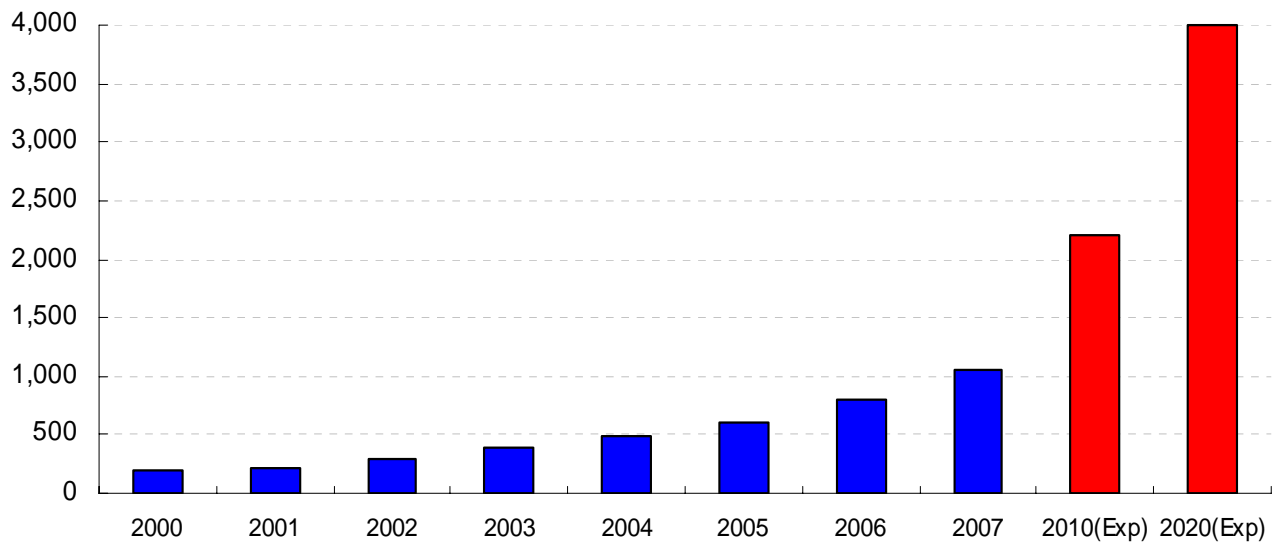
Figure 4: CHINA'S TOP 10 RIVER PORTS 2006

Based on TEU Throughput

	Port
1	Nanjing
2	Taicang
3	Zhangjiagang
4	Nantong
5	Chongqing
6	Wuhan
7	Changshu
8	Zhenjiang
9	Yangzhou
10	Wuhu

Figure 5: CONTAINER THROUGHPUT OF NANJING PORT 2000-2020

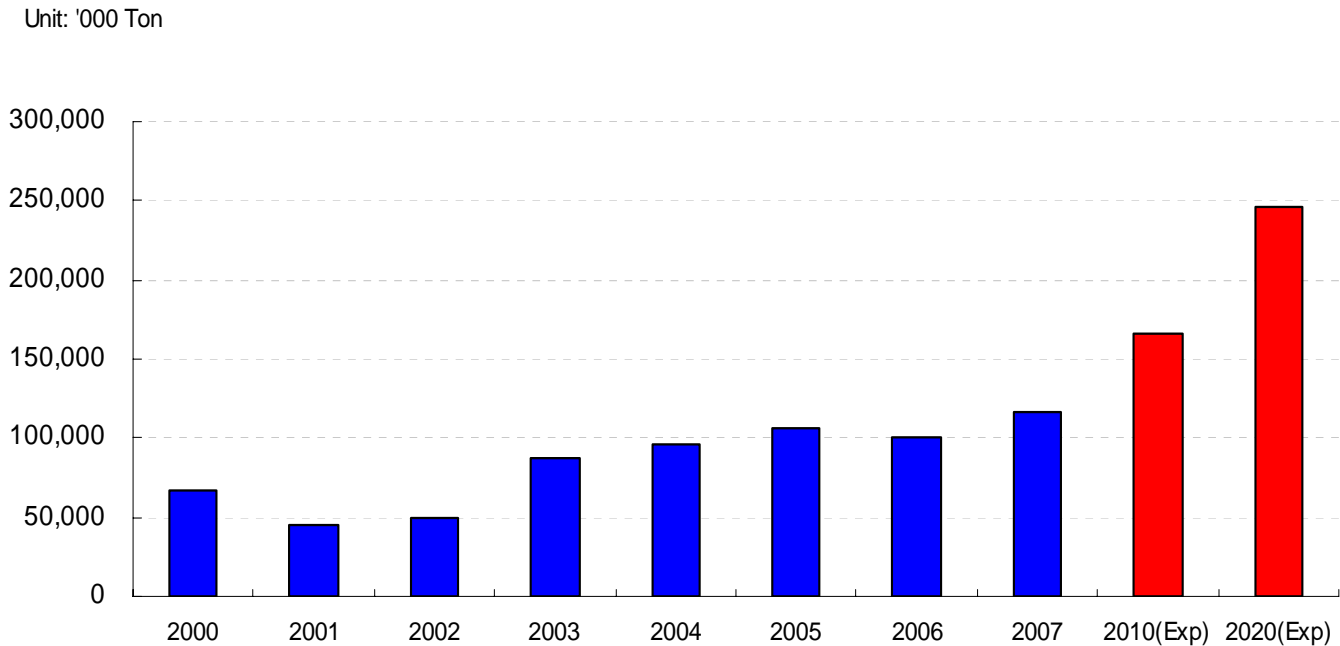
Unit:000 TEU



Source: Nanjing Port Authority

The chart below highlights the Port of Nanjing's historical and projected throughput.

Figure 6: CARGO THROUGHPUT OF NANJING PORT 2000-2020



Source: Nanjing Port Authority

The Port Company

The port of Nanjing is comprised of several operators. One of them, the Nanjing Port Co. ("Port Company"), is publicly traded on the Shenzhen stock market. The Port Company's principal activity is marine cargo handling and port operations including loading, unloading, warehouse and storage of oil, finished oil and liquid chemical products. Their transportation and port services provide storage facilities, principally for oil. In 2007, the Port Company handled 10 million tons of cargo. Petrochemicals accounted for a large percentage of this, including 2.1 million metric tons of chemical materials, 5.8 million metric tons of crude oil and 1.2 million metric tons of finished oil products. The figures below highlight the Port Company's most recent financial information:

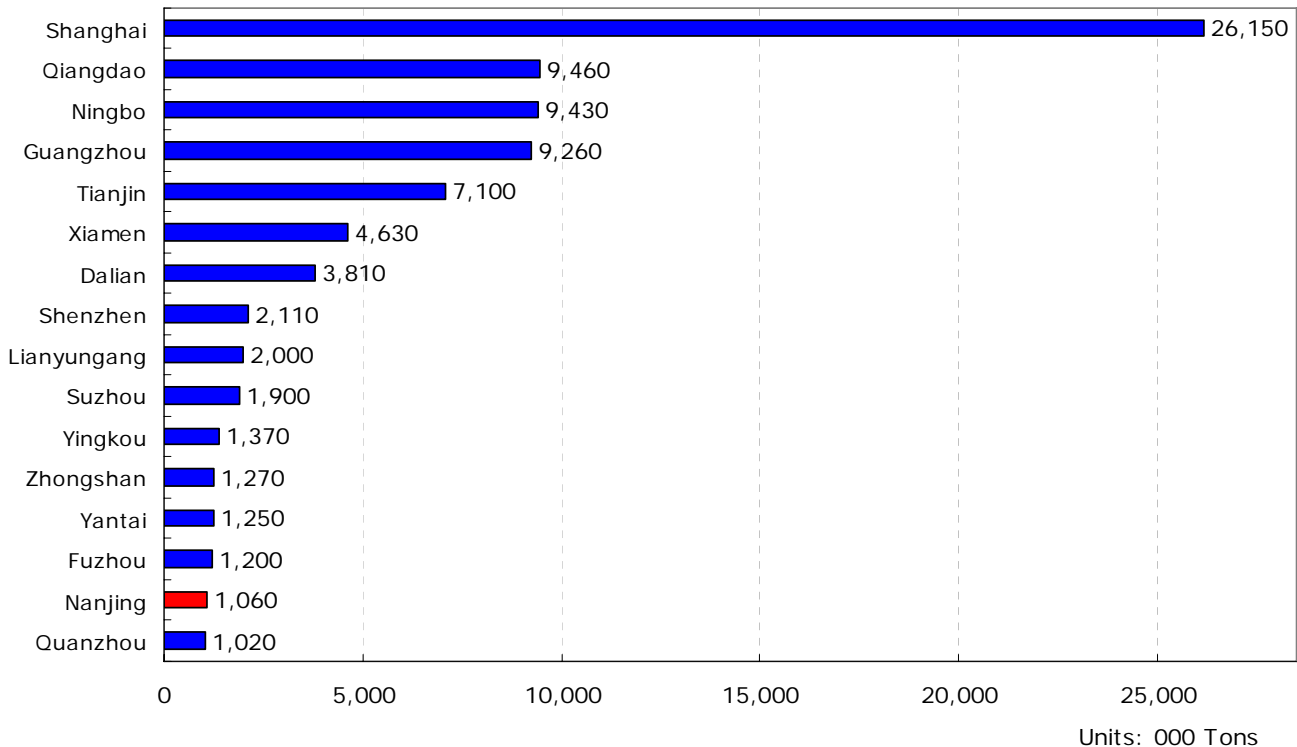
- Sales: RMB 146 million (in FY 2007)
- PE: 64.9X (7/23/08)
- Market Cap: RMB 1.36 billion (7/23/08)
- Employees: 993 (Google)

As an interesting side note, the Port Company aspires to have a role in environmental protection. They initiated a mandate entitled, "Nanjing Port Joint-Stock Company Against Pollution Administrative Provisions" in order to prevent pollution created by the ships that would threaten the aquatic environment around the port.

The figure below contrasts the top ports in China in terms of cargo throughput. Of the list below, none of the ports are inland waterways (i.e. located exclusively on a river) except Nanjing and Suzhou. As mentioned in our previous reports, there is no "Port of Suzhou" per-se. Suzhou is an inland city. It has three ports located nearby. Combined, they call themselves the "Port of Suzhou." For more information, please read our earlier research report on the Ports of Changshu and Zhangjiagang (January 2008).

When looking at the graph below, the container throughput of Nanjing seems relatively small. Clearly, anything seems small compared to the Port of Shanghai. But by comparison, the Port of New York/New Jersey has a bit more than 5 million TEU's, the ports of Seattle-Tacoma and Oakland have roughly 2 million TEU's, respectively, and the Port of Miami, Florida has 1 million. The important distinction is that Nanjing is an inland river port, located 300+ kilometers (roughly 200 miles) away from the Pacific Ocean.

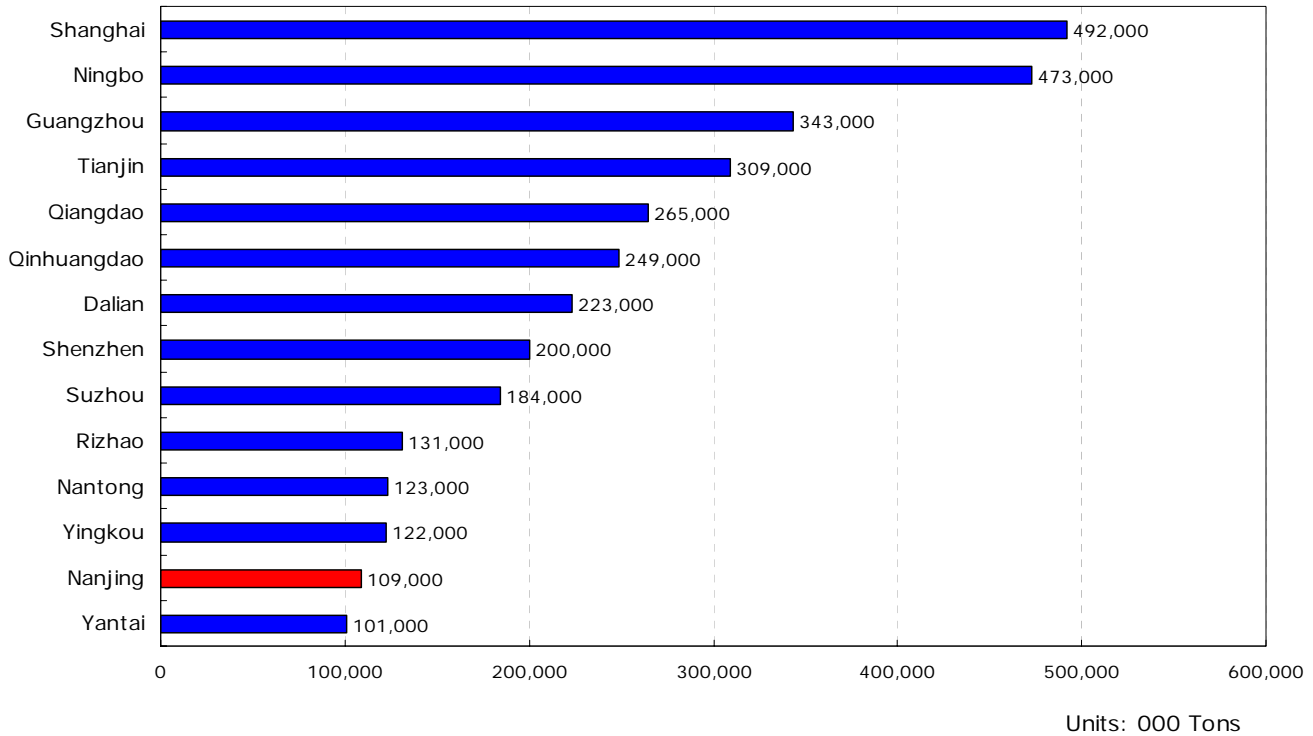
Figure 7: RANK OF CHINESE PORTS BY CONTAINER THROUGHPUT IN 2007



Source: Ministry of Communication

The graph below depicts the top Chinese Ports by bulk cargo throughput (i.e. not containers). Again, almost all of the ports below are located on the coast. Nantong is a partial exception, as part of it is located on the Yangtze River (see our earlier research report on Nantong, August 2007).

Figure 8: RANK OF CHINESE PORTS BY CARGO THROUGHPUT IN 2007



Source: Ministry of Communication

Ship Repair:

The Port area hosts numerous ship repair facilities. One of the most famous is Jinling. Founded in 1952, the Jinling shipyard is a large-scale state-owned shipbuilding enterprise located at the south bank of the Yangtze River. The facility comprises an area of over 1 million square meters. The Jinling shipyard is authorized as a “Bonded Factory” by the China National Customs Authority. It is also ISO9001 certified. The Jinling shipyard is equipped with 100,000 DWT and 200,000 DWT dry docks, eight shipbuilding berths with capacity of 10,000-50,000 DWT, and three outfitting quays which can store/park numerous vessels simultaneously. The facility also has eight gantry cranes ranging in capacity from 150-500 tons. The Jinling shipyard entered the international ship building market in 1996, and has since has built various types of vessels including tankers, chemical vessels, working platform vessels, container ships, bulk carriers, floating docks, and submersibles. Over 100 vessels have been delivered to owners from more than twenty countries and regions.

Recent Events:

Shenzhen International Holdings, a company engaged in logistics, construction, and infrastructure, is expected to launch a JV to build additional port terminals in Nanjing. This US\$64 million venture will build 5 deep-water terminals and two logistics centers at the Nanjing Chemical Industrial Park. Shenzhen International will have a 70% stake in the venture, while both the Nanjing Port Authority and the Nanjing Chemical Industry Park Co will each have 15%. The first phase of the project is scheduled to be completed by the end of 2009. This phase consist of building two terminals for 50,000-ton vessels and a 400,000 square meter logistics center for RMB 800 million. The remaining three terminals for 50,000 ton vessels and a logistics center will be constructed within 3-4 years after the completion of the first stage.

Offhand, Random Statistics:

- The Port of Nanjing's textile machinery imports soared to more than US\$210M. These numbers grew by 40.5% since last year. This is due to the abolishment of the automatic import license on types of machinery, among other factors.
- Along with textile machinery imports, in Q1 2008 chemical fertilizer exports doubled out of the port of Nanjing.
- On May 28, 2008, six people died and three were missing after a ship carrying students struck a cargo ship in the Yangtze River Nanjing port in eastern Jiangsu Province. 15 people were saved by rescuers. There were no injuries or casualties aboard the other ship.

Conclusion:

With a population of 6 million inhabitants, Nanjing is not an insignificant city. It is seen within China as an important historical capital and also as a major center of production. The great number of industrial parks, Sino-foreign JV's, and the presence of major F500 companies is testament to the commercial importance and future viability of this city. The Port of Nanjing is one of the most important along the Yangtze River, and as the city prospers, so will its port.

In our next installment, we plan to go further upriver to the Port City of Wuhan.