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China's Port Logistics Industry Lower Yangtze River Ports—Zhenjiang and Yangzhou

"A person is born with a liking for profit"
 - Xun Zi (310BC-327BC)

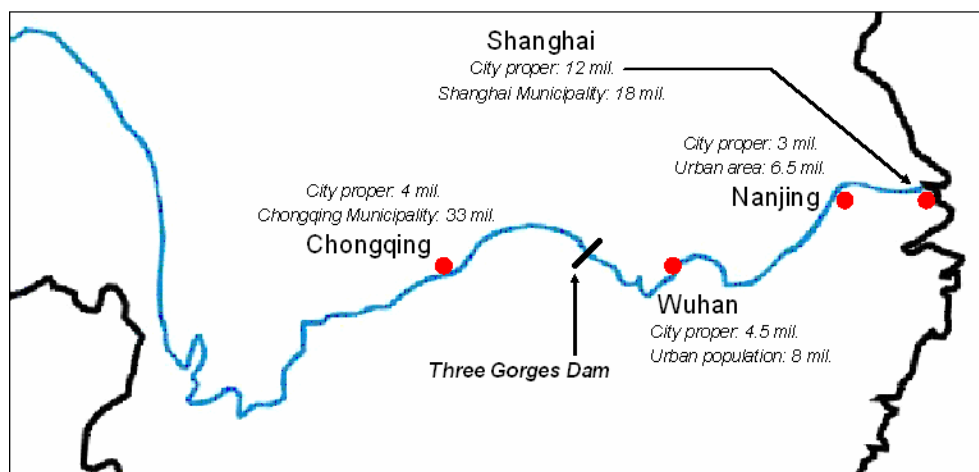
Over the next several months, ChinaVest will continue to provide summary research on the logistics infrastructure in China. Our firm, a merchant bank based in Shanghai, has been operating in greater China since 1981. ChinaVest has a strong connection to the logistics industry. We have owned logistics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

China's Yangtze Inland Ports:

This report covers the ports of *Zhenjiang* (jehn-jiang) and *Yangzhou* (yang-joe) and is the fourth in our installment on 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 systems and provided a study of the Port of Taicang and then the port of Nantong (August 2007). Most recently we examined the ports of Suzhou: Zhangjiagang and Changshu (January 2008).

When we discuss inland waterways in China, we refer essentially to one river: the 4,000 mile long Yangtze. The Yangtze is the world's third longest river. Its path slices through the middle of China, beginning in the Kunlun Mountains to the west, winding its way eastward, and opening up into the East China Sea. The population that resides along the river is roughly the size of the European Union.

Figure 1: THE YANGTZE RIVER—A CLOSER LOOK



The Yangtze hosts roughly 80% of China's inland waterway shipping. Major inland trade is confined between the Port of Chongqing (chung-ching), which lies directly in the center of China, and the Port of Shanghai, which is located in the Yangtze Delta. The highest volume of trade along the Yangtze River occurs between Nanjing and Shanghai. 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 coast, however, second-tier cities in Central China are now attracting new waves of investment. Despite this new surge, the labor differential between the heavily urbanized east and more rural west 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 only US\$0.45 per hour². Although this price gap may seem relatively insignificant compared to the average US\$23 per hour rate of the United States, for China it makes a tremendous difference in many low-margin industries.

In recent years, cities in central China that have ports along the Yangtze have been investing billions in infrastructure in attempt to attract factories, companies and investors. As a result, manufacturing hubs have sprung up along the river in large numbers, surrounding the ports for easy accessibility. The focus of this report is on two such ports: Zhenjiang and Yangzhou (see Figure 2 for their locations).

Figure 2: YANGZHOU & ZHENJIANG—A CLOSER LOOK



² Erin Lett and Judith Banister, "Labor Costs of Manufacturing Employees in China," Monthly Labor Review (November 2006): 40.

Ports of the Month: Zhenjiang & Yangzhou

The cities of Yangzhou and Zhenjiang are located in Southwest Jiangsu Province on opposite banks of the Yangtze River. Most importantly, they sit at the crossroads of the Yangtze and the "Grand Canal," which runs from Beijing to Hangzhou. As described in the following section, the Grand Canal has helped facilitate trade in China since as early as the 7th century AD, and it has played an integral role in the continued economic development of the Yangtze Delta. The ports of Zhenjiang and Yangzhou are extremely unique because of their strategic location. In essence, they sit in locations with access to water transportation heading both East to West, along the Yangtze, and North to South, along the canal. Both Yangzhou and Zhenjiang also have excellent logistical access to railroads and highways linking them to Shanghai and Beijing, including the Shanghai-Beijing Expressway and the Runyang Bridge, the second longest suspension bridge in the country and fourth worldwide.

As illustrated in Figure 3, the ports of Zhenjiang and Yangzhou rank among the top ten inland river ports on the Yangtze River. The two main functions of the ports are: 1) the trans-shipment of goods, particularly raw goods such as coal or cement, from smaller barge boats traveling along the canal to other ports along the Yangtze, and 2) the distribution of industrial products produced locally, mainly to international ports such as the port of Shanghai. In the following text we discuss in more detail the importance of these ports and their surrounding cities.

Figure 3: TOP 10 RIVER PORTS

Top Ranked Yangtze River Ports 2006
Based on TEU Throughput

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

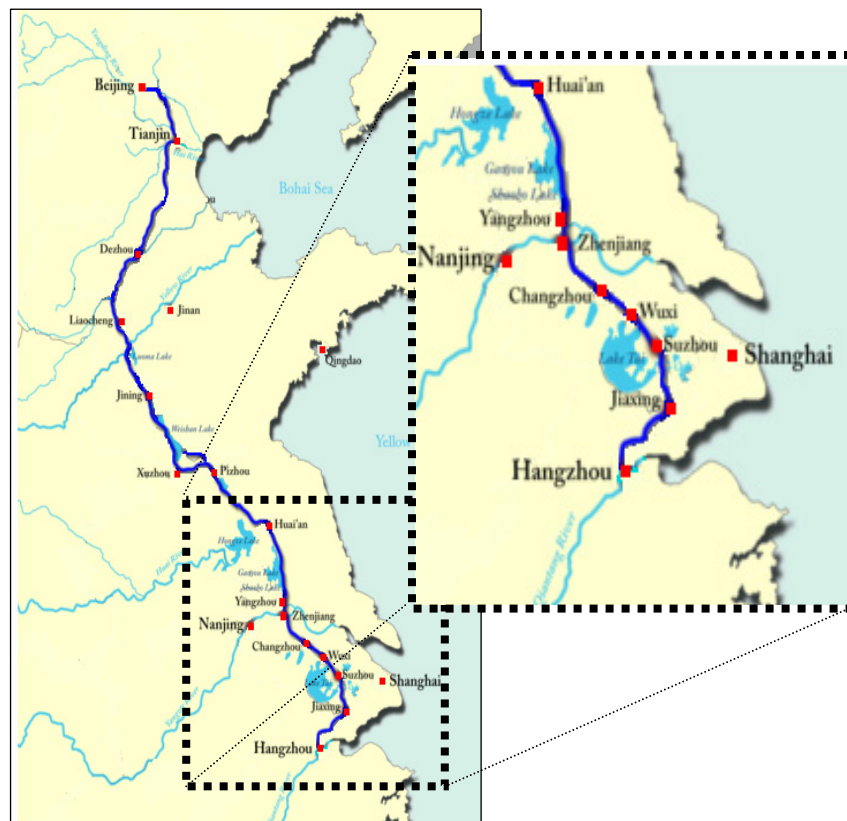
The Grand Canal

The Grand Canal, also known as Beijing-Hangzhou Grand Canal, is the longest and oldest canal system in the world. Although it was built in roughly 600AD by the Sui Dynasty, some sections of the canal date back as far as the 5th century BC. The canal travels over 1,100 miles from Beijing in the North to Hangzhou in the South*. Historically it was used to facilitate the trade of grain and other basic commodities between Beijing and southern cities. Over the years, however, the canal has also served as a means of political and cultural unification in China, as it has created easy access to regions throughout much of the country.

Today, the Grand Canal passes through some of China's largest manufacturing areas, including Wuxi and Suzhou. Facilitating the economic development of the Yangtze River Delta, the canal has become critical for supplying the region with valuable commodities to fuel its growth. Although narrow in parts, the canal is used as a major transportation corridor for barge ships carrying bulk goods such as coal, bricks, sand, gravel, petrol, and other raw commodities. The growing importance of the canal has put the ports of Yangzhou and Zhenjiang in an advantageous position, as they are the only ports located at the intersection where the Grand Canal crosses the Yangtze River.

**The canal can only be navigated for about 2/3 of its length, between Hangzhou and Jining.*

Figure 4: THE GRAND CANAL—A CLOSER LOOK



Over the years, the Yangtze Delta has transformed itself into a major region for investment and manufacturing, especially the areas around Suzhou (see last port report for more information). The canal is important as it links these prosperous manufacturing areas with those that provide both raw materials and lower value added sub-assembly goods. Considering that waterways provide a far cheaper alternative to rail or highway transportation in China, the ports of Zhenjiang and Yangzhou are situated in an ideal location to take advantage of China's inner-coastal shipping needs.

As an interesting side note, part of the Grand Canal will be used as the Eastern corridor of the *South-North Water Transfer Project*, which is currently being constructed under the authority of the Chinese government. This project—the largest of its kind ever undertaken—was first conceived in 1952 by Mao Zedong. It aims to transfer excess water from the water rich south of China (mainly the Yangtze River) to the highly urbanized and much more arid North. Among other environmental concerns, the project has been criticized because of fears that it may potentially cause water shortages, as well as affect transportation along the Yangtze River. The project commenced in 2002 and it is estimated that it will be completed by 2050.

The Port of Zhenjiang

The name "Zhenjiang" translates to "Garrison of the River." The city received its name during the Sui Dynasty (600AD) when it was a military base that served to protect the Yangtze. It eventually became a point at which taxes were collected on the extensive grain trade in the region. Today, Zhenjiang has developed into a modern city, and its port plays an important role in the transportation of goods within China, as well as to ports across the globe.

The port of Zhenjiang is the eighth largest port along the Yangtze, in terms of TEUs (i.e. container throughput), just slightly larger than Yangzhou. The port primarily serves as an intermediary between domestic ports, but also has direct shipping lines to over 70 countries and 288 harbors worldwide. Zhenjiang port is composed of seven main port areas, namely Gaozi, Jianbi, Dangang, Longmeng, Gaoqiao, Yangzhong and Xinminzhou. As of 2006, the port had a combined total of 184 berths, including 28 berths for ships over 10,000 tons. Zhenjiang has also been recognized as one of the top 50 ports in all of China, having reached a throughput of 280,000 TEU's and 78 million tons of cargo in 2007. Port volume is expected to continue to increase at an impressive rate; especially in terms of TEU throughput which should double by 2015 (see Figure 6). The port supports trade in many of the city's main industries, which include chemicals, paper, electronics, and building materials. However, it mainly specializes in the shipment of metal products, construction material, coal, and other raw materials.

There are eight special development zones set up in the surrounding Zhenjiang area, the most important of which is the Zhenjiang Economic Development Zone. Other important zones include the Zhenjiang Export Processing Zone and the Zhenjiang Jinkou Industrial Park. These economic zones help attract foreign investment to the region by providing various financial incentives to investors. There are currently more than 2,000 companies established in these zones who have collectively invested over RMB100 billion. Oil concern Total (France), meat company Cargill (USA), auto firm Fiat (Italy), and Asia Paper & Pulp (Singapore) are only a few of the notable multinationals that have operations in the development zones.

The charts below highlight Zhenjiang port's throughput.

Figure 5: CARGO THROUGHPUT OF ZHENJIANG PORT 2003-2020

Tons '000

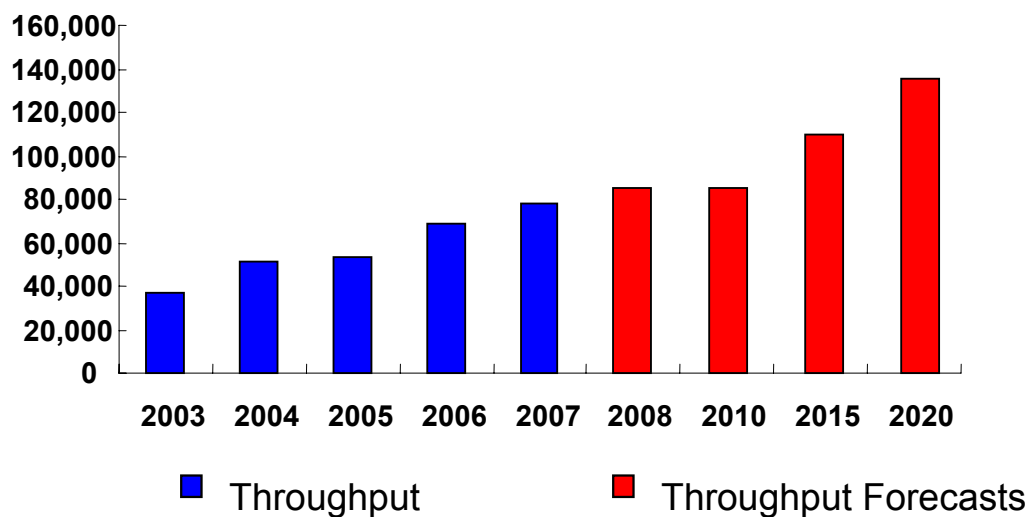
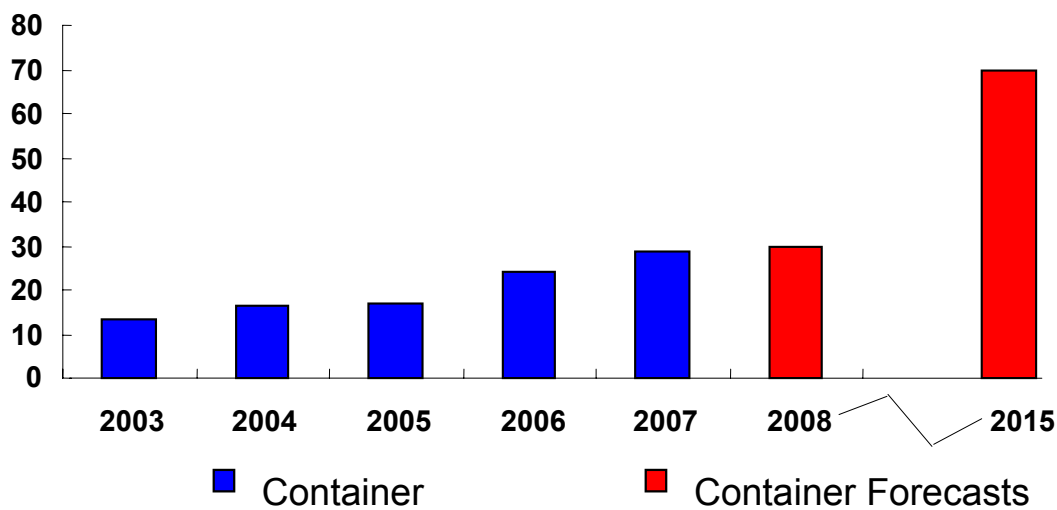


Figure 6: CONTAINER THROUGHPUT OF ZHENJIANG PORT 2003-2015

TEU's '000



The Port of Yangzhou

Yangzhou has always been an important economic and cultural center in China, dating back over 2,500 years. The city has a long history in maritime trade with foreign merchants and has records of international residents from a wide range of nationalities, including Koreans, Japanese, Persians and Italians. Marco Polo is believed to have served in the Yangzhou government during the 13th century, and recently unearthed tombs have discovered the remains of an Italian trading family, indicating that the city has been open to foreigners for centuries. Up until the 19th century, Yangzhou depended on grain, salt, silk, and rice as their trade staples.

Today, Yangzhou remains an important trading hub along the Yangtze River. The city has a population of just over 4.5 million with an approximate per capita GDP of roughly RMB15,000. Thanks in large part to its position along the Grand Canal and Yangtze River, the Yangzhou region has attracted over 1,400 companies, including famous multinationals such as Philips and Colgate. The port specializes in shipments of chemical products along with automobiles & parts. Other top industries include manufacturing for machinery, biochemical, ship building, and textiles & garments. In 2006, Yangzhou was also ranked second among ports in China for processing of imported lumber.

The port of Yangzhou also encompasses the two nearby ports of Jiangdu and Yizheng. Jiangdu acts mainly as a complimentary port to Yangzhou, providing interim storage for timber, mining, and liquid chemical products. It is located along the Jiajiang River, just outside of Yangtze River Estuary, and focuses its shipping services in ore, building materials, cement, and liquefied petroleum gas, among other goods. The port also has excellent access to highways connecting it to both Beijing and Shanghai. Yizheng port, like Jiangdu, operates on a much smaller scale than Yangzhou. The port is situated along the Yangtze River, in the outskirts of Yizheng city. The port mainly deals in the transport of bulk cargo and raw materials for the production of chemicals.

Although it is not one of the larger Yangtze ports, Yangzhou is still rather significant in size. In combination with the facilities at Jiangdu and Yizheng, the port has a total of 273 berths, including 10 berths for ships of more than 10,000 tons. The port has the capacity to deliver goods around the world; however, it is mainly used as a transit port for goods to international ports such as Shanghai. It is, however, an important transit port for neighboring provinces: Jiangsu, Southern Shandong, and Eastern Anhui. Since 2005, Yangzhou's cargo throughput has increased by 35%, up to approximately 16 million tons per year. That figure is expected to double by 2010. Meanwhile, the port's container throughput has grown over 80% since 2004, up to 273,000 TEU's in 2007.

In and around Yangzhou port there are eighteen established economic zones. Of these, Yangzhou Chemical Industrial Park, Yangzhou Economic Development Zone, Yizhen Automobile Industrial Park, and Jiangdu Automobile and Autoparts Industrial Park are the most important to the economic development of the city. Estimates show that the Chemical Park is responsible for almost 70% of all exports for the port.

The charts below highlight Yangzhou port's throughput.

Figure 7: CARGO THROUGHPUT OF YANGZHOU PORT 2005-2020

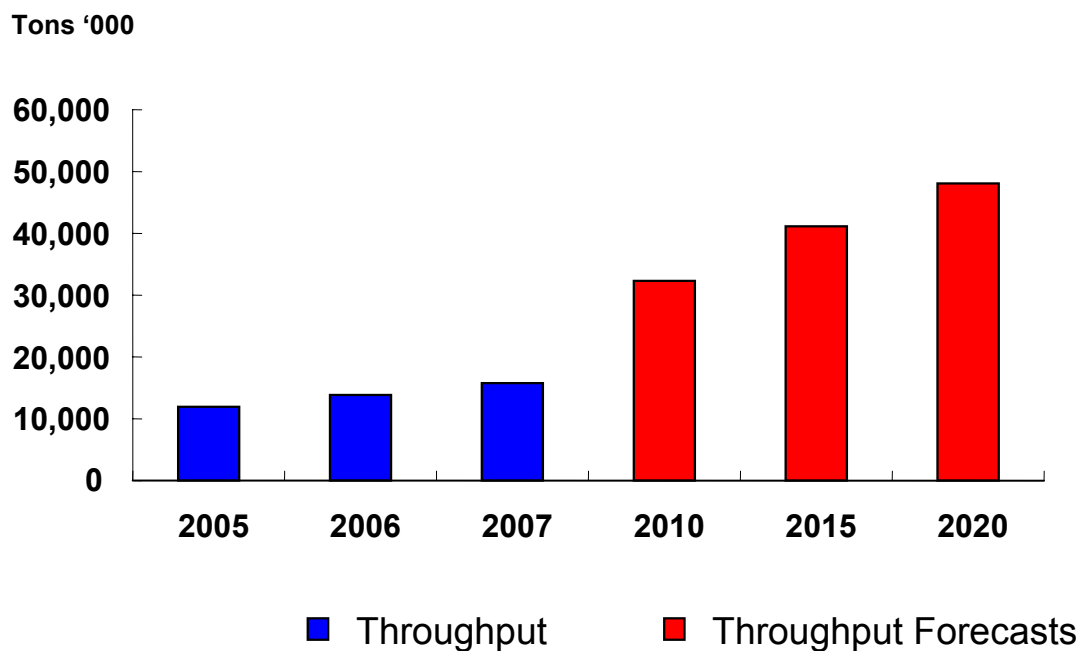
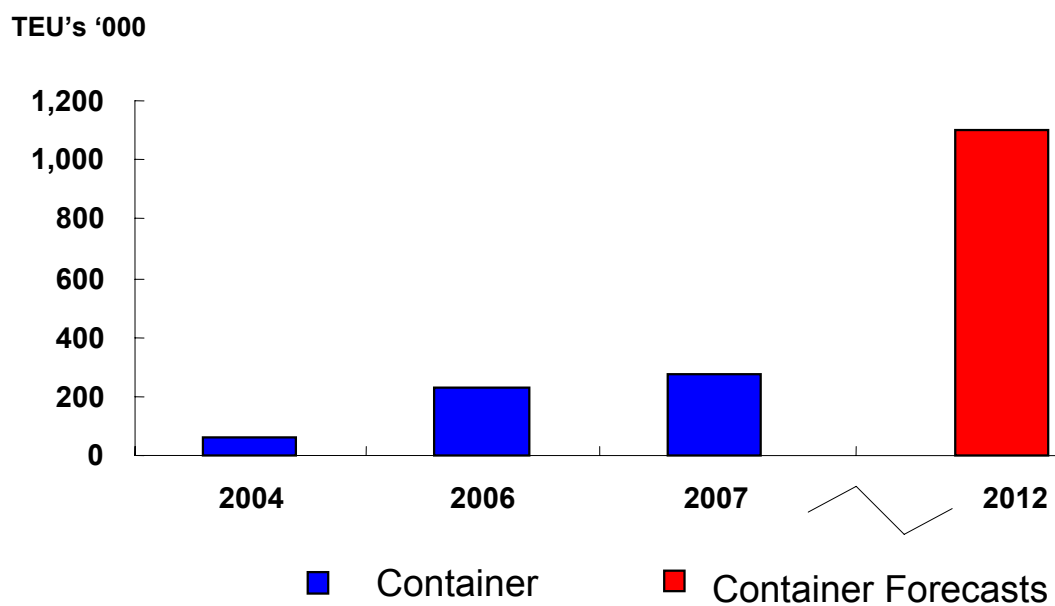


Figure 8: CONTAINER THROUGHPUT OF YANGZHOU PORT 2004-2012



Conclusion

The ports of Zhenjiang and Yangzhou have both prospered greatly from the development of the Yangtze Delta area. As the delta continues to receive investment, and manufacturing expands into lower cost regions along the Grand Canal, the demand for shipping services (especially domestically) will only increase. Despite a forecasted increase in capacity, however, these ports are unlikely to expand beyond their current roles as smaller transshipment ports along the Yangtze. Nonetheless, these ports will continue to require investments as they grow.

In our next installment we will continue west to examine the port of Nanjing.

For more information regarding inland ports of the Yangtze River, please visit our website at www.chinavest.com.