

Outlook

There are enough project opportunities for China to reach a container capacity of 170 million TEU by 2010

A list of possible container port expansions is included in Exhibit 2.29, which shows 62 possible new container berths with an annual capacity of 52 million TEU. With the 2007 container throughput of 114.7 million TEU, it would seem that there are enough project opportunities for China to reach a container capacity of 170 million TEU by 2010.

Exhibit 2.29: Possible container terminal expansions

Port	Terminal	No of berths	Forecast new capacity (thousand TEU)		
			2008	2009	Post 2009
Dalian	Dayao Bay (15&16)	2			1,600
Dalian	Dayao Phase III	5	1,600	2,400	
Dalian	North Harbour	2			1,600
Ningbo	Daixie	2	800	800	
Ningbo	Beliun V	4	1,600	1,600	
Ningbo	Jintang Island	5			3,200
Qingdao	Qianwan IV	4	2,400	800	
Qingdao	Qianwan	4	800	800	
Shanghai	Yangshan	4	4,000	3,000	
Shenzhen	Shekou III	3	800	800	
Shenzhen	Dachan Bay I	5	2,000	3,000	
Shenzhen	Dachan Bay II	4		2,000	2,000
Shenzhen	Yantian III	5	2,000	2,000	
Tianjin	Beingangchi II	3		2,400	
Tianjin	PSA Int.I	6	2,400	2,400	
Xiamen	Haicang 14-17	4		3,200	
Total		62	18,400	25,200	8,400

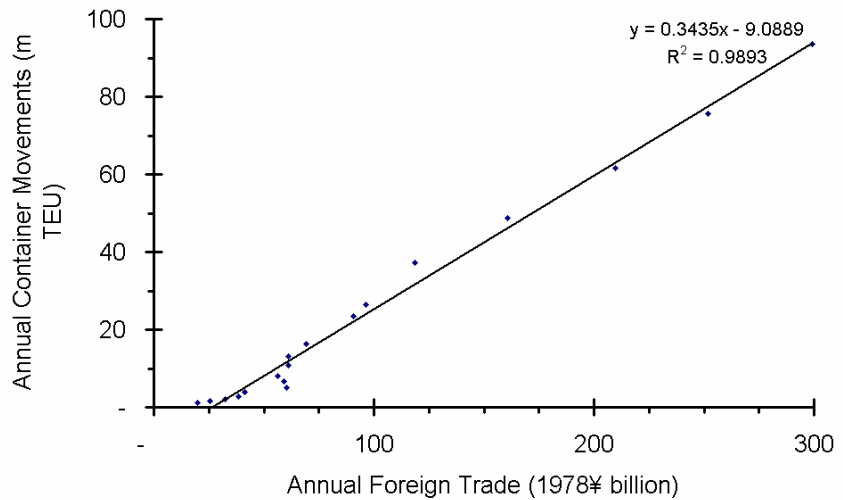
Source: *Urandaline* analysis.

Will 170 million TEU by 2010 be sufficient?

But will 170 million TEU by 2010 be sufficient? The graph in Exhibit 2.30 attempts to answer this question. It compares China's annual movements of containers with the country's foreign trade. The foreign trade data, which cover the period since 2006, have been adjusted for inflation.

Exhibit 2.30: China's foreign trade and its container movements

Strong correlation between container movements and foreign trade



Source: China Statistical Yearbook (2007).

The requirement of 170 million TEU by 2010 implies an annual foreign trade turnover of ¥245,565 billion

The graph in Exhibit 2.30 shows a high degree of correlation ($R^2=0.9893$) between the number of container movements and the amount of foreign trade. Using the relationship implied by the data in Exhibit 2.30 and the requirement of 170 million TEU by 2010 implies an annual foreign trade turnover of ¥521.37 billion in 1978¥, equivalent to ¥245,565 billion in 2007¥. China's foreign trade would need to grow at an annual average rate of 14.9 per cent to achieve ¥245,565 billion in 2010. This is a slower rate of growth than that in the previous five years, which has averaged 21.6 per cent per year. In the previous five-year period (1996-2001), China's foreign trade expanded at an annual average rate of 11.5 per cent.

Urandaline expects serious bottlenecks to emerge at China's container terminals

While China is not likely to sustain the trade growth of the past five years, it is almost certain to grow at a faster rate than 14.9 per cent pa, which suggests that congestion would become more noticeable at the country's container terminals. However, offsetting this is the possibility of incremental productivity improvements, especially at the smaller ports. It is possible that, over the next five years, there could be new capacity beyond that identified in Exhibit 2.29. Either way, such possibilities are unlikely to add significantly to forecast capacity, and *Urandaline* has concluded that over the coming three years, serious bottlenecks are likely to emerge at China's container terminals.

Others also see problems emerging around 2011

This view of the potential for serious bottlenecks at China's container terminals is supported by a recent study by Ocean Shipping Consultants (OSC), who expect that container terminals in China will face the problem of insufficient

capacity after 2011. Although the United States economic fallout has affected export trade, rising international commerce doubled China's terminal volumes in 2007. OSC points out that ports on the east coast, such as Shanghai, Ningbo and Xiamen may face capacity shortage from the beginning of 2011.¹³

Developments along the Yangtze River could stress capacity at the hub terminals at Shanghai

Because more than 40 per cent of the containers transported along the Yangtze River are trans-shipped at Shanghai for onward transport to foreign destinations, any increase in shipping activity along the river would add to the pressure on container hub ports.¹⁴

A large new iron ore and coal port is being developed at Caofeidian

There are a number of new bulk-cargo port projects, the largest of which is a new iron ore and coal port at Caofeidian, south of the Jingtang port near Tangshan, 225 km from Beijing. The site has good rail links and natural deepwater channels suitable for vessels exceeding 250,000 dwt. The first phase, of 50 mtpa, is now operational; it has two iron ore berths, each with a channel depth of 23 metres and a draught of 25 metres. But the ultimate objective, which is estimated to cost ¥32.0 billion, is to develop 16 deepwater berths with an aggregate capacity of 200 mtpa, including a 6-mtpa liquefied natural gas (LNG) berth and a 350,000-dwt crude oil facility.

Caofeidian will relieve pressure on Qinhuangdao

Caofeidian will include dedicated coal-handling facilities which should relieve pressure on Qinhuangdao, northern China's largest coal port. Accordingly, the project will include a branch rail line linking the Datong to Qinhuangdao railway to Caofeidian port. Shenhua Coal will construct a 930-km railway, with a design capacity of 150 mtpa, linking its northwest China coal mines with Caofeidian.

Shougang Group will relocate most of its existing steel production facilities to Caofeidian

Subsequent expansions of Caofeidian could see it become a major national iron ore and steel centre. The Beijing-based Shougang Group, one of China's largest steelmakers, is relocating its existing production facilities to Caofeidian.

The new bulk-handling ports will be built by steel and coal producers

Bulk ore ports do not attract foreign investors in the same way that container terminals are able to, so all funding for China's bulk cargo expansions must come from domestic sources. These are principally steelmakers, which import ever-growing quantities of iron ore, and power utilities, which consume large quantities of coal. The Shenhua Coal Company plans to invest in the new Caofeidian coal terminal, and Baosteel has a financial stake in Majishan.

¹³ *China to encounter insufficient container capacity in 2011*, News Track Daily, 18 February 2008.

¹⁴ This possibility is analysed in Chapter VI.

Possible new bulk-handling ports in the Zhou Shan Archipelago

Daishan County in Zhejiang is seeking investors to develop several bulk commodity port projects in the Zhou Shan Archipelago. The Archipelago consists of more than 400 islands, the largest of which, Daishan Island, is 63 km from Ningbo and 32 km from the Yangshan container terminal. The local authorities are seeking to capitalise on the relative lack of deepwater berths around the Yangtze industrial area by developing oil, ore and coal storage with trans-shipment facilities. The coastline around Daishan includes 69 km with a water depth of 10 metres, 9.5 km with a depth of 15 metres and 13.5 km with a water depth of more than 20 metres.

The Huangze and Sheyimen harbours are being promoted as ideally suited for vessels exceeding 300,000 dwt

The Huangze and Sheyimen harbours in particular are being promoted as ideally suited for vessels exceeding 300,000 dwt. The Huangze harbour is sheltered by other islands and has a depth of 23 metres in the channel and 30 metres in the harbour. The planned facility includes a 340-metre-long berth, 300,000-dwt discharge berth storage tanks and two unloading berths for 20,000-dwt to 30,000-dwt vessels.

The north entrance to Sheyimen is 20 metres deep, and the south is 14 metres deep, allowing a fully laden 300,000-dwt carrier to enter, unload and exit without having to change direction.

Island-based trans-shipment centres have some appeal in terms of China's geography

Other developments are proposed for Daishan, Changtu and Dajiaoshan. The concept of island-based trans-shipment centres has some appeal in terms of China's geography. Hub terminals can be built on cheaper land, and the deeper water surrounding offshore islands permits the entry of larger vessels which can then trans-ship to smaller vessels for distribution to feeder ports.

A 20-mtpa ore trans-shipment terminal has been proposed for Shulang Island

Another potential development involves a 20- mtpa ore trans-shipment terminal on Shulang Island. The plans envisage a 50,000-dwt discharge berth, 340 metres long, and two unloading berths with more than 480 metres of quay.

Investment opportunities

A dynamic global shipping centre growing at more than 20 per cent per year

China has become one of the world's most dynamic shipping markets, with ocean shipping handling 95 per cent of the country's foreign trade. Growth in both container and bulk cargo throughput has been substantial over the past ten years, more than double the growth of GDP. By the end of 2006 China had 12 ports with an annual handling capacity of more than 100 million TEU each, and it now has the largest