上海国际航运研究中心
SHANGHAI INTERNATIONAL SHIPPING INSTITUTE

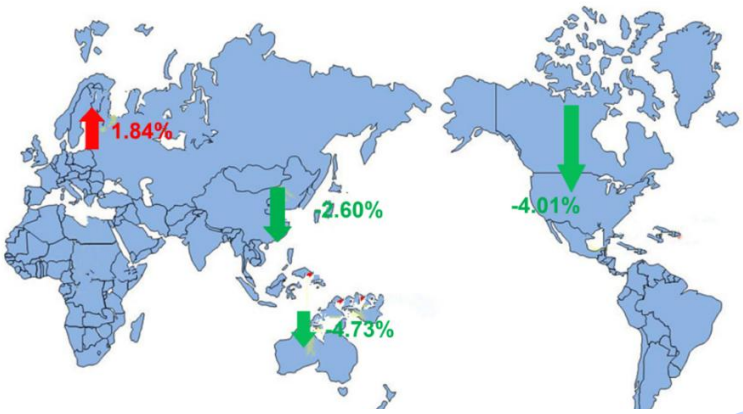
Subsided by Construction Project of Shanghai University Knowledge Service Platform (ZF1209)

Global Port Review

Quarter 1·2019

——Global economy exhibited a downward trend and port production dipped overall.

✧ Growth Rates of Cargo Throughput of Major Ports



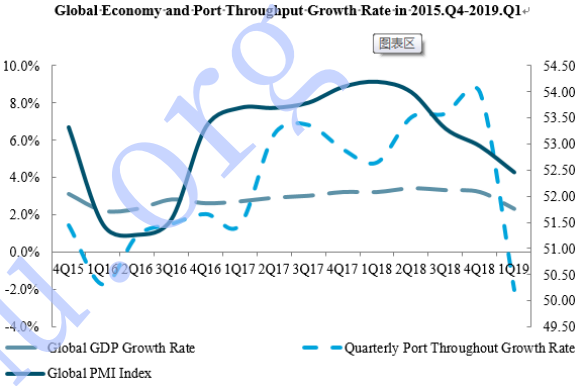
- **Production of major global ports dipped.** The global economy exhibited an evident downward trend in Quarter 1 2019, with weak growth in major economies, continued depression in international trade and investment, manufacturing ex-growth and dramatic declines in multiple economic and trade indicators. As a result, the world's major ports were in an overall recession of production.

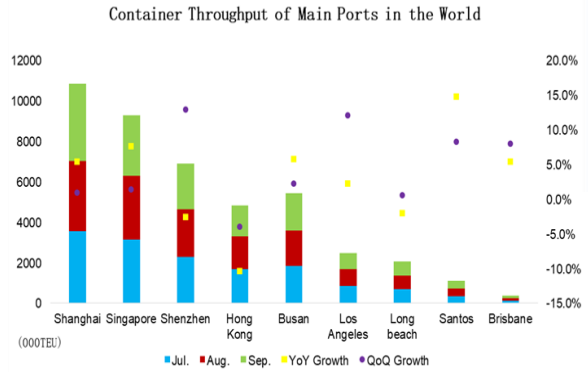
- **Global major terminal operators slowed down in production.** In Quarter 1 2019, COSCO Shipping Ports, China Merchants Port and other major terminal operators in the world exhibited slowdown in production growth year-on-year. Except DP World which suffered negative growth in throughput, all other terminal operators managed to sustain low-rate growth. In addition, terminal operators continued to explore the extension of supply chain logistic services beside their main businesses of handling operations.

Topics Inside ▶▶▶

- Path of Port Transformation from a Digitization Perspective
- Strategic Prospect of Global Shipping Hubs

Panorama on Global Ports ▶▶▶





Side Products ▶▶▶

- Rankings of Global Ports with Greatest Potential
- Comments on comprehensive services of global container ports

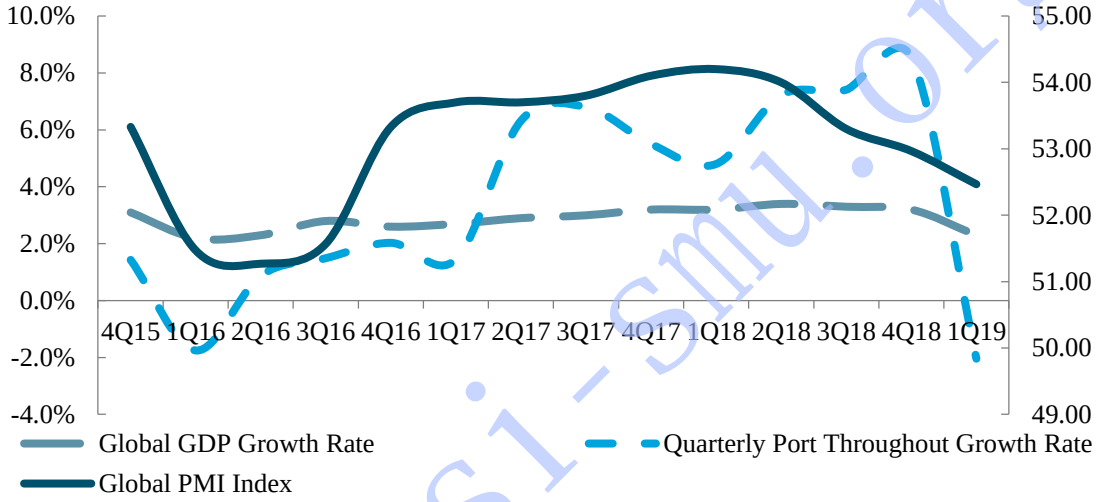
Port Development Dept. ▶▶▶

Zhao Nan, Xie Wenqing,
Zhang Jing, Chen Weijie.
Tel: +86(0)21-65853850*8033
Email: rockyzhao1986@163.com
Fax: +86(0)21-65373125

Ⅰ. Comments on Production of Global Ports in Q1

1.1 Overview of global ports operation

The global economy exhibited an evident downward trend in Quarter 1 2019, with weak growth in major economies, continued depression in international trade and investment, manufacturing ex-growth and dramatic declines in multiple economic and trade indicators. The International Monetary Fund (IMF) tuned down again the yearly economic growth projection to 3.3%, from the 3.5% projected in January, in its global economic prospect report released in April. As a result, the world's major ports1 were in an overall recession of production.



Note: Left coordinate represents quarterly port throughout growth rate and global GDP growth rate. Right coordinate represents global PMI index.

Source: The website of The Ministry of Transport of People's Republic of China, JPMorgan and China Bank.

Figure 1-1 Global Economy and Port Throughput Growth Rate in 2015.Q4-2019.Q1

Into the future, as major global economies are expected to continue the sluggish growth, it is projected that all major economies may record lower growth in 2019. The U.S. economy will lose steam for growth, European economy will continue the recession and emerging economies will welcome polarization in growth. The escalating Sino-U.S. trade frictions will increase pressure on global port production in Quarter 2.

1.1.1 Ports in Asia show discrepant developments

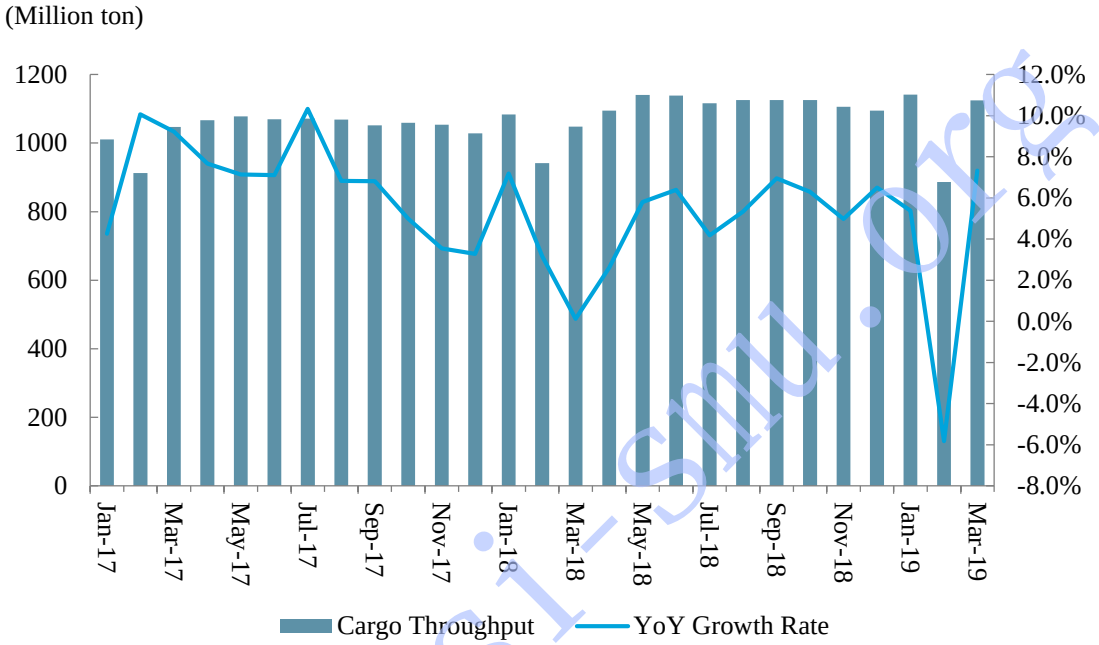
Asia economy maintained stable performance in Quarter 1 overall. Japan sustained sound economic stability, and China's economic growth was slightly beyond expectation. The quarterly economic growth in Korea went down again because of its sluggish exports. Emerging economies in Asia enjoyed improved financial stability with stable economic growth. As a result, the cargo

[1] The world's major ports in this report only cover those with statistic data available, including major global cargo ports. See the table in the appendix for a detailed list of ports.

throughput of major ports in Asia declined by 2.6% year-on-year.

- **China's ports enjoy cargo throughput growth on a high base number**

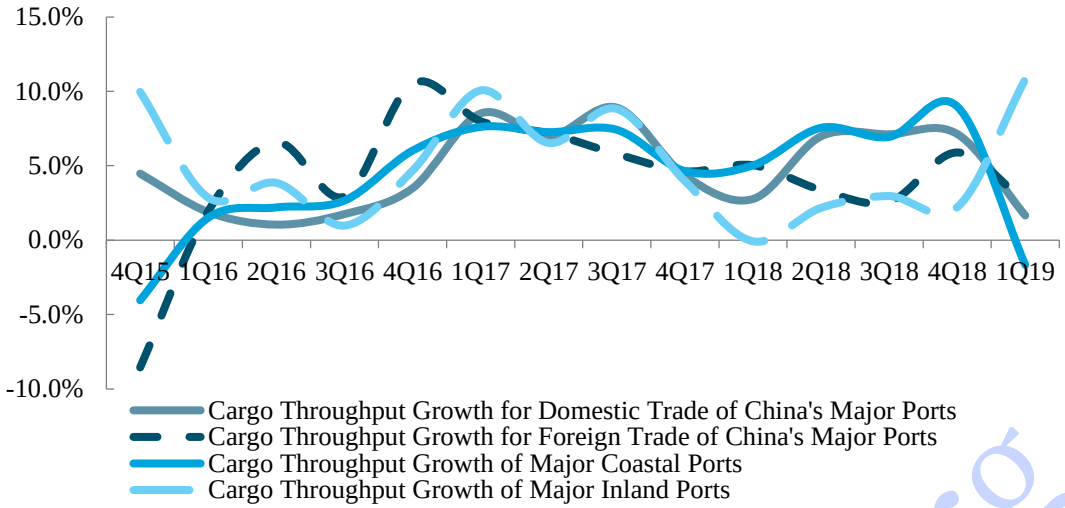
China maintained stable economic operation in Quarter 1, with its GDP growing by 6.4% year-on-year. Trade-wise, China's import and export values in Quarter 1 totaled 7.01 trillion yuan, rising by 3.7% year-on-year. The growth rate marked a sharp decline from the 10% for the same period last year, with the import value growth standing at 0.3%. In Quarter 1, China's ports of a designated scale or above handled 3.15 billion tons of cargoes, increasing by 6.6% year-on-year.



Source: Websites of Port Authorities, sorted by SISI.

Figure 1-2 Cargo Throughput and Growth Rate of China's Ports during Jan-17 to Mar-19

A major contributor to the stable growth was the pickup of cargo throughput for domestic trade. Among coastal and inland river ports, inland river ports recorded a cargo throughput of 990 million tons, increasing by 15.4% year-on-year. Multiple inland river ports such as Zhenjiang, Nantong and Wuxi in Jiangsu province saw their cargo throughput grow by more than 10% in Quarter 1. From the domestic and foreign trade point of view, the cargo throughput for domestic trade surged by 8.4 % year-on-year, a rise of 5.6 percentage points year-on-year. The cargo throughput for foreign trade totaled 140 million tons, a small rise of 3.2% year-on-year. This is a direct result of the declined import and export values of China in February.



Source: Websites of Port Authorities, sorted by SISI.

Figure 1-3 Cargo Throughput Growth Rate of China's Ports in 2015.Q4-2019.Q1

From the cargo throughput rankings, we can see that the rankings of ports in mainland China in Quarter 1 2019 underwent great changes. Except Ningbo-Zhoushan Port, Shanghai Port and Tangshan Port which secured their positions in the top 3, all other ports were reshuffled to varied degrees. Inland river ports demonstrated sound growth. A large number of illegal cargo owner terminals along the Yangtze River were shut down in a regulatory campaign that started from Quarter 3 2018, and a high proportion of cargo sources turned to large and medium-sized ports. Zhenjiang Port, for example, welcomed 82 percent growth in throughput in Quarter 1.

The ports suffering declines are mostly bulk ports. The sluggish imports of major bulks to mainland China in Quarter 1 dealt a heavy blow to ports with bulks as their dominant cargoes. According to China's General Administration of Customs, the imports of iron ores, coal and soybeans in Quarter 1 fell to 261 million tons by 3.5%, 74.63 million tons by 1.8% and 16.75 million tons by 14.4%, respectively. This also led to throughput declines of varied degrees at Yingkou Port, Tianjin Port and Qinhuangdao Port. Specifically, Qinhuangdao Port dropped off the top 20 list due to a dramatic decline, and Yingkou Port also fell by more than 30%.

Table 1-1 China's above-scale port cargo throughput rankings from Jan to Mar in 2019

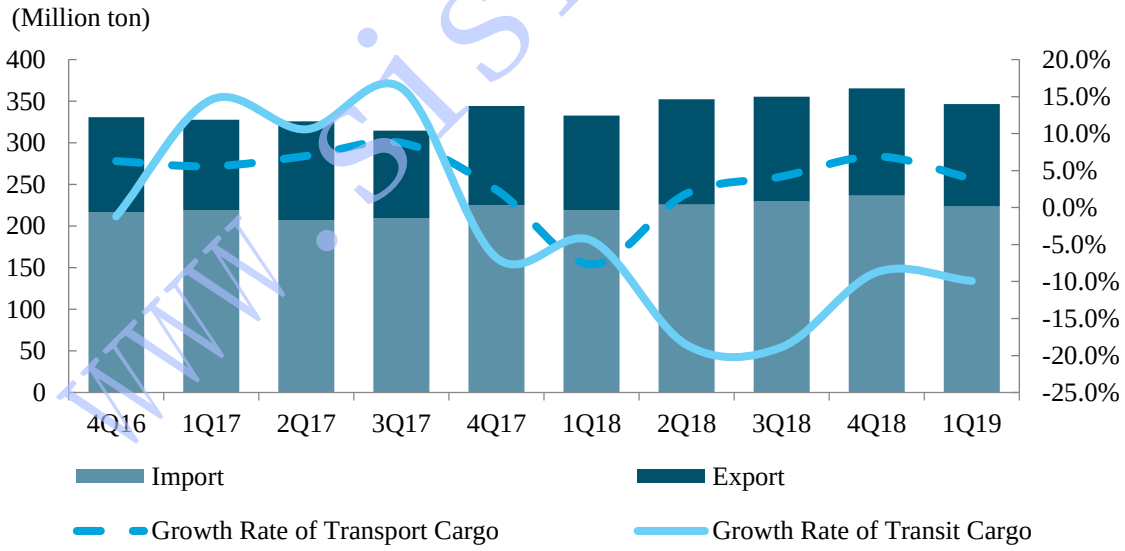
Ranking	Port	2019Q1 (Million ton)	YoY Growth Rate(%)
1（1）	Ningbo Zhoushan	255.27	0.50%
2（2）	Shanghai	175.06	4.10%
3（4）	Tangshan	161.87	12.90%
4（3）	Suzhou	150.66	3.10%
5（5）	Guangzhou	142.08	10.30%
6（6）	Qingdao	138.14	8.30%
7（7）	Rizhao	113.74	4.30%
8（8）	Tianjin	105.43	-3.10%
9（10）	Yantai	93.98	18.50%

10（11）	Dalian	81.37	3.10%
11（12）	Huanghua	67.69	1.20%
12（25）	Zhenjiang	66.80	82.00%
13（9）	Yingkou	66.62	-31.10%
14（17）	Nantong	64.65	16.50%
15（13）	Taizhou	62.38	4.00%
16（15）	Nanjing	58.65	4.30%
17（19）	Lianyungang	58.56	5.70%
18（16）	Shenzhen	57.40	1.10%
19（14）	Zhanjiang	56.44	-2.50%
20（19）	Beibuwan	56.21	11.60%

Source: The Ministry of Transport of People's Republic of China, sorted by SISI.

- **Cargo throughput growth at ports in Korea glides**

Korea economy continued the drop in Quarter 1 2019, with the nation's GDP declining by 0.3% quarter-on-quarter. Major causes to the economic downturn were the reduced exports and investments. The sharp decline of electronic equipment exports dragged down the nation's exports by 2.6% quarter-on-quarter. Korea experienced four declines in a row in terms of monthly export value since last December, and its machinery and transport equipment investment was also stagnant, leading to a 10.8% reduction quarter-on-quarter in equipment investment value in Quarter 1, recording the steepest fall since 1998. Against this backdrop, the cargo throughput of Korea grew by mere 3.5% year-on-year, hitting 123 million tons.

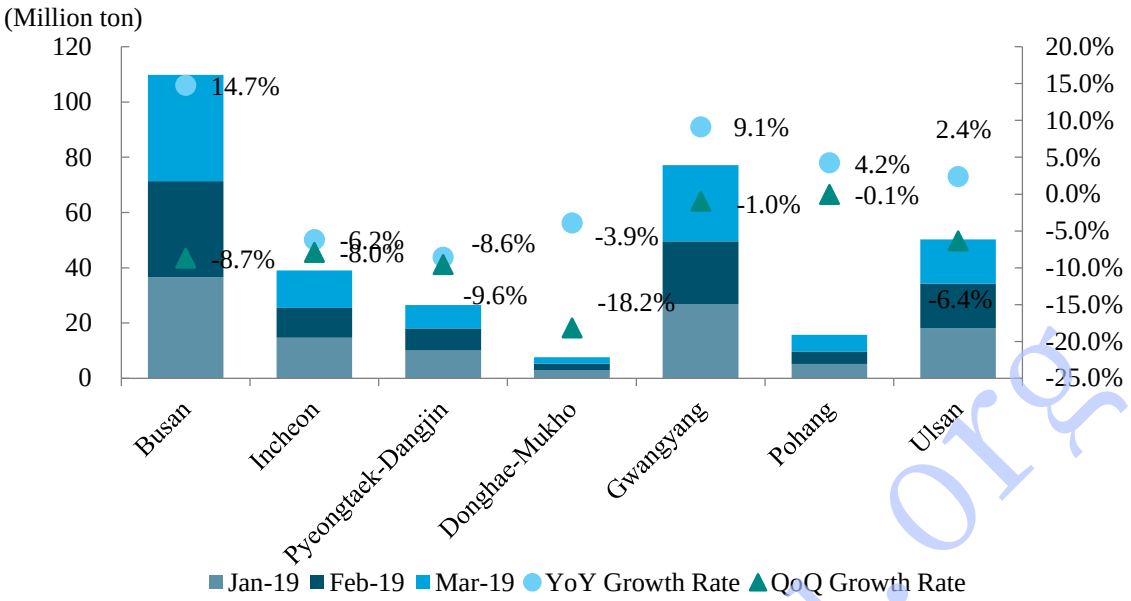


Source: Websites of Port Authorities, sorted by SISI.

Figure 1-4 Cargo Throughput and Growth Rate of Ports of South Korea in 2016.Q4-2019.Q1

Port specific, most ports in Korea experienced negative growth in throughput, except Port of Busan which recorded growth against the trend. Its cargo throughput for exports and that for transshipment both grew by more than 10% - namely 19.8% and 13.5% to be precise. Among the exports, oil refined products, chemical products and rubber products enjoyed robust growth by

39.6%, 15.6% and 24.5% year-on-year, respectively. This drove the throughput of the port in Quarter 1 to surge by 14.7% to 110 million tons.



Source: Websites of Port Authorities, sorted by SISI.

Figure 1-5 Cargo Throughput and Growth Rate of South Korea's Major Ports in 2019.Q1

- **Ports in Southeast Asia post discrepant performance**

Emerging economies maintained stable growth overall but their ports posted discrepant performance. Throughput-wise, ports in the Philippines handled a total of 59.28 million tons of cargoes, a rise of 6.4% year-on-year. Low-value-added dry bulks and other cargoes are shifting to ports around Singapore, leading to continuous throughput declines at Port of Singapore, namely to 152 million tons in this quarter, down by 2.59% year-on-year.

Table 1-2 Port cargo throughput and growth rate of Southeast Asian economy in 2019.Q1

Economy	2019Q1 (Million ton)	2018Q1 (Million ton)	YoY Growth Rate	QoQ Growth Rate	2018Q4 (Million ton)
Philippine	59.28	55.70	6.43%	-11.03%	66.63
Singapore	151.91	155.95	-2.59%	-4.82%	159.61

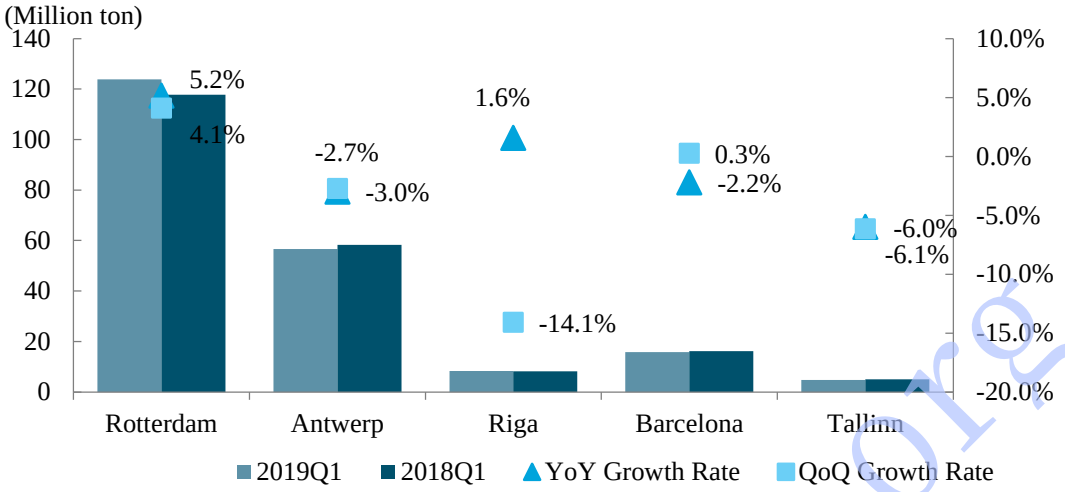
Source: Websites of Port Authorities, sorted by SISI.

1.1.2 Growth rates of European ports slow down

GDP of the Euro Zone grew by 0.4% in Quarter 1 2019, a pickup from the level at the end of last year, but the growth margin was too minor to form a sunnier view. Major European ports recorded a cargo throughput of 209 million tons, increasing by 1.8% year-on-year.

Port specific, Port of Rotterdam enjoyed stable growth in throughput this quarter, by 5.2% year-on-year to 124 million tons, primarily as a result of the increasing throughput of crude oil and coal. The rising import tax for iron and steel by the United States slashed the iron and steel imports at Port of Antwerp. Additionally, the poor bulk trade contributed to the reduction of iron ore and

coal throughputs which fell by 22.9% and 16.5%, respectively. As a result, the throughput of Port of Antwerp in Quarter 1 even declined by 3.0% to 56.58 million tons. Port of Barcelona, Port of Riga and Port of Tallinn also recorded declines to varied degrees.

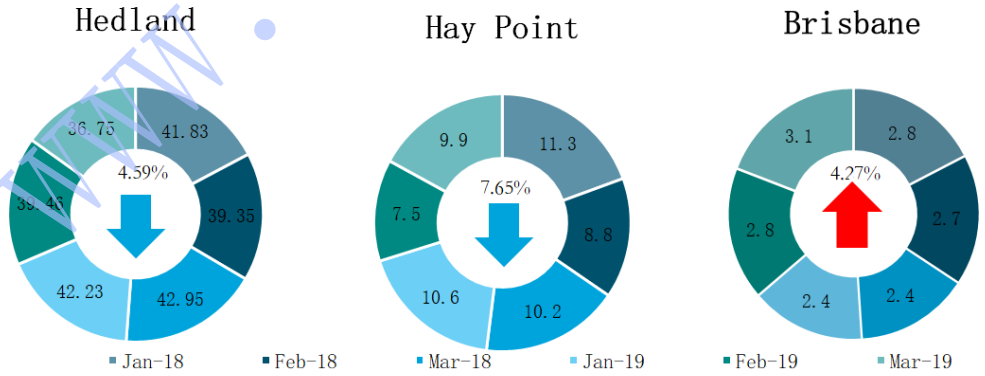


Source: Websites of Port Authorities, sorted by SISI.

Figure 1-6 Cargo Throughput and Growth Rate of European Major Ports in 2019.Q1

1.1.3 Ports in Australia suffer throughput declines

Ore export, a pillar industry of Australia, suffered dramatic declines since the second half of 2018. The nation's inflation data was not promising, with the CPI for Quarter 1 lower than the expected 0.2%, the worst performance since Quarter 1 2016. The dual impacts of the two contributed to an obvious slowdown in Australia's economic growth. In Quarter 1 2019, the slump of the international dry bulks trade market and the hurricanes to multiple ports added to the blows to ore exports of Australia. Under the joint impacts of these factors, major ports in Australia only handled 155 million tons of cargoes in Quarter 1, plunging by 4.7% year-on-year.



Unit: Million Tons

Note: The left semicircle represents the throughput in 2019, the right semicircle represents the throughput in 2018.

Source: Websites of Port Authorities, sorted by SISI.

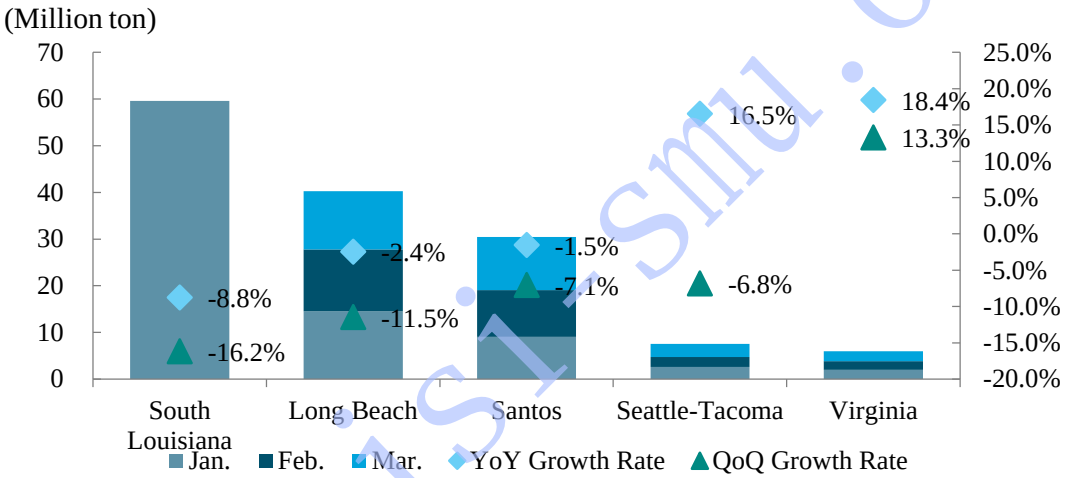
Figure 1-7 Cargo Throughput and Growth Rate of Australian Major Ports in 2018.Q1 and 2019.Q1

1.1.4 Throughputs of ports in Americas fall across the board

- **Ports in North America demonstrate polarized growth**

In Quarter 1 2019, the U.S. failed to continue the favorable performance from last year and posted economic growth slowdown as a result of the reduced consumption growth and falling investment in merchandise houses. Canada also tuned down its economic growth estimate for 2019 to 1.5% because of the dispirited oil exports and recession in direct foreign investment among other factors. The dim prospect of North America economic performance also curbed the throughput growth at ports in the region.

Specifically, Seattle-Tacoma Seaport enjoyed a 16.5% surge in throughput this quarter boosted by the fast growth of containerized cargoes (11.1%) as well as sundries and ro-ro cargoes. Port of Long Beach, however, suffered a 2.4% decline of throughput to 40.26 million tons because of the advance shipment of cargoes for the purpose of evading impacts from the Sino-U.S. trade frictions.



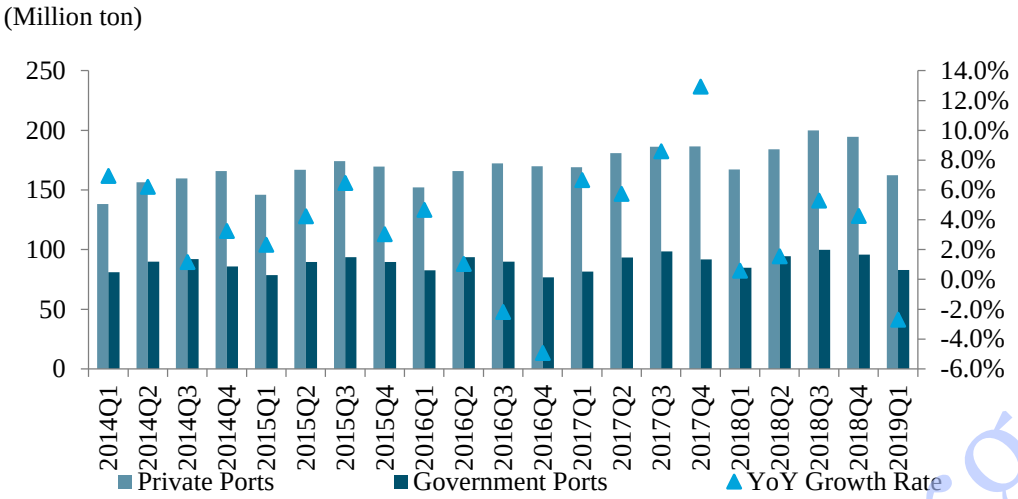
Note: The throughput of South Louisiana is the third-quarter throughput

Source: Websites of Port Authorities, sorted by SISI.

Figure 1-8 Cargo Throughput and Growth Rate of Major American Ports in 2019.Q1

- **Ports in Latin America enjoy throughput growth yet by minor margins**

The situation of Latin America was overall not promising as the region's economic growth remained low. There was a high uncertainty in the new policies rolled out by the Brazilian government which also postponed its reform schedule. Besides, China resumed soybean imports from the U.S., undermining the soybean export growth of Brazil. Ports in the country, following a short-lived pickup in 2017 boosted by the overall economic performance, fell into negative growth in terms of throughput again. In this quarter, the throughput of ports in Brazil declined by 2.7% year-on-year to 245 million tons, hitting a record low since Quarter 4 2016.



Source: website of Brazilian Port Authority, SISI

Figure 1-9 Cargo Throughput and Growth Rate of Major Brazilian Ports in 2019.Q1

1.2 Container throughput of global ports

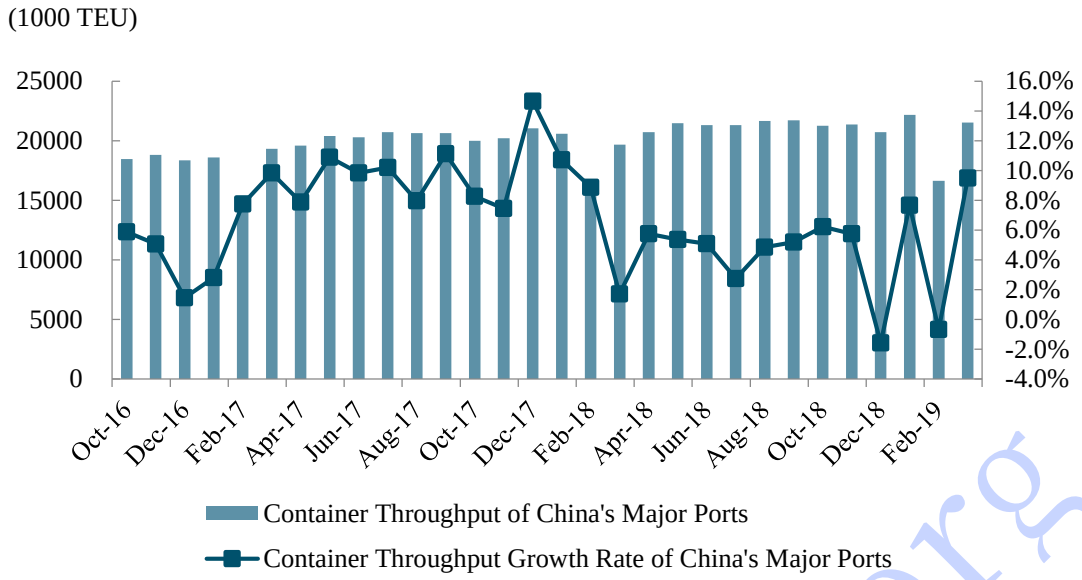
The container throughput of global ports in Quarter 1 2019 grew by 3.9%year-on-year, a decline of 0.2 percentage points year-on-year.

1.2.1 Economic growth in Asia slows down

Major economies in Asia demonstrated slower economic growth in Quarter 1 2019. The import and export trade of China, Japan and Korea grew slower, and Japan and Korea even fell to negative growth, namely by 2.4% in exports and 4.6% in imports in the case of Japan. Korea exports fell by more than 8% year-on-year. Both China and Korea suffered declines in growth of container trade. Container ports in Asia totaled 121 million TEUs of container throughput, rising by 3.0% year-on-year, a decline of 2.7 percentage points year-on-year.

- **Ports in mainland China follow a "V-shaped" curve in container throughput**

The container throughput of ports in mainland China picked up growth in Quarter 1 2019, with ports of a designated scale or above handling 60.33 million TEUs of containers in total, rising by 6.1% year-on-year. The rate, though being a little lower than that of the same period last year, picked up to some extent compared with the previous two quarters.



Source: The Ministry of Transport of People's Republic of China, sorted by SISI.

Figure 1-10 Container Throughput and Growth Rate of China's Major Ports during Oct-16 to Mar-19

The container port rankings by throughput were roughly the same with the same period last year. Dalian Port and Yingkou Port in Liaoning province, which were in business resource restructuring for domestic-trade containers, witnessed their throughputs plummet by 4.8% and 10.2%, respectively, in this quarter. All the other ports on the list maintained growth, and Guangzhou Port, Qingdao Port, Xiamen Port and Suzhou Port even recorded growth rates of higher than 8%. It is worth mentioning that Suzhou Port, which is enjoying stable growth in both cargo and container throughputs, handled 1.56 million TEUs of containers in this quarter, a rise of 14.7% year-on-year.

Table 1-1 Ranking of China's Port Container Throughput in 2019.Q1

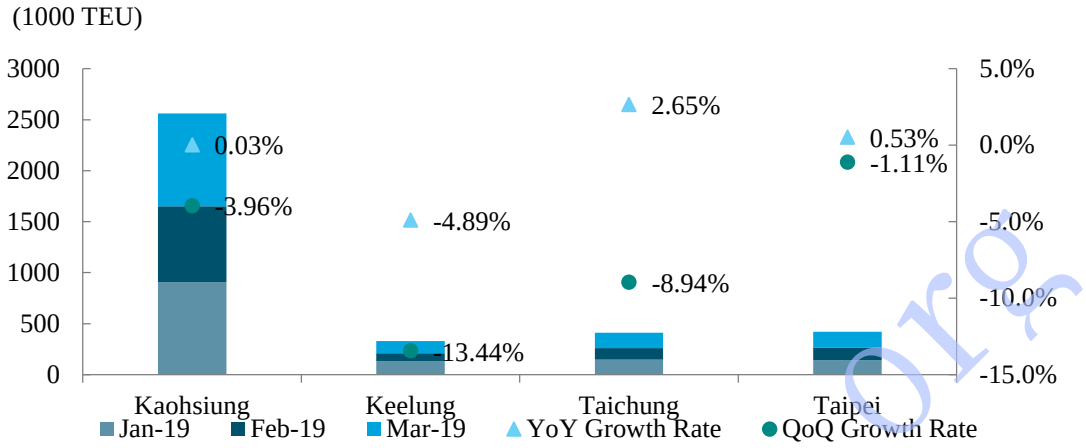
Ranking	Port	2019Q1(1000 TEU)	YoY（%）
1(1)	Shanghai	10420	7.0%
2(2)	Ningbo Zhoushan	6700	3.0%
3(3)	Shenzhen	6050	1.4%
4(4)	Guangzhou	5280	8.8%
5(5)	Qingdao	4940	8.6%
6(6)	Tianjin	3780	4.9%
7(7)	Xiamen	2690	8.1%
8(8)	Dalian	2110	-4.8%
9(10)	Suzhou	1560	14.3%
10(9)	Yingkou	1400	-10.2%

Source: The Ministry of Transport of People's Republic of China, sorted by SISI.

- **Ports in Chinese Taipei perform poor in terms of container throughput**

Chinese Taipei suffered slower economic growth caused by stagnant manufacturing, especially the stock adjustment of semiconductor supply chain and weak sales of smart phones. The electronic

industry demand of Chinese Taipei (including electronic parts) was sluggish, with sliding capacity utilization and significant downturn in chemical materials, textile, machinery and equipment, as well as automobile and parts industries. The real growth of GDP of Chinese Taipei was 1.98% in Quarter 1, far lower than the market expectation.

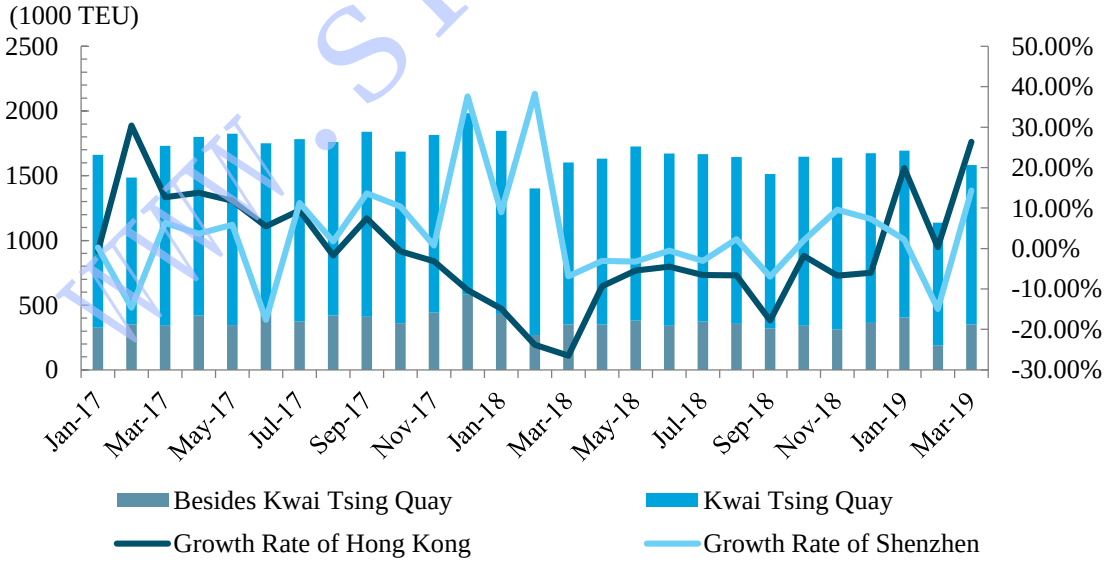


Source: Websites of Port Authorities, sorted by SISI.

Figure1-11 Container Throughput and Growth Rate of Ports in Chinese Taipei in 2019.Q1

- **Container throughput growth of Hong Kong, China, continues to slide**

Hong Kong's GDP increased by mere 0.5% in Quarter 1 due to the weakening internal and external demands, marking the worst performance in the past seven years. The gross cargo export value of Hong Kong, China, fell by 4.2% and the gross import value fell by 4.6% in Quarter 1. The container throughput of Hong Kong Port in the quarter slumped by 9.2% year-on-year to 4.44 million TEUs.

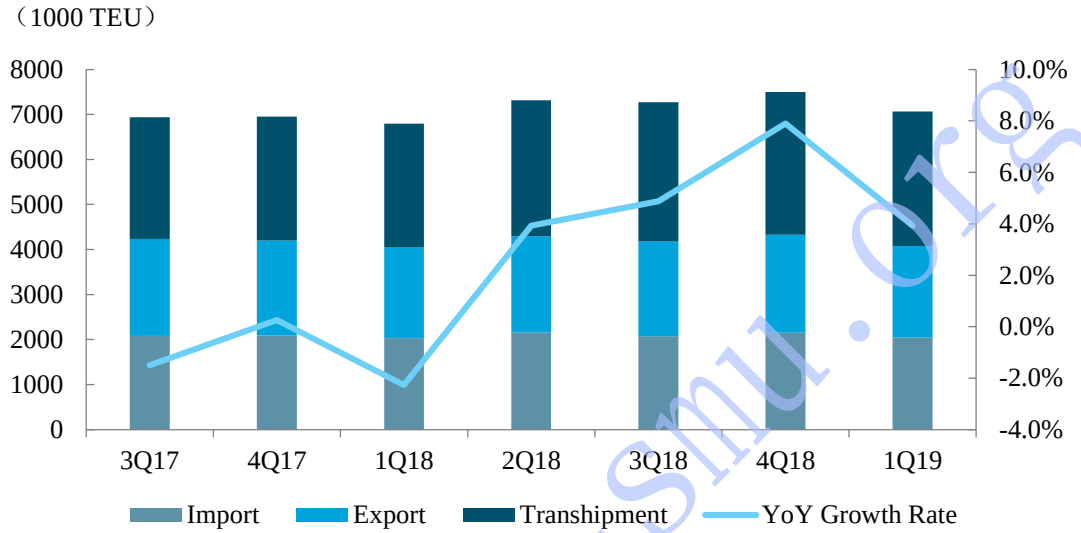


Source: Hong Kong Port Development Authority.

Figure 1-12 Container Throughput and Growth Rate of Hong Kong Port and Shenzhen Port during Apr.2017 to Sep.2018

- **Container throughput growth of Korea's ports slows**

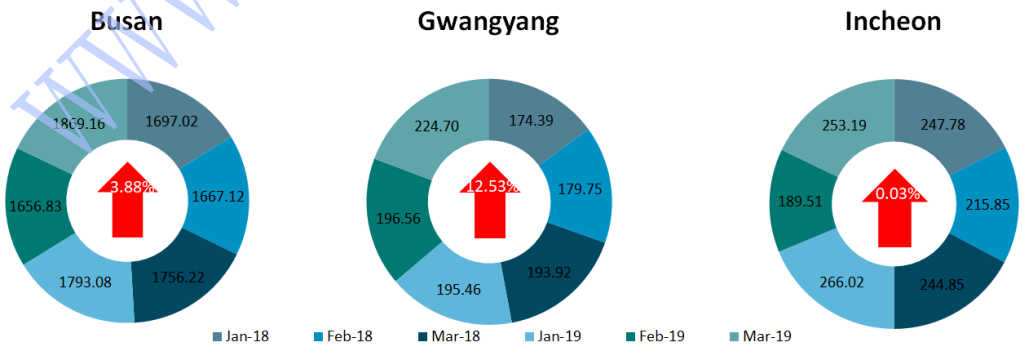
In Quarter 1 2019, Korea's economy shrank worse than expected, and its GDP declined by 0.3% quarter-on-quarter, recording the worst performance since Quarter 4 2008. Korea's container throughput growth in Quarter 1 slowed down significantly, with only 7.06 million TEUs of containers handled, growing by 3.9% year-on-year, a decrease of 4 percentage points quarter-on-quarter. The nation's container throughputs for import and export increased by only 0.8% and 1.1%, respectively, significant declines compared with the previous quarter.



Source: Websites of Port Authorities, sorted by SISI.

Figure 1-13 Container Throughput and Growth Rate of South Korea During 2017.Q3 to 2019.Q1

Port specific, amid the widespread growth slowdown in container throughput among ports in Korea, Port of Gwangyang achieved positive growth against the trend, with its container throughput in the quarter surging by 12.5% year-on-year to 617,000 TEUs. In the case of Port of Busan, however, its container throughput in the quarter only rose by 3.9% due to the sluggish import and export trade in Korea, the rate being lower than the average level of 5.70% in 2018.



Unit: Thousand TEUs

Note: The left semicircle represents the throughput in 2018, the right semicircle represents the throughput in 2017.

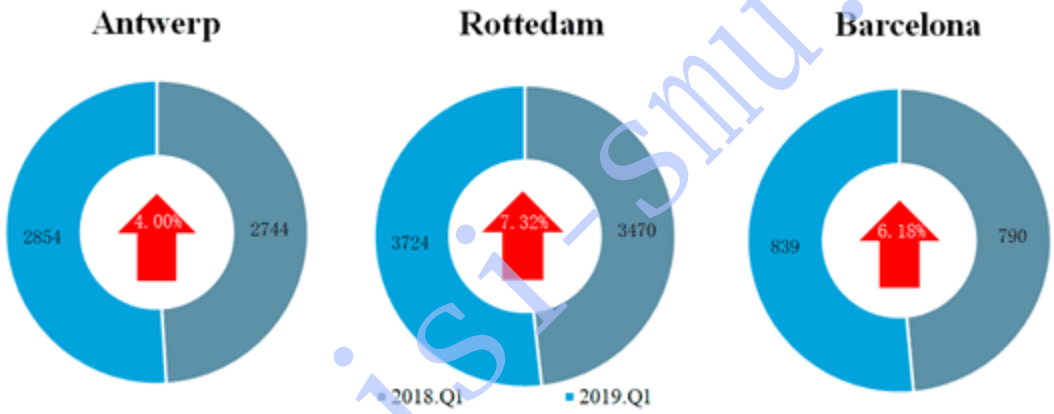
Source: Websites of Port Authorities.

Figure 1-14 Container Throughput of South Korea's Major Ports in 2019.Q1

1.2.2 Container throughput of European ports slips

Major container ports in Europe maintained moderate growth of throughput in this quarter. However, the unfavorable trade situations in Europe, the continued negative impact of Brexit and the postponement of the Brexit resolution, again, clouded the European economic and trade situations with uncertainties. According to Drewry, European ports handled 33.93 million TEUs of containers in total, a decline of 2.2% year-on-year.

Port of Rotterdam, the largest container hub in Europe, continued its good performance in 2018, with its container throughput rising by 7.3% year-on-year to 3.72 million TEUs. The container throughput growth of Port of Barcelona declined but remained high, namely at 6.2% year-on-year with 840,000 TEUs of containers handled, of which imported containers were the main driver with a growth rate of 8.1% year-on-year. The vibrant multimodal transport container business was also one of the main drivers for the rapid container throughput growth at Port of Barcelona in recent years. In Quarter 1, the port completed a total of 37,515 multimodal transport units (equivalent to trucks, platforms and trailers).



Unit: Thousand TEUs

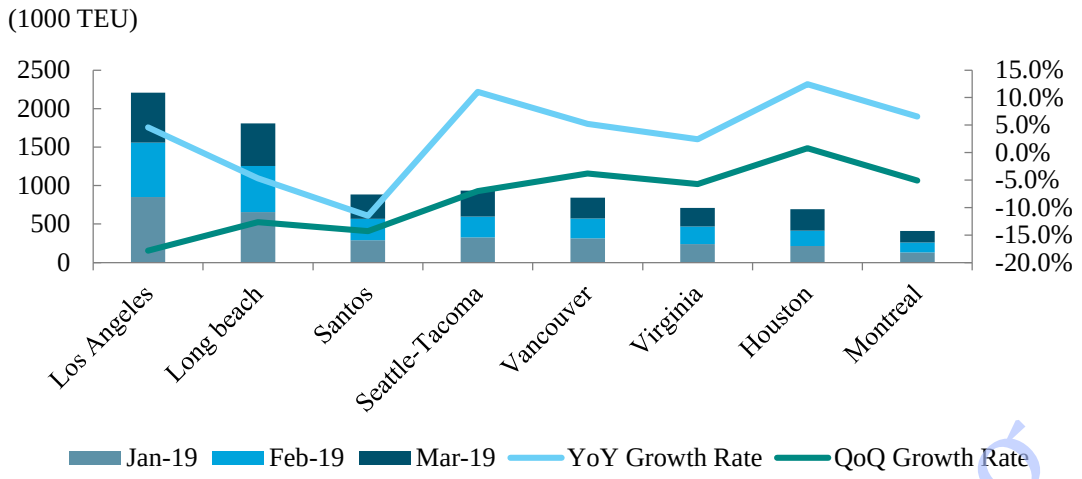
Source: Websites of Port Authorities.

Figure 1-15 Container Throughput of European Major Ports in 2019.Q1

1.2.3 Ports in North America witness slower growth

Major ports in North America totaled 7.6 million TEUs of container throughput, rising by 3.6% year-on-year, a decline of 1.1 percentage points year-on-year. Port specific, ports of Long Beach, Vancouver and Montreal among others in North America all experienced declines in container throughput growth to varied degrees.

Among them, Port of Long Beach suffered the steepest fall from a historical high of nearly 20% in Quarter 1 2018 to -4.7% year-on-year. A main reason behind the decline was the advance shipment of cargoes in Quarter 3 2018 which led to stockpiling in the upstream and downstream on the U.S.' domestic supply chain and the resulting lower demand. In February alone, the container loading volume for imports at ports of Los Angeles and Long Beach decreased by 10.2% year-on-year, a reduction of nearly 75,000 TEUs from that in February.



Source: Websites of Port Authorities, sorted by SISI.

Figure1-16 Container Throughput and Growth Rate of Major American Ports in 2019.Q1

1.3 Dry-bulk cargo throughput of global ports

The dry bulk trade market remained stagnant in Quarter 1 2019. The freight rates stayed low and BDI continued to fall to 635 points in February. Iron ore and coal in major dry bulks saw declined supply and demand at the same time. Only the bulk grain trade market picked up to some extent because of China's resumption of soybean imports from the U.S.. As a result, major dry bulk ports around the globe presented a downward trend. Coupled with environmental concerns in some countries which hence imposed limits on dry bulks handling volumes at ports, Qinhuangdao Port, Port of Antwerp, Port of Hedland and Port of Hay Point all demonstrated a declining trend in terms of dry bulk throughput.

Table 1-4 Dry Bulk Throughput of Global Major Ports in 2019.Q1

Port	1Q2019 (000 ton)	1Q2018 (000 ton)	YoY Growth Rate (%)	4Q2018 (000 ton)	QoQ Growth Rate (%)
Qinhuangdao	48470	57600	-15.9%	55810	-13.2%
Hedland	117290	122630	-4.4%	125480	-6.5%
Santos	13733	12290	11.7%	14560	-5.7%
Antwerp	3080	3380	-8.9%	3710	-17.0%
Rotterdam	19450	18800	3.5%	20950	-7.2%
Hay Point	28000	30320	-7.7%	30150	-7.1%

Source: Websites of Port Authorities, sorted by SISI.

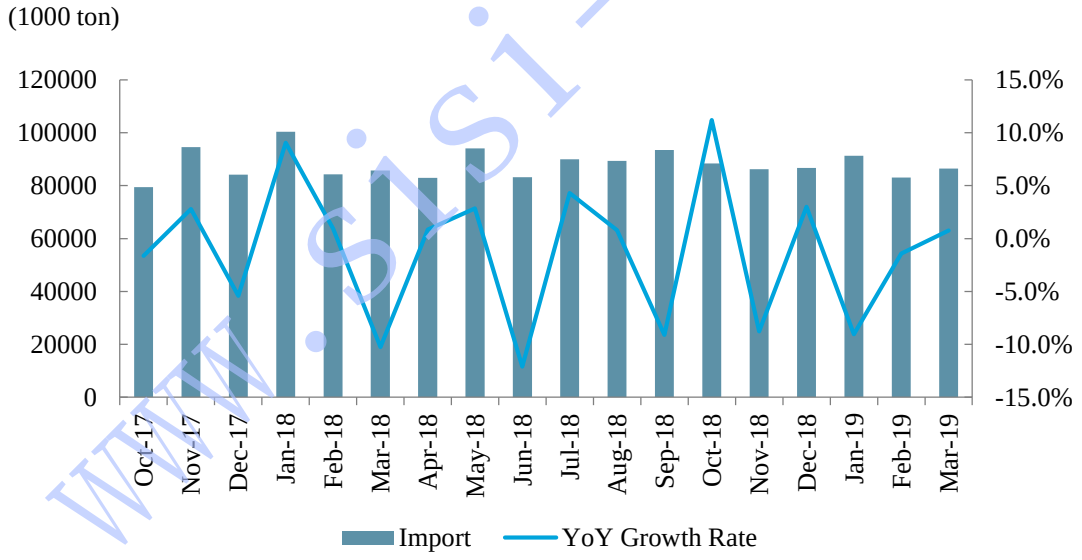
1.3.1 Iron ore throughput slides

The international iron ore trade suffered depressed supply and demand in Quarter 1 2019. The mine mishap of Vale led to production reduction of the company. The iron ore shipment volumes of

Australia's Rio Tinto and BHP Billiton decreased by 9% and 14%, respectively. The production reduction of the three major iron ore producers in the world directly led to iron ore supply strains globally, and iron ore prices soared, reaching a two-year high as of the end of March. The soaring price of iron ores caused by short supply has in turn suppressed the demand for iron ores.

- **China's iron ore imports grow at low rates in 2016**

China's iron ore market was relatively sluggish in Quarter 1 due to insufficient seasonal demand. From the supply side perspective, the earlier low inventories encouraged steel mills to replenish their iron ore inventories to prepare for the upcoming winter at the beginning of Quarter 1. Then the market turned weak. Construction sites were near shutdown because of the Spring Festival holiday, and the shipping market was in the doldrums. From the demand side perspective, the steel market entered the traditional winter storage period where the end demand shrank significantly, the current inventories of steel rose rapidly, the shipping demand declined, and the freight rate fell. Due to the high inventories before the holiday, the market was still consuming the pre-holiday inventories and the overall demand was yet to be restored. The coastal metal ore freight rate dropped slightly. In terms of environmental protection and production restrictions, though Tangshan and Wu'an areas among others recently tightened up the regulations, the overall regulatory effect was not as evident as the same period of last year. China's iron ore imports in Quarter 1 amounted to 260.76 million tons, down by 3.55% year-on-year.



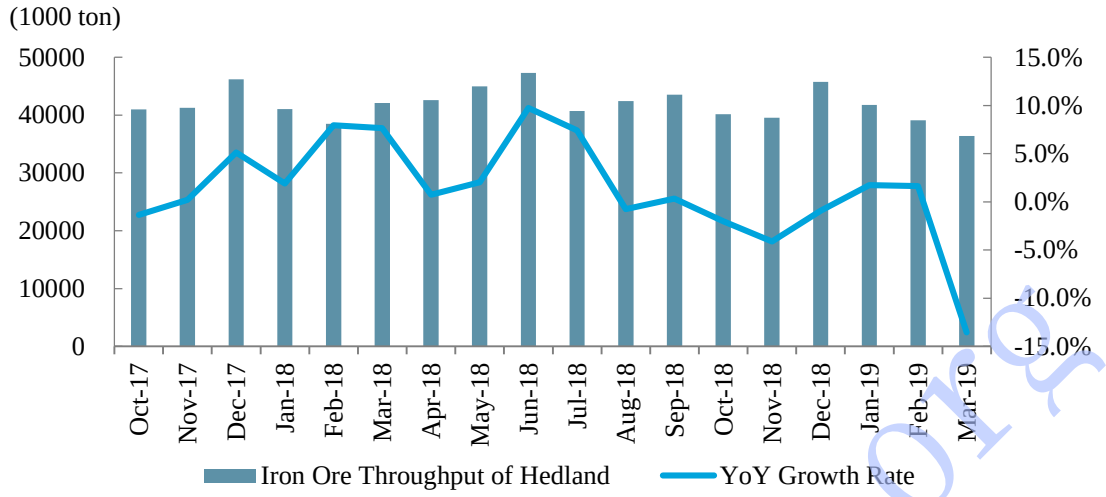
Source: Websites of China Customs, sorted by SISI.

Figure 1-17 Iron Ore Imports and Growth rate of China During Oct.17 to Mar.19

- **Iron ore throughput of Port of Hedland slumps**

The hurricanes as well as the low prices of Australia's iron ores and export frustration in Quarter 1 contributed to a 4.4% reduction year-on-year of iron ore throughput at the Port of Hedland. In March 2019, the port was closed for 92.5 hours as a result of the tropical cyclone Veronica, directly

leading to a slump of iron ore throughput in the month. The port recorded a monthly throughput of 36.7 million tons in March, including 36.3 million tons of iron ore exports, a decrease of 14% year-on-year.



Source: Website of Headland Port Authority.

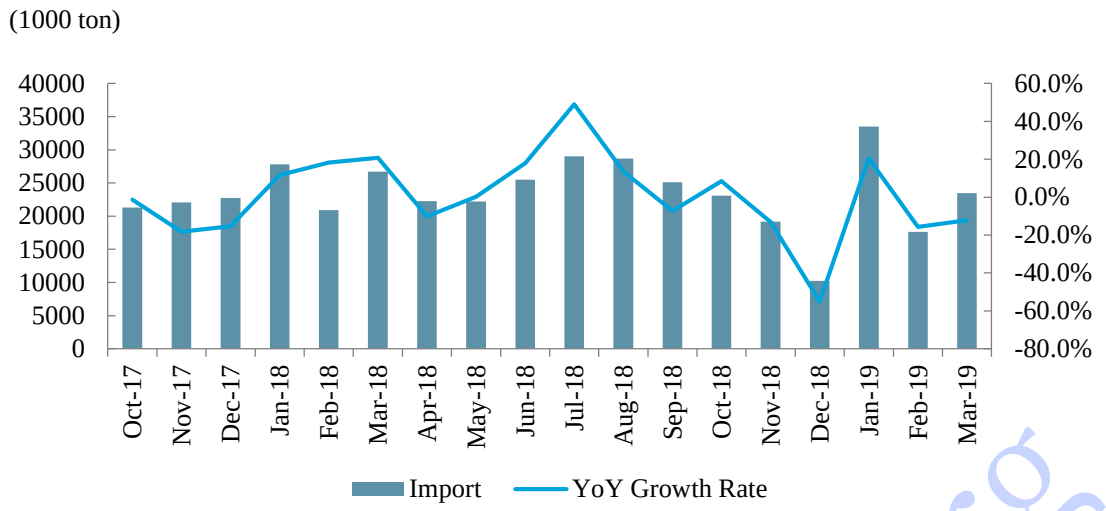
Figure 1-18 Iron Ore Throughput and Growth Rate of Hedland During Oct.17 to Mar.19

1.3.2 Coal throughput picks up

The international coal trading market continued the depression in Quarter 1. Major coal producers such as China, India and Russia all experienced different degrees of output declines in Quarter 1. Coal imports of China, Japan and Korea, major coal importers, also fell year-on-year. India, a rising coal importer in 2018, recorded a decline in coal import growth, from 14.7% in Quarter 1 2018 to 3.5%.

- **China's coal imports fall and then rise**

China's coal imports stood at 74.63 million tons in Quarter 1, a decline of 1.8% year-on-year, presenting a "V-shaped" trend. Externally, major coal exporters limited their capacities and the international coal prices fluctuated, which both contributed to the market trend and further impacted the supply landscape in the domestic coal market. Internally, the national coal policies to weed out backward capacities and highlight high-quality capacities as well as to control coal imports will also curb coal demand in China.

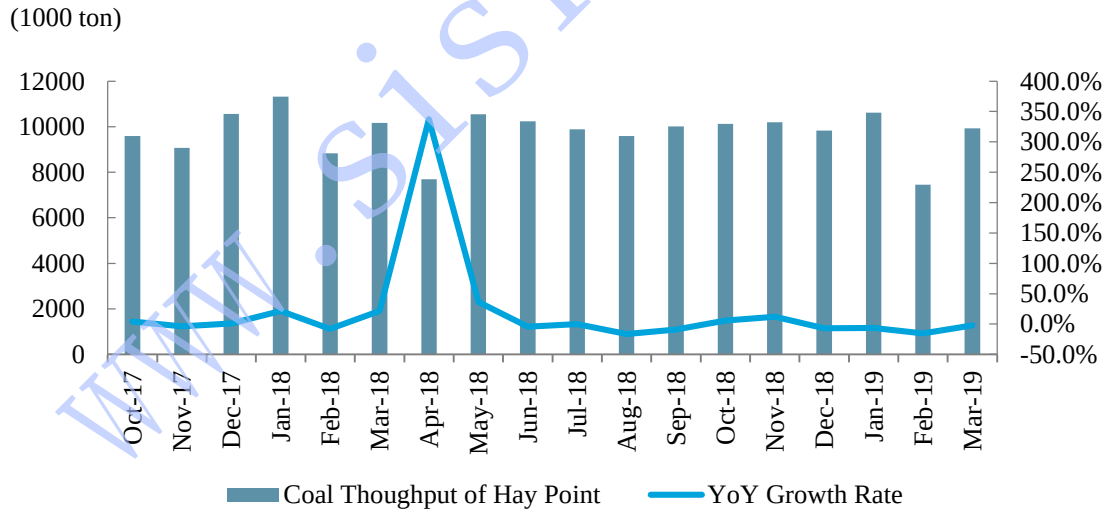


Source: Websites of China Customs, sorted by SISI.

Figure 1-19 Coal Imports and Growth rate of China During Oct.17 to Mar.19

- **Coal throughput growth at Port of Hay Point plunges**

The Sino-U.S. trade frictions severely undermined Australia's coal industry, as Chinese coal dealers turned to Russia, Indonesia and other nations for coal imports. This is because the Sino-U.S. trade frictions have extended the customs clearance time for the coal imported from Australia. In the past, the customs clearance for cargoes from Australia took around 5-20 days, and now it is extended to about 45 days.



Source: Website of Hay Point Port Authority.

Figure 1-20 Coal Throughput and Growth rate of Hay Point During Oct.17 to Mar.19

1.4 Liquid bulk cargo throughput of global ports

OPEC's production trim plan and the growth slowdown of the U.S. shale oil in Quarter 1 jointly

contributed to the crude oil demand growth of 1.4 million barrels per day on the global scale, and crude oil prices climbed. The settlement price of WTI crude oil futures rose to US$60.14/barrel as of the end of March. The futures contract rose accumulatively by 32% in Quarter 1, the largest single-quarter increase in the past decade. The settlement price of Brent crude oil futures rose to US$68.39/barrel, with the cumulative increase in Quarter 1 reaching 27%. Major liquid bulk ports accomplished a total of 239 million tons of liquid bulk throughput in Quarter 1, rising by 0.5% year-on-year.

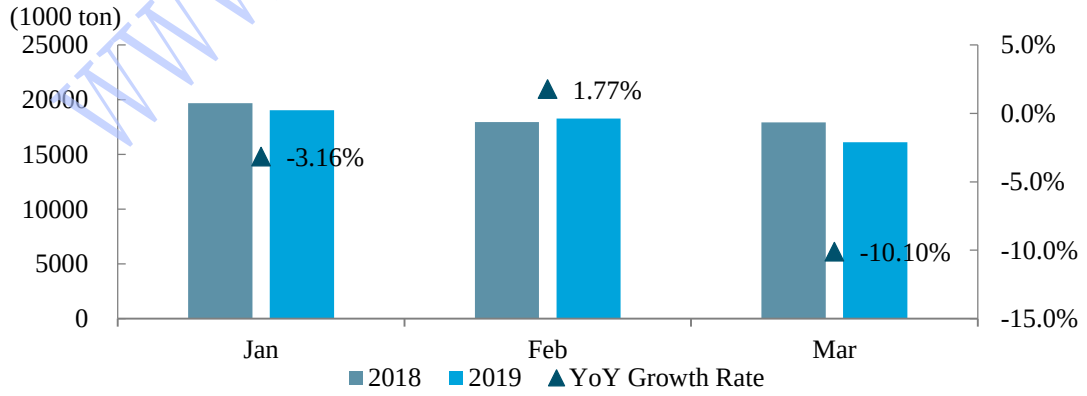
Table 1-5 Liquid Bulk Throughput of Global Major Ports in 2019.Q1

Port	2019.Q1 (000 ton)	2018.Q1 (000 ton)	YoY Growth Rate(%)	2018.Q4 (000 ton)	QoQ Growth Rate(%)
Rotterdam	58506	55900	4.66%	52442	11.56%
Singapore	57773	55835	3.47%	58005	-0.40%
Ulsan	30394	33698	-9.80%	33057	-8.06%
Kwangyang	36135	32093	12.59%	36892	-2.05%
Dashan	16596	17154	-3.25%	17435	-4.81%
Incheon	14928	16513	-9.60%	14835	0.62%
Antwerp	16957	18552	-8.60%	18147	-6.56%
Santos	4114	4041	1.81%	4393	-6.34%
Barcelona	3576	4085	-12.46%	3564	0.33%

Source: Websites of Port Authorities, sorted by SISI.

- **Oil product throughput at Port of Singapore declines**

On the one hand, the high oil prices suppressed the crude oil trade in the market in Quarter 1. On the other hand, Singapore's high fuel inventories also reduced its import demand. According to the International Energy Agency (IEA), Singapore's residual oil inventory at the end of March exceeded 21.6 million barrels, reaching a high level in the past year. These factors brought down the throughput of Singapore's oil products in the quarter by 3.8% year-on-year to 53.44 million tons, with that for March, in particular, falling by 10.1% year-on-year.

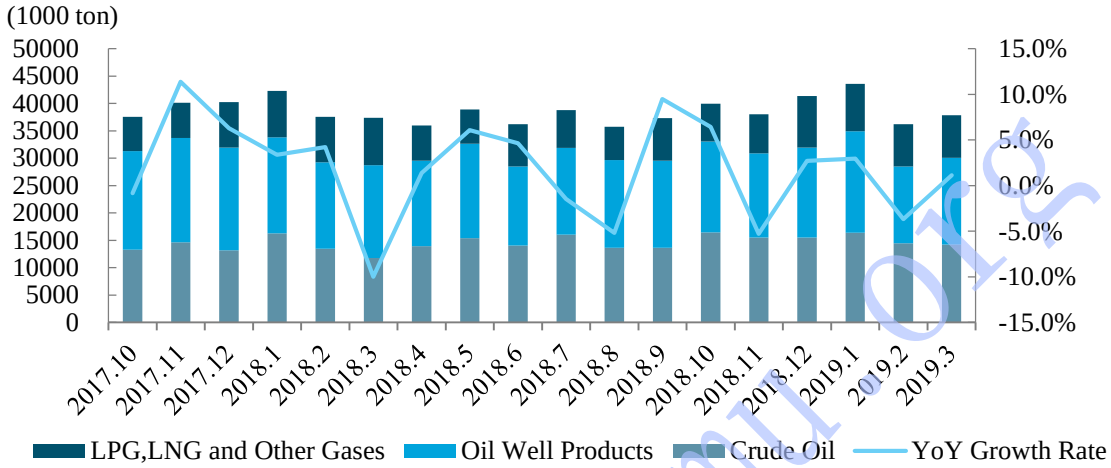


Source: Singapore Port Group.

Figure 1-21 Oil Bulk Throughput and Growth Rate of Singapore in 2019.Q1

- **Oil cargo throughput in Korea grows slower**

Korean oil bulk throughput was lackluster in Quarter 1, up by only 0.2% year-on-year to 117 million tons. Among major ports, except Port of Gwangyang, Port of Taesan, Port of Incheon and Port of Ulsan all suffered declines in oil bulk throughput, by 3.3%, 9.6% and 9.8%, respectively. Port of Gwangyang achieved against-the-trend growth of oil bulk throughput by 12.6% to 36.13 million tons.

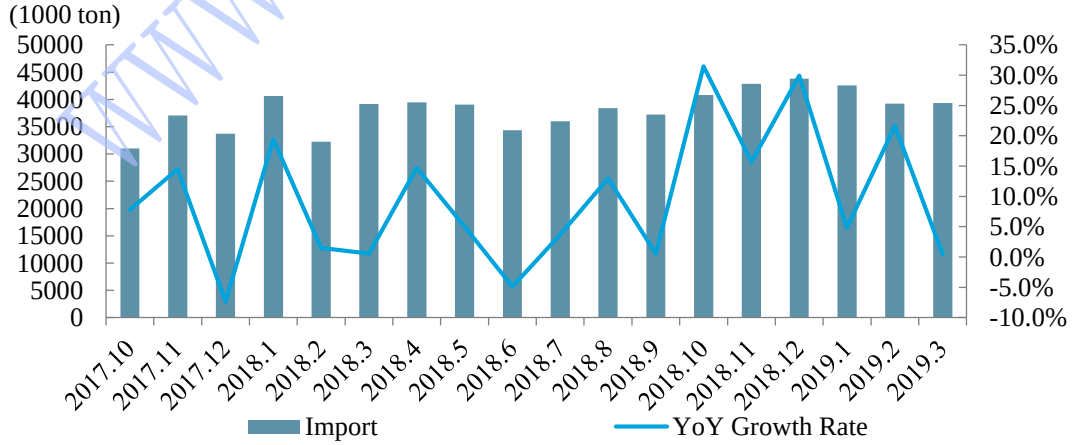


Source: Website of Korean Port Authority.

Figure 1-22 Liquid Bulk Throughput of Korea Ports in Cargo Type During Oct.17 to Mar.19

- **China's oil product throughput grows at high speed**

China's crude oil imports from January to March this year totaled 121 million tons, up by 8.2% year-on-year. Its natural gas imports hit 24.27 million tons, up by 17.8% year-on-year, maintaining a relatively high growth rate. China's energy supply and demand continued to grow steadily with the structure optimizing. In addition, since Iran announced replacing U.S. dollars with RMB for settlement of oil exports to China, China's oil imports from Iran have mounted, which in turn drives diversity in China's crude oil import sources.

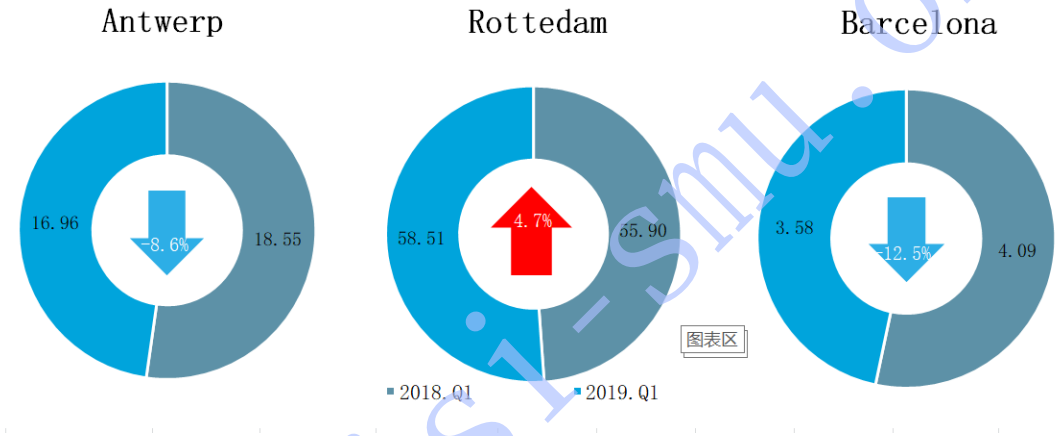


Source: Websites of China Customs, sorted by SISI.

Figure 1-23 Crude Oil Imports and Growth rate of China During Oct.17 to Mar.19

- **Liquid bulk throughput of European ports rises slowly**

In Quarter 1, the crude oil demand in some European countries was sluggish. Crude oil consumption in Germany, France, Italy, the Netherlands, the United Kingdom and other countries has declined to varied degrees since December 2018. The liquid bulk throughputs at Port of Antwerp and Port of Barcelona also dropped. Specifically, the liquid bulk throughput of Port of Barcelona was slashed by 12.5% because of the Spanish government's cut of crude oil imports from Venezuela under the U.S. pressure. The liquid bulk throughput at the the Port of Antwerp in Quarter 1 dropped by 8.6% year-on-year to 16.96 million tons. Port of Rotterdam enjoyed rapid growth of 4.7%, completing a total liquid bulk throughput of 58.51 million tons. Its LNG throughput in Quarter 1 was much higher than the same period last year, growing by 143% to 1.8 million tons, highlighted by a record high throughput in February at more than 500,000 tons. This also indicates that Rotterdam is gradually becoming an LNG trading center in Europe.



Unit: million Tons

Source: Websites of Port Authorities.

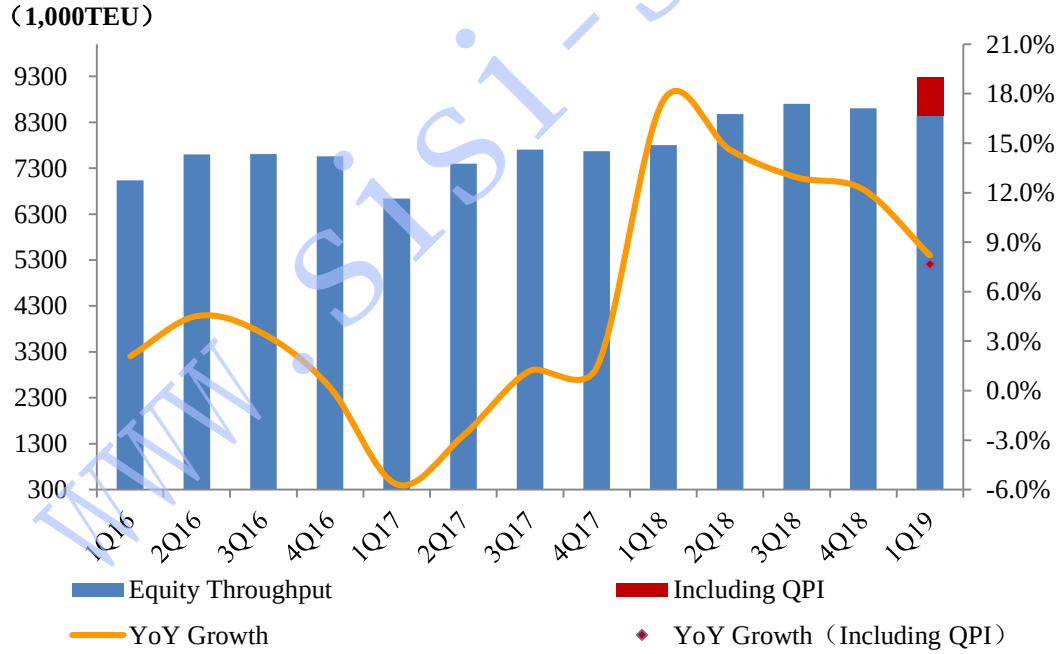
Figure 1-24 Liquid Bulk Throughput of Major European Ports in 2019.Q1

Ⅱ. Comments on Business Performance of Global Terminal Operators in Q1

Major economies in the world demonstrated sluggish growth in Quarter 1 2019, and global trade and investment was lackluster. COSCO Shipping Ports, China Merchants Port and other major terminal operators in the world suffered slowdown in production year-on-year against this background. Various terminal operators continued to explore the extension of supply chain logistic services beside their main businesses of handling operations, to further widen service scopes and improve service quality and values. They launched multimodal transport and commerce and trade information businesses through acquisitions and collaboration among other means.

2.1 Business performance of COSCO Shipping Ports

COSCO Shipping Ports completed a gross container throughput of 28.73 million TEUs in Quarter 1 2019, a year-on-year increase of 5.62%, and an equity throughput of 9.28 million TEUs, a year-on-year increase of 7.66%. Into 2019, COSCO Shipping Ports may fail to continue the high growth in 2018 but is expected to maintain stable development boosted by the sound operation status.



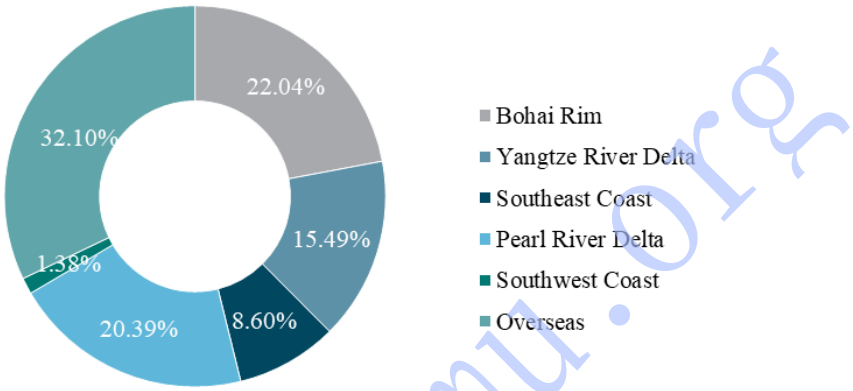
Note: The terminal throughput of QPI(Qingdao Ports International Co. Ltd.) was not included in the blue part.
Source: Website of COSCO SHIPPING Port, sorted by SISI.

Figure 2-1 Equity Throughput and Growth Rate of COSCO SHIPPING Port in 2016.Q1-2019.Q1

Region-wise, mainland China will remain a major source of containers of COSCO Shipping Ports. The company's equity throughput from the region rose by 3.14% to 6.3 million TEUs, accounting for 67.90% of the company's total equity throughput. Specifically, the southwest coastal

region contributed 128,200 TEUs of equity throughput, a robust rise of 16.30%; the Yangtze River Delta region recorded a year-on-year equity throughput increase of 8.06%; the Pearl River Delta region maintained the 1.50% growth of equity throughput; the Bohai Rim region, after being counted in Qingdao Port International, achieved an equity throughput of 2.05 million TEUs, a rise of 1.70% year-on-year.

Overseas region remained a dominant source of growth for COSCO Shipping Ports, with the region's equity throughput rising by 18.67% year-on-year to 2.98 million TEUs. The growth rate, though falling by 33.80% year-on-year, remained high.



Note: Including QPI.

Source: Website of COSCO SHIPPING Port.

Figure 2-2 The proportion of Equity Throughput of Investment Regions of COSCO SHIPPING Port in 2019.Q1

Table 2-1 Equity Throughput and Growth Rate of COSCO SHIPPING Port by Region in 2019.Q1

Area	China						Overseas
	Bohai Rim	Yangtze River Delta	Southeast Coast	Southwest Coast	Pearl River Delta	Total	
Equity Throughput /1,000 TEU	2046.1	1437.9	798.4	128.2	1892.3	6302.9	2979.1
YoY Growth/%	1.70	8.06	0.55	16.30	1.50	3.14	18.67

Note: Including QPI.

Source: Website of COSCO SHIPPING Port.

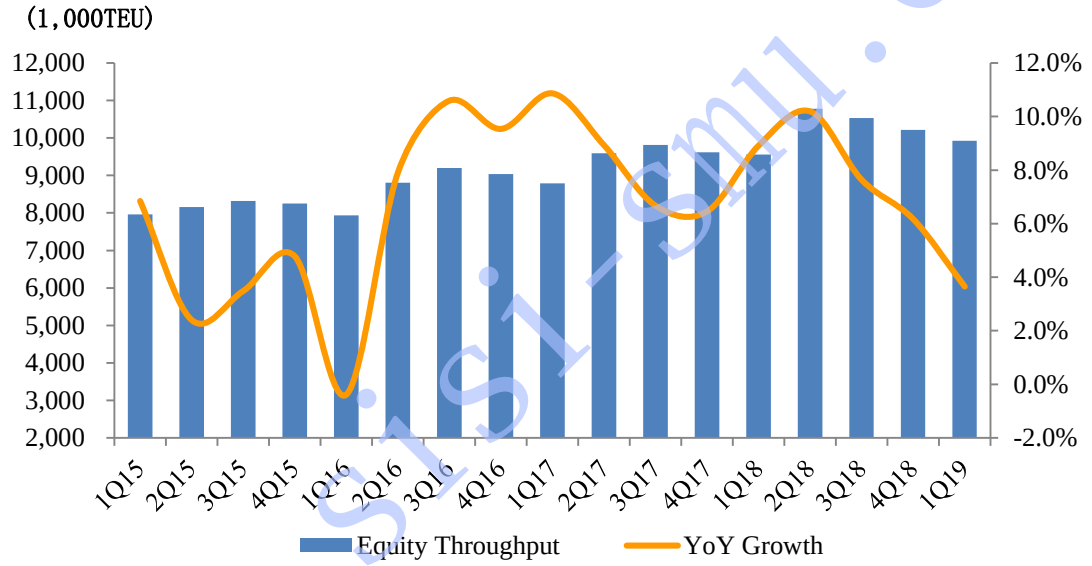
In Quarter 1 2019, COSCO Shipping Ports, on the one hand, stayed committed to expansion and upgrading of terminals to support its parent company's ship upsizing and industry allying, and on the other hand, further improved its global terminal networks. It first strengthened the cooperation with Beibu Gulf Port Co., Ltd. to improve the company's terminal layout in Southwest China, and then acquired a 60% stake in Peru's Terminales Portuarios Chancay S.A., further expanding its global terminal network to South America. In addition, COSCO Shipping Ports is also

committed to building partnerships with other global terminal operators to enhance synergies while actively leveraging the synergies of the Ocean Alliance.

2.2 Business performance of China Merchants Port

In Quarter 1 2019, China Merchants Port Holdings Company Limited completed a container throughput of 26.39 million TEUs, a year-on-year increase of 3.32%, and an equity throughput of 9.93 million TEUs, a year-on-year increase of 3.65%.

Overall, the global maritime trade is still in in-depth recovery. The production and operation of terminal operators represented by China Merchants Port will be clouded by high uncertainties. Terminal operators may find it hard to sustain the rapid growth. China Merchants Port may further tap the production potential of existing ports based on a stable home port, to realize the transformation from "quantity" to "quality".



Source: China Merchants port Website.

Figure 2-3 Equity Throughput and Growth Rate of CMport in 2015.Q1-2019.Q1

Region-wise, China Merchants Port completed an equity container throughput of 2.77 million TEUs in Quarter 1 in its overseas markets, at a growth rate of 9.56%, the rate being 16.17% slower year-on-year.

In China, except the negative growth year-on-year in the Pearl River Delta region, all other business regions of the China Merchants Port recorded sound container throughputs overall. Specifically, the southeast coastal region was in high growth, completing a container equity throughput of 261,000 TEUs, a year-on-year increase of 31.42%. The southwest coastal region delivered eye-catching performance, with its equity throughput rising by 24.02% to 102,000 TEUs. In the Yangtze River Delta region, Shanghai Port throughput rose steadily, but Ningbo Daxie experienced negative growth. The equity throughput of the region increased by 5.42% year-on-year, which ran neck-and-neck with that of the same period last year. In the Bohai Rim region, the equity

throughput increased by 4.01% year-on-year. The throughput of the Pearl River Delta region fell by 5.84% year-on-year.

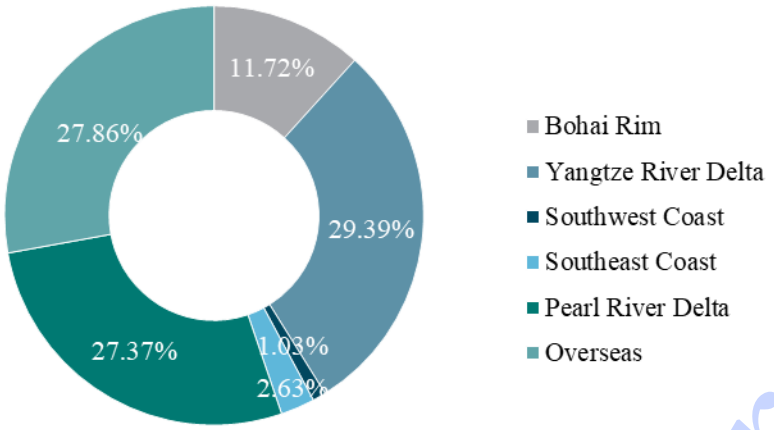
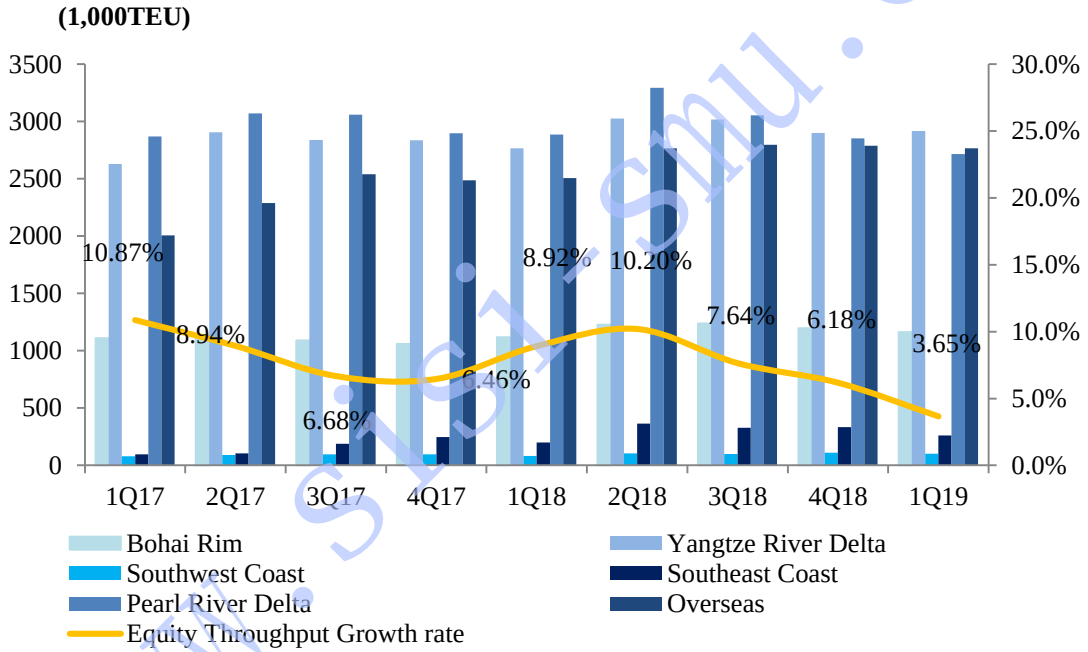


Figure 2-4 The proportion of Equity Throughput of Investment Regions of CMport in 2019.Q1



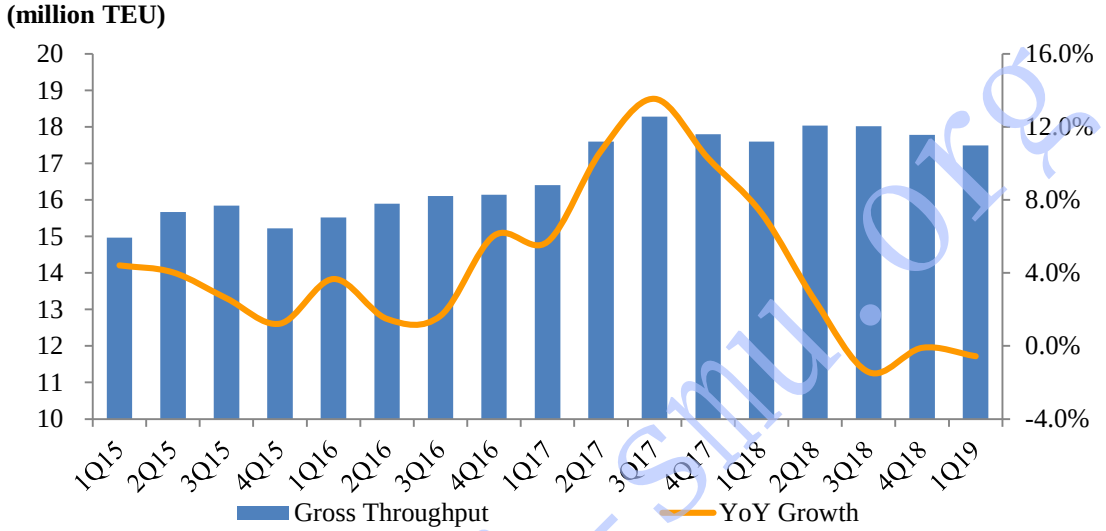
Source: China Merchants port Website.

Figure 2-5 Equity Throughput and Growth Rate of Investment Regions of CMport in 2017.Q1-2019.Q1

In view of the market volatility, China Merchants Port continued to strengthen development of Shenzhen Port, its home port. In Quarter 1, the company signed two capital increase agreements to promote the Shenzhen Qianhai land development projects in a bid to boost the core businesses of its home port. In addition, China Merchants Port continued to enhance its controlling stake in terminals, and realized a 58.35% stake in Zhanjiang Port Group, as part of the effort of strengthening the company's strategic layout in Southwest China and increasing the number of company-controlled ports. Echoing its ports in Liaoning in North China, the company strives to build a system of interconnection and interoperability for its ports in North and South China.

2.3 Business performance of DP World

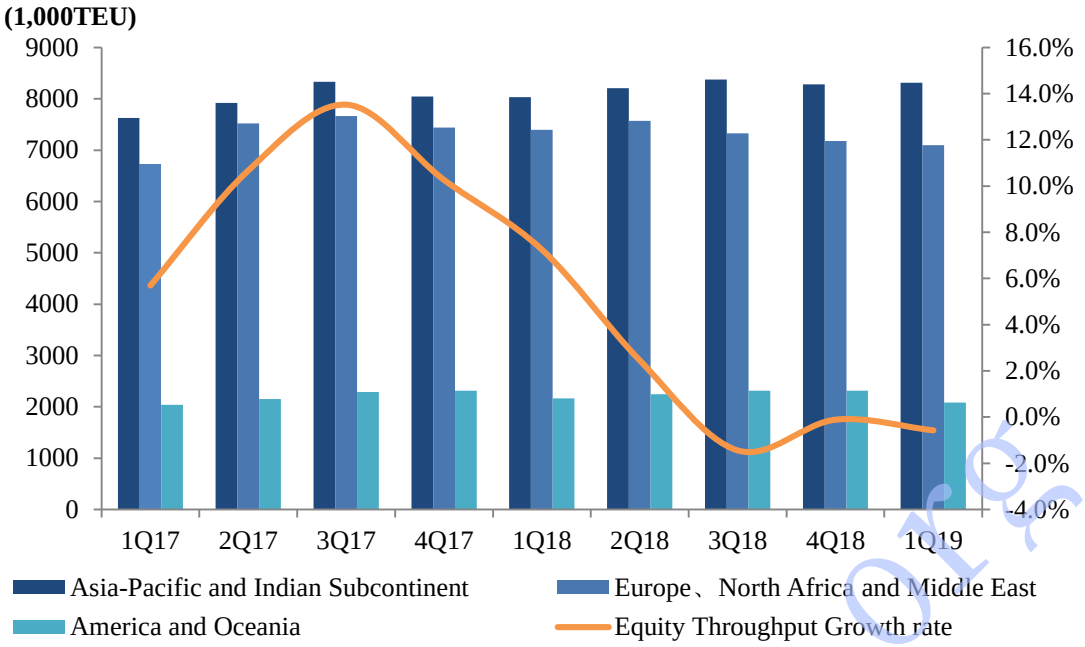
In Quarter 1 2019, terminals of DP World recorded 17.49 million TEUs in container throughput, declining by 0.57% year-on-year. The slowdown in throughput growth of DP World is partly because of the declining shipping business volume from the uncertainty in the current macro environment, and partly because of the group trimming low-profit terminal businesses to stay focused on profit-making cargoes.



Source: DP world Website.

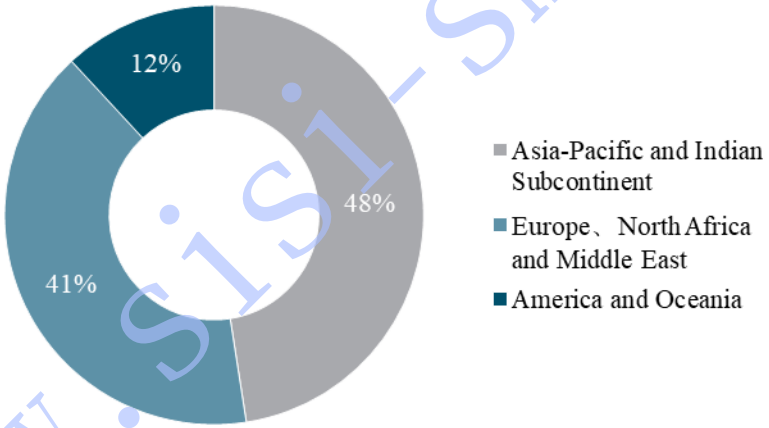
Figure 2-6 Gross Throughput and Growth Rate of DP World in 2015.Q1-2019.Q1

Region-wise, Asia-Pacific and Indian sub-continent regions recorded a container throughput of 8.31 million TEUs, a rise of 3.49% year-on-year and accounting for 47.53% of the group's total, owing to DP World's acquisition of two special economic zones (SEZ) in Kazakhstan last year, which boosted the container business, as well as the strong throughput growth in Port of Mumbai, India. In the Americas and Oceania region, despite the robust throughput growth of Port of Callao in Peru, the company's performance in the region declined overall because of the strike action taken by loading and unloading workers at DP World Australia's container terminals in March, which seriously disrupted the normal operation of these terminals. As a result, the container throughput of DP World in the region fell by 3.70% year-on-year. The macro environmental challenges and the group's reduction of terminal operations in North Africa and the Middle East, especially the United Arab Emirates, jointly contributed to the 4.06% negative growth year-on-year of the group's container throughput in Europe, North Africa and the Middle East.



Source: DP world Website.

Figure 2-7 Gross Throughput and Growth Rate of Investment Regions of DP world in 2017.Q1-2019.Q1



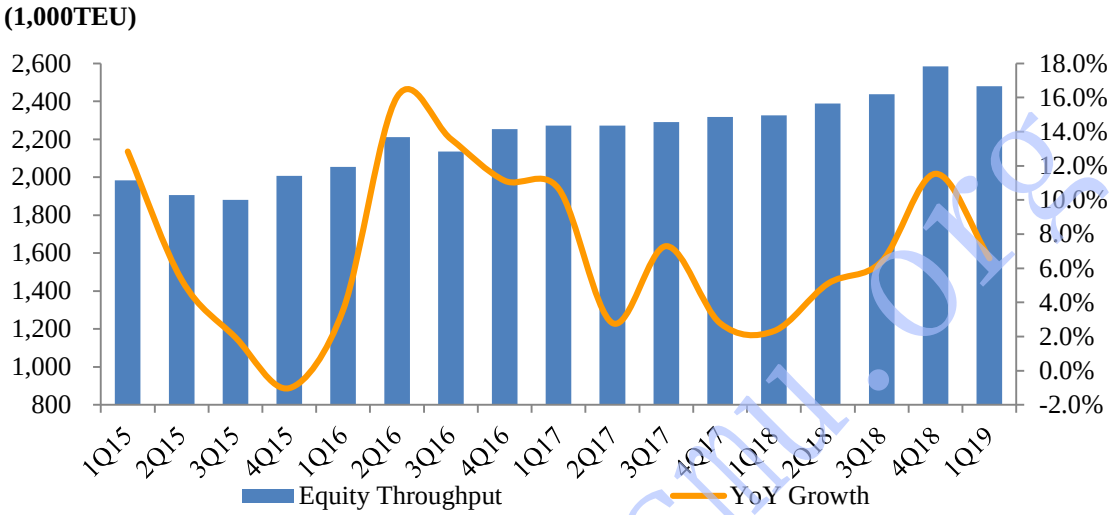
Source: DP world Website.

Figure 2-8 The proportion of Gross Throughput of Investment Regions of DP world in 2019.Q1

In Quarter 1, DP World continued to pursue a strategy of business development in complementary sectors and announced in February the acquisition of the European logistics company P&O Ferries. The acquisition is expected to strengthen the group's product offering capabilities and further enhance its competence on the global supply chain. In addition, DP World is also committed to terminal investment in this quarter. It announced the acquisition of a 71.3% stake in Chilean port and logistics company Puertos y Logistica SA, and acquired more shares of DP World Australia from Gateway Infrastructure Investment Company and other financial investors. These moves enabled DP World to further expand its global offerings and boost its terminal business and market competitiveness.

2.4 Business performance of ICTSI

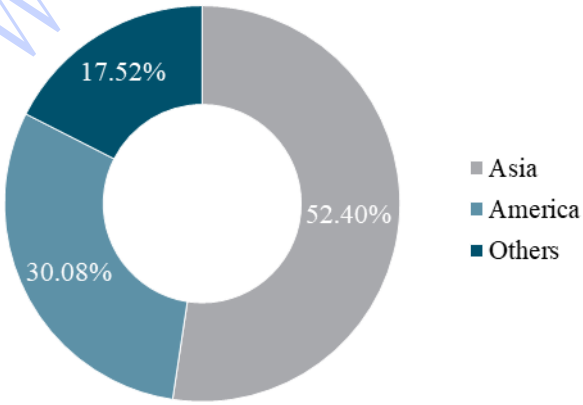
In Quarter 1 2019, Philippine International Container Terminal Services Inc. (ICTSI) completed a total container equity throughput of 2.48 million TEUs, a rise of 7.3% year-on-year. The rate, though a little slower quarter-on-quarter, was 4.26 percentage points faster year-on-year, indicating a favorable momentum overall.



Source: ICTSI Website.

Figure 2-9 Equity Throughput and Growth Rate of ICTSI in 2015.Q1-2019.Q1

Region-wise, Asia was a main contributor of ICTSI's equity throughput. In Quarter 1, the region recorded an equity throughput of 1.3 million TEUs, up by 4.63% year-on-year, becoming the biggest contributor with 52.40% share in the group's total. The Americas totaled an equity throughput of 745,600 TEUs, a rise of 7% year-on-year. Boosted by the throughput contribution of new ports, including VICT at Port of Melbourne, Australia, as well as Lae and Motukea in Papua New Guinea, the ICTSI demonstrated outstanding performance in all regions except Asia and the Americas, with its container equity throughput grow by 12.11% year-on-year to 434,300 TEUs.



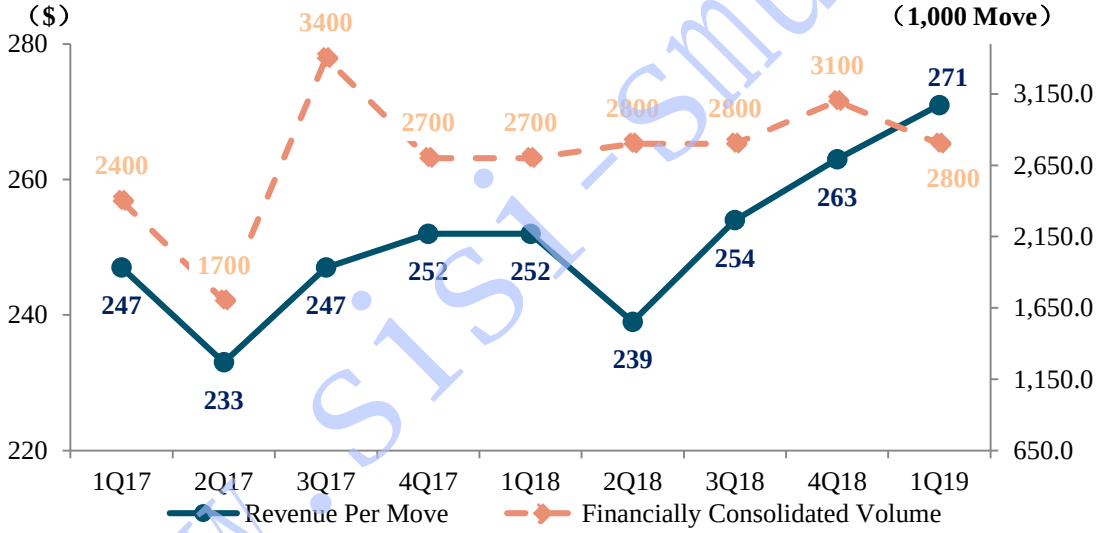
Source: ICTSI Website.

Figure 2-10 The proportion of Equity Throughput of Investment Regions of ICTSI in 2019.Q1

In Quarter 1, ICTSI was committed to improving the operation efficiency of container terminals while tapping new opportunities and continuing to expand its overseas terminal reach. ICTSI also increased 15.17% shareholding in Manila North Harbor Port. After the deal closure, the group's shareholding ratio in the company will increase from 34.83% to 50%. This move will further strengthen the ICTSI's presence in Port of Manila while injecting new impetus for the group's gross business volume growth.

2.5 Business performance of AP Moller-Maersk

In Quarter 1 2019, against the backdrop of declining cargo volumes on trans-Pacific routes between Asia and North America, AP Moller-Maersk presented sound growth of throughput in its port business segment benefited from the increasing warehousing revenue in West Africa and Latin America, contract renewal, the operation of Port of Moin in Costa Rica and the increased business volume in North America. The throughput on the consolidated statement was 2.8 million moves, up by 3.50% year-on-year. The revenue per container was US$271, up by 7.54% year-on-year.



Note: AP Moller-Maersk will stop using statistical units starting Quarter 1 2018 and use move instead. In Quarter 1 2019, only the throughput on the consolidated statement was announced.

Figure 2-11 Financially Consolidated Volume and Revenue Per Move of APMT in 2017.Q1-2019.Q1

Region-wise, the Americas, as a main business region of AP Moller-Maersk, delivered outstanding performance in throughput. Supported by external customers in Los Angeles, the U.S., and the operation of Port of Moin in Costa Rica, the North America and Latin America region enjoyed strong growth in business volume, driving up the business volume of the Americas region by 25.3% year-on-year. However, owing to the divestment from Izmir in Turkey and the declined business volume in Port of Barcelona in Spain, AP Moller-Maersk's throughput in the Europe region on the consolidated statement fell by 13.00% year-on-year. In Asia, the exit from Port of Kobe in Japan and the business volume slip at ports in India led to a decline of 10.3% points in throughput

growth on the consolidated statement.

Table 2-3 Financially Consolidated Volume of APMT in 2018.Q1 and 2019.Q1

(Unit: Million Move)

Area	1Q2019	1Q2018	YoY Growth
Americas	1.3	1.0	25.3%
Europe,Russia and Baltics	0.6	0.7	-13.0%
Asia	0.5	0.5	-10.3%
Africa and Middle East	0.4	0.5	-2.4%
Total	2.8	2.7	3.5%

Source: Maersk Website.

AP Moller-Maersk continued to stay committed to strengthening its global terminal network and improving its global supply chain network. On the one hand, the company signed memorandums of understanding with Sahathai Terminal PLC (PORT) and Mitr Phol Sugar. On the other hand, the company and the Management Committee of Ningbo Meishan Bonded Port Area signed an investment letter of intent for about 200 *mu* of land for Meishan Phase II logistics project, which will help AP Moller-Maersk to build a large-scale, intensive and automated international supply chain service platform that provides customers with a comprehensive and omni-channel logistics supply chain ecosystem.

Special Topic I: Path of Port Transformation from a Digitization Perspective

Into the 21st century, information technology has received rapid development and application on the global scale. Boosted by the current emerging technologies such as the internet, big data and artificial intelligence, port digitalization has become an inevitable trend of industry development. Port is an important node on the logistics supply chain. The digitalization transformation of ports should not only involve ports themselves, but also cover and coordinate with the entire logistics system while staying in line with the needs and characteristics of the development of modern logistics industry.

I. Status quo of digitalized development of global ports

(1) "One-window" offering of services

China's ports are at the forefront of the world in digitalized transformation of ports. A standard version of the international “one window” is promoted nationwide, and its functions are constantly improved. The “one-window” platform for international trade achieves data intercommunication with the background of banks, enabling mutual embeddedness of data between enterprises' customs declaration and trade settlement, greatly improving the payment efficiency.

Despite the continuous promotion and improving functions, "one-window" platform still has to overcome the "data silos" problem for development. Data is stored and maintained independently in the information systems of different departments and is isolated, forming physical silos. Besides, different departments understand and define the data from their own perspectives, giving distinct meanings to some originally identical data. This has imperceptibly increased the cost of cross-departmental data cooperation.

(2) Digitalized transformation of operating systems at terminals

Operating systems of container terminals have undergone more than three decades of development. Through continuous upgrading and transformation, the operating systems of terminals have basically completed the digitalized transformation. From simplex loading and unloading services to a package of digital services including ship loading optimization, depot utilization optimization, and crane dispatching and monitoring, the digitalized transformation of operating systems of container terminals has penetrated across the supply chain from serving terminal operators to connecting shipping companies and logistics companies, offering more comprehensive functions and improved efficiency.

Compared with traditional operating systems, currently the world-leading container operating systems integrate more advanced digitalization technologies and state-of-the-art logistics technological equipment. Mainstream operating systems of container terminals in the world mostly

have the following features: planning system, management system, and operating system.

(3) Port and shipping enterprises adopt digitalized operational management

French line giant CMA CGM launched CMA CGM eSolutions, a fully digital ecosystem offering a diversity of new features and digitalized customer experience to provide a new sales channel for CMA CGM customers. In addition, CMA CGM will regard the customer center and digitalization as its strategic gravity.

Maersk enables remote management of containers through digitalization. Maersk Line has equipped more than 400 ships with 270,000 refrigerated containers that support transmission of real-time data about the containers to the authority offices, ports and suppliers through satellites using digitalized devices.

(4) New types of digitalized platforms mushroom

Port of Los Angeles worked with GE Transportation to develop a US$13 million worth of platform that aggregates port data. The objective is to provide a uniform window for shippers to facilitate personalized cargo status updates and access to ocean-going ship schedules. **Port of Hamburg** integrates multiple independent systems to form a port-universal intranet platform. Such platforms cannot only help port authorities and their partners to improve internal operations, but also enable real-time collection of traffic information inside the ports to avoid traffic jams at depots and terminal water-gates.

II. Prospect of digitalized transformation of ports

(1) Information service

This service focuses on the access to data flows through the value chain of port production. The value chain of port production has access to a large amount of valuable raw data. With the support of the Internet of Things technologies, we can enable continuous automatic monitoring over handling equipment and transportation assets, infrastructure, workers and customer requirements and other logistic elements, and control the work through technical means for communications. In general, this process is comprised of the following three levels:

- Process execution: including roles of transportation planning, tracking, auditing and payment;
- Data analysis: including roles of evaluation and value goal positioning, route optimization, compliance management and performance analysis;
- Visualization and data integration: including roles of using monitoring panels to control elements and alarm warnings.

(2) Logistic service

At present, the global logistics transportation platforms can be divided into two categories: first,

the platform that integrates a small amount of cargoes and transfers the cargoes to a large logistic service provider as an independent customer; second, the platform that serves logistics transportation and price comparison between logistics transportation service providers. Both of the two models fail to precisely align the shipping demand with the logistic competency. A digitalized global transportation platform, however, cannot only link a single seller with millions of potential buyers, but also enable a clear display of DES (Delivered Ex Ship) cost and delivery time and provide niche services of transportation.

(3) Delivery competency

As the science and technology evolve on, the global transportation demand also rises and delivery approaches start to change. The innovation of manufacturing methods (3D printing), unmanned aerial vehicles, autonomous trucks has created more possibilities for the development of the logistics industry of ports.

(4) Circular economy

Circular economy is different from the traditional linear economy. In the traditional linear economy, resources are made, used and then disposed of. In a circular economy however, resources are used to the full to exert their maximum values, and then their components and materials are recycled and re-engineered when the resources' service life draws to a close.

As the circular economy develops on and gains popularity, enterprises will try to minimize the use of "new" materials and therefore reduce potential orders for logistic services, but the demand for procedures of complex returns (recycling) of goods may rise. Against the backdrop of circular economy development, the logistic services at ports should adapt to complex returns of goods, and the derivative service industry can be developed based on the demand of a circular economy.

Special Topic II: Strategic Prospect of Global Shipping Hubs

With the continuous evolution of global trade, port and shipping industries and science and technologies, the global shipping hubs are actively preparing medium- and long-term development strategies in response to the changes in the future market landscape. The four major shipping hubs in the world have formulated medium- and long-term strategies to voice their viewpoints on the future shipping market and shipping hubs.

I. Favorable growth expected for cargo volumes in the shipping market in the medium and long run

Most projections by major shipping hubs look to further growth of the shipping market in the future, namely by at least 1.5% in container throughput at ports from today to 2030, and the probability of seaborne trade growth peaking was small.

In the strategic report of the four major shipping hubs, Port of Rotterdam demonstrated the most active performance and made four types of expectations for future development of the market. In the economic integration pattern on the global scale, the cargo throughput of Port of Rotterdam is expected to exceed 750 million tons in 2030, with an average annual compound growth rate of 3.2%. In view of the trends of EU integration, high oil price and low economic growth, the port will maintain an average annual growth rate of 2.3%, 1.6% and 0.4%, respectively. The throughput of Port of Rotterdam is expected to peak in the scenario of low economic growth trend only by 2020, and then continue to fall. In contrast, Singapore and the UK are more optimistic about the future growth of the shipping market. Hong Kong, China, is expected to reach 31.5 million TEUs of container throughput in 2030, with an average annual growth rate of around 1.5%. Although the container volume of Hong Kong, China, fluctuated at around 20 million TEUs in the short term due to factors such as the Sino-U.S. trade frictions, the medium and long-term trend of forecast remains unchanged.

II. Port infrastructure operational capabilities enhanced again

In the medium and long-term development plans of several major shipping hubs, port capacity expansion is an important part. Port of Singapore transferred its port business to Tuas Port, with its designed capacity increased to 65 million TEUs/year, doubling the operational capacity of the port. Its terminal can berth ultra-large container ships of a draft of 18 meters and 500 meters long. Hong Kong, China, proposed to upgrade Stonecutters Island and some other break-bulk terminals to container terminals, allow inland river terminals to operate ocean-going vessels, build new berths at Kwai Tsing Terminal, and expand depots at terminals to meet the requirements arising from future

growth of cargo volumes at the port.

Although Port of Rotterdam does not mention specific construction plans in its strategic plan, based on the development trend of its cargo volume and container business at the port in the future, we can estimate that its port renovation and expansion will be large-scale. The UK Maritime Strategy 2050 also stipulated to further forge port clusters centering on the coastal areas of the country to improve the UK's marine trade capabilities to the outside world.

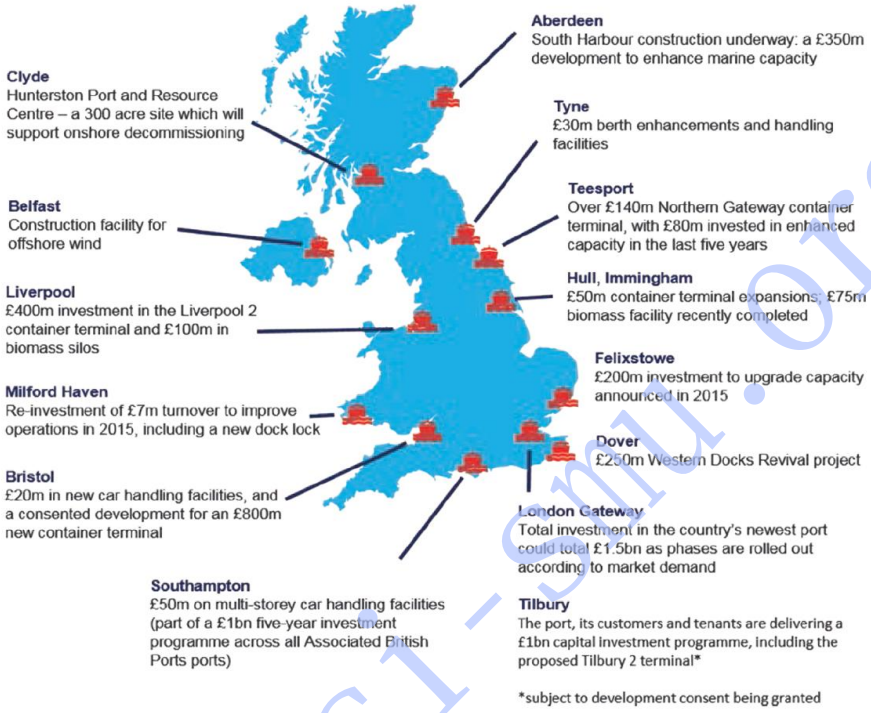


Figure 1 The Ports Construction in England

III. Information technologies become a core of port and shipping industry development in the future

Port of Rotterdam plans to improve the information infrastructure at the port first, and then optimize the operation system of the port to enable more efficient scheduling of various port resources. Based on this, the port will establish an interconnected information platform pooling together upstream and downstream enterprises on the industrial chain, and integrate relevant port services to open up the data flows in the upstream and downstream links of the value chain of the port, so as to promote efficient operation of government functional departments, shipping companies, logistics companies, and financial and legal service institutions.

The UK focuses on strengthening the design and manufacturing of smart shipping technologies by building next-generation smart ports and expanding the port's new business model through digital, automated and intelligent technologies. Meanwhile, the port improves the transport efficiency through paperless operations in transactions and various procedures to reduce logistics costs. The port explores modern technologies such as blockchain, leads the development of international

standards, and enhances the UK's technology leadership in the port and shipping field. In addition, Singapore focuses on promoting informatization reforms in port operations and port services to improve the operational efficiency of the port and enhance synergies between companies and governments and between different companies.

IV. Shipping hubs lay more stress on development of industrial clusters

Comparing the 2030 and 2050 development strategies of the world's four major shipping hubs, we can find the most obvious feature in that all shipping hubs not only focus on the development of basic industries such as shipping and logistics at the port, but also on integrating the ecosystem of port and shipping industries and the development of industrial clusters.

(1) Port of Rotterdam stresses the development of port-surrounding industries

While strengthening the hub ports in Europe, Port of Rotterdam also focuses on promoting the development of port-surrounding industries, especially on enhancing port accessibility, developing green sustainability, and enhancing flexibility of port services to attract European industries to Rotterdam and eventually comprehensively improve the logistics operational efficiency at the port. Therefore, Port of Rotterdam aims to build a green shipping industrial hub with high production efficiency, convenient transport, industrial agglomeration, system leadership and environmental protection by 2030.

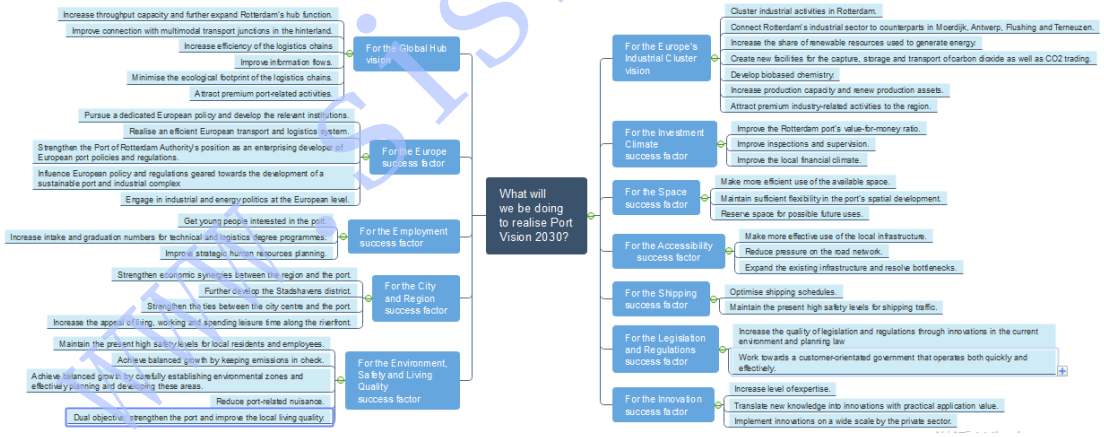


Figure 2 Strategy of Port of Rotterdam in 2030

(2) Port of Singapore builds shipping industrial cluster

The development of Port of Singapore not only relies on the transit hub role of the port, but also on the gathering of headquarters of shipping companies. The port actively introduces and fosters shipping service industries such as shipping finance, shipping brokerage, shipping insurance, and maritime arbitration, and builds a shipping service ecosystem. Therefore, Port of Singapore aims to build a shipping industrial hub with dense shipping routes, agglomeration of shipping

elements, and concerted development of high-value-added sectors by 2030.

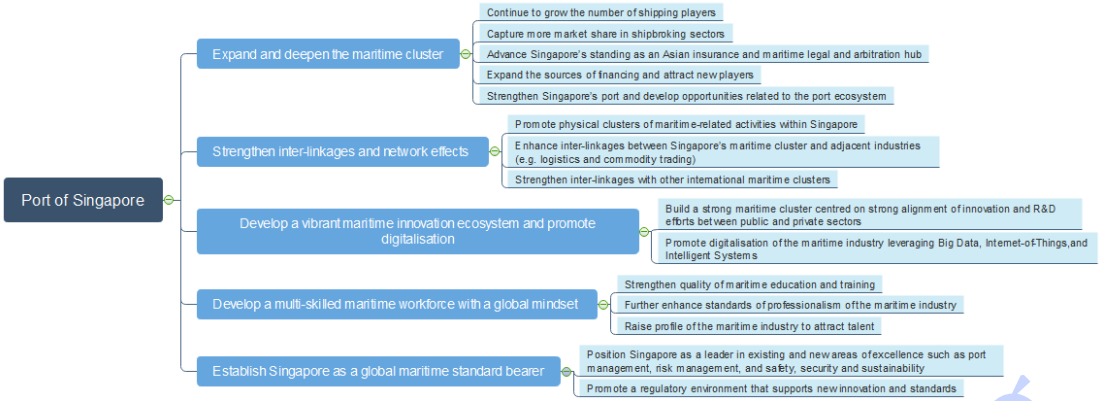


Figure 3 Strategy of Port of Singapore in 2030

(3) London leads the change in shipping service standards

Compared with other shipping hubs, the UK focuses on leveraging its advantages in maritime concepts, maritime technologies, service standards, rule-making, regulatory methods, and talent support to further consolidate its presence in international shipping and trade in its Maritime Strategy 2050. London aims to build a shipping technology hub that takes a lead in technologies, rule-making and standards by 2050.

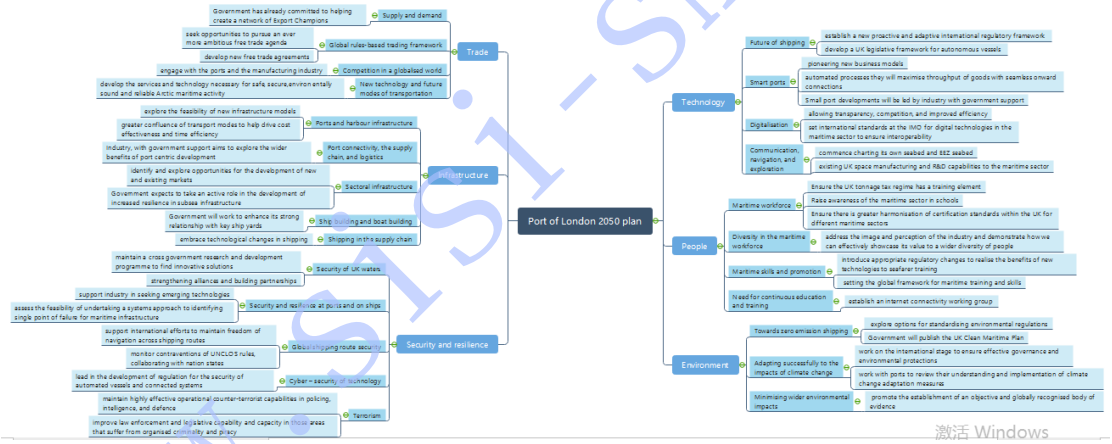


Figure 4 Strategy of Port of London in 2030

(4) Hong Kong, China, focuses on consolidating the status as a transit hub

In comparison, Hong Kong, China, attaches more importance to the development of basic port and shipping industries. The mission of Hong Kong Port in the 2030 strategy is mainly to expand port capacity, improve port efficiency and enhance port competitiveness. Its development measures are primarily to build new berths and logistics facilities to meet the expected cargo growth in the future. Therefore, Hong Kong, China, will still focus on building a shipping hub in 2030.

In summary, although various shipping hubs have distinct positioning and expectations for future development, they share the optimistic views toward the trade situation and the importance attached to information technologies. Centering on their respective development characteristics and positioning and holding favorable expectations toward the market, they further enhance the

industrial advantages, strengthen business development and industrial deepening from the perspectives of supply chain, clustering and ecosystem, so as to integrate the port into the industrial chain as a logistics node.

Appendix

Appendix 1 Cargo Throughput of Global Major Ports in 2019Q1

Region	Port	2019.Q1 (10,000 tons)	YOY Increase (%)
Asia	Ningbo-Zhoushan	25527	0.5%
	Shanghai	17506	4.1%
	Singapore	15191	-2.6%
	Tianjin	10543	-3.1%
	Qingdao	13814	8.3%
	Tangshan	16187	12.9%
	Guangzhou	14208	10.3%
	Dalian	8137	3.1%
	Yingkou	6662	-31.1%
	Busan	10984	14.7%
	Rizhao	11374	4.3%
	Gwangyang	7714	9.1%
	Qinhuangdao	5366	11.4%
	Zhanjiang	5644	2.5%
	Yantai	9398	18.5%
	Shenzhen	5740	1.1%
	Xiamen	4468	7.3%
	Ulsan	5025	2.4%
	Lianyungang	5856	5.7%
	Beibu Gulf Port	5621	11.6%
	Inchon	3898	-6.18%
	Huanghua	6769	1.2%
	Fuzhou	4468	11.1%
	Pyeongtaek/Karatsu	2649	-8.6%
	Quanzhou	3033	17.6%
	Pohang	1567	4.2%
	Tokai/Mukho	755	-3.9%
Europe	Rotterdam	12387	5.2%
	Antwerp	5658	-3.0%
	Riga	835	1.6%
	Barcelona	1585	-2.2%
	Tallinn	472	-6.0%
The Americas	South Louisiana	5962	-8.8%
	Port of Long Beach	4026	-2.4%

	Seattle-Tacoma Seaport	752	16.5%
	Virginia	597	18.4%
Oceania	Headland	11845	-4.6%
	Port of Hay Point	2800	-7.7%
	Brisbane	821	4.3%

Source: official websites of various ports, prepared by the SISI

Appendix 2 Container Throughput of Global Major Ports in 2019.Q1

Region	Port	2019.Q1 (10,000 TEUs)	YOY Increase (%)
Asia	Shanghai	1042	7.0%
	Singapore	890	3.2%
	Shenzhen	605	1.4%
	Ningbo-Zhoushan	670	3.0%
	Busan	532	3.9%
	Qingdao	493	8.6%
	Hong Kong, China	444	-9.2%
	Guangzhou	529	8.8%
	Tianjin	378	4.9%
	Dalian	211	-4.8%
	Xiamen	269	8.1%
	Yingkou	139	-10.2%
	Lianyungang	119	0.4%
	Kaohsiung	256	0.03%
	Keelung	33	-4.9%
	Taichung	41	-2.7%
	Taipei	42	0.5%
	Dubai	349	-8.9%
	Gwangyang	62	12.5%
	Inchon	71	0.0%
The Americas	Los Angeles	221	4.6%
	Long Beach	181	-4.7%
	Seattle-Tacoma Seaport	93	11.1%
	Vancouver	84	5.2%
	Virginia	71	2.4%
	Houston	69	12.4%
	Montreal	41	6.6%
	Halifax	13	-3.1%
	Santos	88	-11.5%
Europe	Rotterdam	372	7.3%
	Antwerp	285	4.0%

	Barcelona	84	6.2%
Oceania	Brisbane	30	-12.1%

Data source: official websites of various ports, prepared by the SISI

Appendix 3 Equity Throughput and Growth Rate of COSCO Shipping Port

(Unit: 10,000 TEUs)

	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17
Total Throughput	703.49	760.27	761.10	756.20	663.55	739.65	770.30
YOY Increase	2.09%	4.52%	3.44%	0.18%	-5.68%	-2.71%	1.21%
	4Q17	**1Q18**	**2Q18**	**3Q18**	**4Q18**	**1Q19**	
Total Throughput	766.88	780.24	847.65	869.92	860.40	844.18	
YOY Increase	1.41%	17.59%	14.60%	12.93%	12.19%	8.19%	

Note: Qingdao International not counted in.

Source: COSCO Shipping Ports Limited website

Appendix 4 Equity Throughput and Growth Rate of China Merchants Port

(Unit: 10,000 TEUs)

	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17
Total Throughput	793.14	880.55	919.73	903.80	879.36	959.23	981.13
YOY Increase	-0.39%	7.90%	10.60%	9.54%	10.87%	8.94%	6.68%
	4Q17	**1Q18**	**2Q18**	**3Q18**	**4Q18**	**1Q19**	
Total Throughput	962.18	956.02	1077.99	1053.50	1021.60	992.78	
YOY Increase	6.46%	8.72%	12.38%	7.38%	6.18%	3.65%	

Source: China Merchants Port Holdings website

Appendix 5 Equity Throughput and Growth Rate of DP World

(Unit: 10,000 TEUs)

	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17
Total Throughput	1551.6	1589.8	1610.30	1614.20	1640.10	1759.60	1828.20
YOY Increase	3.66%	1.47%	1.65%	6.04%	5.70%	10.68%	13.53%
	4Q17	**1Q18**	**2Q18**	**3Q18**	**4Q18**	**1Q19**	
Total Throughput	1780.0	1759.1	1802.90	1801.90	1778.10	1749.10	
YOY Increase	10.27%	7.26%	2.46%	-1.44%	-0.11%	-0.57%	

Source: DP World website

Appendix 6 Equity Throughput and Growth Rate of ICTSI

(Unit: 10,000 TEUs)

	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17
Total Throughput	205.36	221.10	213.54	225.42	227.26	227.28	229.12
YOY Increase	3.57%	16.04%	13.57%	11.13%	10.66%	2.79%	7.30%
	4Q17	**1Q18**	**2Q18**	**3Q18**	**4Q18**	**1Q19**	
Total Throughput	231.68	232.55	238.87	243.81	258.42	247.87	
YOY Increase	2.78%	2.33%	5.10%	6.41%	11.54%	6.58%	

Source: ICTSI website

Appendix 7 Business Volume Data of the Consolidated Statement of AP Moller-Maersk, 2017.Q1-2019.Q1

(Unit: million moves)

	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19
Throughput on Consolidated Statement	2.4	1.7	3.4	2.7	2.7	2.8	2.8	3.1	2.8

Source: Maersk Group website

Major data sources and references

1.IMF

2.World Economic Outlook Database

3.Drewry website

4.Clarkson website

5.OECD website

6.Ministry of Transport of the People's Republic of China

7.Hong Kong Port Authority website

8.Singapore Port Authority website

9.Rotterdam Port Authority website

10.EU organization statistics websites

11.China Ports website

12.www.snet.com

13.Shanghai Maritime University Library

14.Asia-Pacific Economic Cooperation

15.COSCO Pacific Limited financial report

16.A.P. Moller-Maersk Group

17.The Journal of Commerce

18.Lloyd's List

19.G-Port, UK

20.Port Strategy Magazine

21.Port Technology Magazine

22.Port Management Magazine

23.Container Management Magazine

24.Websites of Various Port Authorities

Global Port Development Report (2019) Preparation Committee

Chief Editor: Zhen Hong （Professor）

Members: Yin Ming （Professor）

Li Gang （Associate Professor）

Zhang Jieshu （Professor）

Zhao Nan （Director of Port department）

Xie Wenqing（Assistant Director of Port department）

Working Group on Global Port Development

Leader： Zhao Nan

Deputy head：Xie Wenqing

Members： Zhang Jing, Chen Weijie

Zhou Xin, Wu Jiazhang

Wu Wenjua, Xu Zhongchen

Lin Xiao

Shanghai International Shipping Institute
Shanghai International Shipping Institute Port Development Institute
Add: No.150 Huoshan RD. Shanghai China Zip code：200082
Contact: Lu Weiling
Email: luweiling@sisi-smu.org.
TEL: +86 21 65853850*8038/65355897
Fax: +86 21 65373125
Website: http://en.sisi-smu.org/

Port Development Department Contract: Zhao Nan Tel:021-65853850-8033 Email:rockyzhao1986@163.com

Shanghai International Shipping Institute		
Business Consultation（021-65853850）		
International Shipping Market Analysis Report	021-65853850*8025	Zhang Yongfeng
International Container liner Shipping Market Analysis Report		
International Dry Bulk Shipping Market Analysis Report		
Chinese Coastal Dry Bulk Shipping Market Analysis Report	021-65853850*8039	Zhou Dequan
Chinese Shipping Prosperity Report		
Global Port Development Report	021-65853850*8033	Zhao Nan
Global Modern Shipping Services Development Report	021-65853850*8015	Jin JiaChen
Chinese Cruise Market Analysis Report		Cheng Juehao
China Shipping Financial Market Report		Gan Aiping
Shipping Review Magazine	021-65853850*8032	Liu Zhengyu
Maritime intelligence		
CHINA SHIPPING AND PORTS（E-JOURN）		
China Maritime Information Website		
China Shipping Database	021-65853850*8006	Xu Kai
Shipping Information Development Report		

Shanghai International Shipping Institute Secretariat

Secretary General: Professor Zhen Hong

Deputy Secretary General: Professor Yin Ming

Associate Professor Li Gang

Professor Zhang Jieshu

Assistant to the Secretary General：Dai Jin

Zhao Nan

Director of Port Research Department：Ph.D. Zhao Nan

Director of International Shipping Research Department：Ph.D. Zhang Yongfeng

Director of Shipping Center Construction Research Department: Ph.D. Jin Jiachen

Director of Domestic Shipping Research Department: Ph.D. Zhou Dequan

Director of Shipping Information Research Department and

Shipping &Port Big Data Laboratory: Ph.D. Xu Kai

Shanghai International Shipping Institute

Add: Room 305. No.150 Huoshan RD. Shanghai China Zip code：200082

TEL: +86 21 65853850*8005/65355897

Fax: +86 21 65373125

Website: http://en.sisi-smu.org/