



2024 Global Port Productivity Trends

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CHAPTER

I

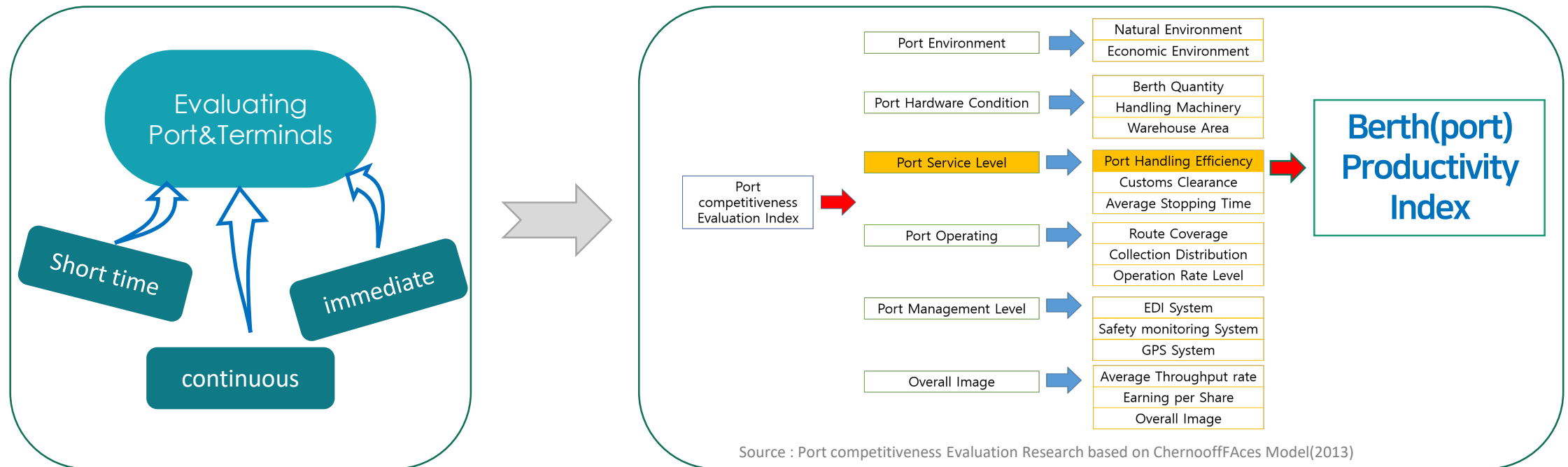
Background



Background

Need for Research

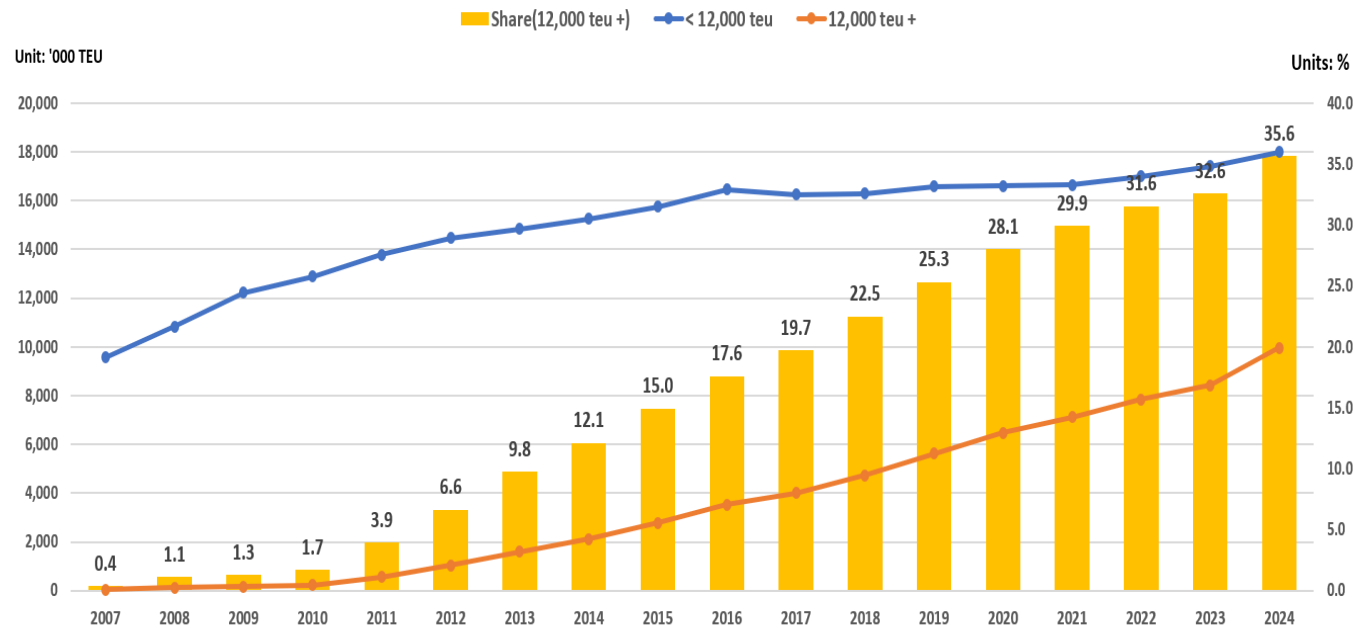
- Longer ship calls at the ports, higher cost
⇒ Port's efficiency is a important consideration for shipping companies
- Rising need for immediate, continuous efficiency metrics.



Background

Need for Research

- Especially, Container ship enlargement makes competitiveness in large vessels increasingly critical



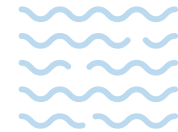
Source : Clarksons Research(2024.08)

Year	< 12,000TEU (No)	12,000TEU +(No)
2007	4,034	2
2008	4,430	7
2009	4,800	9
2010	4,873	14
2011	5,034	39
2012	5,137	74
2013	5,115	117
2014	5,091	151
2015	5,090	194
2016	5,166	239
2017	5,086	268
2018	5,062	311
2019	5,136	363
2020	5,166	411
2021	5,196	445
2022	5,308	486
2023	5,459	521
2024	5,657	607
CAGR('04~24)	1.1%	14.9%

CHAPTER

II

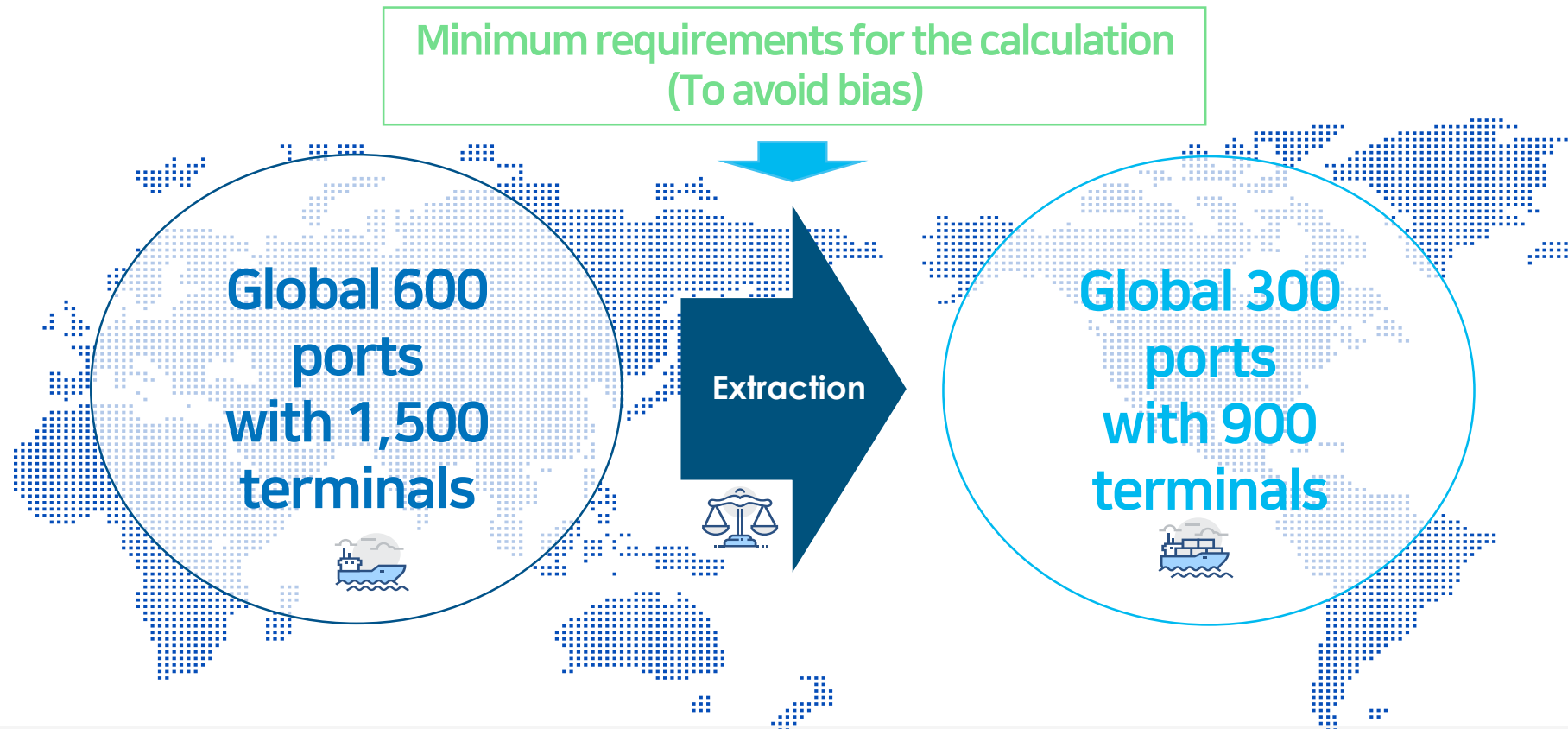
Methodology



Methodology

Data

- Data : Sample data on container ship arrivals and departures from approximately 600 ports worldwide



Methodology

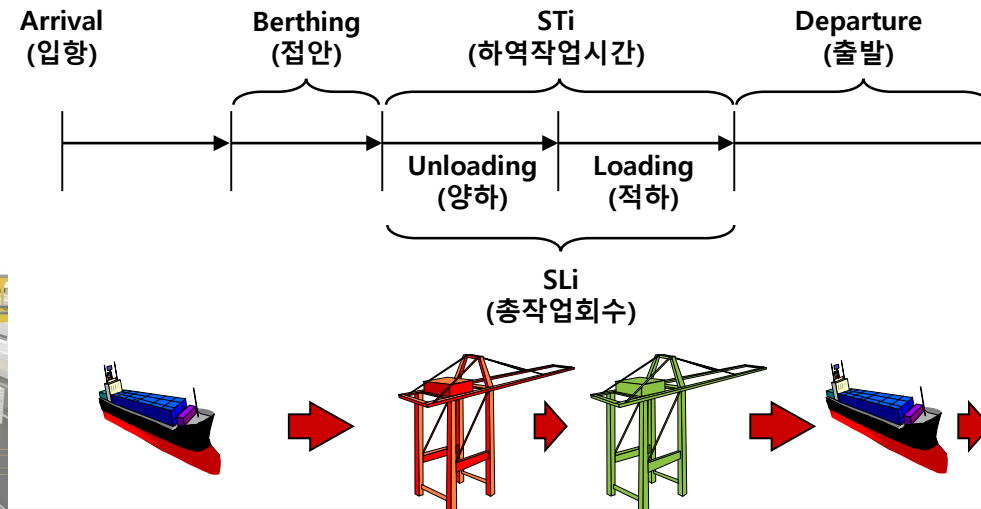
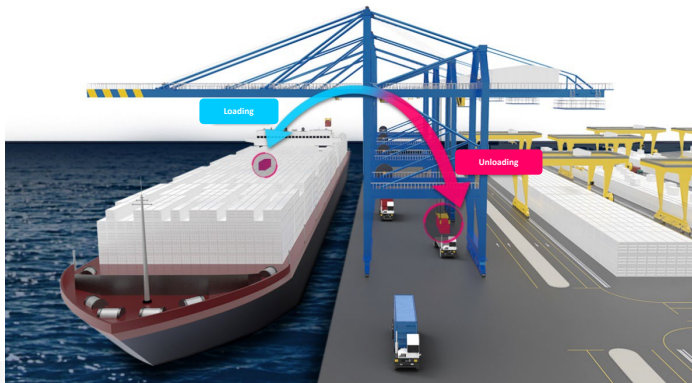
Caclulation

- Berth Productivity: unloading and loading lifts per hour per ship

**Method of Calculation : total mean of each vessel's berth productivity
(number of total container lifts ÷ total time of unloading and loading)**

- i : ship number ($i=1, 2, 3, \dots, n$)
- ST_i : Unloading and loading time for the ship i
(from lifting at the first container to the last container)
- SL_i : Number of Container Lifts during ST_i
- k : Terminal or Port or Country ($k=1, 2, 3, \dots, n$)
- $P(k)$: Berth Productivity of Terminal(or Port or Country) 'k'

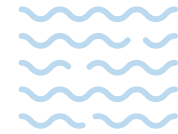
$$P(k) = \frac{\sum_{i=1}^n \frac{SL_i}{ST_i}}{n}$$



CHAPTER

III

Results



Results

By Region(12,000 teu +)

- The berth productivity of vessels over 12,000 TEU worldwide is an average of 102.2(move/hour)
- Gradual recovery from the impacts of COVID-19 and the logistics crisis, but recently turning into a decline due to port congestion

Rank ('24.H1)	Region	2019[rank]	2020[rank]	2021[rank]	2022[rank]	2023[rank]	2024.H1
1	South/South East Asia	137.2 [1]	127.7 [1]	121.1 [1]	126.7 [1]	128.7 [1]	123.4
2	Northeast Asia	123.3 [3]	109.8 [3]	111.6 [3]	110.5 [2]	116.6 [2]	115.6
3	North Europe	97.7 [4]	93.1 [4]	82.2 [5]	76.9 [4]	88.3 [4]	89.3
4	Middle East/Africa	128.4 [2]	114.3 [2]	111.7 [2]	109.1 [3]	97.2 [3]	89.2
5	Mediterranean Region	91.8 [5]	90.1 [5]	84.2 [4]	82.4 [5]	87.6 [5]	86.8
6	East Coast/Gulf North America	75.3 [6]	78.2 [6]	74.5 [6]	70.4 [6]	74.1 [6]	71.4
7	West Coast North America	70.6 [8]	68.3 [8]	55.7 [8]	67.9 [8]	64.7 [8]	66.6
8	Latin America	72.2 [7]	69.4 [7]	66.0 [7]	62.6 [7]	64.9 [7]	61.7
	World	113.9	105.0	101.2	100.1	104.5	102.2

Source : KMI's calculation using S&P Global Market Intelligence Data

Results

By Country(12,000 teu +)

- Malaysia maintains top spot, Korea rises two spots to 11th place
- Top 5 countries fully recover to pre-COVID levels

Rank ('24.H1)	Country	2019[rank]	2020[rank]	2021[rank]	2022[rank]	2023[rank]	2024.H1	Rank ('24.H1)	Country	2019[rank]	2020[rank]	2021[rank]	2022[rank]	2023[rank]	2024.H1
1	MALAYSIA	143.9 [1]	145.4 [1]	133.8 [1]	142.2 [1]	153.3 [1]	145.5	11	KOREA	120.9 [9]	107.5 [11]	95.8 [11]	99.0 [9]	95.1 [13]	93.7
2	MOROCCO	124.2 [8]	117.0 [6]	119.6 [6]	129.6 [3]	137.9 [2]	137.6	12	DENMARK	128.3 [6]	110.2 [10]	90.5 [16]	77.7 [22]	97.1 [12]	93.4
3	CHINA	126.7 [7]	111.6 [8]	117.7 [7]	115.8 [8]	127.2 [4]	126.3	13	BELGIUM	110.0 [15]	105.2 [13]	83.5 [21]	79.5 [21]	93.8 [15]	89.2
4	VIETNAM	115.7 [12]	105.0 [15]	111.3 [8]	117.3 [7]	118.7 [5]	123.9	14	SPAIN	119.1 [11]	104.2 [16]	96.0 [10]	87.9 [14]	94.2 [14]	86.1
5	NETHERLANDS	108.2 [16]	106.9 [12]	93.9 [14]	94.3 [12]	117.4 [6]	121.1	15	QATAR	-	-	-	-	87.8 [17]	85.6
6	SINGAPORE	142.7 [2]	133.4 [4]	119.9 [5]	128.5 [4]	129.4 [3]	120.2	16	GERMANY	93.8 [19]	93.8 [20]	77.8 [22]	63.9 [28]	79.7 [22]	82.9
7	POLAND	137.8 [4]	133.5 [3]	130.0 [2]	123.7 [6]	115.2 [6]	117.2	17	THAILAND	-	89.5 [21]	89.8 [17]	88.9 [13]	85.8 [19]	81.9
8	EGYPT	-	116.6 [7]	92.7 [15]	86.8 [15]	100.1 [11]	110.3	18	HONG KONG	104.5 [18]	100.0 [17]	94.9 [12]	96.0 [11]	84.6 [20]	81.3
9	UAE	139.3 [3]	120.3 [5]	125.8 [4]	125.1 [5]	109.9 [9]	106.0	19	SLOVENIA	85.1 [23]	83.6 [24]	65.8 [30]	57.3 [32]	62.4 [34]	78.9
10	SRI LANKA	119.9 [10]	105.2 [14]	111.2 [9]	97.9 [10]	108.1 [10]	99.2	20	GREECE	86.8 [22]	94.6 [19]	87.7 [19]	80.4 [18]	77.3 [26]	78.0

Source : KMIs' calculation using S&P Global Market Intelligence Data

Results

By Port(12,000 teu +)

- Busan port rises two spots to 25th place

Rank ('24.H1)	Port	2019[rank]	2020[rank]	2021[rank]	2022[rank]	2023[rank]	2024.H1	Rank ('24.H1)	Port	2019[rank]	2020[rank]	2021[rank]	2022[rank]	2023[rank]	2024.H1
1	Port said	-	136.5 [4]	120.3 [10]	124.1 [5]	138.4 [5]	175.4	16	Algeciras	127.9 [12]	108.9 [19]	109.8 [16]	109.1 [14]	108.5 [19]	106.1
2	Tianjin	142.6 [4]	128.5 [7]	122.1 [8]	146.1 [2]	165.7 [2]	172.8	17	Mawan	-	-	83.3 [34]	84.0 [32]	110.9 [15]	103.2
3	Tanjung Pelepas	153.1 [1]	151.0 [1]	145.0 [1]	163.5 [1]	178.6 [1]	166.9	18	Zhoushan	-	-	-	-	109.1 [17]	101.8
4	Qingdao	143.3 [2]	138.4 [3]	130.4 [5]	129.5 [7]	150.5 [3]	148.1	19	Xiamen	107.3 [23]	100.6 [25]	94.7 [22]	101.8 [17]	108.5 [18]	100.5
5	Shanghai	132.8 [9]	113.4 [12]	143.1 [2]	139.1 [4]	144.8 [4]	143.3	20	Shekou	-	-	-	83.4 [33]	93.8 [29]	100.2
6	Tanger-Mediterranean	124.2 [15]	117.0 [10]	119.6 [12]	129.6 [6]	137.9 [6]	137.6	21	Colombo	119.9 [16]	105.2 [22]	111.2 [15]	97.9 [21]	108.1 [20]	99.2
7	Cai Mep	115.7 [19]	105.0 [23]	111.3 [14]	118.6 [12]	120.9 [10]	126.7	22	Guangzhou	126.7 [13]	92.7 [31]	93.2 [24]	84.7 [29]	95.1 [28]	98.4
8	Gdansk	137.8 [8]	133.5 [5]	130.0 [6]	124.3 [9]	115.9 [13]	126.0	23	Port Klang	74.8 [38]	111.9 [13]	102.6 [17]	99.2 [19]	105.8 [21]	96.8
9	Dalian	94.6 [30]	99.7 [28]	90.1 [26]	103.3 [16]	128.7 [8]	122.0	24	Antwerp	110.7 [21]	108.1 [20]	88.8 [29]	84.7 [30]	98.3 [24]	94.4
10	Rotterdam	108.2 [22]	106.9 [21]	93.9 [23]	94.3 [23]	117.4 [12]	121.1	25	Busan	126.0 [14]	110.2 [16]	97.5 [20]	100.5 [18]	95.2 [27]	94.2
11	Ningbo	138.8 [7]	122.8 [9]	127.4 [7]	119.5 [11]	120.1 [11]	120.3	26	Aarhus	128.3 [11]	110.2 [17]	90.5 [25]	77.7 [38]	97.1 [25]	93.4
12	Singapore	142.7 [3]	133.4 [6]	119.9 [11]	128.5 [8]	129.4 [7]	120.2	27	Bremerhaven	99.5 [27]	102.7 [24]	84.1 [33]	76.2 [40]	86.7 [34]	90.2
13	Khalifa Port	132.5 [10]	113.4 [11]	118.4 [13]	134.9 [5]	115.9 [14]	118.7	28	Jebel Ali	141.2 [5]	125.7 [8]	132.3 [4]	116.8 [13]	104.1 [22]	89.5
14	Long Beach	-	-	77.5 [39]	87.3 [27]	96.4 [26]	116.6	29	Gwangyang	95.9 [29]	85.7 [35]	83.0 [37]	85.0 [28]	93.4 [30]	88.8
15	Yantian	117.5 [17]	100.1 [26]	98.5 [19]	98.0 [20]	110.4 [16]	112.2	30	Hamad Port	-	-	-	-	87.8 [33]	85.6

Source : KMI's calculation using S&P Global Market Intelligence Data

Results

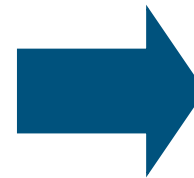
By Port(12,000 teu +)

- Top 20 Container Ports : Average Productivity of 113.2

< Top 20 ports in 2023 >

Rank ('23)	Port	2023('000 teu)	Rank ('23)	Port	2023('000 teu)
1	Shanghai	4,916	11	Port Kelang	1,406
2	Singapore	3,901	12	Rotterdam	1,345
3	Ningbo-Zhoushan	3,530	13	Xiamen	1,255
4	Qingdao	3,000	14	Antwerp-Bruges	1,250
5	Shenzhen	2,988	15	Tanjung Pelepas	1,048
6	Guangzhou	2,541	16	Laem Chabang	887
7	Busan	2,315	17	Kaohsiung	863
8	Tianjin	2,219	18	Los Angeles	861
9	Dubai(Jebel Ali)	1,447	19	Tanger Med	861
10	Hong Kong	1,440	20	Ho Chi Minh City	840

Source : Alphaliner and Port's Authorities



Rank('24.H1)	Ports	2024.H1
1	Tianjin	172.8
2	Tanjung Pelepas	166.9
3	Qingdao	148.1
4	Shanghai	143.3
5	Tanger Med	137.6
:	:	:
13	Antwerp-Bruges	94.4
14	Busan	94.2
:		
Average*		113.2

* Except for the Port of Ho Chi Minh City

CHAPTER

IV

Summary and Outlook



Summary and Outlook

Summary and Outlook

- Berth Productivity for Large Container Ships Rebounds Post-COVID
⇒ Productivity Recovery is Most Prominent in the Asia Region
- Recent Red Sea risks and increased early shipments for inventory stocking
=> Berth Productivity Declines Due to Port Congestion
- Continuation of the Russia-Ukraine War, Increased Possibility of Strikes at U.S. East Coast Ports, and the Expansion of Protectionism
=> Productivity Recovery Unlikely in the Second Half of 2024

THANK YOU