Energy | Shipping

Shipping: A Tale of Two Decades

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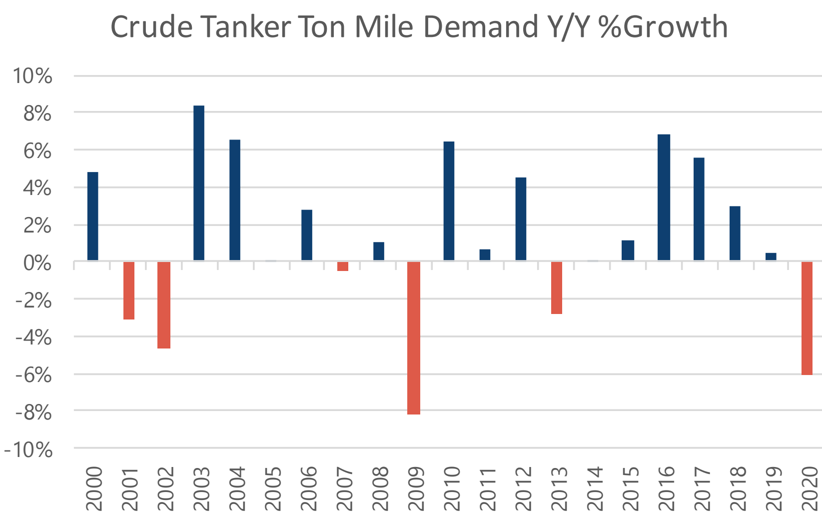
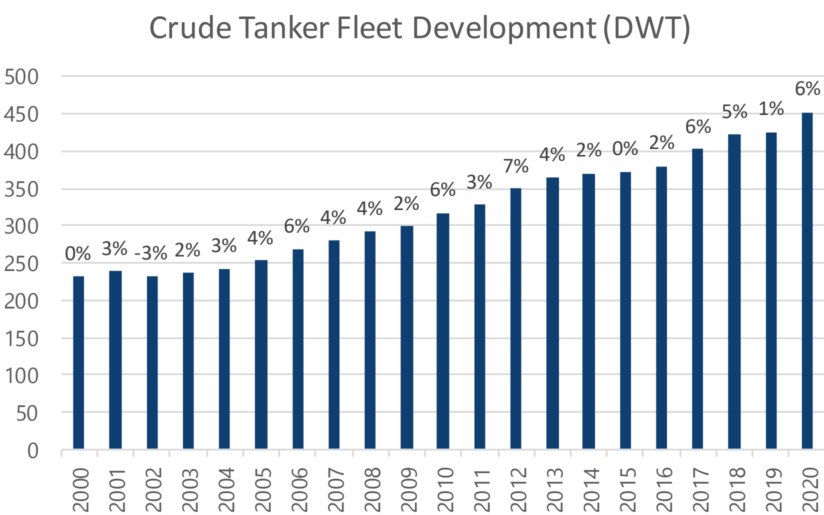
2000-2010 vs 2010-2020 Comparison Charts





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Jefferies

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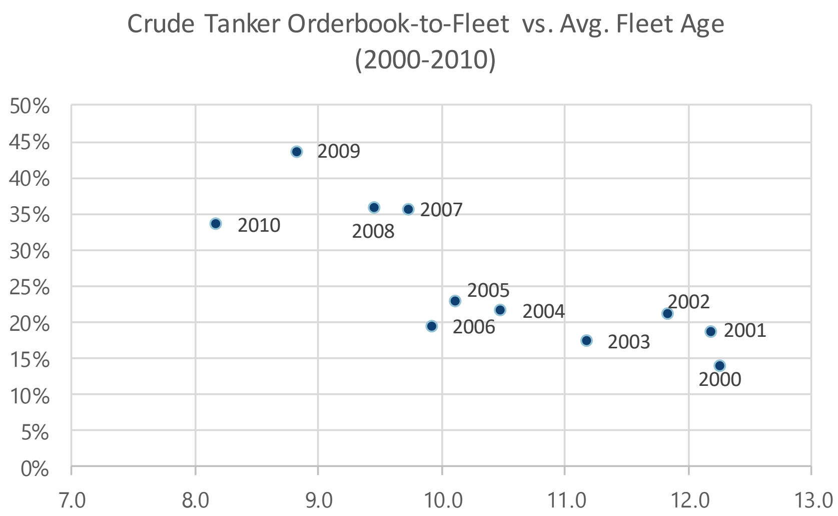

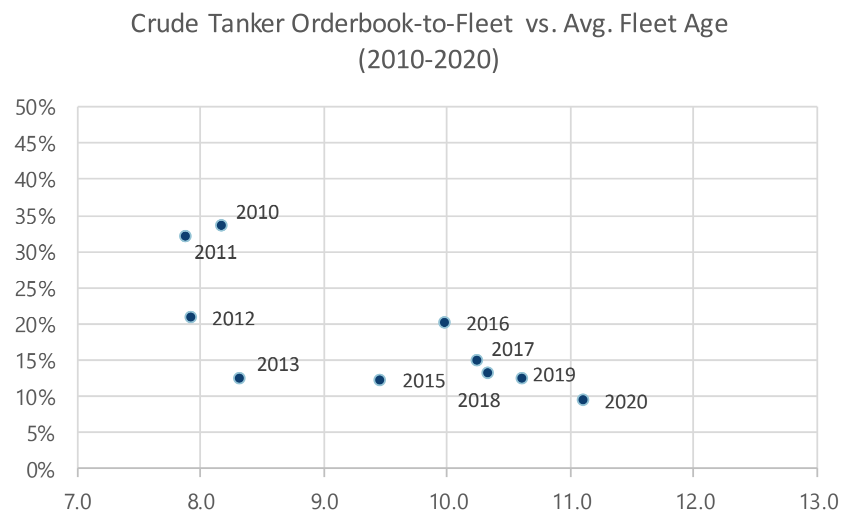

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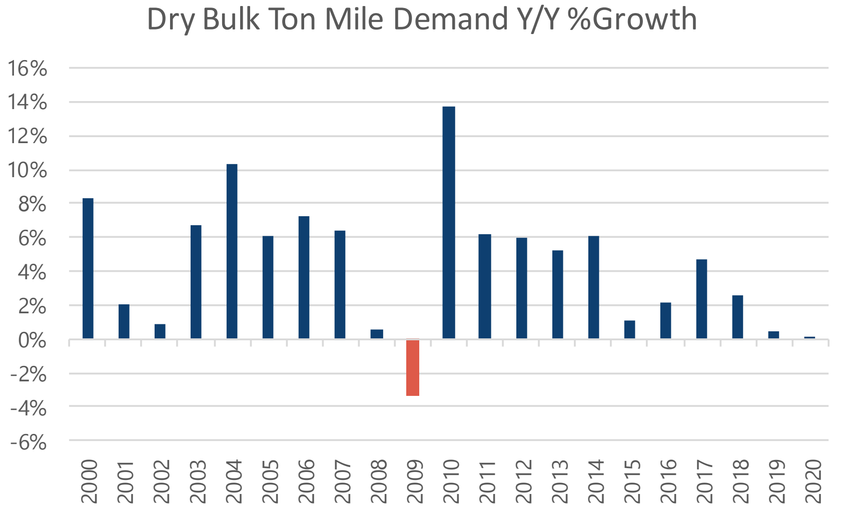

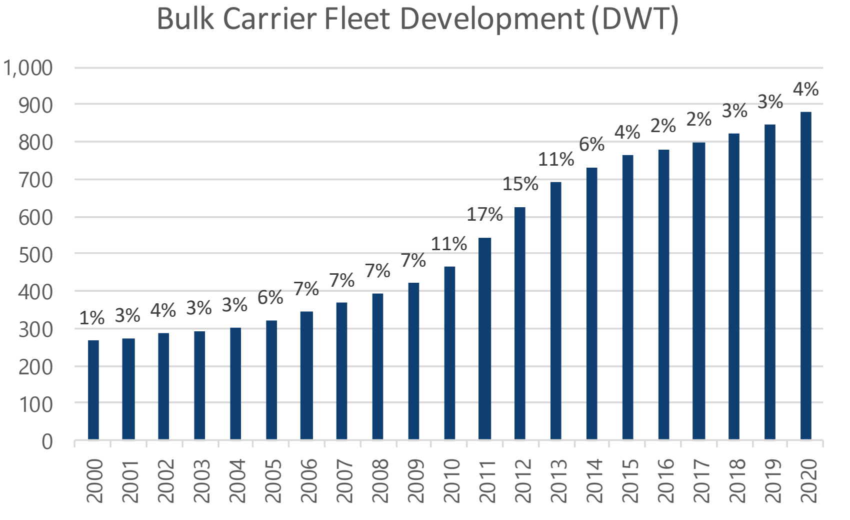

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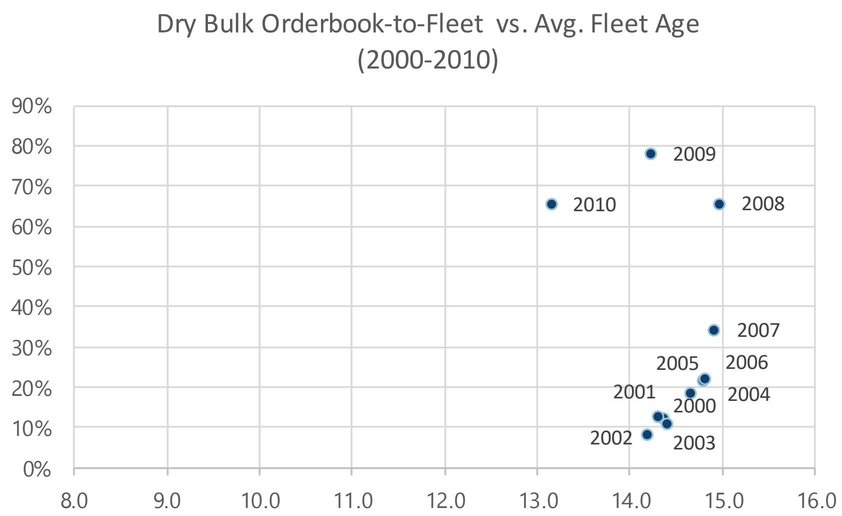

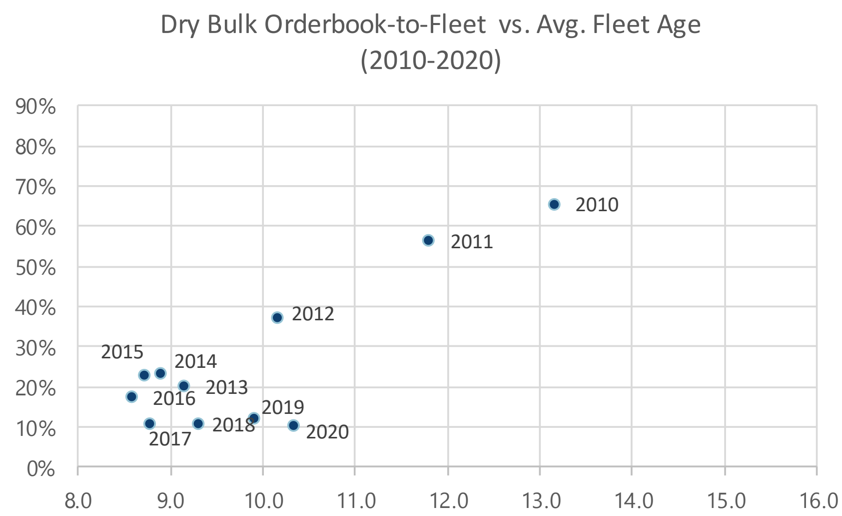

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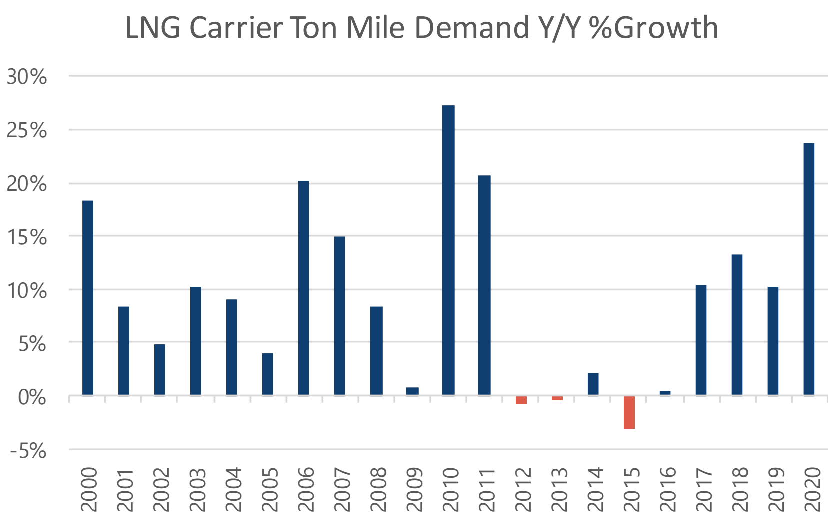

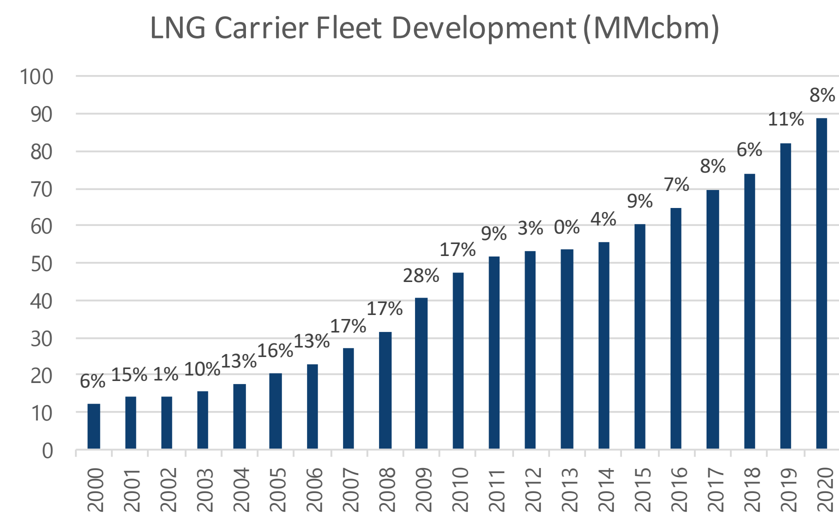

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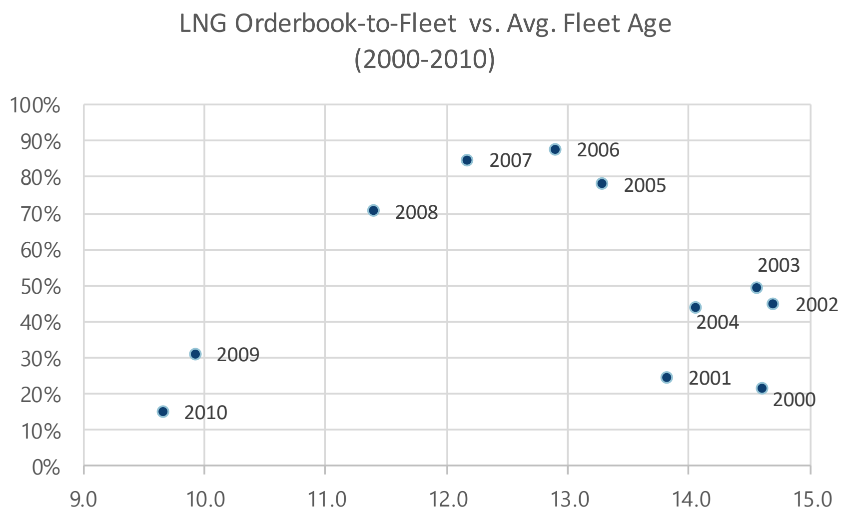
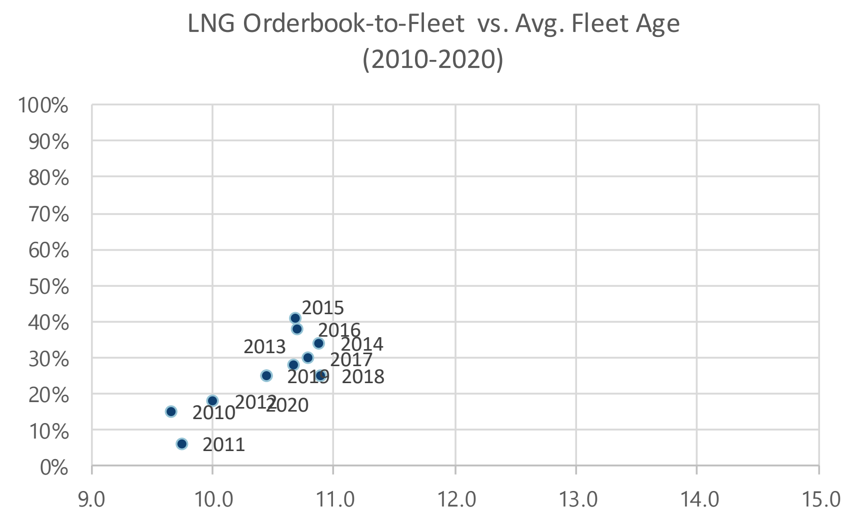
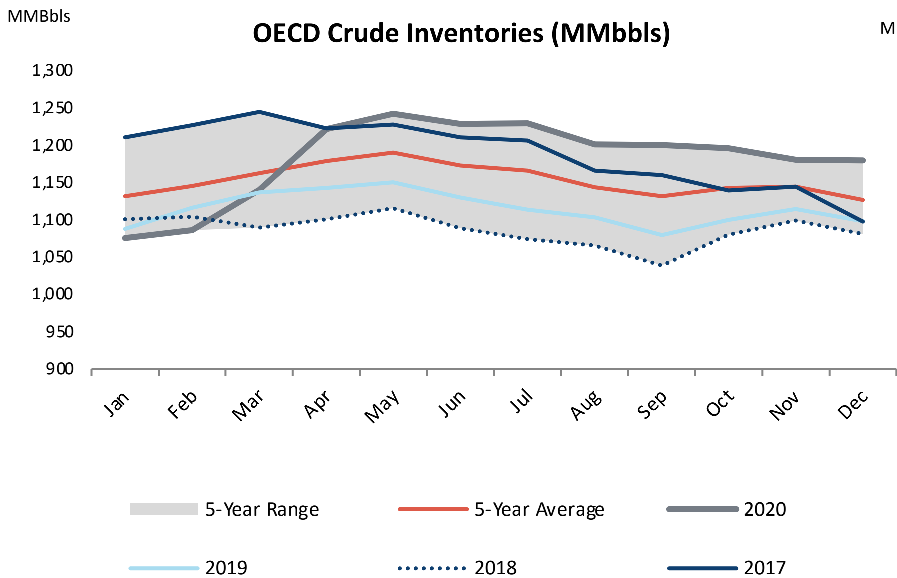


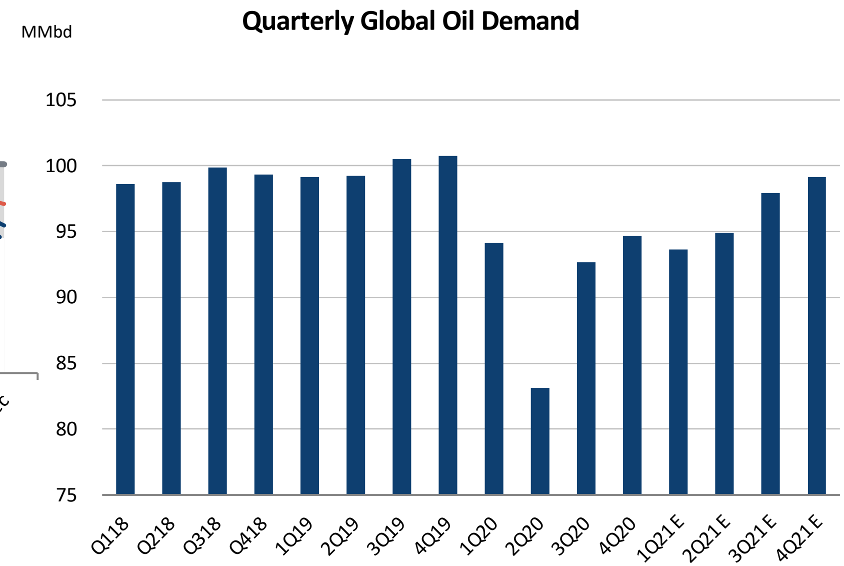


Jefferies

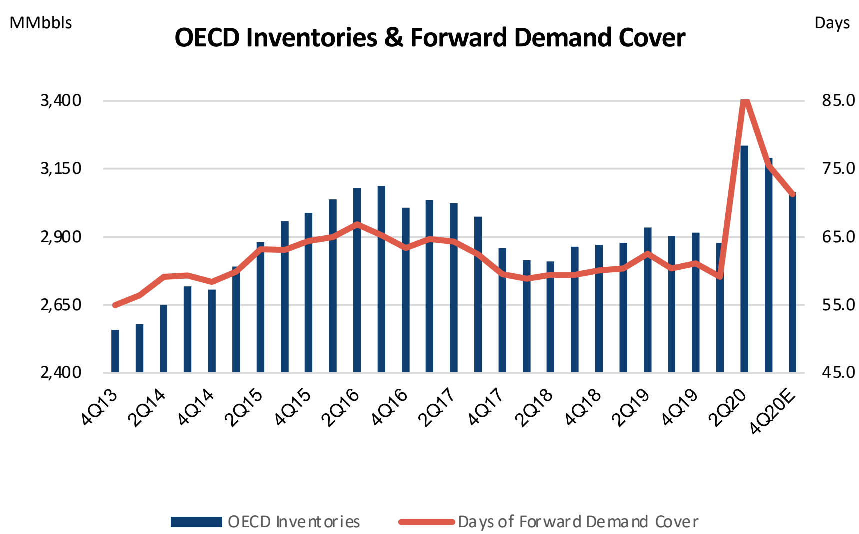
Crude Tanker Demand



Source: IEA



Source: IEA, Jefferies



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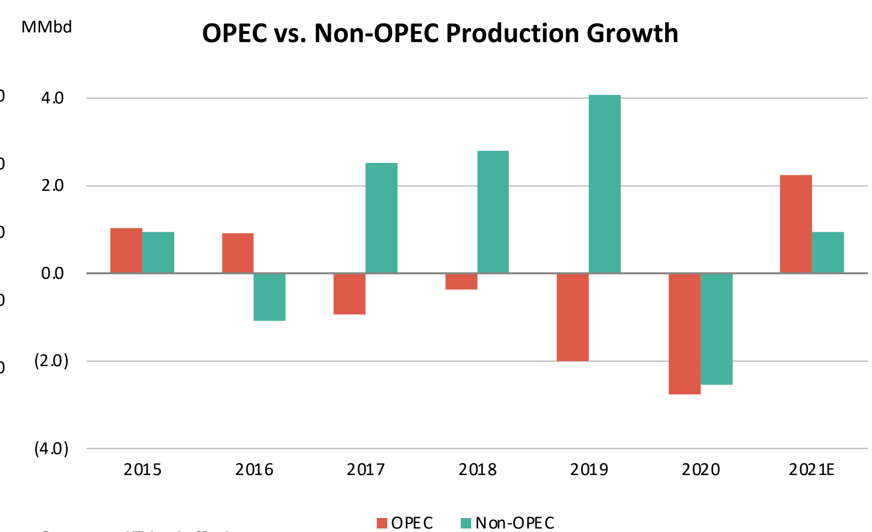
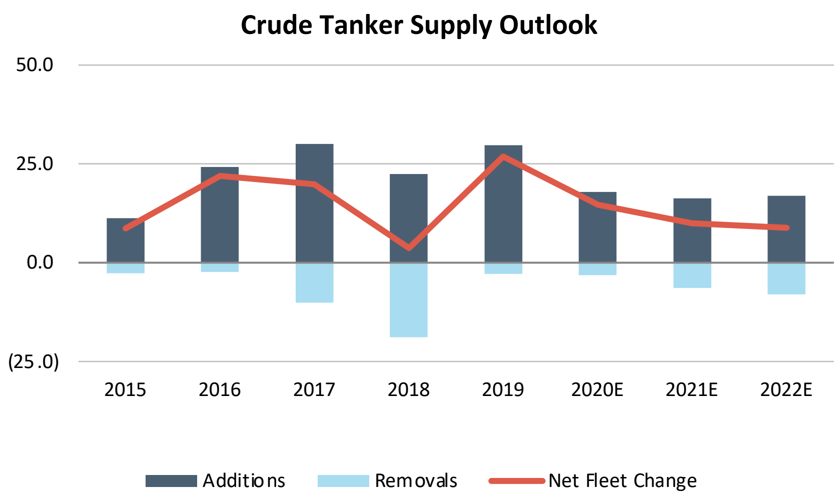
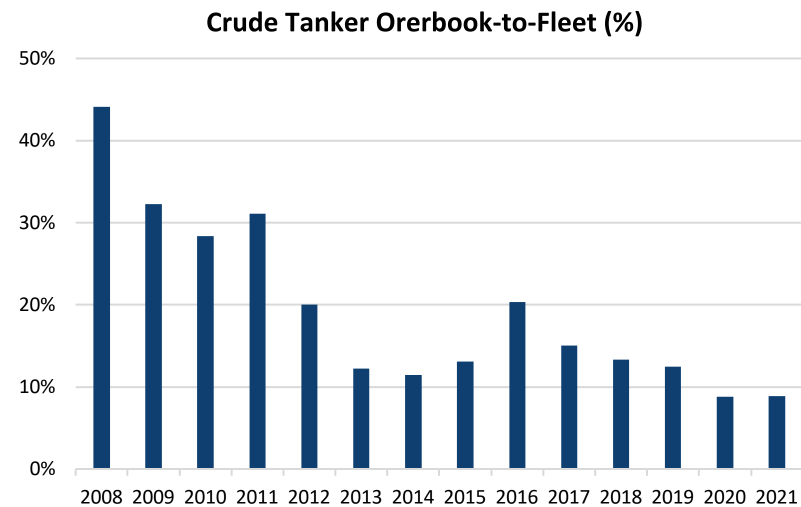


Source: IEA, Jefferies

Crude Tanker Supply



Source: Clarksons Research Services Limited (CRSL), Jefferies



Source: Clarksons Research Services Limited (CRSL), Jefferies

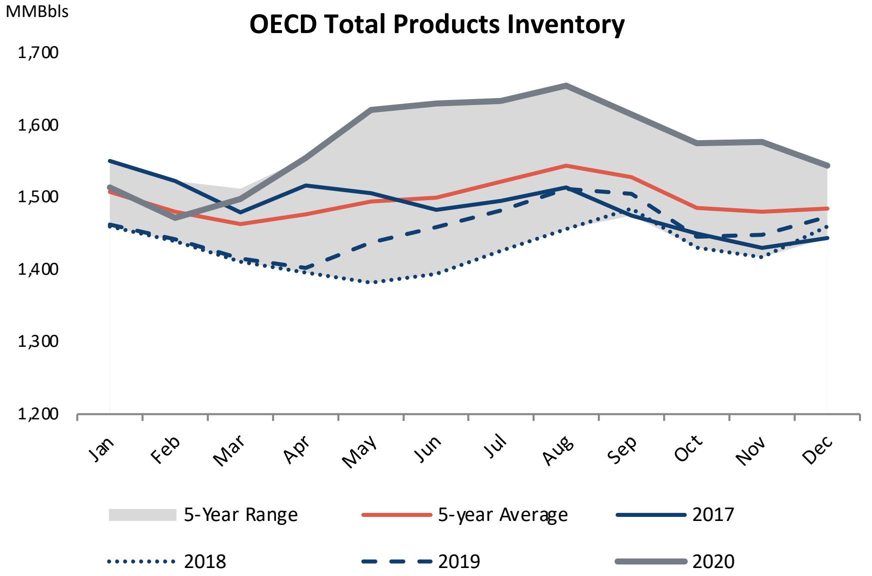
- Current orderbook-to-fleet ratio of 8.9%
- 1.2% of the current fleet is over 25 years old
- Projected net fleet growth of 2.1% in 2021 and 1.9% in 2022
- Slippage has averaged 20-25% per year from 2015-2020
- Crude tanker fleet unlikely to grow significantly in the coming years due to lack of newbuilding ordering in recent quarters

Crude Tanker S/D Table

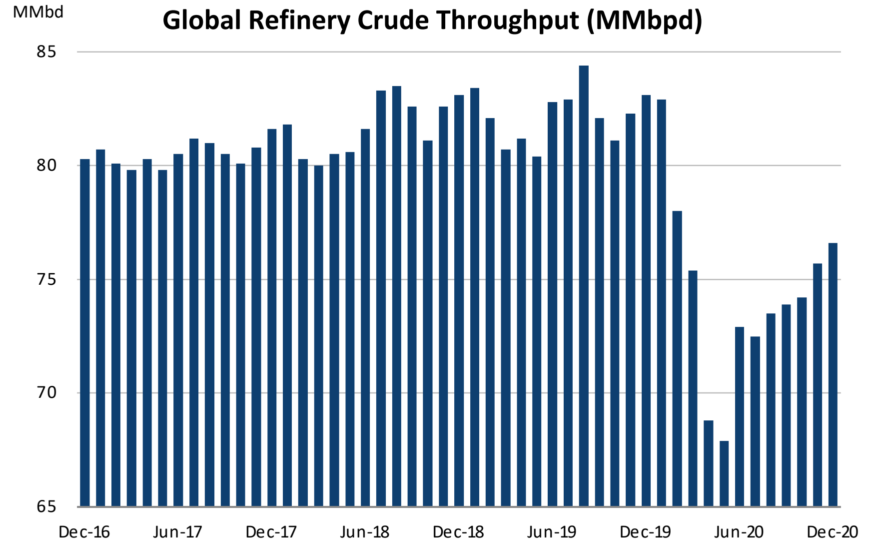
(in millions of dwt)	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020E**	**2021E**	**2022E**
Size of Tanker Fleet at Beginning of Year	349.6	365.2	370.3	371.5	380.1	402.1	421.9	425.6	452.5	467.2	477.1
PLUS: Tanker Deliveries	26.4	15.8	10.0	11.3	24.2	30.0	22.5	29.7	17.9	16.3	16.9
LESS: Tanker Scrappings/Conversions/Offhire	(10.8)	(10.8)	(8.8)	(2.6)	(2.3)	(10.1)	(18.8)	(2.8)	(3.2)	(6.4)	(8.0)
Size of Tanker Fleet at End of Year	365.2	370.3	371.5	380.1	402.1	421.9	425.6	452.5	467.2	477.1	486.0
Tanker Fleet Growth	15.6	5.0	1.2	8.7	21.9	19.9	3.7	26.9	14.7	9.9	8.9
(in millions of bd)	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020E**	**2021E**	**2022E**
Worldwide Oil Demand	90.5	91.9	93.2	95.1	96.2	98.1	99.2	100.0	91.2	96.9	98.9
Expected OPEC Production	30.8	30.0	29.8	30.9	32.1	31.7	31.3	29.3	26.6	28.8	30.8
Expected Non-OPEC Production	53.9	55.1	57.1	58.8	58.3	58.8	63.1	65.0	63.0	63.8	65.0
Expected OPEC NGL Production	6.3	6.3	6.3	6.7	6.8	6.8	5.5	5.5	5.4	5.6	5.7
Change in OPEC Production	1.4	(0.8)	(0.2)	1.1	1.2	(0.4)	(0.4)	(2.0)	(2.8)	2.2	2.0
Change in Non-OPEC Production	0.6	1.3	2.0	1.7	(0.5)	0.6	4.3	1.9	(2.0)	0.8	1.2
Change In OPEC NGL Production	0.3	0.0	0.0	0.4	0.1	0.0	(1.3)	(0.0)	(0.0)	0.2	0.1
Est. Tanker Tonnage Required to Ship 1 MMbbl of Oil	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Total Incremental Tanker Demand (MMdwt)	23.1	4.3	18.5	32.0	7.2	2.2	26.4	(1.6)	(48.7)	32.4	33.0
Increase/Decrease in Floating Storage Vessels (MMdwt)								16.0	32.0	(16.0)	(16.0)
Net Change in Tanker Fleet (MMdwt)	15.6	5.0	1.2	8.7	21.9	19.9	3.7	26.9	14.7	9.9	8.9
Incremental Tanker Demand Requirements (MMdwt)	23.1	4.3	18.5	32.0	7.2	2.2	26.4	14.4	(16.7)	16.4	17.0
Net Capacity Surplus/(Shortage) (MMdwt)	**(7.5)**	**0.8**	**(17.3)**	**(23.3)**	**14.7**	**17.6**	**(22.7)**	**12.5**	**31.3**	**(6.5)**	**(8.1)**
Average VLCC Spot Rate	$21,187	$18,621	$30,015	$64,846	$41,488	$17,794	$21,448	$41,843	$47,241		

Source: IEA, Clarksons Research Services Limited (CRSL), and Jefferies LLC Estimates

Products Tanker Demand



Source: IEA



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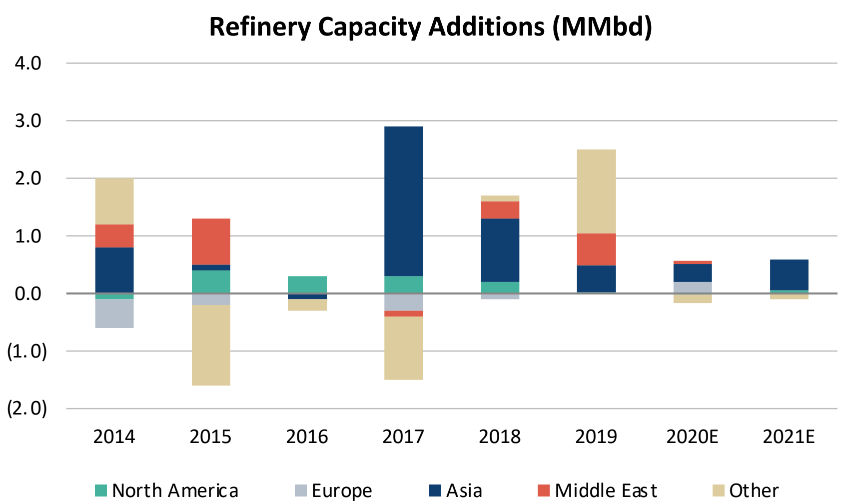
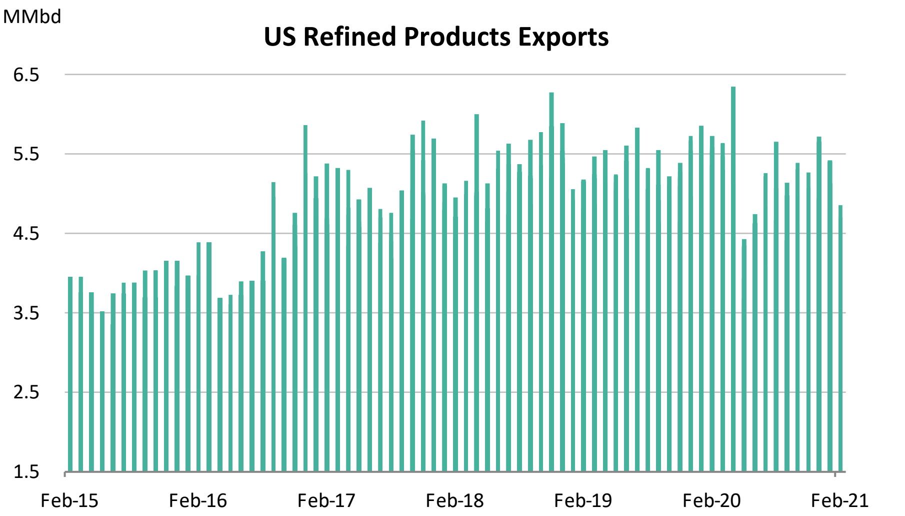
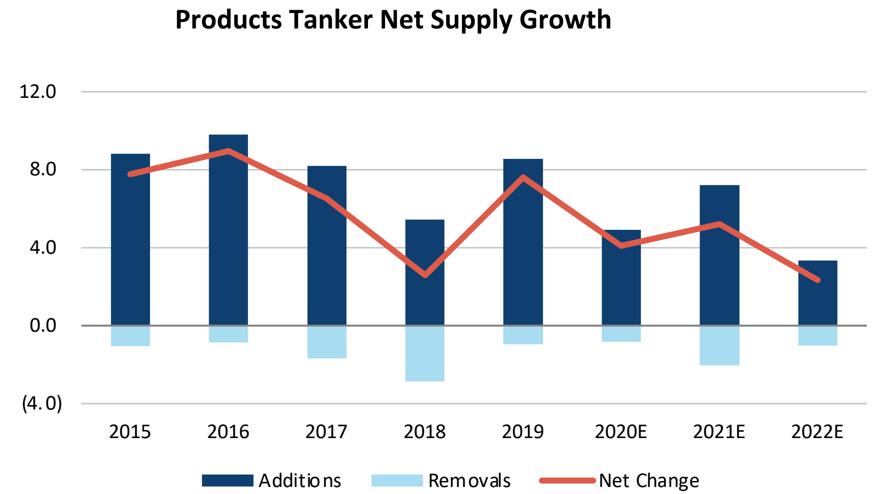


Source: IEA, Clarksons Research Services Limited (CRSL), Jefferies

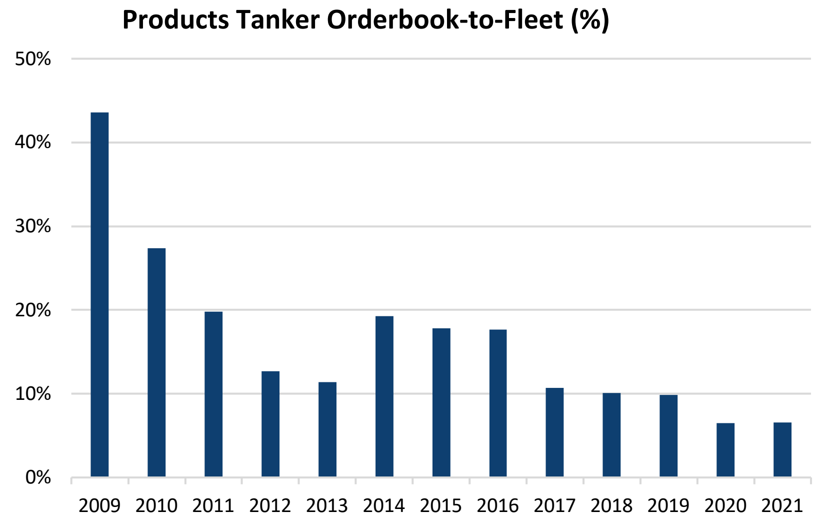


Source: IEA

Products Tanker Supply



Source: Clarksons Research Services Limited (CRSL), Jefferies



Source: Clarksons Research Services Limited (CRSL), Jefferies

- Current orderbook-to-fleet ratio of 6.6%
- 1.9% of the current fleet is over 25 years old
- Projected net fleet growth of 3.0% in 2021 and 1.3% in 2022
- Products tanker fleet unlikely to grow significantly in the coming years due to lack of newbuilding ordering in recent quarters

Products Tanker S/D Table

	2012	2013	2014	2015	2016	2017	2018	2019	2020E	2021E	2022E
Size of Tanker Fleet at Beginning of Year	125.1	127.6	130.9	136.0	143.7	152.7	159.1	162.0	170.0	174.1	179.3
PLUS: Tanker Deliveries	6.1	5.5	6.6	8.8	9.8	8.2	5.5	8.6	4.9	7.2	3.4
LESS: Tanker Removals	(3.5)	(2.2)	(1.5)	(1.0)	(0.9)	(1.8)	(2.9)	(1.0)	(0.8)	(2.0)	(1.0)
Size of Tanker Fleet at End of Year	127.6	130.9	136.0	143.7	152.7	159.1	162.0	170.0	174.1	179.3	181.6
Net Tanker Fleet Growth (%)	2.1%	2.5%	3.9%	5.7%	6.2%	4.2%	1.8%	4.9%	2.4%	3.0%	1.3%
Global Seaborne Products Trade (MMbd)	19.8	20.4	20.3	21.7	22.6	23.0	23.4	22.3	20.3	21.6	22.7
Seaborne Products Demand Growth	0.5%	3.0%	-0.5%	6.9%	4.1%	1.8%	1.9%	-4.9%	-8.9%	6.4%	5.0%
Total Incremental Tanker Demand (MMdwt)	0.6	3.9	(0.7)	9.6	6.1	2.8	3.1	(8.2)	(15.3)	11.3	9.0
Increase/Decrease in Floating Storage Vessels (MMdwt)								5.8	11.5	(5.8)	(5.8)
Net Change in Tanker Fleet (MMdwt)	2.6	3.2	5.1	7.8	9.0	6.4	2.6	7.6	4.1	5.2	2.3
Incremental Tanker Demand Requirements (MMdwt)	0.6	3.9	(0.7)	9.6	6.1	2.8	3.1	(2.5)	(3.8)	5.6	3.3
Net Capacity Surplus/(Shortage) (MMdwt)	**1.9**	**(0.7)**	**5.7**	**(1.9)**	**2.8**	**3.6**	**(0.5)**	**10.1**	**7.9**	**(0.4)**	**(0.9)**

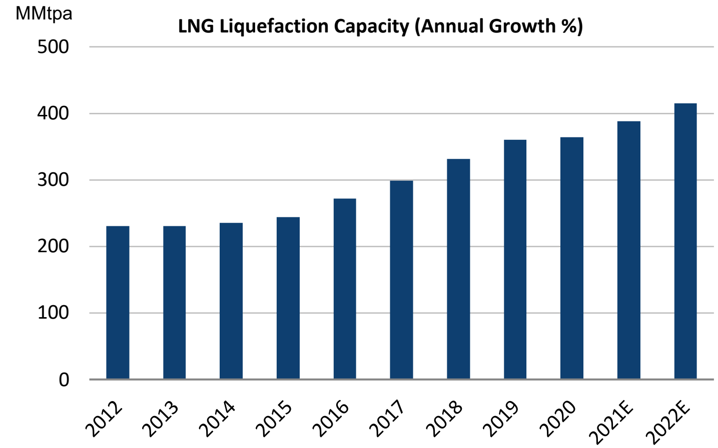
Source: IEA, Clarksons Research Services Limited (CRSL), and Jefferies LLC Estimates

LNG Carrier Demand

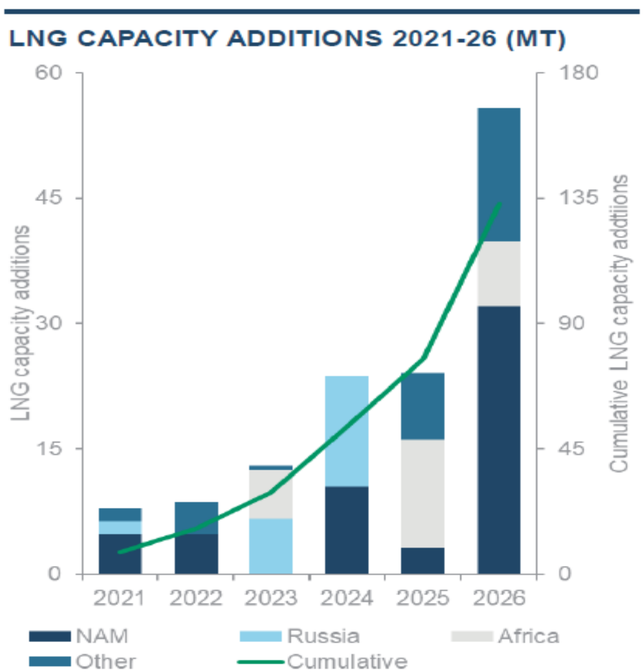
Global LNG Projects Under/ Near Construction

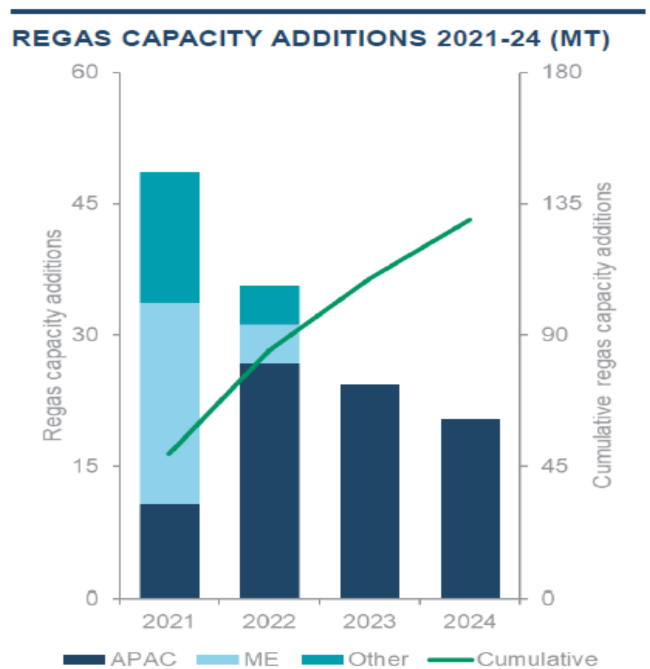
Country	Project	Capacity (bcm)	Capacity (MMtpa)	Online date
Russia	Yamal Train 4	1.4	1.0	2021
Russia	Portovya Train 1	2.1	1.5	2021
Malaysia	Petronas FLNG 2	2.1	1.5	2021
Oman	Qalhat P2	1.4	1.0	2021
USA	Corpus Christi LNG Train 3	6.2	4.5	2021
Indonesia	Tangguh Train 3	5.2	3.8	2022
Mozambique	Coral FLNG	5.2	3.8	2022
USA	Calcasieu Pass Trains 1-9	14.9	10.8	2022
Russia	Arctic LNG 2 Train 1	9.1	6.6	2023
USA	Sabine Pass LNG Train 6	6.2	4.5	2023
Russia	Artic LNG 2 Train 2	9.1	6.6	2023

Source: IEA, Company Reports, Jefferies

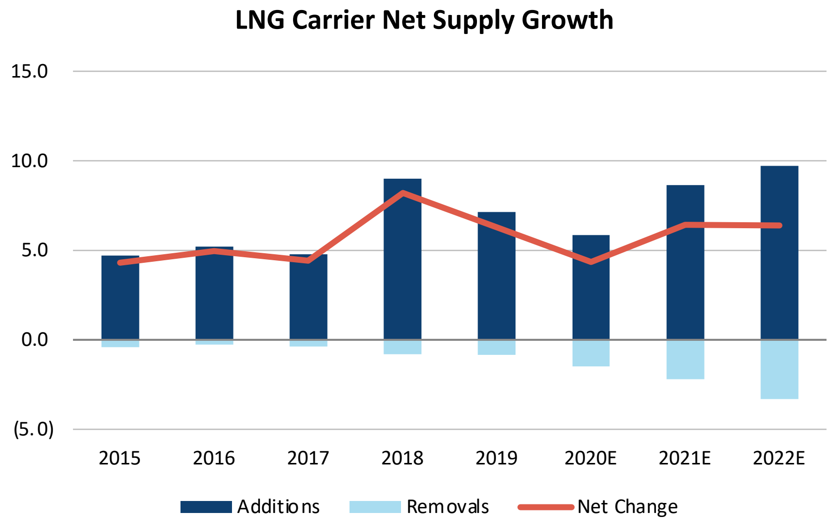


Source: IEA, Company data, Jefferies

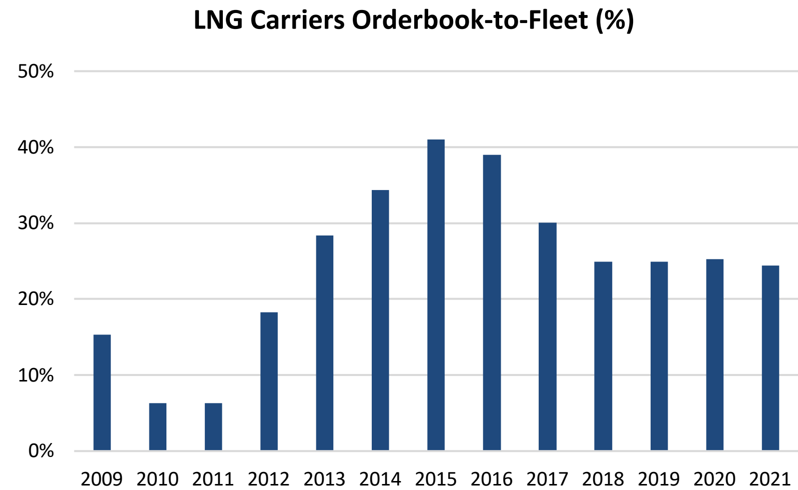




LNG Carrier Supply



Source: Clarksons Research Services Limited (CRSL), Jefferies



Source: Clarksons Research Services Limited (CRSL), Jefferies

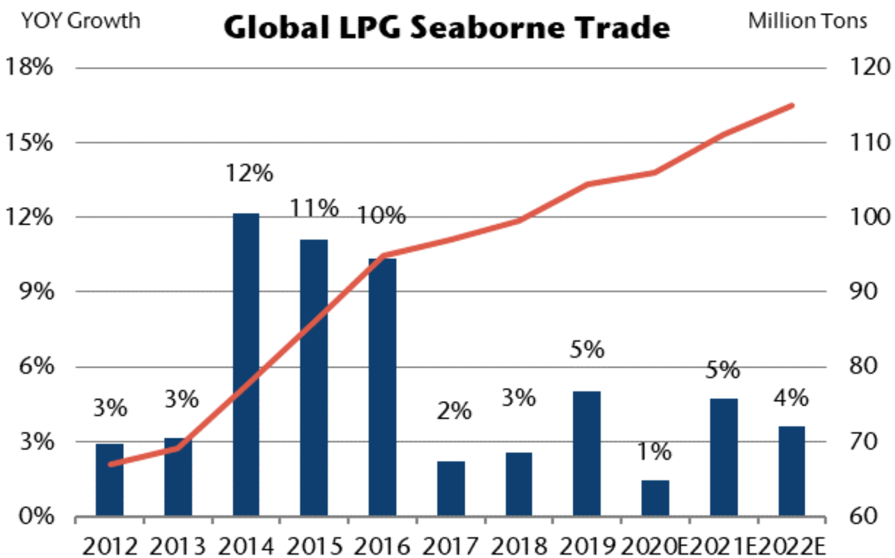
- Current orderbook-to-fleet ratio of 24.4%
- 5.3% of the current fleet is over 25 years old
- Projected net fleet growth of 6.9% in 2021 and 6.4% in 2022
- Unlike other shipping sectors, LNG carrier orderbook extends into 2025
- Existing newbuilding orders primarily placed at 6 shipyards globally

LNG Carrier S/D Table

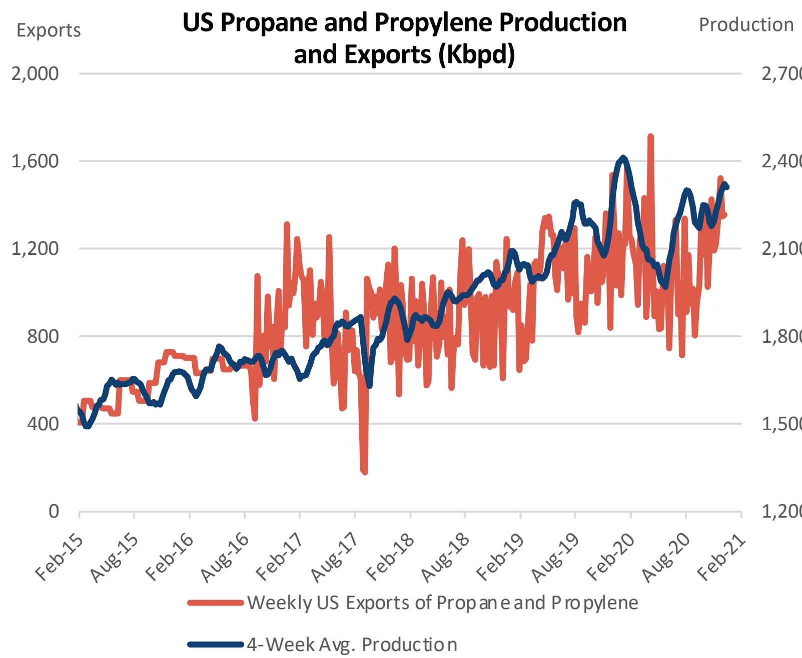
	2012	2013	2014	2015	2016	2017	2018	2019	2020E	2021E	2022E
LNG Liquefaction Capacity (MMtpa)	276.2	280.6	287.2	297.6	329.0	359.9	392.6	424.5	449.3	462.3	477.2
LNG Trade (MMtpa)	231.0	230.1	235.5	244.0	271.5	298.7	331.8	359.8	363.9	388.3	415.2
Liquefaction Utilization	84%	82%	82%	82%	83%	83%	85%	85%	81%	84%	87%
LNG Trade Growth (MMtpa)	(5)	(1)	5	9	27	27	33	28	4	24	27
LNG Trade % Change	-2.0%	-0.4%	2.3%	3.6%	11.3%	10.1%	11.1%	8.5%	1.1%	6.7%	6.9%
Additional LNG Carriers Required	-8	-1	9	14	44	44	53	45	7	39	43
LNG Fleet	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020E**	**2021E**	**2022E**
Beginning balance ('000 cbm)	53,149	53,221	55,233	60,151	64,458	69,408	73,819	82,543	88,817	93,180	99,591
Deliveries ('000 cbm)	323	2,539	5,314	4,714	5,207	4,795	8,992	7,127	5,840	8,626	9,704
Demolition/Losses/Removals ('000 cbm)	(252)	(528)	(396)	(407)	(257)	(385)	(789)	(853)	(1,477)	(2,215)	(3,322)
Ending Balance ('000 cbm)	53,221	55,233	60,151	64,458	69,408	73,819	82,543	88,817	93,180	99,591	105,973
Fleet Growth ('000 cbm)	72	2,012	4,918	4,307	4,950	4,410	8,724	6,274	4,363	6,411	6,382
LNG Fleet % Change	0.1%	3.8%	8.9%	7.2%	7.7%	6.4%	11.8%	7.6%	4.9%	6.9%	6.4%
Additional LNG Carriers Delivered	0	13	31	27	29	26	51	37	26	38	38
Vessel (Shortage)/Surplus	**8**	**14**	**22**	**13**	**(15)**	**(18)**	**(2)**	**(8)**	**19**	**(1)**	**(5)**

Source: Clarksons, IEA, Jefferies Estimates

LPG Carrier Demand

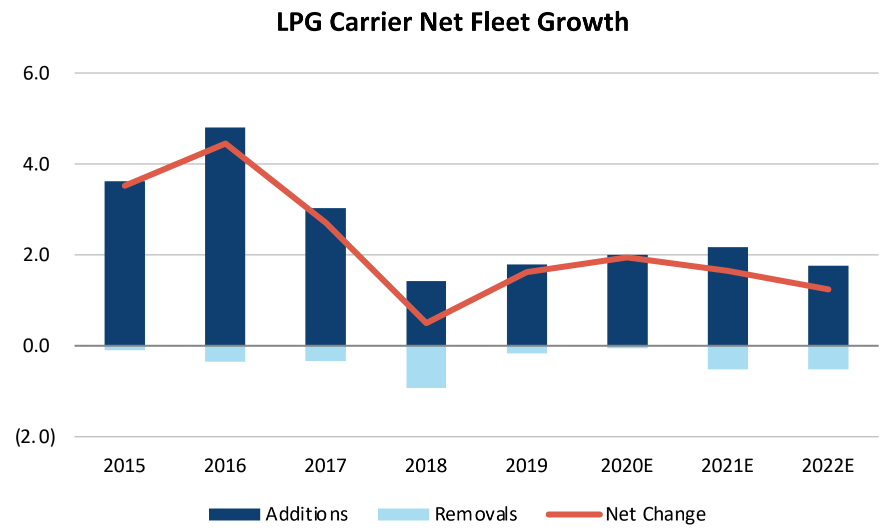


Source: Poten, Epic Gas

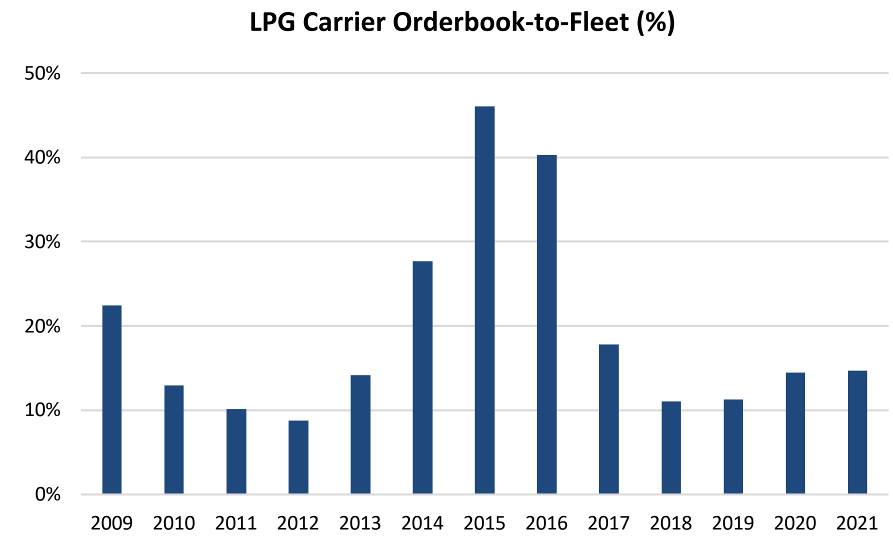


Source: EIA

LPG Carrier Supply



Source: Clarksons Research Services Limited (CRSL), Jefferies



Source: Clarksons Research Services Limited (CRSL), Jefferies

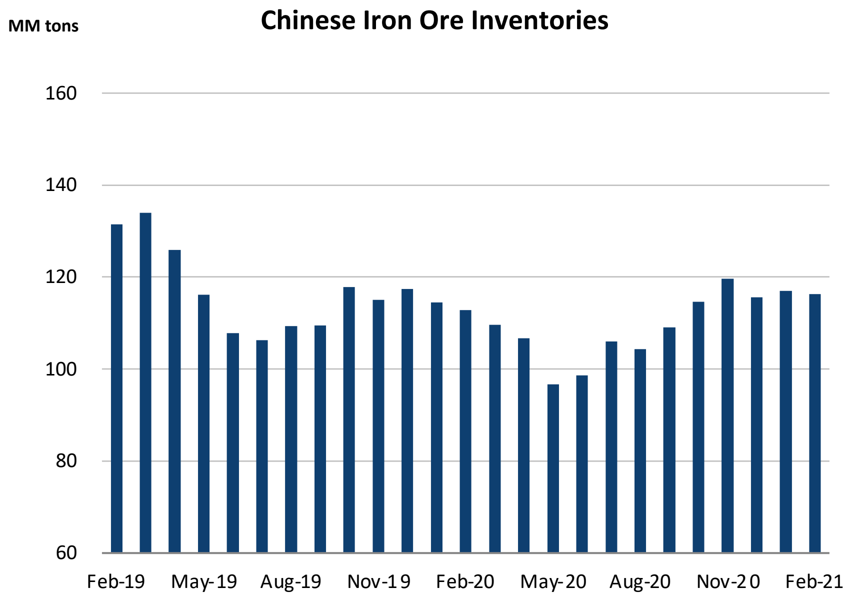
- Current orderbook-to-fleet ratio of 14.7%
- 9.0% of the current fleet is over 25 years old
- Projected net fleet growth of 4.4% in 2021 and 3.2% in 2022
- Vast majority of orderbook is focused on VLGCs

LPG Carrier S/D Table

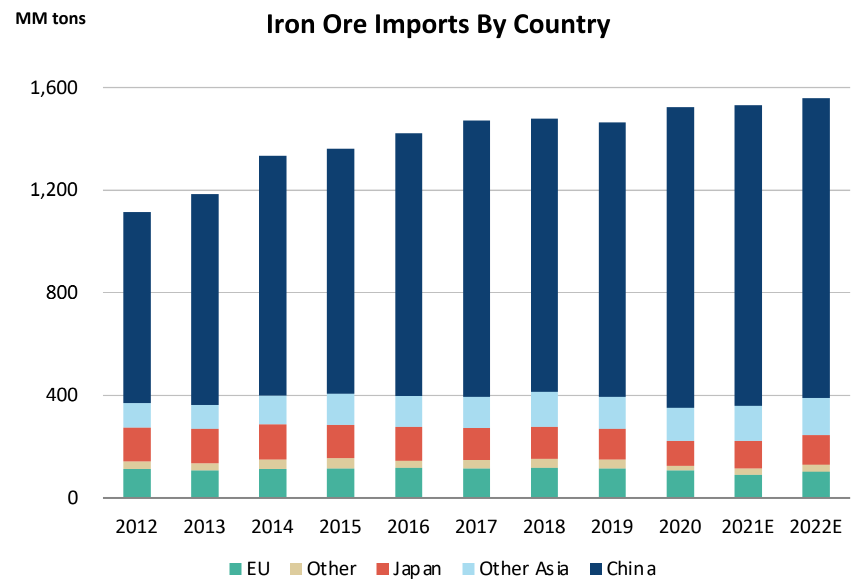
LPG Fleet (,000 cbm)	2012	2013	2014	2015	2016	2017	2018	2019	2020E	2021E	2022E
Beginning balance	19,686	20,001	21,357	22,339	25,865	30,316	33,022	33,521	35,144	37,085	38,732
Deliveries	425	1,455	1,131	3,622	4,796	3,034	1,424	1,791	2,001	2,167	1,761
Demolition/Losses/Removals	(110)	(100)	(149)	(96)	(345)	(328)	(926)	(168)	(60)	(520)	(520)
Ending Balance	20,001	21,357	22,339	25,865	30,316	33,022	33,521	35,144	37,085	38,732	39,973
Fleet Growth	316	1,356	982	3,526	4,452	2,706	499	1,623	1,941	1,647	1,241
% Change	1.6%	6.8%	4.6%	15.8%	17.2%	8.9%	1.5%	4.8%	5.5%	4.4%	3.2%
LPG Seaborne Demand Growth	3.7%	3.6%	11.9%	10.0%	10.3%	2.2%	2.6%	5.0%	1.4%	4.7%	3.6%
LPG Fleet Growth	1.6%	6.8%	4.6%	15.8%	17.2%	8.9%	1.5%	4.8%	5.5%	4.4%	3.2%
(% Undersupplied)/Oversupplied	**(2.1%)**	**3.2%**	**(7.3%)**	**5.7%**	**6.9%**	**6.7%**	**(1.1%)**	**(0.2%)**	**4.1%**	**(0.3%)**	**(0.4%)**

Source: IEA, Clarksons Research Services Limited (CRSL), Poten & Partners, Epic Gas, Jefferies LLC Estimates

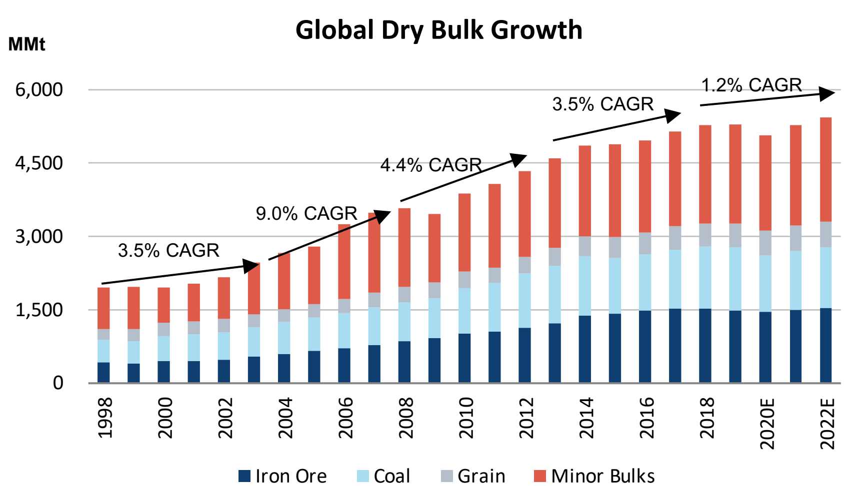
Dry Bulk Carriers Demand



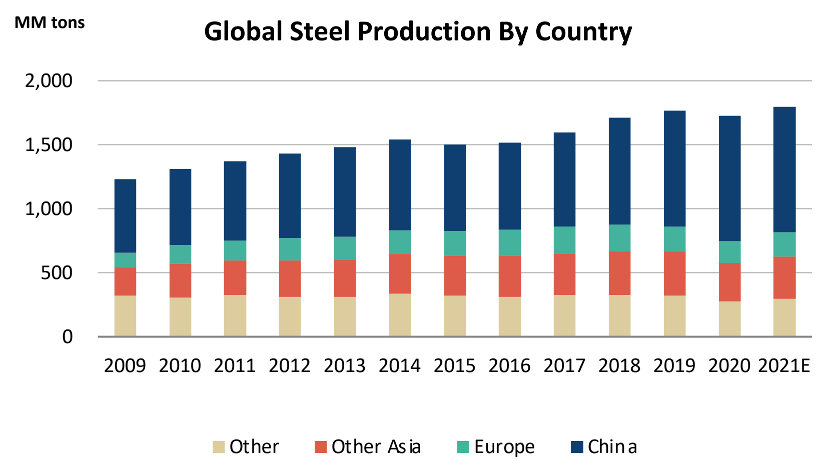
Source: Bloomberg



Source: Clarksons Research Services Limited (CRSL), Jefferies

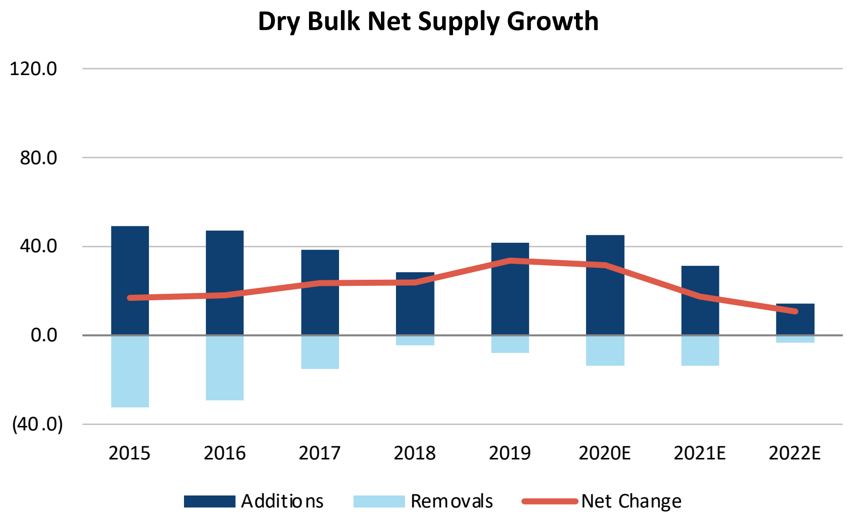


Source: Clarksons Research Services Limited (CRSL), Jefferies

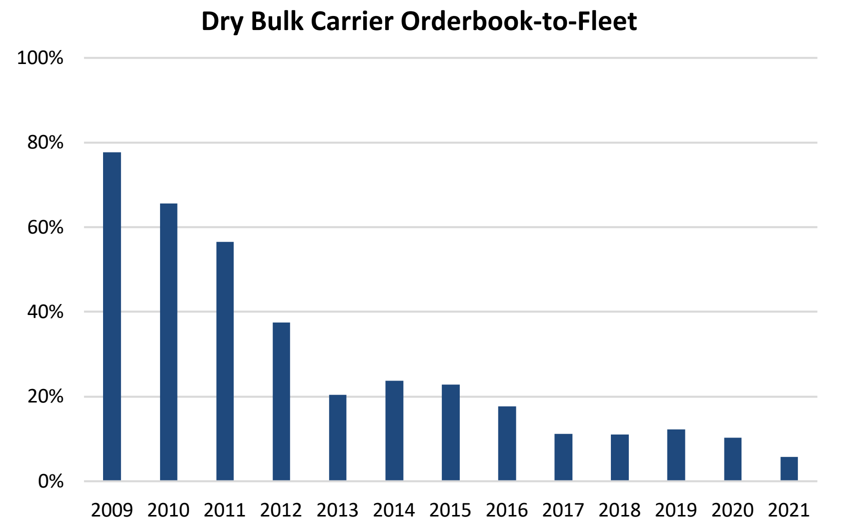


Source: IISI, Jefferies estimates

Dry Bulk Carriers Supply



Source: Clarksons Research Services Limited (CRSL), Jefferies



Source: Clarksons Research Services Limited (CRSL), Jefferies

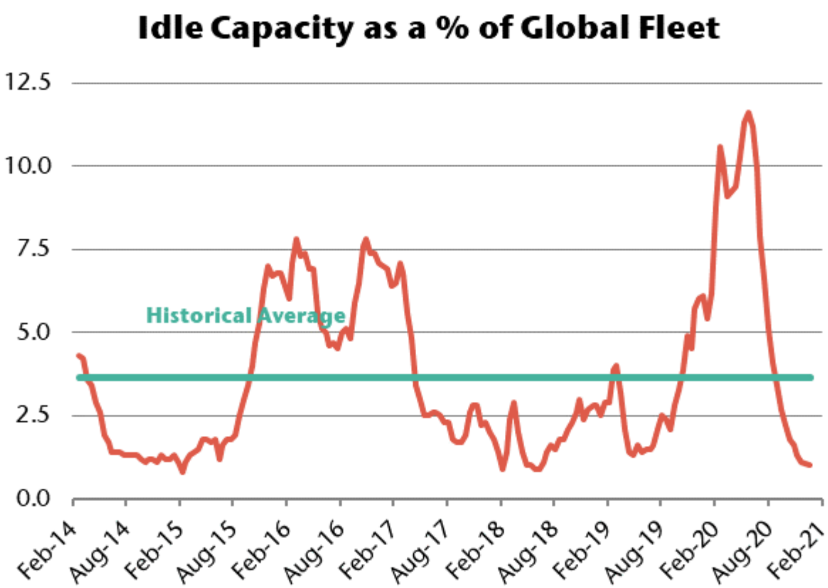
- Current orderbook-to-fleet ratio of 5.8%
- 2.5% of the current fleet is over 25 years old
- Projected net fleet growth of 1.9% in 2021 and 1.2% in 2022
- Dry bulk carrier fleet unlikely to grow significantly in the coming years due to lack of newbuilding ordering in recent quarters

Dry Bulk Carriers S/D Table

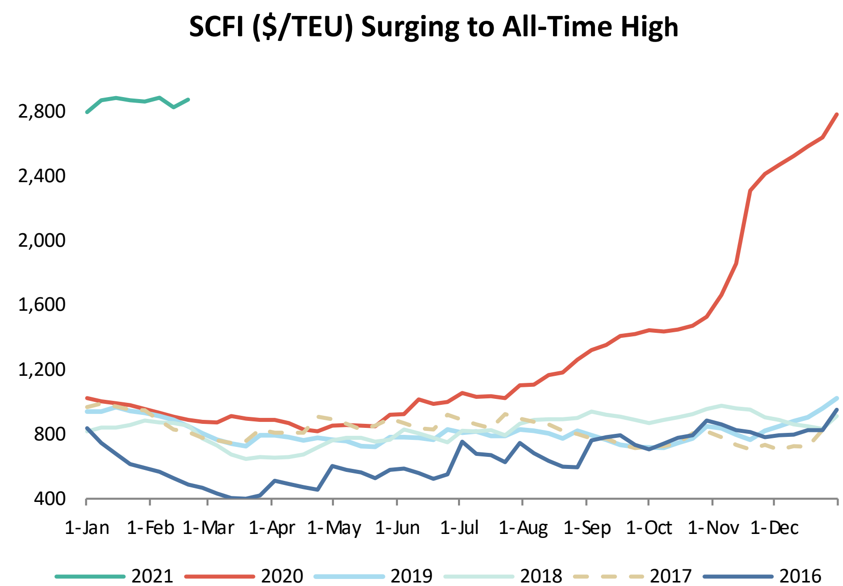
ALL BULK COMMODITIES											
(in millions of tons)	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020E**	**2021E**	**2022E**
Coal	1,111	1,182	1,217	1,138	1,141	1,202	1,263	1,292	1,157	1,210	1,246
Iron Ore	1,130	1,222	1,382	1,422	1,491	1,529	1,526	1,489	1,460	1,497	1,533
Grains	345	363	407	429	450	476	475	477	500	512	530
Other Minor Bulks	1,745	1,826	1,848	1,892	1,880	1,937	2,010	2,028	1,949	2,052	2,124
Total	4,331	4,593	4,854	4,881	4,962	5,144	5,274	5,286	5,066	5,271	5,433
Seaborne Trade Growth	214	262	262	27	81	182	130	13	-220	205	162
Seaborne Trade Growth (%)	5.2%	6.0%	5.7%	0.6%	1.7%	3.7%	2.5%	0.2%	-4.2%	4.0%	3.1%
Additional Panamaxes Equivalent Required	**509**	**623**	**623**	**64**	**193**	**432**	**309**	**30**	**(524)**	**488**	**385**
(in millions of dwt)	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020E**	**2021E**	**2022E**
Beginning balance	621.7	687.8	731.4	763.2	780.0	798.1	821.5	845.4	879.0	910.5	928.1
Deliveries	100.7	63.3	48.2	49.2	47.3	38.4	28.4	41.6	45.2	31.2	14.2
Deletions, Repair & Congestion	(34.7)	(19.7)	(16.4)	(32.4)	(29.2)	(15.0)	(4.5)	(7.9)	(13.7)	(13.7)	(3.4)
Ending Balance	687.8	731.4	763.2	780.0	798.1	821.5	845.4	879.0	910.5	928.1	938.8
Fleet Growth	66.1	43.6	31.8	16.8	18.1	23.5	23.9	33.6	31.5	17.5	10.8
Fleet Growth (%)	10.6%	6.3%	4.3%	2.2%	2.3%	2.9%	2.9%	4.0%	3.6%	1.9%	1.2%
Additional Panamaxes Equivalent Delivered	**944**	**622**	**454**	**241**	**258**	**335**	**341**	**480**	**450**	**250**	**154**
Vessel (Shortage)/Surplus	**435**	**(1)**	**(169)**	**177**	**65**	**(97)**	**32**	**450**	**974**	**(238)**	**(232)**

Source: Clarksons Research Services Limited (CRSL), Jefferies estimates

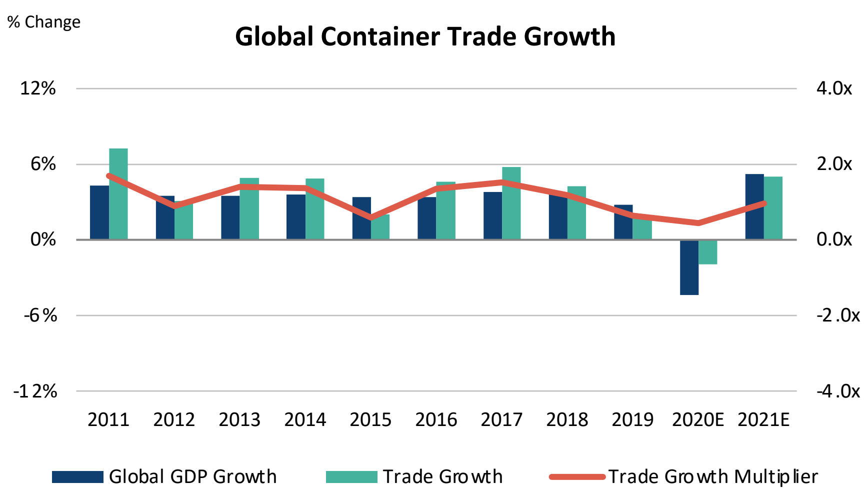
Containership Demand



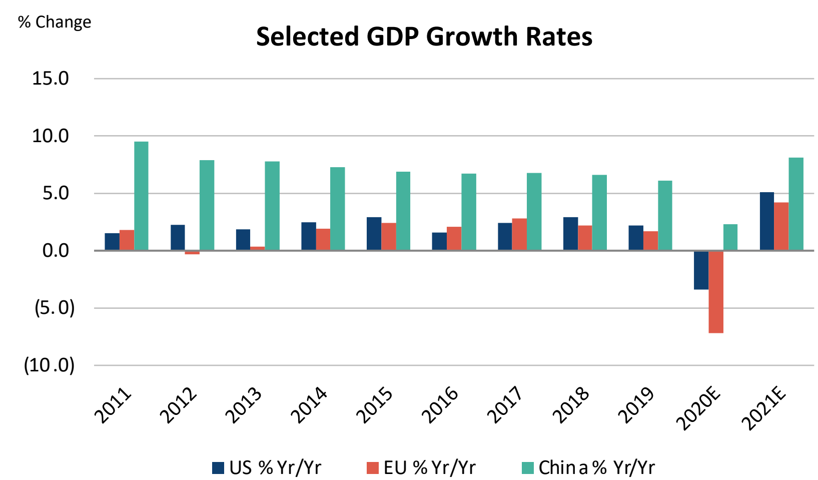
Source: Alphaliner, Jefferies



Source: Alphaliner, JOC, Shanghai Shipping Exchange

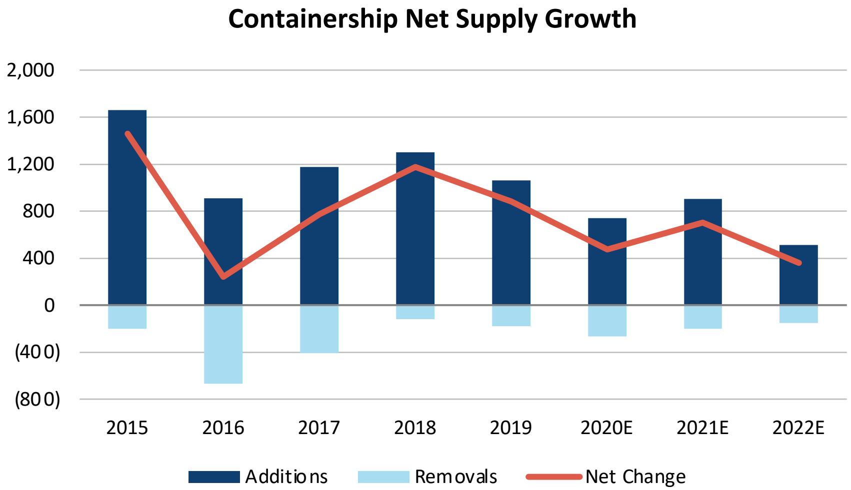


Source: Clarksons Research Services Limited (CRSL), Jefferies

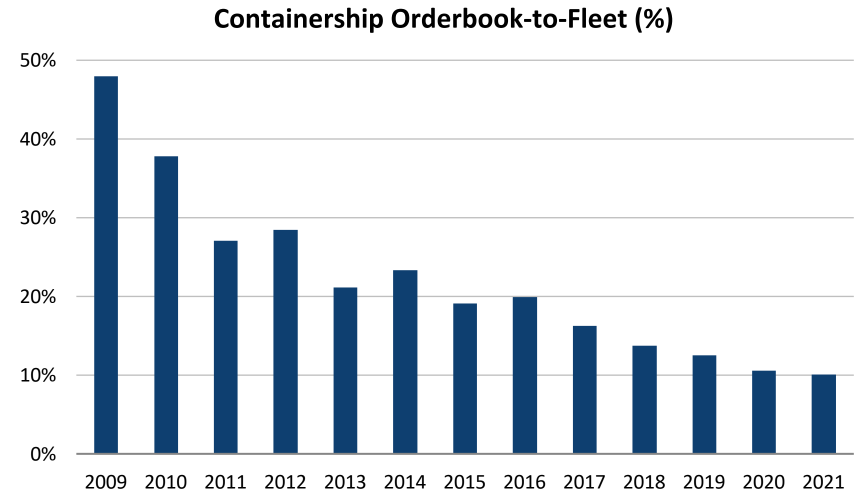


Source: Clarksons Research Services Limited (CRSL), Jefferies

Containership Supply



Source: Clarksons Research Services Limited (CRSL), Jefferies



Source: Clarksons Research Services Limited (CRSL), Jefferies

- Current orderbook-to-fleet ratio of 10.1%
- 1.7% of the current fleet is over 25 years old
- Projected net fleet growth of 3.0% in 2021 and 1.5% in 2022
- Idle capacity is currently around 1%, well below historical average
- Vast majority of orderbook is focused on very large containerships (>15,000 TEU)

Containership S/D Table

Effective Container Fleet (000 teu)	2012	2013	2014	2015	2016	2017	2018	2019	2020E	2021E	2022E
Size of Fleet at Beginning of Year	15,415	16,336	17,278	18,428	19,887	20,134	20,905	22,083	22,966	23,530	24,230
PLUS: Deliveries	1,263	1,367	1,525	1,661	908	1,177	1,298	1,063	739	901	514
LESS: Scrappings/Slow Steaming	(342)	(442)	(374)	(202)	(668)	(408)	(121)	(180)	(267)	(200)	(154)
Size of Fleet at Year End	16,336	17,278	18,428	19,887	20,134	20,905	22,083	22,966	23,530	24,230	24,590
Fleet Growth (000 teu)	921	942	1,151	1,459	247	771	1,177	883	564	701	360
% Fleet Growth	6.0%	5.8%	6.7%	7.9%	1.2%	3.8%	5.6%	4.0%	2.5%	3.0%	1.5%
Total Container Trade (000 teu)	149,240	156,580	164,440	167,800	175,530	185,700	193,640	197,081	193,252	202,985	210,125
Trade Growth (000 teu)	4,710	7,340	7,860	3,360	7,730	10,170	7,940	3,441	(3,829)	9,733	7,140
% Trade Growth	3.3%	4.9%	5.0%	2.0%	4.6%	5.8%	4.3%	1.8%	-1.9%	5.0%	3.5%
(% Undersupplied)/Oversupplied	**2.7%**	**0.8%**	**1.6%**	**5.9%**	**(3.4%)**	**(2.0%)**	**1.4%**	**2.2%**	**4.4%**	**(2.1%)**	**(2.0%)**

Source: Clarksons Research Services Limited (CRSL), Jefferies estimates

IMO 2020 And Beyond (2030, 2050, 2100)

IMO 2020

- Purpose: reduce sulfur emissions from the maritime industry
- Mechanism: cap sulfur content of fuel oil by weight from 3.5% to 0.5%, can be met either by compliant fuel or by using an exhaust gas cleaning system

IMO 2030

- Purpose: reduce carbon emissions per transport work on average across the shipping industry by 40% compared to 2008 benchmark levels
- Mechanism: annual carbon intensity standards and requirements, new fuel or engine efficiency standards

IMO 2050

- Purpose: reduce carbon intensity by 70% compared to 2008 baseline as well as to reduce GHG emissions by at least 50% compared to the same time period
- Mechanism: unknown at this time

IMO 2100

- Purpose: reduce emissions by the shipping industry to zero

Shipping Equities: Past, Present, and Future

- Global economic recovery ongoing boosting ton-mile demand for commodities
- Most attractive supply picture in decades
- Company balance sheets much improved with low leverage ratios
- Starting to see a rotation from momentum/growth stocks to economically-sensitive, energy-related, global trade-driven value stocks…SHIPPING!

Randy Giveans, Equity Analyst, (713) 651-3829, rgiveans@jefferies.com

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