Why is the Bulker Fleet Slowing Down?

The Impact of an Ageing Fleet in the Era of Efficiency

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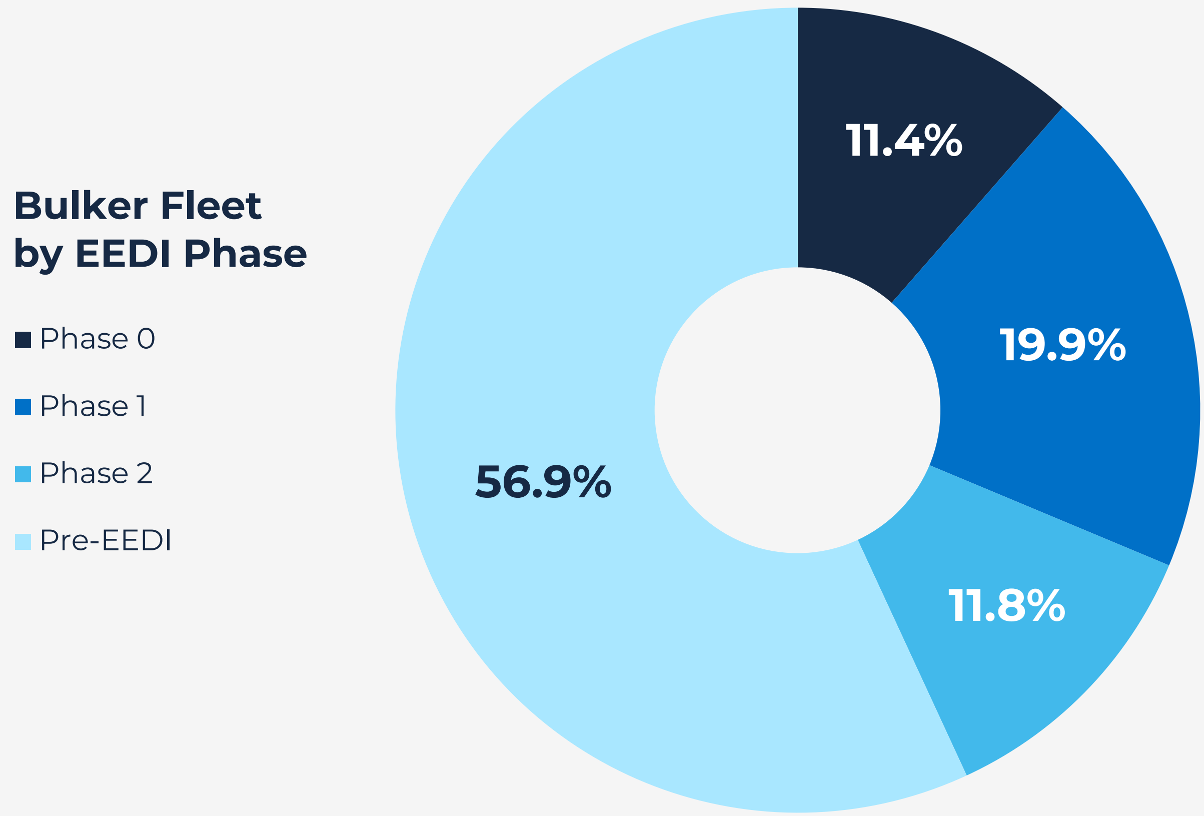
VESON NAUTICAL

In our previous report, *How are CII and EEXI efficiency regulations influencing a strong bulk market*, we identified a trend of declining average speed in the Bulk Carrier fleet. We suggested that the enforcement of efficiency regulations such as Carbon Intensity Indicator (CII) and Energy Efficiency Existing Ship Index (EEXI) have had an important influence on this.

In this report, we investigate this assumption further by conducting a granular analysis of Veson's average speed data. Using a dataset from the VesselsValue's Trade module, we have assessed the individual monthly average speed of every Bulker in the fleet since 2012 to determine whether there are noticeable trends within certain groups of vessels. This has been paired with VesselValue specifications data and energy efficiency metrics to analyze developments in engine power, DWT, and estimated EEXI figures, to build a detailed picture of how efficiency criteria are affecting average speeds and supply of tonnage in the Bulker market.

Ageing fleet is reducing overall average speed

Data suggests that older vessels, particularly those built before the Energy Efficiency Design Index (EEDI) criteria was enforced in 2013, have seen a noticeable decrease in speeds, relative to newer vessels. Combined with the fact the current Bulker fleet has been ageing since 2016 – we can conclude that a surplus of older, inefficient vessels in the fleet, which are now penalised by efficiency regulations for sailing at higher speeds, are a driving factor in declining average speed overall.



Source: Veson Nautical, Feb 2025

Figure 1

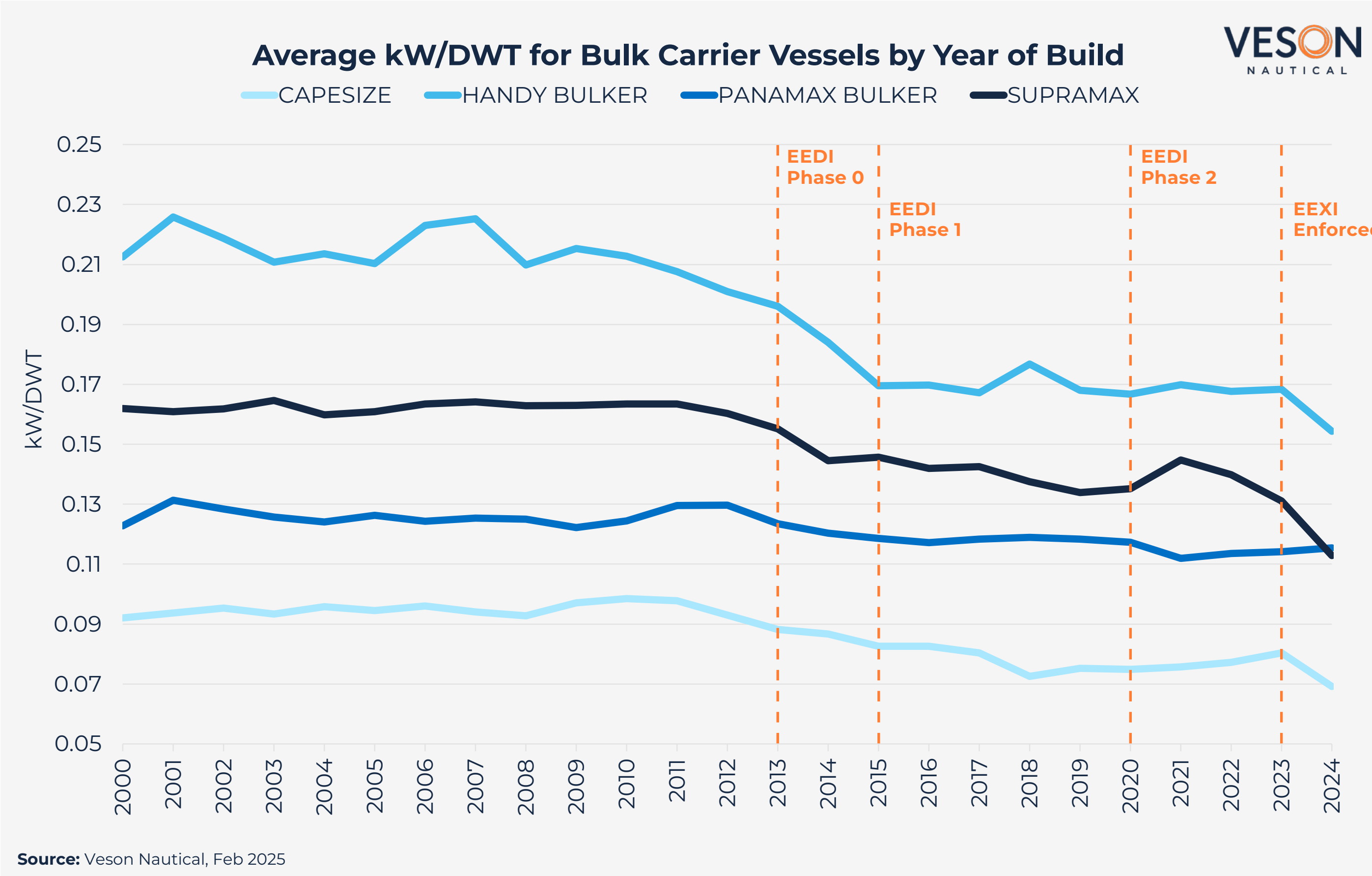


Figure 2

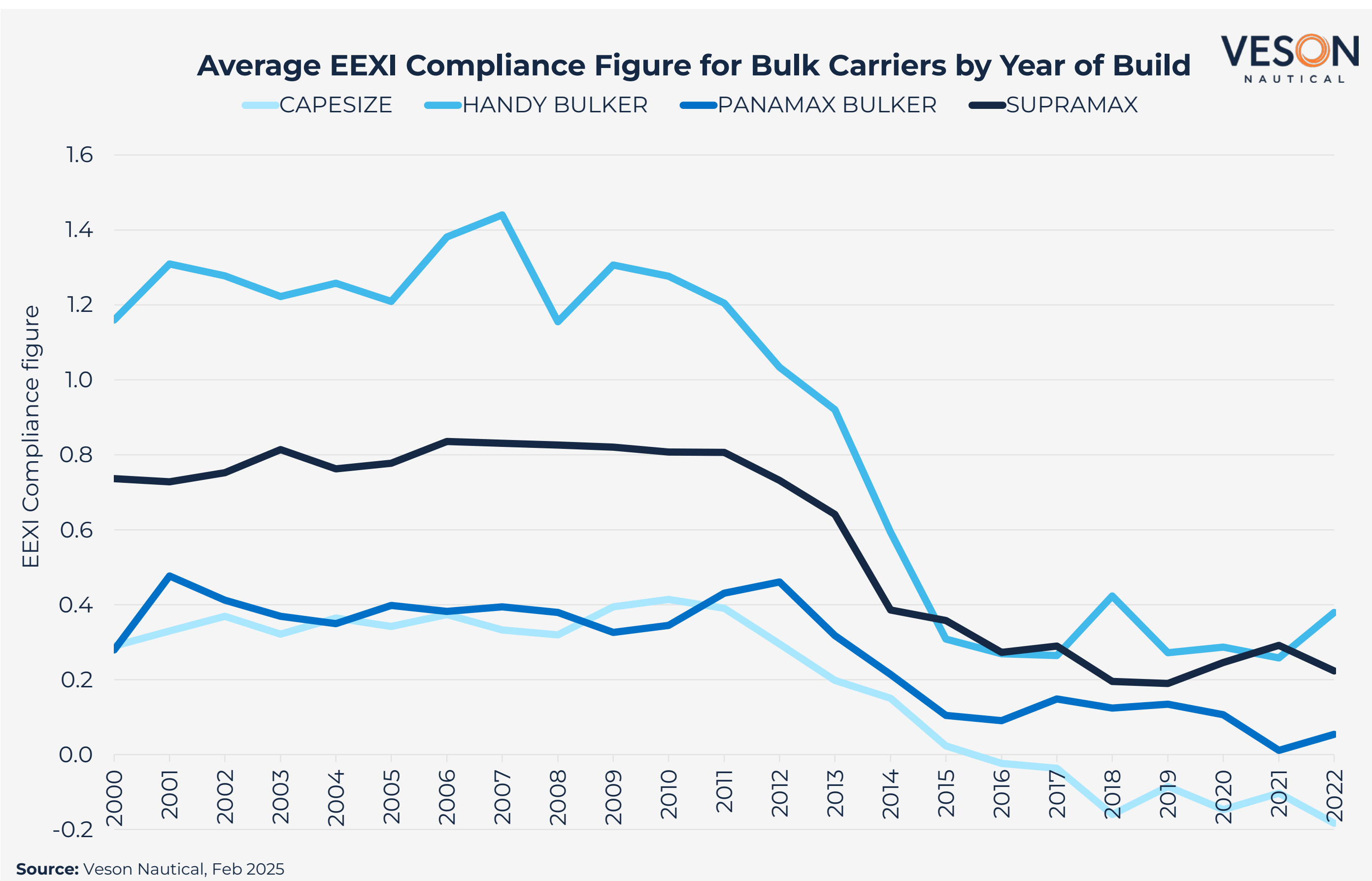


Figure 3

The legacy of the Chinese Tiger

Shipbuilding saw an enormous expansion in capacity in the mid-late 2000s, particularly for Bulkers as the Chinese economy boomed and demand for iron ore and coal imports soared to new heights. In the early 2000s Bulker newbuilds delivered by Chinese yards totalled around 3 mil DWT per year; by the end of the decade this had rocketed to around 51 mil DWT per year. By the time the 2008 financial crash had fully set in, Chinese, Japanese, and South-Korean yards had several years of backlogged ship orders to complete, ensuring that deliveries into the fleet remained high for the following years to come.

Figures 4 and 4.1 show the impact this had on the Bulker fleet age profile in the following years; as this "baby boom" of newbuilds entered operation, older vessels were scrapped owing to oversupply of tonnage, and average age of the fleet reached an all-time low of 7.9 years in 2015. Bulker ordering was comparatively subdued over the next 10 years leading to average age steadily increasing to 11.8 years today. Now that operational efficiency measures such as CII have entered into force, this ageing majority of vessels are having a crucial impact on supply dynamics within the fleet.

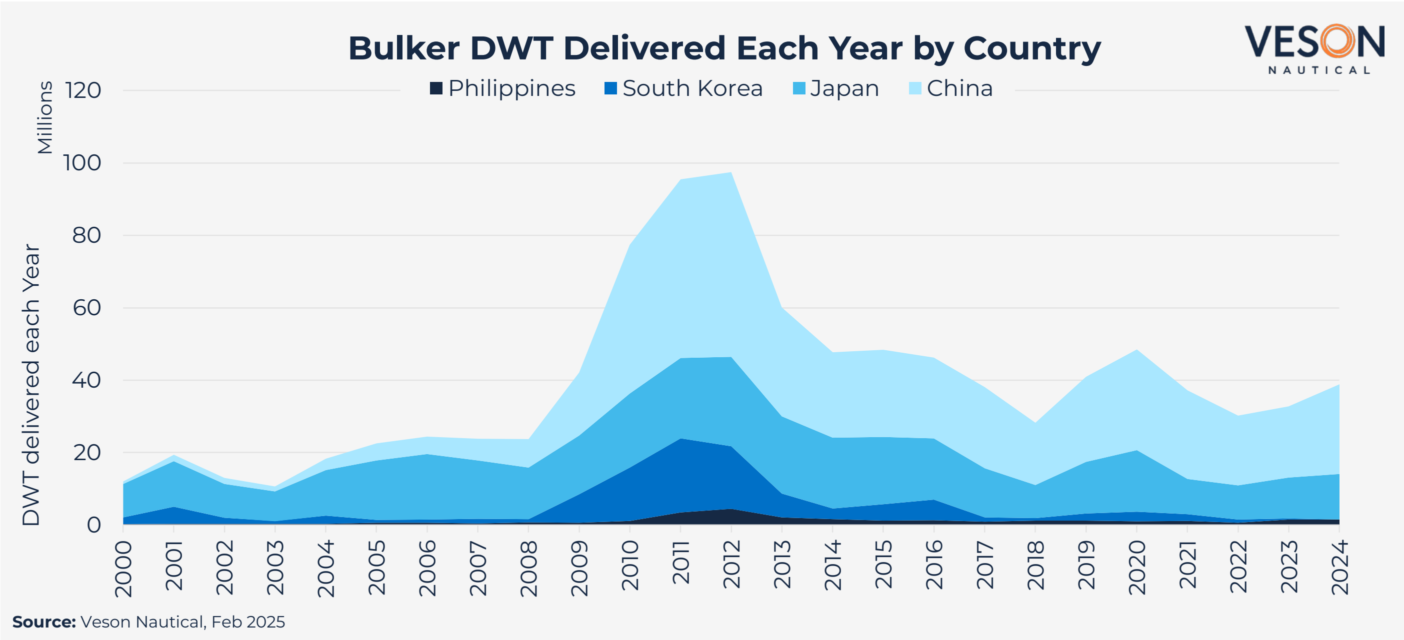


Figure 4

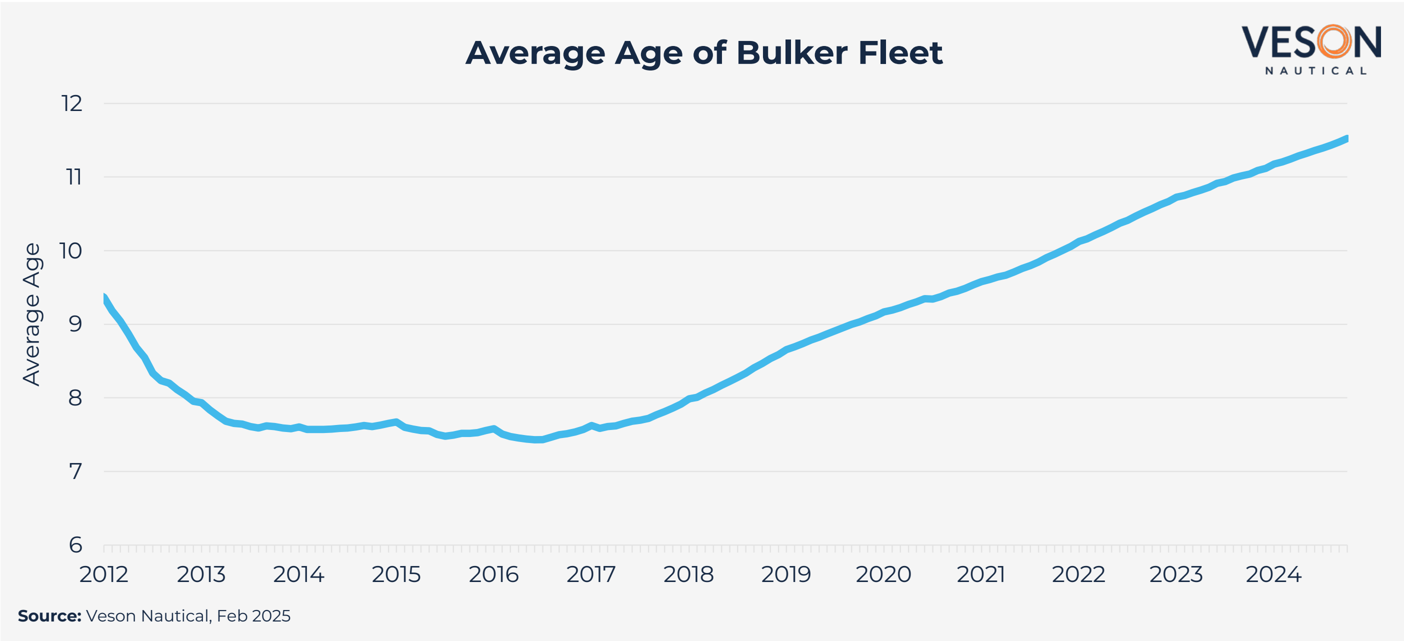


Figure 4.1

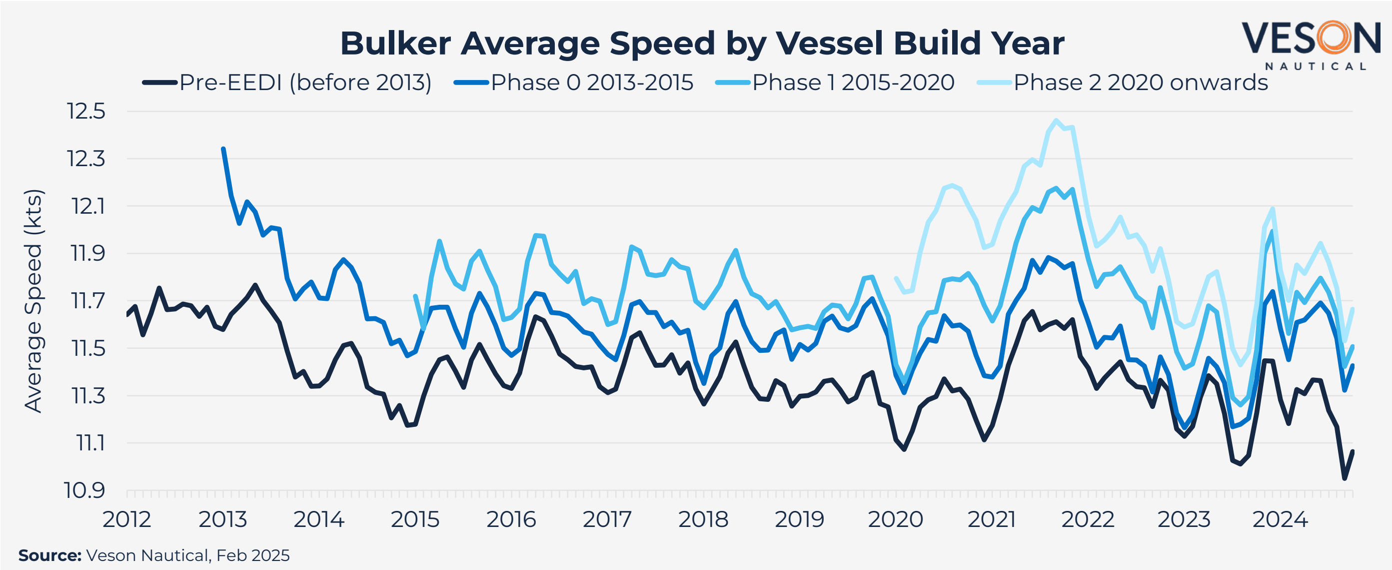


Figure 5

Baby Boom Bulkers are falling behind

A key observation from figures 5 and 6 is the clear depreciation of speed performance over a vessel's lifetime. Vessels naturally become more inefficient as they age due to factors such as hull fouling, wear and tear on engine components, and propeller bearings—resulting in higher fuel consumption. An aging fleet should see a reduction in overall average speed over time, as it becomes increasingly less economical to operate the majority of vessels at higher speeds.

Although speed depreciation is assumed to have always been a factor, figures 6 and 7 show that over the past five years there is a growing discrepancy in the speed performance between new and old vessels. Figure 6 shows that prior to 2017, there was little difference in performance between 0-5 YO vessels and 10-15 YO vessels. Since then, a clear separation has emerged between the latest generation of vessels and the rest of the fleet. In recent years modern vessels have shown a clearly defined improvement relative to older vessels, and the performance of 10-15 YO vessels have declined to the point where they are now operating in the same speed range as demolition-age vessels. There are several factors behind this:

- Increasingly stringent EEDI criteria since 2013 have driven improvements in vessel design to allow better fuel efficiency at higher speeds for modern vessels. This includes uptake of technologies such as electronically controlled "Eco" engines and hull and propeller optimisations.
- The Chinese shipbuilding industry has matured over the past 15 years and now accounts for 2/3rds of Bulker tonnage delivered each year. Over this period, China has gathered experience and expertise in the sector leading to improvements in shipbuilding quality. This has led to an increasing proportion of better quality and higher efficiency vessels being delivered into the fleet compared to late 2000s/early 2010s.
- Pre-EEDI vessels built in lower-quality yards have aged to the 10-15 YO age group. Their less efficient design is assumed to exacerbate the speed depreciation effect, considering that new operational-efficiency regulations such as CII will penalise inefficient vessels for emissions associated with higher speed.
- Since 2023, pre-EEDI vessels must comply with the EEXI regulations, meaning non-compliant vessels must reduce their kW/DWT ratio by retrofitting energy saving technology or by Engine Power Limitation (EPL). It is likely that the majority of these vessels have had EPL installed.

The fact that average kW/DWT has noticeably decreased since EEDI began (see Figure 2) supports the claim that modern vessels have substantially better fuel performance, as it shows that these vessels require less relative power per DWT, yet they can still achieve higher efficient speeds than older vessels. This indicates that modern vessels are able to achieve a commercial advantage by sailing at a higher speed to shorten voyage length, whilst maintaining low variable costs (bunker fuel), thereby increasing net freight profitability on voyage charters. Combined with the fact that efficient vessels are favorable for compliance with emission regulations such as CII, EU ETS, and the proposed IMO carbon tax, it is likely that an efficiency related S&P premium will emerge as modern vessels filter into the secondhand market.

A further point to consider is that the degree of this premium will likely depend on market strength at the time of sale. In strong market conditions it is typical to see a narrowing of price discrepancy between vessels of different quality, as the sheer demand for tonnage overrides any negotiable factors. Additionally, during highly optimistic market conditions, vessels engaged in voyage charters can benefit from slower speeds due to increasing market sentiment; arriving later can mean that they fix the next voyage at a higher rate than earlier arrivals.

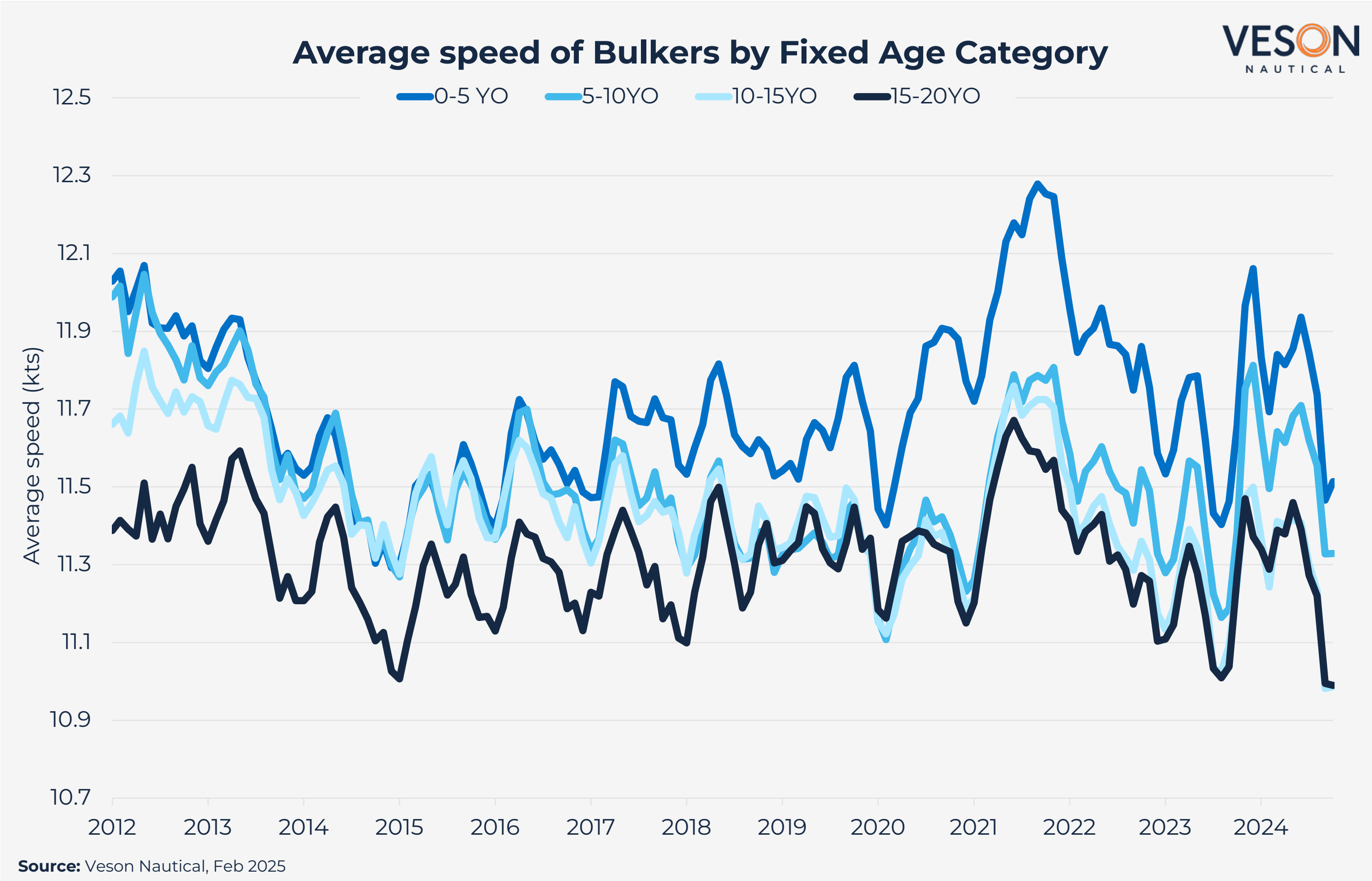


Figure 6

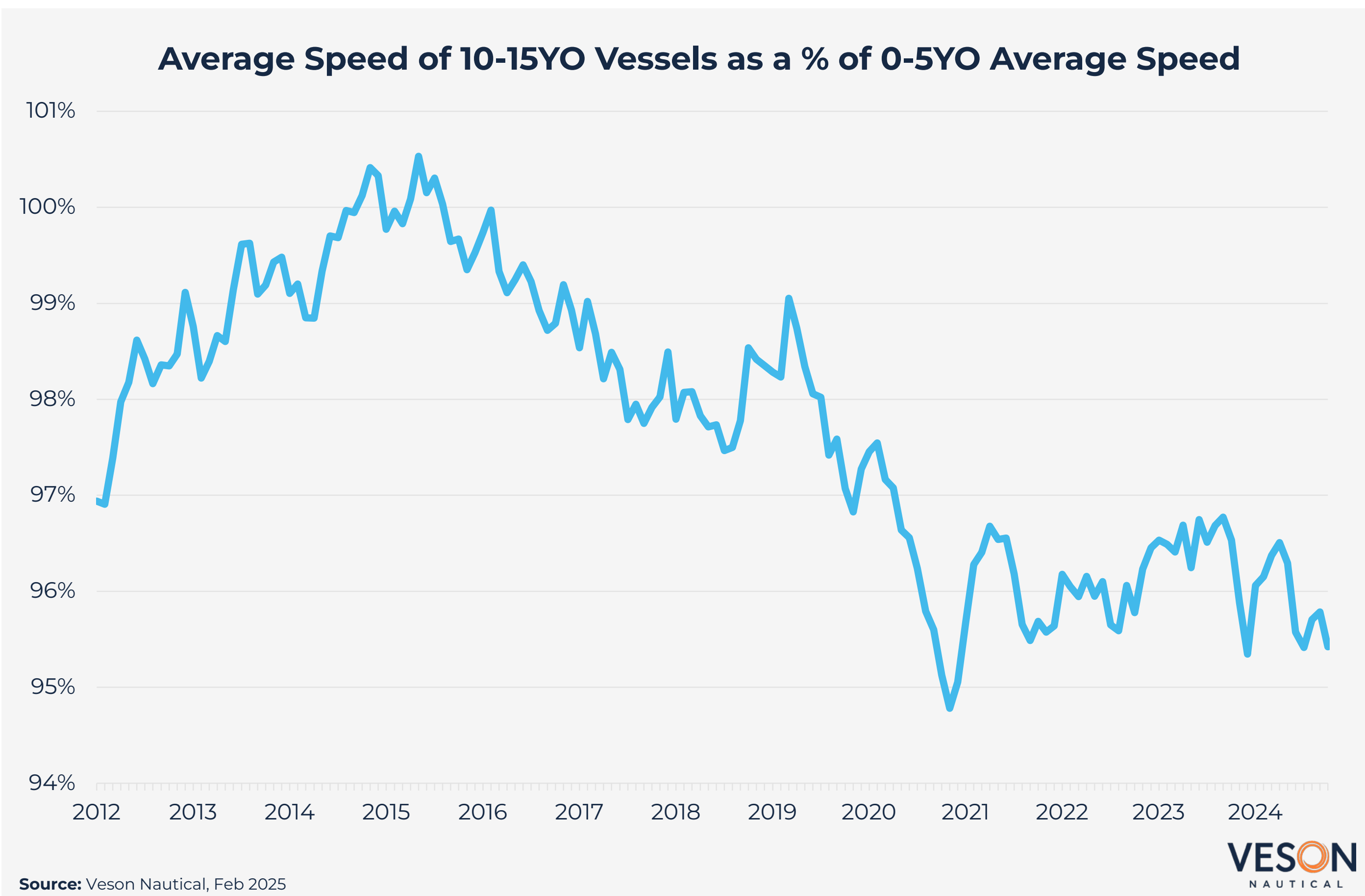


Figure 7

Transport effectiveness of the fleet has reduced

Although reducing average speed has been observed to have a positive effect on operational efficiency as discussed in our ***Bulker CII Market Insights***, a side effect of this is that it reduces the transport capacity of the fleet. Evidence of this is presented in figure 9, where total ton miles achieved each quarter is divided by total fleet capacity in DWT. This shows how much transport work each unit of transport capacity has performed each quarter. Aside from the notable ton-mile spike in 2024 as a result of the Suez Canal closure, a declining trend in "transport effectiveness" of the fleet is apparent since 2016.

Although slow steaming has improved CO2 operational efficiency, it appears to have led to a notable decrease in the transport work of older vessels in the Bulker fleet. As the fleet continues to age, we can expect that this factor will have an important dynamic in the bulk carrier markets. Markets with vessel age restrictions (typically around 18 YO), such as the Australian and North American Capesize trading routes may strengthen as a large portion of the fleet ages above the threshold, and demand for emission compliant modern vessels increases. However, this may be offset by increased productivity made possible by speed/efficiency gains, as the latest EEDI Phase 3 vessels are delivered.

Similarly, markets typically plied by older vessels, such as the West Africa trade routes, are in danger of becoming over-supplied. On the other hand, decreasing speed of older vessels owing to emission restrictions may counteract this. This will be particularly relevant over the next five years; by 2030, pre-2013 built bulkers, which currently make up the majority of the fleet (56.9%) will mostly have entered into the +18 YO age bracket.

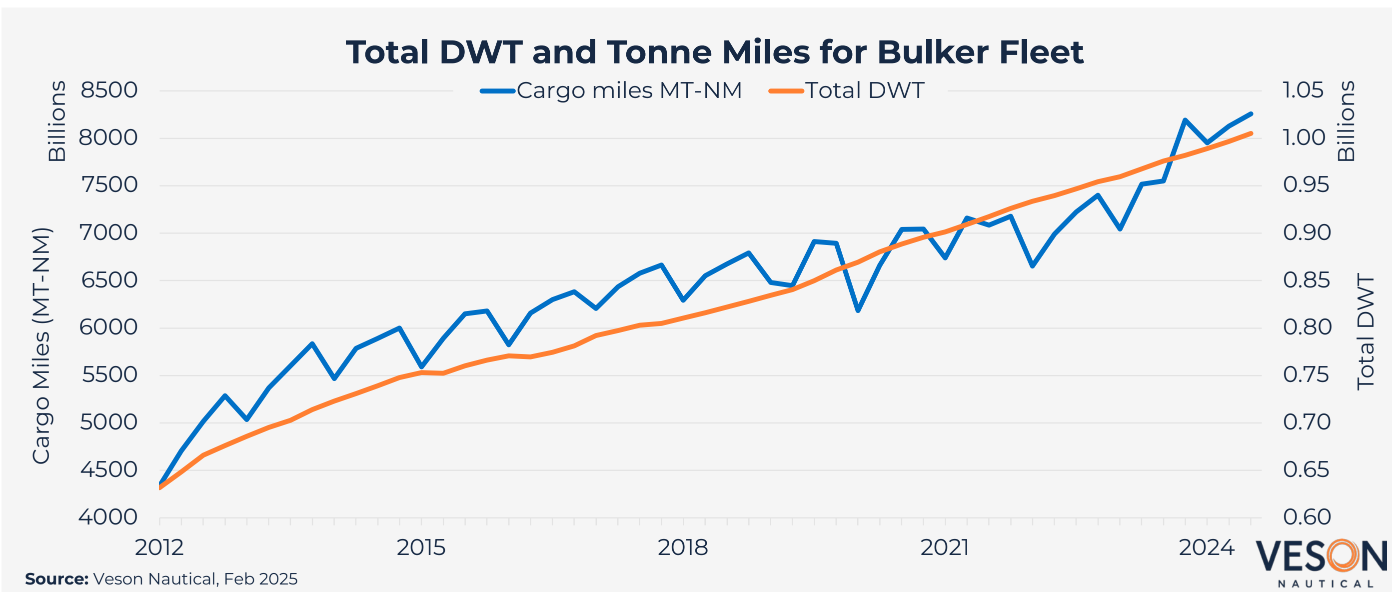


Figure 8

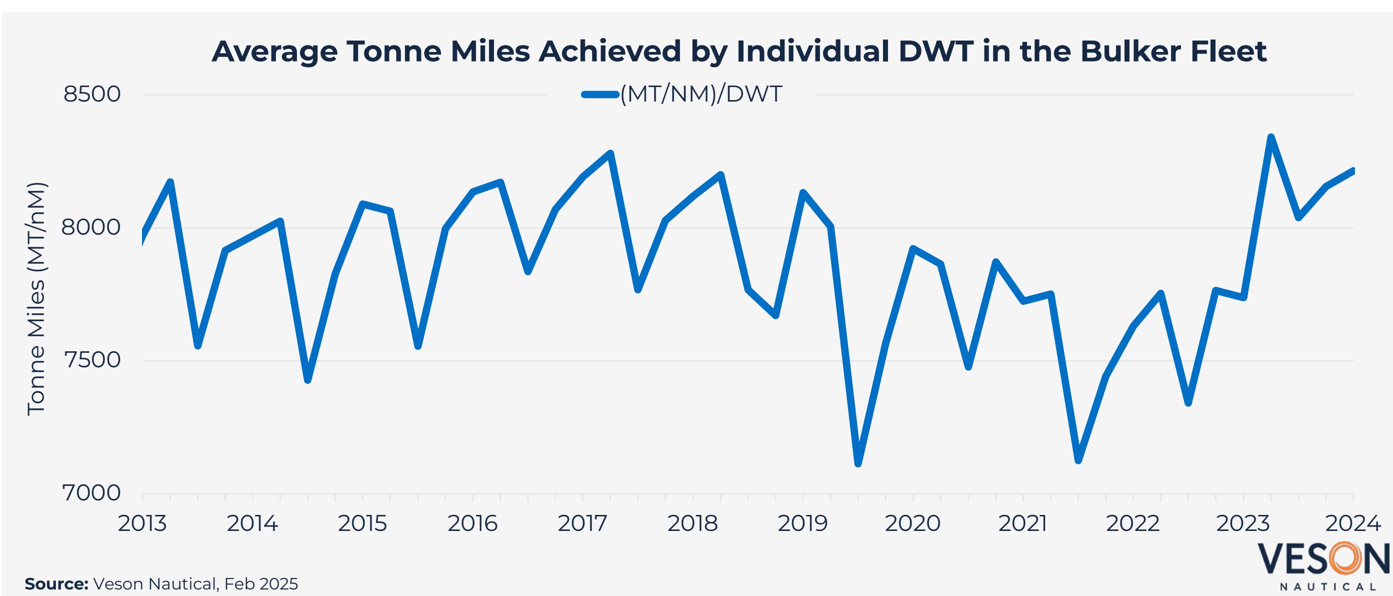


Figure 9

Market liquidity and age profile

Looking at Bulker S&P history, the liquidity of age groups (see Figure 10) closely follows the age profile of the pre-2013 built Bulker fleet. From the period 2013-2018, 0-10 YO vessels had the highest liquidity, whereas now, the 10-15 YO age group account for the majority of sales. The increased liquidity of 10-15 YO vessels in the past few years does indicate that there is still appetite for the older generation of vessels. In the strong S&P market of 2024 there has been a steady increase of middle-age vessel sales; favourable market conditions appear to have encouraged owners to offload older vessels to fund fleet renewal.

Declining liquidity of modern vessels

The latest generation of vessels have a much greater variation in design, engine specification, and energy saving technologies than the previous cohort. They are also more expensive to build and so require a greater degree of financial commitment. Owners who have inked orders for multiple alternative-fuelled vessels have typically also invested considerable sums of money into green-fuel production facilities. These factors point towards a general trend of low liquidity amongst modern alternative-fuelled vessels as owners seek long-term charters to secure finance for these costly projects, thus keeping these vessels off the second-hand market for the foreseeable future. For non-alternative fuel vessels, EEDI-driven efficiency improvements should mean that owners will be reluctant to part ways with vessels that provide both commercial advantages and emissions compliance.

As seen in figure 10, there is already evidence of declining sales in the 0-5 YO age range. 2025 also marks the beginning of phase 3 of EEDI, where a further 5% efficiency improvement is required for newbuilds compared to phase 2 vessels. Overall this means a 30% improvement in efficient design, relative to the 2009 baseline and is set to further stratify the market.

If these next-generation vessels find their way into the S&P market over the next decade, then an efficiency-related premium is likely to be sought by sellers. Key to this premium, will be the ability to offer precise and conclusive proof of a vessels' fuel and carbon efficiency. A barrier to this is that the shipping industry is currently lacking a standardised data collection method for fuel efficiency; figures can vary significantly, depending on the methods and equipment used onboard for recording both fuel usage and the instantaneous weather/sea conditions experienced during a voyage.

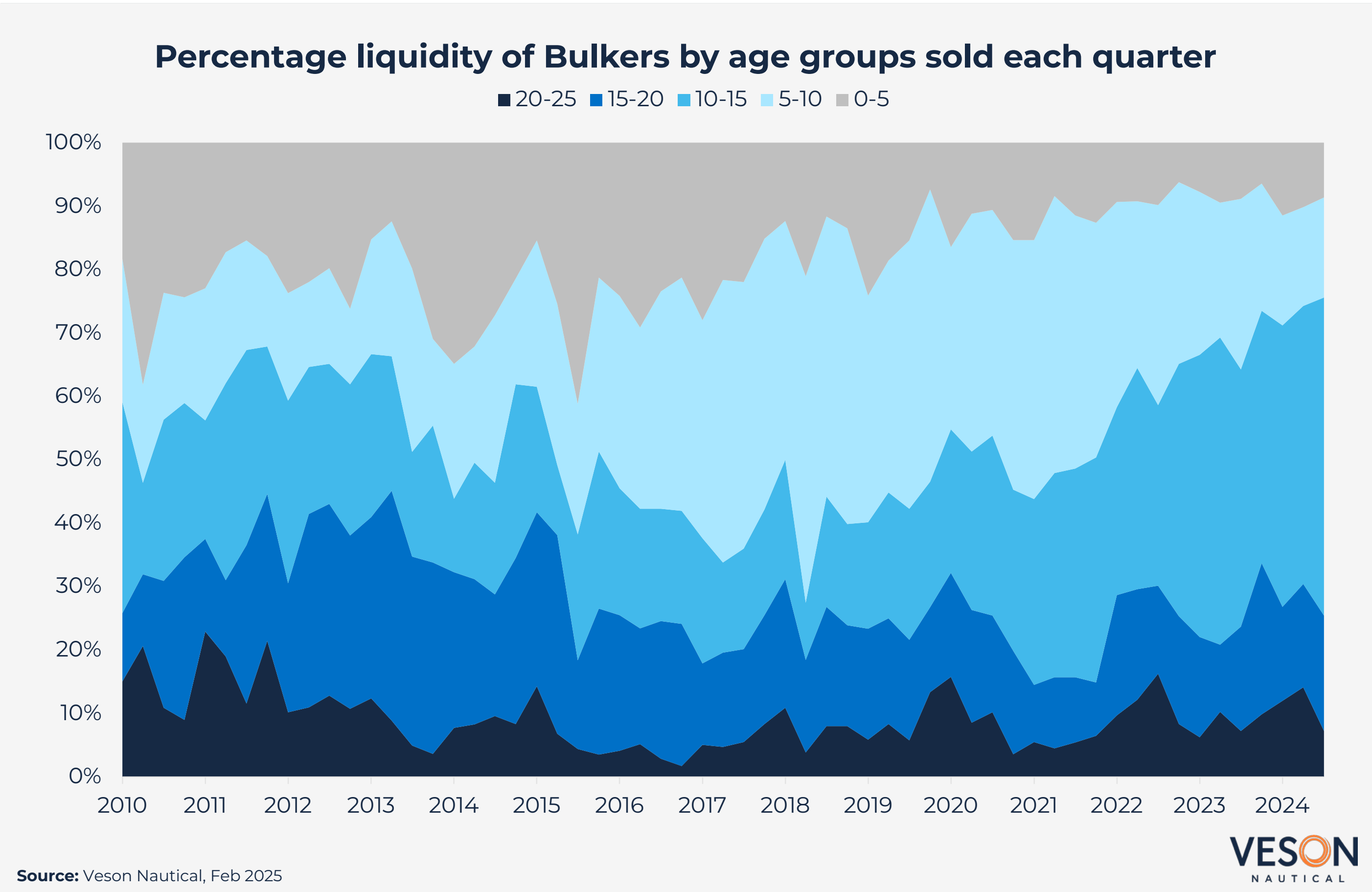


Figure 10

Summary

Validated and accurate data is a valuable commodity in the shipping markets; in terms of fuel efficiency, it can enable the technical performance and associated profitability of a vessel and its specific green technologies to be accurately compared to its peers. Whilst CII can offer an indication of operational performance, the rating is not able to clarify whether a certain type of vessel design is more efficient than another. Similarly, EEDI and EEXI figures rely on theoretical calculations based on the vessels initial design – they do not provide empirical evidence of vessel fuel consumption and fail to account for the effect of efficiency depreciation as a vessel ages.

If fuel and speed performance metrics are of interest to you or your organization, please reach out to Oliver Kirkham, Senior Valuation Analyst, at **okirkham@veson.com** to discuss further.

About the Author

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Oliver is a valuation and efficiency analyst at Veson Nautical. He is a qualified Master Mariner (unlimited) and holds an MSc in Shipping and Logistics from Newcastle University, UK.

Before working for Veson Nautical, Oliver was a seafarer, working onboard various passenger and cargo ships as a navigation officer over the course of 9 years.

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