Seafarer Projections Review

A Cebr report for the Department for Transport

February 2026

Disclaimer

Whilst every effort has been made to ensure the accuracy of the material in this document, neither Centre for Economics and Business Research Ltd nor the report's authors will be liable for any loss or damages incurred through the use of the report.

Authorship and acknowledgements

This report has been produced by Cebr, an independent economics and business research consultancy established in 1992. The views expressed herein are those of the authors only and are based upon independent research by them.

The report does not necessarily reflect the views of the Department for Transport.

London, February 2026

Contents

Abstract 1

Executive summary 2

1 Introduction 5

1.1 Overview and purpose of the report 5

1.2 Structure of the report 5

2 Global demand for seafarers 6

2.1 Historical trends in the global demand for seafarers 6

2.2 Drivers of global seafarer demand 7

2.3 Forecasting global demand 8

2.4 Scenarios 11

3 UK demand for seafarers at sea 14

3.1 Historical trends in the UK demand for seafarers 14

3.2 Drivers of UK seafarer demand 16

3.3 Forecasting UK demand for seafarers 17

4 UK supply of seafarers at sea 22

4.1 Stock-and-flow model 22

4.2 Secondary method: Panel data modelling 27

5 Balance of UK demand and supply of seafarers at sea 28

5.1 Headline results 28

5.2 Officers 28

5.3 Ratings 29

5.4 Interpretation and methodological caveats 30

5.5 Scenario analysis 31

6 Career progression and UK demand and supply of ex-seafarers for onshore roles . 34

6.1 Career progression of seafarers 34

6.2 Demand for ex-seafarers for roles onshore 37

6.3 Supply of ex-seafarers for roles onshore 43

6.4 Balance between demand and supply of ex-seafarers for onshore roles 44

7 Extent to which requirements need to be met by UK seafarers 47

8 Conclusion 55

Annex A: Global demand for seafarers 58

Annex B: UK demand for seafarers at sea 59

Projected UK share of global demand – construction of time series 59

Secondary method: UK time-series modelling 59

Annex C: UK supply of seafarers at sea 63

Stock-and-flow model – Annual forecasts by category 63

Secondary method: Panel data modelling 64

Abstract

This report provides an updated assessment of the UK's future requirement for trained seafarers to 2035, covering both roles at sea and shore-based maritime functions. Using econometric modelling, stock-and-flow workforce projections, scenario analysis and primary employer evidence, it evaluates global demand trends, UK demand and supply balances, and the extent to which projected needs must be met by UK nationals.

Globally, demand for officers and ratings is projected to continue rising, albeit at a slower pace than in previous decades, reflecting moderated growth in seaborne trade. For the UK, total demand at sea is expected to increase to 2035, with officer demand growing faster than ratings. Under baseline assumptions, emerging shortfalls are projected from the late 2020s onwards, reaching a combined gap of just under 9,000 seafarers by 2035, concentrated in deck, engine and technical officer roles. Results are sensitive to assumptions about non-UK recruitment, highlighting the continued importance of international labour mobility.

Shore-based roles requiring prior seagoing experience are also projected to remain tight, with persistent gaps between demand and supply of ex-seafarers. The analysis finds that workforce pressures are less about aggregate volume and more about experience accumulation, mid-career progression and the conversion of sea-based expertise into senior and regulatory-adjacent functions. While many operational roles remain internationally substitutable, a subset of judgement-intensive and UK-context-specific roles present more structural constraints for workforce planning.

Executive summary

This report provides an updated assessment of the UK's future requirement for trained seafarers until 2035, covering both at sea and shore-based maritime roles. It replaces the previous Seafarer Projections report published in 2017 and reflects significant changes in the operating environment since then, including Brexit, the COVID-19 pandemic, and evolving patterns of global trade and maritime activity.

The analysis draws on different quantitative methods, including econometric modelling and scenario-based forecasting, alongside qualitative evidence from an employer survey and interviews. Given the inherent uncertainty associated with long forecasting horizons, the results should be interpreted as indicative orders of magnitude rather than point forecasts.

Global demand for seafarers

- Global demand for seafarers is projected to continue rising to 2035, but at a slower pace than observed historically, reflecting the long-run linkage between seafarer demand and global seaborne trade growth.
- Under the baseline forecast, global officer demand is projected to increase from 883,780 in 2021 to around 1.11 million by 2035 (+1.7% p.a.), while rating demand is expected to rise from 997,540 to around 1.14 million (+1.0% p.a.).
- Officer demand is projected to grow more strongly than ratings, reflecting the increasing technical and regulatory complexity of vessels and operations. As a result, the historical gap between officer and rating demand is expected to narrow further over the forecast horizon.
- However, scenario analysis indicates materially greater volatility in projected officer demand than in rating demand.

UK demand for seafarers at sea

- UK demand for seafarers at sea, across all nationalities, is projected to grow through to 2035 under the baseline assumption that the UK's share of global demand remains broadly stable at recent levels.
- Total officer demand is projected to increase by around 24% (+2.0% p.a.) between 2024 and 2035, reaching just under 55,000, while total rating demand is projected to increase to around 118,000 (+1.1% p.a.) by 2035.
- Growth is projected across both non-hospitality roles (deck, engine, technical and general/dual-purpose) and hospitality roles (catering, hotel and other), although the latter remain a particularly large component of rating demand.

UK supply of seafarers at sea

- UK supply of seafarers is projected to grow more slowly than demand over the forecast period, with aggregate growth remaining modest across both officers and ratings, constrained by weak inflows and the effects of an ageing workforce.
- Supply of UK national officers is projected to increase by around 11% (+1.0% p.a.) to c. 15,410 between 2024 and 2035, with growth concentrated in deck and hotel/other

roles, more subdued growth in engine officers, and a modest decline in technical officers.
- Supply of UK national ratings is forecast to grow by around 6% (+0.5% p.a.) to c. 10,470, with increases in hotel/other ratings offset by slight declines in deck and technical/general-purpose ratings.
- Non-UK supply assumptions play a material role in the overall balance. Growth in the supply of non-UK national officers is assumed to continue broadly in line with historical patterns observed in BIMCO/ICS workforce data, while non-UK national rating supply growth is proxied by global working-age population trends.
- Including both UK and non-UK nationals, total seafarer supply at sea is projected to grow modestly to 2035, with compound annual growth of around 1.3% for officers and 0.7% for ratings, reaching c. 51,190 officers and 113,360 ratings by 2035.

Balance of UK demand and supply of seafarers at sea

- Combining demand and supply projections indicates a gradual shift from approximate balance in 2024 to emerging excess demand from the late 2020s onwards.
- By 2035, excess UK demand across all nationalities is expected to reach around 3,800 officers and 5,100 ratings, implying a combined shortfall of just under 9,000 seafarers under baseline assumptions.
- For officers, shortages are concentrated in deck, engine and technical positions, with hospitality officer roles remaining closer to balance.
- For ratings, excess demand is more evenly distributed across non-hospitality and hospitality roles by the mid-2030s. A substantial share of rating demand reflects replacement needs driven by attrition rather than net expansion.
- Employer survey evidence is consistent with these findings: 83% of respondents report that vacancies for active seafarers are hard to fill, particularly in senior and technically specialised roles.

Sensitivity to international recruitment

- Projected shortfalls are sensitive to assumptions about the availability of non-UK seafarers.
- Relatively modest increases in the assumed growth of non-UK supply would be sufficient to close most projected gaps by 2035, particularly for ratings.
- This highlights the potential for constraints to bind most strongly in roles or operations where international recruitment is restricted due to visa or legal considerations.

Career progression and shore-based roles

- Evidence on career progression indicates that most seafarers spend extended periods at sea before transitioning to shore-based roles, commonly after 10 or more years of service, though pathways vary widely.
- Transitions to shore-based roles are typically mid-career and are shaped by lifestyle considerations, remuneration differentials, and the availability of onshore roles that value seagoing experience.

UK demand and supply of seafarers onshore

- Demand for ex-seafarers in shore-based roles is concentrated in functions where prior seagoing officer experience is essential or strongly preferred, for example maritime training, technical and fleet management, and port operations.
- Current demand is estimated at around 4,330 positions in 2024 and is projected to rise modestly to around 4,540 by 2035, driven primarily by replacement needs associated with an ageing workforce rather than expansion.
- The supply of ex-seafarers available for onshore roles is projected to increase from around 3,330 in 2024 to just under 4,000 by 2035, reflecting inflows from officers leaving sea-based roles and higher turnover in shore-based employment.
- Under baseline assumptions, demand exceeds supply throughout the projection period, with a shortfall of around 650 roles by 2035, indicating sustained tightness.

Nationality considerations

- Nationality preferences are role-specific rather than uniform across the workforce. The study finds that employers are generally open to employing non-UK seafarers in many operational roles, particularly where qualifications are recognised.
- Stronger preferences for UK nationals arise primarily in senior, judgement-intensive and regulatory-adjacent roles, where familiarity with UK operating contexts, institutions and standards is particularly valued. Strong requirements for UK nationals are therefore concentrated in experienced seagoing officers and ex-seafarers in shore-based positions.
- Preferences for UK nationals often reflect capability and practicality rather than nationality per se. Interview evidence indicates that UK training pathways and UK Certificates of Competency are viewed as important signals of competence in certain roles, while practical considerations, such as the feasibility of recruiting locally for regionally fixed positions, also shape preferences.

1 Introduction

1.1 Overview and purpose of the report

The Centre for Economics and Business Research (Cebr) has been commissioned by the Department for Transport (DfT) to provide an updated assessment of the UK's future requirement for trained seafarers until 2035, both at sea and in shore-based maritime roles. The previous Seafarer Projections report was published in 2017, and since then the sector has experienced significant changes, including Brexit and disruptions due to the COVID-19 pandemic, necessitating a full reassessment grounded in contemporary evidence.

The study addresses **five objectives:**

1. Forecast the global demand for seafarers at sea over the next decade.
2. Estimate the UK demand for and supply of trained seafarers at sea.
3. Assess demand for and supply of trained UK seafarers ashore.
4. Determine the extent to which both requirements must be met by UK nationals.
5. Examine career progression, including typical pathways from sea to shore.

Alongside quantitative modelling, the study draws on primary employer evidence, including a dedicated survey designed by Cebr and administered by YouGov in late 2025, as well as in-depth stakeholder interviews with medium and large operators across the maritime sector. This evidence is used to contextualise the modelling results, particularly in relation to recruitment constraints, nationality preferences and role-specific substitutability.

1.2 Structure of the report

The remainder of the report is structured as follows:

- **Section 2** presents the methodological approach and findings for the global seafarer demand forecasts.
- **Section 3** sets out the approach and findings for the UK seafarer demand at sea forecasts.
- **Section 4** provides the framework and results for the UK seafarer supply at sea forecasts.
- **Section 5** analyses the balance between projected UK demand and supply at sea.
- **Section 6** contains a discussion on career progression as well as the analysis and results for the UK demand and supply forecasts for ex-seafarers in onshore roles.
- **Section 7** considers the extent to which arising labour demand needs to be met by UK national seafarers in particular.
- **Section 8** summarises the main conclusions of the report.
- **Annex A** contains details on the global demand model results.
- **Annex B** contains methodological notes on the UK demand models.
- **Annex C** contains methodological notes on the UK supply models.

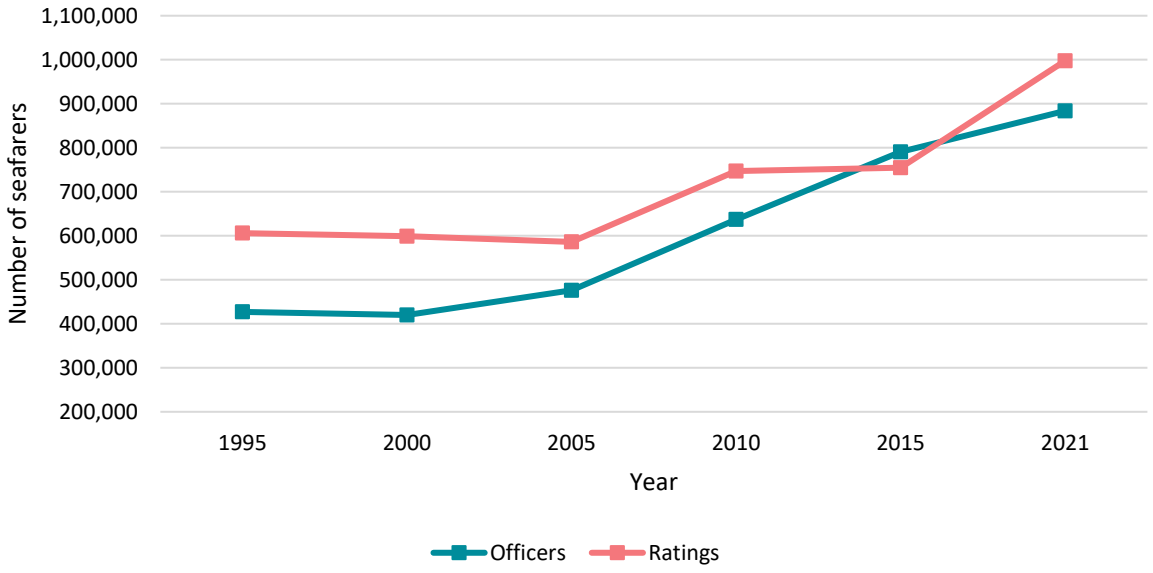
2 Global demand for seafarers

2.1 Historical trends in the global demand for seafarers

The authoritative source of data on long-term global demand for seafarers is the series of workforce studies undertaken by the Baltic and International Maritime Council (BIMCO) and the International Chamber of Shipping (ICS). The most recent data from the 2021 BIMCO/ICS Seafarer Workforce Report indicate that total **global demand for seafarers stood at 1.89 million in 2021**. Figure 1 shows that between 1995 and 2021, demand for officers rose from around 427,000 to 883,780, more than doubling over the period. Demand for ratings also increased, though at a more moderate pace, from approximately 606,000 in 1995 to 997,540 in 2021.

Noteworthily, although demand for ratings exceeded that for officers throughout the 1990s and 2000s, the gap has narrowed considerably over time. By 2015, officer demand surpassed that of ratings for the first time in the series, and although the gap then reversed and widened again by 2021, the long-term trend still exhibits a gradual convergence between the two categories. Trends identified by UN Trade and Development (UNCTAD) in the *Review of Maritime Transport 2025* are consistent with this development. The Review highlights the increasing technological complexity of ship operations, including widespread digitalisation, expanded monitoring requirements, and the early deployment of alternative-fuel systems, which raise the skill intensity of many onboard functions.[1] These developments tend to increase structural demand for officers relative to ratings.

Figure 1: Global demand for deck, engine, and technical officers and ratings, 1995–2021



Source: BIMCO/ICS

[1] UNCTAD (2025). Review of maritime transport 2025, Chapter II.

Over the period in question, growth in seafarer demand has occurred alongside the expansion of the world merchant fleet and the rising volume of global maritime trade. From 1995 to 2021, the total deadweight tonnage (DWT) of the world merchant fleet almost tripled to reach 2.1 billion,[2] while global seaborne trade (GST) more than doubled in volume terms to 11.7 billion metric tonnes.[3] This expansion increased the overall scale of global shipping activity; greater total carrying capacity and rising cargo throughput imply more vessel-days and operational hours to be staffed, even though individual ships have become larger and more efficient over time.

Seafarer demand has also varied considerably across ship types. In 2021, BIMCO/ICS estimated that general cargo vessels accounted for the single largest share of global seafarer demand at nearly 500,000 officers and ratings combined, followed by bulk carriers (around 377,000) and offshore vessels (approximately 221,000). By contrast, total demand aboard liquefied petroleum gas (LPG) and liquefied natural gas (LNG) carriers stood at roughly 37,000 and 23,000, respectively. This distribution broadly reflects the number of vessels within each fleet segment, as crewing requirements depend on vessel numbers and operational characteristics.

2.2 Drivers of global seafarer demand

Several structural forces drive global demand for seafarers. The most fundamental is the **scale and configuration of maritime trade**. Shipping carries over 80% of world merchandise trade by volume,[4] and UNCTAD reports that the average haul distance for global shipping increased from 4,831 nautical miles in 2018 to 5,245 miles in 2024, driven by geopolitical disruptions, post-pandemic supply chain restructuring, and rerouting around major chokepoints.[5] Beyond volume effects, the lengthening of voyage routes raises the number of sailing days required per unit of cargo transported, contributing to higher aggregate crewing requirements.

A second major driver is the **size, composition and technological profile of the global fleet**. While the overall fleet size shapes headline demand, the mix of vessel types also affects aggregate labour requirements, as ships differ in their crewing structures and the seafarer-to-berth ratios needed to keep positions continuously manned. Variation in fleet growth across ship types feeds directly into these labour needs; for example, the 2021 BIMCO/ICS forecasts indicated that LNG and LPG carriers, as well as passenger ships and cruise vessels, were set for some of the strongest five-year fleet growth rates.

Looking ahead, the green transition towards new propulsion systems and digitalised ship operations requires continuous upskilling of maritime personnel. Alternative fuel-capable vessels already account for more than half of tonnage on the orderbook, even though over

[2] UNCTAD (2025). Merchant fleet by country of beneficial ownership, annual (analytical).

[3] UNCTAD (2025). World seaborne trade by type of cargo, annual (analytical).

[4] UNCTAD (2025). Shipping data: UNCTAD releases new seaborne trade statistics.

[5] UNCTAD (2025). Review of maritime transport 2025.

90% of the active fleet still uses conventional fuels.[6] Advances in automation and digitalisation, from smart-port systems to early-stage autonomous vessel prototypes, also have the potential to transform both the scale of labour demand and the skill requirements of the maritime workforce. Notably, these may reduce reliance on some routine deck and rating functions while the skills profile of the workforce is therefore likely to tilt towards higher technical competence and systems management capability. However, it is premature to assume that automation and remote operations will translate into a net reduction in seafarer numbers. Shore-based remote operation centres may reallocate, rather than eliminate, officer roles if watchkeeping and oversight are conducted under standard shore-based working patterns instead of extended sea-going rotations. The net impact on aggregate demand therefore remains ambiguous. What appears more plausible is a restructuring of the qualification pyramid, with relatively greater emphasis on senior-level oversight, digital competence and hybrid sea–shore career pathways.

A third factor shaping seafarer demand is the **regulatory and institutional environment** governing ship operation. International conventions such as the Maritime Labour Convention (MLC) and the Standards of Training, Certification and Watchkeeping (STCW) define minimum crewing, safety and competency requirements, and therefore influence the volume and skill composition of labour that shipping companies must deploy. These frameworks establish baseline obligations for training, watchkeeping, and safe manning, which translate directly into operational staffing needs on board vessels.

2.3 Forecasting global demand

Our baseline forecast for global demand for seafarers is based on a long-run econometric relationship between the volume of the world's seaborne trade and the global pool of active seafarers. The model links the number of officers and ratings to global trade volumes, expressed in metric tonnes.

The long-run relationship was estimated on annual data from 1995 to 2021 using quinquennial global seafarer data from the BIMCO/ICS *Seafarer Workforce Reports*. The chosen specification takes the following form, with all variables log-transformed:

$$\ln(Officers_t) = \alpha + \beta \ln(GST_t) + \epsilon_t$$

$$\ln(Ratings_t) = \alpha + \beta \ln(GST_t) + \epsilon_t$$

where GST_t denotes global seaborne trade in metric tonnes and ϵ_t is the error term.

Model estimation

A range of potential long-run drivers were tested, including global seaborne trade (GST), global fleet size in terms of deadweight tonnage (DWT), and global GDP. Statistical tests

[6] Baltic Exchange (2025). Shipbuilding's role in a greener maritime future.

showed that only GST and DWT move in a stable long-run relationship with officer and rating numbers.[7]

Long-run regressions were estimated for both potential drivers with Newey–West standard errors. Although GST and DWT perform equivalently on all long-run econometric tests, only GST can support the forward-looking requirements of this study. Both variables yield a stable cointegrating relationship with global seafarer demand, but credible long-horizon projections and scenario paths exist for GST, whereas no comparable forecast series is available for DWT. GST therefore provides the only explanatory variable that can be projected consistently to 2035 and used to develop 'good' to 'poor' scenarios. In addition, global seaborne trade projections are produced within Cebr's established macroeconomic forecasting suite, enabling a coherent and internally consistent set of assumptions to underpin the scenario analysis.

The estimated elasticities were significant and economically intuitive:[8]

- **Officers:** $\beta \approx 1.07$ ($p \approx 0.0007$, $R^2 = 0.91$), implying that a 1% increase in global seaborne trade is associated with a slightly larger than proportional increase in officer demand.
- **Ratings:** $\beta \approx 0.62$ ($p \approx 0.01$, $R^2 = 0.74$), indicating a lower sensitivity to trade growth, consistent with differences in crew composition and automation.

Forecasting framework

To project global demand through to 2035, the estimated long-run elasticities were combined with forward projections of global seaborne trade. The forecasting equation for each series is:

$$\ln(\hat{y}_t) = \hat{\alpha} + \hat{\beta}\ln(GST_t)$$

where $\hat{y}_t$ denotes predicted global demand for officers or ratings.

Results

Applying the estimated elasticities to the projected GST values yields baseline global forecasts for both officers and ratings to 2035. The resulting paths reflect steady medium-term growth in global demand, broadly in line with historical relationships between trade expansion and seafarer employment, albeit at a slower pace than observed in earlier periods.

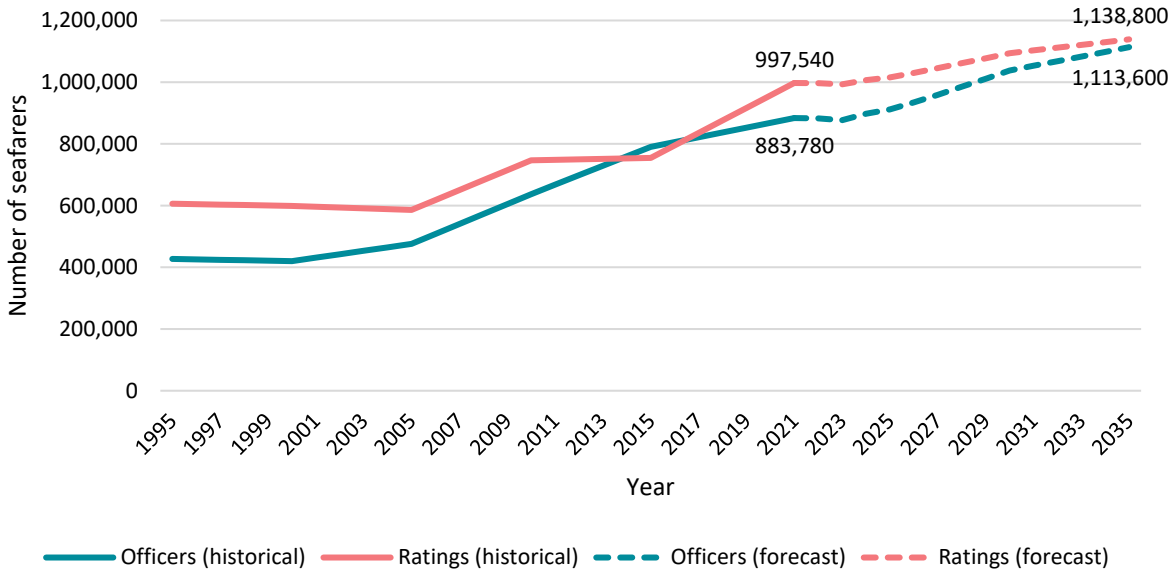
Global demand for officers is expected to rise from 883,780 in 2021 to c. 1,113,600 in 2035, an increase of 26%, or 1.7% per year. This represents a noticeable slowdown compared with the period from 1995 to 2021, when officer demand expanded at an average rate of 2.8%

[7] Unit-root tests (ADF, KPSS) indicated that all series were non-stationary in levels. Engle–Granger cointegration tests confirmed that both GST and DWT were cointegrated with global demand for officers and ratings, while GDP was not. Note that to carry out these tests, the intervening years for the officers and ratings series were linearly interpolated.

[8] Residuals were stationary at the 5% level, confirming the presence of a stable long-run equilibrium. Complementary annual error-correction models (ECM) produced negative and significant adjustment terms and coefficients very close to those above, reinforcing the validity of the long-run specification.

annually. By contrast, the outlook for ratings points to a more modest uplift. Demand is projected to increase from 997,540 in 2021 to c. 1,138,800 in 2035, a gain of 14% over the horizon. This corresponds to annual growth of 1.0%, which is also well below the historical trend of 1.9% recorded between 1995 and 2021.

Figure 2: Projected global demand for deck, engine, and technical officers and ratings, 2021–2035



Source: BIMCO/ICS, Cebr analysis

Structurally lower projected demand growth for both types of seafarers can be attributed to an expected slowdown in global seaborne trade growth relative to historical levels. While GST increased at an annualised rate of 2.9% from 1995 to 2021, from then onwards realised (2022–2024) and forecast (2025–2035) growth is expected to halve to 1.5% per annum. This reflects the projected GST growth path generated within Cebr's modelling framework described above, and is directionally consistent with United Nations forecasts. Given the tight relationship between trade volumes and demand for seafarers, this deceleration is reflected in the projected seafarer numbers.

The growth differential between ratings and officers, which follows the historical pattern of officer demand outpacing that of ratings, reflects the greater responsiveness of officer demand to movements in global seaborne trade. As a result, the gap in demand between the two seafarer categories, which temporarily reversed in 2015 but has since opened again, is expected to narrow further: from 42% in 1995 and 13% in 2021 to just 2% by 2035.

A further factor supporting comparatively faster growth in projected officer demand is the increasing technical and regulatory complexity of modern vessels. UN Trade and Development (UNCTAD) notes that the industry is shifting towards technologically advanced and alternatively fuelled ships, requiring continuous upskilling of the maritime workforce to operate new propulsion systems, digitalised equipment and enhanced safety protocols.[9]

[9] UNCTAD (2025). Review of maritime transport 2025.

These developments tend to place greater emphasis on officer competencies, given their responsibilities for navigation, engineering oversight and regulatory compliance. UNCTAD also highlights that automation and digitalisation increasingly affect areas such as voyage planning, cargo operations and ship management, which may lessen the labour intensity of some manual tasks typically performed by ratings.

2.4 Scenarios

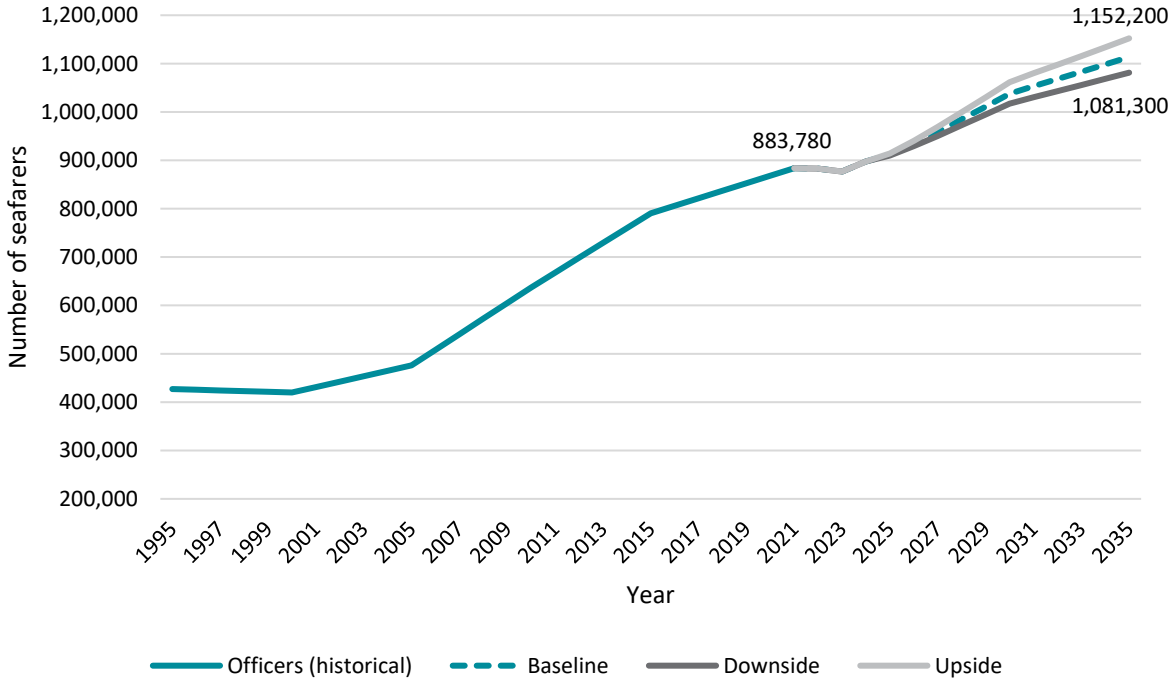
In addition to the baseline model presented above, we modelled two further scenarios for the global demand for seafarers, 'Upside' and 'Downside'. These were conducted by creating bootstrapped confidence intervals of the coefficient estimates to create a 90% confidence upper and lower bound. This method was used in order to create an aggregate of the existing scenario forecasts and falls in line with many of the downside scenarios that were created and tested, such as a slowdown in global trade, a structural depreciation of the dollar, and the risk of a global recession.

- **Upside**: Seaborne trade growth exceeds the baseline as stronger global economic growth supports higher goods demand and trade volumes. Improved productivity growth and easing supply-chain frictions contribute to more favourable shipping conditions, resulting in higher demand for seafarers relative to the central projection.
- **Downside**: Seaborne trade growth underperforms the baseline as weaker global economic conditions dampen goods demand and trade flows. Alongside wider strains in public finances globally, the resulting slowdown in investment and confidence, in tandem with elevated and persistent protectionist trade measures, reduces export demand and leads to weaker seaborne trade growth relative to baseline.

For officers, the Upside scenario produces a trajectory in which global demand rises by 30% between 2021 and 2035, reaching c. 1,152,200 by the end of the period. This corresponds to an average annual increase of 1.9%, compared with 1.7% under the baseline, and leaves officer demand in 2035 around 3.5% higher than the baseline estimate of c. 1,113,600. Should officers follow the Upside scenario while ratings remain on the baseline trajectory, officer demand would surpass ratings by roughly 1.2% by 2035.

Under the Downside scenario, the projected path is noticeably softer: officer demand is projected to grow by 22% over the same period, reaching c. 1,081,300 in 2035. This equates to annual growth of 1.5% and results in a 2035 demand level approximately 2.9% below the baseline projection.

Figure 3: Projected global demand for officers – Upside and Downside scenarios, 2021–2035



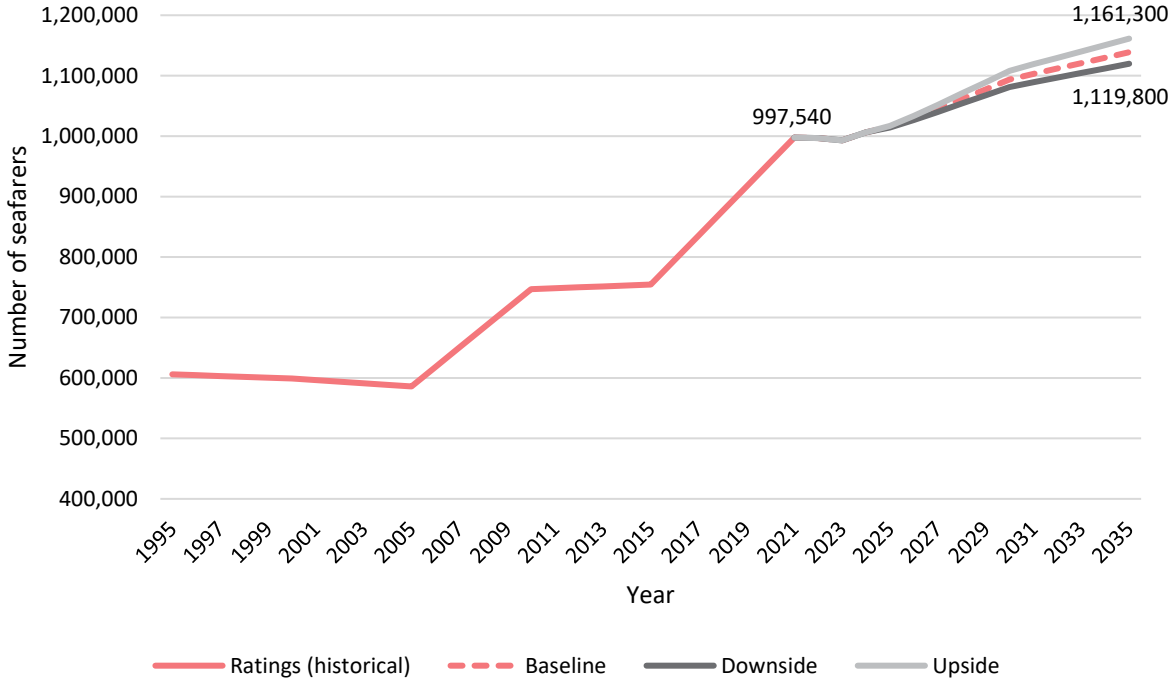
Source: BIMCO/ICS, Cebr analysis

For ratings, the Upside scenario points to a more moderate uplift. Global demand is projected to increase by 16% between 2021 and 2035, reaching c. 1,161,300 by the end of the period. This translates into average annual growth of 1.1%, slightly above the 1.0% pace under the baseline, and results in a 2035 demand level roughly 2% higher than the corresponding baseline estimate of c. 1,138,800.

In contrast, the Downside scenario delivers a more subdued trajectory for ratings. Demand rises by 12% over the forecast horizon, reaching c. 1,119,800 in 2035. This is equivalent to annual growth of 0.8% and leaves projected rating demand in 2035 about 1.7% below the baseline figure.

Taken together, the scenarios show that ratings exhibit a narrower spread between Upside and Downside outcomes than officers, reflecting their comparatively lower sensitivity to long-run changes in global seaborne trade.

Figure 4: Projected global demand for ratings – Upside and Downside scenarios, 2021–2035



Source: BIMCO/ICS, Cebr analysis

3 UK demand for seafarers at sea

3.1 Historical trends in the UK demand for seafarers

In a global labour market such as the one for seafarers, UK operators are generally able to source crew internationally when required, although for sectors where crew operate entirely within UK territorial waters (i.e. within 12 nautical miles) and for services operating exclusively between UK ports, such as offshore energy, towage, and UK-Northern Ireland ferry routes, visa rules can render hiring more restricted.[10] For example, stakeholder interviews from the towage sector suggest that, following Brexit, recruitment into these port-based operations has increasingly involved additional immigration and compliance processes when hiring non-UK seafarers, reflecting changes in access to the available labour pool faced by UK operators.

Stakeholders noted that, because recruitment constraints are relatively limited at the global level outside of the special cases mentioned above, the number of seafarers actually employed in the UK fleet has historically tracked underlying demand quite closely. As a result, the realised headcount series provides a reasonable proxy for true demand over time, and, despite short-term volatility, captures longer-term structural shifts in the industry.

Our historical series for UK seafarer demand is based on official DfT/UK Chamber of Shipping (UKCoS) statistics of realised employment, with a three-year moving-average filter applied to smooth out year-on-year fluctuation. Additional adjustments were made to ensure consistent industry coverage and to correct for isolated anomalies. These included instances where international operators reclassified seafarers onto the UK register in particular years without this reflecting an underlying workforce trend, which were confirmed on a case-by-case basis through stakeholder discussions and corrected by moderating the affected growth rates. Further detail on the construction of these series is provided in Annex B.[11]

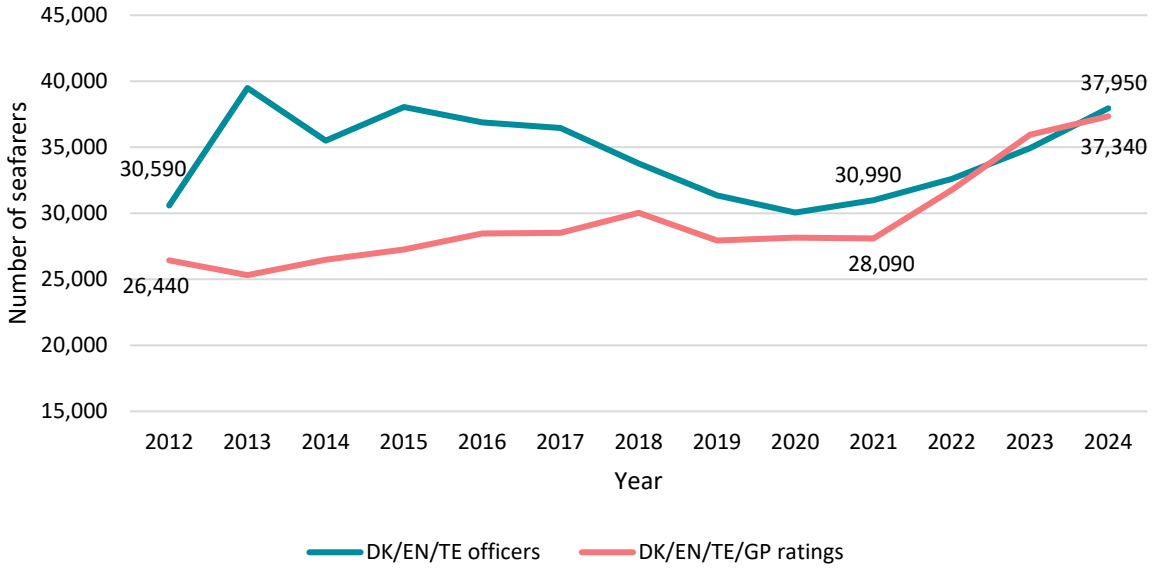
It is important to note that these figures represent total industry demand, covering both UK and non-UK nationals. Given the generally high degree of substitutability across nationalities, the analysis here focusses on demand by role type. Section 7 discusses perceived differences in the relative merits of these nationality groups, and notable shifts in workforce composition are highlighted where relevant.

For non-hospitality, i.e. deck, engine, technical, and general or dual-purpose roles, demand has increased steadily for both officers and ratings over 2012 to 2024. Officer demand rose from around 30,590 to 37,950, an uplift of 24% or 1.8% per year. Rating demand in these categories expanded more rapidly, increasing by 41% over the period, equivalent to annual growth of 2.9%.

[10] Cebr (2025). The Competitiveness of the UK Shipping Industry.

[11] Official UK seafarer statistics have poor coverage of workboats and superyachts, meaning that the majority of ratings employed in these sectors fall outside the reported totals, and are therefore largely beyond the scope of this study (Maritime Skills Commission (2023). Barriers To Progressing UK Ratings Review, p. 8).

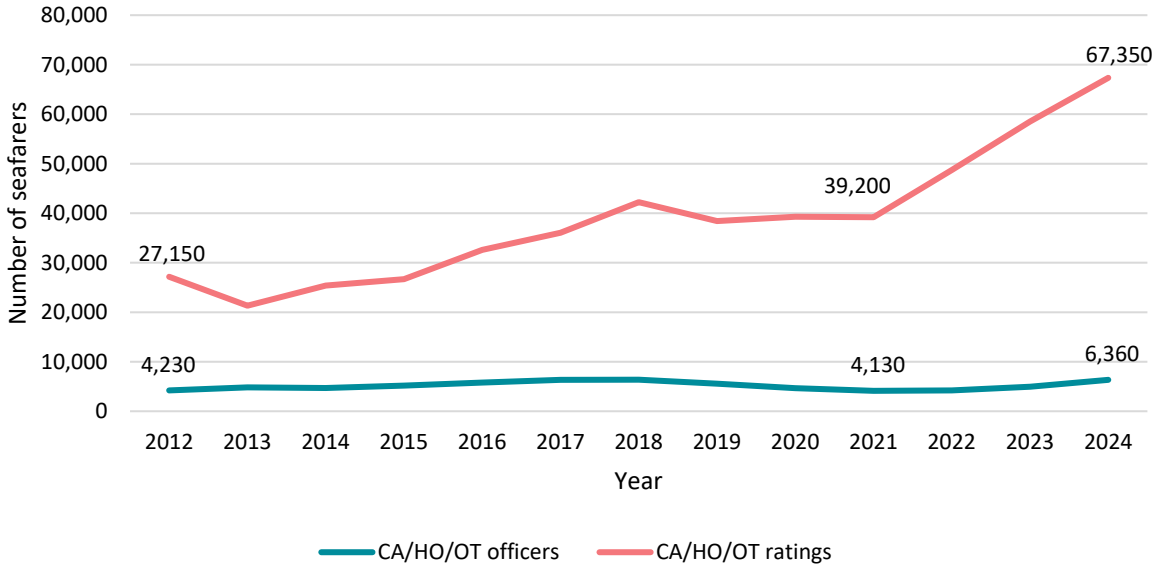
Figure 5: UK demand for non-hospitality officers and ratings, 2012–2024, smoothed



Source: DfT, UKCoS, Cebr analysis

Hospitality seafarer roles have grown at a much faster pace. Among officers in catering, hotel, and related functions, demand increased by 51% between 2012 and 2024, or 3.5% annually. Hospitality ratings grew even more sharply, more than doubling over the period with an increase of 148%, corresponding to a growth rate of 7.9% per year. This long-term rise can be separated into two distinct phases. Before 2021, hospitality ratings grew at an annualised rate of 4.2%. Since 2021, however, growth accelerated markedly to 19.8% per year. The recent surge reflects a genuine underlying trend; although the raw survey-based increases for 2022 to 2024 were adjusted downward to correct a known reclassification anomaly related to UK registration, the smoothed series still shows a marked rise.

Figure 6: UK demand for hospitality officers and ratings, 2012–2024, smoothed



Source: DfT, UKCoS, Cebr analysis

The particularly strong increase in hospitality rating roles in recent years can be traced to two main factors. First, UK-based operators have drawn more extensively on the global pool of hospitality ratings, particularly after 2021, enabling rapid expansion in this segment. Second, continued growth in cruise operations, which rebounded post-pandemic, has increased demand for catering, hotel, and passenger service staff relative to traditional deck and engine roles. Together, these developments account for the pronounced upward trajectory observed for hospitality ratings.

Additional numerical evidence from the global cruise sector reinforces this explanation. The Cruise Lines International Association (CLIA) reports that cruise passenger volumes exceeded pre-pandemic levels in 2023, reaching 31.7 million globally and setting a trajectory towards almost 40 million passengers by 2027.[12] The 2025 CLIA State of the Industry report similarly records continued growth in both fleet capacity and forward bookings.[13] Because cruise vessels employ large hotel and catering departments relative to other ship types, even modest increases in global cruise activity create substantial labour demand for hospitality ratings, which in turn feeds through to UK-based operators participating in this expanding market.

3.2 Drivers of UK seafarer demand

While global shipping conditions will continue to underpin long-term labour needs, the outlook for UK demand for seafarers over the next decade reflects a combination of countervailing global and domestic pressures. Structural shifts in trade patterns, fleet composition and regulatory requirements generate both upside and downside risks. These forces will not affect all market segments uniformly, and their net impact will depend on how UK operators adapt to evolving operational and policy conditions.

UNCTAD's *Review of Maritime Transport 2025* notes that **heightened geopolitical tensions** continue to affect key shipping corridors, with an exceptional increase in voyage distances seen in 2024, reflecting large-scale detours around the Red Sea. Looking ahead, UNCTAD highlights that a broader market recalibration is underway in several shipping segments, with fleet capacity outpacing demand in areas such as containers and product tankers.[14] For UK-serving operators, the operational implication is that routing conditions over the next few years remain uncertain and sensitive to geopolitical developments. Prolonged detours would sustain more complex voyage planning and variable transit times, increasing the operational demands placed on experienced officers, whereas a normalisation of routes would ease these pressures.

Meanwhile, **decarbonisation commitments** and the uptake of alternative-fuel vessels (e.g. LNG, methanol, ammonia) are expected to accelerate through the 2030s, increasing the technical complexity of ship operations. Interview evidence is consistent with this, with training providers noting that decarbonisation, alternative fuels and increasingly digital ship systems

[12] CLIA (2024). State of the Cruise Industry Report 2024.

[13] CLIA (2025). State of the Cruise Industry Report 2025.

[14] UNCTAD (2025). Review of maritime transport 2025.

are already shifting skill requirements towards electrical, electronic and control-systems expertise rather than purely mechanical engineering capabilities.

From a UK perspective, these developments align with the ambitions in the *Maritime Decarbonisation Strategy*, which commits the UK to leading the global transition to clean maritime growth.[15] As UK-based operators renew or retrofit fleets, demand is likely to shift towards officers and engineers with specialised competence in alternative fuels, emissions-monitoring technologies and digital systems, although the scale and timing of these effects will depend on global regulatory pathways and the pace of fleet renewal.

More broadly, future UK demand will be shaped by the **interaction between global trade patterns**, **technological transition and the structure of UK shipping**. A rising share of global trade growth is concentrated in intra-Asian routes largely served by Asian operators, while UK industry bodies highlight some persistent competitiveness constraints[16] in the UK. These stem primarily from regulatory friction, complex border processes, high operating costs, institutional fragmentation, and slow progress on infrastructure modernisation, which limit the extent to which global shipping growth could translate into domestic crewing demand, even as decarbonisation and digitalisation raise demand for higher-skill roles.

In addition to net changes in fleet activity, a significant component of future demand for ratings, particularly in deck and engine roles, reflects replacement requirements rather than expansion. An ageing workforce, combined with comparatively weak inflows, implies that a large share of vacancies is driven by attrition rather than by growth in fleet capacity. As a result, sustaining staffing levels in these roles increasingly depends on the ability to replace leavers, even in scenarios where net demand growth is modest.

3.3 Forecasting UK demand for seafarers

To forecast the UK's future demand for trained seafarers at sea over the next decade, disaggregated by officers and ratings and by deck/engine/technical/general or dual-purpose (henceforth DK/TE/EN/GP or non-hospitality) and catering/hotel/other (henceforth CA/HO/OT or hospitality) seafarers, we undertook two complementary approaches to ensure robustness, with the choice of primary method determined by the quality and explanatory strength of the model outputs.

Projected UK share of global demand

Our primary method anchors UK demand to the global forecast from Section 2. Historical global figures were drawn from the ICS/BIMCO workforce reports, which provide periodic estimates of worldwide demand for officers and ratings. For the UK, we used official DfT statistics and adjusted officer numbers to reflect under-reporting in the industry survey on which these statistics are based.

[15] Department for Transport (2025). Maritime Decarbonisation Strategy.

[16] Cebr (2025). The Competitiveness of the UK Shipping Industry.

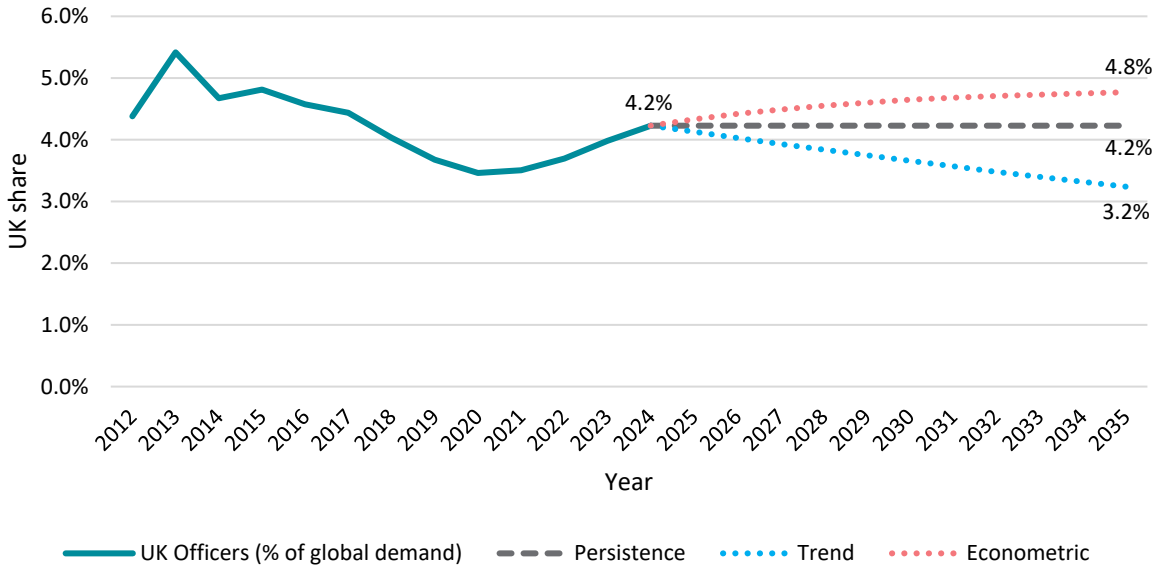
We then used detailed information from the UK Chamber of Shipping's Seafarer Employment Surveys (SES) to estimate the split between hospitality and non-hospitality roles within the UK workforce. These shares were smoothed to reduce year-to-year volatility and applied to the UK totals to produce consistent series for officers and ratings across hospitality and non-hospitality roles. Further detail is provided in Annex B.

To forecast UK demand, we projected three possible paths for the UK share of global officer and rating demand. These variants capture different assumptions about how UK participation in the global labour market might evolve:

1. Persistence – the UK share stabilises at its 2024 level;
2. Trend – the historical trend of the UK share is linearly extrapolated forward; and
3. Econometric – statistical models that allow for short-term changes and capture a partial regime shift post-2021.[17]

In assessing these variants, we consider not only statistical fit but also the broader macroeconomic and industry context discussed above. Although the Econometric variant is statistically adequate for both officers and ratings and captures the post-2021 uptick in UK shares, there is insufficient evidence that this increase represents a lasting structural shift.

Figure 7: Historical and projected UK share of global demand, non-hospitality officers



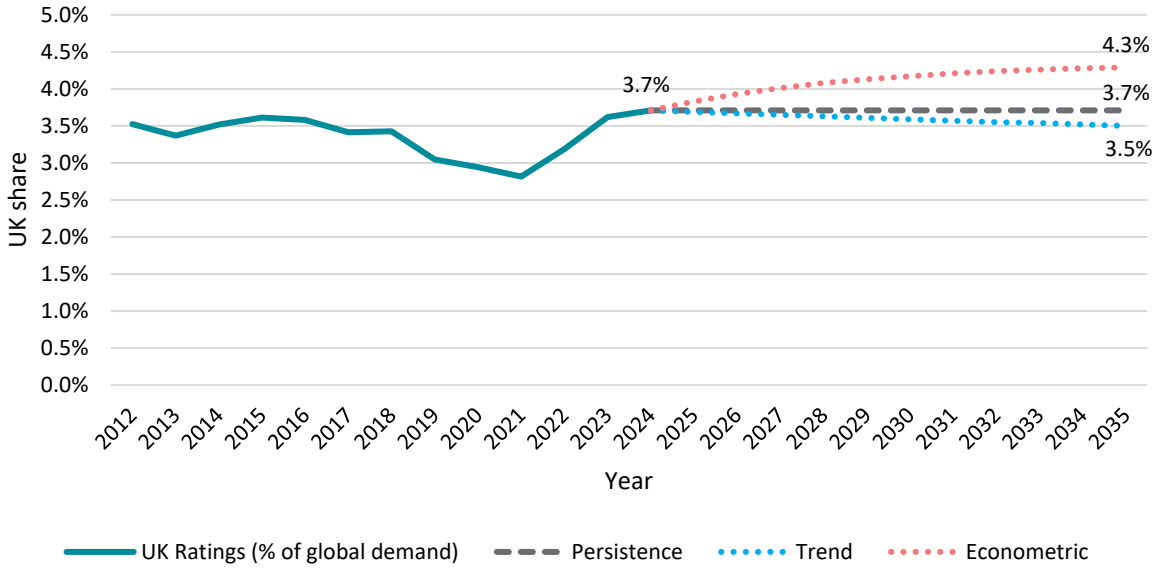
Source: BIMCO/ICS, DfT, UKCoS, Cebr analysis

Conversely, the downward-sloping Trend variant would imply a sustained erosion in the UK share that is not well supported by the longer historical pattern and appears too pessimistic, especially for officers, for whom the share has historically stood at a higher level. Overall, these factors make the **Persistence** variant the most defensible baseline as it avoids

[17] For officers, an autoregressive model (AR(1) with a structural break in 2021 and an anchored mean), for ratings, an exponential smoothing specification.

assuming an unsupported upward drift while not extrapolating a short-period decline into a long-run structural fall.

Figure 8: Historical and projected UK share of global demand, non-hospitality ratings

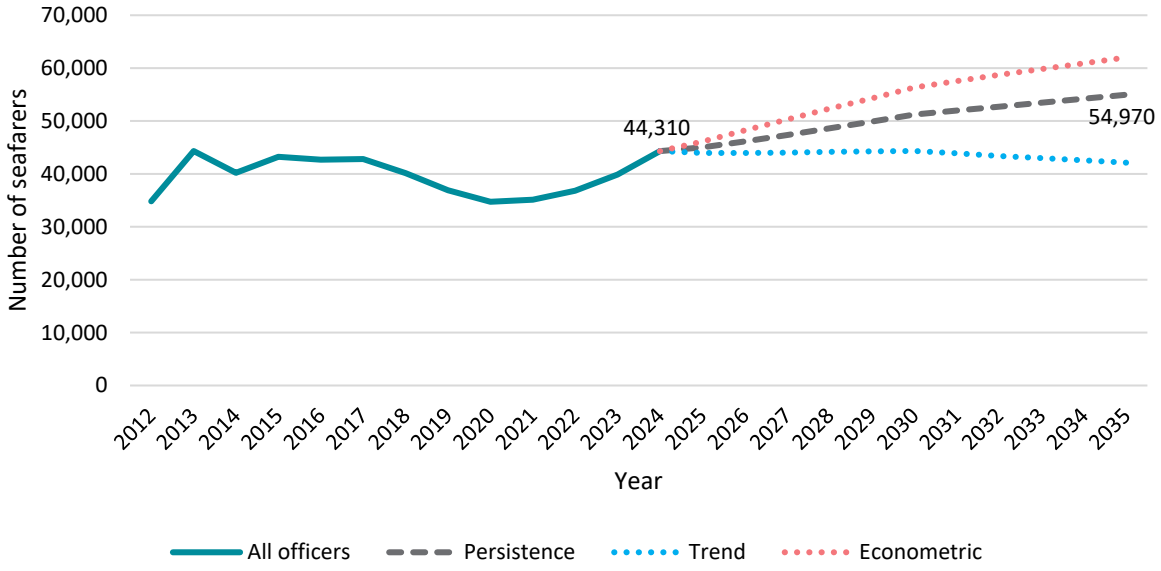


Source: BIMCO/ICS, DfT, UKCoS, Cebr analysis

Having projected the three variants, we multiplied the forecast global demand from Section 1 by the respective shares, separately for officers and ratings, to obtain projected UK non-hospitality demand. Finally, we applied the historical ratios of hospitality to non-hospitality seafarers to obtain projections for hospitality roles, before combining all series into a total UK demand forecast. It should again be noted that these figures correspond to demand across all nationalities, i.e. for both UK and non-UK nationals.

For officers, the Persistence scenario indicates that UK demand rises by 24% between 2024 and 2035, reaching around 54,970, which corresponds to an annualised growth rate of just under 2%. Of this total, around 47,080 are non-hospitality officers (deck, engine, and technical roles) and around 7,890 are hospitality officers (catering, hotel, and other functions). This projected growth is slightly below the pre-2012 trend, when UK officer demand increased from around 34,810 to 44,310, a rise of c. 27% or 2.0% per year.

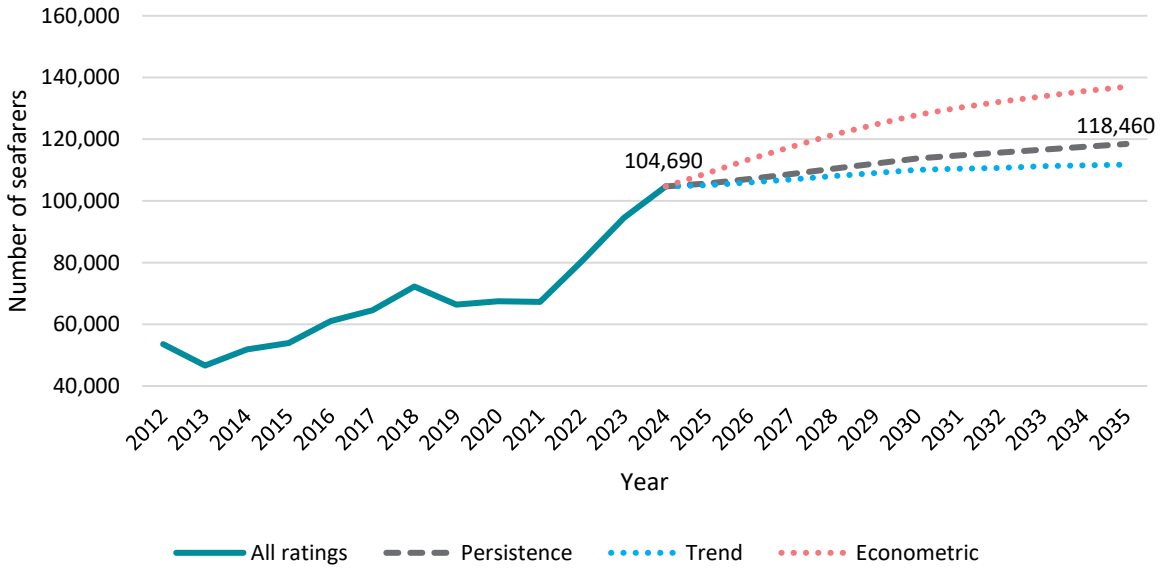
Figure 9: Projected total UK demand for officers, 2024–2035



Source: DfT, UKCoS, Cebr analysis

For ratings, total UK demand is expected to increase from around 104,690 to 118,460 by 2035 under the Persistence scenario. This comprises c. 42,250 non-hospitality ratings (deck, engine, technical, and general or dual-purpose roles) and 76,210 hospitality ratings (catering, hotel, and other functions). Although rating demand grew rapidly before 2024, almost doubling over the preceding period (up 95%, or 5.7% per year), the outlook points to a more moderate trajectory, with projected annual growth of around 1.1%.

Figure 10: Projected total UK demand for ratings, 2024–2035



Source: DfT, UKCoS, Cebr analysis

Secondary method: UK time-series modelling

Our secondary method treats the UK demand for officers and ratings as directly dependent on global economic and maritime drivers. A suite of candidate models and drivers was evaluated for each dependent variable, including autoregressive integrated moving average with exogenous regressors (ARIMAX), error-correction models (ECM), autoregressive distributed lag (ARDL), and ordinary least squares (OLS). The idea is to allow the series to evolve dynamically in response to global economic conditions while capturing short-term persistence in employment levels. Separate models were estimated for officers and for the two rating categories (hospitality and non-hospitality). For all series, the ultimately chosen specification was an autoregressive model with exogenous regressors (ARIMAX). Detailed methodology and results for this approach are presented in Annex B.

4 UK supply of seafarers at sea

To forecast the UK's supply of trained seafarers over the next decade, disaggregated by officers and ratings, we undertook two complementary approaches to ensure robustness. The primary method constructs forward projections of UK national officer and rating supply using a stock-and-flow framework. The second method uses panel regression modelling to study the variables driving officer and rating supply, and hence forecast these forwards to 2035.

4.1 Stock-and-flow model

Our primary method uses a stock-and-flow framework to forecast the future supply of UK national seafarers. This approach derives annual joiner and leaver patterns from UKCoS Seafarer Employment Surveys (SES), which, applied to the observed 2024 supply and iterated forward until 2035, enable a sectoral labour market microsimulation that evolves the existing stock forward each year.

Separate models are constructed for officers and ratings, each broken down by age group (18–29; 30–59; and 60–73) and by department (deck; engine; technical/GP; hotel/other). To minimise noise and mitigate the influence of one-year anomalies in inflows or outflows for particular departments or age groups, the models are constructed by averaging 2022–2023 and 2023–2024 estimates. In equation form, the intertemporal dynamics of supply for a given department and age group are governed by:

$$S_{t+1} = S_t + I - rS_t + A_t$$

where

- S_t is the stock at time t;
- I represents inflows;
- r is the department- and age group-specific leaving rate;
- and A_t is the net effect of ageing, meaning the balance of seafarers entering the age group (e.g. those moving from age 29 to 30) and those exiting it (e.g. those moving from age 59 to 60).

The simplified logic of the model is illustrated below:

<table>
<tr><th colspan="2">Supply in 2024</th></tr>
<tr><td>Add annual UK national inflows:
Newly qualified deck and engine officers (estimated from DfT Seafarer Statistics – Table SFR0206)
Experienced deck and engine officers ('re-joiners', estimated from SES)
Other officers and ratings (estimated from SES)</td><td>Subtract annual UK national outflows:
UK national outflows by applying leaving rates of UK national seafarers by age group to the supply stock (estimated from SES)</td></tr>
<tr><td colspan="2">Add net change in non-UK national seafarers:
Varying by seafarer type (yearly growth rate sourced from BIMCO for officers, and from United Nations Department of Economic and Social Affairs (UNDESA) for ratings)</td></tr>
<tr><th colspan="2">Supply in 2035</th></tr>
</table>

Estimating inflows and outflows

We begin by estimating annual joiners across all seafarer categories. For deck and engine officers aged 18–29, joiners are treated as newly qualified officers (cadets), reflecting the typical entry route into these roles. These are estimated based on cadet entrants from DfT statistics (Table SFR0206), with a slight upward adjustment informed by stakeholder interviews with training providers to reflect the most recent cohort sizes. We assume a conservative 7% drop-out rate, informed by stakeholder discussions with maritime training providers, and distribute graduates to deck and engine departments in line with existing industry employment. For all other departments and age groups, annual joiners are estimated from individual-level UKCoS records by identifying new entrants appearing in the survey for the first time. These inflows are expressed in absolute terms.

Annual leaver rates are computed by first identifying individuals present in one year but absent in the next, and then dividing this number by the former year's stock. Like for joiners, these leaver rates are computed separately for each department and age group, allowing the model to reflect the differing turnover dynamics observed across occupations and career stages. These flows are expressed as a proportion of the stock.

Reconciling SES sample with the industry stock

Because individual-level SES data do not cover the entire seafarer workforce, the observed patterns must be scaled to industry level. We do this by comparing the age-department distribution in the SES company sub-sample with the total UK national seafarer stock by distribution for 2024. From this comparison we derive scaling factors for each department and age group. These factors are then applied to initial stocks and inflows by department and age group, ensuring that the model remains consistent with the observed overall workforce size while preserving the detailed structure of the flows.

Projecting UK seafarer supply forward

We then simulate the evolution of the UK national officer and rating stock year by year from 2024 to 2035. This iterative process yields a dynamic projection of the UK national seafarer workforce that captures both demographic ageing and underlying labour-market flows:

(i) Initial age structure

The complete 2024 stock is distributed across exact ages in proportion to the age profile observed in the detailed individual-level SES data.

(ii) Age progression

Each year, all individuals move forward one year in age. Those reaching the upper age boundary for their age band transition into the next band, while those reaching age 74 exit the stock. This age acts as a modelling backstop rather than a stated retirement age, as the vast majority of retirements are already captured through age-specific leaving rates applied earlier in the process.

(iii) Adding joiners

Annual joiners are added to the stock in line with the scaled estimates. Within each age band, joiners are allocated evenly across ages except for newly qualified officers, who are concentrated around typical training-completion ages (21–23).

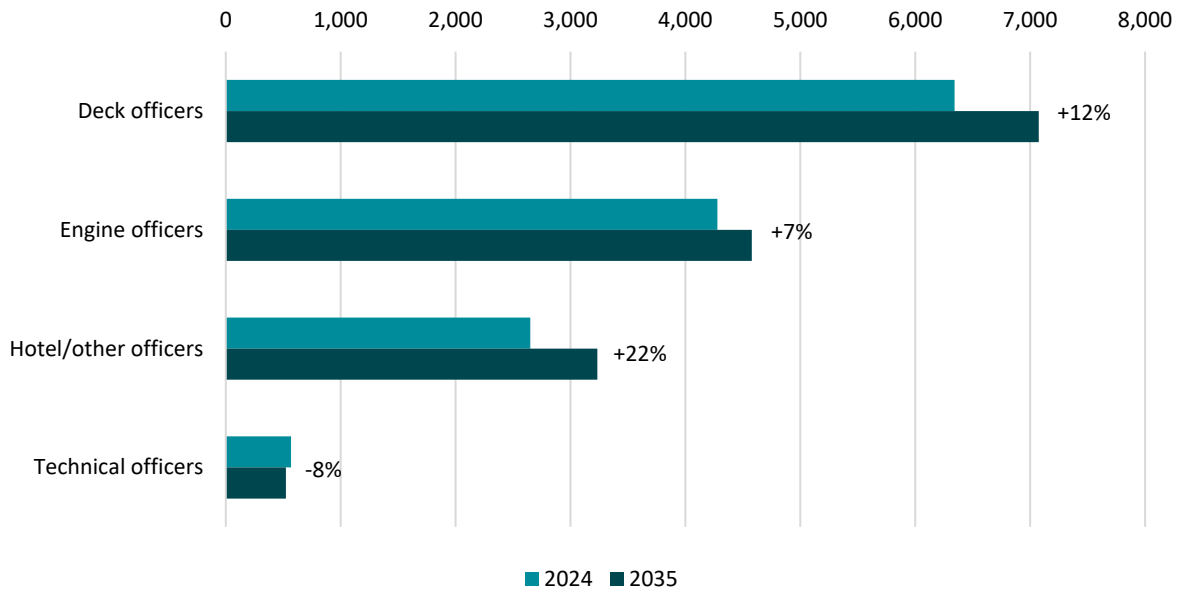
(iv) Subtracting leavers

Age- and category-specific leaving rates are applied to the stock. This captures natural attrition, retirements below age 74, and other separations.

UK national officer results

The supply of UK national officers is forecast to increase moderately over the projection horizon. Deck officers show gradually rising numbers; engine officers increase slightly; hotel and other officers display sustained growth reflecting strong inflows; and technical officers decline slightly due to consistently higher outflows relative to inflows. **Overall, the total supply of UK national officers is forecast to grow by 11.3% to c. 15,410 from 2024 to 2035, corresponding to growth of 1.0% per annum**.

Figure 11: Projected supply of UK national officers, 2024–2035

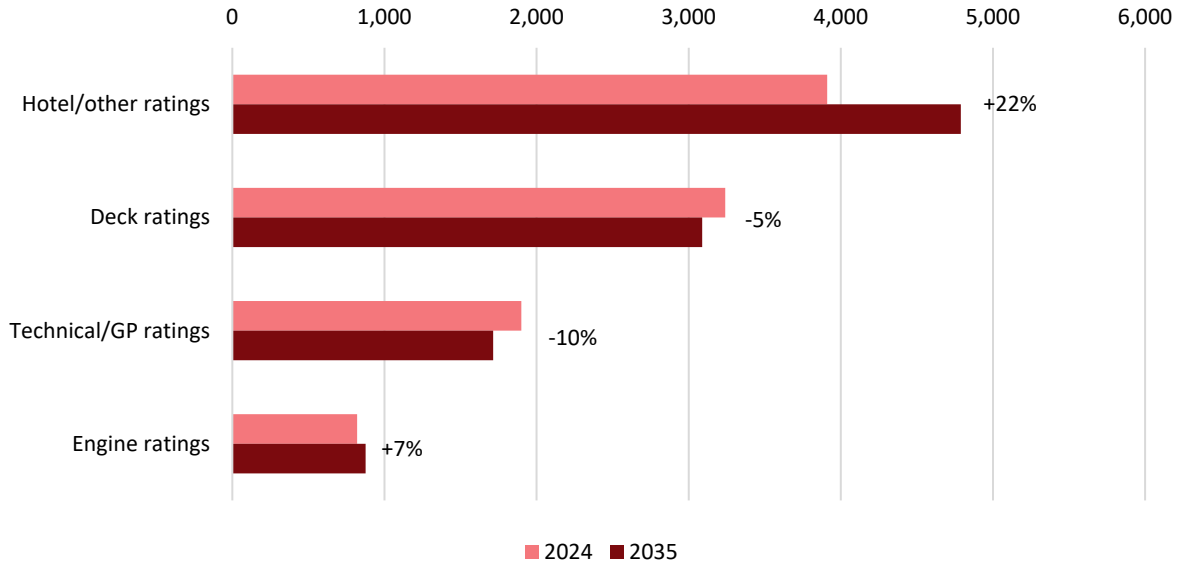


Source: DfT, UKCoS, Cebr analysis

UK national rating results

As for officers, the projected supply of UK national ratings exhibits a modest upward trend over the period. While the hotel and other category is estimated to increase by a fifth, deck and technical/GP ratings are both expected to decline slightly. **Overall, UK rating supply is forecast to grow by 6.1% to c. 10,470 from 2024 to 2035, corresponding to growth of 0.5% per annum**.

Figure 12: Projected supply of UK national ratings, 2024–2035



Source: DfT, UKCoS, Cebr analysis

Non-UK supply

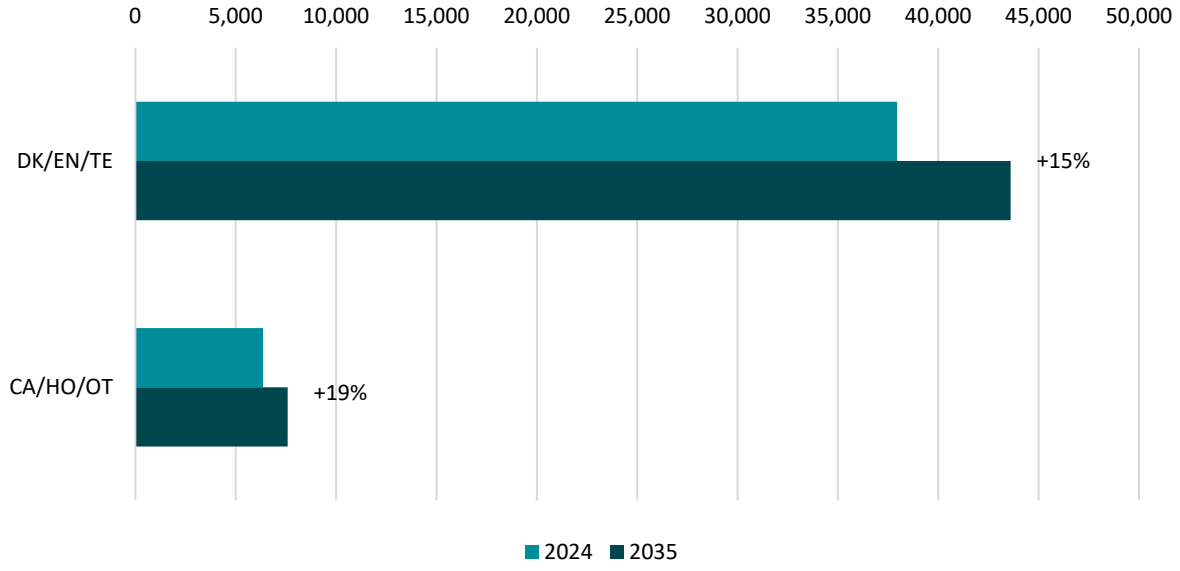
For non-UK national officers and ratings, separate growth rates are estimated and applied iteratively to the existing stock. For officers, the growth rate is sourced from the 2021 ICS/BIMCO Seafarer Workforce Report and corresponds to the annual growth of non-UK officer supply from 2015 to 2021. This assumes that recent realised growth is a reasonable proxy for future trends and that the share of non-UK officers becoming available to the UK labour market remains constant.

For ratings, where qualification requirements are lower and training pathways are substantially more accessible across labour-supplying countries, supply growth is assumed to match the forecast annual growth of the global working-age population. This reflects the fact that the ratings labour pool is drawn from a wide and demographically diverse set of countries, many of which have large and expanding working-age cohorts and where maritime employment remains an important source of overseas income. In the absence of a consolidated international forecast of rating supply, global population growth provides a transparent and economically grounded proxy for the expansion of the potential labour pool from which UK operators recruit.

Total supply

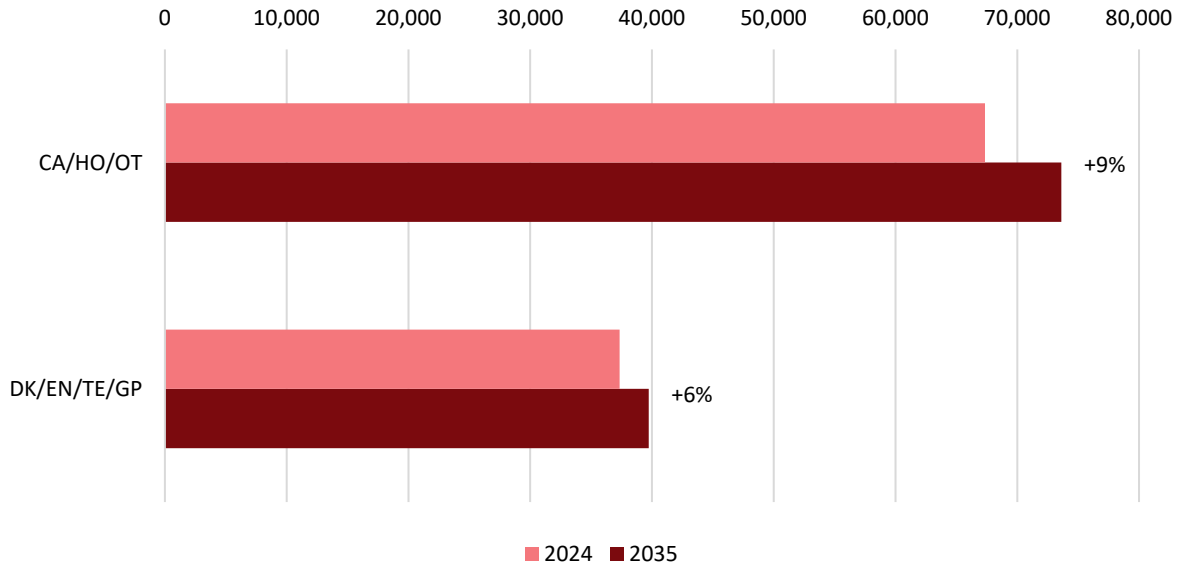
Finally, supply projections for UK and non-UK nationals are combined to provide total officer and rating supply up to 2035. **The overall seafarer workforce supply is expected to exhibit modest growth to 2035, with compound annual growth rates of 1.3% and 0.7% for officers and ratings respectively, reaching around 51,190 officers and 113,360 ratings**, with the compositional balance shifting towards hotel/catering/other roles and away from technical categories (deck, engine, technical) due to stronger expected growth in the former.

Figure 13: Projected total UK supply of officers, 2024–2035



Source: DfT, UKCoS, Cebr analysis

Figure 14: Projected total UK supply of ratings, 2024–2035



Source: DfT, UKCoS, Cebr analysis

4.2 Secondary method: Panel data modelling

The secondary models used for this objective are panel regressions which assess the impact of macro-level indicators on a country's seafarer supply. Separate models were developed for officers and ratings, with the former being the only one to produce satisfactory results. The officer model takes the form of a fixed effects (FE) model with unit and time fixed effects. Despite positive results, conceptual ambiguity in the underlying data means that estimates are only used as a secondary cross-check to those from the primary stock-and-flow model.

This secondary approach produces a supply trajectory that is closely aligned with the stock-and-flow results. The stock-and-flow model projects officer supply of UK nationals of around 15,410 in 2035, while applying the panel-derived growth rates yields 14,900, a difference of c. 3%. Detailed methodology and outputs for this approach are presented in Annex C.

5 Balance of UK demand and supply of seafarers at sea

This section combines the demand projections from Section 3 with the supply projections from Section 4 to estimate the balance between demand and supply for seafarers at sea in the UK to 2035. Throughout, excess demand is defined as projected demand minus projected supply, so a positive figure indicates a shortfall of seafarers, and a negative figure indicates an oversupply. Results are presented for all seafarers combined and separately for non-hospitality (DK/EN/TE/GP) and hospitality (CA/HO/OT) roles for both officers and ratings.

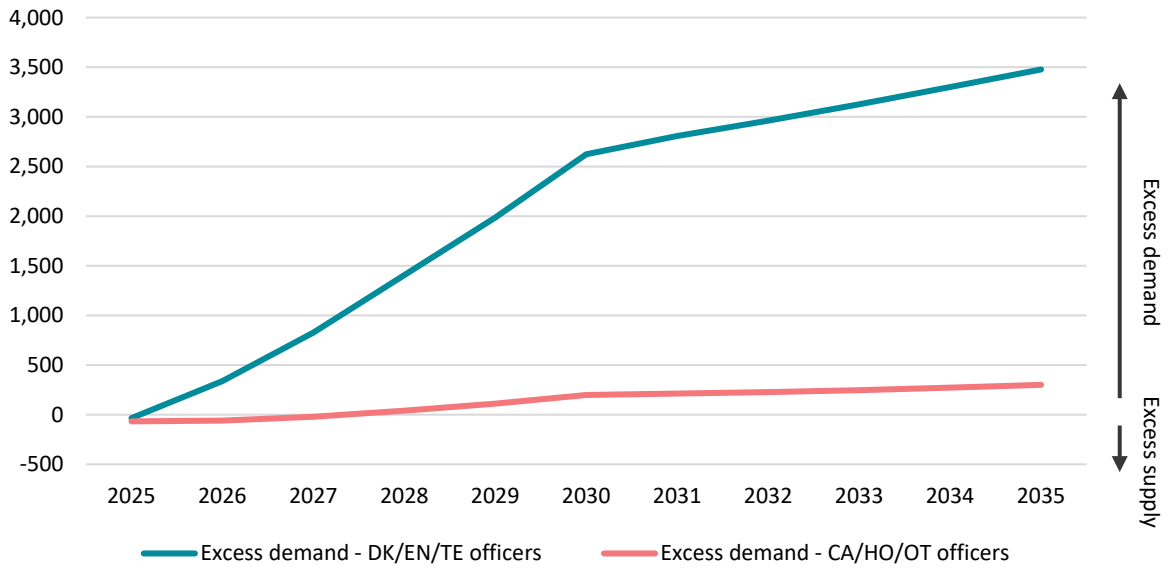
5.1 Headline results

Across all categories, the modelling points to a gradual move from approximate balance in 2024 to emerging excess demand by the early 2030s. On the officers' side, total excess demand is projected to rise to around 3,800 by 2035. For ratings, total excess demand is expected to increase to approximately 5,100 by the end of the period. Taken together, the combined shortfall across all officers and ratings reaches slightly under 9,000 seafarers by 2035 under the baseline assumptions.

5.2 Officers

For officers overall, projected demand only marginally exceeds supply in the early mid-2020s, with excess demand of around 300 in 2026. From 2027 onwards, the gap widens, reaching around 1,400 by 2028 and approximately 2,100 by 2029. By 2030, we forecast an officer shortfall of about 2,800, rising to around 3,800 by 2035.

Figure 15: Projected excess demand for officers of all nationalities by category, 2025–2035



Source: Cebr analysis

The shortfall is concentrated in non-hospitality officer roles. Excess demand for deck, engine, and technical officers is projected to increase to roughly 2,000 by 2029, then to 2,600 by 2030 and just under 3,500 by 2035. In contrast, catering, hotel, and other officer roles exhibit a modest initial oversupply in 2025 and 2026, and a near-balanced position in 2027. From 2028 onwards, this flips into a gradually rising shortfall, increasing slowly to around 300 by 2035.

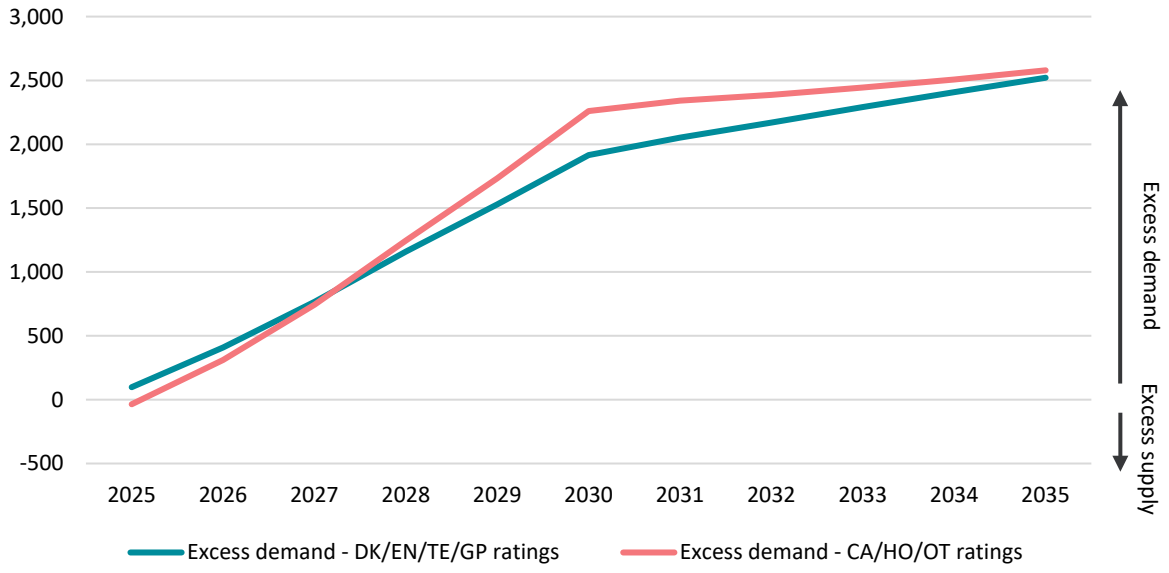
These results indicate that the officer workforce in the UK shipping industry is likely to face capacity pressures primarily in technical and navigational roles, with hospitality officers remaining closer to balance throughout the period. Stakeholder interviews similarly suggest that future demand pressures may not be evenly distributed across officer disciplines; some training providers reported that as vessels become more technologically complex, the strongest growth is expected in electro-technical and electrical/electronic engineering roles, while mechanical engineering roles may also gradually shift towards more electrical and systems-focused competencies.

5.3 Ratings

For ratings, the imbalance is more evenly distributed across non-hospitality and hospitality segments. Total excess demand is forecast to rise to c. 700 in 2026 and just over 1,500 by 2027. By 2029 the shortfall amounts to around 3,300 ratings and continues to grow thereafter, reaching approximately 4,200 in 2030 and 5,100 by 2035.

Within this aggregate, excess demand for deck, engine, technical, and general-purpose ratings moves to about 1,200 by 2028 and just over 1,500 by 2029. The projected shortfall then rises more gradually to roughly 1,900 in 2030 and about 2,500 by 2035. Catering, hotel, and other ratings again start from a slight oversupply, but swing into excess demand by 2026 (at c. 300) and thereafter follow a rising path. By 2029, the shortfall in CA/HO/OT ratings is around 1,700, increasing to about 2,300 in 2030 and approximately 2,600 by 2035.

Figure 16: Projected excess demand for ratings of all nationalities by category, 2025–2035



Source: Cebr analysis

The profile for ratings notably differs from that of officers in that shortage is split relatively evenly between non-hospitality and hospitality roles by the mid-2030s, suggesting that capacity pressures are likely to be felt across a wider range of operational functions, including passenger services and hotel roles on cruise and ferry vessels.

Large-scale employment of UK ratings is concentrated primarily in ferry operations and the Royal Fleet Auxiliary, whereas other major shipping segments, notably the cruise sector, do not rely on the domestic labour market for ratings. Cruise operators reported that prevailing business models and salary structures make employment of UK ratings commercially unviable, resulting in reliance on international labour. Ferry operators, by contrast, indicated that they do depend on UK ratings, but face recruitment challenges linked directly to pay competitiveness relative to alternative local employment and other maritime-adjacent sectors. Across ferry and towage operators, stakeholders framed current pressures primarily as a retention challenge rather than an inability to recruit at all. Entry-level roles were generally described as fillable, while shortages were more pronounced among experienced ratings. Higher churn was attributed to relative pay differentials with local employment and maritime-adjacent sectors, particularly offshore wind and shore-based technical roles, alongside work-life balance considerations and the physically demanding nature of the work.

Qualitative survey evidence is also consistent with the modelling results. When asked whether vacancies for active seafarers are proving hard to fill, 83% of respondents agreed. The roles most frequently cited by these employers as difficult to fill were concentrated in senior and technically specialised categories. These included deck officers, such as masters and officers of the watch; engineering officers, notably chief and senior engineers; and electro-technical roles including ETOs. Experienced deck and engine ratings, as well as hospitality and catering roles, were also mentioned.

5.4 Interpretation and methodological caveats

The excess demand figures should be interpreted as indicative orders of magnitude rather than point forecasts. Some caveats apply:

1) **Choice of baseline variants**: The demand projections are based on the share-of-global-demand Persistence variant from Section 3, while the supply forecasts rely on the stock-and-flow framework for UK nationals combined with assumed growth rates for non-UK labour. Alternative combinations, for example using the alternative time-series specification on the demand side or the panel-based supply cross-check, would yield somewhat different levels of excess demand, although the directional pattern of emerging shortfalls is robust.

2) **Simplifying assumptions on non-UK supply**: Non-UK officer supply is assumed to grow in line with historical ICS/BIMCO trends, while non-UK rating supply is linked to global working-age population growth. These assumptions provide a transparent and tractable proxy, but they inevitably abstract from potential future constraints on training capacity, changes in sending-country labour market conditions, immigration policy, or shifts in the attractiveness of seafaring relative to other occupations.

3) **Static treatment of behavioural responses**: The projections do not endogenise wage adjustments, contract changes, or policy interventions that might be triggered by emerging shortages. In practice, excess demand would be expected to prompt adjustments on both the demand side (for example through automation, changes to crewing models, or route rationalisation) and the supply side (for example increased training intakes, targeted recruitment from additional labour-supplying countries, or improved retention). The results should therefore be viewed as a description of pressures that would materialise if current behavioural patterns and institutional settings persisted.

4) **Occupational and skill substitutability**: The analysis treats each category (DK/EN/TE/GP vs CA/HO/OT, officers vs ratings) as fixed. Some substitution does occur over time, for instance via rating-to-officer conversion routes, although interviewees noted that these are currently taken up largely by non-UK nationals.[18] Stakeholders also emphasised that movement into highly technical roles, particularly electro-technical, is slow and capacity-constrained. The results do not capture these adjustment channels and may overstate the rigidity of imbalances in the medium term.

5.5 Scenario analysis

Given the high degree of substitutability between UK and non-UK nationals in most seafaring roles, the above analysis does not disaggregate results by nationality. In principle, projected shortfalls may therefore be addressed either through an expansion in the supply of UK nationals (for example through training, retention initiatives, or encouraging experienced UK seafarers to return to sea), or through increased recruitment of non-UK seafarers. The former would require a set of policy and workforce development interventions, the details of which are beyond the scope of this study. Instead, this subsection focusses on the latter channel and considers how much faster the supply of non-UK nationals would need to grow in order to close the projected demand-supply gaps across the four respective role categories.

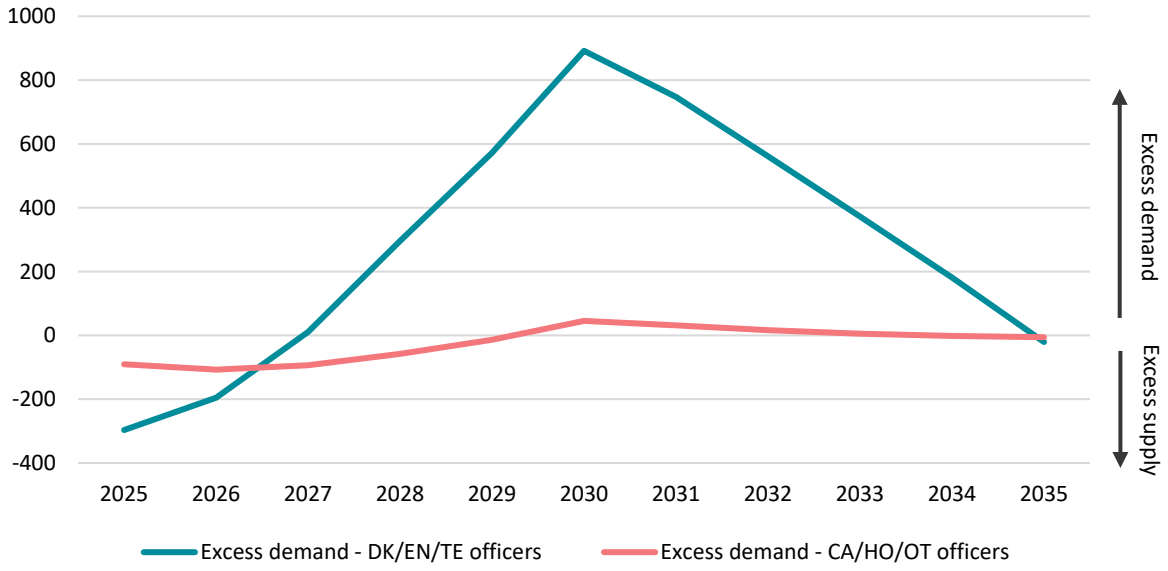
For officers, the assumed annual growth rate of non-UK supply in the baseline model is 1.5%. Increasing this to approximately 2.5% per year for deck, engine, and technical officers would be sufficient to bring demand and supply broadly into balance by 2035. Even under this higher growth rate, however, excess demand would still rise somewhat in the late 2020s, peaking at just under 900 officers around 2030 before gradually narrowing and eventually flipping marginally into surplus by the end of the period.

For catering, hotel, and other officers, a more modest acceleration is required. Raising the assumed annual growth rate of non-UK supply to around 2.1% would be sufficient to keep this

[18] Stakeholders attributed this primarily to incentive structures rather than structural barriers: in some countries, ratings cannot progress to officer through domestic experience-based routes and therefore seek UK certification, whereas UK nationals typically have access to sponsored cadetships (including SMarT support) that make direct officer entry more attractive than beginning as a rating. It was emphasised that no institutional barrier prevents UK ratings from converting, and that policy efforts are aimed at clarifying and widening progression pathways.

segment close to equilibrium through most of the projection horizon, with only very limited and temporary imbalances emerging.

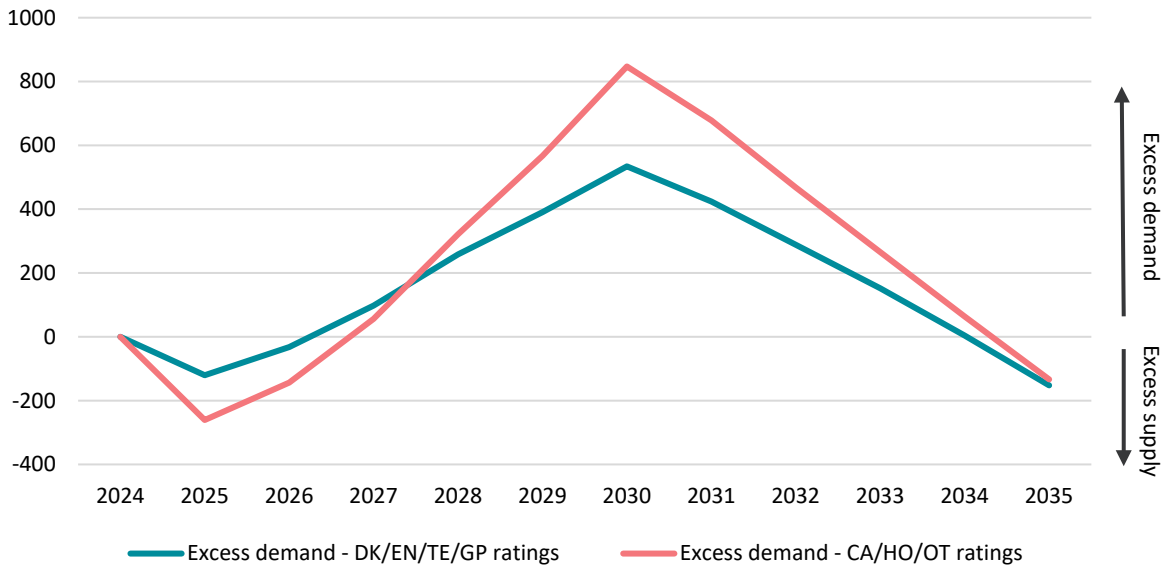
Figure 17: Projected demand-supply balance for officers of all nationalities by category, assuming increased supply of non-UK national seafarers, 2025–2035



Source: Cebr analysis

A similar pattern holds for ratings. For deck, engine, technical, and general-purpose ratings, doubling the assumed annual growth of non-UK supply from 0.7% to around 1.4% would eliminate projected excess demand by 2035, with only modest shortfalls arising mid-period before declining again. For catering, hotel, and other ratings, an even smaller adjustment would be required: increasing annual growth to around 1.1% would lead to a moderate shortfall peaking in 2030 (at c. 850 ratings), followed by a gradual easing towards a broadly balanced position at the end of the projection horizon.

Figure 18: Projected demand-supply balance for ratings of all nationalities by category, assuming increased supply of non-UK national seafarers, 2025–2035



Source: Cebr analysis

This exercise demonstrates that **the baseline results are sensitive to assumptions regarding the availability of non-UK seafarers**. As the global maritime labour market remains substantially international in nature, employers generally retain the option to recruit from abroad where domestic supply is insufficient. The more structural constraints are therefore likely to arise in those roles where either legal, visa, immigration, or regulatory requirements limit the scope to employ non-UK nationals, or where employers prefer to hire UK nationals for other reasons (see Section 7 for a detailed discussion on the topic). Thus, these categories may warrant particular policy attention, as they represent the areas in which projected supply shortfalls are most likely to translate into binding operational challenges in practice.

6 Career progression and UK demand and supply of ex-seafarers for onshore roles

6.1 Career progression of seafarers

Seafarers' careers commonly begin with structured pre-sea education or cadet training, after which most move directly into active sea service to build essential experience and qualifications. This early period at sea is generally spent progressing through watchkeeping and departmental ranks while completing time-based certification requirements under the International Convention on Standards of Training, Certification and Watchkeeping (STCW), which link sea time and professional advancement. Typical progression through these ranks varies by department and individual pace, with each promotion often requiring several years of documented sea service and successful assessment of competency standards.

In most cases, this early career stage extends over several years, during which seafarers accumulate the operational experience, certifications and managerial responsibilities needed for progression to more senior roles. This period often forms the foundation for later career decisions, as achieving higher-level certificates of competency and serving in positions of increased responsibility shape both long-term earning potential at sea and the range of opportunities available ashore, particularly in technical, safety-critical and regulatory functions. As a result, most seafarers do not actively consider shore-based employment until they have accumulated a substantial period of sea service and reached at least senior watchkeeping or management-level certification.

Interviews indicate several common career pathways. These include remaining at sea and progressing to senior ranks; moving from ratings to officer roles; transitioning into tug, pilot-boat or other port-based operations; or taking up crewing, training and company roles ashore. Some subsequently move into technical management functions such as superintendent or designated person ashore roles, while others spend periods in maritime college teaching before progressing into Maritime and Coastguard Agency (MCA) or industry training posts.

Factors influencing the timing of transition to roles ashore

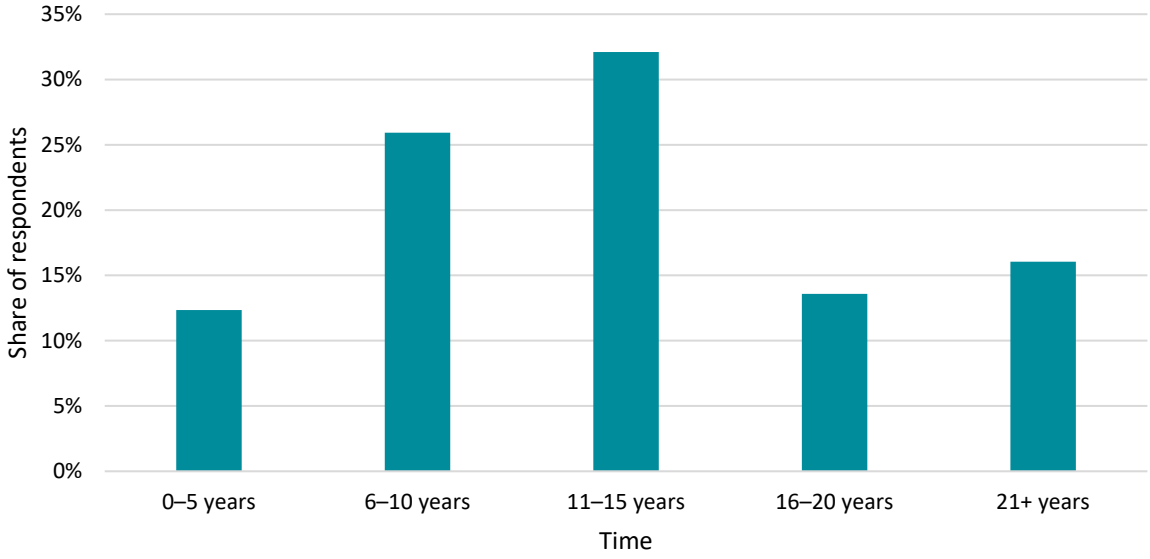
Decisions about whether or when to move to shore are influenced by career objectives, personal circumstances and broader industry dynamics. Many seafarers aim to reach a level of seniority or gain higher certificates, such as Chief Officer or Chief Engineer, before seeking onshore employment, as these credentials enhance opportunities in technical, management and regulatory roles ashore. Stakeholders also emphasised that quality of life considerations, including family commitments and the desire for more stable living conditions, are key drivers for leaving sea service. External surveys support this, noting that while seafarers may be

satisfied with aspects of life at sea, "pull" factors such as family life and longer-term career prospects ashore often play a decisive role in career transitions.[19]

However, these factors were rarely described as sufficient on their own to prompt early transition. Instead, interviewees repeatedly highlighted that favourable tax treatment associated with international seagoing employment acts as a strong incentive to remain at sea, often delaying both transition into domestic or shore-based roles and retirement from sea service. In this sense, tax advantages were described as actively retaining senior seafarers at sea rather than merely shaping post-transition outcomes.

Overall, the evidence suggests that most seafarers undertake extended periods at sea, commonly over a decade, before transitioning into shore-based work. Stakeholder survey responses indicate that the average time seafarers spend at sea before moving onshore varies considerably: around a quarter of respondents reported that ex-seafarers in their organisation had between 6 and 10 years of sea service before moving ashore, while the largest single group (32%) identified 11–15 years. Smaller proportions cited even longer sea careers of 16–20 years (14%) or more than 21 years at sea (16%).

Figure 19: Stakeholder views on the typical length of sea service of ex-seafarers working onshore



Source: Stakeholder survey, Cebr analysis. N = 81

Observed pathways from sea to shore

Once seafarers move ashore, many remain within the maritime cluster in roles where operational experience is advantageous. These can include fleet and technical management, safety and compliance functions, maritime training, surveying, and port or logistics roles. Estimated current and future demand for and supply of such ex-seafarers is quantified in the

[19] INTERTANKO (2024). INTERTANKO Seafarers Survey: Making your way at sea, p. 17.

following subsections. Others move into non-maritime sectors that value the discipline and leadership skills developed at sea.

Stakeholders also noted that career pathways are not strictly linear. Some individuals undertake temporary or rotational shore-based assignments while maintaining a valid CoC, before either returning to sea or making a permanent transition ashore. This reversibility was described as an important feature of maritime careers, particularly during mid-career stages.

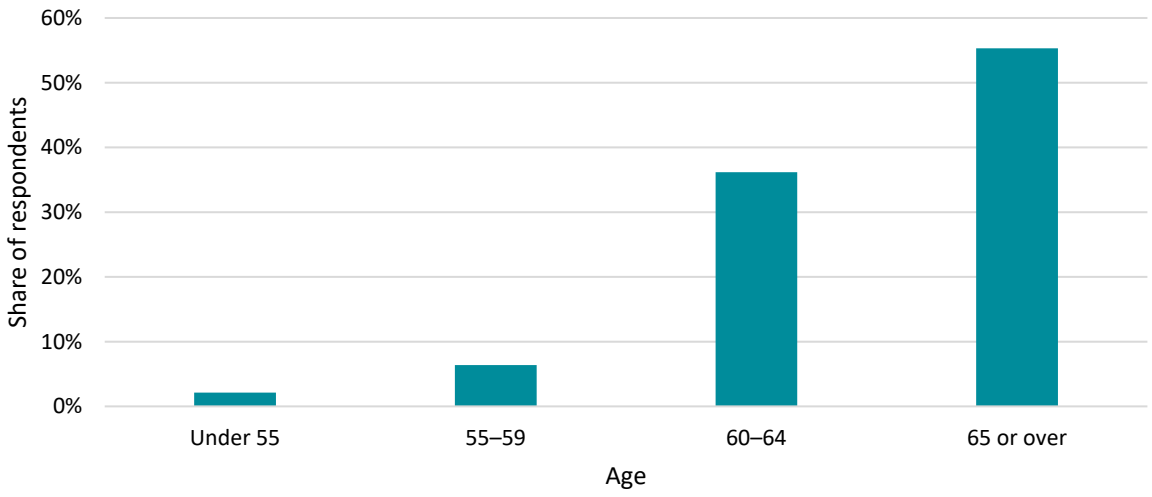
Typical retirement ages for seafarers at sea

Survey and interview evidence together indicate wide variation in the length of time seafarers spend at sea before moving into shore-based employment. While no single "typical" tenure emerges, the evidence consistently points to extended periods of sea service as the norm.

As mentioned, not all seafarers end up making the full transition to onshore roles; some remain at sea for the entirety of their career, while others undertake temporary assignments ashore before returning to sea. Given the diversity of career pathways for seafarers at sea, stakeholders cautioned that it is difficult to define a single typical retirement age. Interviewees noted that, in practice, the point at which individuals retire from active sea service is shaped not only by professional considerations but oftentimes also by the financial implications of leaving seagoing employment. For example, some may choose to stay at sea longer partly because of the favourable tax treatment associated with seagoing contracts, which can make continued sea service financially attractive relative to shore-based roles.

Stakeholder interview insights from the cruise sector suggest that seagoing careers commonly conclude in the early 60s, with engineers often remaining at sea slightly longer than deck officers. Earlier retirement was generally characterised as atypical and usually linked to health considerations, financial readiness, or specific personal circumstances, rather than standard career trajectories.

Figure 20: Stakeholder views on the typical retirement age for seafarers in their organisation



Source: Stakeholder survey, Cebr analysis. N = 47

Our survey data are broadly consistent with this pattern. Fewer than one respondent in ten considered the typical retirement age in their organisation to be below 59; around 36% placed it between 60 and 64, while a majority judged it to be 65 or above.

6.2 Demand for ex-seafarers for roles onshore

Demand for ex-seafarers in shore-based roles is concentrated in functions where prior seagoing officer experience is either essential or strongly preferred. These include maritime training and assessment, technical and fleet management, marine operations, port services such as pilotage and harbour management, regulatory and compliance roles, and selected insurance, surveying and consultancy functions. Stakeholder interviews indicate that these roles draw overwhelmingly on former officers rather than ratings, reflecting the certification, responsibility and technical experience typically required.

Estimating current employment of ex-seafarers

Current employment of ex-seafarers in shore-based roles was estimated using a mixed-method approach combining stakeholder interviews, employer survey evidence, collaboration with public bodies, and sector-level extrapolation. Given the absence of comprehensive administrative data covering ex-seafarer employment across the maritime cluster, all estimates should be interpreted as indicative. It should be noted that these estimates relate almost exclusively to former officers. Across all sectors covered by the interviews and survey, organisations reported that they do not systematically track the employment of former ratings in shore-based roles and were generally unable to provide reliable or consistent estimates for this group. As a result, the figures presented primarily reflect ex-officer employment, with ex-rating representation likely to be limited and uneven across sectors.

For core commercial maritime sectors where employer interviews and survey responses were available, most notably shipping, education and training, insurance, and legal services, estimates were derived by combining reported headcount figures with stakeholder-provided indications of the proportion of roles typically held by former seafarers. These reported shares were then extrapolated to the wider sector based on the relative size of participating firms compared with total sector employment.

For public bodies, maritime administration, regulators, charities and NGOs, a different approach was adopted. Estimates were constructed on a company-by-company basis in collaboration with the MCA, drawing on expert knowledge, known role requirements, and direct confirmation where possible.

For ports and port services, the evidence base is more limited and fragmented. In the absence of consistent employment data on ex-seafarers across port operators, pilotage authorities and harbour authorities, estimates were informed by professional membership data. Specifically, the number of members of the UK Harbour Masters' Association and the UK Maritime Pilots' Association was used as a proxy for the scale of senior operational and pilotage roles typically held by former seafarers. These figures were supplemented by interview evidence on organisational structures within ports and marine services. These estimates are not directly comparable with those reported in the previous Oxford Economics study. In particular, maritime pilots were excluded from the scope of that analysis, whereas they are included here following clarification from the MCA. Given the significant concentration of former officers in

pilotage and related port service roles, this difference in scope materially affects sector-level and aggregate totals.

For classification societies, estimates were taken directly from the previous iteration of this study undertaken by Oxford Economics, reflecting the absence of new evidence, hence assuming no material change in employment patterns since that analysis. Similarly, certain parts of the wider maritime cluster, including consultancy, surveying, marine engineering and related specialist services, were not directly covered by the employer survey or interviews. For these sectors, the size of employment was benchmarked against the previous OE study. That study indicated that these activities accounted for approximately 8% of total ex-seafarer employment ashore. In the absence of evidence suggesting a material structural shift since the earlier study, current estimates were scaled up by a comparable proportion to account for these activities.

Across all sectors, the resulting estimates represent orders of magnitude rather than precise counts. They reflect triangulation across multiple evidence sources, adjusted for sector coverage and gaps, and are intended to provide a robust indicative picture of the current scale and distribution of ex-seafarer employment across the UK maritime economy.

Table 1 summarises the estimated current employment of former seafarers in shore-based roles across the UK maritime cluster.

Table 1: Estimated current employment of ex-seafarers in shore-based roles

Sector	Estimated employment
Ports and port services	1,050
Shipping	632
Classification societies	633
Education and training	301
Public bodies & maritime administration	199
Trade associations, charities & NGOs	125
Insurance and P&I clubs	92
Legal and compliance	50
Other sectors	245
Total	**3,327**

Sources: Cebr analysis, survey and stakeholder interviews

The distribution highlights the strong concentration of ex-seafarer employment in sectors where operational judgement, regulatory credibility and lived seagoing experience are central to role performance. Ports and port services represent the single largest destination, reflecting the prevalence of former officers in pilotage, harbour master and marine management roles. Shipping and classification societies together account for a further substantial share, driven by demand for technical superintendents, fleet managers, surveyors and safety-critical assurance functions.

Zoom on specific sectors employing ex-seafarers

Ports and port services

Employment of ex-seafarers in ports and port services is concentrated in marine operational roles where seafaring experience is essential. Typical positions include pilots, harbour masters, deputy and assistant harbour masters, pilotage operations managers, marine superintendents, and Vessel Traffic Service (VTS) operators and managers. These roles are filled by former deck officers holding management-level Certificates of Competency, with equivalence between officer rank at sea and seniority ashore. Seafaring experience is regarded as a functional requirement rather than a preference.

Recruitment dynamics vary strongly by location. Some ports report relatively smooth recruitment, while others, particularly in less densely populated regions, face prolonged hiring timelines for specialist roles such as harbour masters.

Towage operators employ ex-seafarers in a small number of shore-based roles, primarily marine and technical superintendents and related oversight functions. These roles require direct seagoing experience and are almost exclusively filled by former officers. The scale of shore-based employment is limited relative to the predominantly sea-based workforce, but the reliance on experienced CoC holders is high. The labour market for seafarers in towage is described as increasingly tight, particularly for experienced masters and chief engineers.

Recruitment pressures are driven by an ageing workforce, high attrition, competition from offshore wind and other sectors, and constraints on international recruitment following Brexit.

Shipping (cruise and ferry)

In cruise shipping, ex-seafarers are heavily concentrated in shore-based technical, safety, refit, fleet management and operational assurance roles. Typical positions include Safety Superintendents, Deck Superintendents, Engine Superintendents, Electrical Superintendents, Technical Hotel Maintenance Superintendents, Fleet Operations Managers, among others. These positions are typically held by former deck, engineering and electro-technical officers with substantial sea service, often at senior watchkeeping or management level.

Seafaring experience is viewed as essential for most of these roles, particularly those involving casualty response, risk assessment, maintenance planning, refit oversight, regulatory compliance, and real-time operational decision-making. For senior technical posts, candidates typically have seven to ten years or more of sea service and hold management-level Certificates of Competency. More junior shore roles such as technical documentation support, investigation support officers or junior fleet analysts may be open to individuals with shorter sea service, but these represent a small share of total employment.

Large operators reported employing very few UK-trained former seafarers in these roles, relying instead on international officers drawn from global fleets. The principal barriers to employing UK ex-seafarers are financial (loss of tax advantages on transition ashore) and geographic (requirement to relocate to UK office locations). Ferry operators employ relatively more UK seafarers in shore-based management and technical roles. Roles include Marine Superintendents, Technical Superintendents, Heads of Technical, Heads of Operations, Fleet Managers, Safety Managers, Passenger Operations Managers, and Engineering Managers. These roles are again filled by former officers holding CoCs, although isolated examples of ratings progressing internally to officer level before moving ashore were noted. Ferry operators reported recruitment challenges, driven primarily by pay competitiveness relative to local labour markets and other maritime-adjacent sectors.

Education and training

Maritime education and training providers are structurally dependent on former seafarers. Teaching staff delivering STCW-aligned and competency-based courses are predominantly ex-officers, typically holding management-level CoCs. Seafaring experience is considered essential for most instructional roles, as delivery requires practical judgement and the ability to assess operational competence rather than purely theoretical knowledge.

Operators consistently shared that recruitment into teaching roles has become increasingly difficult, particularly for UK ex-seafarers. Pay differentials relative to at-sea roles and competing shore-based maritime positions were cited as key constraints, alongside cost-of-living pressures. While international recruitment is possible, immigration costs and visa requirements limit flexibility.

Insurance and P&I clubs

Within marine insurance and P&I clubs, ex-seafarers are concentrated in loss prevention and technical advisory functions. These roles require maritime credibility and are commonly filled by former senior officers and engineers. Seafaring experience enhances effectiveness but is not an absolute prerequisite as a whole.

Claims handling, underwriting and broader commercial functions employ relatively few ex-seafarers. A structural mismatch exists whereby roles that would benefit from maritime experience are often junior in grade, while seafarers transitioning ashore typically come from senior ranks.

Legal and compliance services

Ex-seafarers in maritime legal services are concentrated in casualty, admiralty and technically intensive areas of practice. Those who transition typically do so after long sea careers, often as master mariners or senior deck officers, and subsequently retrain as solicitors or specialists. The number of ex-seafarers in this sector is small and has declined over time due to changes in how casualty investigations are conducted and greater reliance on digital evidence. Seafaring experience remains valuable for credibility and technical insight but does not substitute for formal legal qualification.

Estimating current demand for ex-seafarers

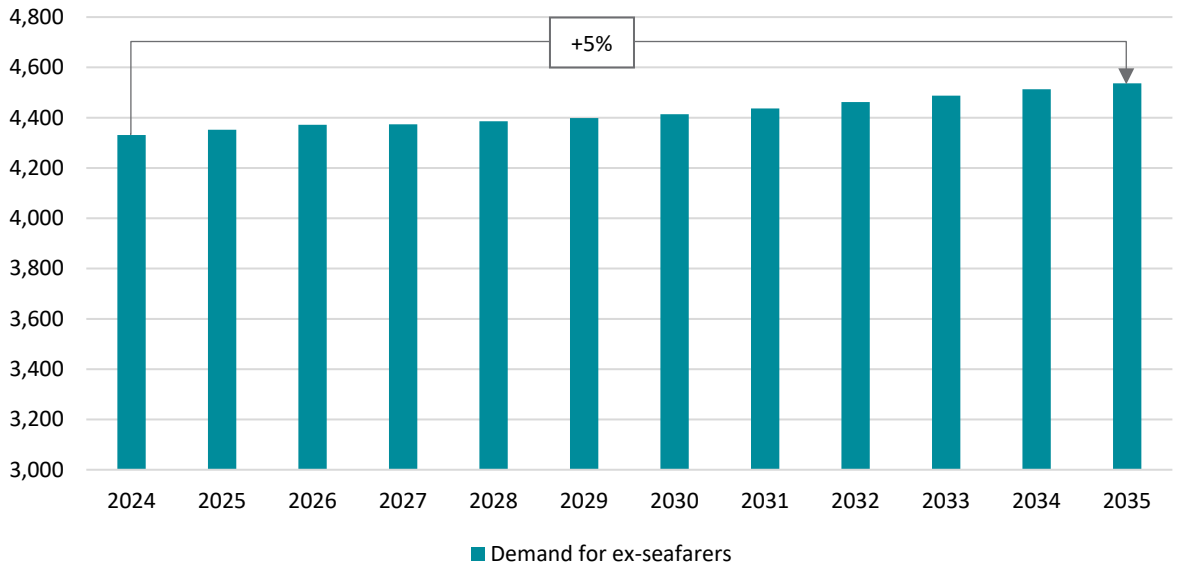
To move from observed employment to underlying demand, a further adjustment may be required, as labour markets can at any point be in equilibrium, exhibit excess supply (where employment reflects demand), or excess demand (where employment reflects supply). This was gauged based on survey responses and pointed to a current total excess demand of around 30%. Employment was then uplifted by this amount to obtain total demand, which was estimated at around 4,330 in 2024.

This quantitative evidence aligns with interviewees' experiences. For example, stakeholders from maritime training colleges reported marked tightening in the labour market for teaching staff with seafaring experience. Whereas historically lecturers often remained in post until retirement, typical tenure is now reported to be around four to five years, with many then moving into other maritime-related roles ashore. Training providers also reported difficulty recruiting UK engineering officers into teaching, while international recruitment is increasingly limited by salary thresholds and visa costs. These constraints pose a potential bottleneck for scaling training provision, particularly in technical and electro-technical disciplines where demand is expected to grow.

Estimating future demand for ex-seafarers

Having established current demand, the subsequent step was to forecast the development of this demand over the next decade. In order to do so, we drew on Cebr's in-house labour market forecasting model, which delivers sector-level annual growth rate projections until 2035. These rates were mapped by sector and applied to the estimated current demand figures to project demand forward. Total demand for ex-seafarers in onshore roles is expected to increase from around 4,330 positions in 2024 to approximately 4,540 by 2035, corresponding to modest but persistent cumulative growth of around 5% (or 0.4% per year on a compound basis).

Figure 21: Projected demand for ex-seafarers in onshore roles, 2024–2035

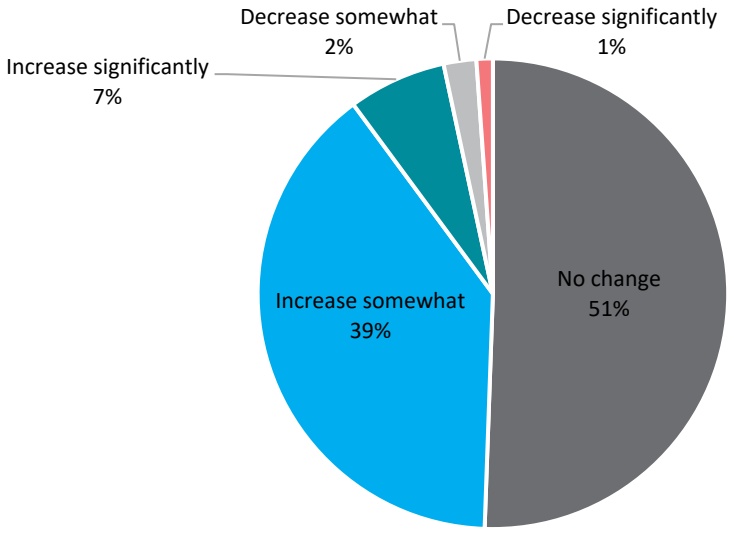


Source: Cebr analysis

Sector-level demand paths were informed not only by modelled growth rates but also by stakeholder interview evidence on how demand is generated in practice. In sectors where demand for ex-seafarers is driven primarily by fixed intake volumes or institutional capacity rather than employment growth, projections were adjusted accordingly. For example, demand in maritime education and training is closely linked to annual cadet intakes, which stakeholders do not expect to increase materially; demand in this sector was therefore modelled as flat over the forecast period.

The projections are broadly consistent with industry expectations. Over the next five years, 46% of survey respondents expect demand for ex-seafarers to either increase somewhat (39%) or increase significantly (7%). Conversely, only 3% expect demand to decrease.

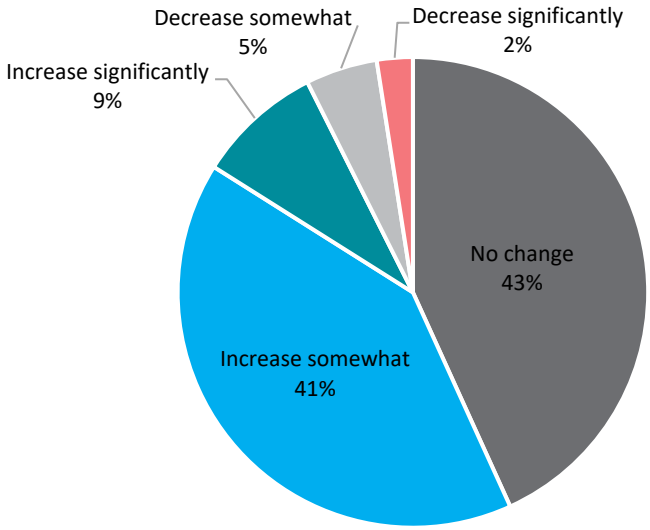
Figure 22: Stakeholder views on ex-seafarer demand in their organisation over the next 5 years



Source: Stakeholder survey, Cebr analysis. N = 89

Over a longer, ten-year horizon, the share of employers expecting demand to increase reaches half of respondents; 41% expect demand to increase somewhat, while 9% expect it to increase significantly. This slight differential in expectations over horizons, which is also aligned with our model's marginally higher projected growth in the 2030s, stems in part from the age profile of the current cohort. For example, some major UK port operators report that while the number of employed ex-seafarers as marine pilots and harbour masters has remained broadly stable, a sizeable share of staff in these roles are approaching retirement. Stakeholders reported growing awareness of this ageing profile and noted recruitment difficulties in some areas, indicating potential tightening in demand for experienced ex-seafarers in port pilotage and harbour management over the coming decade.

Figure 23: Stakeholder views on ex-seafarer demand in their organisation over the next 10 years



Source: Stakeholder survey, Cebr analysis. N = 81

Stakeholders from the maritime education sector, in turn, reported that teaching teams in ratings colleges are now small, with examples of five full-time staff including three ex-seafarers compared with much larger, predominantly ex-mariner teams in the past. However, they similarly highlighted that many lecturers are now in their sixties and are unlikely to remain in post for long, while recruitment is difficult because college pay can compare unfavourably with other maritime roles.

6.3 Supply of ex-seafarers for roles onshore

Modelling approach

The supply of ex-seafarers available for shore-based roles is modelled using a stock-and-flow framework analogous to that used for seafarers at sea. The model takes as its starting value the stock of ex-seafarers employed in onshore roles where prior seagoing experience is either essential or strongly preferred, established, as detailed in the section above, to be around 3,330 in 2024, and projects it forward annually by adding and subtracting appropriate inflows and outflows.

Inflows

Annual inflows are derived from officers leaving seagoing roles in mid-career, specifically those aged 30–59 exiting deck, engine, and technical officer positions. Informed by the at-sea stock-and-flow model for UK nationals, these inflows amount to around 950 officers per year over the projection period. **The model assumes that 80% of officers leaving sea-based roles make themselves available for relevant onshore positions**, recognising that some will exit the maritime sector entirely and pursue alternative careers. In practice, transition propensities from at sea to onshore roles specifically in the maritime sector are likely to differ between deck, engine and technical officers, so the model captures overall availability rather than the precise composition of onshore inflows.

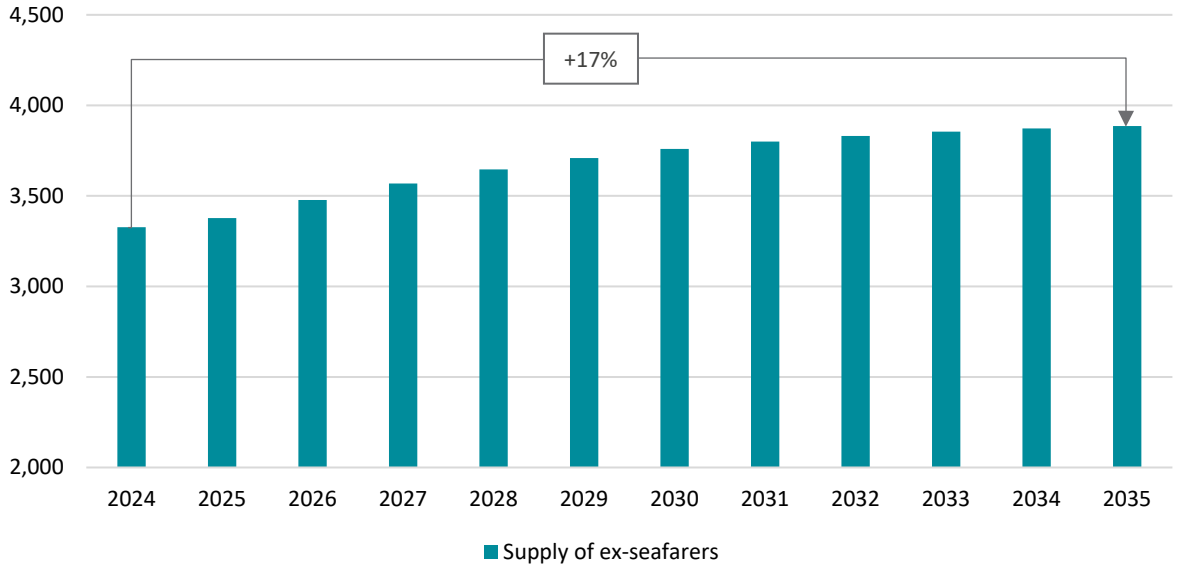
No inflows of non-UK national officers are assumed in the baseline. While such groups may contribute to onshore supply in practice, particularly where visa or salary thresholds permit, stakeholder evidence suggests that these channels have become more limited and uncertain, and they are therefore excluded from the central projections. However, when considering the balance between demand and supply, recruitment from abroad may still play a role in alleviating shortages in specific roles or sectors where regulatory and immigration constraints are less binding.

Outflows

Outflows from the onshore stock are modelled using an annual leaving rate of 25%, taken from corresponding seagoing roles and adjusted upwards. This assumption is informed by stakeholder evidence indicating increasingly shorter tenures in shore-based posts, driven both by attractive opportunities outside the maritime sector and by some ex-seafarers returning to sea, for example where seagoing roles offer fiscal advantages.

Under these assumptions, the supply of ex-seafarers in onshore roles is projected to rise from around 3,330 in 2024 to around 3,890 by 2035, equivalent to cumulative growth of around 17% (or 1.4% per year).

Figure 24: Projected supply of ex-seafarers in onshore roles, 2024–2035



Source: Cebr analysis

These supply projections depend on assumptions about the proportion of seagoing leavers who seek onshore roles in the maritime sector. This parameter is subject to uncertainty and is explored further through scenario analysis in the next subsection.

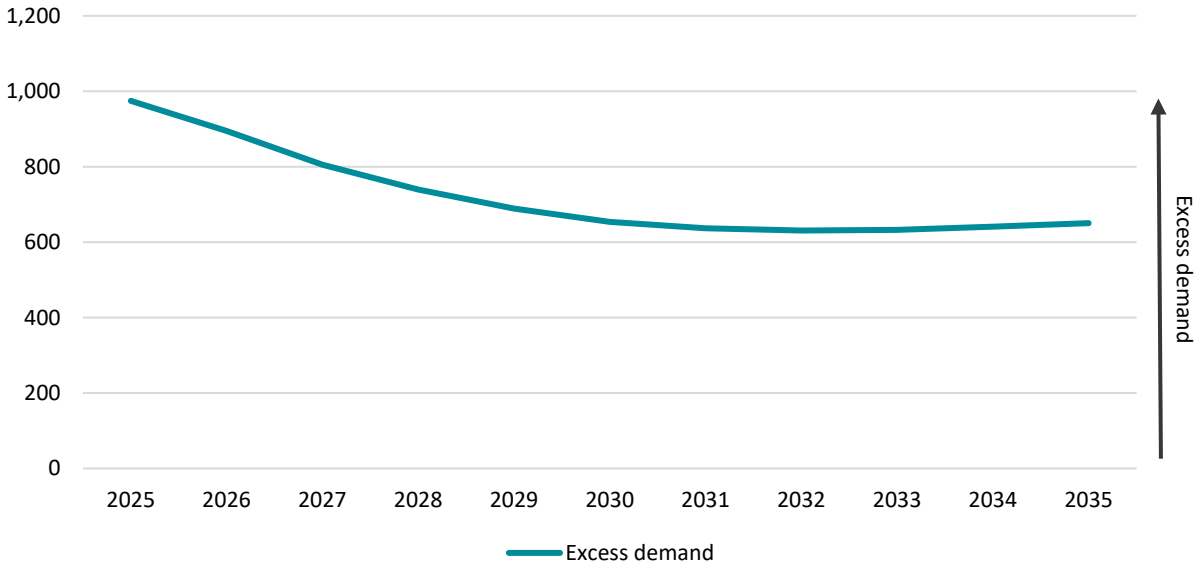
6.4 Balance between demand and supply of ex-seafarers for onshore roles

Bringing together the demand and supply projections points to a persistent imbalance between the number of shore-based roles requiring prior seagoing officer experience and the available

supply of ex-seafarers. Under the baseline assumptions, demand exceeds supply throughout the projection period, indicating sustained tightness in this segment of the onshore maritime labour market.

Plotted in the figure below, the estimated baseline gap between demand and supply remains positive throughout the forecast horizon. The shortfall is around 980 roles in 2025, reflecting both existing recruitment difficulties reported by stakeholders and the assumption of current excess demand embedded in the demand baseline. It then narrows as inflows of former officers into onshore roles outpace outflows, before flatlining from the early 2030s onwards. By 2035, the baseline scenario indicates a demand–supply gap of around 650 roles.

Figure 25: Projected excess demand for ex-seafarers in onshore roles, 2025–2035

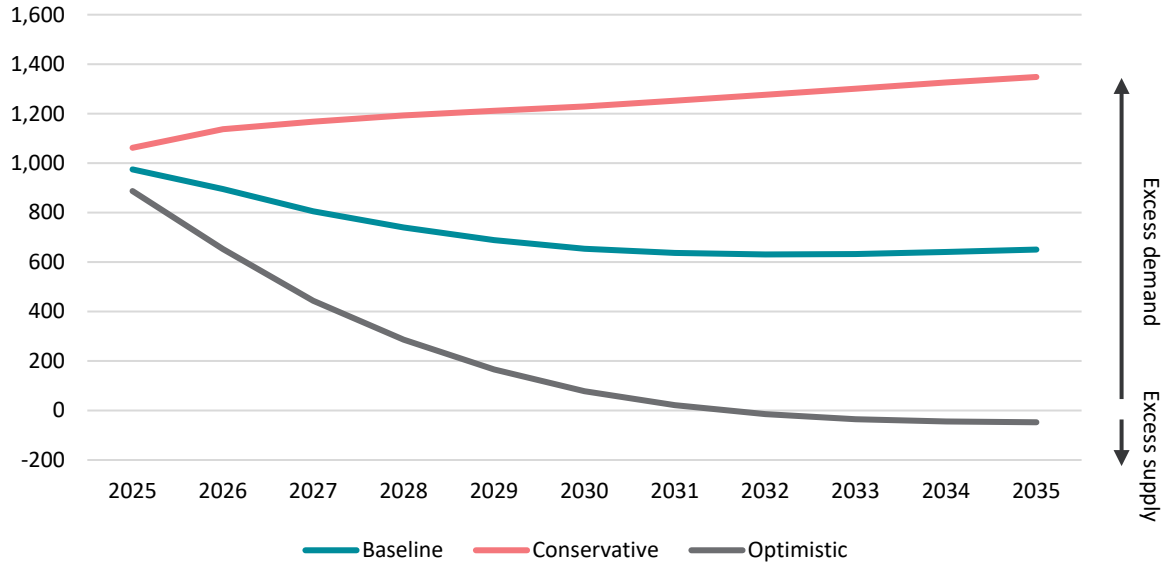


Source: Cebr analysis

Scenario analysis

Figure 26 presents two alternative scenarios that vary the assumed proportion of officers leaving sea-based roles who make themselves available for onshore positions, defining an upper and lower bound. Under the baseline, 80% of those leaving roles at sea are treated as potential supply (α = 80%). Under a more conservative assumption, where α = 65%, the demand–supply gap widens steadily over the projection horizon, exceeding 1,300 roles by 2035 and pointing to a pronounced and growing shortage. Conversely, under a more optimistic scenario in which nearly every officer leaving seagoing roles is considered a potential entrant (α = 95%), supply slightly exceeds demand from 2031 onwards with the market staying close to balance until the end of the period.

Figure 26: Projected demand-supply balance scenarios for ex-seafarers in onshore roles, 2025–2035



Source: Cebr analysis

The scenario analysis serves to illustrate that the balance between demand and supply is sensitive to assumptions about transition behaviour from sea-based roles. However, one should note that across most scenarios, the analysis directionally points to excess demand in this segment of the onshore maritime labour market; the market is roughly in equilibrium by the end of the period when α = 94%, while values below that lead to anticipated excess demand and vice versa.

In practice, the realised outcome will depend on the extent to which projected gaps are met through a combination of increased training, retention within shore-based roles, and, where feasible, recruitment of non-UK seafarers. Stakeholder evidence suggests that attrition rates in onshore roles can be relatively high, implying that easing constraints may require not only expanding inflows but also reducing turnover and improving retention in key shore-based functions.

7 Extent to which requirements need to be met by UK seafarers

The final objective of this study is to estimate how many of the seafarers required to meet UK demand over the next decade, as identified in Section 3, will need to be UK nationals. While the preceding sections quantified workforce needs by role type, the present analysis examines the qualitative and institutional factors that shape employers' nationality preferences. These include legal or regulatory requirements, reputational considerations, the perceived advantages associated with employing UK national seafarers, and the extent to which non-UK nationals are considered suitable substitutes. To address these questions, Cebr designed a dedicated employer survey in late 2025, conducted by YouGov, with responses provided across a wide range of maritime sectors employing seafarers at sea and onshore.

The findings reveal a nuanced picture. On the one hand, employers recognise some benefits associated with UK-trained seafarers in both seagoing and shore-based roles. On the other, the employers exhibit a high degree of openness to employing non-UK national seafarers under appropriate conditions, especially where qualifications are mutually recognised or where UK applicants are in short supply. The survey results suggest that nationality constraints bind strongly in some specific segments of the labour market, for example when visa or immigration regulations restrict hiring of foreign labour, but less so in others.

Stakeholder interviews indicate that employment of UK national ratings is currently concentrated in ferries, dredging, jack-up barges in offshore wind, tug operations and some tanker fleets. Interviewees also noted that UK rating apprenticeships remain small in number, typically around 40 to 60 starts per year,[20] largely constrained by limited cabin and berth space for supernumeraries and by employers' misaligned recruitment timetables.

Current views on the share of UK seafarers within organisations

Survey responses suggest that most employers are broadly content with their current share of UK national seafarers, but with pockets where a higher UK presence would be preferred. The share of those who consider the current nationality balance of their workforce about right or responded "don't know" is over half for all role categories, ranging between 52% and 63%. A further 13–33% of respondents across categories express no particular preference regarding the UK share.

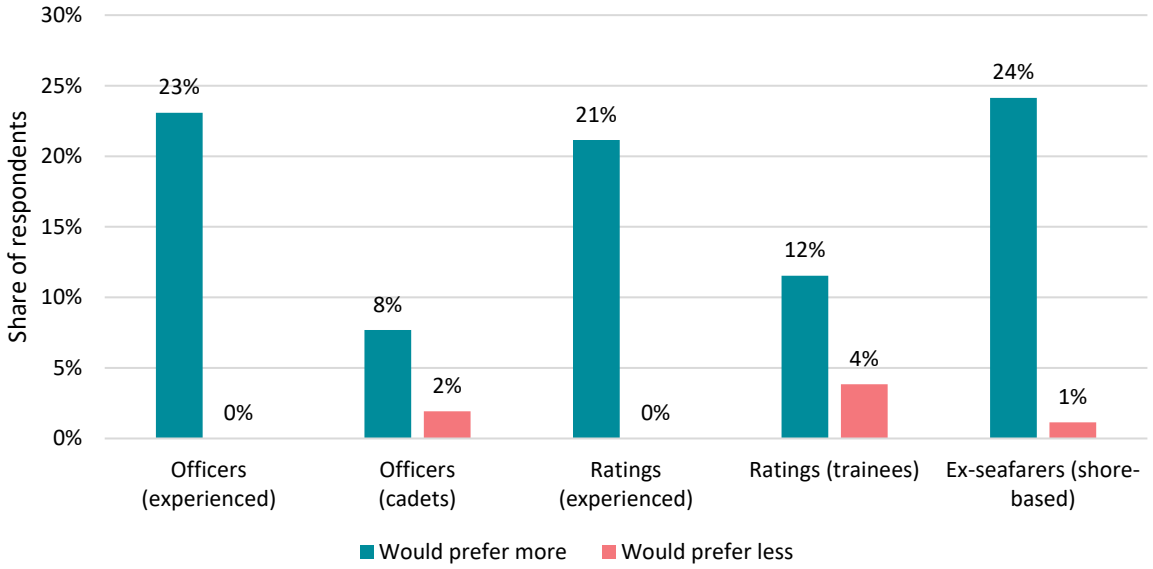
Within this generally balanced picture, a notable minority would like to employ more UK nationals in specific groups. These include ex-seafarers in shore-based roles (24% would prefer more), as well as experienced officers (23%) and experienced ratings (21%) at sea, indicating a continued appetite for domestically trained and experienced crew.

Trainee ratings (12%) and officer cadets (8%) also attract some demand for a higher UK share, though less so than for the three aforementioned categories. By contrast, there is very limited

[20] Department for Transport (2025). Seafarers in the UK Shipping Industry: 2024.

willingness to reduce the number of UK seafarers in any category: “would prefer less” responses are at or below 4% across all groups. The combined pattern points to employers being generally satisfied with existing levels, while still expressing a meaningful, if not universal, desire to see more UK nationals in key experienced and shore-based roles.

Figure 27: Stakeholder views on the current share of UK seafarers in their organisations



Source: Stakeholder survey, Cebr analysis. N = 52/87 (roles at sea/onshore)

Interview evidence suggests that survey responses indicating satisfaction with the current share of UK seafarers should be interpreted cautiously. In many cases, contentment reflects adaptation to constrained supply rather than an absence of underlying preference. Employers consistently report that they would employ more UK nationals in experienced and shore-based roles if suitably qualified candidates were available, but that recruitment strategies have adjusted to international labour markets due to limited domestic pipelines. Several employers noted that non-UK nationals holding UK CoCs are viewed particularly favourably, indicating that certification quality, rather than nationality alone, is the primary driver of preference in these roles. Preferences for UK nationals are primarily role-specific and capability-driven, particularly in positions requiring regulatory familiarity, safety oversight and institutional knowledge. In practice, these preferences are reinforced by pragmatic considerations: for many shore-based and regionally anchored roles such as ferry operations, ports and training, employers report that recruiting locally from the UK labour market is materially easier and more reliable than attracting internationally mobile candidates to relocate, even where skills are otherwise comparable.

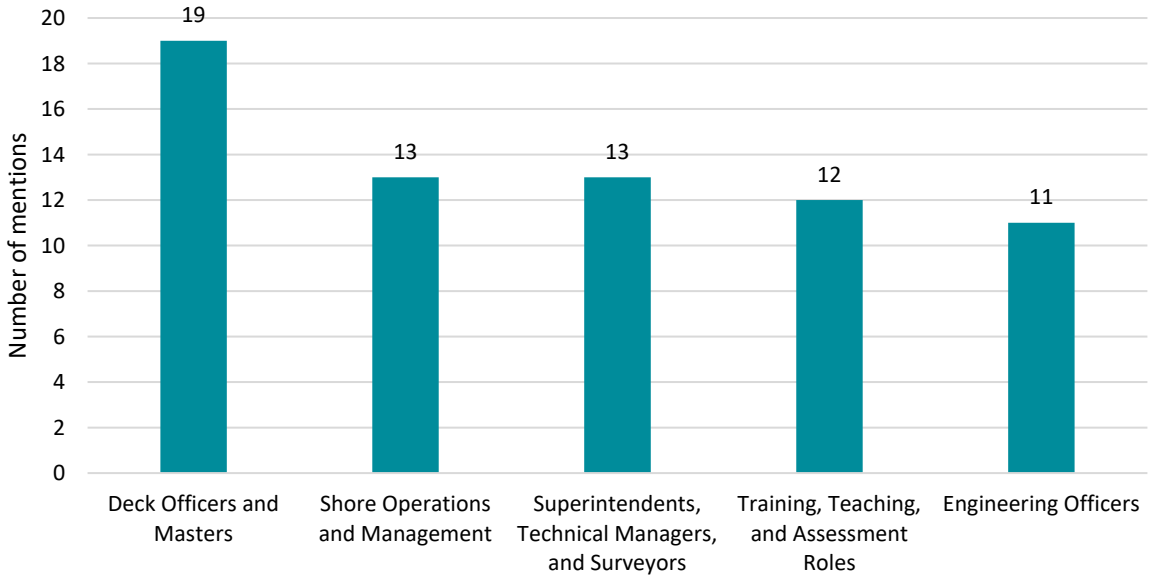
Roles where employers would like to employ more UK seafarers

Employers were asked to identify up to five specific job descriptions in which they would prefer to employ more UK nationals, both at sea and onshore. Responses clustered around five broad categories: deck officers and masters were mentioned most frequently (19 mentions), followed by shore operations and management roles (13), superintendents, technical managers and surveyors (also 13), training and assessment positions (12), and engineering officers (11).

These preferences point to a set of functions where employers perceive UK nationals to add particular value beyond technical competence alone. Given the comparatively small number of respondents answering this question, however, these results should be interpreted as illustrative.

Interview evidence indicates that these preferences are driven less by nationality per se and more by the nature of the roles identified. Deck officers, masters, superintendents, technical managers, trainers and surveyors are consistently cited as positions where UK training pathways and UK CoCs are especially valued. Employers associate UK CoCs with stronger bridge and engine-room management, a more embedded safety culture, and higher levels of regulatory literacy, particularly in relation to UK and international compliance, inspection regimes and audit requirements. In several cases, interviewees explicitly noted that UK nationals holding UK CoCs are regarded as more desirable than UK nationals without them. Many of the roles identified are senior, judgement-intensive and regionally anchored. As a result, employers often find it more feasible and reliable to recruit from the domestic labour market for these functions.

Figure 28: Main role categories in which stakeholders would like to employ more UK seafarers



Source: Stakeholder survey, Cebr analysis. N = 26

Reasons why certain roles must or should be filled specifically with UK seafarers

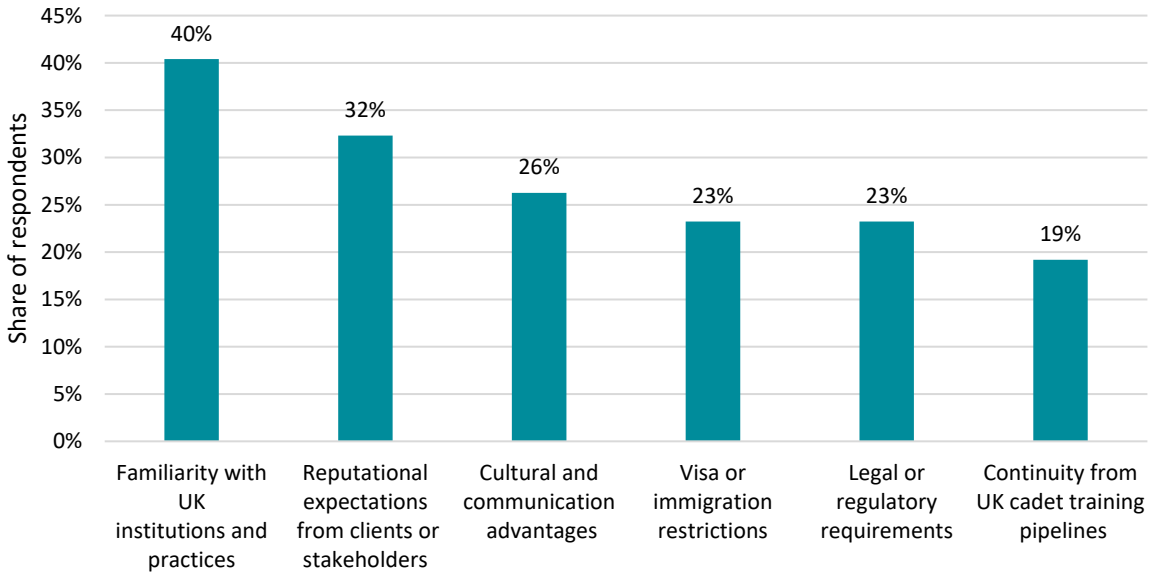
A further question for this study is not only whether employers prefer UK seafarers as such, but whether some roles must or should be filled domestically. For each option, employers were asked to denote whether or not they consider it to be a reason why roles must or should be filled with UK seafarers in particular. Survey results show that nationality requirements or strong preferences are concentrated in roles where knowledge of UK institutions and client expectations is particularly important.

The most commonly cited reasons were familiarity with UK institutions, standards and practices (40%), followed by reputational expectations from clients or stakeholders (32%) and perceived cultural or communication advantages (26%). %). Visa or immigration limitations

were mentioned by 23% of respondents; despite the global nature of maritime labour markets, these constraints can arise in roles operating exclusively within UK territorial waters, including UK-Northern Ireland ferry routes, towage, and offshore energy operations.

A similar share (23%) pointed to legal or regulatory requirements, while 19% highlighted continuity from UK cadet and training pipelines. Employers also identified other considerations, including government security requirements, organisational culture and mindset, training standards, competence and experience, technical skill, and operational know-how.

Figure 29: Main reasons why some roles must or should be filled with UK seafarers



Source: Stakeholder survey, Cebr analysis. N = 98

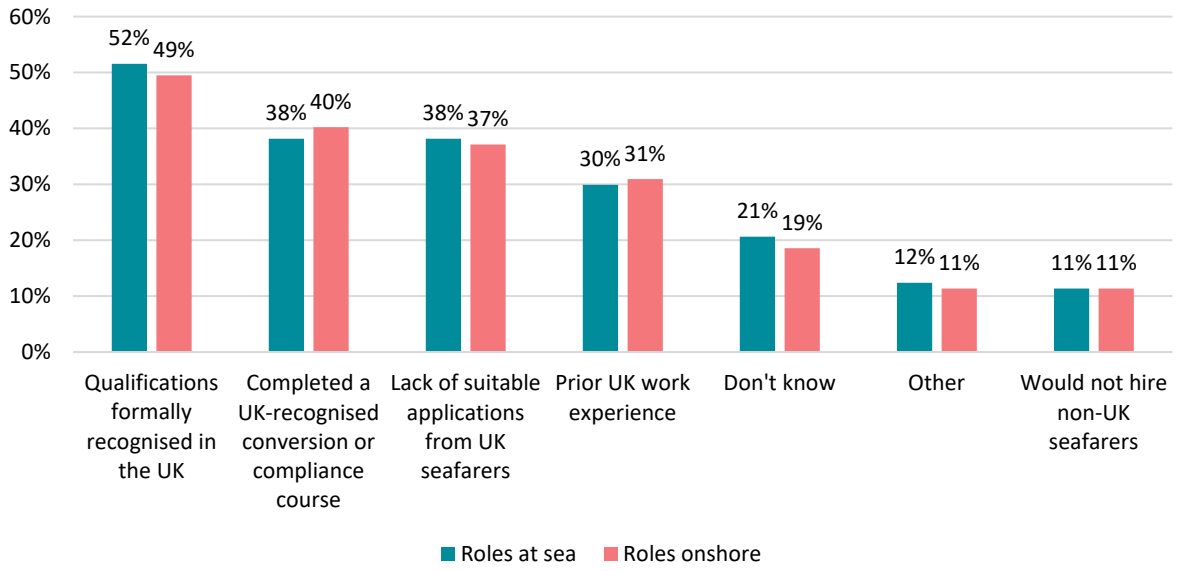
Conditions under which employers would hire non-UK seafarers

The maritime labour market is distinctly global, and employers are generally open to employing non-UK national seafarers, particularly under conditions that ensure regulatory equivalence and minimise administrative burden. The survey distinguishes between roles at sea and roles onshore, though here the relative importance aligns between both types of roles.

Recognition of qualifications is the dominant requirement for both groups, cited by 52% of respondents for roles at sea, and 49% for onshore roles. Completion of a UK-recognised conversion or compliance course is the next most important condition (38–40%), while the lack of suitable applications from UK seafarers is seen as a material condition by a roughly similar proportion (37–38%) of employers.

Prior UK work experience holds importance for 30–31% of respondents. Only a small proportion of employers indicate that they would categorically not hire non-UK seafarers (11% for both at sea and onshore roles).

Figure 30: Conditions under which stakeholders would consider hiring non-UK seafarers



Source: Stakeholder survey, Cebr analysis. N = 97

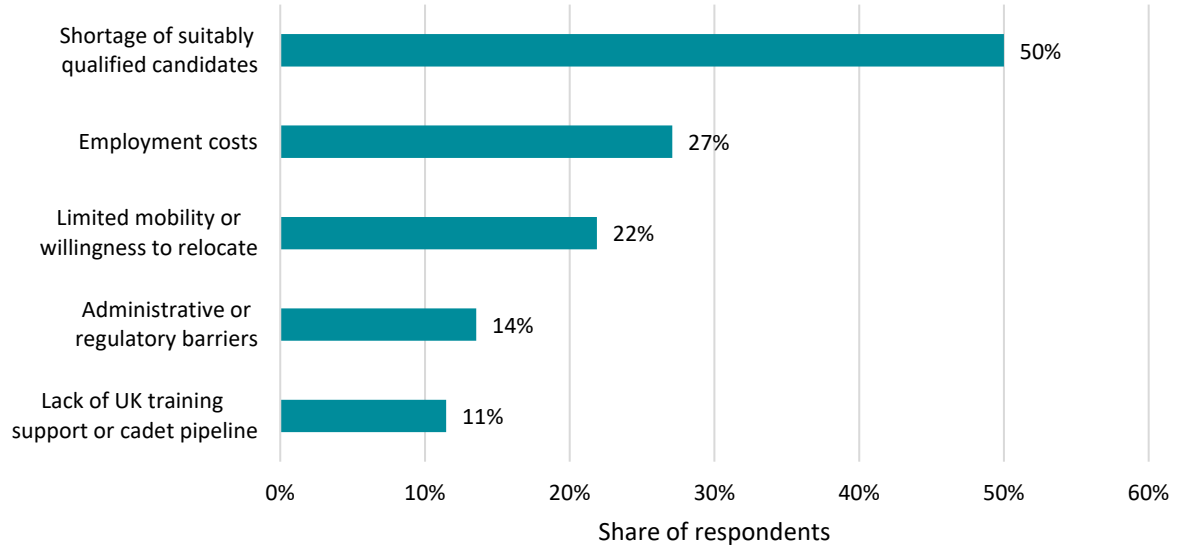
Interview evidence indicates that employer openness to hiring non-UK seafarers is conditional not only on formal recognition of qualifications, but on perceived equivalence with UK training and certification standards. In practice, recognition is often benchmarked implicitly against UK Certificates of Competency (CoCs), which employers associate with greater assessment rigour, stronger safety culture, and deeper familiarity with regulatory and operational expectations. Although only a small minority of employers state that they would categorically not hire non-UK seafarers, interviews suggest that practical constraints related to location, regulatory expectations and role design often limit feasibility in practice, even where there is no formal restriction.

Barriers to employing more UK seafarers

The fact that employers would prefer to hire more UK nationals in many roles does not necessarily imply that they are able to do so. The survey identifies several barriers that constrain domestic employment. The most frequently cited barrier was the shortage of suitably qualified UK candidates, chosen by half of respondents. Interviewees highlighted that the realities of seagoing work can affect recruitment into maritime roles. At open days, some prospective entrants express reservations about extended periods away and limited connectivity while at sea, which stakeholders suggested may influence interest in these careers. Stakeholders also highlighted training duration and cost as barriers to domestic recruitment, with mandatory certification required even for entry-level roles under international regulatory standards, and multi-year qualification timelines for officers.

Employment costs were cited by around a quarter of operators, and is relevant in competitive global markets where wage differentials across nationalities can be substantial. Some stakeholders observed that the cost environment for employing UK ratings, including national minimum wage requirements, can pose challenges within certain business models.

Figure 31: Main barriers to employing more UK seafarers



Source: Stakeholder survey, Cebr analysis. N = 96

The next most cited barrier was limited mobility or willingness to relocate (22%), which suggests a structural challenge, whereby qualified UK seafarers may be less willing than non-UK counterparts to move to specific vessel types, routes or locations. Administrative and regulatory barriers and an insufficient UK training or cadet pipeline were seen to constitute a barrier by 14% and 11% of respondents, respectively.

Interviews suggest that the barriers identified in the survey are highly concentrated by career stage, role type and business model. Employers consistently reported that shortages of suitably qualified UK candidates are most acute at the mid-career officer level, typically referring to officers with several years of operational experience beyond initial certification, rather than at entry or junior grades, reflecting the long time required to accumulate experience and the limited scope for accelerating progression.

Lifestyle considerations interact with tax and remuneration structures to reinforce this pattern, as tax-free earnings at sea available in internationally trading seagoing roles increase the option value of remaining seagoing and delay transitions into shore-based roles. Employment costs were also described as binding only in specific operating models, particularly in globally competitive segments where UK wage structures are difficult to accommodate, while mobility constraints were framed less as unwillingness to relocate and more as a structural consequence of family settlement and the regional concentration of shore-based roles.

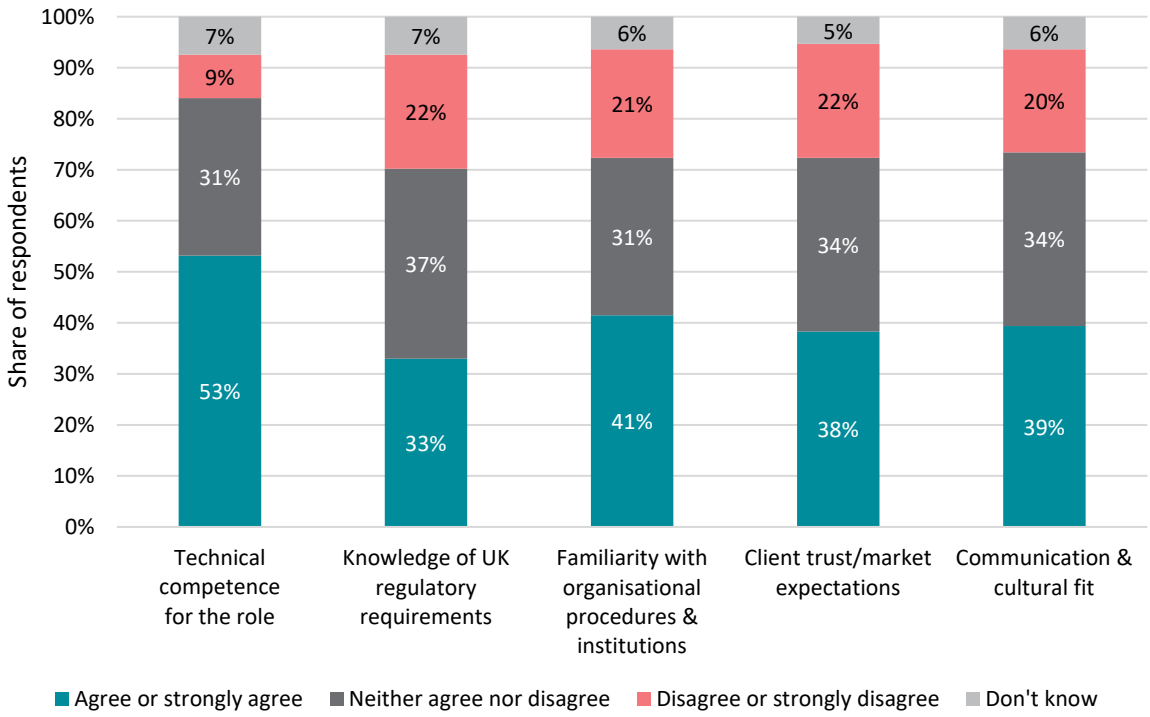
Extent to which non-UK seafarers are perceived to deliver the same benefits

Finally, survey respondents were asked whether non-UK seafarers can deliver the same benefits as UK nationals across a range of dimensions. The results suggest that employers broadly agree on technical equivalence, although some perceive differences in areas requiring institutional familiarity or client interaction.

Technical competence shows the strongest perceived substitutability: 53% of respondents agree that non-UK seafarers are equally competent, while only 9% disagree. By contrast, only 33% agree that non-UK seafarers possess equivalent knowledge of UK regulatory requirements, with 22% disagreeing. Familiarity with UK organisational procedures and institutions also shows weaker substitutability, with 41% agreeing and 21% disagreeing. Views are similarly mixed with respect to client trust and market expectations, where 38% agree that non-UK seafarers deliver equivalent benefits and 22% disagree. Perceptions of communication and cultural fit follow a comparable pattern, with 39% agreement and 20% disagreement.

These patterns imply that while technical skills can generally be sourced internationally without loss of quality, the institutional and relational aspects of work may be less easily transferable. Many operational seagoing roles can be supplied from the global labour pool, whereas UK nationals remain desirable for roles with regulatory, managerial or client-facing components.

Figure 32: Extent to which non-UK seafarers are seen to deliver the same benefits as their UK counterparts



Source: Stakeholder survey, Cebr analysis. N = 94

Implications for workforce planning

To conclude, workforce planning challenges in the UK maritime sector are less about headline volume shortages and more about composition, timing and capability. The evidence at hand suggests that while employers value UK seafarers highly and would appreciate larger domestic participation in many categories, strict nationality requirements or strong preferences apply only to a subset of roles. For most operational seagoing roles, non-UK seafarers offer a high degree of substitutability, and employers are generally willing to employ them where qualifications are recognised, or where domestic applicants are scarce.

As a result, the number of roles that *must* be filled by UK nationals is smaller than the total projected demand. However, the number of roles for which UK training, experience and certification are strongly preferred is materially larger, and these roles tend to sit at critical points in the maritime system. They include experienced officers at sea and shore-based functions such as training, technical management, survey, port operations and regulatory-adjacent roles. Shortages in these areas are not easily mitigated through international recruitment alone.

From a workforce-planning perspective, this implies that aggregate demand-supply balances can mask strategically important constraints. Employer preferences for UK seafarers are not primarily driven by nationality per se, but by the availability of individuals with UK CoCs, deep familiarity with UK operating contexts, and the credibility to exercise judgement under regulatory and stakeholder scrutiny. For shore-based roles especially, interview evidence suggests that these attributes are acquired over long career horizons and, critically, that increases in trainee or cadet numbers do not automatically translate into greater availability of experienced seafarers for shore-based roles. Employers emphasised that the supply of ex-seafarers depends on progression through mid-career stages and on the relative attractiveness of transitioning ashore, with pay, tax treatment and the opportunity cost of leaving sea-based employment influencing the timing of such moves. Consequently, constraints in shore-based roles reflect limits in the conversion of seagoing experience into onshore employment, rather than training volumes alone.

8 Conclusion

Workforce pressures are concentrated rather than uniform

Baseline projections indicate that total UK demand shifts from approximate balance in 2024 to emerging excess demand from the late 2020s onwards, reaching a combined shortfall of just under 9,000 seafarers by 2035. However, the imbalance is unevenly distributed and concentrated in experience-intensive roles. Officer demand is projected to grow materially faster than rating demand, with shortages focused in deck, engine and technical officer categories, while hospitality roles remain comparatively closer to balance.

The imbalance reflects a structural misalignment between maritime activity and domestic labour supply. In subsectors such as cruise management, insurance and professional services, employers report expanding UK-based operations but a limited pipeline of UK-trained seafarers feeding into these roles. The UK's success in attracting high-value maritime functions therefore does not automatically translate into proportional growth in domestically trained experience.

The scale of projected gaps is sensitive to international recruitment

Relatively modest increases in the availability of non-UK seafarers would close most baseline shortfalls. For example, increasing the assumed annual growth rate of non-UK officer supply from 1.5% in the baseline to approximately 2.5% would be sufficient to bring officer demand and supply broadly into balance by 2035. In much of the labour market, employers retain the ability to recruit globally where domestic pipelines prove insufficient. The more binding risks therefore sit in categories where international substitution is constrained, whether by visa and immigration requirements, regulatory conditions, or strong capability-based preferences for UK nationals. In these roles, projected imbalances are more likely to translate into operational strain.

Recruitment constraints emerge at mid-career stages

Although total officer supply is projected to grow at around 1.3% per annum to 2035, this is insufficient to prevent shortages in experienced deck, engine and technical posts. Ratings supply growth is more modest still, at around 0.7% per annum, and a significant share of projected rating demand reflects replacement needs rather than expansion. In deck and engine functions in particular, attrition within an ageing workforce means maintaining staffing levels increasingly depends on replacing leavers rather than supporting fleet growth. Employer evidence corroborates this structural pressure: 83% of respondents report that vacancies are hard to fill, especially in senior and technically specialised roles.

Transitions from sea to shore shape the availability of experience

Constraints extend beyond sea-based roles. Shore-based demand for ex-seafarers is projected to rise from approximately 4,330 roles in 2024 to around 4,540 by 2035, while projected supply of experienced leavers from sea grows more slowly, implying a persistent shortfall of roughly 600 positions. These roles are disproportionately concentrated in operationally critical and regulatory-adjacent functions, meaning shortages are unlikely to be easily absorbed without consequence.

The availability of experienced personnel for these positions is shaped by the economics of sea-to-shore transition. Relative pay differentials, tax treatment and the opportunity cost of leaving seagoing employment influence both the timing and volume of movement ashore. As a result, increases in cadet intake or entry-level training do not translate directly into relief for shore-based shortages. 46% of employers expect demand for ex-seafarers to increase over the next five years, rising to half of respondents over a ten-year horizon. This aligns with ageing profiles in shore-based functions, where a substantial cohort of experienced personnel is approaching retirement. As replacement demand crystallises in these regulatory and safety-critical roles, the margin for substitution narrows and workforce pressures are likely to intensify over the coming decade.

Training capacity is a structural constraint

The capacity to expand domestic training provision is itself subject to labour market constraints. Stakeholders from maritime colleges report a marked tightening in the market for teaching staff with seafaring experience. Whereas lecturers historically remained in post until retirement, typical tenure is now reported at around four to five years, with many moving into higher-paid maritime roles ashore. Providers report particular difficulty recruiting UK engineering officers into teaching, while international recruitment is increasingly constrained by salary thresholds and visa costs. These dynamics risk creating a bottleneck in scaling training capacity, especially in engineering and electro-technical disciplines where projected demand growth is strongest.

Limited progression from ratings into senior and shore-based roles

The ratings workforce does not currently function as a significant pipeline into senior seagoing or shore-based maritime roles. Under baseline projections, UK national rating supply is forecast to grow by only around 6% to 2035, while a substantial share of projected rating demand reflects replacement needs arising from an ageing workforce and ongoing attrition rather than net fleet expansion. As a result, maintaining staffing levels in deck and engine rating roles increasingly depends on replacing leavers, with limited internal progression into higher-responsibility positions. This structural constraint is reinforced by the alignment of many shore-based and senior maritime roles with officer-level qualifications and experience. Organisational and credential frameworks constrain progression from rating backgrounds, and interview evidence indicates that formal rating-to-officer conversion routes are rarely taken up by UK nationals.

Geographic variation in recruitment pressures

Geographic factors further shape workforce outcomes. The analysis indicates that sectors with roles tied to remote locations such as ports and harbour services face greater difficulty attracting suitably qualified personnel, particularly for specialised or senior roles. By contrast, maritime business services and professional functions located in large urban centres tend to experience fewer recruitment constraints. Workforce pressures are therefore unevenly distributed across the sector and that national-level projections may obscure more acute, location-specific constraints in parts of the maritime system where mobility is limited, and substitution options are narrower.

Anticipated impacts of technology and decarbonisation

Finally, the study finds limited evidence that technological change or decarbonisation will lead to substantial shifts in overall workforce composition in the medium term. Many operators are adopting a cautious, wait-and-see approach, reflecting uncertainty around regulatory pathways, fuel standards and the pace of technological deployment. While employers are closely monitoring developments in decarbonisation and digital systems, most do not anticipate widespread restructuring of crewing models over the next decade. Instead, anticipated impacts are concentrated in specific specialist roles, with interviewees pointing to growing importance of expertise in areas such as alternative fuels, energy systems and electro-technical functions, including engineers with sustainable-fuel knowledge and electro-technical officers (ETOs). Scenario analysis indicates greater volatility in officer demand than in rating demand, reinforcing the need for resilience in technically specialised pipelines. The principal structural adjustment is likely to occur within the qualification pyramid, towards higher technical intensity, rather than through net expansion or contraction of total headcount.

Annex A: Global demand for seafarers

Table A.1: Global demand projections for officers and ratings, quinquennial

	Officers			Ratings		
Year	**Baseline**	**Upside**	**Downside**	**Baseline**	**Upside**	**Downside**
2021	883,780	883,780	883,780	997,540	997,540	997,540
2025	911,825	914,097	909,867	1,015,562	1,017,012	1,014,312
2030	1,037,580	1,061,573	1,017,262	1,093,621	1,108,045	1,081,295
2035	1,113,586	1,152,232	1,081,251	1,138,844	1,161,332	1,119,771

Annex B: UK demand for seafarers at sea

Projected UK share of global demand – construction of time series

Historical global demand for non-hospitality seafarers, disaggregated by officers and ratings, was obtained from the quinquennial ICS/BIMCO *Seafarer Workforce Reports*, with intervening years linearly interpolated. As the most recent data is from 2021, the global demand forecast developed in Objective 1 was used for years 2022–2035 (with 2022–2024 thus technically representing a backcast).

Historical UK demand was obtained from official DfT seafarer statistics. We used Table SFR0303 as the base series, before applying an upward scaling factor to officers, computed as *Certificated officers from Table SFR0101 / Certificated officers from Table SFR0303*. This factor ranged from 1.57 to 1.89 during the period 2012–2024, and reflects the fact that the UKCoS Seafarer Employment Survey, on which Table SFR0303 is based, does not capture the entire officer employment in the industry.

We then combined individual seafarer-level data from UKCoS Seafarer Employment Surveys with Table SFR0301 to estimate hospitality-to-non-hospitality ratios, separately for officers and ratings, and for UK and non-UK nationals. These ratios were smoothed with a 3-year moving average. The smoothed shares were used to construct separate historical UK time series for hospitality and non-hospitality ratings and officers.

Secondary method: UK time-series modelling

NB: this section presents a secondary, cross-checking approach to forecasting UK seafarer demand, included to test the robustness of the primary share-of-global-demand projections rather than to define the baseline estimates used in the report.

Model framework

For all series, an autoregressive model with exogenous regressors (ARIMAX) was estimated, expressed as:

$$y_t = \kappa + \theta X_t^{MA3} + \sum_{i=1}^{p} \phi_i y_{t-i} + \epsilon_t$$

where

- y_t is the natural logarithm of UK seafarer demand;
- X_t^{MA3} is the three-year moving average of the logarithm of the relevant global driver (either global seaborne trade or global GDP);
- ϕ_i are autoregressive coefficients; and
- ϵ_t is the error term.

All models were estimated in levels, with the differencing order $d = 0$, as the dependent variables exhibit stationarity once conditioned on their external drivers. The three-year smoothing of the driver series reduces short-term volatility and matches the officers and

ratings series. A drift term (κ) was included only where statistically warranted ($p < 0.05$), representing a small deterministic growth component beyond that explained by the external variable. The exact specifications were as follows:

- Officers – ARIMAX(2,0,0) with drift, using global seaborne trade ($X_t^{MA3} = \ln(GST)_t^{MA3}$) as the external driver. The inclusion of drift captured a modest underlying upward trend and improved residual stationarity.
- DK/EN/TE/GP ratings – ARIMAX(2,0,0) without drift, using global GDP ($X_t^{MA3} = \ln(GDP)_t^{MA3}$). The no-drift version provided the best cross-validated accuracy and avoided over-projecting long-term growth.
- CA/HO/OT ratings – ARIMAX(2,0,0) with drift, using global GDP ($X_t^{MA3} = \ln(GDP)_t^{MA3}$) as the driver. The inclusion of drift captured a modest underlying upward trend and improved residual stationarity.

Model estimation and validation

Each specification was estimated over the period 2006–2024 (for ratings up to 2023 given recent volatility), using ordinary least squares maximum likelihood within the ARIMAX framework. Model stability and adequacy were assessed through:

- Expanding-window one-step-ahead cross-validation, evaluating predictive accuracy by root mean squared error (RMSE) and mean absolute error (MAE);
- Residual diagnostics, ensuring no serial correlation (Ljung–Box p-values > 0.05);
- Stability checks, confirming autoregressive roots lay outside the unit circle; and
- Coefficient significance, with both the autoregressive terms and the global-driver coefficient (θ) significant and correctly signed.

Forecast generation

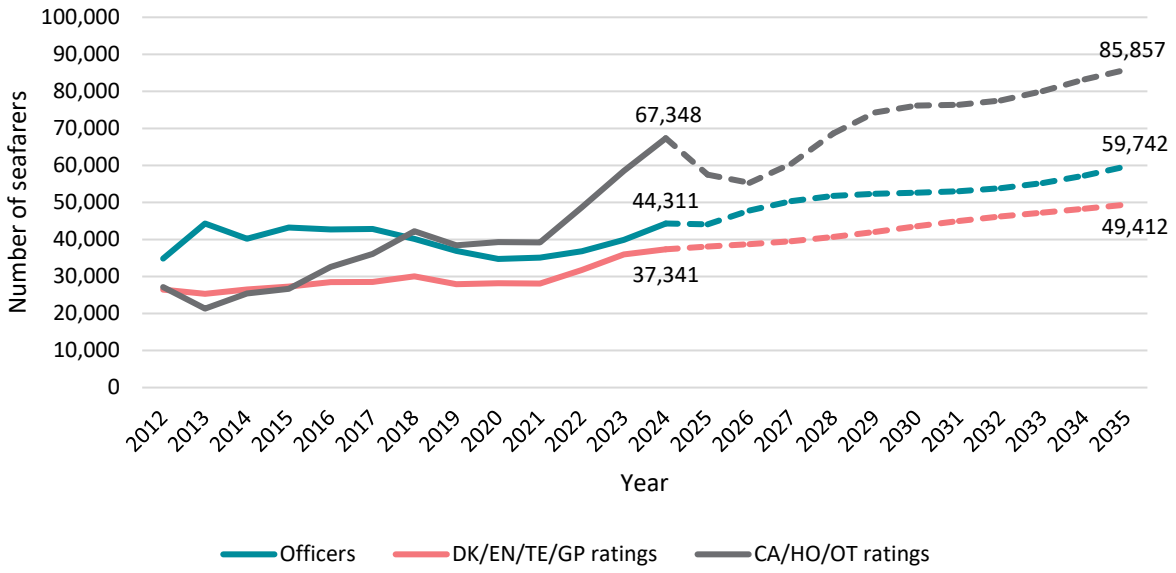
Forecasts were produced to 2035 using the projected global GDP and seaborne-trade paths from Objective 1. For each model, future values were calculated iteratively as:

$$\hat{y}_{t+h} = \hat{\kappa} + \hat{\theta} X_{t+h}^{MA3} + \sum_{i=1}^{p} \hat{\phi}_i \hat{y}_{t+h-i}$$

Forecasts were generated in logarithmic form and exponentiated to recover employment levels. The resulting projections provide an alternative view of future UK seafarer demand across all categories, conditioned on the assumed trajectory of global trade and wider economic activity. Officer numbers are forecast to rise from 44,311 in 2024 to 59,742 in 2035, a 35% increase, equivalent to annual growth of 2.8%. Non-hospitality ratings are expected to increase from 37,341 to 49,412 over the same period, up 32% or 2.6% per year. Hospitality

ratings are also set to grow, from 67,348 to 85,857, representing a 27% uplift and an annualised pace of around 2.2%.[21]

Figure B.1: Projected total UK demand for officers, hospitality ratings, and non-hospitality ratings, 2025–2035



Source: DfT, UKCoS, Cebr analysis

Forecast comparison across methods

The table below displays 2035 forecast results from our primary approach (Persistence variant) and secondary method side-to-side.

Table B.1: Share-based approach (Persistence) vs time-series modelling, side-by-side comparison

Segment	Method 1 (2035)	Method 2 (2035)	Difference	Difference (%)
Officers	54,971	59,742	4,771	8%
DE/TE/EN Ratings	42,252	49,412	7,160	14%
CA/HO/OT Ratings	76,206	85,857	9,651	11%
Total Ratings	118,458	135,269	16,811	12%

Source: Cebr analysis

While the secondary method provides consistently higher estimates than the Persistence variant, the resulting forecasts are slightly below or at the same level as results in the Econometric variant: the respective differences are –4%, +1%, –3%, and –1%. However, higher estimates do not in themselves imply a more appropriate baseline where evidence of

[21] Note that the brief two-year dip followed by a rebound for hospitality ratings reflects the internal dynamics of the ARIMAX model, which adjusts the series when it identifies departures from the underlying trend. The sharp rise after 2021 is interpreted by the model as an upward deviation, prompting a correction before the series returns towards its longer-term path.

a lasting structural shift is limited. Thus, given that results fall between the two upper variants, the secondary method broadly corroborates our primary, UK share-based approach.

Annex C: UK supply of seafarers at sea

Stock-and-flow model – Annual forecasts by category

Table C.1: Supply projections by department for UK national officers, 2024–2035

Year	Deck	Engine	Hotel/other	Technical	Total
2024	6,342	4,278	2,650	568	13,838
2025	6,501	4,369	2,764	559	14,193
2026	6,625	4,439	2,861	552	14,477
2027	6,733	4,481	2,941	546	14,700
2028	6,819	4,514	3,007	539	14,879
2029	6,889	4,538	3,061	536	15,023
2030	6,942	4,555	3,104	533	15,134
2031	6,981	4,566	3,140	531	15,219
2032	7,012	4,571	3,170	529	15,282
2033	7,038	4,574	3,195	527	15,333
2034	7,057	4,574	3,216	525	15,373
2035	7,074	4,577	3,233	523	15,408
CAGR 24-35	**1.0%**	**0.6%**	**1.8%**	**-0.7%**	**1.0%**

Table C.2: Supply projections by department for UK national ratings, 2024–2035

Year	Deck	Engine	Hotel/other	Tech/GP	Total
2024	3,240	820	3,910	1,900	9,870
2025	3,241	841	4,081	1,884	10,047
2026	3,231	856	4,223	1,867	10,177
2027	3,213	867	4,342	1,851	10,274
2028	3,192	874	4,441	1,835	10,341
2029	3,181	878	4,524	1,818	10,401
2030	3,169	880	4,591	1,799	10,439
2031	3,153	883	4,645	1,781	10,462
2032	3,135	880	4,694	1,765	10,475
2033	3,117	878	4,731	1,747	10,472
2034	3,101	878	4,764	1,729	10,472
2035	3,088	876	4,789	1,715	10,468
CAGR 24-35	**-0.4%**	**0.6%**	**1.9%**	**-0.9%**	**0.5%**

Secondary method: Panel data modelling

NB: this section presents a secondary, cross-checking approach to forecasting UK seafarer supply, included to test the robustness of the primary stock-and-flow projections rather than to define the baseline estimates used in the report.

Assembling the data

The panel dataset informing the econometric models was assembled using multiple sources of global country-level data.

Data for officer and rating supply were sourced from the quinquennial Seafarer Workforce reports[22] prepared by ICS and BIMCO. The first iteration of this report was published in 1995, with the sixth (and latest) version published in 2021.

Conceptually, there is a degree of ambiguity over the supply figures presented in the ICS/BIMCO report. For instance, it is unclear whether UK supply numbers capture only UK nationals or, more broadly, seafarers of any nationality trained in the UK. For this reason, outputs from these econometric models are used only as cross-checks on the estimates obtained through the primary stock-and-flow model.

As to the rest of variables and regressors, data for these were sourced from the IMF's World Economic Outlook and the World Bank's World Development Indicators.

Model specification

A variety of models were tested to estimate both officer and rating supply. The chosen model for officers was a fixed-effects model with unit and time fixed effects, specified as follows:

$$Officers_{it} = \alpha_i + \gamma_t + \beta_1 Population_{it} + \beta_2 Unemployment\ rate_{it} + \epsilon_{it}$$

where

- $Officers_{it}$, is the supply of officers (country i year t);
- $Population_{it}$ and $Unemployment\ rate_{it}$ are country-level regressors;
- α_i is a country fixed effect; time-invariant country attributes like geography, institutions, etc;
- γ_t is a year fixed effect; common shocks across countries in year t, like COVID-19, trade cycles, etc; and
- ϵ_{it} is the error term.

[22] Not all countries reported unique observations for officer and rating supply for all six years of reporting. On occasion, previous supply estimates were carried forward across years by ICS/BIMCO. Out of concern that this assumption could introduce noise into the model, we restricted our sample solely to countries for which unique observations for all six years were available (36 countries).

Population and unemployment rate were included as the only regressors for two main reasons. Conceptually, they are both clearly linked to overall employment levels and, consequently, officer supply. Practically, data on these variables is generally widely available across countries and time periods. Other variables which, conceptually, could have strengthened the model (like government spending on education) were not well-recorded across the board and would have reduced our effective sample size below n = 100.

Forecast generation

Forecasts for officer supply of UK nationals were estimated to 2035, using the fitted values from the officers' model and forward projections of the UK population and unemployment rate. These allowed calculating, for each year of the next decade, the following equation:

$$\widehat{Officers}_t = \widehat{\beta_1} Population_t + \widehat{\beta_2} Unemployment\ rate_t$$

where $\widehat{Officers}_t$ denotes predicted UK supply of officers.

UK population forecasts to 2035 were taken from the Office for National Statistics[23], while unemployment rate forecasts came from Cebr's in-house macroeconomic models.

Model estimation and validation

The officers' model was estimated over the period 1995-2021 with an effective sample size of n = 123. Model fit and adequacy were assessed through:

- **Coefficient significance**: both β_1 and β_2 were statistically significant (p-value < 0.001 in the case of the former and < 0.10 for the latter).
    - Standard errors were **clustered at the country level** to account for serial correlation in the FE residuals, as indicated by a Wooldridge test (p < 0.001).
- **Regression fit statistics:** the model explains roughly 40% of the variation in officer supply ($R^2 \approx 0.40$), with an adjusted-R^2 of 0.15, indicating meaningful fit without substantial overfitting.
- **Hausman-test:** the test strongly rejected the null hypothesis (p < 0.001), indicating that the random-effects estimator is inconsistent and that the fixed-effects model is preferred.
    - A Dynamic Panel Model was tested and rejected due to the lags of the dependent variable being almost perfectly correlated.

The ratings' model was estimated as an FE model with unit and time fixed effects too, but failed to produce any statistically significant results and had poor fit statistics. Different specifications and models (including a cointegration-based model similar to that used to cross-check global demand in Objective 1) were considered and tested but did not, ultimately, improve the fit nor the strength of the model.

[23] National population projections: 2022-based.

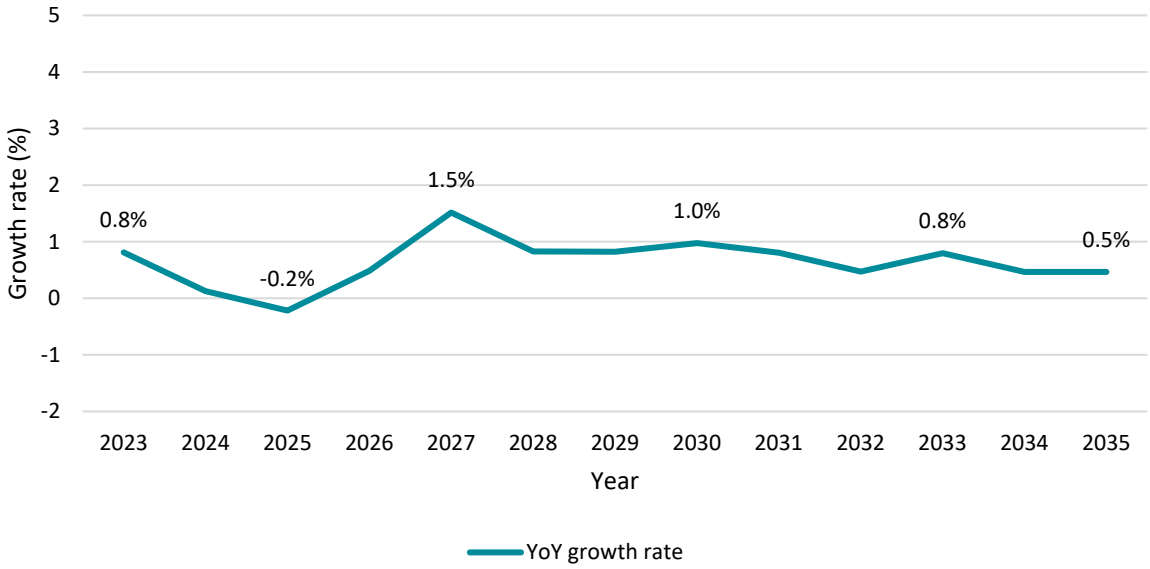
This is most likely due to characteristics of the underlying ratings data. For instance, according to ICS/BIMCO, in 2005 the supply of UK national ratings was of 4500, rising to 8536 (+90%) by 2010, to fall again to 3945 (–46%) in 2015. This suggests there is considerable volatility in the ratings data which quinquennial observations are not best placed to capture. Volatility consequently makes it more difficult to establish econometric relationships between variables, as standard errors are inflated and confidence intervals widen.

Results

As discussed, concerns around the underlying ICS-BIMCO data means that the officers' model is only used as a secondary cross-check to the estimates obtained from the primary stock-and-flow method. Given difficulties interpreting absolute supply values, the results presented here centre around forecast year-to-year growth of officer supply.

The forecast yearly growth of UK officer supply to 2035 is presented in the figure below. According to the results, officer supply of UK nationals is forecast to, for the most part, grow moderately to 2035, slowing down slightly during periods where UK unemployment is forecast to rise.

Figure C.1: Projected year-on-year growth rate for the supply of officers (UK nationals), 2025–2035



Source: BIMCO/ICS, DfT, UKCoS, ONS, Cebr analysis


Cebr