

Annual Report

# Valencia Containerised Freight Index

Balance of the year 2022



Fotografía: @fran\_broch

Fulfilling its annual deadline, and five years since the beginning of its monitoring in 2018, this report of the Valencia Containerised Freight Index (VCFI) aims to analyse the factors that explain the evolution of export freight from Valenciaport throughout the year 2022. Although everything pointed to 2022 being the year of global economic recovery after the pandemic generated by COVID-19, this forecast was dashed by the Russian invasion of Ukraine and its consequent impact on energy and raw material prices.

In this sense, the demand for international trade, and thus for maritime transport, fell sharply in the second half of 2022. Consequently, and together with other factors - both supply and demand - which are analysed in this report, the behaviour of freight rates, beyond the distinctive peculiarities of each region, has been marked by two distinct stages. Although record levels have been reached a priori, from the second half of the year 2022 onwards they have shown a sharp decline, although without reaching pre-pandemic levels, which has been an accurate indicator of the economic and business situation at the time.

The report concludes with a special focus on the specific case of Valenciaport, providing context for the trajectory of VCFI based on the performance of port traffic and the dynamics of the export sector in the hinterland. As well as analysing the general performance of the index, it will analyse freights in the Valenciaport's three main markets: the United States and Canada, the Far East and the Western Mediterranean. This shows the evolution of freight rates by area, reflecting the particular features of each trade route, the economic dynamism of these markets and their activity at the international level.





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### Maritime economy:

# The Maritime Economy in 2022

## Container Shipping: Moving away from the great entanglement

2022 represented the year that the maritime industry would return to a modicum of normalcy after two turbulent and disruptive years. As much as 2020 expressed the risk that global supply chains and the shipping industry would experience a slump at a scale beyond the financial crisis of 2008-09, 2021 saw a complete reversal of the situation with demand surges, capacity management challenges at ports and along major shipping lanes, resulting in what could be called the great entanglement. It involved a series of vertical and lateral impacts that took place in the port and maritime shipping industry from the second half of 2020 until the beginning of 2022. Propagation and backpropagation mechanisms were set in motion with compounding effects. For instance, at major gateway ports, ships had to wait at anchor, often for days, while waiting for an available berth.

The stress related to the decline in the velocity of container movements gave rise to a negative feedback loop. As containers had to spend more time being carried at terminals or inland due to a lack of capacity, whole elements of the transport chain had a reduced velocity and fluidity. More assets were then required to perform the same service level, further exacerbating congestion. If a container yard is congested, it restrains the capacity of a terminal to handle ships as they cannot be unloaded due to a lack of yard space. The stress imposed on the shipping capacity resulted in a market response through higher rates and profitability, which

surged in 2021. Capacity shortages, particularly driven by a decline in the velocity of assets, provided a positive feedback loop involving investments, new competition, and the search for shipping alternatives. Further, this feedback loop was associated with a wave of new ship orders with significant additional capacity to be added. The outcome is likely to be a context of overcapacity and depressed rates from 2023 into the foreseeable future.

## Convergence between maritime shipping and global supply chains

The onset of the Covid-19 pandemic resulted in record-level disruptions, affecting entire global supply chains. It underlined the convergence between maritime shipping and global supply chains and their interdependence. Among a variety of measures assessing supply chains and their disruptions, the Global Supply Chain Pressure Index (GSCPI) is a comprehensive measure that includes 27 monthly variables reflecting events within supply chains and transportation costs in the maritime and air cargo sectors, which is normalized so that zero indicates an average value. Any deviation is related to a stress level, with the extent of the deviation indicative of the severity. Positive values represent how many standard deviations the index is above the average, implying that supply chains are under pressure. Negative values are shown when supply chains are functioning well and experiencing limited disruptions or pressure. Over the last 25 years, several supply chain disruptions were of a scale impacting the GSCPI (Chart 1). An economic event such as the financial crisis of 2008-09 (4) substantially





reduces the index through demand destruction, leaving a situation of additional capacity and increased fluidity. On the opposite, natural disruptions, such as the Thailand Floods (7) or the Sendai Earthquake (2011), are associated with surges in the index because of the shortages of parts and finished goods they generate.

The GSCPI surged in early 2020 (14) and fell back in the Autumn of the same year as China resumed its manufacturing in the second semester of 2020. A divergence emerged as the shipping and port industry could not cope with the surge across several trade lanes. An important driver was a shift in consumption patterns in key import markets, particularly in the United States and Europe. While American consumers usually spend about 69% of their consumption expenditures on services, the pandemic resulted in a drop to around 65% by the second half of 2020, with the extra spending going on goods consumption, notably durable goods. This shift was substantial enough to put significant pressure on supply chains.

By late 2020, increasing port congestion resulted in the GSCPI surging again, particularly for Los Angeles/Long Beach (15). This was aggravated by the blockage of the Suez Canal in March 2021 (16). Container shipping rates along major trade routes surged four or five times above their long-term trend. By late 2021 and early 2022, the index was on the decline, but the War in Ukraine created additional disruptions, particularly in the energy and

agricultural sectors (18). Then, the index resumed its downward trend as the inflationary cycle was having a dampening effect on the demand. Further, container shipping rates declined substantially with lessening demand, less port congestion, and excess capacity. By early 2023, the index was back to pre-pandemic levels.

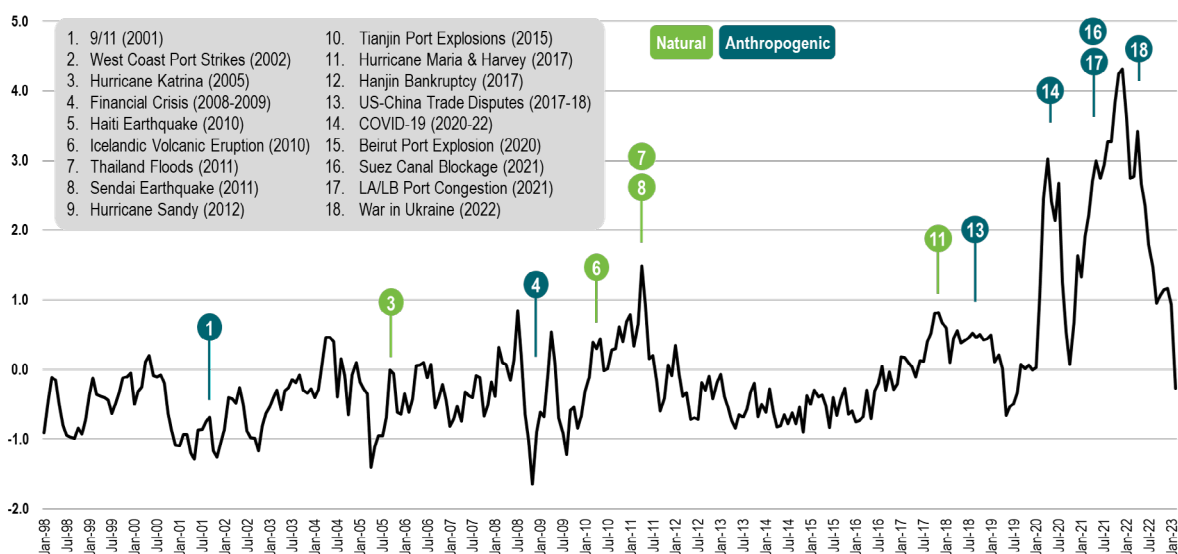
## Divergence in container port growth rates

The derived demand for maritime transportation is directly reflected in port throughput and is subject to a variety of cycles, ranging from long-term economic cycles to short-term seasonality. The Container Throughput Index (CTI) tracks the monthly traffic of 82 ports covering more than 60% of world container traffic in all major markets. The evolution of the CTI since 2007 is revealing (Chart 2). First, it underlines the annual cyclability of shipping with a peak season usually around the end of the summer and a low season with a February lull which corresponds to the Chinese New Year. This is mainly associated with retail cycles in North America and Europe, with high demand in the later part of the year and lower demand in the first annual months.

The impacts of the financial crisis of 2008-09 are apparent, with a steep decline of the CTI and a slow recovery through 2010 and 2011. Then, the index resumed ongoing growth through the 2010, with

Chart 1|

### Global Supply Chain Pressure Index (GSCPI) and Major Supply Chain Disruptions



Source: Federal Reserve Bank of New York, Global Supply Chain Pressure Index (GSCPI).



market demand expansion, outsourcing, and offshoring being key drivers. The onset of Covid-19 initially resulted in a strong decline of the CTI in early 2020, but with an impressive bounce back by late 2020. A closer look at the distribution of container growth rates among a sample of the 35 world's largest ports indicates a complete pattern reversal between 2020 and 2022. The distribution of growth rates between 2020 and 2021 (A) underlines a duality with a group of ports with average growth rates in the range of 1 to 9%, while another group experienced growth rates above 15%. The latter group represents major trade gateways in North America, Europe, and Asia, with the main transshipment hubs in between. This group was also associated with the ports contributing the most to the great entanglement and delays along main shipping lanes.

Then, for 2021-2022 the distribution completely shifted (B), with the majority of the ports experiencing no growth or negative growth. Again, this reversal is mostly taking part in major trade gateways and the intermediary transshipment hubs that experience. After the surge in 2021, a deflationary effect due to the removal of the deferred demand, including stimulus effects and inflationary pressures. Thus, 2022 represented as much of a paradigm shift as the Covid-19 pandemic. The divergences and mismatches in the shipping market structure are associated with significant risks and uncertainty.

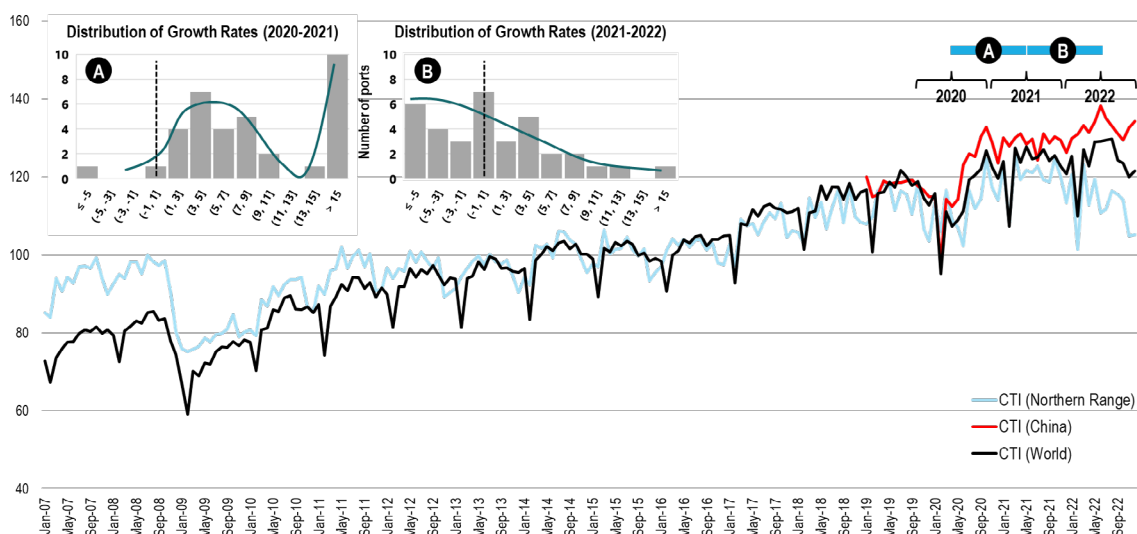
## Emerging risks and resilience challenges

The observed convergence between supply chains and maritime shipping and the divergence in port growth rates that has been observed since 2020 incite the consideration of resilience and risk management as a core focus for the coming years. The most prevalent include:

- **The China risk.** The macroeconomic context and role of China in global supply chains are within a paradigm shift. Domestic real estate, which has been a strong growth factor and vector for wealth accumulation, has entered a deflationary cycle, with the bankruptcy of several large real estate builders as a warning sign. Supply chain managers, particularly for procurement, are gradually reassessing their China strategy and looking for reshoring options and alternatives. Further, China has entered a demographic bust with depressed natality rates and the aging of the population that will have important ramifications for domestic demand and labor availability.
- **The decarbonization risk.** The push toward the decarbonization of the shipping industry has been ongoing. For ports, this represents a lower risk as it mostly involves the electrification of the equipment, asset structure and life cycle in the maritime

Chart 2|

Container Throughput Index (2007-2022) and  
Distribution of Annual Growth Rates at Selected  
Container Ports, 2020-2022 (2020-2022)



Source: RWI/ISL Container Throughput Index.



industry. For maritime shipping, the risks are significantly higher as it involves heavy investments in ship assets with a new propulsion technology and related fuels (e.g. LNG, ammonia, hydrogen). Further, emerging KPIs such as ESG are inciting asset allocation measures that are uncertain and even subject to ideological capture. Considering the level of carbon emissions of the industry, which is less than 5% of the world's total, the risks are high, and the rewards are relatively low.

- **The market risk.** Assessing global and regional future demand has remained an enduring challenge for the maritime industry. An improper assessment of market demand and growth potential can lead to overcapacity or capacity shortages. Deployment and ordering capacity can take two to three years to realize once a decision has been made, and any significant market change onward is a risk factor. Since 2020, there has been limited reliability in market conditions which has resulted in asset misallocations.
- **The digitalization risk.** The application of information technologies in the maritime industry, particularly concerning transactions and documentation, has experienced a paradigm shift since 2020. There are undeniable benefits related to transactional efficiency, including accuracy and transferability, but new risks are also emerging. For instance, in late 2022, Maersk announced that it was pulling out of its blockchain TradeLens platform, mainly due to issues of collaboration between actors. This represented a setback in the previous high expectations about a more complete digitalization of maritime supply chains. Cybersecurity issues have also become prevalent and will remain an ongoing risk with ramifications difficult to assess.

As the financial crisis of 2008-09 incited actors to reassess the financial risks related to shipping and port assets, particularly the value of terminal assets, the aftermath of the great entanglement of 2021 is inciting actors to reassess supply chain risks, which include maritime shipping. Under such circumstances, their resilience is becoming a strategy being considered and partially implemented. Still, resilience comes with additional costs and may be counterintuitive to the drivers that have benefited the maritime industry in recent decades, particularly economies of scale.



# METHODOLOGY

Conceptually, the Valencia Containerised Freight Index (VCFI) is a quantitative index that allows us to measure and compare data relating to maritime freights from the port of Valencia. This index has been created based on information obtained from primary data sources, formed by eleven top level panellists who operate in the port of Valencia, including forwarding agents and shipping companies (Alonso Pricing, Arkas, Cosco Shipping, Cotunav, Grimaldi, Grupo Raminatrans, ONE, MSC, Savino del Bene, TIBA, White Line Shipping).

The composite index is calculated after receiving and checking monthly data on freight prices of exports for each of the ports, obtaining the weighted average of average freight prices for each port.

The individual indexes are calculated based on the rates at 42 ports, which represent approximately 60% of the total export traffic of TEUs at Valenciaport in 2017, aggregating 13 geographic areas, as displayed in the table below.

VCFI geographic area	Reference ports
<b>WESTERN MEDITERRANEAN</b>	Casablanca (MA), El Djazair (DZ), Tunis (TN)
<b>ATLANTIC EUROPE</b>	Felixstowe (GB), Hamburg (DE), Antwerp (BE)
<b>EASTERN MEDITERRANEAN</b>	Alexandria (EG) Ashdod (IL) Piraeus (GR) Istanbul (TR)
<b>FAR EAST</b>	Shanghai (CN), Hong Kong (HK), Port Kelang (MY), Singapore (SG), Busan (KR), Tokyo (JP), Kaohsiung (TW), Bangkok (TH), Ho Chi Minh (VN)
<b>MIDDLE EAST</b>	Jeddah (SA), Jebel Ali (AE)
<b>ATLANTIC USA-CANADA</b>	New York (US), Montreal (CA), Houston (US), Miami (US)
<b>CENTRAL AMERICA AND THE CARIBBEAN</b>	Veracruz (MX), Cartagena (CO) Altamira (MX), Caucedo (DO)
<b>ATLANTIC LATIN AMERICA</b>	Santos (BR), Buenos Aires (AR)
<b>AFRICA WEST COAST</b>	Luanda (AO), Bata (GQ), Dakar (SN)
<b>AFRICA EAST COAST</b>	Durban (ZA), Port Elizabeth (ZA)
<b>PACIFIC LATIN AMERICA</b>	Callao (PE), San Antonio (CL)
<b>INDIAN SUBCONTINENT</b>	Nhava Sheva (IN), Kandla (IN)
<b>BALTIC COUNTRIES</b>	Saint Petersburg (RU), Helsinki (FI)

To calculate the index, the individual data (latest data for current month) for the export freight prices (in dollars or euros per TEU are collected monthly for each of the 42 ports considered. As freights on some maritime routes are negotiated in dollars, for conversion to euros, the exchange rates published monthly by the European Central Bank shall be used. The items included in the final freight prices from panellists are the following:

- Bunker Adjustment Factor (BAF)/ Fuel Adjustment Factor (FAF)/ Low Sulphur Surcharge (LSS)
- Emergency Bunker Surcharge(EBS)/ Emergency Bunker Additional (EBA)
- Currency Adjustment Factor(CAF)/Yen Appreciation Surcharge (YAS)
- Peak Season Surcharge(PSS)
- War Risk Surcharge(WRS)
- Port Congestion Surcharge (PCS)
- Suez Canal transit Fee/Surcharge (SCS)/ Suez Canal Fee (SCF)/ Panama Transit Fee (PTF)/ Panama Canal Charge (PCC).



The calculation of the index is materialised from the following formula:

$$f_j = \sum_{i=1}^n \frac{t_{ij}}{n}$$

$$VCFI = \sum_{j=1}^m k_j * f_j$$

whereas:

$f_j$  = average freight for Port j

$t_{ij}$  = freight reported by panellist i for Puerto j

$n$  = number of panellists for Port j

$k_j$  = weighting factor for Port j

In the first place, the average freight is calculated per port ( $f_j$ ) based on the data received for that port by all panellists. Secondly, a weighting factor is applied to the average freight based on the weighting of the port, resulting in the final index.

With the aim of representing the performance of freights over time, the decision was taken not to show absolute values but to show index number, the VCFI. This is the statistical measure that contains the evolution of a period for a specific magnitude. In this case freights, for a base reference period. The base of the composite index will be 1,000 points and the base of the period coincides with publication, that is January 2018.

This index aims to provide an index reference in the Western Mediterranean, much as the Shanghai Containerized Freight Index does for the Asia region. There will be monitoring of the pertinence and practical utility of the publication of the VCFI, analysing the new needs and priorities and developing new complementary statistical indicators.

The objective of VCFI is to provide value-added information on the key factor to defining port competitiveness, in the form of freight rates. The publication of the VCFI represents an important change in the sector by making information that until now was confidential, available to the port community. This exercise in transparency helps improve decision making for different port users.

On the one hand, this information will be useful for transporters, providing them with a composite index that will set the market trend. The VCFI will serve as a barometer for the health of the market by showing supply and demand for shipping for the principal trade routes from Valencia. This will serve transporters as a tool to predict the evolution of freights with their target markets, which is a determining element of their operating costs.

On the other hand, it will also be useful for operators to offer these services by constituting a benchmarking element for the performance of freights on the market and their own.

As a result, the VCFI favours the functioning of a more transparent market and better information available through decision making, resulting in a more efficient market.





# VCFI: performance of freights in 2022

The year 2022 has reversed the upward trend in freight rates that started in 2020 and reached record levels in mid-2021 due to the well-known factors that exploded in the international economic and geopolitical environment. In this regard, freight rates have shown a downward trend, which intensified in the second half of the year. This trend reflects the effects of the economic slowdown as a direct consequence of the weakening of the global economy. This recession is due, among other reasons, to rising inflation levels as a direct consequence of geopolitical tensions (Chart 3). In the case of the VCFI, given its regional character, the decline in freight rates has been later than in other indices with more global characteristics, however, and from the time of the first fall in freight rates, the trend has been sharply downwards.

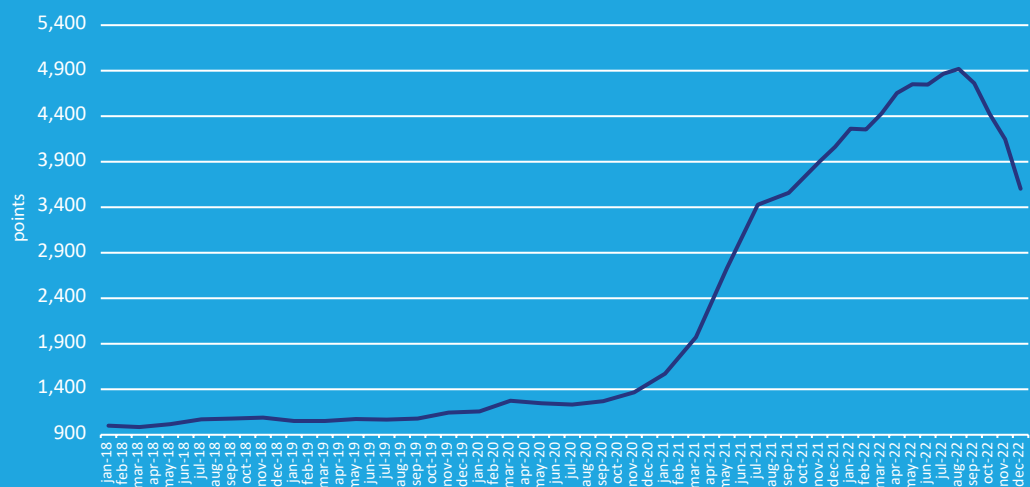
Analysing the VCFI since its inception, the performance of the VCFI was stable, with freight rates contained for much of the first two years while, at the end of 2019, the index already started to anticipate the effects of the entry into force of the new IMO 2020 legislation. However, what was expected to be a major change, and which raised concerns about the evolution of freight behaviour, was totally overshadowed by the arrival of the COVID-19 pandemic, where two periods could be

distinguished. In the first half of the year, a fall in the level of freight rates due to the slowdown in global economic activity and, in the second half of the year, strong growth, largely due to the increase in seaborne trade.

For the year 2022, there are two distinct stages. On a geopolitical level, the outbreak of war in Ukraine and its consequent impact on the level of energy and commodity prices, among other endogenous factors, coincide. The second stage, influenced by the previous one, is characterised by the weakening and shrinking of the world economy. Thus, in the first half of the year, the VCFI reached a record high of 4,918.77 points, which represents an accumulated growth of 391.98% since the beginning of the historical series. However, from the third quarter of the year 2022, and in particular from September onwards, a fall in the level of freight prices can be observed, continuing until the end of the year. With this, the 2022 VCFI closes the year with 3,603.07 points, representing a cumulative growth since the start of the series in 2018 of 260.31%. This figure is below the values reached at the end of the year 2021, when 4,063.59 points were reached, but above the end of the year 2020, with 1,423.20 points.

Chart 3|

Monthly evolution  
points VCFI, 2018  
-2022



Source: author's own.



In a market as globalised as the maritime market, benchmarking the VCFI against the main market benchmarks indexes allows the identification of common patterns of behaviour in the evolution of the different indices, compatible with market dynamics and associated trade flows. Thus, taking as a reference the Shanghai Containerised Freight Index (SCFI<sup>1</sup>), which shows container freight rates from the main Chinese ports, the same upward trend can be perceived at the beginning of the year 2022, a priori attributed to the effects of the war in Ukraine on inflation and energy costs, followed by a loss of momentum in the increase, intensified in the last quarter of the year, as a direct consequence of the retraction in the world economy (Chart 4). However, although the VCFI uses a very similar methodology to the SCFI, the latter has a more global component and has a more immediate response to the market, so the timing is not the same. In contrast, the VCFI is a local indicator which aims to provide guidance on the evolution of export freight from the Port of Valencia and to be the benchmark for certain maritime routes from the Mediterranean. Analysing both indices as a whole, a similar profile can be observed, but with several lags in the case of the Valencian index.

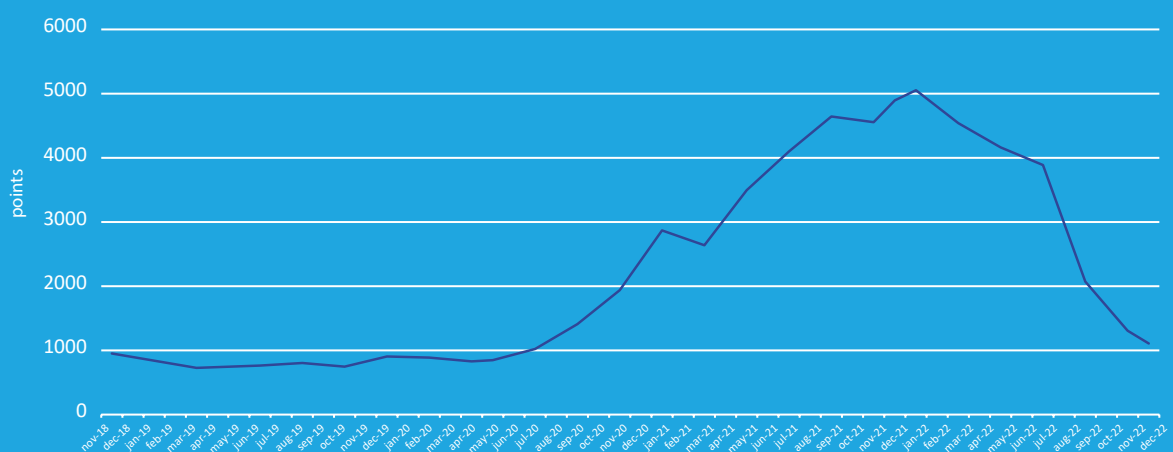
## Global Analysis: Maritime Transport Network

One of the main conditioning factors for the performance of freights is the functioning of the international economy as a whole, which sets the supply and demand conditions of capacity on the maritime transport market. The detailed macroeconomic analysis can be found in the first section of this report, as well as in the economic situation analyses within the framework of the Valenciaport Chair of Port Economics APV-UV<sup>2</sup>. The following is a summary of some of the main economic indicators that, to a greater or lesser extent, have conditioned the behaviour of freight prices in 2022.

The economic situation in 2022 was complex, characterised by a generalised slowdown in economic activity, and more pronounced than expected, with the highest inflation recorded in several decades. To this effect, the cost-of-living crisis, the tightening of financial conditions in most regions, Russia's invasion of Ukraine and the persistence of the pandemic in some areas have had a significant impact on the outlook. Not surprisingly, the level of economic uncertainty, monitored by

Chart 4|

Monthly evolution points  
SCFI, 2018 -2022



Source: author's own.  
Data: Alphaliner.

<sup>1</sup> The SCFI is the methodological reference used for the design and development of the VCFI.

<sup>2</sup> For more information, please refer to the reports on international economic situation at:  
<https://www.valenciaport.com/negocio/informe-de-coyuntura-economica/>



the Economic Policy Uncertainty Index (EPU), which summarises the monthly evolution of uncertainty about the global political and economic situation, has reached exceptionally high levels, although below the levels shown in 2020, and after the outbreak of the COVID-19 health crisis, but above those of 2021 (Chart 5).

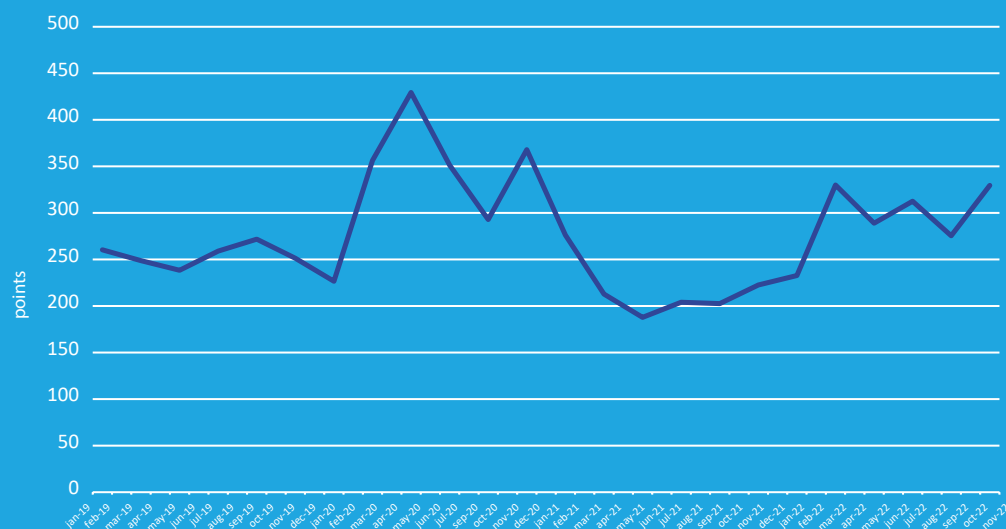
Likewise, and as has already been mentioned, one of the main items of note in the year 2022 has been the high level of inflation, with the fastest rise in prices at a global level in the last twenty years, as pointed out by the International Monetary Fund (IMF). Along these lines, a significant inflationary wave already occurred in mid-2021, given the constant supply chain disruptions that delayed the delivery of stock and contracted supply, with the world recording inflation of 4.7%. However, the outbreak of war in Ukraine distorted economic forecasts and turned inflation into a persistent threat, so that by the end of March, the Russian offensive was already being felt in rising prices, especially with regard to the level of energy and commodity prices. Overall, the year 2022 ended with global inflation of 8.8% over the

previous year, according to the International Monetary Fund's projection, 4.1 basis points higher than the same reading in 2021 (Chart 6).

Overall, there is no doubt that the economic outlook in 2022 has been extremely complex. According to the latest data compiled in the IMF's World Economic Outlook and shown in Chart 7, Gross Domestic Product (GDP) growth in 2022 is expected to be 3.4% for the world economy as a whole, which is above the growth of advanced economies (2.7%) but below the economic growth of emerging market and developing economies (3.9%). In the same vein, and according to the latest update of the IMF's World Economic Outlook, projected global growth is also projected to decline by an estimated 2.9% by 2023. It is noteworthy, however, that the IMF's economic outlook at the beginning of the year forecasted GDP growth of 4.4% and 3.8% respectively for the world economy as a whole for 2022 and 2023, which is 1% and 0.9% respectively lower than the IMF's latest update of economic projections.

Chart 5|

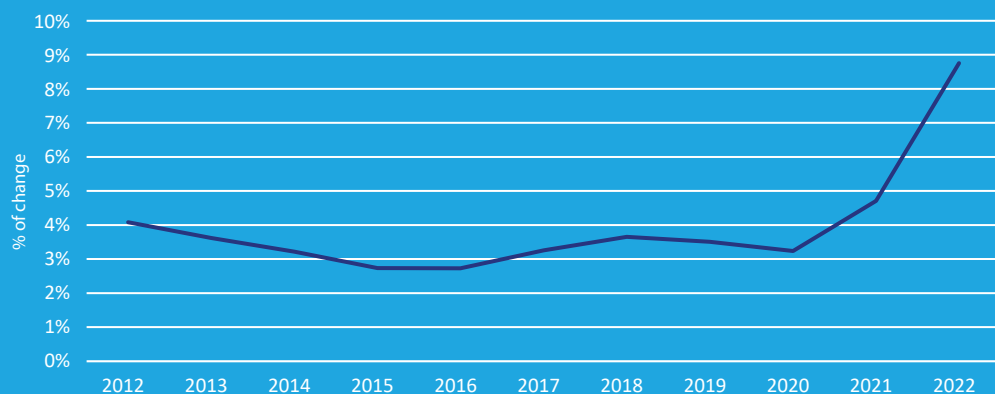
### Trajectory of Global Uncertainty Index



Source: author's own.  
Data: Economic Policy Uncertainty.

Chart 6|

### Inflation rate, average consumer prices



Source: author's own.  
Data: World Economic Outlook.



Trade in goods and services is highly correlated with GDP growth. Thus, according to the latest annual estimate, prepared by the IMF, world trade grew by 5.4%, corresponding to a GDP multiplier of 1.59%, the highest value recorded during the last decade. On a month-on-month basis, while trade volumes drove solid growth in the first half of the year as demand stimulus was injected, rising price levels have slowed global trade to a significant economic downturn in the second half of 2022.

As a direct consequence of the slowdown in international trade during the second half of the year, and consequently in the demand for goods handled by

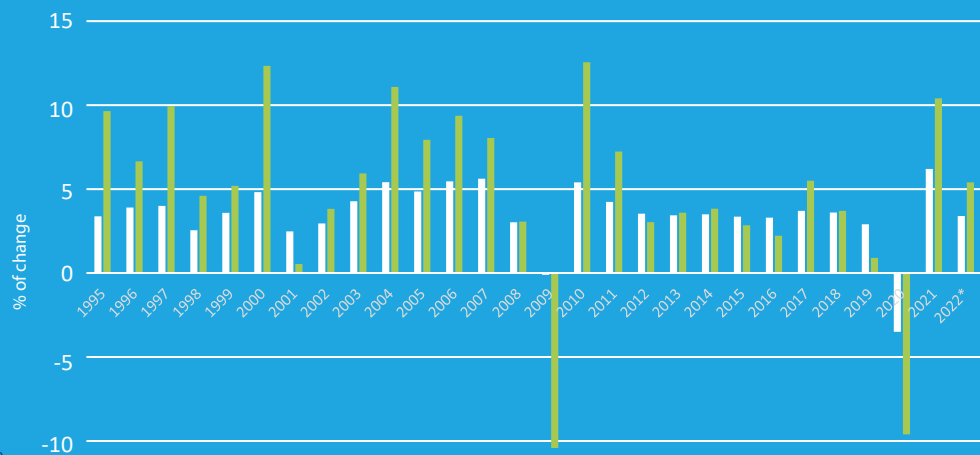
sea, the overall volume of port traffic has decreased, as reflected in the Container Trade Statistics data (Chart 8), showing a downward trend in the second half of 2022. While it is true that during the first part of the year the upward trend continued after the recovery experienced during 2021, as is usual in the container market, the beginning of the Chinese New Year marks a turning point in the volatility of international container trade due to the impact of the reduction of economic activity in China on the transport market and port traffic.

The recovery in container traffic was also abruptly interrupted by the invasion of Ukraine and, in the middle of the year, by disruptions in supply chains,

Chart 7|

### General GDP growth and trade

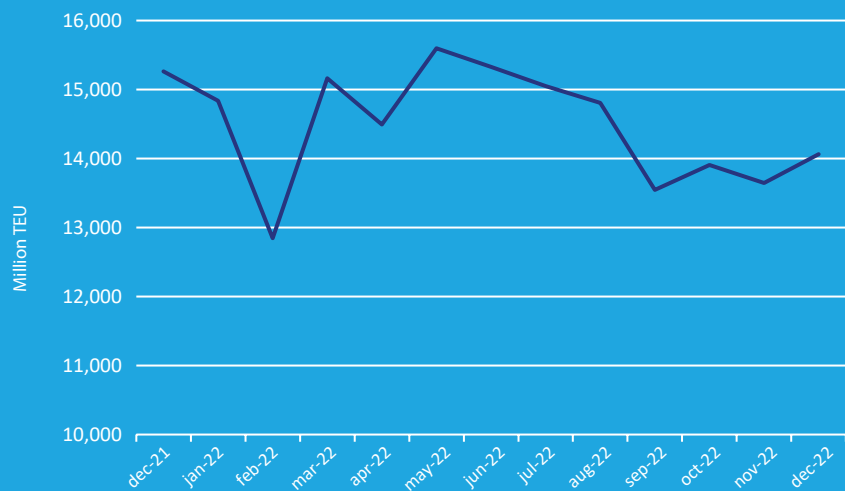
■ GDP  
■ Trade



Source: author's own.  
Data: International Monetary Fund (IMF)

Chart 8|

### Evolution of world container volume (TEU)



Source: Own elaboration based on data obtained from Container Trade Statistics





due among other factors to the zero-COVID blockades in China, thus impacting on container traffic volumes. While supply chain pressures seemed to be easing, the sharp decline in traffic in October foreshadowed a phase of global economic weakness. As mentioned above, this recession is linked to rising energy costs and high general and, subsequently, core inflation, leading to a drop in handled traffic from the last quarter of the year onwards.

Similarly, based on data obtained by Container Trade Statistics (CTS), container demand growth during 2022 was weaker than in 2020, the same year as the pandemic, with a three-fold drop (Chart 9). In addition, the sharp drop in the last four months of the year has had a major impact on the full year results, so that demand in TEU for the whole of 2022 has fallen by 3.9%.

In the same vein, it is important to note that, in general, the regional distribution of container demand has been uneven, with a greater concentration in the North American area. When distinguishing between trade routes, the evolution of the volume of trade from the Far East to Europe and the United States shows a slowdown from the second half of the year onwards (Chart 10 & 11). According to Sea Intelligence, and compared to pre-pandemic levels, volume growth on the West Coast of the US contracted from the third quarter of the year onwards, continuing a downward trend until the end of the year. On the other hand, ports on the East Coast

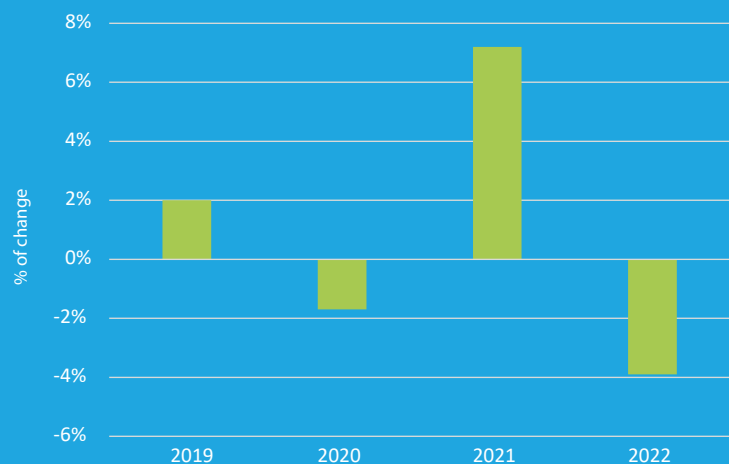
of the United States shows an opposite trend, handling considerably more volume. To this effect, there is a clear shift of handling volumes from West Coast to East Coast ports. In the same vein, and as shown in Chart 12, trade flows between North America and Europe show the aforementioned slowdown in trade volume from the second half of the year onwards.

At this point, another noteworthy fact is the imbalance between the different types of existing routes, known as head-haul, back-haul and regional. Along these lines, when looking at the evolution of demand when considering exclusively the TEUs moved on head-haul routes throughout the year 2022 (Chart 13), a drop of -5.1% is observed, in the same way, and as far as back-hauls are concerned, the drop is -4.9%, so that, almost coinciding with the drop in head-hauls, it predicts a step backwards in the improvement of trade imbalances. The fall in the regional transport segment was -1.9%.

Looking at the evolution of the different cargo segments with respect to 2019 (Chart 14), it can be seen that regional routes were the most resilient to the pandemic. On the other hand, back-hauls have been the worst performers, so that by 2022 cargo movement was lower than in 2019. Overall demand for TEUs has increased over the previous three years almost imperceptibly, by 1.5%. With all this, Sea Intelligence points to the fact that demand data shows that 2022 is one of the worst years in the history of container shipping.

Chart 9|

### Overall TEU growth



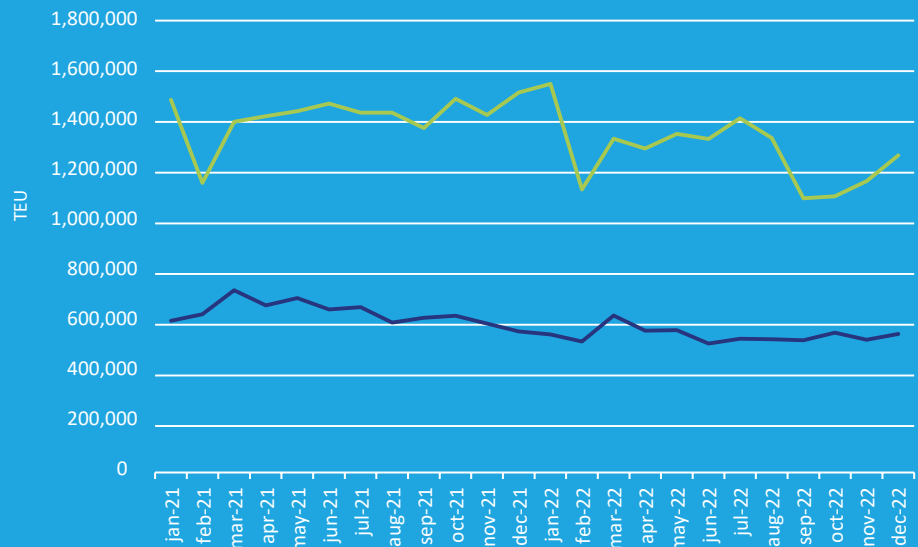
Source: author's own.  
Data: Container Trade Statistics (CTS).



Chart 10|

Trade volumes between  
Europe and the Far East;  
year 2021-2022

— Europe - Far East  
— Far East-Europe

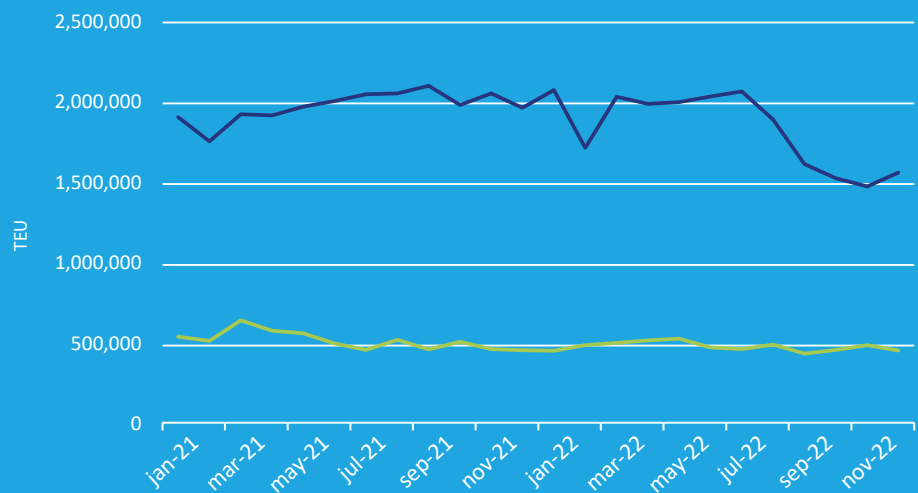


Source: author's own.  
Data: Container Trade Statistics

Chart 11|

Trade volumes between  
North America and the Far East;  
year 2021-2022

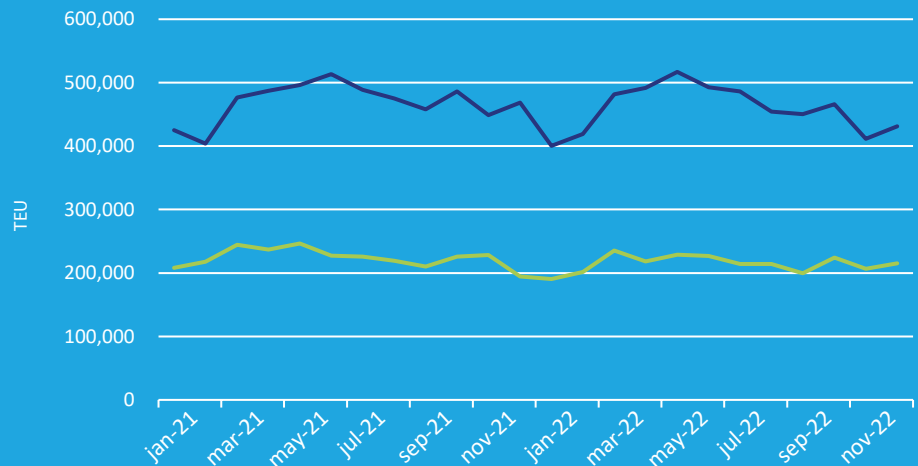
— Far East-North America  
— North America-Far East



Source: author's own.  
Data: Container Trade Statistics.

Chart 12|

Trade volumes between  
Europe and North  
America; year 2021-2022



Source: author's own.  
Data: Container Trade Statistics.



Along these lines and with regard to tariffs by type of route, although at the beginning of 2022 there was an increase in tariffs, both in back-hauls and head-hauls, in the last quarter of 2022 both levels have been falling. In addition, the fall in the price level of head-hauls has been more pronounced. This has narrowed the gap between the two rates, thus improving the imbalances existing at the end of the year.

For its part, the supply of capacity has not been able to adjust to the economic situation, since, as mentioned above, 2022 has been marked by significant volatility, closing the year with a slowdown in international economic activity. In this sense, and according to

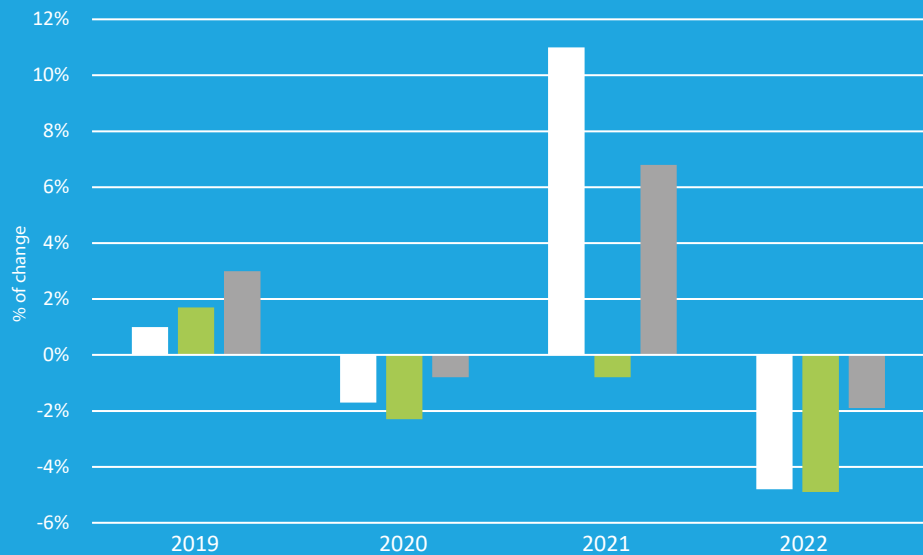
Alphaliner data, even though the number of new ship deliveries reached 1,009,923 TEU (a decrease of 7% compared to 2021), the withdrawal of ships, for its part, remained below 2021 levels, thus reaching 10,379 TEU (a decrease of 37.18% compared to 2021). Overall, the difference between these two figures shows that the actual fleet delivered throughout 2022 was more than 999,544 TEU. In short, and as Alphaliner rightly points out, the available capacity in 2022 closed at 25.9 million TEU, an increase of approximately 2% compared to the previous year (25.4 million TEU in 2021).

In short, in 2022, shipping lines have maintained a high deployed capacity to meet demand in the first half of

Chart 13|

## TEU growth by route type

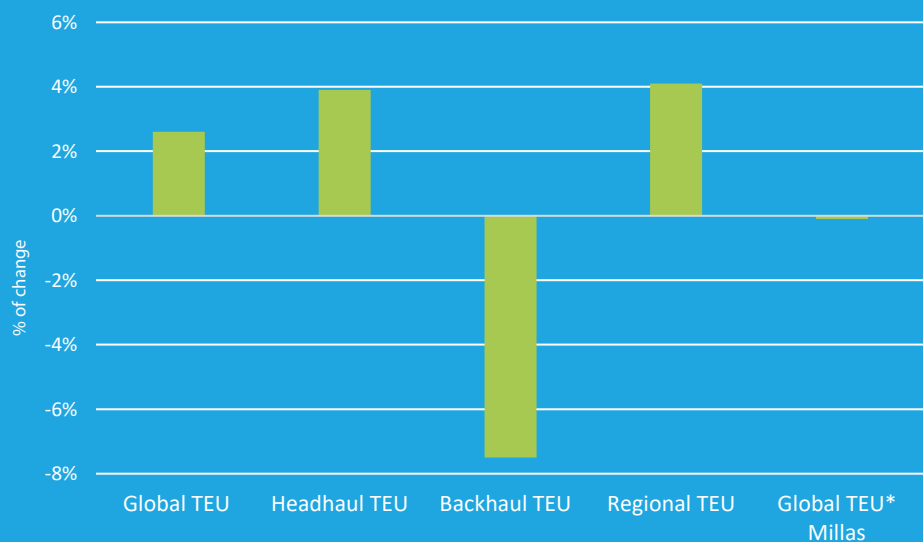
- Headhaul growth in TEU
- Backhaul growth in TEU
- Regional growth in TEU



Source: author's own.  
Data: Container Trade Statistics (CTS) and Sea Intelligence.

Chart 14|

## TEU growth in 2022 compared to 2019



Source: author's own.  
Data: Container Trade Statistics (CTS) and Sea Intelligence.



the year, using almost all available vessels, so that the commercially idle fleet has been kept to a minimum and restricted in most cases to operational reasons (Chart 15).). Observing the evolution of idle fleet levels in the year under review, at the beginning of the year, strong market demand and high freight rates encouraged carriers to maintain and deploy the entire available fleet, with some typical Chinese New Year spikes or taking advantage of the holiday period to take vessels out of service for maintenance and repair in preparation for the high summer season. However, during the second half of the year, weakening cargo demand and carriers' announcements on the suspension of shipping on some of the main east-west trade lanes, together with the "Golden Week", led to a significant increase in containership idle time.

An important factor resulting from the interaction between supply and demand in maritime transport is the level of port congestion, due to its impact on global supply chains. After two years of widespread port congestion, waiting times have shown clear signs of improvement in the second half of 2022 (Chart 16). Although supply chain disruptions have continued over the past year, the factors for which have already

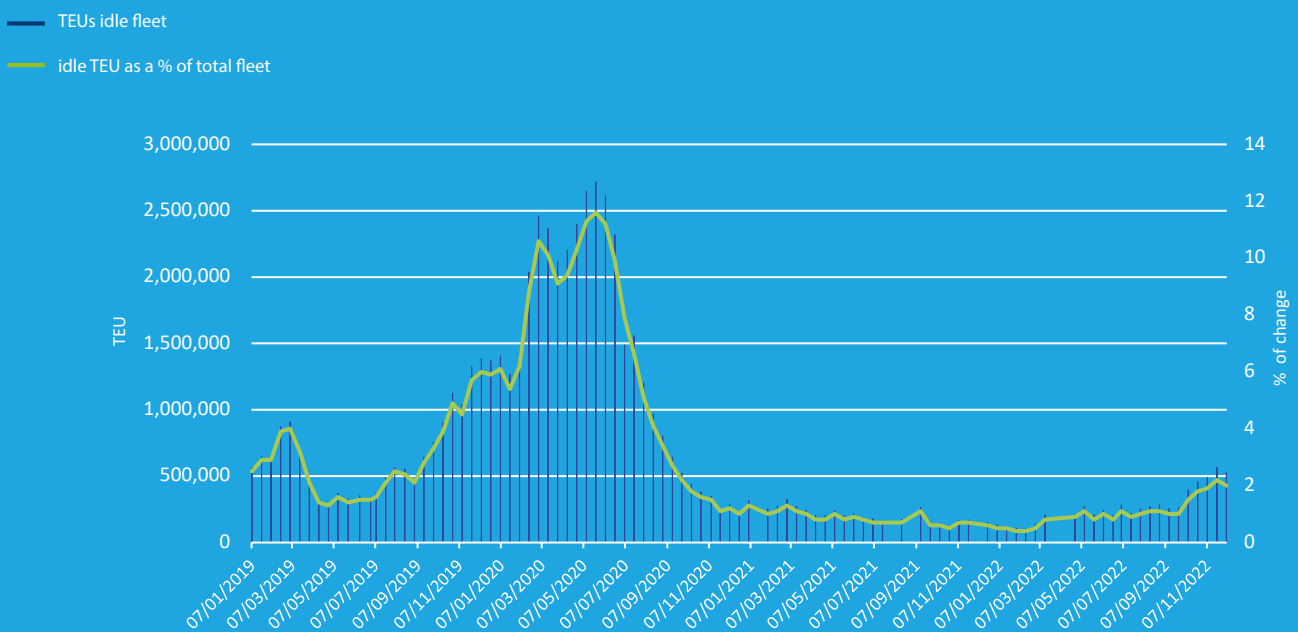
been mentioned above, congestion levels showed a downward trend linked to the fall in demand in the middle of the year, although they have not reached pre-pandemic figures.

In this respect, it is worth noting the decrease in port congestion in Chinese ports during 2022, although, even with a considerable number of ships at anchor. At least 800 vessels were berthed in Chinese ports each week during 2022 and, in some weeks, that number exceeded 1,000 vessels, according to Breakwave Advisors. As the Shanghai COVID-19 blockade measures were extended to more Chinese cities, including parts of Beijing, port congestion picked up in northern Chinese ports. As a result of these blockade measures, operations at ports such as Shenzhen were limited, and carriers had to accept long waiting times at the port to change routes. Therefore, during the blockade, cargo from Shenzhen was redirected to the ports of Qingdao, Ningbo-Zhoushan, Tianjin and Shanghai. In addition, in the last month of the year, the increase in COVID-19 infection rates following the government's easing of restrictions has had an impact on congestion levels.

In addition, while most of the global congestion during

Chart 15|

### Evolution of the idle fleet in the market, 2019-2022



Source: author's own.  
Data: Alphaliner.





2022 has been concentrated in US ports, by the end of the year levels have been declining, but only slowly as port and land transport workers' protests have exerted pressure for different reasons. It is also worth noting that, at the end of the year, the level of congestion on the East Coast increased slightly due to Hurricane Nicole. Even so, the counts of ships at anchor in the ports of Los Angeles and Long Beach (LA-LB) have reached the lowest level in more than two years.

As far as the overall congestion of European terminals is concerned, similarly to US ports, they have experienced a slow decline in congestion levels. The decline was particularly noticeable in North European seaports, partly linked to port strikes and low water levels in the Rhine River in mid-year. Among the worst performing ports were Rotterdam, Hamburg, Bremerhaven and Southampton, while Spanish ports generally had fewer operational problems. Even so, European ports stabilised at the end of the year in terms of port congestion.

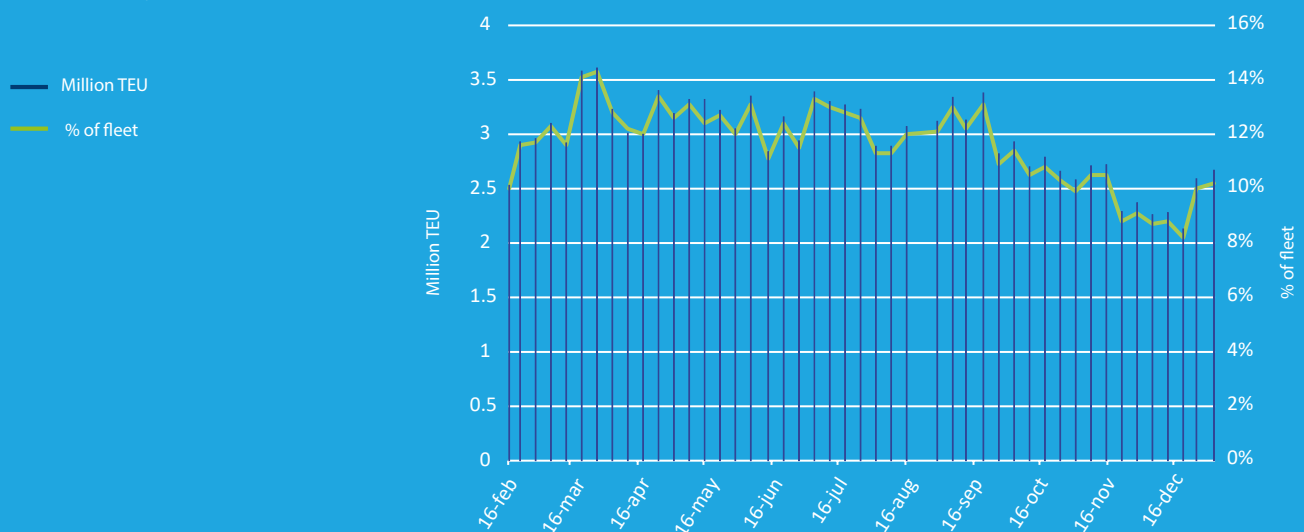
One of the effects of congestion in ports is the increase in the time needed to complete ship rotations and, given the impossibility of meeting the schedules, shipping lines are forced to cancel calls and even complete voyages. In this sense, and with regard to the last months of the year, the elimination of capacity by shipping lines through the cancellation of services or blank sailings has been the result of the drop in demand

in the second half of the year. In parallel, the reliability of global container line schedules improved considerably in the second half of 2022, as supply chain stress began to ease as demand for goods fell.

In this sense, with regard to the reliability of *Schedules*, mainly conditioned by the evolution of congestion levels and provided by shipping companies for their services, in 2022 it increased by 42.3%, surpassing the figure reached in 2021, with a value of 35.8%, but without yet reaching the values of 2020 and 2019, with values of 64% and 78% respectively (Chart 17). On the other hand, the average delay of late arrivals of ships has been steadily decreasing since the beginning of the year, however, in December 2022, the average delay increased slightly, reaching 5.43 days.

Another key aspect in understanding the evolution of freight rates because of their direct influence on the operating costs of shipping lines is the price of fuel (Chart 18). In this regard, and as mentioned above, it is worth noting that the global bunkering market, after bottoming out in 2020 and following the onset of the pandemic caused by COVID-19, resumed its upward trend in 2021. Well into 2022, and in the wake of Russia's invasion of Ukraine, fuel prices rose even more sharply, reaching a record high in May and June. However, from July onwards, the price started to decline, reaching pre-invasion levels.

Chart 16|  
Global congestion



Source: author's own.  
Data: Lynerlitica.



Thus, according to data provided by Ship&Bunker on the cost of bunkering in the twenty main ports of the world, the average price of IFO 380 (Intermediate Fuel Oil) stood at \$451.73 compared to \$467.54 in December of the previous year, which represents a drop of -3.4%. Looking at the evolution during the year, the first months of the year from January to May, the average IFO380 fuel price increased by 41.8%, while from June to December there was a drop of -39.1% from May to December.

On the other hand, VLSFO (Very Low Sulphur Fuel Oil) rose 7.02% from \$604.43 in December 2021 to \$646.89 in December 2022. Likewise, from January to May there was an increase of 41.5% in the average VLSFO price, while the months of May to December produced a fall of -31.8%.

As for MGO (Marked Gas Oil), it increased by 42.2%, standing at \$996.80 in the month of December 2022 compared to \$700.78 in the same month of the previous

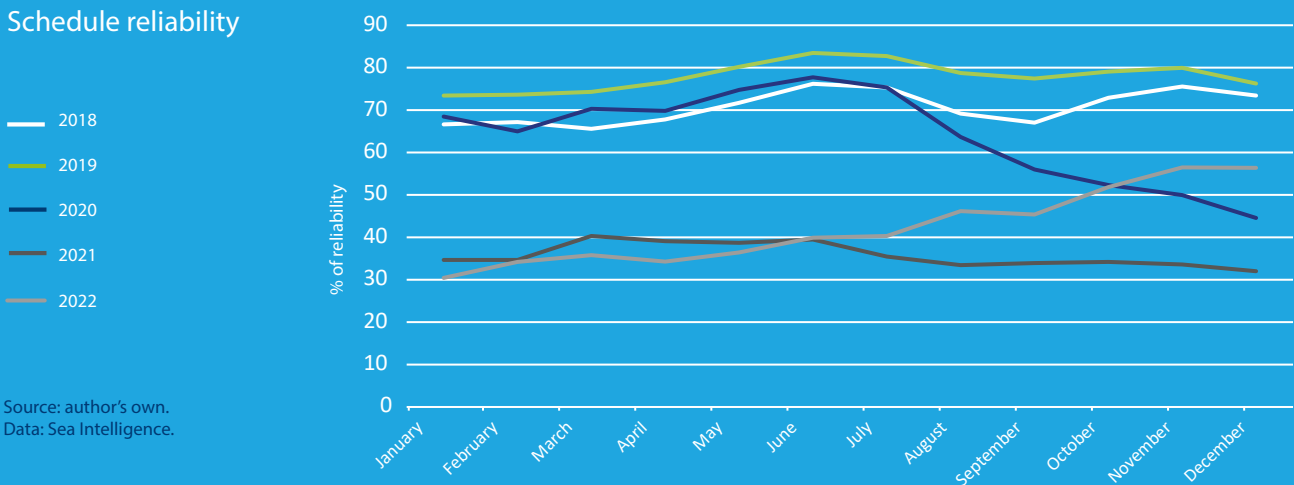
year. From January to May MGO increased by 63.2% and in the following months it decreased by -22.7%, which is less pronounced than the two fuels mentioned above.

## Regional analysis: the case of Valenciaport

As analysed in the first section of the report, although the international economic situation has defined the situation of the global maritime market in 2022, the regional nature of the VCFI makes it necessary to review the evolution of Valenciaport's export and import traffic. These have been marked by the dynamism shown by the Spanish economy and, in particular, by the industries that make up the export network of the Valenciaport Hinterland, as well as internationally, determined by the evolution of the countries that make up the Valenciaport Foreland or area of influence.

Chart 17|

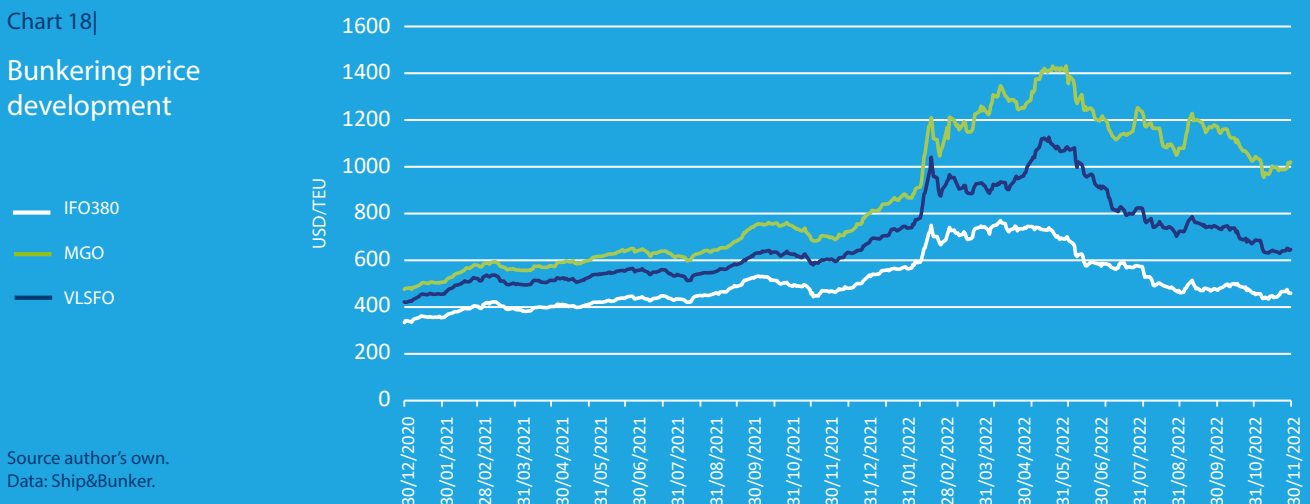
### Schedule reliability



Source: author's own.  
Data: Sea Intelligence.

Chart 18|

### Bunkering price development



Source author's own.  
Data: Ship&Bunker.



Continuing along these lines, and looking at the evolution of the Spanish economy with respect to the year 2022 as a whole, according to the Spanish National Statistics Institute (INE), GDP at current prices has reached 1,327.108 billion euros, which means an increase of 10% with respect to the GDP at the end of 2021. In constant prices, i.e. without taking into account price growth, Spanish GDP grew by 5.5% in 2022. In quarterly terms, and after a contraction of 0.01% in the first quarter, GDP grew by 0.2% in both the second and third quarters. Furthermore, and according to the INE, there are two very different readings for the year 2022 as a whole; on the one hand, the economy remained “robust” after recording a first half of the year of high growth driven by the rise in activity, and, on the other hand, that which emerges from a second half of the year of deceleration due to inflation and restrictive monetary policies.

This brings the national accounts to two consecutive years of progress after a return to positive rates in 2021 following the 11.3% collapse in GDP caused by the COVID-19 pandemic in 2020.

For its part, domestic demand contributed 2.8 points to GDP growth in 2022, a figure 2.4 points lower than in 2021, while foreign demand contributed 2.6 points, which is 2.3 points above the previous year, given the dynamism in exports, as noted by the INE. As mentioned in the previous section of this report, another of the main

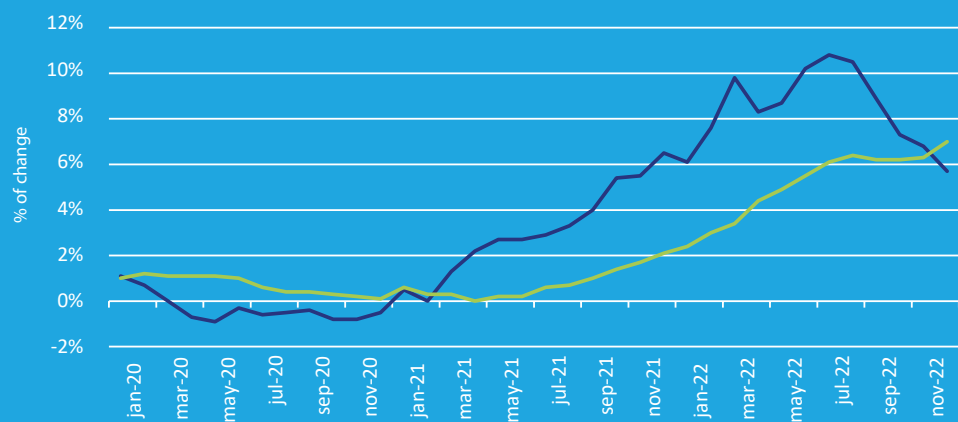
challenges facing the world economy, and in particular the Spanish economy in 2022, is inflation ([Chart 19](#)). Thus, it rebounded strongly in the last months of the year, influenced by the geopolitical situation and its impact on energy prices, reaching rates above 10% in June, July and August. In parallel, the annual rate of change of core inflation (headline index excluding unprocessed food and energy products) stood at 7.0% at the end of the year, the highest since November 1992.

Taking the Industrial Production Index (IPI) as a reference, which shows the evolution in the production volume of industry, excluding construction and, therefore, the production of final goods that can be exported, according to INE data ([Chart 20](#)) and for Spain specifically as a whole in the year 2022, it increased by an average of 2.9%, below what it did in 2021, reaching an increase of 7%. In addition, for the last month of 2022, industrial production slumped by 3.4% compared to December of the previous year, the second consecutive year-on-year decline and the steepest since February 2021, when it fell by 3.6%. With regard to the IPI of the main provinces of the Valenciaport Hinterland in economic terms, the communities that recorded the greatest increase in 2022 with respect to the previous year were the Community of Madrid (5.7%), followed by Aragon (5.1%). However, the region with the smallest increase compared to 2021 was the Region of Murcia with an increase of 1.7%.

Chart 19|

### Annual rate of CPI

— General harmonized CPI  
— Harmonized underlying CPI



Source author's own.  
Data: Nacional Statistics Institute(INE).



Focusing on the evolution of Spain's international trade (Chart 21), according to data provided by the Spanish Tax Administration Agency (AEAT), Spanish exports of goods reached a value of 389.2089 billion euros in 2022, an increase of 22.9% over the previous year. Imports, meanwhile, reached €457.3212 billion from January to December 2022, a year-on-year growth of 33.4% over 2021. In this sense, the country reveals a trade deficit situation as the coverage rate is 85.1%. In terms of volume, exports of goods in 2022 reached 184 million tonnes, an increase of 0.9% over the previous year, but still below the pre-pandemic figures of 185 million tonnes in 2019. In contrast, imports grew to 261 million tonnes, 6.3% higher than the previous year, reaching pre-pandemic figures (260 million tonnes).

With regard to the evolution of the provinces of the Hinterland in economic terms (Table 1), a generalised growth in the rate of variation of GDP can be observed for the year 2022 as a whole, with Madrid and Aragon

showing a higher rate of growth than that of 2021, with 5.7% and 5% respectively. For the rest of the provinces, a slight slowdown in growth can be observed, although in all cases this is above pre-pandemic levels, so it can be affirmed that, for all the provinces analysed, the evolution in the annual rates of change of GDP has been positive in its entirety.

In terms of import and export activity, there has been a general slowdown compared to the previous year (Table 2). With regard to the volume of exports, with the exception of Castilla la Mancha, which recorded one of the highest growth rates (20.3%), the rest of the communities observed have shown much lower growth rates, even falls of around 4%, as is the case of the Valencian Community and Aragon (decreases of 3.1% and 3.9%, respectively). Similarly, as far as the evolution of the volume of imports is concerned, both the Valencian Community and Aragon showed signs of decrease, with falls of 0.6% and 5.3% respectively.

Chart 20|

Annual variation in the Industrial Production Index (IPI) for Spain and the main Autonomous Communities in the Valenciaport hinterland



Source author's own.  
Data: Nacional Statistics Institute(INE).

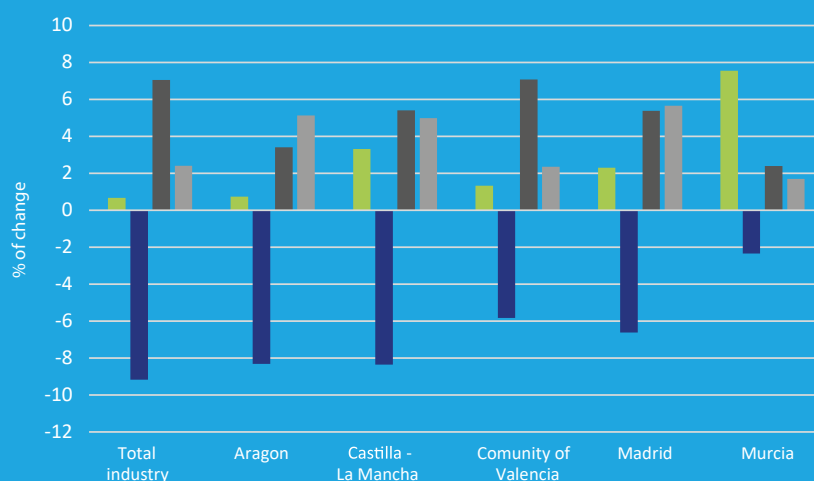
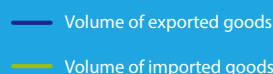
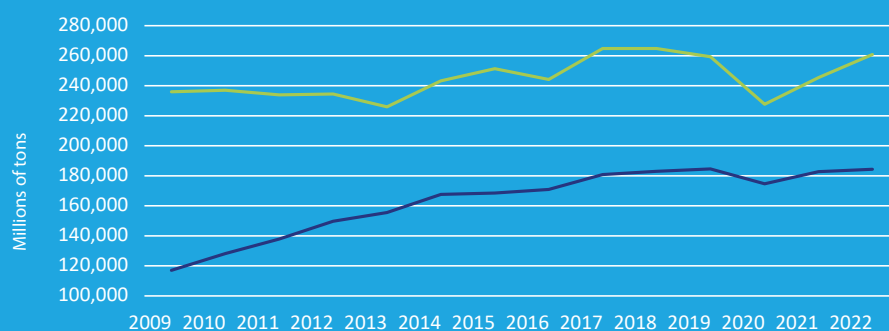


Chart 21|

Evolution of imports and exports of goods



Source author's own.  
Data: Datacomex.





Similarly, taking into account the evolution of the main macroeconomic aggregates of the most relevant countries that make up the Valenciaport Foreland (Table 3), moderate growth rates in economic activity are generally observed. In this respect, one of the most notable trends is the high inflation rates, in some cases rising by more than 8% in the last year. With regard to the evolution of both exports and imports, it is worth highlighting the volume of growth in exports from Morocco (24.1%) and the growth rate of imports in the United Arab Emirates (15.5%) with respect to the year 2021.

Analysing Valenciaport's traffic as a whole, in 2022 it exceeded 79 million tonnes, representing a drop of 6.92% with respect to 2021. In the same vein,

containerised cargo reached 5.1 million TEUs, down 9.85% from the previous year. In turn, and with regard to the evolution of full TEUs from Valenciaport (Chart 22), cargo movements stood at 999,071 TEUs, a decrease of 7.59%.

On the other hand, containerised exports are global in nature, with the top 5 export partners being the United States, Spain, China, Saudi Arabia and the United Arab Emirates, which together account for 36% of export destinations. In this sense, there has been a generalised fall in the volume of containers compared to the previous year, with a clear decrease in the volume of TEUs exported to China of 24.4% for this last year (Table 4).

Table 1 |

Real GDP growth by Autonomous Community. (% annual change)

	Community of Valencia	Aragon	Castilla la Mancha	Madrid	Murcia
Average 2014-2019	2,6	1.9	1.9	3.3	3
2020	-10.9	-8.7	-7.7	-11	-9.1
2021	5.6	4.4	4.8	5.4	5
2022	5.5	5	4.3	5.7	5

Source author's own.  
Data: Nacional Statistics Institute(INE) and Funcas.

Table 2 |

Evolution in the main macroeconomic aggregates of the Valenciaport Foreland (million tonnes)

		Community of Valencia	Aragon	Castilla-La Mancha	Madrid	Murcia
Volume of exports	2019	25.0	5.2	4.32	10.05	13.22
	2020	24.1	5.3	4.08	9.86	12.93
	2021	25.9	5.9	4.76	11.43	10.93
	2022	25.1	5.6	5.73	11.68	11.50
Volume of imports	2019	25.1	4.7	2.43	15.63	24.12
	2020	22.7	4.7	2.45	23.93	22.00
	2021	26.7	4.9	2.92	26.87	19.39
	2022	26.6	4.7	3.23	33.31	24.99

Source author's own.  
Data: International Monetary Fund (IMF).



Table 3 |

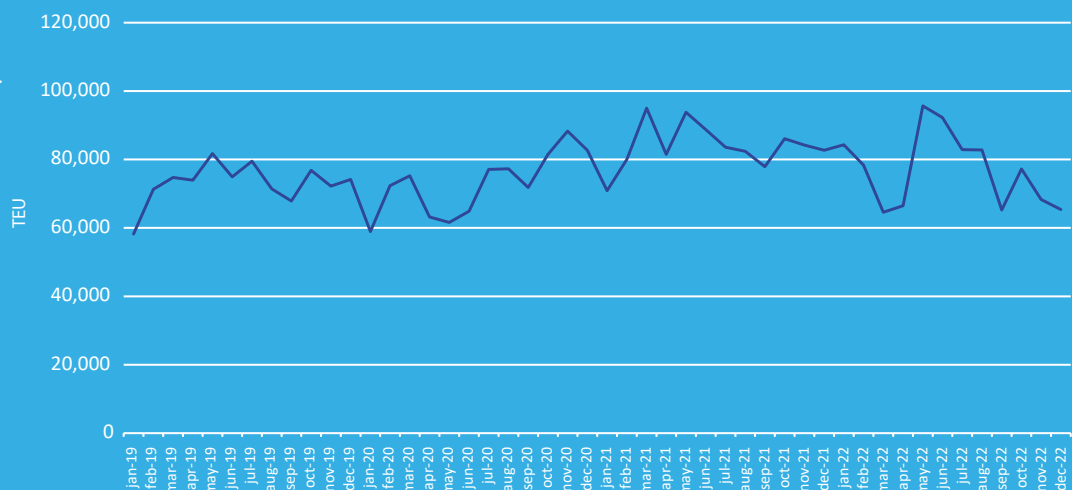
## Evolution in the volume of exports and imports by Autonomous Community. (% of change)

	Algeria	China	Italy	Morocco	Saudi Arabia	United Arab Emirates	United Kingdom	United States
GDP (% annual change)	4.7	3.2	3.2	0.8	7.6	5.1	3.6	1.6
CPI (% annual change)	9.7	2.2	8.7	6.2	2.7	5.2	9.1	8.1
Evolution of exports (% of GDP)	4.3	1.1	8.4	24.1	6.9	9	5.2	3.8
Evolution of imports (% of GDP)	-4.2	-4.7	11.7	2	1.9	15.5	9.9	7.8

Source author's own.  
Data: International Monetary Fund (IMF).

Chart 22|

## Evolution of full TEUs from Valenciaport; year 2019-2022



Source author's own.  
Data: Port Authority of Valencia.

When analysing the freight rates of the different sub-indices, i.e. distinguishing by the Western Mediterranean, Far East and the US and Canada, there is a general upward trend. More specifically, the first half of the year shows heterogeneous peaks depending on time and place, while in the second half of the year the decline in freight rates is generalised for all three areas, in line with the evolution of the VCFI at the global level (Chart 23).

Focusing by areas, in the case of the Far East, a downward trend is observed in the evolution of freight rates throughout the year 2022, in response to the economic situation that the Asian continent has experienced for

most of the year, which directly affects demand levels. With a general slowdown in the Chinese economy following changes in global consumption patterns after the pandemic and reduced demand for Chinese products due to high energy prices, rising interest rates, sustained inflation and the negative effects of the war in Ukraine. In this sense, although the year began with 3,827.93 points, at the end of 2022 the reading was 2,372.04 points. Among all the downward movements, a fall of -22.11% in October stands out, followed by a drop of -8.43% in November and -7.51% in December 2022. Overall, shipping prices with this area have accumulated a growth since the beginning of the series in January



2018 of 137.20%, which is below the year-end 2021 and 2020, with 274.30% (3,742.98 points), and 176.34% (2,763.37 points), although far from the pre-pandemic values, where the accumulated growth since the beginning of the series was 3.50% with an index reading of 1,034.96 points.

It is also worth highlighting the evolution in full TEU export traffic from Valenciaport to China, the main trading partner of the Valencian enclave in this area, and

for full container traffic as a whole from Valenciaport, which throughout the year 2022 decreased by 11.32% compared to the previous year, reaching a total of 530,902 TEU managed (both loading and unloading), and leading to greater downward pressure on transport prices, given the weakening in demand and, consequently, the imbalance between the supply-demand binomial of maritime transport.

Table 4 |

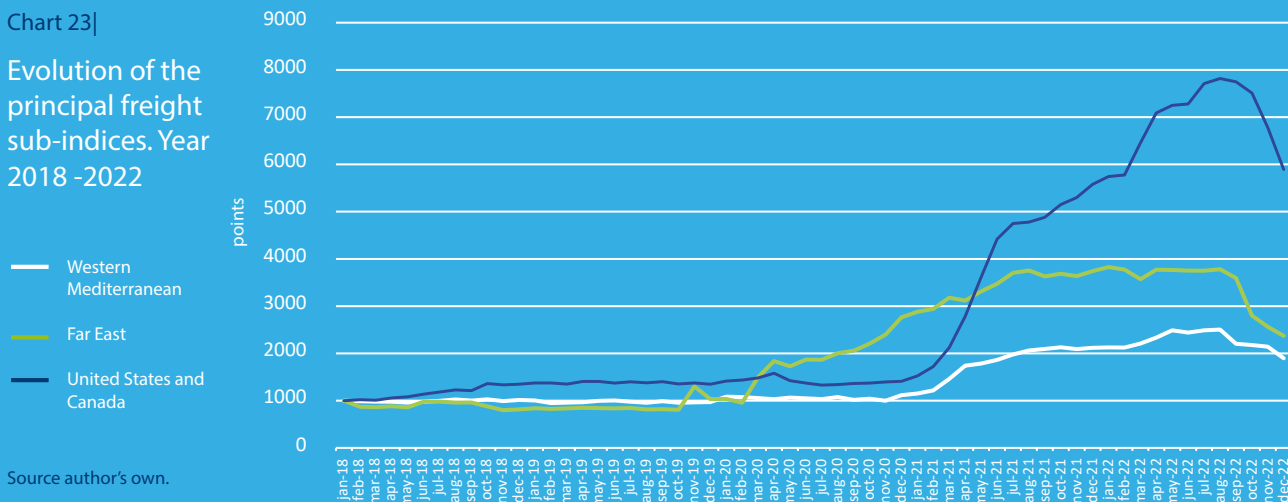
#### Evolution of the export flow of the main export destinations in containerised cargo format (TEUs)

	2020	2021	2022	% of total	Var. 2021-2022
United States	123,144	145,953	143,216	14.33%	-1.9%
Spain	74,470	80,106	75,736	7.58%	-5.5%
China	72,768	73,451	55,700	5.58%	-24.2%
Saudi Arabia	50,022	48,683	48,403	4.84%	-0.6%
U.A.E.	29,031	38,449	36,902	3.69%	-4.0%
Mexico	28,129	35,004	35,539	3.56%	1.5%
United Kingdom	23,467	25,820	30,247	3.03%	17.1%
Canada	21,133	24,285	26,811	2.68%	10.4%
Morocco	27,213	32,019	25,759	2.58%	-19.6%
Israel	15,527	21,285	23,234	2.33%	9.2%
India	21,000	25,774	23,003	2.30%	-10.8%
Brazil	19,765	20,811	21,585	2.16%	3.7%
Rest	443,621	509,463	452,936	45.34%	-11.1%
<b>Total</b>	<b>949,290</b>	<b>1,081,103</b>	<b>999,071</b>	<b>100.00%</b>	<b>-7.6%</b>

Source author's own.  
Data: Datacomex

Chart 23 |

#### Evolution of the principal freight sub-indices. Year 2018 -2022



With regard to the behaviour of freight rates in the United States and Canada during the year 2022, one of the routes that has been experiencing the most dynamism in recent times, two well differentiated stages can be observed. Persistent growth can be distinguished until the month of August, reaching its maximum, with 7,817.65 points and an accumulated growth since the beginning of the series in the year 2018 of 681.76%. However, from September until the end of the year 2022, the trend has been downward, so that by the month of December a decrease of -13.09% has been recorded, placing the index at 5,893.55 points, and accumulating a growth of 489.36%, which is even above the accumulated growth at the end of the year 2021, with a rate of 457.93% and reaching 5,579.27 points.

Undoubtedly, such performance is the result of an economic scenario which, in line with what has been discussed throughout this report, has been largely marked by high levels of uncertainty, rising fuel prices, distortion in the price of other commodities and rising core inflation during the first part of the year, followed by a significant slowdown in demand levels in the latter part of the year, where consumer purchasing patterns have normalised. On the other hand, although the United States is the main country in the movement of cargo containers from Valenciaport, and as mentioned, a route with a very high level of demand, during 2022 a total of 143,216 TEUs have been shipped, which shows a slight drop of -1.87% compared to the whole of 2021, which closed with a total of 145,953 TEUs of cargo.

Similarly, with regard to the Western Mediterranean, a sub-index that has much more regional characteristics than the previous ones, which are part of major maritime routes, the trend observed also responds to two distinct stages. Thus, in the first half of the year, and with the exception of the months of February and June, an increase in freight rates was observed, reaching a value of 2,487.88 points in July, with a cumulative growth of 148.79%. However, from August until the end of the year 2022, the performance of freight rates has trended downward, standing at 1,897.94 points, accumulating a growth since the beginning of the series of 89.79%. In addition, and when comparing with the close of previous years, it is interesting to note the difference with respect to the year 2021, when the year closed with 2,117.26 points and a cumulative growth of 111.73%. However, the index reading is still far from the values computed in 2020 and 2019, with 1,116.11 and 970.92 points respectively. Undoubtedly, the change in the trajectory of the VCFI in this area and for the year 2022 responds to the current situation, a priori marked by an increase in price levels, and secondly, by a weakening in demand levels.

On the other hand, exports from Valenciaport to Morocco have reduced by 19.55%, to reach 25,759 TEUs, compared to the 32,019 TEUs channelled in 2021. Exports to Algeria have decreased by -59.22% to 9,749 TEUs, compared to 23,909 TEUs in 2021. This decrease is due to the decision taken by the Algerian government to suspend the trade agreement signed with Spain two decades ago, creating a significant retraction in trade flows with this country from Valenciaport.

A determining factor in understanding the evolution of each area are the individual features of each country, as well as the dynamism of its economy, the idiosyncrasies of each port system and the characteristics of the container trade routes that link both countries and which have a direct influence on the evolution. With regard to economic and trade dynamism, the main economic variables for each area ([Table 5](#), [Table 6](#) and [Table 7](#)) show a positive trend in the evolution of both economic growth and foreign trade. However, as an exception, it is worth highlighting the retraction in the volume of imports from Asia (especially China, Hong Kong and Taiwan), given its particular situation, where trade activity has been reduced by the 0-COVID policy and the various outbreaks that have occurred, as explained above. Similarly, as far as the Western Mediterranean area is concerned, the drop in Algeria's import levels is noteworthy, which, as also reflected in the data mentioned above, is partly due to the suspension of trade relations with Spain, an important trading partner.

Therefore, beyond the peculiarities of each area, the fall in freight price levels in the second part of the year 2022, although far from pre-pandemic levels, has undoubtedly been a faithful barometer of the economic and business situation at the time. In this sense, after a 2021 marked by supply chain stresses, resulting in high levels of port congestion, bottlenecks have been relieved in 2022, while capacity supply has been increased. On the other hand, demand has weakened, indicating a possible economic downturn. In a scenario of high uncertainty, both at the geopolitical level and in the international economy, we must wait for an adjustment between maritime transport supply and demand to be effected.





Table 5 |

## Far East: principal economic variables in 2022 (annual change)

	China	Hong Kong	Singapore	South Korea	Japan	Vietnam	Thailand	Taiwan	Malaysia
Economic growth (% annual change at constant prices)	3.03	-0.85	3.02	2.59	1.75	7.00	2.84	3.31	5.40
Evolution of exports (as % of GDP)	1.11	-8.27	4.35	3.66	4.37	2.10	1.66	-4.21	2.08
Evolution of imports (as % of GDP)	-4.67	-7.62	9.16	2.74	4.94	0.04	6.19	1.81	5.26

Source author's own.  
Data: International Monetary Fund (IMF).

Table 6 |

## United States and Canada: principal economic variables in 2022 (annual change)

	United States	Canada
Economic growth (% annual change at constant prices)	1.64	3.30
Evolution of exports (as % of GDP)	3.85	0.54
Evolution of imports (as % of GDP)	7.82	7.44

Source author's own.  
Data: International Monetary Fund (IMF).

Table 7 |

## Western Mediterranean: principal economic variables in 2022 (annual change)

	Morocco	Tunisia	Argelia
Economic growth (% annual change at constant prices)	5.7	3.0	3.4
Evolution of exports (as % of GDP)	10.63	13.80	5.20
Evolution of imports (as % of GDP)	2.27	5.46	1.65

Source author's own.  
Data: International Monetary Fund (IMF).





Edited in June 2023 by:



Panelistas:

