



Competitive Landscape in the Global Freight Forwarding Market

By Marta Chiriatti, John Manners-Bell & Thomas Cullen, Ti Research Team

October 2022

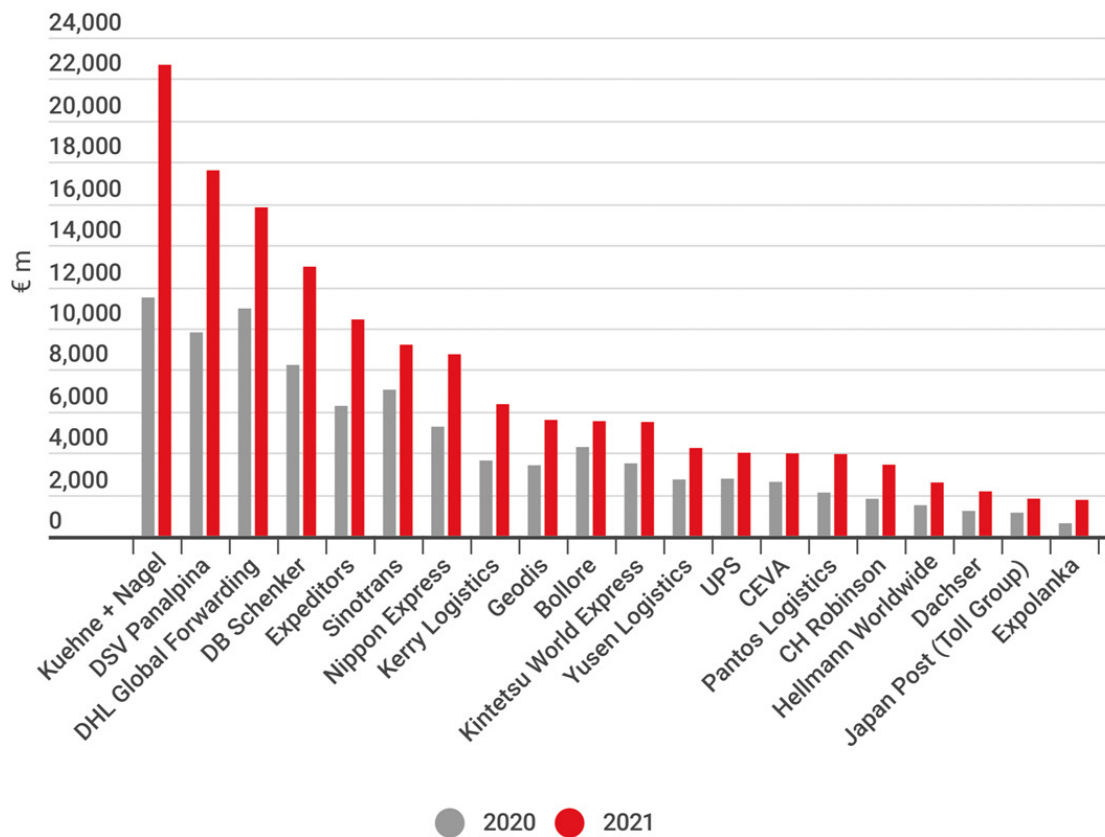
COMPETITIVE LANDSCAPE IN THE GLOBAL FREIGHT FORWARDING MARKET

In 2021, an increase in global trade led to a growth in the volume of goods transported via different modes of transportation, resulting in global capacity issues and congestion. Nonetheless, the performance of freight forwarders in the extraordinary market conditions over 2021 has been remarkable and their profitability has been significant. This paper provides comparative analysis of the financial performance of the top 20 freight forwarders, their vertical sector exposure and M&A activity.

1. Revenue Comparison

All major forwarders have benefited roughly equally from the unusual market conditions, with all companies under review achieving significant revenue gains in 2021. In a year marked by fallout from the global Covid-19 pandemic, freight markets returned to growth in volume terms, but supply chain bottlenecks, capacity constraints and widespread congestion all contributed to freight rates booming.

Figure 1: Top 20 Global Freight Forwarders by Revenue 2020 – 2021



Notes: All figures stated are either actual figures taken from company reports, provided by LSPs or have been estimated by Transport Intelligence.

The inflated freight prices caused by the shortage of capacity was a strong contributor to the revenue increases in 2021. A confluence of factors has contributed to the freight rate inflation, including the sharp rebound in economic activity and trade, shortage of containers, shortage of drivers on the ground and dock workers, and port congestion in the US and China. As the pandemic started to wane, global demand recovered strongly, especially in the manufacturing and retail sectors. As a result, competition for ocean and air freight capacity intensified as shippers looked to replenish inventories across global supply chains.

Kuehne + Nagel and DSV Panalpina lead the global freight forwarding market, with revenues of €22.7bn and €17.6bn in 2021, respectively.

Among the top 10, Kuehne + Nagel and DSV Panalpina have also seen the strongest revenue growth in 2021 (97.6% and 79.7% respectively), despite the disruptions that have plagued supply chains over the past two years.

The two market leaders have successfully integrated acquisitions in recent years, which has helped both to top the list. Kuehne + Nagel fully benefited from integrating Apex International (the 17th largest air freight forwarder in 2020). Meanwhile, DSV's integration of Panalpina, followed by the acquisition of Agility, allowed the company to rise to second place and ahead of DHL Global Forwarding for the first time.

DHL Global Forwarding, DB Schenker, and Expeditors showed consistency in their individual revenue and volume rankings for their air and sea segments.

DHL Global Forwarding dropped to third place in the ranking, with its revenue increasing by 44.5% YOY to €15.8bn. The division successfully overcame challenging conditions in the international transport markets, such as port congestion across Asia and North America.

DB Schenker and Expeditors round out the top five. Indeed, across the individual revenue and volume rankings for air and sea, there is a great deal of consistency. Sinotrans is the only other forwarder that gains a top-five ranking, pushing Expeditors to sixth in both sea revenue and volume rankings.

DB Schenker's 2021 revenue rose even further by 57.5%, from €8.23bn to €12.96bn. An increase in air freight volumes drove the division's growth, but a reduction in sea freight was impacted by port disruption and closures, with the lingering impacts of the pandemic still playing a significant role in volume levels.

Expeditors managed to increase its revenue by 66.5% to €10.4bn in 2021, despite ocean freight volumes declining by 2%, which was attributed to ports being too congested and workers shortages to support the load and unloading of containers.

2. Sea Freight Volumes and Revenue Comparison

Sea Freight Revenues

Kuehne + Nagel topped the sea freight forwarding ranking in 2021. Sea freight forwarding, or what Kuehne and Nagel now calls 'Sea Logistics', has always been Kuehne and Nagel's strength and 2021 was no exception. The company's sea freight revenues saw an increase of 91.4% YOY.

The rest of the top five largest sea freight forwarders by revenue were some way behind Kuehne + Nagel. Sinotrans and DSV's sea forwarding businesses are around two-thirds the size of Kuehne + Nagel by revenue.

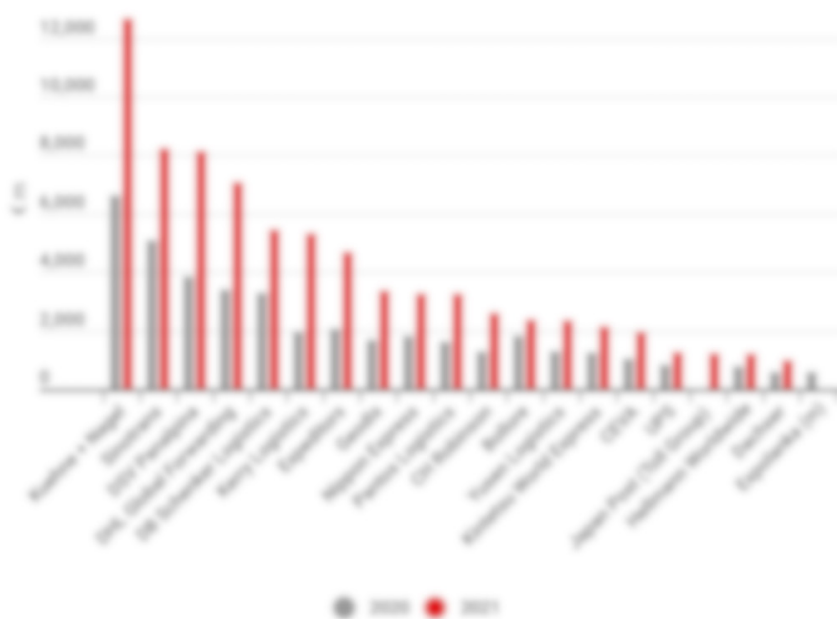
In fourth place is DHL Global Forwarding. DHL Global Forwarding made moves during 2021 and followed

its move acquisitive peers into the M&A markets. Its August acquisition of liquids specialist JF Hillebrand was, at least in part, targeted at expanding its sea freight network. The wine section of JF Hillebrand has been part of DHL Forwarding since 1998, allowing DHL to get a thorough understanding of the business as well as a deep analysis of the network before making the €1.5bn acquisition. The end of 2022 will reflect the true extent of the success of the deal.

In 2021, the largest 20 sea freight forwarders by revenue had a combined market share of 53.4%. At 28.4%, the five largest sea freight forwarders held a market share of more than a quarter.

To access the data chart below [subscribe to GSCi](#).

Figure 2: Top 20 Global Freight Forwarders by Sea freight revenues in 2020 and 2021



Notes: All figures stated are either actual figures taken from company reports, provided by LSPs or have been estimated by Transport Intelligence.

Sea Freight Volumes

Almost all providers saw a modest increase in their sea freight volumes, except for C.H. Robinson, which saw a staggering 84% YOY sea freight volume increase in 2021.

Kuehne + Nagel was the largest sea freight forwarder by volume in 2021. Kuehne + Nagel’s sea freight performance developed similarly to the previous years and its sea freight volumes increased slightly by 2%. Its volumes were some 830,000 higher than second-placed Sinotrans.

Sinotrans had the second highest TEUs volumes for 2021 across the top 20 freight forwarders analysed and just below Kuehne + Nagel.

DHL and DSV Panalpina are third and fourth on the list in terms of TEUs.

DHL’s Sea freight segment, impacted by global conditions, saw a volume increase of 10%. The Asia Pacific was the busiest trade lane, contributing 39.3% of total ocean volumes.

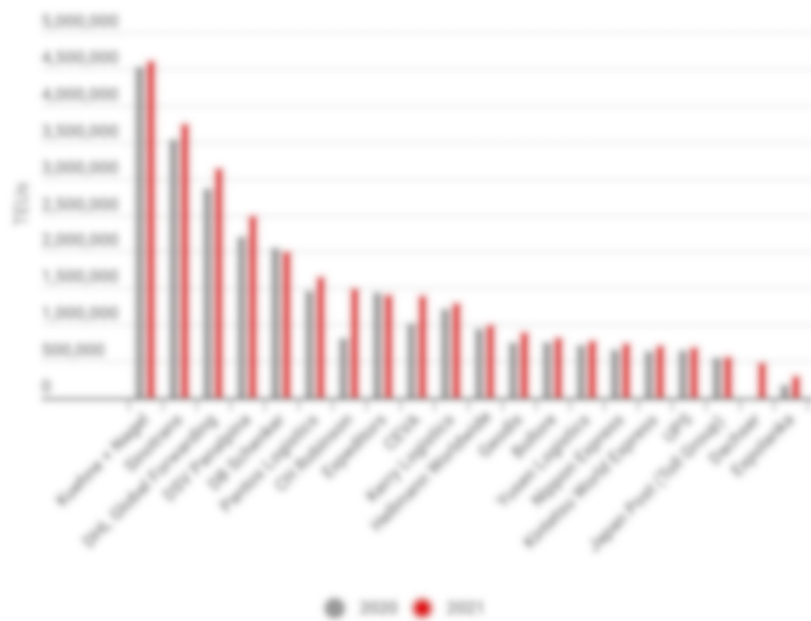
DSV Panalpina sea freight results showed positive developments, with volumes going up by 13%, translating in a sea freight revenue increase of 111.8% YOY in 2021. DSV's sea freight forwarding business performance was boosted by acquisitions, both of the now fully digested Panalpina but also of GIL, with the latter expected to increase profits by Kroner 3bn from the back-end of this year. The exposure to GIL's market in the Middle East and Africa has been essential and invaluable to DSV sea freight operations, enabling it to become the second largest sea freight forwarder by revenue in 2021.

DB Schenker rounds out the top 5 despite seeing volumes dip by 2.4% in the year.

In 2021, a total of 11 freight forwarders recorded volumes over 1m TEU during the year. In 2020, eight forwarders passed the 1m TEU mark.

To access the data chart below [subscribe to GSCI](#).

Figure 3: Top 20 Global Freight Forwarders by Sea freight volumes (TEUs) in 2020 and 2021



Notes: All figures stated are either actual figures taken from company reports, provided by LSPs or have been estimated by Transport Intelligence.

3. Air Freight Revenue and Volumes Comparison

Air Freight Revenues

Kuehne + Nagel topped the air freight forwarding revenue ranking in 2021. With revenues just slightly above €10bn, it was also the only forwarder to exceed that mark.

DSV was in second position. Both Kuehne + Nagel and DSV benefitted from higher freight rates during the year.

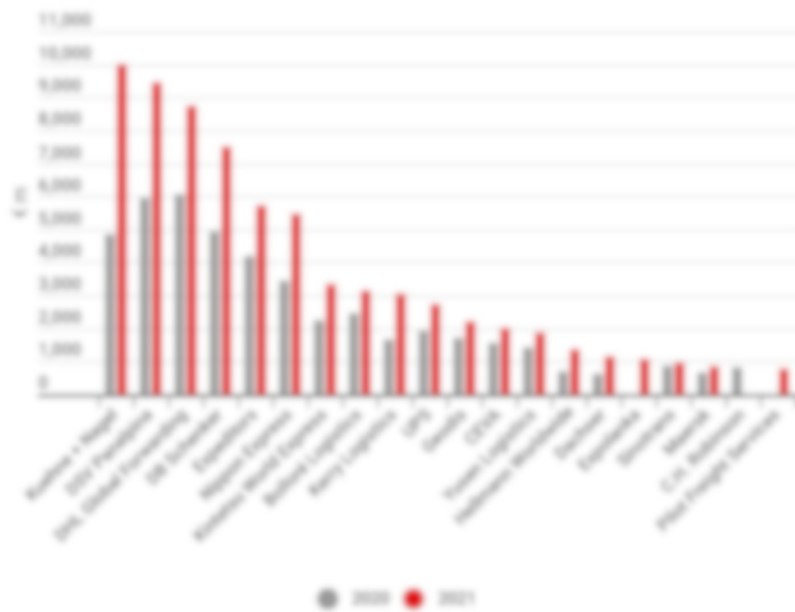
DB Schenker ranked fourth for air freight revenue, and the engine of the freight forwarding business was airfreight. It handled 31.4% more cargo whilst ocean forwarding saw a 2.4% reduction. As was usual for 2021, DB Schenker joined other forwarders in making money on higher rates as well as charters.

The year saw 16 air freight forwarders record revenues above the €1bn mark. Expolanka, a Sri Lanka-based 3PL and part of Japan’s SG Holdings rounded out this grouping having reported a 131% rise in air freight revenue during the year.

Dachser and Hellmann Worldwide Logistics joined Exploanka in recording air freight revenues above the €1bn mark for the first time.

To access the data chart below [subscribe to GSCi](#).

Figure 4: Top 20 Global Freight Forwarders by Air Freight Revenues in 2020 and 2021



Notes: All figures stated are either actual figures taken from company reports, provided by LSPs or have been estimated by Transport Intelligence.

Air Freight Volumes

When measuring the air freight market in terms of tonnage two trends jump out:

- DHL GFF (note Global Forwarding Freight or, just the forwarding division is Global Forwarding) has lost market share over the past two years.
- DSV (which has acquired Panalpina) and Kuehne + Nagel (which has acquired smaller forwarders) have increased volumes, including through the past two years of disruption.

Kuehne + Nagel was the largest air freight forwarder by volumes in 2021, with its air freight volumes increasing by 55% throughout 2021. About half of Kuehne + Nagel’s growth comes from the acquisition of the air freight forwarder Apex Logistics. Additionally, the company has shipped 1.2bn doses of Covid-19 vaccine to about 90 countries around the world.

DHL’s Global Forwarding, Freight Air volumes were up 25.7%. CEO Frank Appel stated “2021 was an extraordinary year...E-commerce has continued to grow, and global trade has recovered very quickly. We

profitably transported record volumes of freight, express shipments, parcels and operated more efficiently than ever before.”

DSV ranked third in volume terms, although it is some way behind the leading two forwarders. Its air volumes grew by 18.7%, including M&A impact. Adjusted for the acquisition of GIL, DSV air freight division’s growth figures were in line with the market.

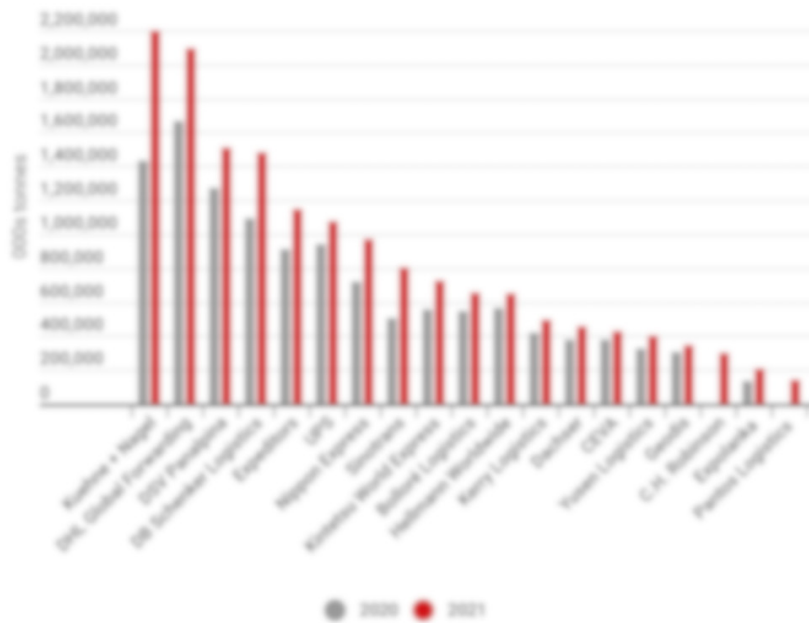
Another Europe-based forwarder, DB Schenker, ranked fourth during 2021. Expeditors rounded out the top five.

Combined the five largest air freight forwarders accounted for 39.3% of the global market in 2021.

Sinotrans ranked 8th but also recorded the strongest YOY air freight volume growth in 2021. The company has a presence in Asia-Pacific, Europe, the Americas, the Middle East, and Africa. It company leveraged heavy cargo and bulk cargo of e-commerce logistics, maximising its loading rate. It transported approximately 804,000 m tons of air cargo through its air freight forwarding services.

To access the data chart below [subscribe to GSCI](#).

Figure 5: Top 20 Global Freight Forwarders by Air volumes (000s tonnes) in 2020 and 2021



Notes: All figures stated are either actual figures taken from company reports, provided by LSPs or have been estimated by Transport Intelligence.

4. Profit and Margins Comparison

We have seen over the past two years that gross profit has risen, but not as much as the cost of air freight itself. Gross profit as a proportion of revenue has fallen, however, it has risen in absolute terms as the price of air forwarding has risen in absolute terms. This trend can be seen in Kuehne + Nagel and DHL Global Forwarding’s numbers.

It should be noted that the increase in air freight rates is only one factor in the gross profit and profit

(also known as EBIT, EBITDA) calculations. As a result, the market’s disarray has created unusually fresh opportunities for forwarders, as follows:

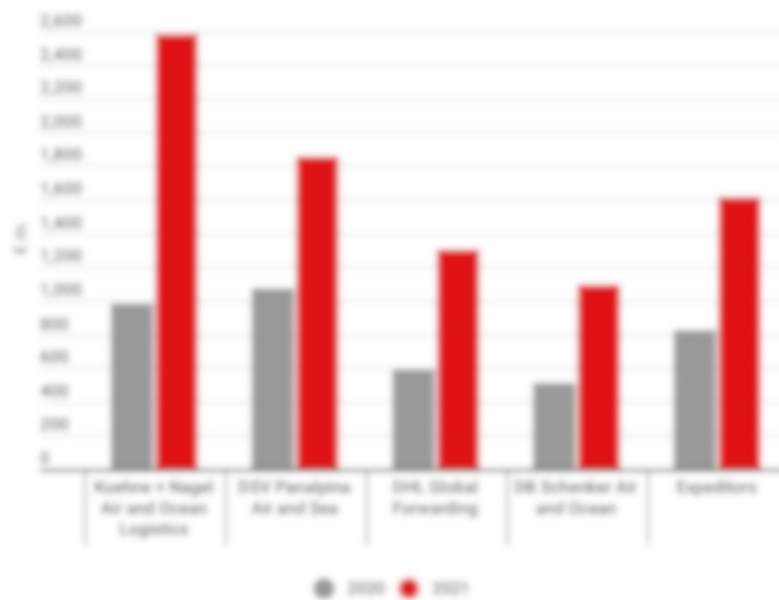
- Forwarders had the possibility of leasing cargo aircraft and then selling the capacity to existing customers on a shared-user or, occasionally, a dedicated basis. This appears to have been lucrative for both the aircraft operator and the forwarder.
- The shortage of belly freight created exceptional market conditions. Freight forwarders were better placed to understand the market than their customers and capitalise on the shortage’s high prices.
- The demand for healthcare-related products in 2020 sparked panic buying amongst a certain group of shippers, and forwarders could exploit them effectively due to their better understanding of the market.

All of these factors had an impact, but all the forwarders analysed have additional incentives to disguise the impacts on their profitability. This competitive advantage has probably underpinned forwarders’ ability to profit so effectively in the unusual market of 2020-2021.

With such an unusual market, it might be expected that there would be differences between forwarders in terms of performance. Slightly surprisingly, this has not been the case. However, it appears that the unusual market conditions have lifted all of the major forwarders to a roughly equal extent, or rather more similar than their varying performance might suggest.

To access the data chart below [subscribe to GSCi](#).

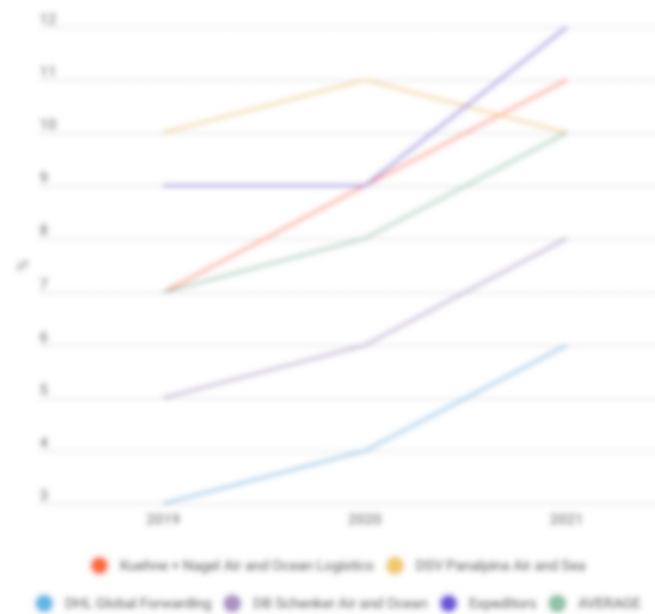
Figure 6. Profitability of top 5 freight forwarders 2020-2021



Notes: All figures stated are either actual figures taken from company reports, provided by LSPs or have been estimated by Transport Intelligence.

To access the data chart below [subscribe to GSCI](#).

Figure 7: Freight Forwarders' Profit Margins (2019 - 2021)



Notes: All figures stated are either actual figures taken from company reports, provided by LSPs or have been estimated by Transport Intelligence.

From 2019 until 2021 the forwarders under review follow the same path of peaks and troughs, but some are considerably more profitable.

Expeditors, DSV Panalpina and Kuehne + Nagel have maintained margins above the average.

Expeditors can generate higher margins by offering services such as customs brokerage and other services beyond forwarding. For example, the company typically acts as a freight consolidator or agent for the shipping carrier or the airline carrying the shipment.

The DSV acquisition of Panalpina, completed in August 2019, has impacted the company's margins negatively. Panalpina had always had relatively low margins and the company faced operational issues with its legacy IT system which hindered growth and market share in ocean activities. In the initial stages, the integration of Panalpina has led to a sharp dilution of profit margins. Such dilution is common in the period following a major acquisition as costs related to such a transaction are often high, although the fall is stark. Previously, DSV's margins were higher, with a notable change around the time of the acquisition of UTi in 2016, but then a gradual resurgence to higher levels than before as UTi was fully integrated.

It should be noted, however, that despite the acquisition's marked impact on margins, DSV Panalpina remains a highly profitable business in comparison to the other forwarders under review. In 2019, its margin was still above both the average and four of the five providers for which comparable data is available.

DHL Global Forwarding and DB Schenker however are below the average line. Despite the opportunities for growth in the business, DB Schenker is still faced with a stagnant, low-margin position compared to the

other four companies, with its freight forwarding unit unable to match the revenues it achieved before the financial crisis of 2008/2009.

Higher value operations at lower volumes can translate to retention in profit and therefore generate higher margin despite declining revenues or volumes. As already explained, another factor in increased margins could be the financial situation specific to a company. For example, expenses associated with acquisitions can often be significant and therefore impact margins over that year, but once the costs incurred are paid, margins recover.

5. Vertical Sectors Comparison

To access the data below [subscribe to GSCi](#).

Table 1. Vertical Sector Comparison

	Agriculture, Food and Fisheries	Automotive	Chemical	Consumer/Retail	Healthcare/Pharmaceutical	High Tech	Industry & Manufacturing	Oil & Gas	Aerospace and Aviation
Kuehne + Nagel	✓	✓	✓	✓	✓	✓	✓	✓	✓
DHL Parcel	✓	✓		✓	✓	✓	✓	✓	
DHL Global Forwarding		✓	✓	✓	✓	✓	✓	✓	
DB Schenker	✓	✓	✓	✓	✓	✓	✓	✓	✓
Expeditors	✓	✓		✓	✓	✓	✓	✓	✓
DSB	✓	✓	✓	✓	✓	✓	✓	✓	
Nippon Express	✓	✓		✓	✓	✓	✓		✓
Kerry Logistics	✓	✓	✓	✓	✓	✓	✓		
Geodis		✓		✓	✓	✓	✓		✓
Bolloré	✓	✓	✓	✓	✓		✓		✓
Emas World Express	✓	✓		✓	✓		✓		✓
Toll Logistics	✓	✓		✓	✓	✓			✓
UPS		✓		✓	✓	✓	✓		✓
CEVA		✓		✓	✓	✓	✓		✓
Flexion Logistics		✓	✓	✓		✓	✓		
On Board	✓	✓	✓	✓	✓		✓		✓
Hollmann Worldwide Logistics	✓	✓		✓	✓			✓	
DSB	✓	✓	✓	✓	✓		✓		
Japan Post (JFE Group)				✓					
Expeditors	✓	✓		✓	✓	✓	✓		

Source: Ti/Various

Most freight forwarders carry out operations in the automotive sector. Automotive has been a leading sector within logistics for several decades. Only retail is comparable, and like retail, the automotive sector is undergoing an extraordinary change. Despite the industry experiencing a slowdown, especially over the last two years and after the coronavirus spread globally, it is an attractive sector that historically sees slow but sustained growth and continuous expansion, especially in emerging markets.

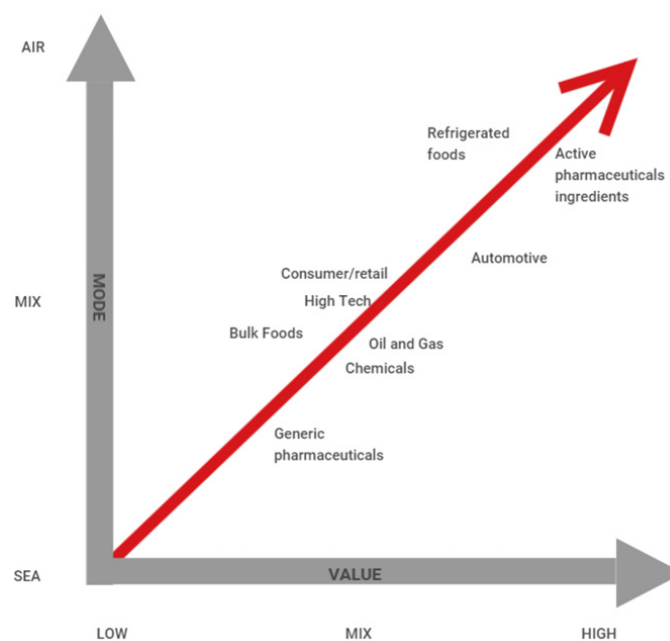
The automotive sector is key to CEVA's growth, with a strong presence worldwide, including in North America, Mexico, Europe, and Asia. The recent acquisition of GEFCO will significantly expand CEVA's automotive logistics reach and enable it to move towards becoming a leading automotive logistics provider. Historically, DB Schenker has also had a strong presence in the automotive sector.

The consumer & retail sector is also attractive for freight forwarders and all forwarders under review have a presence in this vertical. This is unsurprising, as retail is the largest consumer of logistics services in all developed economies and, increasingly, in emerging economies.

The agriculture, food and perishables vertical sector, as well as pharma, offers scope for value-added services as these products require the adoption of fast transportation solutions and appropriate storage facilities. The healthcare and pharmaceuticals sector is particularly important for Kuehne + Nagel, which took action in 2021 to strengthen its presence in this sector through an acquisition.

CEVA also hopes to gain greater access to the food and perishables market by making an acquisition in South America.

Figure 8. Correlation between vertical specialisation and margins



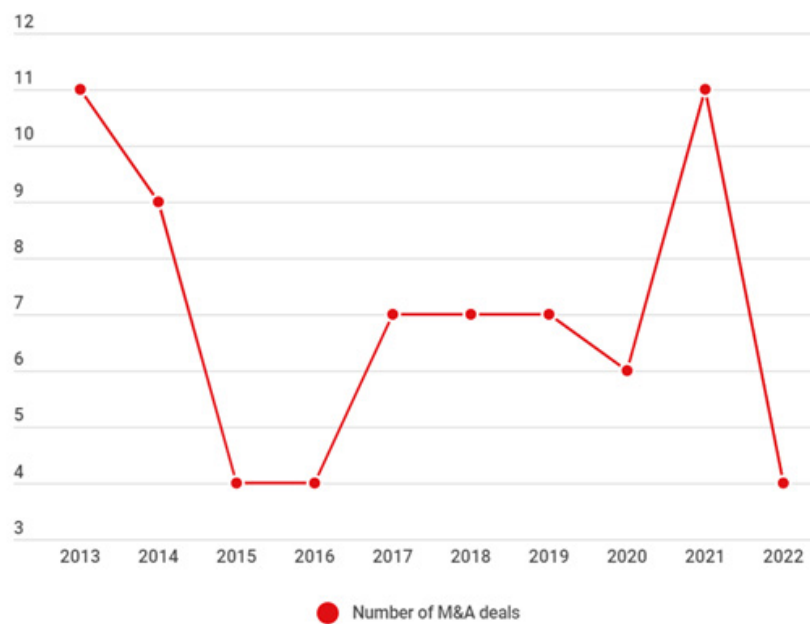
Source: Ti

Overall, most companies have diversified their offering across a range of vertical sectors, allowing a mix of defensive and cyclical revenues.

6. Expansion Strategy

Despite the uncertain conditions putting immense pressure on supply chains, the M&A market in the freight forwarding industry has become increasingly active in the past two years. According to Ti's M&A database, the top 20 largest freight forwarders closed 15 transactions in 2021 and 2022, up from just 6 in 2020. This robust M&A activity is likely attributable to various factors relating to record earnings among logistics players and supply chain dynamics.

Figure 9: Number of M&A deals among the top 20 Freight Forwarders 2013-2022



Source: Ti

Freight forwarding, by definition, requires the management and coordination of other asset providers. As a result, with a few exceptions, companies in this horizontal sector typically make acquisitions to broaden their geographic scope or strengthen their “know-how” and scale on a specific trade lane or in a vertical industry sector.

- Operational Scale and global reach

One of the fundamental reasons behind consolidation in the shipping industry and freight forwarding market is the benefits of scale. Scale provides forwarders with buying power in their dealings with the shipping lines. It not only allows them to get better rates than smaller competitors, but it is also more likely to guarantee that containers are shipped as booked. In times of high volumes and constrained capacity, as we have seen in the last year, shipping lines will provide the best service to their largest customers which include the leading freight forwarders.

- Profitability

The profits made by freight forwarders have acted as a catalyst for further acquisitions, building out the geographic scope and providing for strength and capabilities in vertical sectors. This has left many with

the nice problem of what to do with the unexpected boost to incomes.

- Access to capital

Access to cheap money and the ability of financially strong companies to borrow very cheaply in capital market has been another dynamic behind the acquisition boom.

To access the data below [subscribe to GSCI](#).

Table 2. M&A deals among the top 20 Freight Forwarders (2013 - 2022)

	M&A deals	Regions	Sectors
Kuehne + Nagel	11	Asia Pacific Europe Middle East & North Africa North America South America Sub-Saharan Africa	Agriculture, Food & Perishables Healthcare/ Pharmaceutical
DSV Panalpina	11	Europe Middle East & North Africa South America Sub-Saharan Africa	Agriculture, Food & Perishables Industry & Manufacturing
Kerry Logistics	8	Europe Sub-Saharan Africa	Consumer/ Retail Oil & Gas
CEVA	7	Middle East & North Africa South America Sub-Saharan Africa	Agriculture, Food & Perishables Healthcare/ Pharmaceutical
DHL	6	Europe Oceania	Agriculture, Food & Perishables
Dachser	5	Asia Pacific Europe	n/c
DHL Global Forwarding	4	Middle East & North Africa Sub-Saharan Africa	Chemical
DSB Sublime	4	Asia Pacific Europe North America	n/c
Hellmann Worldwide Logistics	4	Europe	n/c
DB Schenker	2	Middle East & North Africa South America	n/c
Korabely World Express	2	Asia Pacific North America	Agriculture, Food & Perishables
Nippon Express	1	Asia Pacific	High Tech
Yusen Logistics	1	Europe	n/c

Source: Ti

Kuehne + Nagel and DSV Panalpina have been the most acquisitive forwarders in the past 10 years. Although the company is strongest within its core European markets, Kuehne + Nagel has grown inorganically in the Asia Pacific rim and North America. As the years have progressed, Kuehne + Nagel has diversified its regional exposure and revenue streams through acquisitions, moving away from an EMEA dominated business to a business with a well-balanced geographical distribution.

Most attractive regions for M&As

Europe, Asia Pacific and the Middle East and North Africa are the most attractive regions for M&As.

Europe has seen considerable M&A activity over the past 10 years, with logistics companies seeking to increase their presence and capabilities in the region. The reasons behind these acquisitions vary by company but have a unifying logic in reflecting the trends in the market for freight forwarding. Obtaining a recognised know-how in a specialised segment and new business seems to be the key rationale behind the acquisitions in Europe. For instance, out of its acquisition of J.F. Hillebrand, DP DHL has obtained a recognized know-how in a specialized segment but also a large amount of new business which should enable it to consolidate its own position in the industry. This is also the case with CEVA Logistics which will significantly expand its automotive logistics reach through the acquisition of GEFCO.

Asia Pacific is the second most attractive M&A destination which is unsurprising considering it is the single-most-important region for global trade and logistics activities. According to Ti market sizing data, the Asia Pacific remains the largest freight forwarding region, accounting for 35.3% of the global freight forwarding market in 2021. Hence, to expand and stay competitive, and seize the vast opportunities that this market offers, the largest freight forwarders have realised that they need to add Asia Pacific to their portfolio.

The Middle East and North Africa is the third most attractive region for M&A deals in the freight forwarding sector. The region has acted as a refuelling point for air freight carriers and shipping lines moving between Europe and Asia for many years. It was therefore only a small step to create hub and spoke operations in this region in order to maximise capacity and improve operational efficiencies.

Now just as important as its geographical location are a range of other advantages. These include:

- Free trade zones
- Easy customs procedures
- Open sky policies
- Modern facilities

It is an exciting time for logistics in the region and the accelerated economic diversification initiatives across the board are offering a new set of logistics opportunities which forwarders such as Kuehne + Nagel, DHL and CEVA are looking to seize.

To access the data charts below [subscribe to GSCI](#).

Figure 10: Freight forwarding M&A activity across regions (2013 – 2022)



Source: Ti

Figure 11: Freight forwarding M&A activity across sectors (2013 – 2022)



Source: Ti

6.1 Asia Pacific

In 2021, the Asia Pacific was the largest freight forwarding market, but the research shows that in 2021 only Kuehne + Nagel had made an acquisition in this region.

6.2 The Americas

In 2021, the Americas wasn't the primary market for investments and M&As. From the top 20 freight forwarders under review, only one company made an acquisition in the region.

6.3 Africa and the Middle East

Despite repeatedly showing interest in developing Asian countries, Africa remains a key market for CEVA Logistics, which it considered to have tremendous potential for growth due to the rise of the middle class, population growth and advancing technology, driving consumption in recent years. The company has continued to expand its freight forwarding network in Africa, announcing in early 2021 the acquisition of one of the top ten logistics players in the Moroccan market.

6.4 Europe

Europe has been primarily eyed for expansion by Kuehne + Nagel, which has pursued recent acquisitions to strengthen its presence there.

To access all of the data in this whitepaper and Ti's coverage of the wider freight forwarding landscape, subscribe to Ti's [Global Supply Chain intelligence platform \(GSCi\)](#). GSCi contains all the logistics data you need to support and develop your freight forwarding and supply chain strategy:

- **Market size and forecasts:** 2021 market sizes & growth rates, 2022 projections & forecasts to 2026
- Weekly **freight rate benchmarking data** for ocean, air & road
- **Market segmentation** by air & sea freight
- **Market share data** by revenue & volume for air & sea
- **Digital forwarding landscape** analysis
- In depth analysis of **Ti's 2022 Digital Freight Forwarding Survey**
- Ti surveys & interviews on **future market trends**

Visit ti-insight.com/product/gsci to find out more, or to arrange a free, no obligation preview contact - Michael Clover mclover@ti-insight.com

ABOUT TI

Ti Insight is a leading logistics and supply chain market research and analysis company providing:

- Supply Chain and Logistics Market Research Reports
- Global Supply Chain Intelligence (GSCi) online knowledge platform
- Consulting and Market Research projects
- Training, Conferences and Webinars.

Ti has acted as advisors to the World Economic Forum, World Bank, UN and European Commission as well as providing expert analysis to the world's leading manufacturers, retailers, banks, consultancies, shipping lines and logistics providers.

Expertise includes:

- Analysis of corporate strategies of leading express, freight forwarding and logistics companies.
- Global usage and perception studies of shipper and logistics provider behaviour.
- Micro-economic analysis of key logistics segments: express, freight forwarding, road freight, contract logistics, warehousing, air cargo, shipping and e-commerce logistics.
- Analysis of supply chain strategies employed in industry vertical sectors: pharmaceutical, fashion, high tech, oil and gas, consumer, chemical, cold chain, automotive and retail.
- Market sizing and forecasts of key logistics segments and vertical sectors.
- Intelligence on emerging markets logistics sectors in Asia, Africa, Latin America, Eastern Europe and Middle East.

What Sets Ti apart?

- Led by leading industry experienced experts
- Globally recognised and trusted brand
- Global Associate Network provides a multi-country, multi-disciplinary and multi-lingual extension to Ti's in-house capabilities
- More than fifteen years of knowledge delivery to global manufacturers, retailers, banks, consultancies, shipping lines and logistics providers
- Unique web-based intelligence portals
- On-going and comprehensive programmes of primary and secondary research.

For further information about Ti or any of its products and services, please contact Michael Clover, Head of Commercial Development: [Email: mclover@ti-insight.com](mailto:mclover@ti-insight.com)

LICENCE AND COPYRIGHT

Ti reports contain copyrighted material. The user may not modify, publish, transmit, participate in the transfer or sale, create derivative works or in any way exploit, any of the content, in whole or in part. Except as otherwise expressly permitted under copyright law or these Terms, no copying, redistribution, retransmission, publication or commercial or non-commercial exploitation of downloaded material will be permitted without the express written permission of Company and the copyright owner.

You are permitted to print and download extracts from this report for your own private use on the following basis:

- (a) no documents or related graphics are modified in any way;
- (b) no graphics are used separately from accompanying text; and
- (c) any of our copyright and trade mark notices and this permission notice appear in all copies.

You are permitted to use the documents which we supply to you for your own legitimate purposes. The documents (or access thereto) may not be sold or offered for sale to third parties, whether in whole or in part.