Transport & Logistics Barometer

2022 mid-year analysis

M&A deals, joint ventures and strategic alliances
in the transport and logistics industry

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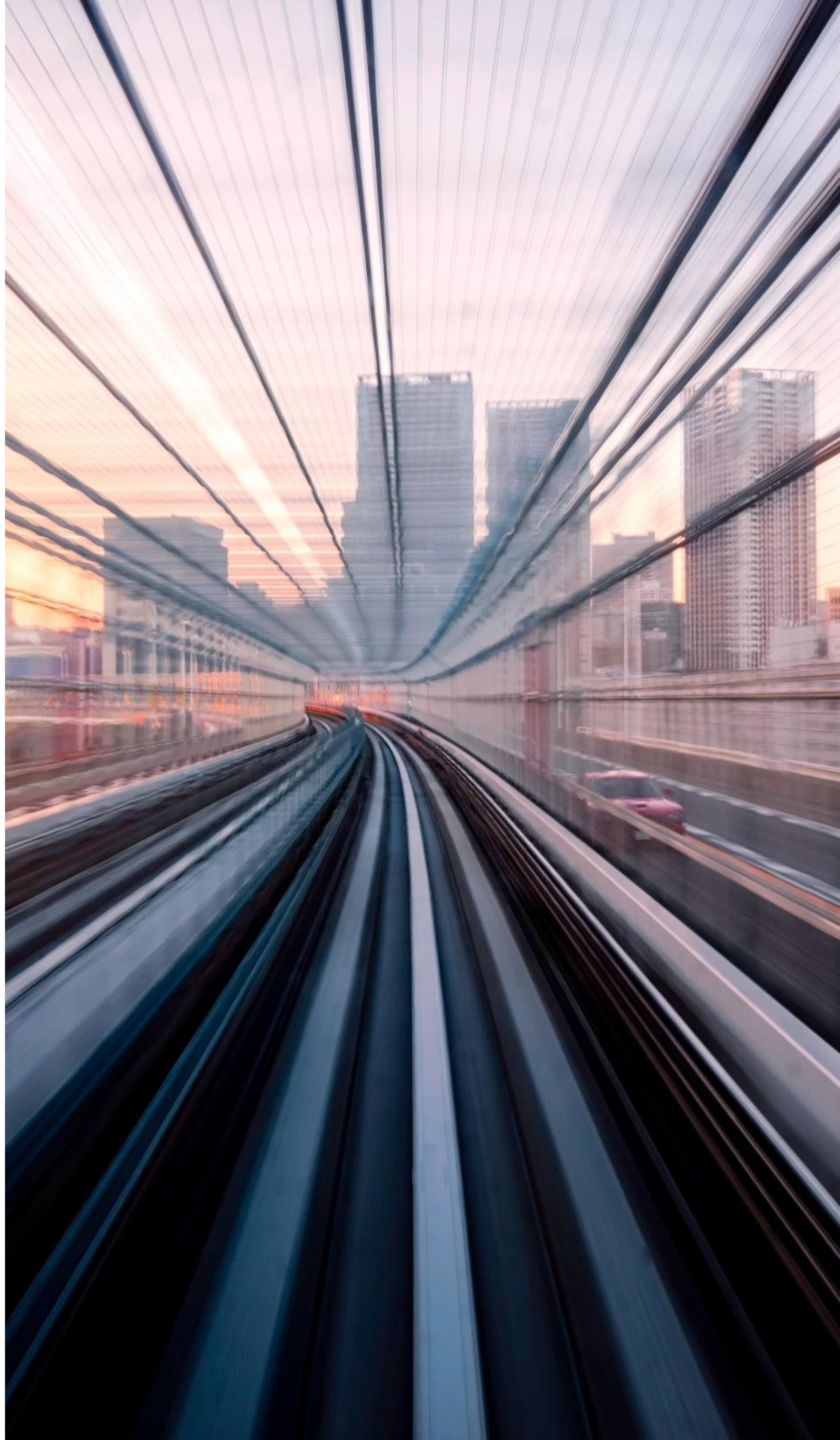
Agenda



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Highlights

Highlights

129

mergers and acquisitions were announced in the transport and logistics (T&L) industry in the first half of 2022. Although this represents a decrease compared to the previous half-years, activity remains at a fairly strong level – except in China, where deal activity is at the weakest level in 10 years (only 15% of the total number of deals globally). The largest deal announcement between Blackstone, Italy's Benetton family and Atlantia ($52 billion) drove the total deal value to $125.9 billion – the highest per half year since 2017. A further 18 megadeals, deals with a value >$1 billion, were announced. Strategic investors continue to gain ground in the buyer base with a share of 46% (2021: 44%); however, they made up for only 28% of the total deal value. This is because the Atlantia takeover involves financial investors and is alone responsible for about 40% of the total value of all deals.

Logistics and Trucking

remain the driving force in global M&A activity, accounting for 50% of all announced deals; and has witnessed a mix of deals in a variety of businesses, including, for example, DB Schenker, which agreed to acquire USA Truck in a $435 million take-private deal. In addition, growth ambitions and the quest for more control over supply chains have driven M&A activity in H1 2022. The major shipping companies like MSC, CMA CGM etc. continued their efforts to evolve into integrated logistics providers through acquisitions in targets outside their core business. Overall, freight-related targets accounted for 72%, slightly down from 75% in 2021, meaning that the upward trend of recent periods for freight-related targets has been interrupted, at least temporarily.

The Russia-Ukraine war

has impacted freight transport and logistics significantly but is evaluated to be manageable overall. The sharp rise in energy and labour costs resulting from the war is the most severe factor, particularly in Europe, as freight transport and logistics companies usually operate on slender margins. These challenges, however, have only added to pre-existing delays and price hikes resulting from the COVID-19 pandemic. Passenger transport has been less affected by the severity of commodity price increases and significant disruption to supply chains.

2.5%

is the projected growth of GDP in the European Union in 2022, a decrease from the 4.0% predicted before the outbreak of hostilities at the beginning of the year. This is according to the most likely scenario, "Accelerated deglobalisation", in our Strategy& analysis. With the exception of Russia, where the sharpest drop in GDP is expected (-9.8%), we observe that the negative impact of the war on other geographies is not large compared to their baseline cases. However, strengthening the global economy will require concerted international cooperation and focused moves to address the underlying problems.

In H2 2022

the outlook for the subsectors of the T&L industry looks basically positive, provided that the general geopolitical situation does not deteriorate. We expect M&A activity to remain at a similar level. However, this is subject to considerable uncertainty. Lower valuations, the drive for market share, the expansion of service offerings and enhanced resilience will still trigger some mergers and acquisitions. In this context, factors like ESG, people, and technology agendas of the target companies are increasingly gaining attention.

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Key issues for the industry

Growth momentum decelerated

After the second half of 2021, which was marked by an increased imbalance in supply and demand, severely disrupted supply chains and repeated new COVID-19 measures by individual countries that burdened global flows of goods and particularly people, 2022 was supposed to be the year of post-COVID-19 recovery and growth. Instead, it is evolving into an uncertain period of geopolitical realignments, persistent supply shortages, and broadening price pressures. A development that has been apparent for some time is accelerated by the current environment: A reordering of the world is emerging, and the nature of globalisation is changing. Countries interact less integratively and collectively; instead, they put their national sovereignty and own economic policy interests first, as seen with UK's Brexit or Trump's nationalism in the US. The consequence for global supply chains is that the relocation of production processes or nearshoring are gaining in importance.

The Tracking Index for the Global Economic Recovery (TIGER*), a twice-yearly analysis produced by The Brookings Institution and The Financial Times, reveals that a marked loss of growth momentum was evident from mid-2021. In both advanced and emerging economies, real activity and financial markets both started to fall in 2021. The emergence of the Russia-Ukraine war in late February 2022 and the resurgence of COVID-19 in China exacerbated this already fragile situation.

The Kiel Trade Indicator analyses the trade flows of countries and regions throughout the world based on an analysis of the movements of container ships. After global trade surpassed its pre-crisis level in January, it fell by 5.6% in February, with a significant slump in exports in Russia. In the EU, the effects were felt with a slight delay in relation to the sanctions imposed by Western governments. According to the indicator, imports decreased by 3.4% in March compared to the previous month, and exports by 5.6%. Trade data stabilised in April, but since then, container ship congestion, which has now reached the North Sea, has led to a deterioration again.

The aftermath of the pandemic is still being felt in the transport and logistics industry as well, and the recovery is again being disrupted by newly emerging challenges. However, the sub-sectors are at different stages and are affected to different degrees by current happenings.

*The Brookings-FT TIGER index compares indicators of real activity, financial markets and confidence with their historical averages, both for the global economy and individual countries.

Industry indicators show continued divergence in T&L

Passenger transport

According to CER, rail passenger volumes and revenues continue to recover from COVID-19, but were still well below pre-pandemic levels in March (-24% and -20%, respectively, vs March 2019). However, both have been trending upward since February, after the recovery curve fell somewhat between October 2021 and January 2022.

Air travel also continues to recover from the pandemic-related slump, despite China's strict COVID-19 measures and the Russia-Ukraine war. In May, industry-wide revenue passenger kilometres (RPKs) increased 83.1% YoY, and global passenger volumes were 31.3% below pre-pandemic 2019 levels. The domestic markets are recovering well, with the exception of China, where renewed travel restrictions have led to a sharp decline in RPKs, capacity and load factors. European airlines performed strongly in April and May and remained a leading force in the industry's recovery. They could even increase air traffic between Europe and other regions in recent months.

Worldwide port calls for cruise ships recovered modestly in 2020 and 2021. The first quarter of 2022 revealed a strong rebound at -15.6% in March compared to 2019, according to the European Maritime Safety Agency (EMSA).*

Freight transport and logistics

In air cargo, 2022 started with the lowest year-on-year growth rate of industry-wide cargo tonne kilometres (CTK) since December 2020. The Omicron wave spreading in China and the Russia-Ukraine war both have caused capacity constraints and supply chain disruptions with a negative impact on air cargo. In May, industry-wide CTKs were 8.3% lower year-on-year. Europe and Asia were the regions with the sharpest declines in available cargo capacity. During COVID-19, the halt in passenger air traffic and the resulting loss of belly freight capacity, as well as the shift of some sea freight to air freight during the Suez Canal blockage, combined with increased demand due to e-commerce, led to a surge in air freight rates. Since the peak in December 2021, rates have fallen until they started to rise with some delay from April onwards in the wake of the Russia-Ukraine war on the routes China-Europe and China-North America.

*only ships with a passenger capacity of 500 or more passengers were included
Sources: CER, IATA, EMSA

On the Europe-North America routes, rates have decreased from April as they are less affected by sanctions and re-routing.

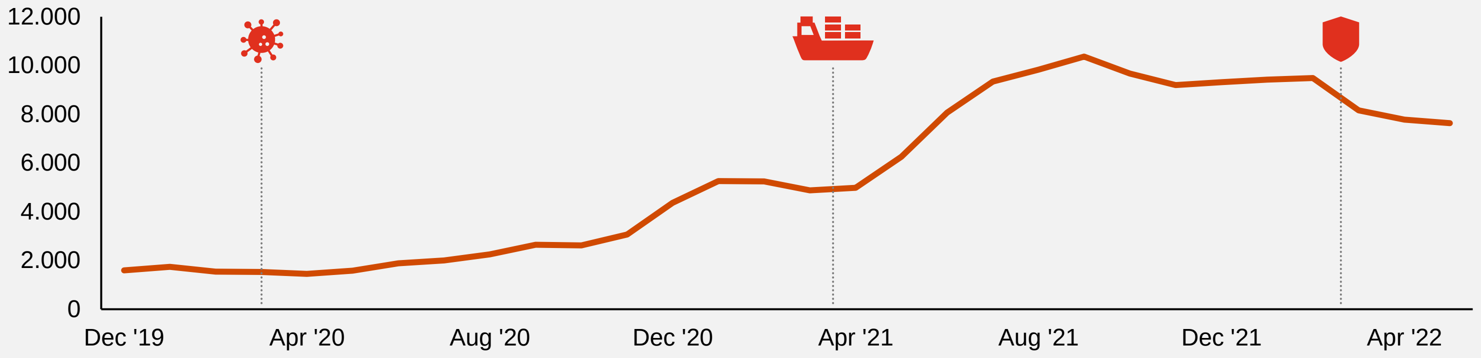
Container freight rates remain at significantly elevated levels compared to the pre-pandemic period, but have steadily declined since their peak in September 2021. This shows that the loss of capacity during COVID-19, port closures and the Suez Canal blockade have had a significantly greater impact on rates than the current geopolitical tensions. Also, the increased oil price has not yet affected shipping rates. The Baltic Dry Index was at a similar level at the end of June as it was at the beginning of 2022. In recent months it was subject to some fluctuations, but reached 3000 points in May, the highest level in half a year before it started to fall again.

In European road freight, the impact of inflation on the supply side, particularly on diesel prices, has led to an all-time high in rates in the first quarter of 2022. The restriction of oil supplies from Russia to Europe has led to further upward pressure on prices.

After further approaching pre-crisis levels at the end of 2021, European rail freight volumes decreased from the beginning of 2022 to -9% in March (vs. 2019). At the same time, revenues remained stable at -4 to -5%.

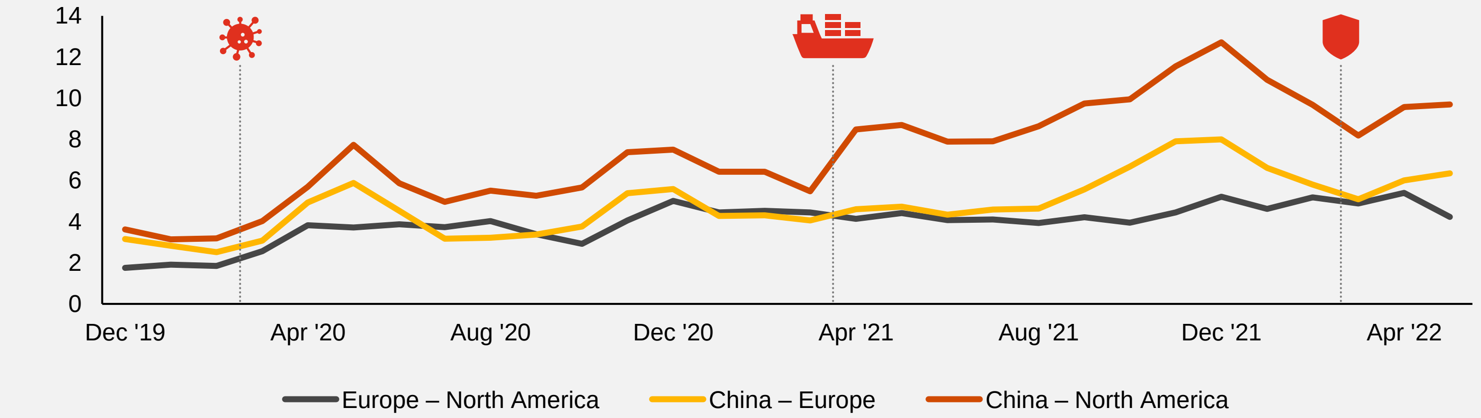
Sources: Transport Intelligence, CER, PwC analysis

Global container freight rates (in USD)



Sources: MacroMicro, in: Statista

Global air freight rates (in USD per kg)



Sources: Air Cargo News, in: Statista

Uncertainty clouds M&A euphoria from 2021

After an absolute record M&A year in 2021, deal activity in the T&L industry slowed in the first half of 2022. A total of 129 deals worth at least $50 million were announced in H1 2022, compared to 175 in H2 2021 and a five-year average of 134 deals per half-year.

Across all industries, the total number of deals has decreased dramatically in the first half of 2022 (-29% vs H2 2021). The relative share of mergers and acquisitions in the T&L industry, however, has slightly improved to 3.7% from 3.4% in 2021, indicating other industries to be more affected by the current volatility in financial markets, inflationary pressures, rising interest rates and geopolitical tensions, all of which contribute to overall uncertainty.

After increasing in recent years, the share of freight-related targets in the T&L industry has moved slightly downwards to stand at 72% (2021:75%); passenger-related targets accounted for 28%. A significant difference is seen in the average deal value, which is almost four times higher for passenger-related targets ($2,070 million) than for freight-related targets ($553.1 million).

The share of strategic investors (46%) in the buyer base increased further compared to the previous year. However, strategic investors accounted for only 28% of the total deal value (2021: 52%), while financial investors gained significantly due to the biggest deal announcement in H1 2022, which distorts the picture to a certain extent.

Among the 19 megadeals (2021: 47), one particularly large deal was announced in the first half of 2022, surpassing even the $33.5 billion Canadian National Railway / Kansas City Southern deal from 2021. Blackstone and Italy's Benetton family have joined forces through investment vehicle Schemaquarantatre to launch a tender offer ($52 billion) for the remaining 66.618% interest in the Italian infrastructure group Atlantia. The company's activities include more than 14,000 kilometres of toll roads in 16 countries across Europe, the Americas and Asia, as well as the operation of airports in Italy and France. Once completed, the offer would mark the largest private equity-backed take-private deal for a European listed company.

Apart from that, it is not surprising that the Logistics and Trucking subsector remains the driver of global M&A activity in T&L, accounting for half of the announced mergers and acquisitions. The shares of the other subsectors have not changed significantly either: Shipping remains the second strongest subsector (16%), while Rail comes in last (2%). See more data on subsectors in the appendix on page 28.

	2016	2017	2018	2019			2020			2021			2022
	Total	**Total**	**Total**	1H19	2H19	**Total**	1H20	2H20	**Total**	1H21	2H21	**Total**	1H22
Number of deals	237	283	227	138	123	261	104	152	256	149	175	324	129
Total deal value ($bn)	119.9	134.2	116.2	68.4	74.3	142.7	37.1	62.7	99.8	99.1	119.8	218.9	125.9
Average deal value ($m)	506.1	474.1	511.9	495.9	604.1	546.9	356.8	412.7	390.0	665.4	684.4	675.7	976.3

Sources: PwC analysis, based on Refinitiv

Deal activity in T&L mirroring GDP

After reaching a high in Q2 2021, real GDP growth rates started to decline in the second half of 2021 (Q3: 4.7%; Q4: 4.6%). This development has continued in the first six months of 2022: global GDP decreased to 4.2% in Q1 and to 3% in Q2; concurrently, the number of deal announcements in T&L fell from 90 in Q4 2021 to 66 in Q1 2022, and further to 63 in Q2. It seems that M&A activity – overall and in T&L – is mirroring the GDP development as a result of the numerous uncertainty factors. We will continue to monitor this as the year progresses.

The development of the major shipping companies trying to gain more influence in global supply chains and acting as integrated logistics providers has continued in H1 2022. In addition to investing in their core business and terminals, shipping companies are using their high gains from the pandemic years in particular to enter the air freight business. The imminent sale of Alitalia's successor ITA Airways, has received a lot of attention. Ultimately, MSC and Lufthansa joined forces and stated a joint offer, while Hapag-Lloyd agreed to acquire a 10% stake in Lufthansa in April. Kuehne Aviation also acquired a 5% stake in Lufthansa in March and has since increased its shareholding. AP Moller-Maersk acquired Pilot Freight Services, a U.S.-based international and domestic supply chain provider with cross-border solutions into Canada and Mexico, for $1.68 billion. CMA CGM has been particularly active with a number of transactions, including air freight (Air France-KLM), parcel services (Colis Privé) and automotive logistics (Gefco).

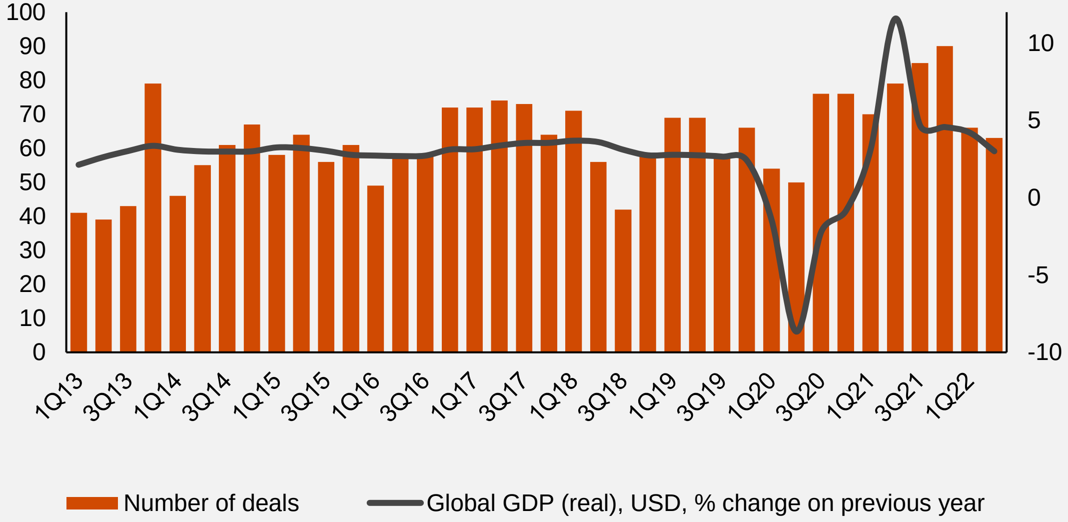
The aviation subsector is experiencing fresh consolidation activity anyway. While during the pandemic, the main focus was on averting insolvencies, partly through state aid, some weakened airlines are now seeking repositioning and growth. One example is the intense bidding battle between Frontier Airlines and JetBlue Airways for Spirit, the largest low-cost airline in the US.

Besides, the T&L industry witnessed a mix of deals in a variety of businesses, including, for example, general freight trucking. DB Schenker agreed to acquire USA Truck in a $435 million take-private deal as part of its ambition to enhance the presence in North American land transport and to become a full-service supply chain provider in the US.

In addition to aiming to increase reach and influence in supply chains, T&L players are buying IT expertise as part of their digitisation efforts. For example, DB Schenker has bought the logistics software specialist Bitergo and German forwarder Fr. Meyer's Sohn acquired the data platform Evertracker.

Sources: PwC analysis, based on Refinitiv

T&L M&A deals
(no. of deals and change in real global GDP)



Source: PwC analysis, based on Refinitiv and IHS

Strategic alliances decreased further

The number of strategic alliances was already at a low level in the last two years; however, it declined further in the first half of 2022; and thus developed according to the GDP trend.

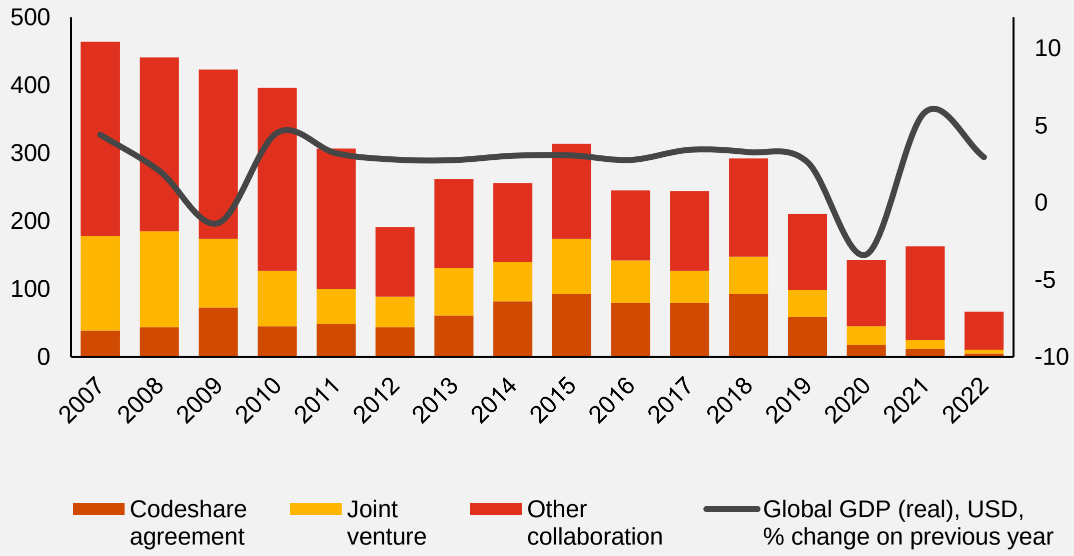
The number of codeshare agreements has still not recovered compared to pre-COVID-19 times, and only a few joint ventures were announced. For example, the joint venture built between PonyTron, the autonomous trucking business unit of Pony.ai and Sinotrans, which is part of China Merchants Group – one of China's leading freight forwarding and logistics companies –, will develop a smart logistics network featuring autonomous trucking technologies and an intelligent fleet of more than 100 trucks. The first step was taken in June 2021 with a pilot program for long-haul logistics. This is one example of a number of other cooperation agreements concerning autonomous commercial vehicles.

Apart from that, the majority of cooperations in transport and logistics are in the fields of decarbonisation and alternative fuels. For example, Gasuine, HES International and Vopak have signed an agreement to jointly develop an import terminal for green ammonia as a hydrogen carrier that will be operating in the Port of Rotterdam from 2026. Air Liquide, Airbus, Korean Air and Incheon International Airport are cooperating to develop a concept for the use of hydrogen at Incheon International Airport and create an airport infrastructure ecosystem to deploy hydrogen-powered commercial aircraft.

Some airlines have entered into cooperation agreements to expand their network or offer value-added services, like Malaysia Airlines Berhad and Qatar Airways. However, there have also been moves in private aviation. One example is McDan Group of Companies and Dream Flights International, providers of private aviation charter services, which have entered a strategic alliance that will provide private air travel and cargo transport operations on a global scale.

Sources: PwC analysis, based on Refinitiv

T&L strategic alliances
(no. of alliances announced and change in real global GDP)



Source: PwC analysis, based on S&P Global Capital IQ and IHS

3

Geopolitical disruption

Geopolitical disruption

Russia's invasion of Ukraine has wrought significant damage to a global economy that was already struggling to recover from the shock of the COVID-19 pandemic. In transport and logistics, both Russia and Ukraine are relatively minor players in global comparison with some other major markets.

The combined turnover of the Russian T&L industry is estimated at $19.6 billion (2020; Road, Post & Courier, Rail, Water, Cargo Handling, Warehousing and Travel Agency & Air). In Germany, for comparison, the T&L market size is about €280 billion; in Europe, approximately €1.115 billion (2020; scope: EU plus Norway, Switzerland and UK).

Due to its access to the Baltic Sea, the Black Sea, as well as the Caspian Sea and the Pacific Ocean, Russia has long been well-connected and, therefore, enjoys a significant presence on the world maritime transport market, specialising in raw materials and commodities, such as crude oil and oil products.

Known as the "bread basket" of the world, Ukraine and Russia are among the top exporters of a variety of agricultural products such as wheat and sunflower oil products. 9% of the worldwide volume of wheat shipments was exported via Ukrainian ports before the war. The current halt on the export of these food staples is hitting the least developed countries especially hard. Somalia, for example, sources 100% of their wheat from Ukraine (approx. 68%) and Russia (approx. 32%).

Impact on key regions

When viewed from a worldwide perspective, the grim general picture in world trade is set to continue. Overall global trade and growth momentum are likely to be stymied for a prolonged period. However, a more detailed analysis from Strategy& and others reveals the uneven impact of the war on specific territories and regions, and on a range of economic indicators.

For example, the rise in the global market price of oil and gas resulting from the war has not affected the whole world in a uniform way. Whereas many countries in Europe have suffered a severe impact due to their high dependency on Russian oil and gas, Gulf nations in the Middle East could be said to be indirectly benefiting from the war, given their high energy reserves and limited domestic demand. By virtue of its relative energy self-sufficiency, the United States is also fairly insulated from the worst effects of the war.

Moreover, some countries and regions, such as Japan, the United States and the Middle East, have very minor import and export relationships with Russia, Belarus and Ukraine, and so there was little that could be affected in this respect. At the other end of the scale, however, the ramifications of the war have been dramatic. For example, the Baltic states (Lithuania, Latvia and Estonia) have very developed trading relationships with the countries directly involved in the war, as well as being highly reliant on Russian gas. Other European countries are, too, dependent on Russian coal, oil and especially gas. This dependence was particularly high in Germany, Italy, Austria and most countries in Central and Eastern Europe.

Sources: World Economic Forum, Statista, Top 100 in European Transport and Logistics Services, UNCTAD, PwC analysis

Impact on various industries

In order to measure the impact of the war on various industries, we have analysed three different factors, or transmission channels, depicted and explained in the graphic on the right:

- Commodity price
- Supply chain
- Trade flow

Commodity price

Several industries have been highly affected by the uncertain energy supply and the rising costs of commodities resulting from the war in Ukraine. The transport and logistics industry (both passenger and freight transport) is one example, as are adjacent sectors such as automotive, industrial manufacturing, chemicals, and consumer goods and retail.

Increased oil, gas and fuel prices significantly raise costs for activities such as chemical refinement or road transport. Moreover, the difficulty in substituting commodities means that the standard fuels for heat-reliant manufacturing processes and machines cannot be quickly replaced.

There is a particular shortage of commodities that emanate principally from Russia and Ukraine, with the latter, for example, previously supplying around half of the global supply of neon gas necessary for the manufacture of semiconductors.

Commodity price (base goods)

Increased prices for foods and metals due to ingredients stemming from RUS/ UKR (wheat, fertilizer,…)

Soaring energy prices in Europe (oil, natural gas, …) since RUS invasion of UKR

Supply chain (industrial/ manufacturing goods)

Direct – Import of manufacturing parts (such as wiring harness for automotive) produced mostly in UKR

Indirect – Import disruption of mining* products increases food retail prices/ industrial production

Trade flow (investments and other financial entanglements)

Export exposures to RUS/ UKR (markets, credits, deposits)

Tightening financial conditions and capital outflow/ reduced FDIs** and capital raising activities in RUS

Sources: S&/PwC analysis

Note – RUS = Russia; UKR = Ukraine; *For instance, bauxite (major source of aluminum or noble gases); **Foreign direct investments; Source: Strategy& analysis

Supply chain

Strategy& analysis reveals that the industries most seriously hit in respect of the supply chain transmission channel have been automotive, industrial manufacturing, chemicals, consumer goods and retail. In these industries, international supply chains optimised for efficiency have limited resilience to unexpected and adverse events.

Indeed, supply chains are often extremely complex, with interlocking dependencies throughout the system, which, when disrupted, create a highly damaging domino effect. For example, cars that are made up of more than 10,000 non-substitutable parts cannot be assembled unless all such required parts are available. To make matters worse, the optimisation of supply chains for maximum efficiency using just-in-time production means that there are no stockpiles to boost resilience.

These issues have hit industries that were already experiencing widespread bottlenecks and delays. Indeed, Russia's invasion has further compounded supply chain congestion and pre-existing shortages of parts and goods that resulted from the COVID-19 pandemic and the ensuing lockdowns throughout the world.

Parts are not the only elements of the jigsaw in short supply. The ready availability of labour has also become a pressing issue. Before the war, for example, Ukrainian labour was widely used in freight transport and industrial manufacturing and is now largely inaccessible, with personnel either enlisting in armed forces or trapped in the conflict zone.

Reconfiguring the supply chain in a fundamental way in order to overcome all these obstacles is something that cannot be achieved overnight. Alternative sources of required parts or labour that are now beyond reach as a result of the war, such as Russian software developers, take considerable time to identify and then secure.

Trade flow

Our analysis of the trade flow transmission channel reveals that individual industries, in particular the energy sector, have been severely hit by the conflict.

Most Western companies in Russia, such as retail and energy players, have been urgently divesting or completely writing off Russian business units. Others have had assets expropriated.

The rising uncertainty within Russia itself has led to the postponement and cancellation of mergers and acquisitions and IPOs, further damaging the domestic economy. Moreover, in order to avoid reputational damage, many Western companies halted exports of goods and services to Russia even before the imposition of sanctions.

Russia's relatively low level of importance within the global economy does limit the overall impact within this transmission channel. However, one plausible risk to trade flow arising from this war would be if China strengthens its strategic and economic alliance with Russia, accelerating the trend towards Western decoupling from China.

Impact of the war on the T&L industry

How is the T&L industry affected by the Ukraine war and the resulting disruptions in global trade? As a service industry that usually follows its customers' moves – into new geographies, technologies or business models – it is an obvious assumption that T&L is equally affected as the industries it is serving. But the picture is more faceted, with specific challenges for freight and passenger transport and the various transport modes.

1. Freight transport and logistics

Commodity price

Of the three transmission channels, commodity prices have been the most affected by the war. Given the aviation, shipping and road freight transport sectors' high reliance on energy supply, they have keenly felt price rises for kerosene, crude oil and diesel. This development began well before the start of the war, but the war has exacerbated the situation. For example, the price of kerosene at the end of March was 39% higher than in the previous month and represented a major cost factor. Although oil supply from Russia will be phased out and replaced in much of Europe by the end of 2022, this will not alleviate rising prices, at least in the short term.

Nevertheless, transport operators and freight forwarders can often pass on these costs to their customers in the form of surcharges. Thus, many shipping companies and also other companies in the logistics chain have so far proven to be resilient and have reported high profits.

Sources: IATA, S&/PwC analysis

Supply chain

Some congestion and entanglement of logistics supply chains have arisen with regard to trucks, planes and spare parts. A number of routes have had to be diverted in order to avoid conflict zones, resulting in extra costs and extended delivery times, especially on routes between Europe and Asia. However, despite the disruption of highly optimised and therefore vulnerable supply chains, agile and swift response has to date rendered these challenges manageable.

Rail and New Silk Road

In particular, China's web of trading routes through Russia and Belarus, a key element of the country's regime's ambitious Belt and Road initiative (BRI), has been severely disrupted as a growing number of logistics companies have ceased BRI-related operations through these countries.

Given the very significant rise in rail freight traffic along these routes in the years leading up to the war, the cost of such disruption is self-evident. For example, according to official data from the China State Railway Group, the value of goods transported by freight trains from China to Europe increased from $8 billion in 2016 to $74.9 billion in 2021, while the number of trips rose from 1,900 to 14,000.

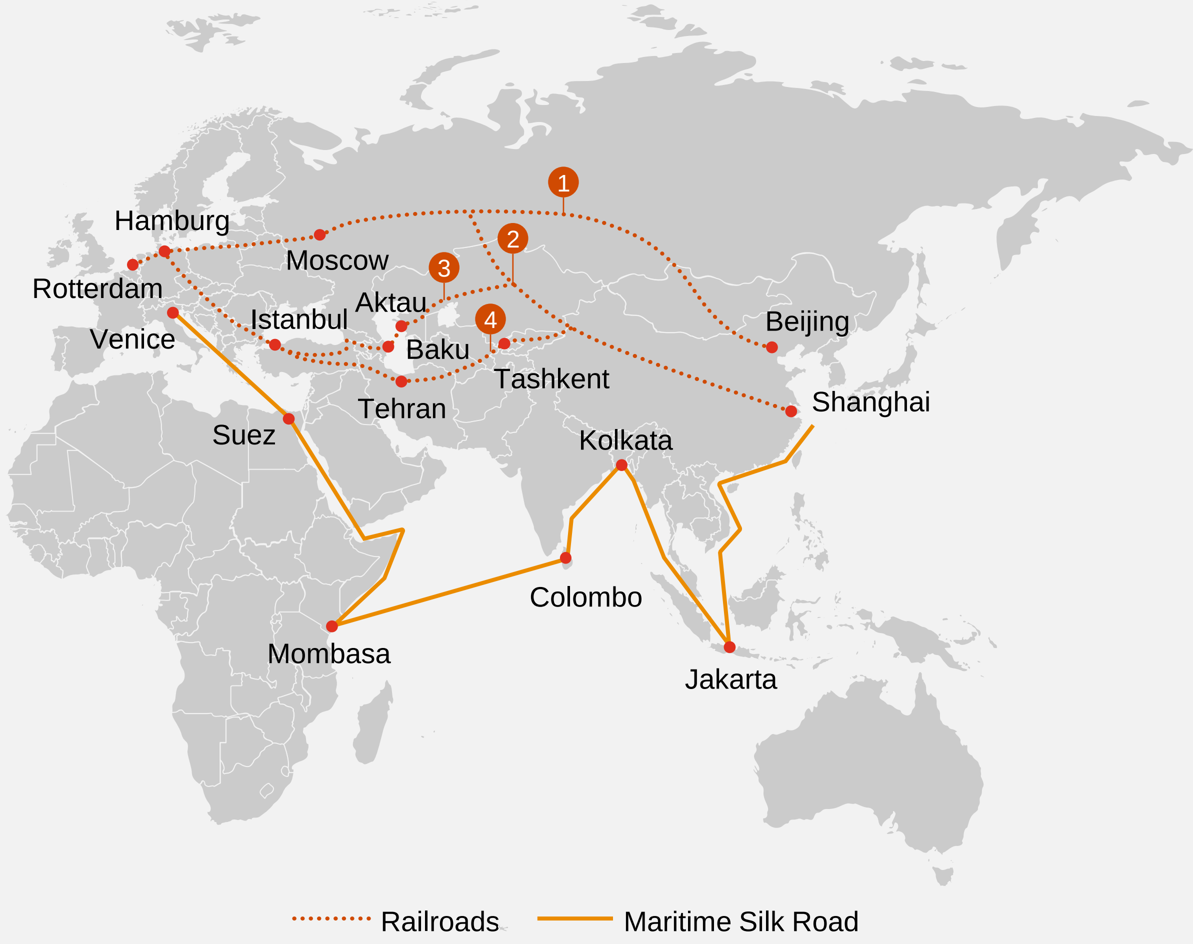
Rail transport on the New Silk Road runs along three routes: The main route in the north runs through Russia, Belarus and Poland, and in the south through Kazakhstan, Russia, Belarus and Poland. In 2021, about 1.5 million TEU on 15,000 trains were carried along these routes. This corresponds to a volume of approximately 27,500 TEU per week.

Since the beginning of the war, the routes via Russia remain available but are largely avoided by shippers due to concerns of sanctions violations and confiscation. As a result, the route via Kazakhstan, Azerbaijan, Georgia and Turkey has gained importance. On this route, containers are shipped from Aktau (Kazakhstan) to Baku (Azerbaijan) via the Caspian Sea. To increase capacity on this route, twice as many ships will be used for transit from September 2022. The expected transport volume is then forecasted at approximately 6,000 TEU per week. This represents less than 25% of the capacity of the main route and will consequently only relieve demand to a limited extent.

As a fourth route for rail transport, the south route via Turkmenistan and Iran is possible. However, this is the least developed connection and is politically problematic due to sanctions against Iran and parts of the connection are still under construction.

Sources: IW Kurzbericht, GTAI, European Parliament, trans.info, duisport, TITR, DB Cargo

Routes of the New Silk Road (existing and under construction)



Source: PwC, based on Germany Trade and Invest (GTAI)

Nevertheless, the amount of cargo itself is limited by the number of trains which can be operated on those connections and their capacity per train.

The main advantage of rail transport along the New Silk Road is the combination of faster carriage than by ship while offering lower costs than air freight. On the main northern routes via Russia, rail freight traffic from Asia to Europe currently takes about 20 days, with the target of optimising transit time to as little as 10 days in the coming years. The transport along the middle route across the Caspian Sea takes up to a week longer. In comparison, seaborne carriage from Asia to Europe via the Suez Canal takes about 45 days.

From today's perspective, rail routes through Russia appear unlikely to recover even in the medium term. So, if the advantage of faster transit times becomes insignificant, this will lead to an uncertain future for rail transport on the New Silk Road.

Air freight

The resulting congestion in alternative ground routes, coupled with the bottlenecks and delays in global maritime supply chains, has led to a rise in air freight shipments.

The air cargo transport between Europe and Asia represents about 20% of the global CTKs. In addition to the increased kerosene prices, the closure of Russian and Ukrainian airspace represents another new obstacle. Significant re-routing on the Europe – Asia air corridor is necessary. In the case of the route Frankfurt – Tokyo, this amounts to a 1,000 km detour, resulting in higher kerosene loadings which reduces cargo volume by up to 20% in terms of weight.

Sea freight

As for maritime trade, several commercial vessels have been subject to aggression by armed forces, while the general access to ports in the region has been severely restricted, if not outright prohibited. Sanctions led to a steep decline in port calls in Russian ports (-40%) and in the Black Sea in general as Ukrainian ports closed down completely (-33% tonnage in the Black Sea) due to the blockade by the Russian Navy and sea mines. Especially the sea mines will endanger accessibility in the future.

Freight rates across all segments are expected to stay high as a result of the war since Europe will need to source oil, coal as well as grain from destinations that are further away, which will increase demand for tankers and bulk carriers. This also coincides with COVID-19 outbreaks in China, which already increased the ongoing supply-demand pressure for shipping. Going forward, availability and cost of bunker fuels, as well as access to seafaring personnel, challenge the shipping industry.

The sector has already been affected, as large numbers of Ukrainian seafarers, who often occupy senior and important roles, return home to enlist. Ukraine provides more than 5% of the worldwide supply of officers serving on board merchant ships and an additional 2.8% of ratings. Russia likewise is an important seafaring nation, too, with 8.4% of officers and 12.2% of ratings being Russian nationals.

Road freight

In 2020, 10.7% of EU road imports and 7.8% of export volumes were linked to Russia. Since the start of the war, most major carriers (DHL, UPS, FedEx) have stopped operations to Russia and Ukraine; however, a number of smaller operators remain active with no commitment on lead times.

In general, road transport is less affected by sanctions due to the predominantly domestic use of this mode of transport. However, the steep increase (40%) in the price of diesel fuel which followed the abandonment of Russian diesel fuel by the large oil companies weighs heavily on the profitability of carriers.

In addition to the heightened fuel prices, road transport companies are likely to face severe capacity problems due to a lack of truck drivers, which already existed before the war but is likely to amplify if Ukrainian drivers return to their home country. The European trucking market is highly dependent on Ukrainian and Belarussian long-distance lorry drivers. It is estimated that around 200,000 Ukrainian nationals are employed as truck drivers in Poland and Lithuania, which amounts to roughly 33% of all drivers.

Sources: IW Kurzbericht, GTAI, European Parliament, trans.info, duisport, TITR, DB Cargo, IATA, Allianz

Trade flow

The impact on the trade flow transmission channel has been limited. Even before the war, European logistics companies had few investment relationships with their Russian counterparts. If and when the war abates, Western companies will still be deterred from future investment in the country, particularly as the Russian government expropriated more than 500 leased aircraft with a total value of approximately $10 billion following its ban on many international airlines from using its airspace. It is fortunate that this act of state confiscation has not to date created undue challenges in the global supply of aircraft.

In regions outside of Europe, the impact of the war on the three transmission channels has often been negligible. Transport and logistics companies in India, for example, have not curtailed activities in Russia. Nor have there been significant suspensions of deliveries or closures of facilities by Indian operators. In other major economies further afield, such as Australia, transport and logistics companies have very few direct links to the region.

Overall impact on freight transport and logistics

Most of the freight transport and logistics industry usually operates on slender margins. Therefore, the sharp rise in energy and labour costs resulting from the war has had a severe impact, particularly in Europe. Moreover, these challenges have only added to pre-existing delays and price hikes resulting from the COVID-19 pandemic. Supply chain congestion and labour shortages are likely to continue to cause problems for some time. Overall, we evaluate the impact of the war on the freight transport and logistics industry to be significant but manageable overall.

2. Passenger transport

The war has certainly had some impact on the passenger transport, travel and hospitality industry, but again this is proving to be controllable.

Commodity price

Rising fuel costs have inevitably had a major impact on the cost structure of the transport industry. Moreover, the economic uncertainty throughout Europe, caused in part by the war, has had a noticeable effect on the Western hospitality sector. Cancellation of existing bookings, or delays in other bookings, have adversely affected an industry that was beginning to mount a slow recovery from the trauma of the downturn brought about by the COVID-19 pandemic.

Tourism from Russia, Ukraine and Belarus has been virtually eliminated as a result of the war, and is unlikely to recover for an extended period of time. However, this will have a negligible impact on the industry as a whole. Russia and Ukraine together account for 3% of global international tourism spending (albeit more in certain localities and an even lower proportion elsewhere).

The commodity price transmission channel has been the most adversely affected within this industry. Due to a high dependence on fuel, price hikes resulting from the war have led to a significant rise in costs, particularly in the aviation and maritime passenger transport sectors. Moreover, the impact of the increased expenditure on fuel has been aggravated by the longer distances that now need to be travelled, as operators divert routes in response to sanctions, continuing war and the closure of regional airspace.

In the aviation sector, further cost pressure will inevitably arise from higher insurance premiums and leasing rates for aircraft to reflect ongoing war risks.

Supply chain

The impact on the supply chain transmission channel has been low, as the passenger travel and hospitality sectors have limited reliance on supply chains emanating from the conflict region. However, the provision of aircraft maintenance and spare parts to Russia has been suspended by all major Western suppliers, placing the future operational capability of the Russian aviation industry in jeopardy.

Trade flow

In terms of trade flow, travel opportunities for Russian and Belarussian citizens have been heavily restricted by sanctions, the exclusion of Russian banks from the international payment system Swift, and the suspension of Western credit card networks in Russia. Meanwhile, foreign commercial activity in the Russian travel sector has been largely paralysed. A very uncertain future awaits travel firms with existing capital ties in Russia, while the seizure of 500 aircraft by the Russian government will be sure to deter future investment in the aviation sector in particular.

Overall impact on passenger transport

The impact of Russia’s invasion of Ukraine has been very varied. Some regions, most notably Europe, have suffered considerable adverse effects, while others may even be said to have derived a certain economic benefit. The freight transport and logistics industry has been affected more than passenger transport, travel and hospitality, mainly due to the severity of commodity price increases and significant disruption to supply chains.

Sources: UNTWO

M&A activities with Russian participation

In the T&L industry, 28 transactions, regardless of the deal value, with clearly attributable Russian participation have already been completed or are in the planning so far in the first half of 2022. Compared to global M&A activity, no megadeal with Russian participation has been announced in the last 2.5 years. The transactions over the past three years have primarily been in the Passenger Ground and the Logistics and Trucking subsectors.

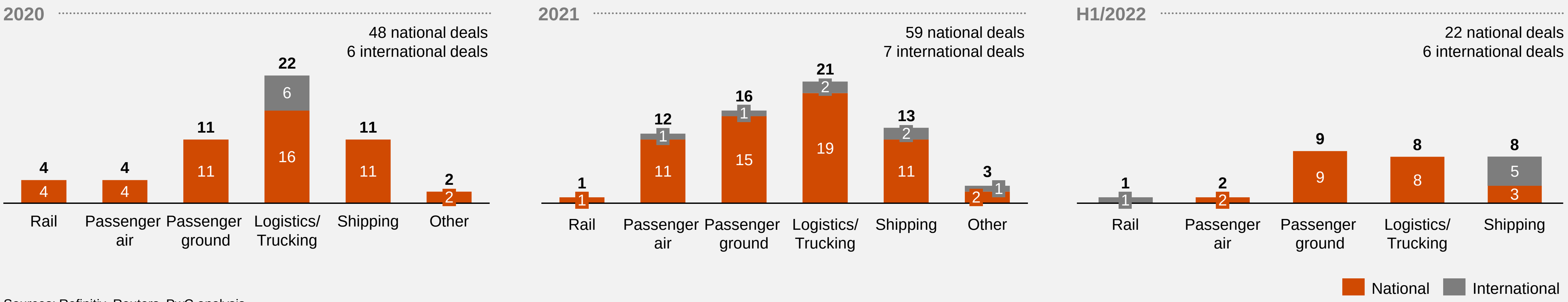
As in the past, the current M&A activities are predominantly domestic transactions. Outside Russia, only transactions with targets and buyers from Cyprus were carried out in H1 2022. This involves a total of six transactions, which are related to the Shipping and the Rail subsectors.

Globaltrans Investment plc (CYP), for example, is in the process of acquiring the remaining 40% stake in BaltTransServis OOO, one of the largest rail freight operators in Russia. Globaltrans is a Cyprus-based holding company with a strong Russian background in its management team and makes almost all of its revenues in Russia.

Another recent international transaction with Russian participation is the sale of 30.75% shares of Global Ports Investments PLC (based in Cyprus) to the Russian company Delo-Tsentr OOO. Global Ports is one of the major container terminal operators in the Russian market. The owner of the 30.75% stake is APM Terminals, a subsidiary of Danish shipping company Maersk, which explained its planned divestment with the Russia-Ukraine war and operational challenges.

The above-mentioned international transactions show that, due to the foreign headquarters, it is an international transaction, but both buyer and target carry out significant operations in Russia. This underlines the strong national focus on Russia's transport and logistics market. Russian participation in international transactions is generally hardly verifiable due to the blurring of the origin of funds through constructs of offshore companies.

M&A deal structure



Sources: Refinitiv, Reuters, PwC analysis

Exiting Russia

Many Western transport and logistics companies have reacted to the Russia-Ukraine war and have stopped their operations to/from Russia as a first step. DB Schenker, for example, is discontinuing its land, air and ocean freight transport to/from Russia until further notice. The only exception to this is currently the transport of medical goods and baby nutrition.

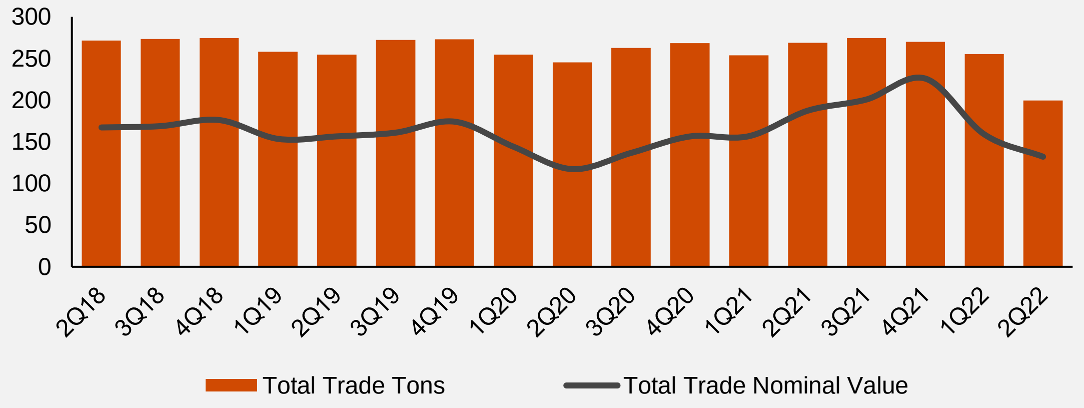
Shipping companies like Ocean Network Express (ONE), Maersk or CMA CGM are also suspending their Russian deliveries and no longer take bookings for goods from Russia. As of the beginning of May, Maersk has ended its service offerings in Russia. It was announced that Maersk would completely leave the Russian market and sell all its assets in Russia, including its 30.75% stake in Russian port operator Global Ports Investments, which will lead Maersk to write off €718 million in connection with this decision, according to the Danish shipping group.

Swiss transport company Kuehne + Nagel announced in June that it will sell its Russian business to its previous General Director for the Russian cluster, Perry Neumann, as part of a management buy-out. Previously, Kuehne + Nagel had already suspended its Russian business since March.

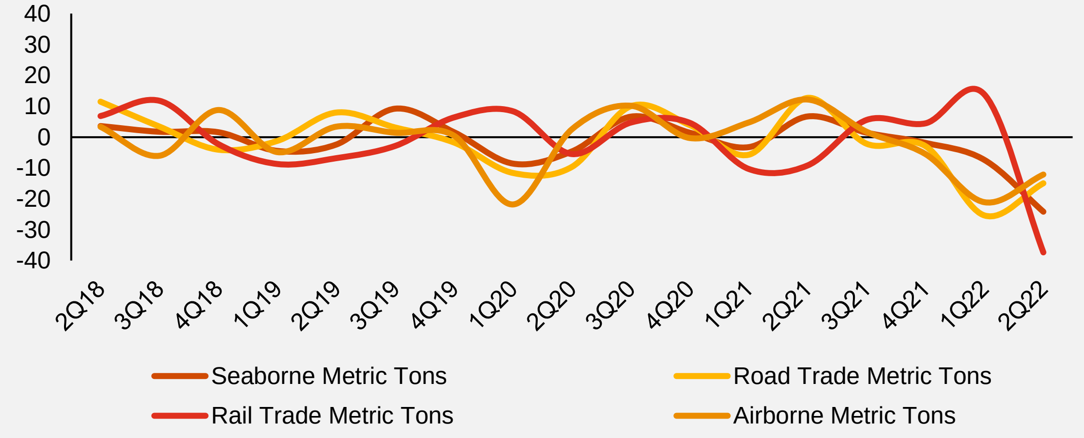
Thus, while many Western companies and many international conglomerates have suspended their Russian business, only some have already sold their local assets or have announced plans to exit the market completely. As a reaction, Russian logistics companies try to expand trade with nations that do not support Western sanctions. For example, Russian freight forwarders Inteco and Swift Transport Group have jointly created liner operating subsidiaries to offer container shipping services between ports in Russia's Far East and port cities in China.

Sources: DB Schenker, Maersk, DVZ, THB

Total Trade with Russia by Quarter (Global imports and exports to and from Russia: Volume in mn. Metric Tons and value in USD bn.)



Quarter-on-Quarter Percent Change in Russia Trade Volume by Mode (Global imports and exports to and from Russia in Metric Tons)



Sources: PwC analysis based on IHS Connect GTAS Data

4

Outlook

Macroeconomic impact

Prior to the outbreak of the Ukraine war, the prospects for 2022 seemed broadly positive. However, in view of the war and ongoing disruptions in China (as a result of the government's zero-COVID policy), global economic organisations have revised their forecasts for growth downward since their last estimates. According to the International Monetary Fund (IMF), world economic output is expected to fall from 6.1% growth in 2021 to an estimated 3.6% in 2022. OECD projections are in the same range at 3%, down from the 4.5% forecast last December.

Whether this forecast will materialise, however, remains highly uncertain and will depend on developments in the coming months. There are some risks, including a prolonged and intensified war, an escalation of sanctions against Russia, a more pronounced than assumed slowdown in China, and a resurgence of the pandemic from new virus mutations. In addition, Europe is facing an upcoming crisis due to increasing inflation and soaring energy prices in particular.

Global inflation projections stand at nearly 9% in 2022 and will pose a greater challenge to central banks to find a proper balance between limiting price pressures and securing growth. Interest rates are anticipated to rise as central banks tighten policy, which will put pressure on emerging and developing economies, but will have a remarkable impact on European economies as well.

Overall, the various geographies are unevenly affected, and their recovery will progress at different speeds.

Deglobalisation set to accelerate

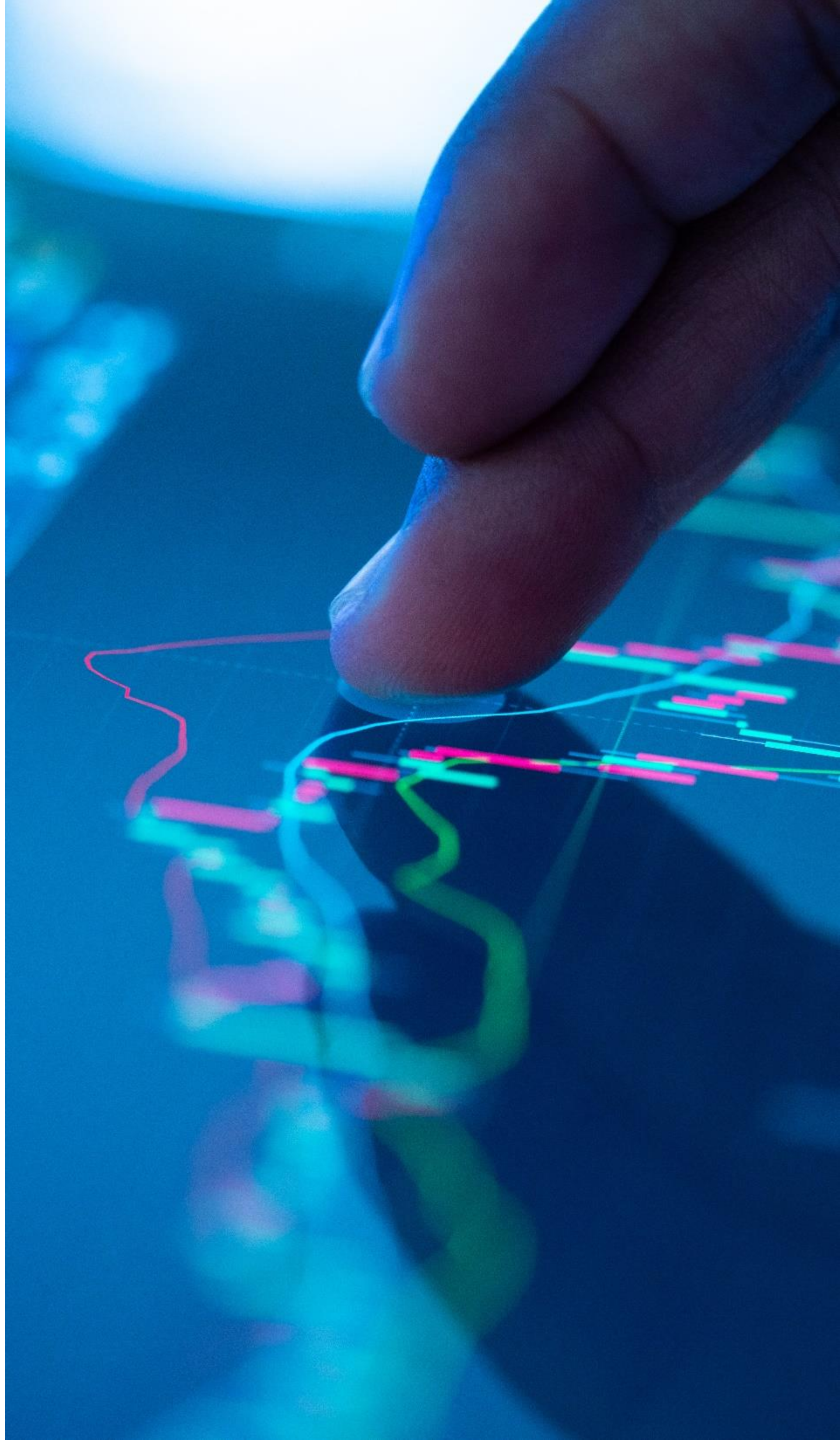
Focusing on the Russia-Ukraine war again, we have outlined the following five broad potential outcomes of the war from a global perspective, based on the extent of the likelihood and severity of various economic and political eventualities:

- **Scenario 1:** Swift resolution of the conflict
- **Scenario 2:** Accelerated trend towards deglobalisation
- **Scenario 3:** Reappearance of the Iron Curtain that characterised the Cold War
- **Scenario 4:** Global polarisation
- **Scenario 5:** Global military escalation

Strategy& analysis, supported by interviews with subject matter experts and economic and political leaders, leads us to the conclusion that Scenario 2 is the most likely to occur. This scenario rests on the assumption of a prolonged war, sustained by the supply of Western defence equipment to aid Ukraine. Such an extended war would result in ongoing sanctions against Russia, continued economic uncertainty, curtailed trading activity, and a widespread return of significant inflation, possibly even stagflation.

While the war is having a negative impact on individual geographies, it is not as pronounced as may have been assumed − with the exception of Russia, which stands to experience the most severe impact. Even though Russia has already been able to counter falling demand and the sanctions effects from Europe with new and additional demand from Asian countries. Overall, many regions will be forced to reassess the regional balance of their trading relationships.

Sources: IMF, OECD, S&/PwC analysis



GDP growth

According to our aggregation of reputable sources, GDP figures throughout the world will be adversely affected by the war and its repercussions.

If the accelerated deglobalisation scenario transpires, GDP growth in the European Union for 2022 will be 2.5%, a considerable fall from the 4.0% predicted before the outbreak of hostilities at the beginning of the year. In Germany, the previously predicted GDP growth of 3.7% for 2022 is now set to slide to 2.2%. For the United States, the respective figures are 4.0% and 3.4%; for Russia, they are 3.4% and -9.8% – a dramatic collapse.

Strengthening the global economy will require concerted moves to address underlying problems, including measures to tackle the humanitarian crisis, prevent further economic fragmentation, limit pandemic-related disruptions, take steps to contain geopolitical tensions, maintain global liquidity, and target measures such as infrastructure spending and invest in sustainability to enhance long-term productivity rather than bolster short-term demand.

This will require strong international cooperation. In addition, policy makers should not lose sight of longer-term goals like digital transformation, new ways of working and cleaner production and transportation.

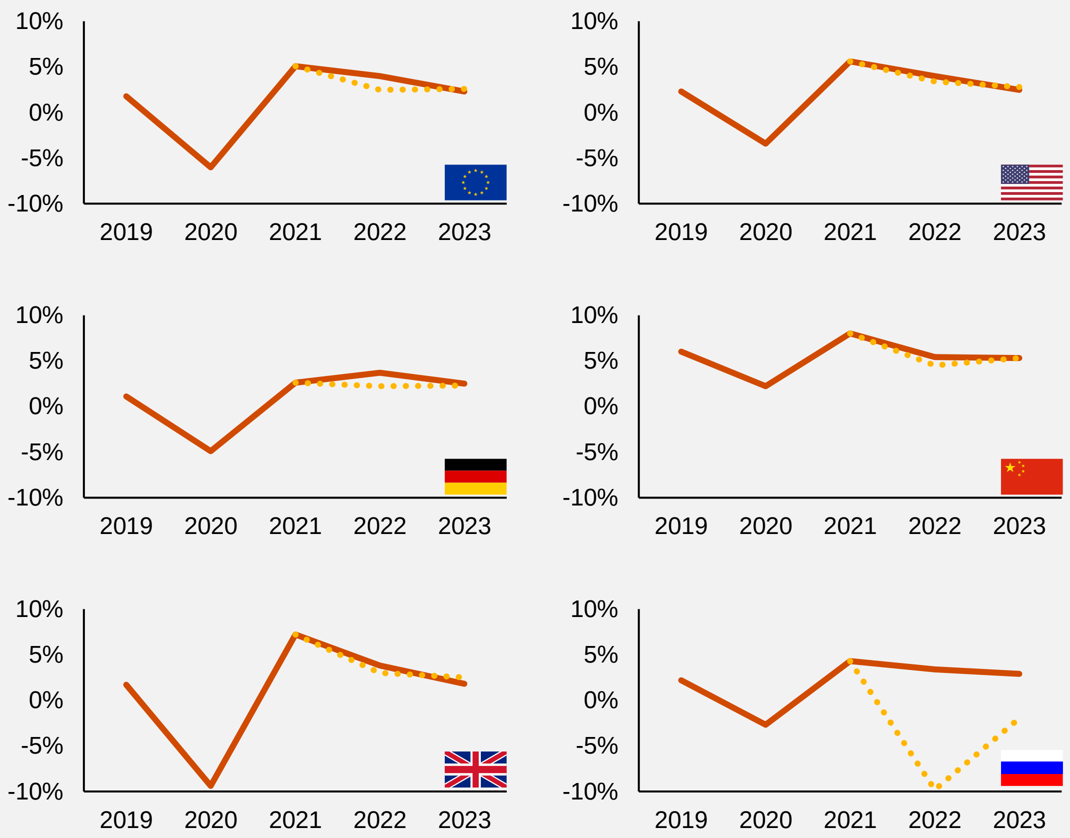
Impact on the T&L industry

Despite these bleak overall economic prospects, we expect the T&L industry to develop positively over the next month. Nevertheless, the impact of the skilled labour shortage will become a growing problem in almost all subsectors, from truck drivers to IT specialists or ground staff. The reasons are many and include the loss of staff during the pandemic, high absence rates due to recurring COVID-19 waves, the war, but also other industries seeking and attracting staff.

In the shipping subsector, the market momentum seems largely in favour of shipping rates remaining high in 2022. Supply chain disruptions will continue to keep fleet productivity low, and new vessel capacity additions are likely to be absorbed by demand growth and longer distances. New vessel deliveries will not be sufficient to reduce freight rates until 2023 at the earliest. The order book in May amounts to nearly 10% of the fleet, 72% of which is planned to be delivered by the end of the year 2023. In container shipping, the May orderbook is 6.6 million TEU and represents 26.4% of the current fleet, and other segments, such as bulkers and tankers, are showing a larger number of orders as well. Environmental requirements and related investments, as well as increasing bunker prices, may reduce the margin of shipping companies not only concentrating on the container business.

Sources: S&/PwC analysis, Danish Ship Finance

Real GDP growth evaluation for most likely scenario*



Base
Scenario

*The charts show real GDP developments for key geographies. The lines in orange represent according to our base scenario prepared before the Ukraine war in January 2022. The dotted lines in amber represent our projections under the scenario 'Accelerated deglobalisation'.

According to IATA, low consumer confidence, high jet fuel prices and inflation are causes for concern, but international passenger bookings are showing a positive trend that is expected to continue throughout the summer. RPKs are projected to increase by 97.6% YoY in 2022 (-17.6% vs 2019), while CTKs are projected to grow 4.4% YoY. Cargo is anticipated to continue to boost the sector's performance, even though cargo yields are moderate due to the additional belly capacity of passenger planes. Overall, the aviation sector is expected to remain in deficit in 2022 with a loss of $9.7 billion and will need to focus on cost pressures from increased fuel costs.

The European road freight market is expected to grow by 4.9% in real terms with all European markets recovering from the pandemic, according to Transport Intelligence's COVID-19 Tracker 2022. The market continues to be influenced by a number of supply- and demand-side factors that impact demand and growth, particularly inflation. Prices in the European road freight market continue to increase while the shortage of drivers, especially from Russia or the Ukraine due to the war, will put additional pressure on the market.

Outlook for T&L deal activity

In the first half of 2022, we have seen a noticeable slowdown in industry momentum as measured by M&A deals, joint ventures, strategic alliances and venture deals. This development is certainly partly due to the Ukraine war and its consequences, but must also be viewed and interpreted against the backdrop of the record M&A year of 2021. This puts T&L in line with the general trend, as declining deal numbers can also be observed in other industries. As previously stated, significant risks and uncertainties remain (inflation, rising interest rates, etc.).

A reliable forecast of M&A activity in transport and logistics, therefore, hardly seems possible. Generally speaking, we do not expect a significant increase in deal activity, instead we anticipate a continuation of the trend from the first half of the year.

In addition to the risk elements already mentioned, which appear to be developing into a longer-term trend, there is another factor that could influence M&A activity. Concerns about a possible Eastern bloc formation under Chinese and Russian leadership could lead to a reluctance of Western T&L players to invest and make deals in and with China. A drop in deal activity with Chinese participation was already evident in the first half of 2022 which, however, can certainly also be attributed to the ongoing COVID-19 crisis in China. The longer this continues, the more it could have a negative impact on deal development in the coming months.

On the other hand, both corporates and private equity firms still have plenty of capital available to fund deals globally. This capital currently provides more opportunities for M&A investment as valuations decline with market volatility.

For strategic investors within the T&L industry, the main drivers for acquisitions remain digital transformation and extending the portfolio of service offerings. In this context, factors like ESG, people, and technology agendas of the target companies are increasingly gaining attention. Another deal driver will be increasing resilience and security. Leveraging more technology and gaining more control over the supply chain are expected to drive deal activity, reduce dependency and improve supply chains as transparency is increased. A strategic realignment of M&A priorities and approaches is undoubtedly critical to unlocking future growth for companies.

Sources: IATA, Transport Intelligence, PwC analysis

5

Appendix: Deals in figures, methodology, contacts

Megadeals = deals with a value of $1 billion or more

H1 2022: 19 deals, $98.3bn
2021: 47 deals, $161.0bn

Megadeals in H1 2022

Announcement	Target	Target nation	Buyer	Buyer nation	Deal status	Deal value ($bn)	Sector
Apr-22	Atlantia SpA (remaining 66.6% interest)	IT	Schemaquarantatre SpA (SPV of Benetton Family, Blackstone)	IT	Intended	52.06	Passenger ground
Jan-22	LeasePlan Corp NV	NL	ALD SA	FR	Pending	5.54	Other
Jun-22	DP World PLC (UAE assets)	UAE	Caisse de Depot et Placement du Quebec	CA	Pending	5,00	Shipping
Jan-22	Hillwood Investment Ppty (US logistics properties)	US	CBRE Investment Management	US	Pending	4.90	Logistics/Trucking
May-22	Ryder System Inc (90% stake)	US	HG Vora Capital Management LLC	US	Pending	3,98	Logistics/Trucking
Apr-22	Spirit Airlines Inc	US	JetBlue Airways Corp*	US	Intended	3.71	Passenger air
Apr-22	Hitachi Transport System Ltd (60% interest)	JP	HTSK Co Ltd	JP	Intended	3.50	Logistics/Trucking
Apr-22	Euronav NV (merger)	BE	FrontLine Ltd	NO	Pending	3.02	Shipping
May-22	Deliverr Inc	US	Shopify Inc	CA	Pending	2.10	Logistics/Trucking
Jun-22	Flughafen Wien (60% stake)	AT	Airports Group Europe (IFM Global Infrastructure Fund)	UK	Intended	1.75	Passenger Air
Jan-22	Lineage Logistics Holdings LLC (undisclosed minority stake)	US	Investor Group	US	Completed	1.70	Logistics/Trucking
Feb-22	Pilot Freight Services LLC	US	AP Moller-Maersk A/S	DK	Completed	1.68	Logistics/Trucking
May-22	FirstGroup PLC	UK	I Squared Capital Advisors (UK) LLP	UK	Pending	1,54	Logistics/Trucking
Jun-22	Zheijang Shangsan Expressway	CN	Zhejiang Communications Investment Group Co Ltd	CN	Pending	1.45	Passenger ground
Mar-22	Ningbo Meishan Baoshui Area (99.987% interest)	CN	Suqian Jingdong Zhuofeng Enterprise Management Co Ltd	CN	Pending	1.42	Logistics/Trucking
Feb-22	Siemens-Mail & Parcel Business	DE	Koerber AG	DE	Pending	1.31	Logistics/Trucking
Feb-22	Clipper Logistics PLC	UK	GXO Logistics Inc	US	Completed	1.26	Logistics/Trucking
May-22	Kintetsu World Express Inc	JP	Kintetsu Group Holdings Co Ltd	JP	Pending	1.24	Logistics/Trucking
Jun-22	Simhapuri Expresssway Ltd	IN	Indinfravit Trust	IN	Pending	1.15	Passenger ground

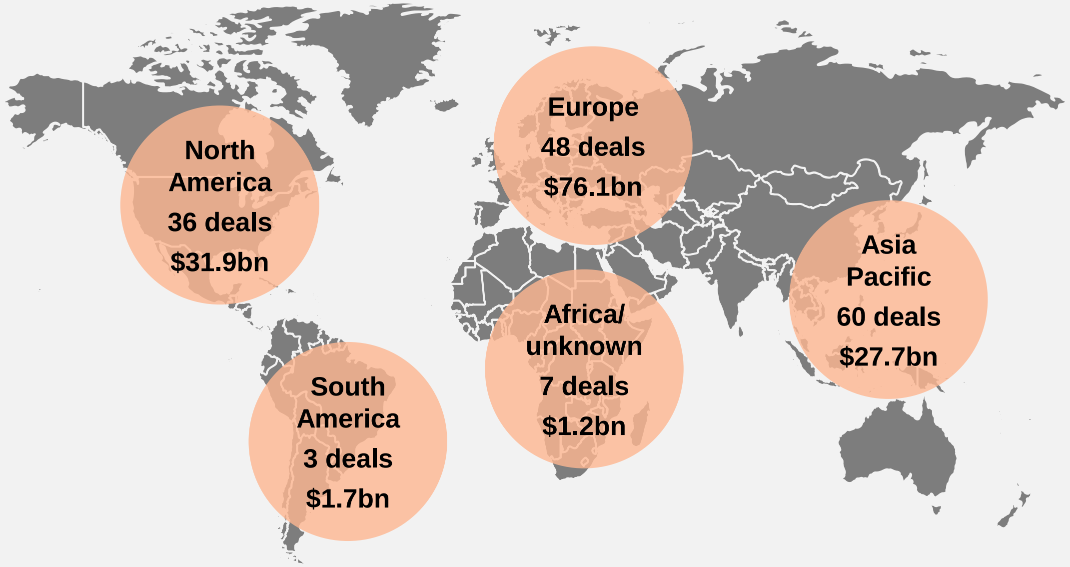
Sources: PwC analysis, Refinitiv; * Two competing Bidders: JetBlue and Frontier Group

Regions

In the first six months of 2022, Europe and North America have been the busiest regions in terms of overall deal value, mostly due to the large proportion of megadeals with participants from these regions. In Europe, the takeover bid for the Italian toll road operator Atlantia alone makes up for about three-quarters of the total deal value of all announced deals.

While Asia remains once again the region with the highest number of mergers and acquisitions, its leading position vis-a-vis Europe and North America is dwindling. This is mostly due to the slowdown of M&A activity in China. So far, we see only 19 deals with Chinese involvement, marking the lowest number of deals announced for the last 10 years. Consequently, the share of Chinese deals in all announced deals globally drops to an all time low of only 15%. Here we see a continuation of a trend from 2021, where we have seen that M&A announcements in Asia Pacific grew less dynamically compared to 2020 than in other regions – mostly because of a strong decline of M&A announcements in China in H2 2021. In our view, the ongoing COVID-19 outbreaks, the lockdowns and supply chain disruptions that go along with them and the slowing GDP growth are the main factors contributing to the slump in deal announcements in China.

	No. of deals	Value ($bn)	Ø value ($m)
Europe			
Local	33	70.2	2,126.8
Inbound	10	3.5	347.1
Outbound	5	2.4	486.8
Total	48	76.1	1,585.2
Asia Pacific			
Local	45	19.5	433.6
Inbound	9	6.7	747.7
Outbound	6	1.5	242.8
Total	60	27.7	461.6
North America			
Local	22	21.8	989.2
Inbound	4	2.2	541.0
Outbound	10	7.9	794.1
Total	36	31.9	885.2
South America			
Local	3	1.7	578.4
Inbound	0	0.0	-
Outbound	0	0.0	-
Total	3	1.7	578.4
Africa/ unknown			
Local	1	0.1	95.4
Inbound	2	0.3	145.5
Outbound	4	0.8	205.9
Total	7	1.2	172.8



Local = target and buyer in the region
Inbound = target in the region, but buyer outside the region
Outbound = target outside the region, but buyer in the region

An inbound deal in one region is also an outbound deal in another. Inbound and outbound deals are, therefore, recorded twice in the list.

Source: PwC analysis, based on Refinitiv

Subsector analysis

As in the previous year, deals with targets in the Logistics and Trucking subsector made up for half of the total number of transactions announced. The total deal value of these transactions comes in second only after the Passenger Ground subsector with the dominating Atlantia takeover bid. Compared to the previous period (H2 2021), the number of deals declined by 33%, but it is still in line with the average of 65 deals per half year during the past three years.

The second most active subsector was Shipping, reaching a total of 20 deal announcements, including nine infrastructure-related port transactions. Overall infrastructure-related deal activity remained stable compared to previous periods, apart from the impact of the Atlantia takeover bid on the deal value of toll road assets.

The recent trend towards an increasing share of freight-related deals at the expense of deals with passenger-related targets has stopped for now: While the absolute number of passenger-related deals remained on the same level, freight-related deal announcements receded by about 30% compared to the previous period.

All deals (incl. infrastructure)	1H2020		2H2020		1H2021		2H2021		1H2022	
Total value ($bn)	No. of deals	Total value	No. of deals	Total value	No. of deals	Total value	No. of deals	Total value	No. of deals	Total value
Passenger Air	13	7.3	14	8.9	20	17.6	16	31.7	14	9.8
Passenger Ground	13	4.6	22	19.0	13	9.0	20	13.9	17	60.1
Rail	2	1.2	5	1.3	4	36.2	4	3.2	2	0.2
Logistics and Trucking	52	10.5	73	19.5	73	25.1	98	53.3	65	36.9
Shipping	22	13.2	26	6.1	27	6.3	32	13.4	20	11.5
Other	2	0.3	12	7.9	12	4.8	5	4.4	11	7.4
Total	104	37.1	152	62.7	149	99.1	175	119.8	129	125.9

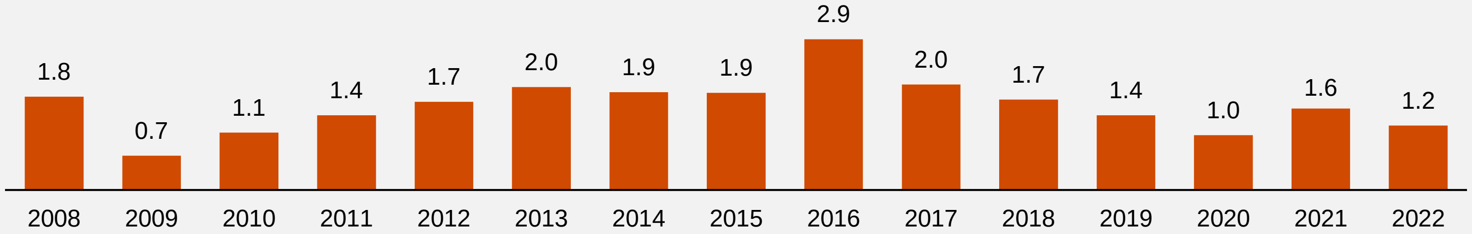
Infrastructure	1H2020		2H2020		1H2021		2H2021		1H2022	
Total value ($bn)	No. of deals	Total value	No. of deals	Total value	No. of deals	Total value	No. of deals	Total value	No. of deals	Total value
Infrastructure (Airports)	5	2.1	1	0.4	8	8.2	6	27.2	6	2.7
Infrastructure (Road)	6	4.0	19	18.3	10	4.2	8	9.8	9	56.6
Infrastructure (Ports)	10	8.6	12	2.3	11	3.1	13	8.6	9	6.8
Total (infrastructure)	21	14.7	32	21.0	29	15.5	27	45.6	24	66.1

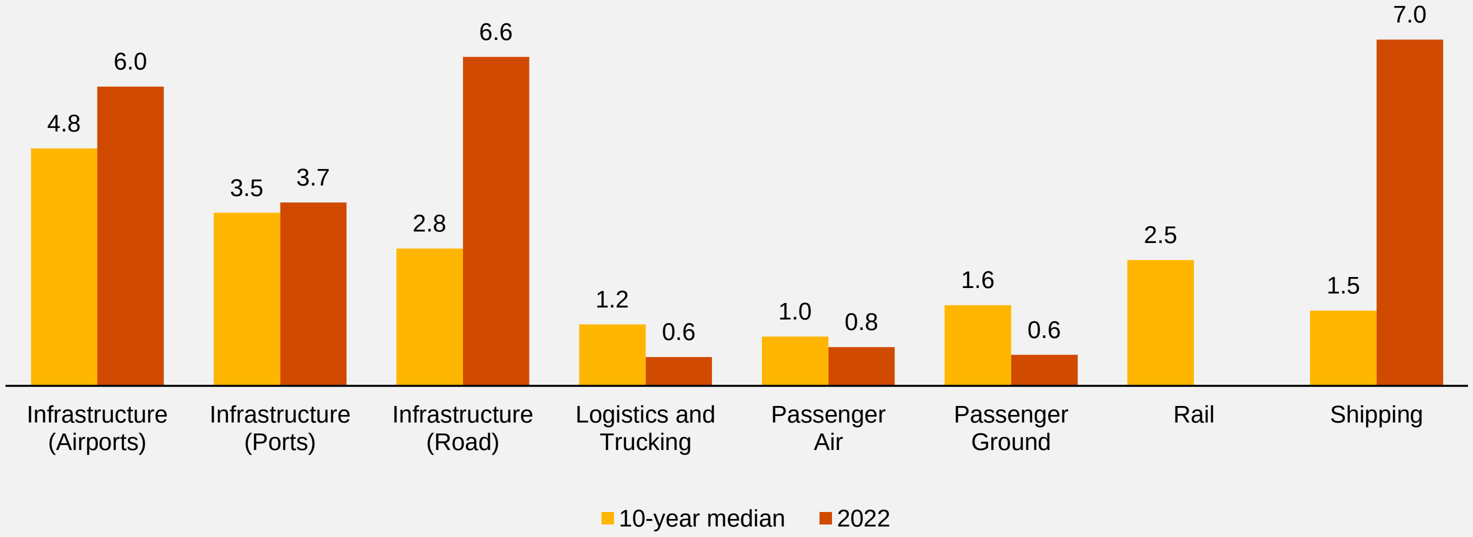
Freight vs. passenger	1H2020		2H2020		1H2021		2H2021		1H2022	
Total value ($bn)	No. of deals	Total value	No. of deals	Total value	No. of deals	Total value	No. of deals	Total value	No. of deals	Total value
Freight	76	26.1	109	29.4	107	37.4	136	70.4	93	51.5
Passenger	28	11.0	43	33.3	42	61.8	39	49.4	36	74.5
Total	104	37.1	152	62.7	149	99.1	175	119.8	129	125.9

Sources: Refinitiv, PwC analysis

Deals with a volume greater than $50 million

Median of value/sales multiples





Decline in prices reflects overall macroeconomic tightening

When the median of sales multiples rose to pre-COVID-19 levels in the last year, nearly reaching its long-term median at 1.8 times sales, we saw this as a sign for a "re-normalisation" of prices paid for T&L targets. The decline to 1.2 times sales can be seen in the context of rising political tensions and worsening economic prospects, as well as declining stock markets.

Looking at the T&L industries' subsectors, however, we observe a rather heterogeneous picture, with infrastructure-related targets still achieving valuations above their 10-year median, while companies in Logistics and Trucking and passenger-related targets are priced well below their long-term averages.

The extraordinarily high valuation for the Shipping subsector, reaching 7.0 times sales (2021: 1.2x), can be considered an outlier as it is based on very few transactions and mainly driven by Frontline's announcement to merge with Euronav.

Sources: Refinitiv, PwC analysis

Strategic investors slowly expanding share of deals

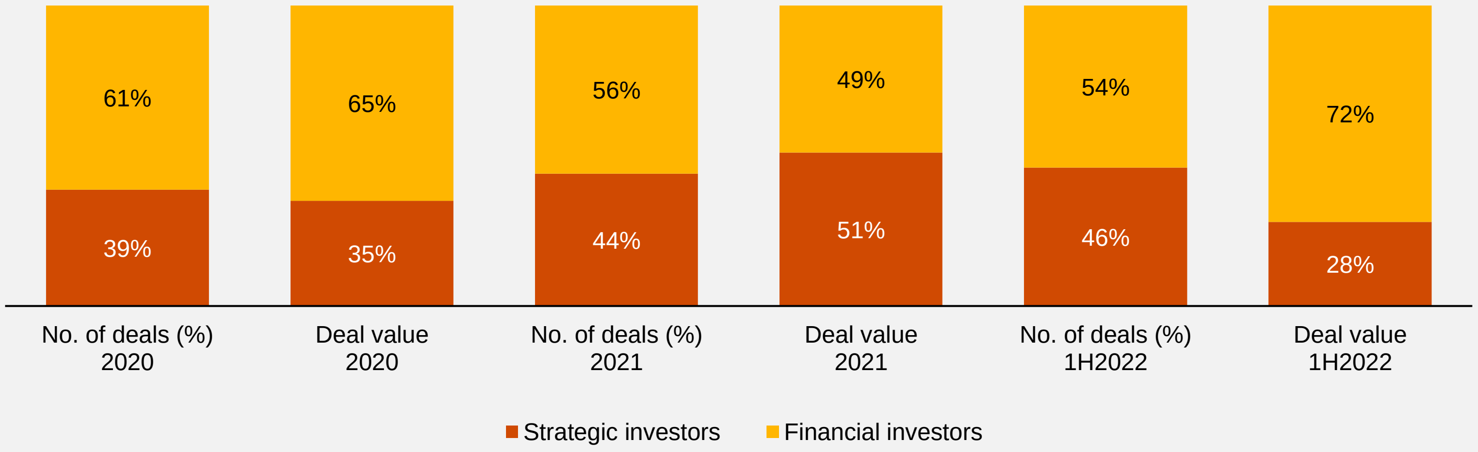
The share of strategic investors in deal announcements rose again to 46% of all deals announced, continuing the trend from 2021. Their plummeting share in overall deal value does not oppose this development, considering that the biggest deal this half-year, the takeover offer for Atlantia, involves financial investors and is alone responsible for about 40% of the total value of all deals. On the other hand, strategic investors were involved in more than half of the remaining, albeit smaller, megadeals, with eleven deals adding up to a total value of $24 billion.

The most attractive subsector for financial investors is, once again, Logistics and Trucking, including investments in warehousing assets, followed by Passenger Ground including toll roads and thus also the Atlantia deal. Shipping and Rail are the only two subsectors where strategic investors have announced more deals than financial investors in the first half of 2022.

Regarding the prices paid by financial investors, we see a strong decline from 2.8 times sales in the previous year to only 0.8 in the first six months of 2022. In contrast, strategic investors have paid a median sales multiple of 2.0 in 2022, slightly above their 10-year median of 1.7x.

Deals with a volume greater than $50 million

Number and total value of deals involving financial investors



	2020		2021		1H2022	
Total value ($bn)	No. of deals	Total value	No. of deals	Total value	No. of deals	Total value
Passenger Air	18	11.8	23	41.1	8	4.2
Passenger Ground	21	20.1	18	19.0	10	57.6
Rail	5	1.3	5	6.0	0	0.0
Logistics and Trucking	87	20.1	101	27.4	40	22.7
Shipping	14	5.5	20	4.7	6	6.0
Other	12	5.9	14	8.1	6	0.6
Total	157	64.8	181	106.3	70	91.2

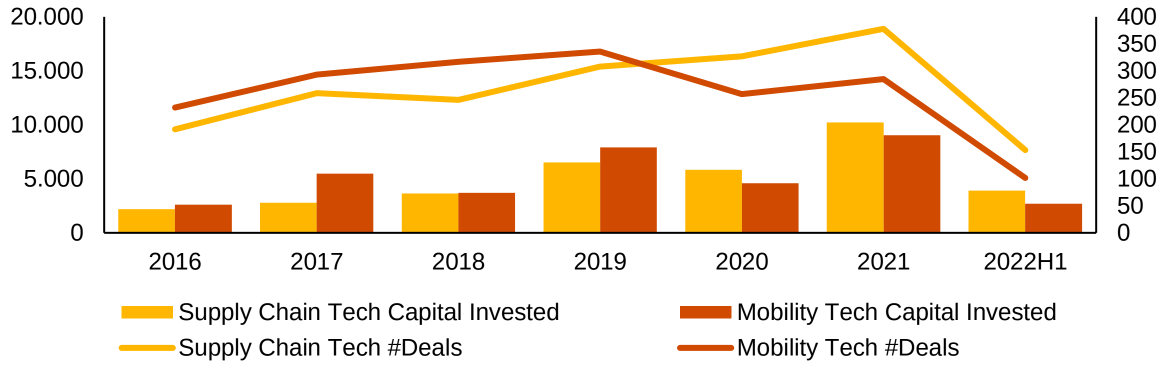
Sources: Refinitiv, PwC analysis

Venture capital pushes technology innovation

When we see venture capital activity as an estimate to gauge promising innovations and possible areas of disruption in the T&L Industry, it comes as no surprise that by far the most active verticals among investments in T&L related start-ups have been supply chain technology and mobility technology. Over the past years, investments in these verticals have increased continuously, only with a short dip in 2020 due to the impact of COVID-19 on overall deal making.

In the first six months of 2022, investors have focused on promising companies within logistics and road transport: Start-ups in these two sectors took up nearly 95% of the capital invested and nearly 90% of the total deals announced. Investments in companies from the aviation and shipping subsectors as well as transport infrastructure played only a minor role.

VC Investments in T&L related Tech Verticals
(no. of Deals and sum of Capital Invested in $mn)



Selected venture capital deals

Deal date	Company	Company nation	(Lead) Investor	Series	Deal value ($mn)
Jan 22	Flexport	US	Andreessen Horowitz (David George), MDS Private Capital	Series E	824
Jan 22	Bolt	EE	Fidelity Management & Research, Sequoia Capital (Andrew Reed)	Series F	628
Mar 22	Careem	AE	Public Investment Fund Saudi Arabia	n/a	446
Jan 22	Project44	US	Goldman Sachs Asset Management, Thoma Bravo, TPG (NAS: TPG)	Series F	371
Apr 22	Xpressbees	IN	Blackstone (NYS: BX) (Mukesh Mehta), ChrysCapital (Kshitij Sheth), TPG (NAS: TPG) (Akshay Tanna)	n/a	273
Feb 22	ElasticRun	IN	SoftBank Investment Advisers (Masayoshi Son)	Series E	265
Apr 22	Convoy	US	Baillie Gifford (Gary Robinson), T. Rowe Price (NAS: TROW)	Series E	238
Jan 22	Paack	ES	SoftBank Investment Advisers	Series D	225
Mar 22	Forto	DE	Disruptive (Alexander Davis)	Series D	222
Feb 22	Deliverr	US	Tiger Global Management	Series E	221
Mar 22	Route	US	FJ Labs, Madrona Venture Group	Series B	210

Sources: Pitchbook, PwC analysis, Forbes

Methodology

This report is an analysis of the current industry environment and of global transaction and strategic collaboration activities in the T&L industry.

The analysis covers all mergers, acquisitions, sales, leveraged buyouts, privatisations and acquisitions of minority interests with a transaction value greater than $50 million. All transactions announced between 1 January and 30 June 2022 have been included. Project transactions, such as public-private partnerships – which are more common than corporate transactions, especially in the field of infrastructure – do not fall within the scope of the analysis.

The data for the transaction analysis is derived from Refinitiv and includes all deals announced where the target company comes from one of the NAICS industries listed below. Historical data is continuously updated. The analysis included all transactions whose status at the time of analysis was “completed”, “not yet completed because of antitrust approval procedures”, “unconditional” (buyer-side conditions have been met but the deal has not yet been completed) or “withdrawn”.

The data for the strategic collaboration analysis is based on information from S&P Global Capital IQ, covering key strategic alliance-related developments disclosed by listed companies related to the T&L industry.

The venture deals analysis is based on the Top 100 Transport & Logistics VC-Deals in Pitchbook announced until June 2022, including mobility verticals.

The macroeconomic scenarios are based on a consensus of analyses that incorporates more than 180 sources (including from global research institutes, universities, investment banks, national governmental and supranational bodies, and ratings agencies), as well as financial data on 40 million corporations globally from 35 countries. The scenarios have been updated regularly since March 2022.

Sectors and assigned NAICS industries

Passenger Air: scheduled passenger air transportation; non-scheduled chartered passenger air transportation; air traffic control; other airport operations; other support activities for air transportation

Passenger Ground: highway, street, and bridge construction; all other specialty trade contractors; commuter rail systems; bus and other motor vehicle transit systems; other urban transit systems; inter-urban and rural bus transportation; taxi service; limousine service; school and employee bus transportation; charter bus industry; special needs transportation; all other transit and ground passenger transportation; other support activities for road transportation

Rail: line-haul railroads; short-line railroads; support activities for rail transportation

Logistics: gas distribution; freight transportation arrangement; packing and crating; all other support activities for transportation; postal service; couriers; local messengers and local delivery; general warehousing and storage; refrigerated warehousing and storage; farm product warehousing and storage; other warehousing and storage; process, physical distribution and logistics consulting services

Trucking: general freight trucking, local; general freight trucking, long distance, truckload; general freight trucking, long distance, less than truckload; used household and office goods moving; specialised freight (except used goods) trucking, local; specialised freight (except used goods) trucking, long distance

Shipping: deep-sea freight transportation; deep-sea passenger transportation; coastal and great lakes freight transportation; coastal and great lakes passenger transportation; inland water freight transportation; inland water passenger transportation; port and harbour operations; marine cargo handling; navigational services to shipping; other support activities for water transportation; regulation and administration of transportation programmes

Other: scheduled freight air transportation; non-scheduled chartered freight air transportation; other non-scheduled air transportation; mixed-mode transit systems; commercial air, rail and water transportation equipment rental and leasing; passenger car rental; passenger car leasing; truck, utility trailer and RV rental and leasing

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