TRADE WATCH
February 2022

TRADE DEFIES HEADWINDS

KEY MESSAGES

- Merchandise trade strengthened in November 2021 despite persistent value-chain bottlenecks and logistics constraints.
- Services trade is finally closing the gap with pre-pandemic levels, a year after merchandise trade.
- International travel services are still severely depressed due to the unequal distribution of vaccines, the emergence of new COVID-19 variants, and continuing border restrictions.
- In shipping, logistics constraints remain at historical levels.

SPECIAL FOCUS

- New evidence of the linkages between shipping reliability and trade in the pandemic period.

RECENT TRENDS

Merchandise trade

Global merchandise trade gained momentum in November 2021, rising almost to 25 percent above pre-pandemic levels (Figure 1). Trade values were up 6 percent from September to November 2021 relative to the previous three months, on the back of robust trade growth in all product groups, particularly in developing East Asia and Europe and Central Asia (Figure 2). Trade in electrical and electronic equipment, medical equipment and minerals surged to over 30 percent of the pre-pandemic levels, and trade in transportation equipment closed much of the remaining gap from 2019.

A look beyond trade values (in current U.S. dollars) highlights different trends for their two main drivers, namely volumes (i.e., trade in constant U.S. dollars, a proxy for the traded quantities) and trade prices (unit values, computed as trade values divided by volumes). In November 2021, trade volumes exceeded pre-pandemic levels by 7 percent, while unit values did so by twice as much (15.8 percent) according to the World Trade Monitor published by the CPB Netherlands Bureau for Economic Policy Analysis. The overall increase in trade price is broad-based across products, but most striking in energy, foods, and industrial supplies, according to estimates based on EU monthly trade data from Eurostat (on-line Excel dataset).

Figure 1. Global trade in current U.S. dollars, not seasonally adjusted (up to Nov. 2021)

This note has been prepared by the Global Trade and Regional Integration Unit of the World Bank. It has been prepared by a team led by Cristina Constantinescu, with contributions by Jean Francois Arvis, Karly Dairabayeva, Pratyush Dubey, Ian Gillison, Alen Mulabic, Karen Muramatsu, Mike Nyawo, Daria Ulybina, and Chris Wellisz, under the guidance of Antonio Nucifora (Practice Manager, Trade and Regional Integration) and Mona Haddad (Global Director for Trade, Investment and Competitiveness). For further information please contact Cristina Constantinescu at ineagu@worldbank.org.
Services Trade

As of November 2021, global services trade had almost fully recovered to pre-pandemic levels, with exports up 1.2 percent and imports down 1.1 percent relative to November 2019. On a monthly basis, exports picked up 1.1 percent, and imports declined by 0.6 percent, while on a year-on-year basis, each was around 18 percent higher than in November 2020. Digitally deliverable services such as computer, financial and business services continued to drive the growth relative to the pre-pandemic levels, while transport was boosted by surging shipping rates (Figure 3). Travel services remained the most affected, while trade in construction, maintenance, and repair services declined slightly in November.

The unequal distribution of vaccines, the emergence of new COVID-19 variants, and border restrictions continued to weigh on international travel. The average number of commercial flights in January 2022 was about 82 percent of 2019 level, with a few days in 2022 surpassing 90 percent levels (Figure 4). International tourism arrivals in December remained depressed at 35 percent of the level in the same month in 2019, with Asia and the Pacific the most affected region.

Logistics constraints

Stress on maritime supply chains stayed elevated in December 2021 at levels observed since October, as 14 percent of the global container fleet in the Panamax class or larger (about 1.8 million TEU) remained stalled amid productivity constraints and operational disruptions in the USA and Asia (Figure 5). Traffic delays picked up somewhat (Figure 5), while shipping rates remained stable at their historical high, in part thanks to voluntary caps (Shanghai Containerized Freight Index). Seasonal low shipping volumes in February might bring some relief in the coming weeks.

Sources:
1: Staff estimates using Global Economic Monitor, data from WTO, IMF International Financial Statistics, OECD, and official data from China, Eurostat, Japan, UK, and the USA. 2: CPB World Trade Monitor. 3: Estimates based on WTO and UNCTAD data. 4: WBG staff based on World Tourism Organization data. 5: WBG staff based on data from MarineTraffic’s Automatic Identification System (AIS). Ship tracking data for Automated Identification System (AIS) reveals real-time information on trade in motion. The analysis has been conducted using a calling event database prepared for the World Bank by MarineTraffic, covering over 7,000 ships calling at over 1,000 ports worldwide. The focus is on container shipping, as opposed to commodity freight in bulk. Container shipping carries manufactured goods and is representative of GVCs. The main indicator is instant (weekly) capacity calling countries or regions, measured in capacity units of Twenty-Foot Equivalent (TEU) boxes (Atlantic ports of France, Spain, Portugal).

Notes:
1: Mirror data is used when data for recent months are missing. Lines depict the average of exports and imports normalized by the average across selected pre-pandemic years. 2: The global aggregate includes data on services exports and imports. Data includes 14 economies that reported in September 2021, which accounted for a total of approximately 38 percent of global services exports and 39 percent of global services imports in 2017 (UNCTAD). 3: The stress index is an estimation of shipping capacity additionally mobilized or stalled at ports when excessive delays are observed over historical port-to-port lead time.

Online Excel data:
Some of the figures in the text as well as additional data corresponding to the merchandise, services, and logistics sections can be found in the online Excel file that accompanies Trade Watch. The file includes data used in the latest issue. Data for previous issues can be shared upon request.
SHIPPING RELIABILITY AND TRADE. EVIDENCE FROM EU IMPORTS

Since 2018 several shocks have disrupted global value chains (GVCs). These disruptions started with the US-China trade war, continued with Brexit, and are currently driven by shipping delays in the midst of the pandemic crisis. While the effects of the US-China trade war and Brexit have been widely studied [1], there have been no studies of the effects of current shipping delays on trade. The importance of time as a trade barrier has been documented by a large number of papers (e.g., De Soyres et al., 2020; Djankov et al., 2010; Hummels and Schaur, 2013). In particular, Hummels and Schaur (2013) estimate that a one-day delay in transit time is equivalent to a 5% ad-valorem tariff. De Soyres et al. (2020) show that changes in shipping times can have an impact on comparative advantages and sourcing decisions.

The Covid-19 pandemic put extreme pressure on maritime transport. Ports were closed, protocols changed, and border controls reintroduced, along with additional restrictions for crew members. Despite the deep global recession, demand for vessels increased for the route from Asia to the West Coast of the United States as consumer spending shifted from services to goods while the shipping industry was undergoing massive operational disruptions on the landside (World Bank, 2021). All of these and other factors disrupted supply chains and increased shipping costs (WTO, 2020). Companies scrambled to meet demand amid record delays and declining global maritime shipping reliability. As economies recovered in 2021, disruptions continued when many businesses that had cut orders of intermediate inputs during the recession were unable to increase supply quickly enough to meet growing demand (IMF, 2021).

To understand how firms react to shipping delays, we focus on European Union imports and analyze whether shipping reliability erosion affected imports from countries outside the EU. This approach has several advantages. For one, the EU reports high-frequency imports, disaggregated at the product level, by different modes of transport. Also, the EU’s extensive networks of motorways and railways connecting it with non-EU members allow importers to possibly switch to other modes of transport when maritime reliability decreases.

As shipping reliability decreased, some importers shifted to alternative modes of transport ...

A first look at EU import data suggests that starting in mid-2020, imports by rail, road, and air increased as global maritime reliability plummeted (Figure 1). Shipping reliability, which is measured as the percentage of ships arriving within 8 hours of schedule, decreased by around 50% between July 2020 and November 2021 [2]. During the same period, imports by air increased by about 60%, and those by rail and road rose by about 20%, while maritime imports remained below the pre-pandemic level. It should be noted that most goods are carried by sea and that large increases in imports by air, rail, and road are limited to a small number of products and destinations and so are unlikely to result in a large overall shift from sea shipping to other modes of transport.

As seaborn shipping became less reliable, some importers switched to other means of transport, mainly by road and rail. Shipping reliability decreased from 70% to less than 40% between mid-2020 and early 2021. Our analysis suggests that on average a 30 percentage point decrease in shipping reliability reduced imports via sea by around 0.7% (Figure 2, blue bar), while it had a strong positive impact on imports by road and rail that increased by 25% (Figure 2, red bar), and a smaller impact on imports by air that expanded by 5% (Figure 2, green bar) [3]. For instance, as a result of shipping delays, Colgate Palmolive decided to ship some of its toothpaste and toothbrushes via air rather than by sea, while other companies such as Walmart chartered their own ships [4].

...increased imports from geographically close suppliers...

Suppliers geographically close to Europe benefitted from the disruptions in the shipping industry. Results suggest that the erosion in shipping reliability led to a drop in imports from distant trading partners, while it increased imports from relatively close countries (Figure 3, Panel A). These findings are confirmed when focusing on imports by sea only (Figure 3, Panel B).

*The Special Focus has been prepared by Alen Mulabdic, based on Caselli and Mulabdic (2022). It benefited from input by Jean Francois Arvis, Paul Brenton, Cristina Constantinescu, Maryla Maliszewska, Pinar Yasar and Chris Wellisz, under the guidance of Antonio Nucifora and Mona Haddad.*


[2] Maritime reliability comes from the Sea-Intelligence GLP report 118. The index measures the percentage of ships arriving within 8 hours of schedule using the information on more than 12,000 vessel arrivals across all deep-sea liner services. It should be noted that the index is likely to be correlated with shipping costs because shipping prices increased as delays became more frequent. So, the results should be interpreted as capturing the overall effects of shipping disruptions instead of just shipping delays.

[3] The results are obtained estimating a fixed effect regression where the dependent variable is the log of EU imports from extra-EU countries at a monthly frequency

A 30 percentage point decrease in shipping reliability led to a roughly 10% decline in imports from distant sources and an increase in imports from nearby countries of the same magnitude. This could be explained by less significant delays between closer countries or by the use of different types of vessels for different routes. Imports from distant countries rely on ultra-large container vessels (e.g., Suezmax or post-Suezmax), while short routes rely on medium-size freighters (e.g., feeder vessels). Imports by rail and road increased for all partners irrespective of distance (Figure 3, Panel C). Finally, the results suggest that maritime shipping disruptions led distant suppliers to shift to air transport, probably for high-value goods (Figure 3, Panel D).

Imported goods from nearby countries increased, especially for time-sensitive products.

**Imports from nearby countries increased, especially for time-sensitive products.** The analysis suggests that transport of time-sensitive products strongly reacted to changes in reliability – with the EU importing more from nearby countries at the expense of distant trade partners (Figure 4, Panel A). Product categories with higher time values include automotive and capital goods as well as food and beverages. In particular, Hummels and Schaur (2013) show that delays can spoil perishable products, while delays of key components can idle an entire assembly plant. The results suggest that imports of less time-sensitive products from remote suppliers did not react to a decline in shipping reliability, while imports from nearby countries expanded (Figure 4, Panel B).

Anecdotal evidence suggests that some multinationals are shortening their supply chains to cope with shipping delays, which can create export and investment opportunities for developing countries close to large consumer markets. For instance, Italy’s Benneton is relocating production from Asia to Serbia, Croatia, Turkey, Tunisia, and Egypt to have more control over lead times (Anzolin and Aloisi, 2021). Similarly, IKEA is shifting more production to Turkey because of shipping delays and costs [5]. Time will tell whether these changes are temporary or permanent. Some of the effects we observe are likely to be driven by a high degree of substitutability between sources of imports, while others indicate an acceleration of a more permanent shift, where multinationals develop regional supply chains to reduce uncertainty and minimize transit times.

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Figure 1: EU Volume of Imports by Transport Mode and Shipping Reliability

Note: 6-month moving averages. Maritime reliability comes from the SeaIntelligence GLP report 118 and is measured as the percentage of ships arriving within 8 hours of schedule.

Figure 2: Effects of Maritime Reliability on EU Imports

Note: Each bar corresponds to the estimated effect of a 30 percentage point decrease in maritime shipping reliability on imports by different mode of transport. Coefficient are obtained from separate regressions of the lag of maritime reliability on the log of imports (volume) by different mode of transport. All specifications include exporter-product effects. The sample covers the 2018m1-2021m11 period and exporting countries with population over 5mln. The interval plot shows 95% confidence intervals constructed using robust standard errors clustered at the product-month level.

Figure 3: Distance and Maritime Reliability

Panel A: Imports all modes

Panel B: Imports by sea

Panel C: Imports by rail and road

Panel D: Imports by Air

Note: The dependent variable is the log of imports (volume) by a different mode of transport. The effects are obtained by estimating a two-way interaction between the lag of reliability and log of distance. All specifications include exporter-product effect and control for the log of EU27 monthly production.
Figure 4: Distance, shipping reliability and time sensitivity

Panel A: Time Sensitive Products

Panel B: Time insensitive products

Note: The dependent variable is the log of imports (volume). The effects are obtained estimating a three-way interaction between the log of reliability, log of distance, and product time sensitivity. All specifications include exporter-product effect and control for the log of EU27 monthly production. Maritime reliability is measured as the percentage of ships arriving within 8 hours of schedule and varies between 0 and 1. Product level time sensitivity at HS 4-digit is from Hummels and Schaur (2013). The sample covers the 2018m1-2021m11 period and exporting countries with population over 5mln. Panel A is the effect of distance for time sensitive products evaluated at time sensitivity equal to two standard deviations above the mean of time sensitivity. Panel B is the effect of distance for time sensitive products evaluated at time sensitivity equal to two standard deviations below the mean of time sensitivity.

REFERENCES


