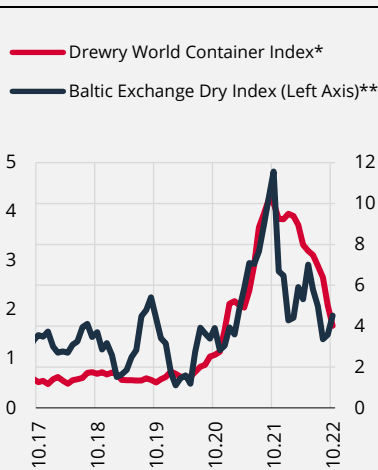


Box 2.6

Recent Outlook for Global Supply Constraints and Their Reflections

The disruptions in supply chains driven by the pandemic have been easing. Pandemic measures taken since the second half of 2020 led to problems in logistics networks, increased freight costs and delays in deliveries. With the spread of vaccination, the gradual removal of pandemic measures has increased global demand and trade, which caused transportation costs to reach historically high levels due to supply-demand mismatch. However, the recent period has seen a positive course in supply-side developments due to the effects of i) the implementation of measures such as increasing efficiency at ports and extending working hours to reduce supply bottlenecks, ii) the retreat of commodity prices, notably oil, and iii) the weakening of the global economic outlook. Thus, a remarkable downward movement is seen in the indicators regarding container and freight costs on a global scale (Chart 1). While the Drewry Container Index, which is a weighted composite indicator of container costs on various shipping routes, decreased by 57% as of October 2022 compared to the end of 2021, it has gradually been converging to its historical average. There is a similar outlook in the Baltic Dry Freight Index, which is another indicator for freight costs and shows the average transportation prices of raw material commodities such as coal, steel and grain to various routes. Besides, this situation in global transportation costs is widespread across routes rather than being specific to certain ones (Chart 2). As a result of all these developments, the global supply chain pressure index, constructed by the New York Fed using various transportation cost indices, air cargo prices and country-specific supply chain variables, has been improving rapidly after hitting its historical peak at the end of 2021, but it is still quite higher than the pre-pandemic levels (Chart 3). The positive course of suppliers' delivery times on a global scale compared to previous episodes and the decrease in backlogs support this outlook.

Chart 1: Drewry World Container Index (Thousand USD) and Baltic Exchange Dry Index (Thousand USD)

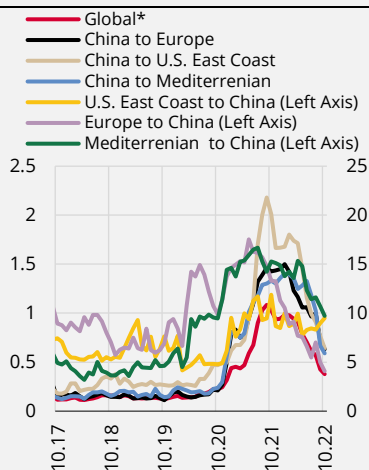


Source: Bloomberg.

* The index is derived from the size-weighted average of container costs of eight shipping routes.

**The index (January 1985=1000) shows the weighted average of Capesize (40%), Panamax (30%) and Supramax (30%) dry cargo freight forward contracts with an average maturity of approximately two months.

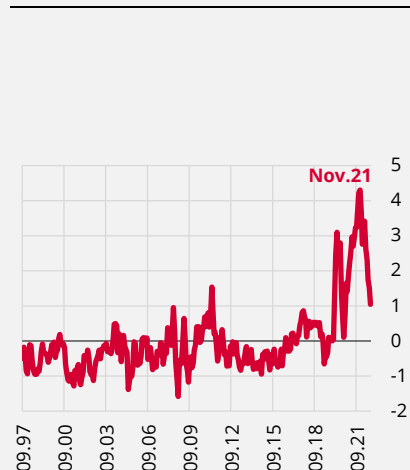
Chart 2: Freightos Baltic Container Index (Global and Selected Routes, Thousand USD)



Source: Bloomberg.

* The global Freightos Baltic Container index shows the weighted average of the container (40 ft) index for 12 routes.

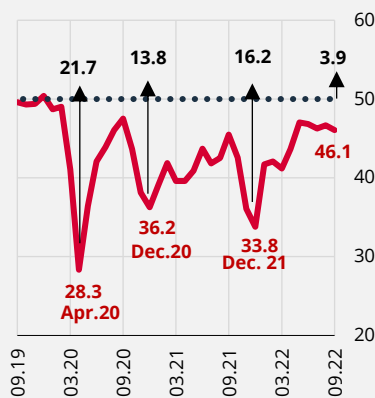
Chart 3: Global Supply Chain Pressure Index (Standard Deviations from Average Value)



Source: New York Fed.

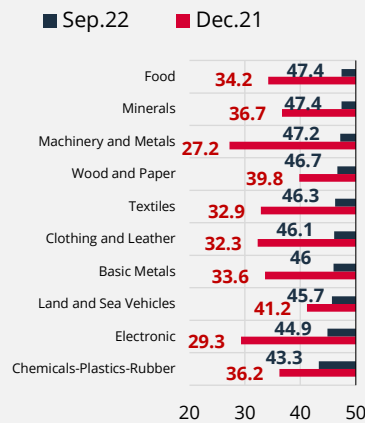
The outlook for the international supply chain firmly affects domestic supply developments. Although the pre-pandemic level has not yet been reached in the “PMI suppliers’ delivery times”, a positive course is observed compared to the previous year (Chart 4). The domestic sectoral effects of the delays in the supply chain suggest that the effects of the disruptions in the supply of raw materials and shipping issues, which were widespread throughout 2021 on the manufacturing industry, have eased as of 2022. Sectoral PMI indicators signal that despite being positive compared to last year, the supplier delivery times in sectors with high global integration and chip usage-related problems such as electrical-electronics and vehicles, and in those producing chemical-plastic-rubber products are still longer than other sectors (Chart 5). On the other hand, indicators imply that supply-side constraints have weakened in food, non-metallic mineral products, machinery and metal producing sectors, given their shorter delivery times.

Chart 4: PMI Suppliers’ Delivery Times (Seasonally Adjusted, Level) *



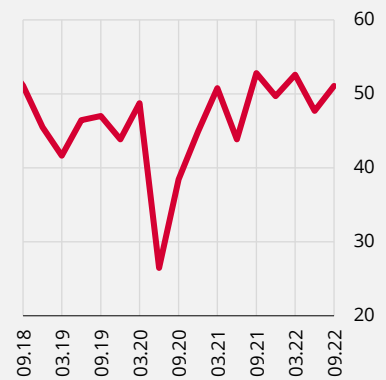
Source: IHS Markit.
* Lower values of the series indicate longer delivery times.

Chart 5: PMI Suppliers’ Delivery Times at Sectoral Level (Seasonally Adjusted, Level) *



Source: IHS Markit.
* Lower values of the series indicate longer delivery times.

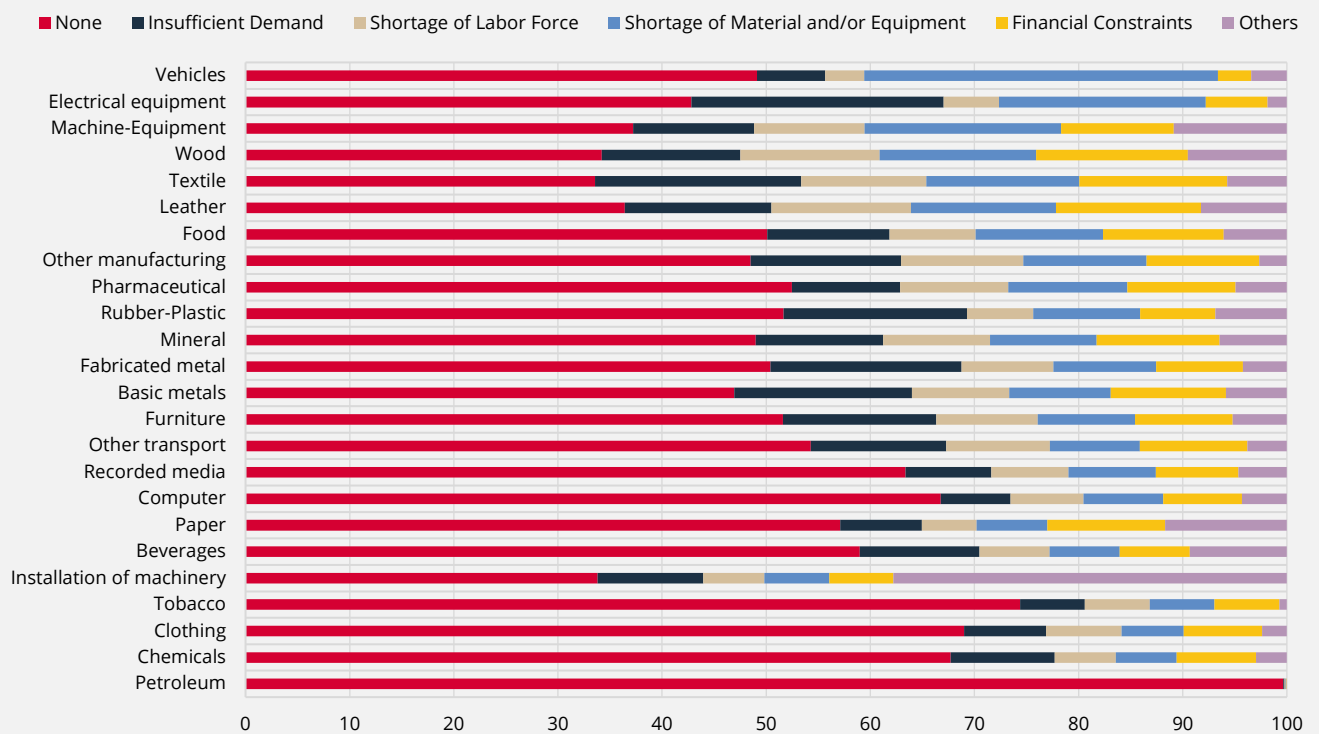
Chart 6: BTS The Ratio of Firms Reporting No Factor Limiting Production (Seasonally Adjusted, %)



Source: CBRT.

In the BTS, another indicator on the subject, the proportion of firms reporting that there was no factor limiting production in the third quarter of 2022 increased above the pre-pandemic level (Chart 6). Similar to what the aforementioned PMI indicators suggest, the sectors that refer most to the raw material and equipment shortage as the factors limiting their production, seem to be vehicle and electrical equipment producers (Chart 7). Lastly, the findings obtained from the CBRT’s face-to-face interviews with real sector companies also indicate that supply-side problems decreased in the third quarter compared to the first half of the year. This decline is due to the alleviation of problems both within the country and abroad, and the current ongoing supply bottlenecks seem to be mostly related to overseas. It is observed that overseas supply constraints are concentrated particularly in the automotive and electrical equipment sectors due to the Russia-Ukraine War as well as the lingering chip crisis albeit at a moderate magnitude.

Chart 7: Business Tendency Survey: Main Factors Limiting Production* (2022Q3, %)



Source: CBRT.

* Ranked based on the ratio of shortage of material and/or equipment.

Within the framework of the outlook outlined above, seven different models based on the VAR approach have been estimated to measure the impact of supply constraints on inflation caused by both commodity prices and PMI suppliers' delivery times. According to the findings based on historical decomposition analysis (average of seven variant models), the impact on annual consumer inflation arising from supply-side factors related to global commodity prices and delivery times, reached around 19 points in the July-August period of 2022, and retreated in September. In addition, analyzes indicate that unless there is an additional deterioration in the current outlook for global supply pressures, the impact of supply-side factors on consumer inflation will slow down in the last quarter after peaking in the third quarter.