How will rising shipping cost affect inflation in OECD countries?

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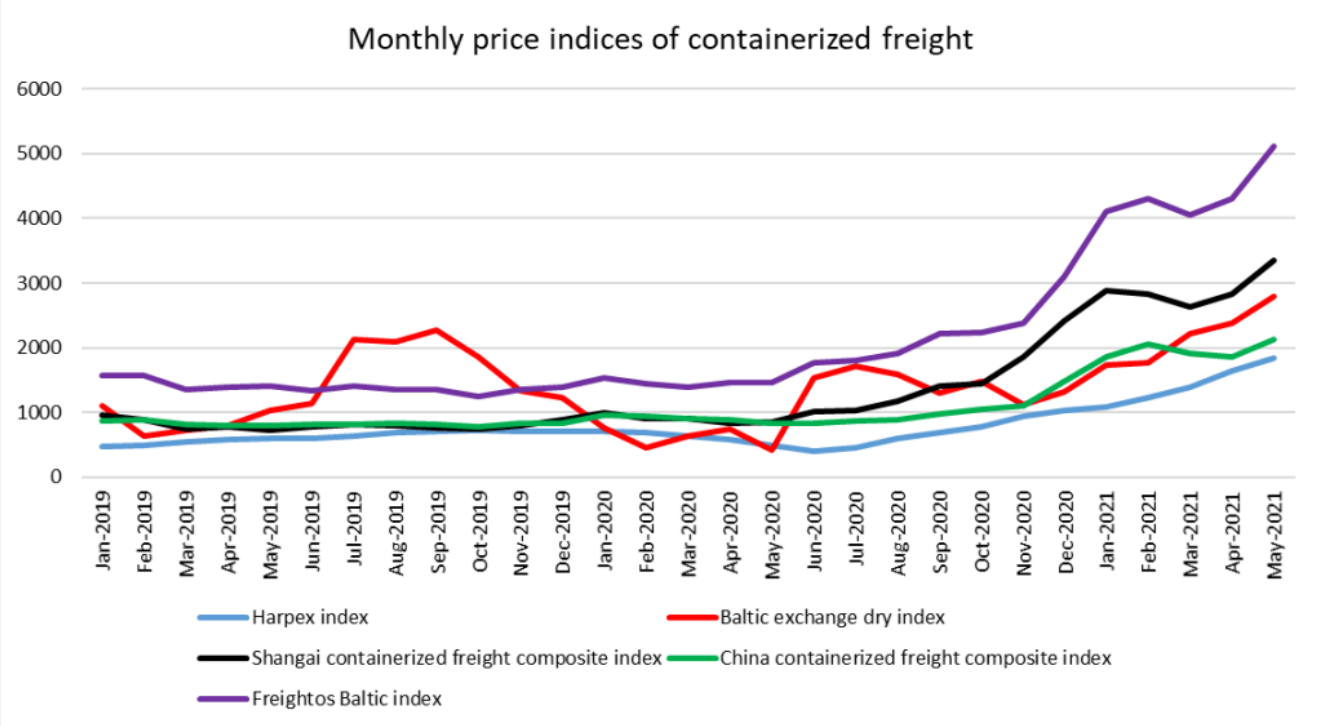
by Sophie Guilloux-Nefussi and Elena Rusticelli, OECD Economics Department

How will rising shipping cost affect inflation in OECD countries?

Extraordinary demand and supply factors have pushed up freight prices

Shipping cost rates have soared in recent months due to the conjunction of booming demand for consumer durables from Asia and supply-side bottlenecks created by sanitary restrictions in ports and terminals. These have slowed loading and unloading operations and crew changes. Prices of containerised freight started to rise in the second half of 2020 and rose further in the first quarter of 2021, when the average quarterly increase across the main indices of global shipping costs ranged between 30% and 65% (Figure 1).

Figure 1: Container shipping prices are on the rise since mid-2020



Source: Refinitiv.

On the demand side, the pandemic led to a global demand drop at the start of 2020, followed by a quick recovery at the end of the same year. Pent-up demand caused by lockdowns in the first half of 2020, shifts in consumption patterns towards durable goods, and government income support all strengthened demand for goods when transportation services were still limited.

On the supply side, multiple factors are compounding shipping delays. Vessels are currently used at almost full capacity and containers remain scarce. Congestion at ports, and lower productivity at terminals and inland depots have also led to bottlenecks. Distancing rules and reinforced hygiene standards have increased intervals between crew shifts. These have prolonged processing times at ports, hampered the return of containers to Asia and generated delays along the entire shipping chain. The March blockage in the Suez Canal also added to shipping disruption and tensions.

This atypical situation is expected to persist for a few more months. Port congestion continues to be a big bottleneck in the United States, where all loading/unloading slots for

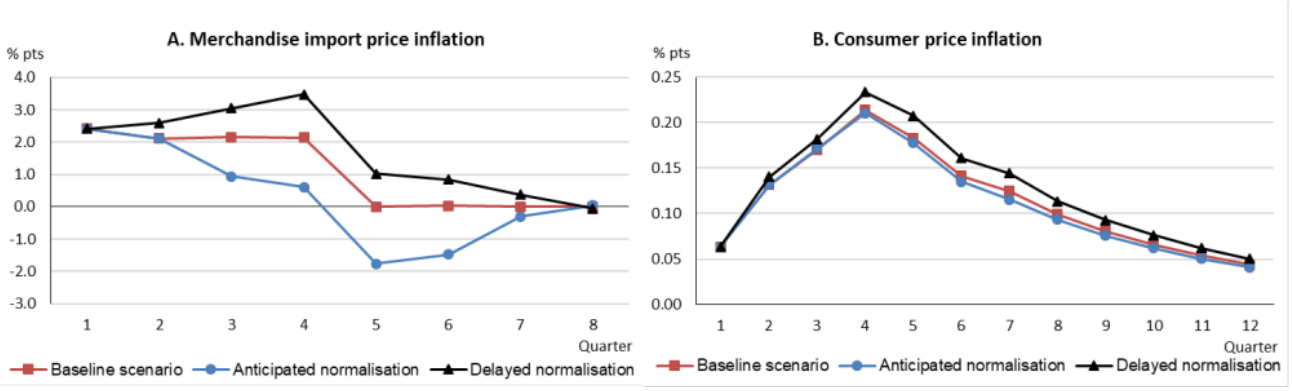
cargoes from/to Asia are fully booked throughout the second quarter of 2021. The reopening of European economies is also impacting supply and demand. In this context, industry experts do not foresee any normalisation of prices before the end of 2021.

Rising shipping costs could push up inflation temporarily in OECD countries

To which extent will the observed rise in global shipping costs impact inflation across OECD countries? The empirical approach to answer this question proceeds in two steps: first, quantifying the pass-through of shipping costs to merchandise import price inflation, and, second, assessing the transmission of import price inflation to consumer price inflation.

In the baseline scenario, shipping costs are assumed to rise by 50% in the first quarter of 2021 and to stabilise at the same level for the rest of the year, in line with the recent industry experts' projections. However, the uncertainty around forthcoming container freight rates remains high and, therefore, two alternative scenarios are considered: one of *anticipated* normalisation in which shipping costs gradually decline to a price level slightly higher than prior to the pandemic starting from the second half of 2021, and one of *delayed* normalisation in which the initial rise is followed by a further 10% increase in each of the three remaining quarters of 2021.

Figure 2 – Effect of global shipping costs developments on OECD merchandise import prices and consumer prices



Note: The charts show the percentage point change in year-on-year inflation resulting from the shipping costs shock. More details about the estimations can be found in the Box 1.3. of the Economic Outlook 109 (2021) and in the underlying working paper (Guilloux-Nefussi and Rusticelli, forthcoming).

In the first quarter, the observed rise in shipping costs is estimated to boost merchandise import price inflation (year-on-year) in OECD countries by 2.5 percentage points on average. After four quarters, depending on the scenario, the impact on merchandise import price inflation could still be between 0.6 to 3.5 percentage points (Figure 2, Panel A). Notwithstanding the swift reaction of import costs, the pass-through to consumer price inflation would be modest. The overall rise in CPI inflation would be by about 0.2 percentage points after four quarters, with no major divergence across the three scenarios (Figure 2, Panel B). Consumer price inflation would start to recede gradually thereafter and settle back over the following 2-year period, reflecting the large inertia in price adjustments of consumption goods. Given the relatively small portion of transport costs normally incorporated in final goods value, this result is not surprising[1] and is in line with previous estimates available for the US economy (based on a different methodology).[2]

Arguably, the rise in ocean shipping costs could compound with other input costs pressures – due to global shortages in specific industries like semiconductors – and rising commodity prices to further push up inflation in the coming months. However, these cost-push pressures are expected to be temporary. Inflation expectations are well anchored and global spare capacity remains sizeable. As a result, a significant and sustained pick-up in underlying inflation is unlikely

beyond a few quarters and monetary authorities should look through these transitory relative price shocks.

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Does the global output gap matter for inflation?

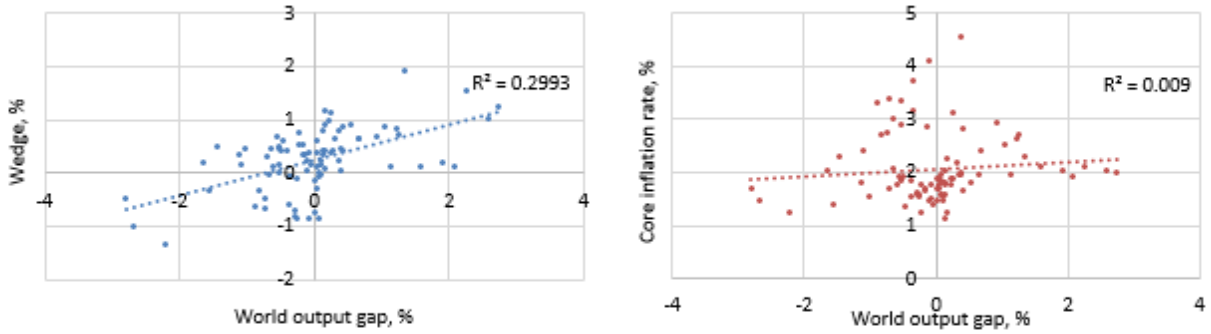
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There is a recurring controversy, as to the role of global demand pressures in driving domestic inflationary pressures, which matters because such an effect would undermine the

control which domestic central banks have in achieving their inflation objectives. Economists from the Bank for International Settlements have presented evidence that global demand pressures, proxied by a measure of the global output gap, are important in explaining inflationary pressure in advanced economies (Borio and Filardo, 2007 and Jasova et al., 2018). On the other hand, other distinguished economists have failed to replicate this result, finding little or no influence of the global output gap on domestic inflation, once other more standard explanations, including domestic unemployment and imported inflation, have been accounted for (Ihrig et al., 2010; Calza, 2008; Gerlach, 2004; Pain et al., 2006; Yellen, 2017; Mikolajun and Lodge, 2016). This blogpost suggests a way in which these apparently contradictory findings can be reconciled and demonstrates that this explanation is borne out with surprising clarity when tested across all OECD economies (for more details see Turner et al., 2019).

The studies that have found important effects from global demand pressures have focused on headline measures of inflation, whereas most of the studies that find contrary results have been explaining ‘core’ inflation, where core inflation typically excludes energy and food prices because they can be very volatile. Global demand pressures might be expected to have stronger effects on energy, food and commodity prices that feed more directly and immediately into headline inflation than core inflation. A simple look at the correlation between the global output gap and aggregate OECD measures of core inflation and of the ‘wedge’ between headline and core inflation, tends to confirm this (Figure 1).

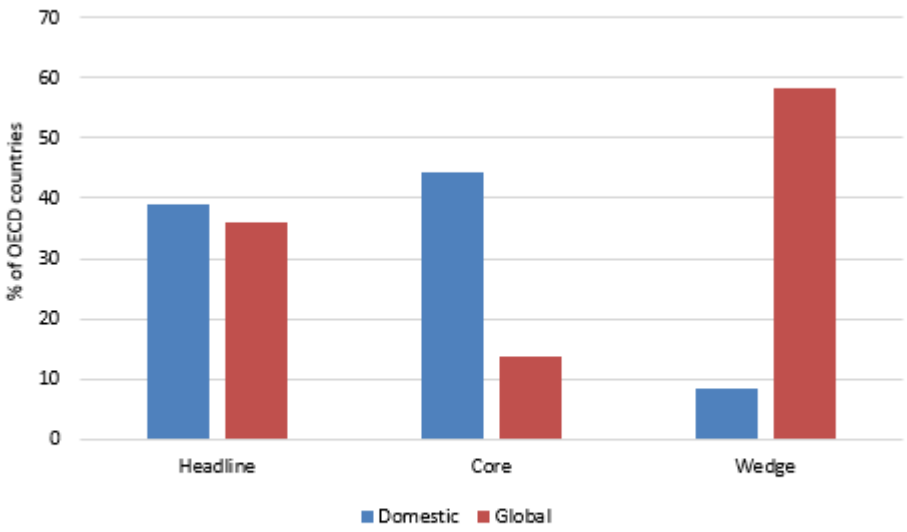
Figure 1. The correlation between global output gap and aggregate OECD inflation.



Note: The global output gap is derived from a Hodrick-Prescott filter of the world real GDP. The OECD wedge variable is the difference between annual headline and core consumer price inflation in OECD countries, aggregated using consumption weights. The period shown is 1998Q1 to 2019Q3.

Similar results are found when looking at OECD countries individually: the choice between using the global or the domestic output gap is unclear when explaining headline inflation, while the domestic output gap is clearly favoured when explaining core inflation. Conversely, the global output gap is overwhelmingly preferred when explaining wedge inflation (Figure 2).

Figure 2. Importance of the domestic and global output gap.



Note: The charts shows the percentage of the 36 OECD countries where the domestic or global output gap measure is significant at the 10% level and correctly signed in the simple regression: $Y_t = \alpha * Y_{t-1} + \beta * domgap_t + \gamma * worldgap_t + \theta * exch_t + c$, where *Y* is the headline, core inflation or the wedge between the two, *domgap* the domestic output gap, *worldgap* the world output gap and *exch* the logged difference of the nominal effective exchange rate. The sample is 1998Q1 to 2019Q3.

The strong relation found between global capacity measures and the wedge between headline and core inflation suggests policymakers should be wary of headline inflation picking up sharply when many countries overheat simultaneously. It might

also raise questions as to the appropriate price index to target: if this wedge is strongly influenced by global, rather than domestic, conditions then targeting core might be more attractive than headline inflation because it relates more closely to domestic monetary policy. Moreover, the experience of recent decades suggests that the difference between headline and core inflation can be very persistent and should not be dismissed as short-term noise. On the other hand, excluding important components of the consumer basket from the official target is open to objections about the diminished relevance of a narrower policy objective, less closely related to living standards and so less relevant to agents in the wider economy.

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