

Box B

Supply Chains During the COVID-19 Pandemic

To contain the spread of COVID-19, governments across the world restricted individual and commercial activities to varying degrees. These measures, along with some very large shifts in patterns of demand, have strained global supply chains, defined as the sequence of processes involved in the *production* and *transportation* of goods.

Australia has not been immune to these effects. Reports of international supply chain issues have been common in the Bank's Regional and Industry Liaison Program over the past year, with non-food retailers and manufacturers the most affected; ABS surveys show a similar pattern (Graph B.1). However, for the majority of firms these issues have been relatively mild and/or temporary, and have not materially affected their ability to operate. As a result, only a small share of businesses have made major long-term changes to their supply arrangements to date.

There have been two phases of international supply chain issues

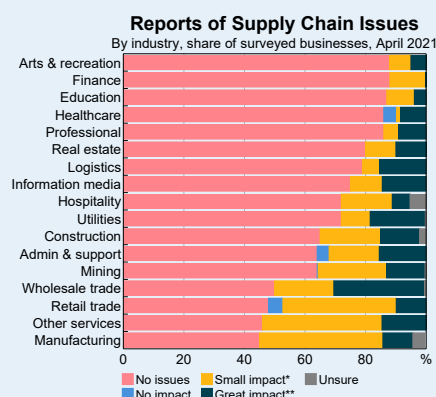
Broadly speaking, there have been two phases of supply chain issues during the pandemic. In the early stages of the pandemic *production* issues due to activity restrictions were most prevalent, first in China and subsequently in other countries. As global demand rebounded from mid 2020, *transportation* issues, particularly the availability of sea freight services, became the major driver of supply chain issues, though

production constraints remain in some countries.

Phase 1: Global lockdowns result in production constraints

When China entered into lockdown in early 2020, Australian firms across many industries reported delays in deliveries of up to a few weeks and, in some cases, difficulties sourcing products, as factories overseas were either shut down or operating at significantly reduced capacity. The difficulties around sourcing sufficient quantities of products were most pronounced for personal protective equipment (PPE) and other medical and hygiene products in high demand. Chinese factories started returning towards normal production over March and April. At the same time, supply chain disruptions started to emerge in other parts of Asia, the United States and Europe as

Graph B.1



* E.g. some delays but little impact on revenue

** E.g. major delays or cannot obtain certain items; significant impact on revenue

Sources: ABS; RBA

those economies implemented various restrictions on activity.

Phase 2: Transportation issues emerge alongside continuing production constraints

With much activity in the travel and services sectors constrained by health-related restrictions and many workers in advanced economies working from home for the first time, global demand shifted from services to goods. This was apparent in the consumption patterns in a range of advanced economies, including Australia (Graph B.2). Fiscal and monetary stimulus supported incomes and helped enable this substitution. Goods manufactured in Asia were particularly affected by stronger demand.

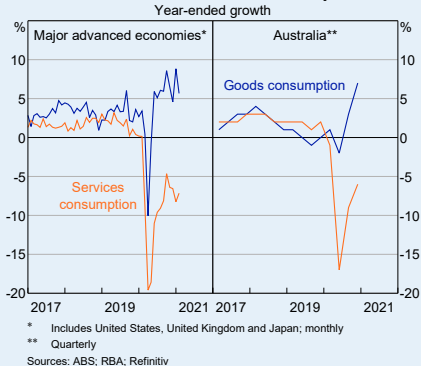
This shift in consumption patterns took suppliers by surprise, and has resulted in transportation issues becoming a major driver of supply chain issues since around mid 2020. This primarily reflects a global shortage of shipping containers, particularly out of China, and a mismatch of the location of containers, which are often full in one direction but empty in the other direction. At various times this has been exacerbated by congestion at some ports around the world

as increased import volumes have coincided with reduced capacity due to restrictions. The lack of shipping containers has resulted in sharp increases in global shipping prices since mid 2020, as well as delivery delays (Graph B.3).

Meanwhile, air freight capacity remains significantly lower than pre-pandemic levels, reflecting far fewer commercial passenger flights due to restrictions on international travel. As a result, delivery times for this form of transport have also increased and costs remain significantly higher than pre-pandemic levels. Nonetheless, air freight accounts for a small share of Australia's total goods trade values.

Global production issues in places such as south and southeast Asia, Europe and the United States eased over the second half of 2020 as commercial activity restrictions were relaxed. However, some factories continue to operate below full capacity because of restrictions, making it harder for them to work through their backlog of orders as well as meet new orders. As a result, production lead times have increased.

Graph B.2
Goods and Services Consumption



Graph B.3
Global Shipping Prices



For most Australian firms, supply chain issues have not been severe enough to affect operations materially ...

With regards to the experience of Australian firms, the majority of contacts in the Bank's liaison program note that supply chain issues have not materially affected their ability to operate, because issues have generally been relatively mild and/or temporary.^[1] Survey data indicate around 10 per cent of firms are experiencing severe supply chain issues, with smaller firms more affected than medium and large firms.^[2] For many firms, the effects of global supply delays early in the pandemic were largely mitigated by drawing down on existing inventories, as well as a significant decline in sales and orders. While some non-food retailers reported that shipping delays had resulted in longer-than-expected times to rebuild inventories since mid 2020, this issue has now largely been resolved with the exception of certain in-demand products, particularly those relying on electronic chips. In addition, apart from some logistical issues, firms have reported limited domestic supply chain issues over the past year, largely reflecting Australia's favourable health outcomes.

However, supply chain issues have resulted in higher costs for PPE and cleaning products, and container and air freight costs have also increased significantly. For most firms these costs are only a small share of total costs, and may be offset by reductions in other costs.

... so relatively few firms have made material long-term changes to procurement practices

The ABS' April 2021 'Business Conditions and Sentiments' survey indicates around one-quarter of respondents have made at least

one change to suppliers or supply chains over the past year. However, both liaison and ABS survey data indicate that only a small share of firms have made major changes to their supply arrangements to date:

- The majority of businesses facing supply chain issues have made the relatively small change of altering ordering processes, including submitting orders earlier than previously and, to a lesser extent, seeking to maintain higher inventory levels (Graph B.4). Within the liaison program, this message has been most common for non-food retailers, manufacturing, mining and health and aged care firms. To date, very few contacts have indicated a desire to hold structurally higher inventories over the medium term.
- Around 10 per cent of firms have made moderate changes such as changing their suppliers or operational processes. Changes to suppliers have included purchasing from alternative domestic suppliers, importing from a wider range of overseas countries or suppliers, as well as some switching from overseas to local suppliers. Liaison suggests firms in the manufacturing and construction industries have been most likely to change suppliers.
- Liaison reports of firms making the major decision to bring part of their supply chain onshore have been very rare.

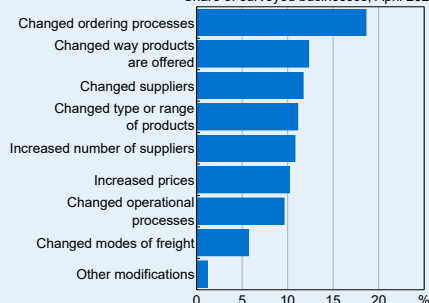
The modest response by most firms to supply chain issues to date is likely because the issues they have experienced have been relatively minor. For industries facing more severe issues, such as non-food retail, and manufacturing, liaison contacts note a range of challenges in switching suppliers, including the complexity, time and higher

costs involved. Higher costs are particularly pertinent for switching to domestic suppliers, and in some instances there are no domestic substitutes at all. ↴

Graph B.4

Response to Supply Chain Issues

Share of surveyed businesses, April 2021



Sources: ABS, RBA

Endnotes

[1] This is consistent with the Productivity Commission’s Vulnerable Supply Chains – Interim Report, which finds that ‘only a small fraction of Australia’s imports are vulnerable to serious supply disruption’, as well as survey data from the Chamber of Minerals & Energy of Western Australia (CMEWA) which indicate that there were initial supply chain impacts, particularly for high-demand items such as sanitiser and other hygiene products, but these had moderated by June 2020. See Productivity Commission (2021), ‘Vulnerable Supply Chains – Interim Report’, 26 March. Available at <[pc.gov.au/inquiries/current/supply-](http://pc.gov.au/inquiries/current/supply-chains/interim)

[chains/interim](http://pc.gov.au/inquiries/current/supply-chains/interim)>. See also CMEWA (2021), ‘The WA Resources Sector: Navigating through COVID-19 and recovery’, 22 March. Available at <<https://www.cmewa.com.au/wp-content/uploads/2021/03/210319-CME-EY-Navigating-COVID-Report-v1.0.pdf>>.

[2] See ABS (2021), ‘Business Conditions and Sentiments’, 30 April. Available at <abs.gov.au/statistics/economy/business-indicators/business-conditions-and-sentiments/apr-2021#supply-chain-disruptions>.

