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General Goods Brief - International Supply Chain Benchmarking Sectoral Assessment

Report for the Department of Infrastructure, Transport, Regional Development and Communications

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Executive Summary

Est. value of freighted goods*	Jobs in Aus
c.$326b	High
Total transported volume*	**Estimated TEU port throughput**
c.56Mt	c.8m containers

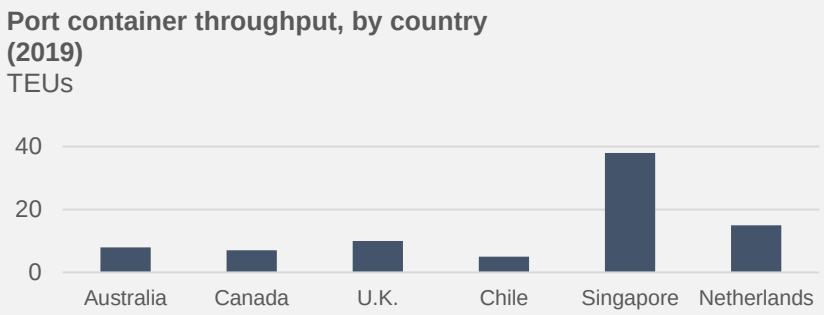
Key issues

1. Lack of empty container park capacity
2. COVID-19 pressure on ports due to decline in air freight and increased demand for imports
3. Rail freight infrastructure will need to expand to meet increasing freight task

Supply chain cost

c.1-2%

of total commodity value



**Value and volume includes general goods such as plasticware, furniture, home appliances*

Australia moves significant volume and value of general goods each year (56Mt, worth $326bn). Many of these goods are containerised imports, including plasticware, furniture, appliances and building materials, and are moved through Australia using an intermodal supply chain.

General goods freight faces a number of key issues, such as bottlenecks highlighted by COVID-19 restrictions, an increase in rail freight task that requires infrastructure planning and investment, and additional empty container park capacity to manage the flow of containers within existing facilities.

General Goods Supply Chains in Australia

General goods broadly refer to containerised freight carrying general cargo such as plasticware, furniture, electronic, and home appliances, as well as beverages such as beer, soft drink and wine which are either bottled and containerised or moved in liquid tankers. L.E.K. Consulting has previously completed work on the wine supply chain, which can be found here.

Australia's largest container ports are Port of Melbourne, Port Botany, Port of Brisbane, Fremantle and Port Adelaide. Port of Melbourne contributes 37% of all container trade in Australia – in FY19, the port moved over 3m containers (c.1.5m imports).

After arriving in the ports, containerised goods are typically transported via road to warehouses or depots before shipping to its national destination. For some longer haul distances, intermodal facilities and the general rail freight flow is used. This is more common along the East-West corridor (Melbourne-Adelaide-Perth), where around c.65k containers (TEUs) were shipped in 2019 (c.70-90% by rail). For the north-south corridor (Melbourne-Sydney-Brisbane), rail is generally considered uncompetitive against road freight. The supply chain is reversed for exports.[i]

Australia's general goods supply chain has the following key issues:

1. Due to a lack of investment in empty container park (ECP) capacity, there is insufficient capacity to manage the cycles in demand, causing a pile up of empty shipping containers leading to excessive truck queuing delays, and inefficient movement and handling processes. In NSW alone, these inefficiencies are costing the supply chain an additional c.$50m per year.[ii] COVID-19 has exacerbated this, causing a global mismatch in the supply and demand of containers. While there is a shortage of containers in large manufacturing countries like China, Australia has accumulated a substantial oversupply of empty containers, leading to significant port congestion.
2. COVID-19 is causing a drastic decline in air freight while increasing the demand for imported goods, putting pressure on ports and causing congestion, delays and increasing freight prices.
3. As the freight task in Australia grows, more of the task will need to be shared with rail. Rail freight can move more TEUs more efficiently over long distances. In Melbourne, the Port Rail Transformation Project (estimated to finish in 2023) will significantly increase the efficiency of moving freight out of the ports, circumnavigating inner-city road traffic.[iii] There may be more opportunities to increase rail freight infrastructure across the country, but this will take a significant amount of time and investment to materialise.

International Supply Chain Comparison

Containerised freight is significant globally, as the universal, uniform container shape allows goods of different shapes and sizes to be bundled together and moved in the same efficient way. Containers with export cargo is sent offshore, while new containers are brought in through containerised imports. Universally, countries with efficient general goods supply chains minimise the amount of 'empty container' movement within the supply chain while ensuring that containers are still in the correct place to be used for goods as needed.

The flow of containers has been significantly impacted by COVID-19 across the world, leading to a mismatch in the global supply and demand of empty containers, with China experiencing a shortage of empty containers while Australia experiences a surplus. This has highlighted the importance of global interconnected freight flows and how disruptions to movement in one country can impact the ability for another to independently move goods, irrespective of individual supply chain efficiency.

Globally, the largest container ports in the world are in Asia, in cities such as Shanghai and Singapore, as these areas are located in the centre of the global supply chain. In particular, China is the largest producer of goods in the world, with c.242m TEUs moving through its port in 2019.[iv]

TEU movement (2019)[v]	Australia	China	Canada	United Kingdom	Chile	Singapore	Netherlands
Estimated TEU port throughput	c.8m	c.242m	c.7m	c.10m	c.5m	c.38m	c.15m

Benchmarking Outlook

Intl benchmarking considerations	Importance	General goods supply chain
Size and growth	◕	The $326b total value of general goods and the 56Mt freight task is significant.
Freight importance	◕	While freight costs take up, on average, just c.1-2% of the total freight value, containerised freight is so ubiquitous that a small improvement in supply chain efficiency would have a significant impact on the sale of general goods
Export importance	◔	Most of the products in general goods are imported. Australia produces c.$7b worth of wine exports, which has been examined in L.E.K.'s prior work.
Geographic scope	◕	General goods are consumed in all parts of Australia. There is an opportunity to improve efficiency for goods travelling from Melbourne or Sydney to the northern or western parts of Australia
Known efficiency / public interest	◕	General goods are widely used and therefore the efficiency of general goods movement will affect every household in Australia

Household goods (plasticware, furniture, appliances, clothes, building materials and paper products) are general containerised goods that should be prioritised in further benchmarking. This is because part of the beverages supply chain has already been explored in previous L.E.K. work through the wine supply chain.

When comparing the efficiency of containerised goods movements, port throughput is an important factor that indicates the overall level of traffic through the supply chain.

The United Kingdom has relatively similar port throughput to Australia and imports a wide range of general goods with a similar demand profile to Australia. The United Kingdom has a sizable intermodal freight network spanning sea, road and rail, with reasonable data availability and therefore could serve as a good benchmark for Australia. Furthermore, the United Kingdom's geographical separation from key markets makes it a reasonable comparator to Australia, despite Australia's considerably greater distance from major trading partners and international freight hubs compared to the United Kingdom.

The Netherlands could be a second comparison country. The Netherlands has historically been Europe's largest freight transport country, due to its coastal location, and therefore has a similar profile to Australia. It imports considerable electrical machinery, plasticware and clothing through its ports and appears to have a strong intermodal freight network for moving containers of general goods domestically and through to other parts of Europe.

References

[i] Price Waterhouse Coopers, Future of Intermodal Terminals Department of Infrastructure and Regional Development, May 2017
[ii] Transport for NSW, NSW Empty Container Supply Chain Study, May 5, 2020
[iii] Port of Melbourne (webpage), Port Rail Transformation Project
[iv] CEIC, China Container Port Throughput, 20018-2019
[v] CEIC, Canada Container Port Throughput, 20018-2019