HOUSTONKEMP
Economists

Economic effect of industrial action at stevedoring terminals

Report for Seyfarth Shaw

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1. Introduction

I have been asked to prepare this report by Seyfarth Shaw, on behalf of DP World Australia Limited (DP World). Its subject is the economic effect of industrial action at DP World's container stevedoring terminals at the Port of Brisbane, Port Botany, the Port of Melbourne and/or the Port of Fremantle (the ports) on the Australian economy and/or any important part(s) of the Australian economy.

The context for my report is a potential application to the Fair Work Commission (FWC) to terminate protected industrial action taking place at the ports by members of the Maritime Union of Australia (MUA).

1.1 Purpose of report

Seyfarth Shaw has asked me to assess the effect of industrial action at the ports on the overall output of the Australian economy, the affected state economies, and particular sectors of those economies. In particular, I have been asked to comment on:

1. What is the importance to the Australian economy of containerised trade and the Ports?
2. What is the likely effect on the overall output of the Australian economy of a stoppage of work by stevedores at one, several, or all of the Ports?
3. What is the likely effect on the overall output of each of the Queensland, New South Wales, Victorian and West Australian economies as a result of a stoppage of work by stevedores at the relevant Port(s)?
4. Are there particular sectors of the Australian or State economies which are likely to be particularly affected by a stoppage of work by stevedores at the relevant Port(s)? If so, which sectors or industries are likely to be so affected and what are the likely effects on them?
5. To what extent could the effects discussed in questions 2, 3 and 4 above be avoided or ameliorated by other means, including:
   - the contracting of work to other stevedoring providers; and
   - the redirection of cargo to other ports and/or modes of transport?

Seyfarth Shaw has also asked that:

> In addressing these issues and any other matters dealt with in your report, please consider the effects of stoppages of work lasting:
>
> - 24 hours;
> - 2 days;
> - 4 days;
> - 7 days;
> - 14 days; and
> - 28 days.

1.3 Structure of report

I have structured the remainder of my report as follows, ie:

- in section 2, I describe the importance to the Australian economy of the ports and containerised trade;
- in section 3, I evaluate the effect of industrial action at the ports on the output of the Australian and state economies;
- in section 4, I explain how some sectors of the Australian economy will be particularly adversely affected by industrial action; and
- in section 5, I present my declaration that I have understood and complied with the Uniform Civil Procedure Rules 2005 NSW Schedule 7, entitled Expert witness code of conduct.

2. Containerised trade and the economy

In this section I assess the importance to the Australian economy of containerised trade at the ports.

2.1 Data relied on in this report

In order to assess the importance to the Australian economy of containerised trade, and to form an opinion on the likely effect of a stoppage by stevedores at one, several or all of the ports, I have first developed an estimate of the volume and type of containerised freight likely to be affected by industrial action.

Since there is no practicable means of directly assessing the contents of containers likely to be affected by any contemplated industrial action, I have used data on historical freight volumes to estimate the volume and type of freight that would be affected by any future industrial action. On the assumption that industrial action might occur during the period August – October 2020, and in light of the highly seasonal nature of sea-based container freight, I have drawn on data in relation to historical container freight volumes over the period 1 August 2019 to 31 October 2019 to estimate the volume and type of freight likely to be affected by industrial action.

I procured data from the air and sea cargo research firm, MariTrade,[1] in relation to the port of Brisbane, Port of Botany (Sydney), Port of Melbourne and Port of Fremantle in relation to:

- container numbers imported and exported;
- commodity volumes imported and exported; and
- commodity values imported and exported,

over the three month period from 1 August 2019 to 31 October 2019.

The data provided by MariTrade included motor vehicles, which I have excluded from the analysis.

In my opinion, given the seasonal nature of trade, these data are the best direct estimate of the trade that may be affected by industrial action taken by DP World stevedores during mid-2020.

2.2 Overview of Australian containerised trade

International trade is central to productivity, output, living standards and the quality of life in Australia. Container shipping is the primary mode of transporting Australia's general cargo imports and exports, and is a crucial link in the broader container freight supply chain.

The ports facilitated approximately $552.9 million of containerised trade each day over the three month period ending 31 October 2019.[2]

The significant flow of goods through the ports reflects their position as the four largest container ports in Australia. The value of goods handled by the ports is also material in the context of each state's economy, and the Australian economy. In Table 1 below I present the average daily value of containerised trade at the ports over the three month period ending 31 October 2019, as compared with average daily gross state product (GSP) per day for the relevant state.

[1] MariTrade has developed a database designed to sort and analyse very large volumes of trade data into meaningful air and sea freight reports. The data records detailed commodity imports and exports by port, State and country. See Maritrade.com.au/statistics.html.

[2] HoustonKemp analysis of MariTrade/ABS data.

Table 1 – Average daily containerised trade and GSP, August to October 2019

	Average daily value of containerised trade ($, million)	Average GSP ($, million)	Containerised trade relative to GSP
Port of Brisbane	96.3	978.2	9.8%
Port Botany	191.3	1683.3	11.4%
Port of Melbourne	204.4	1222.1	16.7%
Port of Fremantle	60.8	714.1	8.5%
Total	552.9	4597.7	12.0%

Source: MariTrade and ABS; and ABS, 5220.0 – Australian National Accounts: State Accounts, 2018-2019 – Table 1. GSP, Chain volume measures and current prices, 2019 financial year. Note that the figures may not add to the total due to rounding

The data presented at Table 1 above shows that the daily value of containerised trade at each port is highly material in the context of its respective state's GSP – ranging between 8.5 per cent for the Port of Freemantle to 16.7 per cent for the Port of Melbourne. It follows that containerised trade makes an important contribution to each state economy, and to the overall Australian economy.

I note that a precise like-for-like comparison of the level of containerised trade at each of the ports with the relevant state's GSP would require state financial information over the same three month period from 1 August to 31 October 2019, ie, part of the financial year ended 30 June 2020. However, information on GSP is only published annually, and is not available in respect of particular months in a given year. I have therefore assumed that the average daily level of GSP over the whole financial year ended 30 June 2019 is a reasonable estimate for the average daily rate over the relevant three month period to 31 October 2019. Further, full national accounts data is not yet available in respect of the 2020 financial year and so I have used information from the financial year ended 30 June 2019 in order to calculate the average daily GSP in each state over the 2019 financial year.

It follows that there is a mismatch between the container trade data (which apply in relation to the 2020 financial year) and the GSP figures. My estimates therefore provide an indication for the quantum of containerised trade relative to economic activity, rather than a precise estimate of the contribution of containerised trade to GSP at a given time. This qualification to my analysis applies in relation to each occasion that I draw on the GSP data in my report.

The level of containerised trade at the ports has grown steadily in recent years, with the volume of containers handled at the ports having increased at an average rate of 3.3 per cent per annum over the ten years between 2008 and 2018, or 38 per cent in total.[3] This growth in trade volumes has outstripped the rate of growth in the applicable states' combined GSP over that period, ie, 2.6 per cent, which reflects the increasing role of containerised trade in the Australian economy.[4]

Although there has been material growth in the level of containerised trade at the ports in recent years, I use 2019 trade volume data as a direct estimate of the volumes in 2020, without allowing for any growth in trade from 2019 to 2020. The conservative nature of this assumption enables an allowance to be made for the potential negative consequences that the COVID-19 pandemic may have on containerised trade volumes over the period 1 August – 31 October 2020.

[3] HoustonKemp analysis of BITRE data, see: BITRE, *Yearbook 2019 - Australian Infrastructure Statistics*, December 2019, p 131. I note that data for 2019 is not available (as at 11 September 2020). Growth rate calculated as (7,660,121 / 5,549,356) ^ (1/10) - 1. Containers exchanged at the four ports of interest was 7,660,121 TEU in 2017/18 and 5,549,356 TEU in 2007/08, which equates to a 38.04 per cent increase over the decade.

[4] HoustonKemp analysis of the compound annual growth rate in New South Wales, Victoria, Queensland and Western Australia's gross state product between 2008 and 2018. See: ABS, *5220.0 - Australian National Accounts: State Accounts, 2018-19, Table 1 Gross State Product, Chain volume measures and current prices.*

In so doing, I assume that the COVID-19 pandemic has not caused a material, sustained disruption to containerised sea freight, on the basis that ships and ports have continued to function, consistent with the maritime industry being considered an essential service. On 30 March 2020, National Cabinet confirmed that aviation and maritime workers continue to provide essential services.[5]

Consistent with my assumption, I note the Maritime Union of Australia's submission to the Australian Parliament Inquiry into the implications of the COVID-19 pandemic for Australia's foreign affairs, defence and trade, which states in relation to the continued operation of ships facilitating Australia's overseas trade that:[6]

> Notwithstanding the COVID-19 restrictions like border closures and quarantine arrangements that posed difficulties for ship crew changes, that impacted on rosters, combined with the confined working environments prevalent onboard and which exacerbated the isolation factor for seafarers, that gave rise to issues like fatigue and mental stress, ships and ports continued to function. Ships continued to deliver the nation's exports that helped hold up the performance of the economy (at least to the March quarter at the time of this submission) and on the import side, the delivery of essential supplies like fuel, medical equipment, medicines and food that has sustained the nation during the COVID-19 pandemic.
>
> Ships and the ports they use are a critical component of the supply chains that support other wealth generating industries. Ships are critical to the import and export supply chains for all facets of manufacturing, resources and energy including refined petroleum products, agriculture, aquaculture, fishing, tourism (including the growing marine tourism and cruise sectors), wholesale and retail distribution, and construction.

And:[7]

> Dockworkers continued to load and unload ships at ports across the nation.
>
> While costs increased to wholesalers, retailers and consumers for some products for which demand increased during the pandemic, this cost increase did not arise from freight cost increases and no bottlenecks arose in the shipping and ports component of supply chains. They continued to function efficiently and productively.

On balance, in my opinion the 2019 historical trade volumes are a conservative estimate of the relevant volumes for 2020 and so the trade volumes that may be affected by industrial action.

Against this backdrop, in my opinion containerised trade and the ports are highly important to the Australian economy.

2.2.1 Nature of containerised trade

A diverse range of goods are imported and exported by means of containerised trade.

Containerised imports principally consist of consumable goods and manufactured items, eg, metals, furniture, pharmaceuticals, electrical equipment, beverages, paper and newsprint, and other manufactured products.

By contrast, containerised exports principally consist of primary goods such as cereal grains, meat, dairy products, and fruit and vegetables. Australia exported US $38 billion of agricultural products in 2018,[8] making it one of the largest agricultural exporters in the world.

[5] See: https://www.pm.gov.au/media/statement-update-coronavirus-measures, accessed 11 September 2020.

[6] Maritime Union of Australia, *Inquiry into the implications of the COVID-19 pandemic for Australia's foreign affairs, defence and trade: submission 84*, 24 July 2020, p 38.

[7] Maritime Union of Australia, *Inquiry into the implications of the COVID-19 pandemic for Australia's foreign affairs, defence and trade: submission 84*, 24 July 2020, p 38.

[8] WTO, *World trade statistical review*, 2019, p 31.

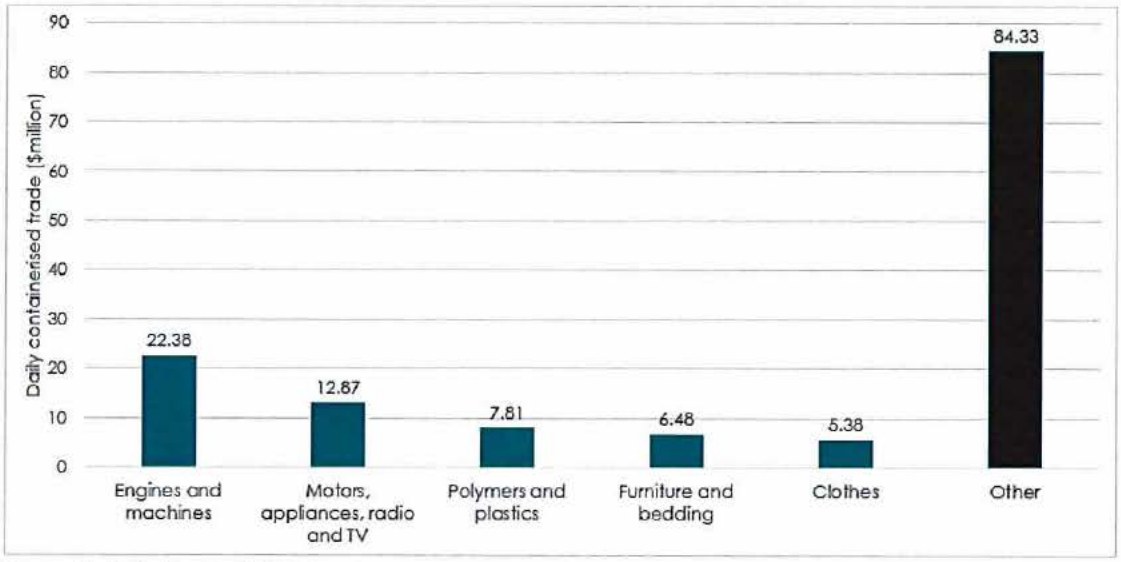
In the remainder of this section I present the top five categories of goods imported and exported at each of the ports over the period from August to October 2019. I also observe significant diversity in the goods handled by the ports, which is evidenced by the value of goods that fall outside the top five categories, ie, the 'other' category in the figures in the remainder of this section.

2.2.2 Port of Melbourne

The Port of Melbourne is the largest container port in Australia, handling approximately 2.71 million TEUs in 2018-19, or 34 per cent of containerised trade in Australia.[9]

I present the top five categories of containerised trade at the Port of Melbourne over the August to October 2019 period in Figure 1 and Figure 2 below, for imports and exports respectively.

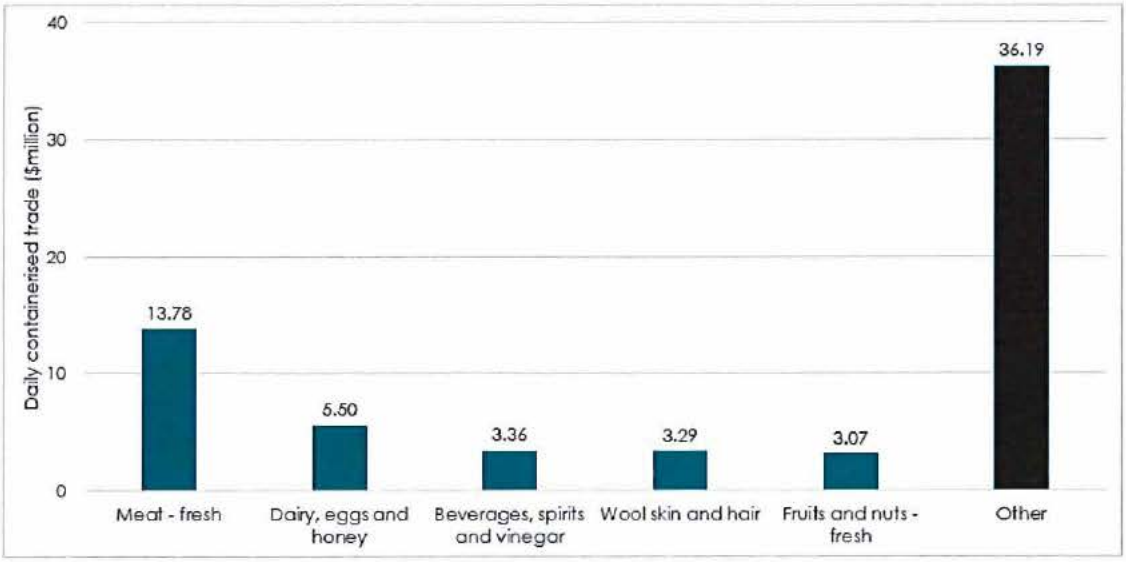
Figure 1 – Top five imports through the Port of Melbourne – August to October 2019



Source: MariTrade based on ABS data

[9] ACCC, *Container stevedoring monitoring report 2018-19*, October 2019, p 47.

Figure 2 – Top five exports through the Port of Melbourne – August to October 2019



Source: MariTrade based on ABS data

2.2.3 Port Botany

Port Botany is the second largest container port in Australia, handling approximately 2.65 million TEUs in 2018-19, or 33.5 per cent of containerised trade.[10]

NSW Ports highlights that Port Botany is a strategic economic asset for Australia and:[11]

> ...critical to the current and future economic prosperity of NSW

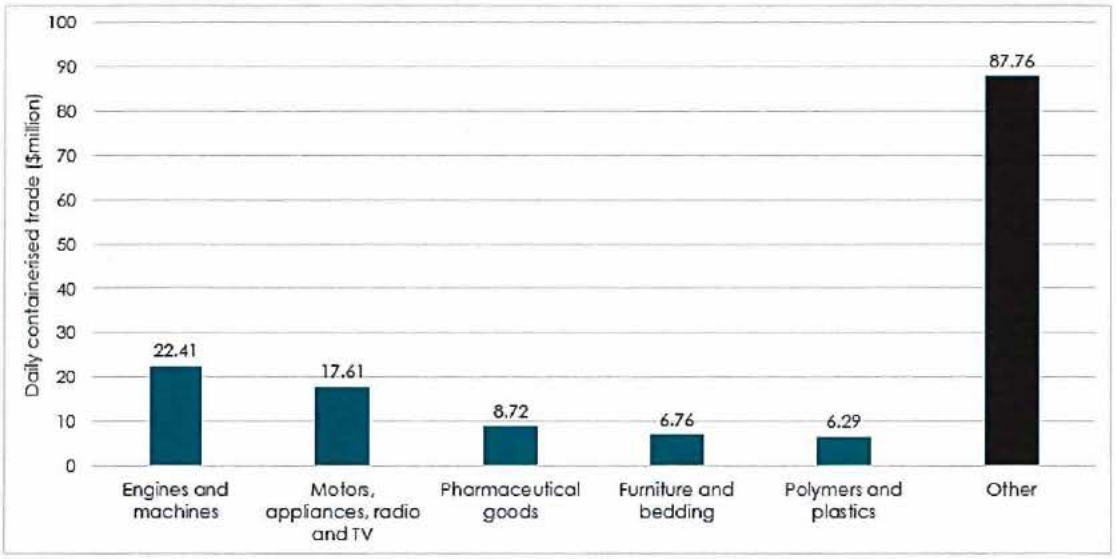
NSW has historically been a net importer of goods. The major suppliers of imported goods are China, the United States and Japan. Major merchandise exports include coal, copper, beef and aluminium, and primary export destinations for goods are Japan, China and the Republic of Korea.

I present the top five categories of containerised trade over the August to October 2019 period in Figure 3 and Figure 4, for imports and exports respectively, along with the daily value attributable to each category.

[10] ACCC, *Container stevedoring monitoring report 2018-19*, October 2019, p 47.

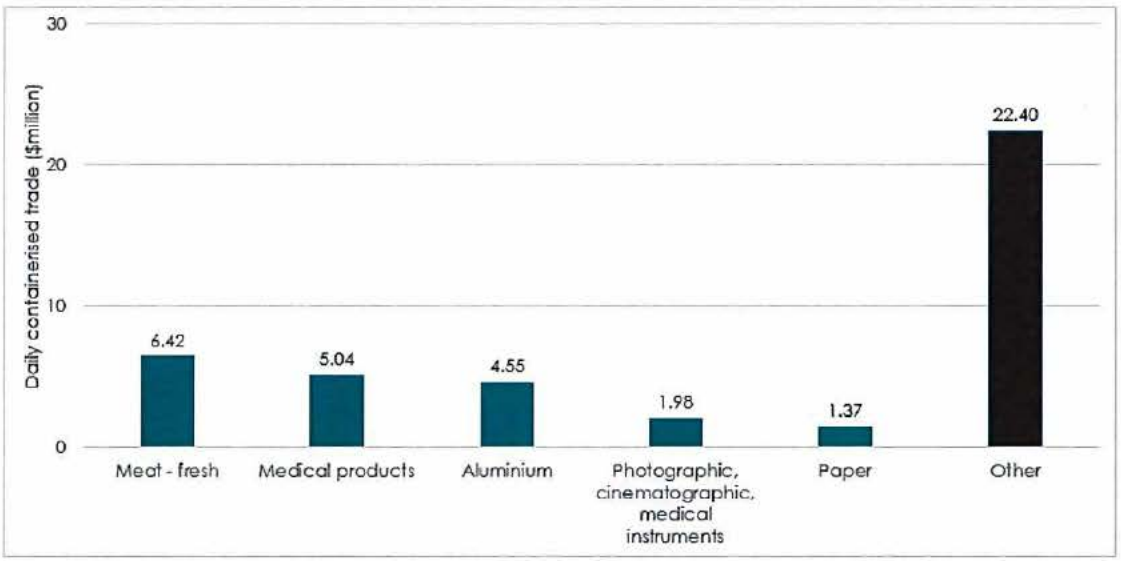
[11] NSW Ports, *Navigating the future – NSW Ports' 30 year master plan*, October 2015, p.7.

Figure 3 – Top five imports through Port Botany and daily value – August to October 2019



Source: MariTrade based on ABS data

Figure 4 – Top five exports through Port Botany – August to October 2019



Source: MariTrade based on ABS data

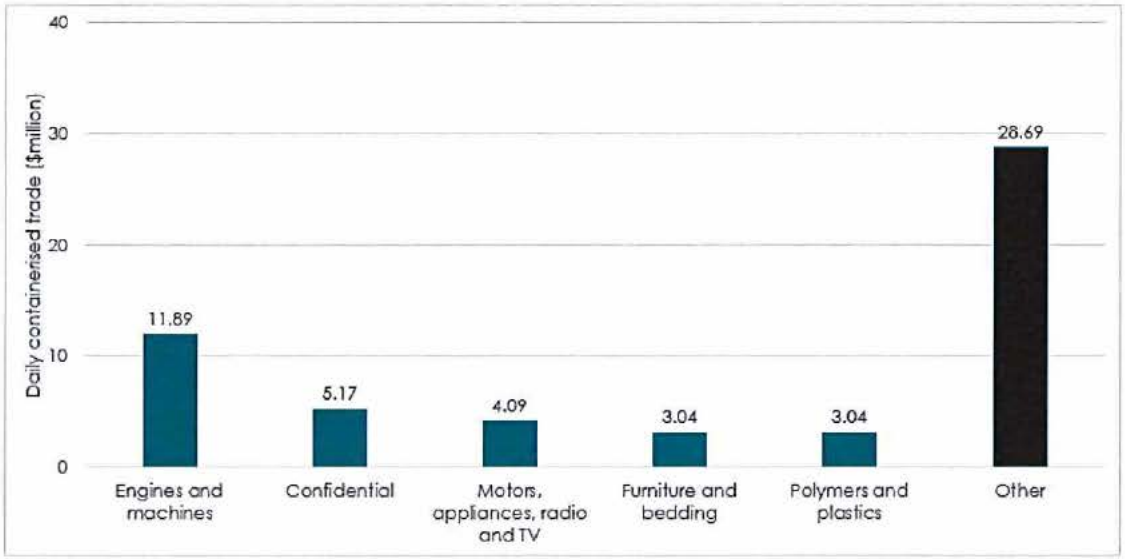
2.2.4 Port of Brisbane

The Port of Brisbane is the third largest container port in Australia, handling 1.31 million TEUs in 2018-19, or 16.6 per cent of containerised trade.[12]

[12] ACCC, *Container stevedoring monitoring report 2018-19*, October 2019, p 47.

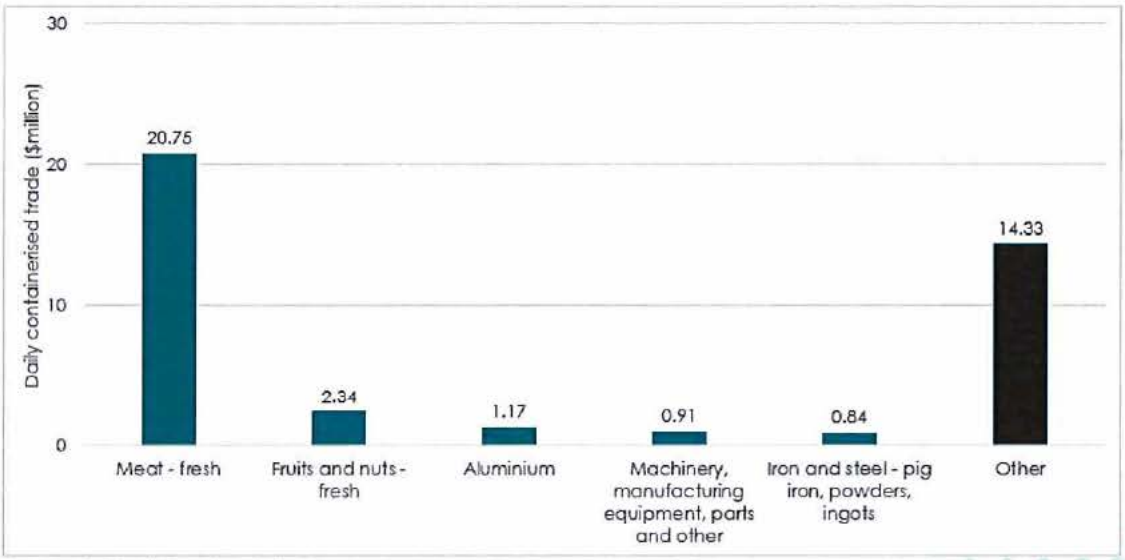
I present the top five categories of containerised trade at the Port of Brisbane over the August to October 2019 period in Figure 5 and Figure 6, for imports and exports respectively, along with the daily value attributable to each category.

Figure 5 – Top five imports through the Port of Brisbane – August to October 2019



Source: MariTrade based on ABS data

Figure 6 – Top five exports through the Port of Brisbane – August to October 2019



Source: MariTrade based on ABS data

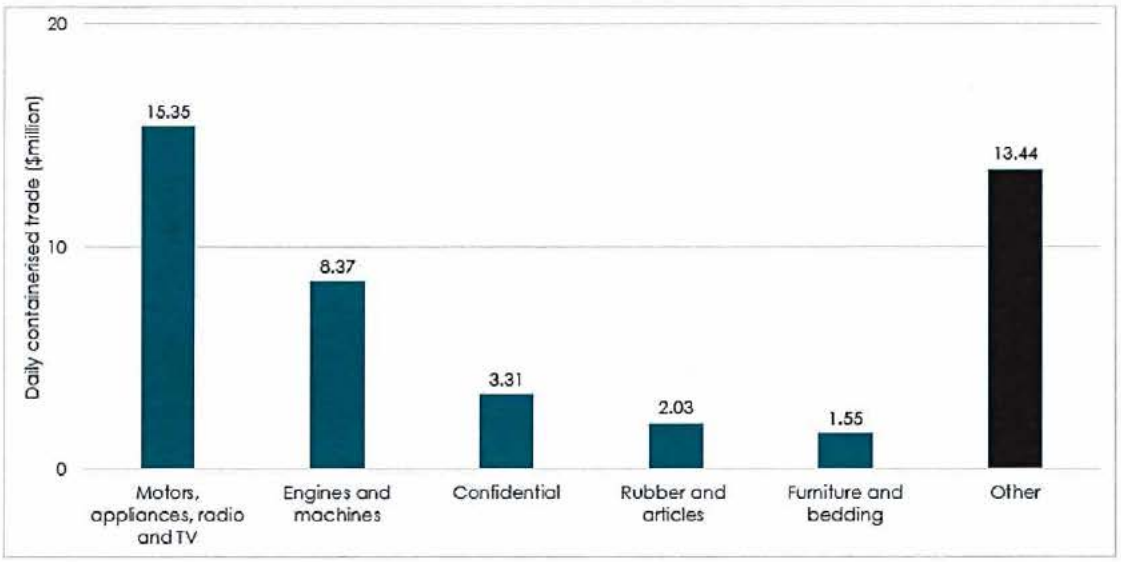
2.2.5 Port of Fremantle

The Port of Fremantle is the fourth largest container port in Australia, handling 0.79 million TEUs in 2018-19, or 10 per cent of containerised trade.[13]

Port of Fremantle's top containerised trading partners are China, rest of Australia, Japan and Malaysia. Port of Fremantle's top container trade imports in 2018-19 were manufactures of metal, paper, paperboard and paper pulp, plastic wares and other manufactures, rubber, and machinery (agricultural and industrial).

I present the top five categories of containerised trade at the Port of Fremantle over the August to October 2019 period in Figure 7 and Figure 8, for imports and exports respectively, along with the daily value attributable to each category.

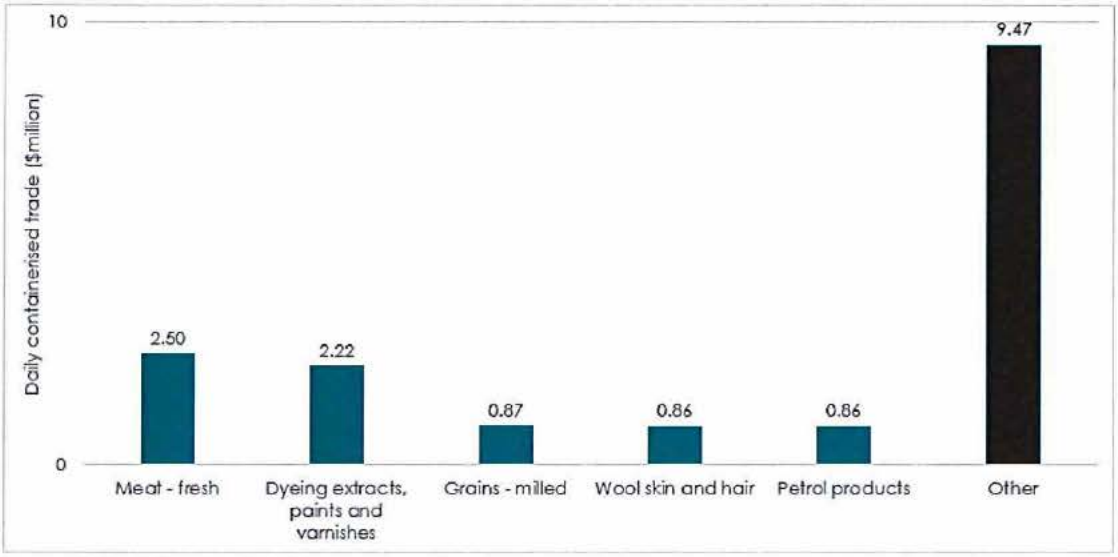
Figure 7 – Top five imports through the Port of Fremantle – August to October 2019



Source: MariTrade, based on ABS data

[13] ACCC, *Container stevedoring monitoring report 2018-19*, October 2019, p 47.

Figure 8 – Top five exports through the Port of Fremantle – August to October 2019



Source: MariTrade based on ABS data

2.3 Context to the potential industrial action

[redacted]

The cascading nature of delays is supported by statements made by Orient Overseas Container Line Limited (OOCL) in relation to industrial action that has already taken place at terminals around Australia, on 9 September 2020:[14]

> OOCL customers would be aware that ongoing industrial action at terminals around Australia has created severe disruptions to shipping lines schedule integrity. The delays experienced around the Australian coast over the past month has impacted all shipping lines vessel schedules upon their return back to Asia.
>
> [...]
>
> Regret these work stoppages and those expected at other terminal operator locations will both disrupt schedule integrity in September and have a cascading impact into October due to the delays as vessels return back to Asia.

2.3.1 Just-in-time supply chains

In recent decades, supply chains have undergone transformations towards leaner, more agile 'just-in-time' systems.[15] A 'just-in-time' supply chain is one that minimises costs by procuring and delivering everything at the last possible opportunity, minimising the costs of warehousing and storage.

[14] See https://www.oocl.com/australia/eng/localinformation/aboutooclaustralia/Pages/default.aspx?site=australia&lang=eng, accessed 13 September 2020.

[15] See, for eg, Nordas, H, *International production sharing: a case for a coherent policy framework,* World Trade Organisation (WTO) Discussion paper 11, 2005, p 1.

By definition, such forms of business operation have very little flexibility to respond to delays or other operational interruptions. In consequence, industrial action by stevedores is likely to cause significant 'ripple effects' out across the supply chain.

2.3.2 Existing protected industrial action

[redacted]

The range of actions across the ports has included one or more of the following:

- **bans on shift extensions**: if a vessel or task is not competed within a shift, there is no ability to extend the shift in order to finish the task – this causes major disruption on the planning of the next shift, where labour and equipment must be redeployed;
- **ban on upgrades:** this ban involves restricting the scope of tasks that any category of employee can undertake, eg, a casual worker cannot take on roles that would be ordinarily undertaken by an employee at a higher skill level – this places restrictions on, for example, the type of yard machinery that can be operates, thereby restricting the ability to resource a crane gang (team of staff on a given shift), representing a big hurdle to crane deployment;
- **ban on overtime**: this restricts the ability to resource a crane gang, where staff have already reached their weekly hours – this action causes particular hurdles on the weekend but is also a restriction during weekdays;
- **ban on call in labour**: this restricts the ability to resource a crane gang and respond to absenteeism, such as in the event of an unplanned absence, or to get extra labour if a vessel arrives late;
- **ban on continuous gangs:** this refers to the ability to use a quay crane continuously for a full eight hour shift – lowering the productivity of the crane;
- **ban on advance or delayed starts for shifts:** this concerns the practice of aligning shifts with available work and therefore optimising productivity; and
- **one hour stoppage per shift:** this restriction that applies across all equipment, placing a significant limitation on available crane hours and also affecting vessels and road transport.

The consequences of any future industrial action by DP World stevedores is magnified by the existing set of PIAs. In particular, DP World will take longer to recover from a stoppage in terms of clearing delays and addressing the backlog of containers that will build up during the period of industrial action, because of the existing restrictions on its ability to optimise its activity.

[redacted]

Put simply, the total effect of a stoppage on container volumes at a port and on the Australian economy depends on DP World's ability to respond efficiently and recover from the action. I understand from DP World that the existing PIA is a material constraint on DP World's ability to do so.

[redacted]

COVID-19

In section 2.2 above I presented an extract from the Maritime Union of Australia's submission to the Australian Parliamentary Inquiry into the implications of the COVID-19 pandemic, which noted that while the ports have continued to function, COVID-19 has presented complexities and challenges for ships and ports.

For stevedore companies, COVID-19 increases the risks and challenges in relation to resourcing crane gangs. COVID-19 increases the risk that staff will take unplanned absences, such as will arise if an individual comes into contact with a known positive case or close contact. For example, in April 2020, a positive COVID-19 case was identified in Hutchison Ports Australia's Sydney workforce, and a second positive case was identified shortly thereafter. Around fifty workers were required to isolate due to the positive case.[17]

The additional pressure on resourcing as a consequence of COVID-19 makes DP World's operations more sensitive to any measure that further affects its resourcing capability, such as industrial action.

[17] See: https://www.mua.org.au/news/hutchison-workers-win-strong-covid-19-measures, accessed 11 September 2020.

3. Effect of industrial action on the economy

In this section I respond to Seyfarth Shaw's request to evaluate the likely effect on the overall output of the Australian economy of a stoppage of work by stevedores at one, several, or all of the ports, and on each of the Queensland, New South Wales, Victorian and Western Australian economies.

3.1 Approach

The consequences to the Australian economy of a stoppage of work by stevedores can be delineated into three key categories, ie:

- direct consequences of disrupted goods – including items that cannot be recovered (eg, fresh meat) and costs and penalties incurred by stevedores, shipping lines and shippers;
- indirect consequences of disrupted goods – the second-order effects in connection with the direct effects ie, the multiplier effects; and
- operational consequences including delays, management of empty containers, reputational effects and their potential to affect overall output of the Australian economy.

First, I estimate the direct consequences of disrupted goods. Second, I make a qualitative assessment of the indirect and operational consequences of the disrupted goods in terms of the likely effect on the overall output of the Australian economy.

For the purpose of estimating the direct consequences of disrupted goods to the Australian economy, I have assumed that the potential industrial action occurs at some time during the three month period ending 31 October 2019 (the assessment period).

I evaluate the effect on output of industrial action at the ports by:

- reference to the known level of containerised trade at each port in the three month period ending 31 October 2019;
- estimating the share of imports and exports handled by DP World at each port;
- accounting for the potential for DP World to sub-contract other stevedores to meet demand it cannot satisfy due to industrial action;
- calculating the value of goods for import and export disrupted by industrial action; and
- estimating the direct loss of output caused by that disruption to the flow of imports and exports.

In the remainder of this section I estimate the value of containerised goods disrupted by industrial action at the ports and then separately evaluate the economic effect of that disruption.

3.2 Direct consequences of disrupted goods

3.2.1 Value of disrupted goods

My analysis indicates that a substantial volume of containers is typically handled at the ports during the months of August, September and October. In Table 2 I present the average daily value and number of containers – measured in twenty-foot equivalent units (TEU)[18] – handled at the ports over the three month period ending 31 October 2019.

[18] One TEU is equivalent to one 20 foot shipping container. TEU is the standard unit of measurement for shipping containers.

Table 2 – Number and value of containers handled by stevedores per day, August to October 2019

	Volume of Imports (TEU)	Value of imports ($, million)	Volume of exports (TEU)	Value of exports ($, million)
Port of Brisbane	1,638	55.9	1,019	40.3
Port Botany	3,635	149.5	1,390	41.8
Port of Melbourne	3,870	139.3	2,463	65.2
Port of Fremantle	1,049	44.1	718	16.8
Total	**10,193**	**388.8**	**5,591**	**164.1**

Source: MariTrade provided data sourced from individual ports and ABS international trade. Note that the figures may not add to the total due to rounding

In my opinion, given the seasonal nature of trade, these data are the best direct estimate of the trade that may be affected by industrial action taken by DP World stevedores during mid-2020. I note in section 2.1 my assumption that these outturn figures in respect of the 2019 year provide a reasonable indication of the value of containers that can be expected to be handled by stevedores over the assessment period in 2020.

3.2.2 Value of goods handled by DP World

Since I have been asked to evaluate the likely effect on the overall output of the Australian economy, I focus my analysis on only those import and export containers that are full, ie, carrying valuable goods. I undertake a qualitative analysis of the operational efficiency implications in relation to empty containers in section 3.4.

I estimate DP World's share of full import and export containers by reference to its share of throughput over the period August 2019 to October 2019, as measured by TEUs. Measuring DP World's share of the relevant throughput in this manner reflects the productivity of each stevedore, which in turn reflects the operating configuration of each stevedore.[19]

In Table 3 overleaf I present my estimate of DP World's market share of full containers at each port, along with the number of TEUs per day.

[19] I note that each stevedoring company operates a number of different types of cranes at each port and that the total number and size of cranes are also a factor determining stevedoring capacity. The class of crane used at berths (ie, Panamax, post-Panamax, super post-Panamax) affects the cranes reach and size of container vessels that can be serviced. The class of crane used will also affect the configuration of lifts (ie single or twin/tandem) that can have an effect on the rate of throughput.

I estimate the value of imports and exports handled by DP World each day over the assessment period by application of DP World's market share at each port – from Table 3 – to the value of imports and exports at each port, from Table 2. I present my estimates of the value of imports and exports handled by DP World each day over the assessment period in Figure 9.

[20] Calculated as the sum of the full import TEU per day at each of the four ports. Note that the figures may not add to the total due to rounding.

[21] Calculated as the sum of the full export TEU per day at each of the four ports. Note that the figures may not add to the total due to rounding.

[redacted]

3.2.3 Scope to sub-contract other stevedores

[redacted]

3.2.4 Direct value of goods disrupted by a 24 hour stoppage

I calculate the daily value of imports and exports disrupted by industrial action at each port to be equal to the average daily value of imports and exports handled by DP World over the three month period ending 31 October 2019, less the proportion of containers that can be subcontracted to other stevedores at each port.

I present my estimates of the value of imports and exports that would be disrupted by a 24 hour stoppage at each port in Figure 10.

My estimate of the value of goods likely to be disrupted by industrial action each day is material in the context of the Australian and state economies.

In Table 5 below I present my estimate of the direct value of goods for import and export disrupted by any 24 hour period of industrial action, as compared with gross daily output of the relevant state in 2019, or the Australian economy.

The direct value of goods disrupted by industrial action that I estimate above is not an estimate of the value of those lost completely, since many of the disrupted goods will likely be delivered to their destination eventually, albeit after a delay.

Nevertheless, the contribution of those goods to the relevant state and Australian economy may be substantially reduced by consequence of a disruption, particularly for those goods that:

- are perishable;
- seasonal in nature or resold by importers without sufficient stock on hand; or
- that are inputs to the production of another good or service in a downstream market.

Some seasonal products attract premiums during a narrow period in which no alternative supplies are available, as noted by the Productivity Commission:[22]

> If the product does not arrive before its expiry date it is unlikely that the product can be sold at all. Particular examples include Chinese cabbage, broccoli and asparagus sold into South-East Asia.
>
> Further, if commodities are imported to supply seasonal industries such as the fishing or wine industries and if these goods miss the season for which they were purchased, sales may be lost or made at greatly reduced prices. Shippers incur the financial cost of having the capital tied up when goods are held over to the next suitable season.

With this in mind, in sections 3.2.6 and 3.2.7 I evaluate the nature of the imported and exported goods likely to be disrupted by industrial action and, on that basis, estimate the resulting loss of output for the relevant state and Australian economy.

Before I present that analysis, I comment briefly on the additional costs likely to be occasioned by industrial action lasting for a period of seven days or longer.

3.2.5 Additional costs occasioned by an extended period of industrial action

When containers cannot be subcontracted to another stevedore for one or other reason, the principal alternatives available to a shipping line are:

- to join a queue at the port where industrial action is taking place;
- to by-pass that port and proceed to the next port on its schedule, provided it is not also affected by industrial action; or
- to amend its schedule through re-routing so as to avoid arriving at the port during the period of industrial action.

[redacted]

I also understand that there will be a range of commercial considerations relevant to the alternative selected by a shipping line, including:

- delays in its schedule and bunker costs;
- demurrage costs for its customers when it joins a queue at the affected port;[23]
- the cost and practicability of arranging alternative transportation by road, rail or sea when it sails on to another port, which may fall to the importer/exporter or shipping line, depending on the commercial arrangements agreed;[24]

[22] Productivity Commission, *International benchmarking of the Australian waterfront: Research report*, April 1998, p 201.

[23] Demurrage costs are charges payable to the vessel owner on failure to load or discharge the vessel within the time agreed.

[24] There are a number of options for transporting containers to their destination port after a vessel has by-passed a port. On land, containers can be transported by road or rail but may incur significant costs given the volumes involved. At sea, vessels may unload the containers at the next available port and arranging for other vessels to transport the containers to the destination port once available. Alternatively, the shipping line decided to double-back on its rotation schedule, incurring the cost of additional days at sea.

- the logistics and operational costs arising from a change in route to avoid arriving at the time of industrial action, eg, containers may need to be unloaded and reloaded because they are stacked to reflect a particular sequence of destination ports;
- wharfage;
- pilot cancellation; and
- towage cancellation costs.

The party liable for demurrage, transport, or other costs occasioned by industrial action will depend on the contractual arrangement between a shipping line and its customers. Nevertheless, the cost of demurrage and alternative transportation are likely to be significant.

The various contractual arrangements under which a shipping line may be operating at any time can give rise to a range of conflicting interests, eg, as between the shipping line and its customers and/or between customers at different ports. Since its decision will ultimately turn on the circumstances it faces, it is generally not practicable to presuppose a shipping lines' response to a disruption.

However, I understand from DP World that shipping lines will generally queue offshore provided a terminal closure or disruption is not for an extended period, ie, seven days or more. The longer the disruption, the more likely it is that a vessel would proceed to the next port in its schedule.

It is therefore likely that industrial action with a duration of seven days or more will result in significant additional costs associated with the additional transportation of containers destined for the affected port by road, rail or sea at a later date.

[redacted]

I am not aware of any recent economic impact studies on the consequences of industrial action by stevedores at an Australian port. In estimating the direct consequences of disruption, I have had regard to:

- OECD research papers on global ports, including the findings that a 10 per cent increase in total transit time leads to a reduction in trade value for exports of between five and 25 per cent;[25]
- estimates by the Congressional Budget Office in the United States of the effect of a one week shutdown of all container traffic through the ports of Los Angeles and Long Beach, California, estimated at between 13 and 30 per cent of imports per day;[26] and
- estimates of the total economic impact of a port disruption over a 90 day period at the Port of Beaumont and Port Arthur in Texas, drawing on input-output multiplier analysis – this paper found that a 90 day disruption at the two ports would be associated with a $4,186[27] million or 24 per cent impact on gross output to the Port Region,[28] for which I note that:
  - as a percentage of trade through the port, the estimate equates to 44 per cent; and

[25] H Nordas, E Pinali and M Geloso Gross, *Logistics and time as a trade barrier, OECD Trade Policy Working Papers*, 35, May 2006, p 9.

[26] The paper finds that the closure of these Los Angeles and Long Beach ports for one week would cost the US economy somewhere in the range of $65 million to $150 million per day.[26] Accounting for containerised imports through these ports of an average of $499 million per day,[26] costs of $65 million to $150 million translates to an economic cost of approximately 13 to 30 per cent. Congressional Budget Office, *The economic costs of disruptions in container shipments,* March 2006, p 2. Calculated as 65/500 and 150/500 respectively.

[27] Rose A, Wei Dan, *Estimating the economic consequences of a port shutdown: the special role of resilience*, Economic Systems Research, 2013, Vol. 25, No. 2, p 228.

[28] Regional output is around $71 billion per year, or $17.8 billion per quarter. $4,186 million is approximately 23 per cent of quarterly regional output.

> in having regard to this paper, measures of gross output are distinct from measures of economic loss.

These studies provide an order-of-magnitude indication of the proportional consequences of an interruption at the ports. In the remainder of my analysis, I have adopted the conservative assumption that the direct economic loss per day is equal to five per cent of affected imports and five per cent of affected exports, in each instance on the assumption that a normal level of vessel service capability is in operation immediately prior to the stoppage, and resumes immediately thereafter.

3.2.6 Consequences of disruption – imports

Figure 10

I explain below that a reduction in the value of goods imported to a state would reduce the overall output of that state, as well as the overall output of the Australian economy.

At the time importers are notified of a forthcoming disruption caused by industrial action, many of them will have containers either:

- delivered to the terminal at the port of origination;
- loaded onto a departing vessel; or
- upon a vessel already in transit.

Further, the duration of transit to Australia is such that many goods are likely to be in transit when the importer is notified of a disruption. I understand from DP World that it will be notified of industrial action five working days before it takes place, whereas goods to be imported from Asia can take longer than 12 to 14 days to arrive in Australia, depending on the applicable route.[29]

It is therefore likely that importers will have limited scope to delay the transport of goods until the industrial action is over, which may be less disruptive and costly than the options available once goods are in transit, eg, by-passing the port, thereby necessitating additional transportation, potential further delays and costs. Importers would only be able to delay shipment when industrial action is expected to be particularly long-lasting, ie, two weeks or more.

Containers that cannot be handled at a port where industrial action is taking place will face delays in getting to their final destination, the cost of which may include:

- lost sales, to the extent that delayed imports represent goods for resale and importers do not have sufficient stock on hand – lost sales are likely to be particularly relevant for importers of perishable goods that cannot be stored for long durations and that may perish before their arrival into Australia;
- demurrage costs for the duration of time that vessels are delayed;
- the cost of transport and potentially storage for those containers that are shipped to and offloaded at an alternate port; and
- additional operating costs or loss of productivity, to the extent that delayed imports are necessary inputs to an importer's production process and the delay in their arrival holds up production.[30]

Nature of containerised imports

The nature and extent of the economic harm arising from a disruption to the flow of goods for import will depend on the sensitivity of their downstream use to delays.

At one end of the spectrum of possibilities, a delay may give rise to an inconvenience for an importer, without necessarily translating into a permanent loss in output and sales that, in turn, results in lost wages and profit. Businesses or consumers falling into this category are likely to be those for whom the import supply chain is a modest or occasional component of their enterprise.

At the other end of the spectrum are importers for whom containerised freight supports complex production and distribution supply chains and/or where international competitiveness demands cost efficiency, as arises from well-functioning, just in time product processing. For these industries, the economic harm occasioned

[29] For example, Maersk Line takes 16 days to transit from Singapore to Sydney on its Komodo service. See: https://www.maersk.com/local-information/asia-oceania-services-routes/komodo#, accessed 13 September 2020.

[30] This may also include additional container storage costs, to the extent there are delays in the transport of containers upon resumption of normal services at DP World's container terminals.

by a delays in the flow of inputs to the point of production carries a much greater risk of irrecoverable damage.

In Table 6 below I present the top five goods imported at each port, arranged by value, over the August to October 2019 period, along with the average *daily* value attributable to each over this period.

Table 6 – Top five goods for importation by value, August to October 2019 ($/day)

Port of Melbourne	Port Botany	Port of Brisbane	Port of Fremantle
$22.4 million Engines and machines	$22.4 million Engines and machines	$11.9 million Engines and machines	$15.4 million Motors, appliances, radio and TV
$12.9 million Motors, appliances, radio and TV	$17.6 million Motors, appliances, radio and TV	$5.2 million Confidential	$8.4 million Engines and machines
$7.8 million Polymers and plastics	$8.7 million Pharmaceutical goods	$4.1 million Motors, appliances, radio and TV	$3.3 million Confidential
$6.5 million Furniture and bedding	$6.8 million Furniture and bedding	$3.0 million Furniture and bedding	$2.0 million Rubber and articles
$5.4 million Clothes	$6.3 million Polymers and plastics	$3.0 million Polymers and plastics	$1.6 million Furniture and bedding
$84.3 million All other imports	$87.8 million All other imports	$27.7 million All other imports	$13.4 million All other imports

Source: MariTrade and ABS international trade data

The analysis that I present in Table 6 indicates that containerised imports at each port support complex, production and distribution supply chains, eg, they are:

- goods for resale, eg, pharmaceutical goods, appliances, furniture, bedding, televisions etc – if these products are not delivered on time then they cannot be sold to customers and, to the extent that importers do not hold sufficient inventories, this delay may translate into lost revenue; or
- inputs to production in a downstream market and result in lost production, eg, engines, machines, pharmaceutical goods etc – these goods represent inputs to the production of other goods and so, to the extent that importers do not hold large stocks of these inputs, a delay may result in lost revenue.

International competitiveness in these supply chains demands cost efficiency achieved through well-functioning, just in time product processing. For these industries, the economic harm from an extended delay in the movement of product to or from its point of production to end-customer carries a much greater risk of economic loss.

In section 4 I discuss the likely effect on Australia's large retailers as one such example of this effect.

The assessment that I discuss above leads me to conclude that a loss in output will arise from a significant proportion of those imports disrupted by industrial action.

Direct reduction in output

I explain at section 3.2.5 that I adopt a conservative assumption that five per cent of the value of all imported goods disrupted by industrial action are lost. On this basis, I estimate that for any 24 hour period of industrial action, the resulting loss of output from disrupted imports:

- for the Queensland, New South Wales, and Victorian state economies will be between 0.12 to 0.33 per cent of their average daily GSP – approximately $0.6 million to $2.8 million per day; and
- for the Australian economy will be approximately 0.21 per cent of average daily gross domestic product – approximately $7.1 million per day.

Gross state and domestic products are one of the primary indicators of an economy's health and represent the total compensation to employees, gross profits for firms and taxes less any subsidies. The practical implication of a contraction in gross state and domestic products caused by industrial action is therefore that the compensation, or 'income', that these parties receive is lower than what it would be otherwise.

I present a breakdown of my assessment in Table 7.

Table 7 – Direct loss of output from disrupted imports and materiality to each state

	Disrupted imports ($ million, per day)	Loss of output ($ million, per day)	Gross product ($ million, per day)	Loss of output relative to gross product
Port of Brisbane	21.0	1.1	646.8	0.16%
Port Botany	56.2	2.8	1,113.1	0.25%
Port of Melbourne	52.7	2.6	808.1	0.33%
Port of Fremantle	11.5	0.6	472.2	0.12%
Australia	**141.5**	**7.1**	**3,414.8**	**0.21%**

Source: HoustonKemp analysis of MariTrade and ABS data, along with ABS, 5220.0 – Australian National Accounts: State Accounts, 2018-19 – Table 1. GSP, Chain volume measures and current prices. Note that the figures may not add to the total due to rounding

Importantly, the estimates I present above do not account for any second round or 'multiplier' effects that exacerbate the consequences of disruption, which I discuss in more detail in section 3.3. Including these wider effects would materially increase the extent of the estimated damage to the state and Australian economies.

In section 3.2.8 I combine my estimates of the direct loss of output caused by disrupted imports (above) and disrupted exports (see section 3.2.7) and extrapolate the resulting values so as to reflect the economic loss arising from industrial action lasting various periods longer than 24 hours.

3.2.7 Consequences of disruption – exports

Industrial action by stevedores at DP World's container terminals will also have a direct effect on the exportation of containerised goods. As for imports, a reduction in the value of goods exported from a state would reduce the annual output of that state, as well as that of the Australian economy.

Disruption to the departure of exports can result in various costs to exporters, including:

- the loss of sales as a result of the inability to ship product to export markets, which will be most significant for exporters of perishable products that may expire prior to the resumption of normal services;
- loss of productivity or increased storage/operating costs from the delay in production of products for export; and
- additional charges relating to the storage of containers at ports for the duration of a delay from industrial action.

I highlight examples of these costs in section 3.5.

In contrast to importers, some exporters may be able to mitigate their losses by amending their production schedule to avoid the shipment of goods during the duration of industrial action.

By way of example, exporters of fresh meat may delay the slaughter of animals in order to minimise losses that would arise if such meat was to perish at port or on vessel prior to delivery to export markets. However, I note that the ability of exporters to vary their production schedules will be constrained by the extent to which there is spare capacity in production chains, eg, delaying the slaughter of animals can only take place if there is sufficient flexibility in slaughter capacity.

Notwithstanding, with only five working days' advanced notice of industrial action, some exporters will have already packed and possibly delivered containers to the affected port prior to notification being given. Once the container is accepted at the terminal, there is limited scope for it to be returned or diverted to an alternate stevedore.

Nature of containerised exports

It follows from the above discussion that the nature and extent of economic harm arising from a disruption to exports will depend on a range of factors, including the extent to which they are perishable, any additional storage costs and the reduction in output as a result of the inability to supply goods to customers overseas.

I therefore present in Table 8 the top five categories of containerised goods exported at each port over the three month period ending 31 October 2019, along with the average *daily* value attributable to each over this period.

Table 8 – Top five containerised exports at each port by value, August to September 2019 ($/day)

Port of Melbourne	Port Botany	Port of Brisbane	Port of Fremantle
$13.8 million Meat - fresh	$6.4 million Meat - fresh	$20.8 million Meat - fresh	$2.5 million Meat - fresh
$5.5 million Dairy eggs and honey	$5.0 million Medical products	$2.3 million Fruit and nuts - fresh	$2.2 million Dyeing extracts, paints and varnishes
$3.4 million Beverages, spirits and vinegar and	$4.6 million Aluminium	$1.2 million Aluminium	$0.9 million Grains – milled
$3.3 million Wool skin and hair	$2.0 million Photographic, cinematographic, medical instruments	$0.9 million Machinery, manufacturing equipment, parts and other	$0.9 million Wool skin and hair
$3.1 million Fruit and nuts - fresh	$1.4 million Paper	$0.8 million Iron and steel – pig iron, powders, ingots	$0.9 million Petrol products
$36.2 million All other exports	$22.4 million All other exports	$14.3 million All other exports	$9.5 million All other exports

Source: ManiTrade provided data sourced from ABS international trade data

I observe that a number of the products listed in Table 8 are perishable and/or seasonal, with the likely consequence that industrial action may result in significant reductions in output for these exporters.

Direct reduction in output

As for imports, I also assume[31] that five per cent of the value of all exports disrupted by industrial action are lost. In so doing, I have effectively assumed that the proportion of export value lost as a result of industrial action is the same as the proportion of import value lost.

However, I expect that a greater proportion of export output will be lost due to the nature of goods for export, as compared with imports, eg, fresh meat is perishable and is the highest value category of good exported at the Port of Melbourne, Port Botany and the Port of Brisbane, and the second highest at the Port of Fremantle. On this consideration, my assumption that five per cent of disrupted exports are lost is likely to be conservative.

On this basis, I estimate that, for any 24 hour period of industrial action, the resulting loss in output from disrupted exports:

- for the Queensland, New South Wales, and Victorian state economies will be between 0.04 to 0.16 per cent of average daily GSP – approximately $0.2 million to $1.3 million per day; and
- for the Australian economy will be approximately 0.09 per cent of average daily gross domestic product– approximately $3 million per day.

I present a breakdown of my assessment in Table 9.

Table 9 – Direct loss in output from disrupted exports and materiality to each state

	Disrupted exports ($ million, per day)	Loss in value ($ million, per day)	Gross product ($ million, per day)	Loss in value relative to gross product
Port of Brisbane	14.4	0.7	646.8	0.11%
Port Botany	16.3	0.8	1113.1	0.07%
Port of Melbourne	25.4	1.3	808.1	0.16%
Port of Fremantle	4.1	0.2	472.2	0.04%
Australia	**60.1**	**3.0**	**3414.8**	**0.09%**

Source: HoustonKemp analysis of MariTrade and ABS data, along with ABS, 5220.0 – Australian National Accounts: State Accounts, 2018-19 – Table 1. GSP, Chain volume measures and current prices, 2019 financial year. Note that the figures may not add to the total due to rounding

Again, the estimates that I present above are based on conservative assumptions and do not account for any second round or multiplier effects, which I discuss in section 3.3.

Including these wider effects would materially increase the estimated damage to the state and Australian economies, although I would expect the multiplier applying to exports to be lower than that for imports, given the offshore location of the relevant downstream activities.

3.2.8 Conclusion - direct effects

[redacted]

[31] See section 3.2.5.

3.3 Multiplier effects

The estimates I present above do not account for any second round or 'multiplier' effects that exacerbate the consequences of disruption. Multiplier effects serve to measure the interconnectedness of economic activity, and so the extent to which a direct shock, or change, in one form of economic activity has consequences for other forms of activity. Accounting for these wider effects is likely to increase significantly the estimated loss in output to the state and Australian economies.

While these effects are difficult to estimate quantitatively, the concept is widely acknowledged and applied in the economics literature. I note the following evidence relating to the transport and logistics sector in Australia, ie:

- a report by PwC estimated a gross domestic product multiplier of 2.3 for the more broadly defined maritime industry in Australia, based on a computable general equilibrium (CGE) model and its international experience;[32]
- Deloitte Access Economics estimated that a one per cent increase in port efficiency would increase state GSP by 0.008 per cent in the long run;[33]
- OECD research estimating the indirect economic effects (backward linkage) multipliers in the range of 1.13 to 2.47;[34]

[32] PwC, *The economic contribution of the Australian maritime industry*, February 2015, p 19-20.

[33] Deloitte Access Economics, *NSW container and port policy, Port of Newcastle*, March 2018, p 71.

[34] O Merk, *The competitiveness of global port-cities: Synthesis report: OECD Regional Development Working Papers*, 2013 p 21.

- NSW Government noted highlighted that:[35]

> Logistics is much more than just transport, with general agreement in previous studies that the entire logistics sector accounts for 2.2 to 2.5 times the freight transport component.

- ACIL Allen suggested that a one per cent increase in the productivity of logistics would add $2 billion to Australia's GDP, based on its CGE model;[36]
- a report by PwC estimated a multiplier of 1.9 for the Port of Melbourne;[37] and
- the Port of Fremantle highlighted that, in addition to the 2000 jobs directly linked to its operations in 2018, around three times that many jobs (6,000) are linked indirectly.[38]

I also explain in section 3.2.5 that industrial action lasting longer that seven days would further exacerbate losses to the state and the Australian economy since vessels would likely continue on to the next port (assuming it is not similarly affected by industrial action). This would result in additional transportation costs occasioned by the need for additional transportation by road, rail or sea at a later date, along with the output lost by consequence of a further delay.

Costs to the transport and logistics sector

In the first instance, the disruption to the flow of containers through each affected port will give rise to a dramatic reduction in business for the trucking industry that transports containers between each port and their point of origin/destination.

This capacity will be idle for the period of the industrial action and, in an industry dominated by owner- or contract-drivers, it can be presumed that the vast majority of these trucks will remain idle over the period, causing their drivers to suffer lost wages.

Other elements of the port to exporter/end customer logistics chain will also be harmed by the stoppages. The most significant additional impact is likely to fall onto the rail freight sector, which plays a complimentary role to trucks in the freight task of moving goods to and from ports. The disruption will cause a reduction in direct rail freight to and from Port Botany and Port of Melbourne, while in Fremantle and Brisbane, off-port rail-road terminals will be similarly affected.

Other indirect costs

The Productivity Commission identified indirect costs of delays that arise when the time taken to transport cargo increases above the efficient level as including financing and insurance costs, inventory costs, increased production costs and foregone production.[39]

The Productivity Commission notes that:[40]

> The indirect costs incurred by importers and exporters are in effect additional production costs. Although intangible, they nevertheless increase the cost of imported goods and reduce the returns from exports.

I have not quantified the extent of such indirect costs in this report.

[35] NSW Government, *NSW freight and ports strategy*, November 2013, p 7.

[36] ACIL Allen, *The economic significance of the Australian logistics sector*, July 2014, p 11.

[37] PwC, *Economic analysis of the Port of Melbourne*, March 2007, p 50.

[38] Port of Fremantle, *Fremantle Ports 2018 Annual Report*, p 8.

[39] Productivity Commission, *International benchmarking of the Australian waterfront: Research report*, April 1998, p 206.

[40] Productivity Commission, *International benchmarking of the Australian waterfront: Research report*, April 1998, p 206.

COVID-19

The COVID-19 pandemic is also likely to heighten the consequences of industrial action, in at least the following ways:

- some of the goods that would be disrupted, delayed or otherwise affected are time sensitive, such as medical equipment or drugs relating to COVID-19; and
- the state and Australian economies are more fragile in light of COVID-19, heightening the consequences of the industrial action.

The importance of trade is reflected in the measures that the Australian government has introduced for export businesses in light of the pandemic, including:

- increasing the level of funding for the International Freight Assistance Mechanism (IFAM), helping to support international freight routes and flights operating until the end of the year;
- increasing the export market development grants, which offers financial support for exporters and tourism businesses; and
- establishing a $500 million COVID-19 Export Capital Facility, a borrowing facility for previously profitable exporters whose businesses have been impacted by COVID-19.

3.4 Operational consequences

I note that the Australian Financial Review reported that Freight & Trade Alliance estimated that a four day stoppage in Victoria by DP World was estimated to cost $10 million in direct costs from re-transporting containers, penalty rates for extra hours and truck delays, and that indirect costs would be 'considerably higher'.[41]

Operational complications arise from the pre-delivery of containers for export to DP World's staging yard approximately six days before a vessel arrives. Testimony by DP World in the Fair Work Commission explained that:[42]

> DP World's container terminals begin receiving containers to be loaded onto a ship about six days before a vessel arrives. If there is a need to subcontract with less than six days' notice some of the relevant export containers will already be in the staging yards as opposed to having otherwise been directed to another terminal. The containers would then need to be moved to another terminal where the cost and difficulty involved would generally outweigh the delay until DP World can load the containers onto an appropriate service. Mr Hulme could only recall one previous instance where export containers which had already been received at DP World staging yards were moved to another terminal.
>
> As a result, where a vessel's stevedoring is subcontracted with less than six days' notice the vessel operator will have a choice between calling at two terminals in the same port once the industrial action ceases or sailing light and leaving some of the containers at DP World until they can be removed on another service or voyage.
>
> Secondly, there are time constraints on the ability of other terminals to receive additional containers in an abbreviated period. A container exchange may exceed 2,000 containers in a 24 hour period but road or rail transport to another terminal could not accommodate this number of containers in the same period

[41] Australian Financial Review, *DP World strike expected to cost industry $10m*, July 11, 2019, https://www.afr.com/work-and-careers/workplace/dp-world-strike-expected-to-cost-industry-10m-20190710-p525v0, accessed 10 August 2020.

[42] Fair Work Commission, *[2019] FWC 908 – Construction, Forestry, Maritime, Mining and Energy Union v DP World Brisbane Pty Ltd T/A DP World and Others*, 12 February 2019, para 29 to 31.

3.4.1 Empty containers

I understand that a key operational consequence of the industrial action is the risk that shipping lines are not able to take empty containers. I understand from DP World that a shipping line may respond to a delay in the vessel schedule by prioritising the loading of full containers (only), and that a shipping line may 'cut and run' once the full containers have loaded, without accommodating any empty containers.

DP World has noted that the main costs associated with empty containers not evacuated is the storage costs. In addition, shipping lines may incur costs for failing to move an empty container to the overseas destination, which could ultimately result in a lost load – for example in some Chinese ports, the supply chain relies on empty containers arriving to the ports to enable loading by exporters to other markets.

If shipping lines fail to accommodate any empty containers, I understand from DP World that the lines will incur the cost of engaging extra loaders to clear the backlog of empty containers at the port.

The consequences of industrial action for empty containers are likely to comprise:

- an increase in the number of empty containers left in key ports (particularly in Sydney); and
- increased costs for transport operators in managing the additional empty containers.

In February 2019, the Container Transport Alliance Australia (CTAA) has noted that the large volumes of empty containers in Sydney is associated with increasing costs, with the CTAA Director observing that:[43]

> The empty container management situation in Sydney has been getting progressively worse over a number of months now

and:[44]

> For many container transport operators it has reached the stage where they cannot fully absorb the additional costs

In addition, it has recently been noted by NineSquared in a report for Transport for NSW that there is insufficient empty container parks in Sydney to adequately manage the cycles in demand.[45] The potential operational costs associated with empty container supply chain management may be substantial.

Inefficiencies in managing empty container supply chain affect a number of parties, ie:

- shipping lines;
- port management;
- empty container park operators
- transport operators; and
- freight customers, regional producers and end consumers, who are likely to bear the ultimate costs of the inefficiencies in the supply chain.

I note that these empty container costs are likely to be enduring over the period in which the stevedore recovers from the stoppage, ie, for several weeks.

Empty container management is likely to be of particular importance at Port Botany, where the volume of imports substantially exceeds the volume of exports. In addition, imports are generally carried in 40ft

[43] CTAA, *Sydney empty container management: Transporters face significant additional costs / reconsider container detention policies*. Media Release, 11 February 2019.

[44] CTAA, *Sydney empty container management: Transporters face significant additional costs / reconsider container detention policies*. Media Release, 11 February 2019.

[45] NineSquared, *NSW empty container supply chain study*, Report prepared for Transport for NSW, 5 May 2020, p 3.

containers, while exports are typically carried in 20ft containers (due to the difference in nature of imports and exports). This trade imbalance makes empty containers a significant category of exports.

3.4.2 Delayed service costs

I understand that there are two forms of delay costs for ships that are directly affected by the industrial action, ie:

- demurrage incurred through extended rotation schedules for those ships that are scheduled to arrive during the period of the stoppage; and
- demurrage incurred through extended rotation schedules for those ships subsequently arriving at all four DP World terminals, and subject to delays as the backlog is cleared.

It is reasonable to assume that, going forward, shipping lines might also factor the risk of incurring such costs on future Australian port rotations into their Australian freight rates, raising the cost and so reducing the competitiveness of both exports and imported goods.

As noted by the Productivity Commission:[46]

> Australian exporters are already disadvantaged by the remoteness from overseas markets. Unreliability further disadvantages them. The higher the risk to overseas buyers of disruptions in supply – all other things being equal – the smaller the market share Australian exporters will be able to gain.

I have not quantified these delayed service costs.

3.5 Industrial action lasting longer than 24 hours

To estimate the loss in output arising from industrial action lasting various periods longer than 24 hours, I apply a linear extrapolation to my estimates of loss for each 24 hour period of industrial action. For example, I estimate the loss of output arising from industrial action lasting 48 hours to be double that for a 24 hour period of industrial action.

In my opinion, this approach is likely to be highly conservative, because the effects of longer periods of industrial action would be likely to compound, eg, as imported goods become increasingly scarce and a backlog of goods for import and export accumulates.

[redacted]

[46] Productivity Commission, *International benchmarking of the Australian waterfront: Research report*, April 1998, p 209.

In my opinion, industrial action lasting for a period of one day or longer will have a material effect on the output of the Australian economy, along with that of the relevant states.

Again, my estimates do not account for any second round or multiplier effects. Accounting for these wider effects is likely to increase significantly the estimated loss in output to the state and Australian economies.

Industrial action lasting longer that seven days would further exacerbate losses to the state and the Australian economy since vessels would likely continue on to the next port (assuming it is not similarly affected by industrial action). This would result in additional costs occasioned by the need for further transportation by road, rail or sea at a later date, as well as the cost of additional delays.

I also observe that my estimates are consistent with Professor Ian Harper and Chris Richardson's March 2012 assessment of the effect on the Australian economy of industrial action at Patrick stevedores, which is of comparable size to DP World. This study included an allowance for flow-on effects and estimated that industrial action lasting one month at the relevant ports would result in a loss of:[47]

- 0.4 per cent to 2.1 per cent of monthly state output; and
- 0.9 per cent of gross domestic product for the Australian economy.

My estimates of loss are much lower when compared with output – 0.17 per cent to 0.48 per cent for state economies and 0.3 for the Australian economy – but my estimates do not account for the indirect, flow-on effects of industrial action.

[47] Deloitte, *Impact of potential disruptions to Patrick's stevedoring operations*, Expert report of Ian Harper and Chris Richardson, March 2012, p 7.

4. Effect of industrial action on particular sectors

In this section, I respond to Seyfarth Shaw's question as to whether there are:

> ...particular sectors of the Australian or State economies which are likely to be particularly affected by a stoppage of work by stevedores at the relevant Port(s)? If so, which sectors or industries are likely to be so affected and what are the likely effects on them?

I explain in section 3 that, industrial action would disrupt approximately $201.6 million of containerised trade each day. However, all these goods should not necessarily be considered as 'lost' from the Australian or state economies since some will be delivered or taken away at a future date, albeit after a delay. In these circumstances, the resulting loss may be limited to the cost and inconvenience occasioned by the delay, along with potential reputational damage.

However, there are a number of sectors whose business activities can reasonably be expected to lose a significant amount of value as a result of any such delays, namely those sectors that involve:

- a loss of sales as a result of the inability to ship product to export markets – this issue is likely to be most significant for exporters of perishable and/or seasonal products that may expire prior to resumption of normal stevedoring services, or be delivered with a reduced shelf-life and so lower value;
- a loss of productivity or increased storage/operating costs resulting from the delay in production of products for export; and
- a loss of sales of downstream goods or services where imported goods represent inputs to production in a downstream market and result in lost production.

By way of example, the Director of the Freight & Trade Alliance, Paul Zalai, highlighted that, in relation to a recent 96 hour period of industrial action at DP World's facilities:[48]

> Some containers were inside the affected terminal at the time and were stranded there for the duration of the stoppage. We understand that some of these containers included high-value and time-sensitive cargo.

It was also highlighted that this industrial action:[49]

> is already having a severe impact on cargo owners who not only face extra costs but risk losing supply contracts or contract penalties

Similarly, previous industrial action at VICT's terminal at the port of Melbourne in 2017 left stranded at the port consignments of Victorian pears destined for Indonesia. The exporter was not able to access containers already in the staging yard and explained that:[50]

> ... he could lose all his money or have to heavily discount the produce which should have arrived in Indonesia by now.
>
> This disrupts the trading relationship and our reputation as Australian exporters.

[48] The Loadstar, *DP World to axe 200 more stevedore jobs in prolonged row with union*, 19 July 2017, available at: https://theloadstar.com/dp-world-australia-to-axe-200-more-stevedore-jobs-in-prolonged-row-with-union/, accessed 10 August 2020.

[49] JOC, Australian shippers feel pinch as DP World-labor woes escalate, JOC.com, 18 July 2019, available: https://www.joc.com/port-news/international-ports/sydney-ports/australian-shippers-feel-pinch-dp-world-labor-woes-escalate_20190718.html?destination=node/3612251, accessed 10 August 2020.

[50] Anna Patty, Nick Toscano, *Ports dispute enters second week and stalls millions of dollars in Christmas deliveries*, The Sydney Morning Herald, December 2017, available: https://www.smh.com.au/business/workplace/ports-dispute-enters-second-week-and-stalls-millions-of-dollars-in-christmas-deliveries-20171206-gzzma0.html, accessed 10 August 2020.

That industrial action also left stranded more than 50,000 litres of fresh milk at VICT's terminal, with one exporter of milk explaining that:[51]

> ...the cost of the spoiled milk, including transport, disposal, and damaged reputation, would far exceed the $60,000 value of the lost sale.
>
> It's a bad look for Victoria, and our whole food reputation

I have identified the three sectors for which a disruption would be likely to result in a loss of sales, a loss of productivity, increased storage/operating costs and/or a loss of sales of downstream goods or services. These sectors are likely to be particularly affected by any industrial action at the ports, ie:

- the highly seasonal cotton export industry – which is worth an estimated $1.5 billion to the Australian economy in 2019, with the vast majority of exports being packed in containers, loaded onto vessels by stevedores and exported between May and November each year;[52]
- the meat export industry whose production has an obvious 'shelf life' and a value that reduces with the duration of storage – which is worth an estimated $13 billion to the Australian economy and reliant on efficient shipping links to ensure the delivery of meat to export markets within short time frames;[53] and
- the retail industry – which is reliant on regular imports for the sale of goods in Australia and can be characterised as an increasingly competitive industry to operate in.

I have not been provided with any information as to the distribution of these goods across the various stevedores, and so I assume the share of containers with these goods handled by DP World is that same as for its competitors, ie, an even distribution.

In my opinion, the primary effect on the cotton industry will be lost revenue to growers and ginners arising from a halted supply of empty shipping containers during the peak production period. Similarly, the primary effect on parties in the meat export industry is likely to be lost revenue resulting from meat perishing or having to be sold locally at lower prices.

While the goods imported by Australian retailers are unlikely to perish, many retailers hold low levels of stock and rely on efficient supply chains to make goods available for sale and some good are likely to have shelf lives of their own in that they are imported to meet specific periods of elevated demand. It follows that the primary effect on retailers from any delay in the arrival of goods will be lost sales revenue.

I have also analysed the transport and logistics sector since any disruption to the flow of containers through the Ports will impact upon a variety of business involved in the logistics chain that facilitates the transport and processing of containers.

4.1 Cotton growing

Australia's cotton growing season lasts approximately six months:[54]

- beginning in September/October with planting; and
- ending in March/April when cotton is picked.

[51] The weekly Times, Milk rots as Melbourne ports dispute drags on, Weekly Times Now, 13 December 2017, available: https://www.weeklytimesnow.com.au/agribusiness/dairy/milk-rots-as-melbourne-ports-dispute-drags-on/news-story/678b418ca47c68b03781685a1bfc00db, accessed 10 August 2020.

[52] ABS, *5368.0 - International Trade in Goods and Services*, Australia, August 2020, TABLE 12b. MERCHANDISE EXPORTS, Standard International Trade Classification (3 digit), FOB Value, Series ID A1828417C.

[53] The MLA website, available: https://www.mla.com.au/about-mla/the-red-meat-industry/, accessed 10 August 2020.

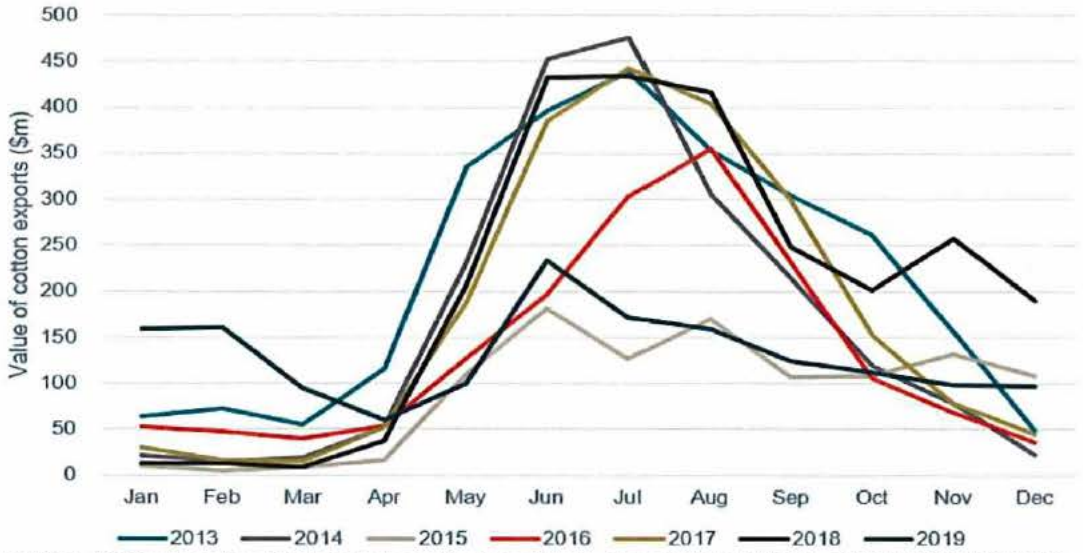
[54] Department of Agriculture and Water Resources website, available: http://www.agriculture.gov.au/ag-farm-food/crops/cotton, accessed 10 August 2020.

Australian cotton is grown in southern, central and north-western New South Wales and central and southern Queensland.[55] Approximately 66 per cent of Australia's cotton is grown in NSW and 33 per cent is grown in Queensland.[56]

Over 90 per cent of cotton production is exported, primarily to spinning mills in Asia, through the ports of Brisbane, Sydney and Melbourne.[57]

The six month growing season for cotton means that exports are highly seasonal, with exports peaking in the months of May to November. I illustrate the monthly time-profile of cotton exports in Figure 11.

Figure 11 – Value of cotton exports by month, 2013 to 2019



Source: ABS, 5368.0 - International Trade in Goods and Services, Australia, August 2020, TABLE 12b. MERCHANDISE EXPORTS, Standard International Trade Classification (3 digit), FOB Value, Series ID A1828417C

Overall, Australian cotton exports totalled nearly $1.5 billion in 2019,[58] which is around 0.4 per cent of total exports by value for that period. These exports make a significant contribution to rural farming communities, and Australia on the whole.

Further, there are plans to significantly expand the cotton industry in Australia. For example, the Commonwealth government and Australian cotton growers will invest in research and development targeted at increasing production by $1.5 billion by 2023.[59] This marks the importance of the cotton industries future role in the economy and the loss that might arise from damage to its reputation.

[55] Cotton Australia, *Cotton Education Kit*, Chapter 1: The Australian Cotton Industry, p. 2. – Available at: https://cottonaustralia.com.au/assets/general/Education-resources/CA-resources/CEK_Chap_1_The_Australian_Cotton_industry.pdf, accessed 10 August 2020.

[56] See: Cotton Australia website, available at https://cottonaustralia.com.au/industry-overview, accessed 2 September 2020.

[57] See: Cotton Australia website, available at: https://cottonaustralia.com.au/australian-cotton/economics, accessed 10 August 2020; and Department of Agriculture and Water Resources website, available: http://www.agriculture.gov.au/ag-farm-food/crops/cotton, accessed 10 August 2020.

[58] ABS, *5368.0 - International Trade in Goods and Services, Australia, August 2020, TABLE 12b. MERCHANDISE EXPORTS, Standard International Trade Classification (3 digit), FOB Value, Series ID A1828417C.*

[59] CDRC, *Annual Operational Plan 2020-2021*, June 2020, p 7.

4.1.1 Economic effects of the potential industrial action

The effects of industrial action on the cotton industry are likely to be particularly marked, owing to its reliance on the flow of exports.

Industrial action may put at risk the efficient operation of the cotton supply chain, which is critical to the ability of Australian cotton growers to compete in the global market. For example, Cotton Australia highlighted that:[60]

> For Australia's growers to compete in a heavily subsidised world market (where government's essentially pay their growers to produce cotton) they must be extremely efficient, grow high yields and keep their costs as low as possible.

A disruption to the production of cotton has the potential to exacerbate unemployment, particularly in regional areas already affected by drought conditions. For example, in a typical year approximately 10,000 people are directly employed by the cotton industry.[61]

Of longer term and potentially greater significance, the Australia cotton industry is recognised as a reliable shipper of cotton to international export markets and its cotton can be sold at a premium in the world market. For example, Cotton Australia highlighted that:[62]

> The Australian cotton industry has earned a reputation as a reliable supplier, with fast shipping times to export destinations, and reliable delivery
>
> Australian cotton is in high demand and can attract a price premium due to its high quality characteristics, reliability and a proven track record in meeting manufacturer and consumer needs

Similarly, in 2011, the then regional head of Olam, Richard Haire, explained that:[63]

> Australian cotton is highly valued internationally, not just because it's a good product, but because it's reliable and our supply chains have been very, very consistent. And so any disruption to that record, that track record or that consistency, will have a long-term impact on the market's perception of the value of our product.

It follows that any delays or reductions in the delivery of cotton resulting from industrial action may put at risk Australia's reputation in the world market and its ability to attract premium prices.

Importantly, compromising the industry's reputation on the world market would reduce the value of cotton output not only in the current year, but also in years to come.

This risk may be exacerbated by the current challenges faced by the industry, ie, drought conditions which led to a 12-year low of bale production of 590 thousand bales in 2019/20.[64] On the other hand, the smaller crop may reduce the output loss in the short term since less cotton will be disrupted, as compared with a typical year.

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[60] Cotton Australia website, available at https://cottonaustralia.com.au/australian-cotton/economics, accessed 10 August 2020.

[61] New South Wales Irrigators Council, Export Control Amendment (Banning Cotton Exports to Ensure Water Security) Bill 2019, Submission, April 2019, p 5.

[62] Cotton Australia website, available at https://cottonaustralia.com.au/cotton-library/fact-sheets/cotton-fact-file-the-economics-of-cotton-in-australia, accessed 10 August 2020.

[63] ABC, *Waterfront strike threatens exporters,* 26 May 2011, available at: https://www.abc.net.au/news/2011-05-26/waterfront-strikes-threaten-exporters/2731440, accessed 10 August 2020.

[64] Department of Agriculture, Water and the Environment, *Agriculture outlook*, available at: https://www.agriculture.gov.au/abares/research-topics/agricultural-outlook/natural-fibres#:~:text=Australian%20cotton%20crop%20to%20begin,590%2C000%20bales%20in%202019%E2%80%9320.&text=However%2C%20area%20planted%20to%20cotton,expected%20to%20remain%20relatively%20low, accessed 10 August 2020.

4.1.2 Conclusion regarding the effect on the cotton growing sector

In my opinion, the Australian cotton growing industry will be particularly affected by industrial action at the ports. The output of this industry is highly seasonal with the vast majority of exports being packed in containers, loaded onto vessels by stevedores and exported between May and November each year. All of Australia's cotton exports are handled at the Port of Brisbane, Port Botany and the Port of Melbourne.

In my opinion, the primary effect on the cotton industry of extended industrial action will be lost revenue to growers and ginners arising from a halted supply of empty shipping containers during the peak production period. Despite relatively poor conditions for the 2019/20 period, the national crop is still forecast to be approximately 1.7 million bales.[65] This would come at a time when the industry and rural communities are particularly sensitive to declines in output and income, owing to the current drought conditions.

Further, any delays or reductions in the delivery of cotton resulting from industrial action will put at risk Australia's reputation in the world market and its ability to attract premium prices. This would reduce the value of cotton output not only in the current year, but also in years to come.

4.2 Meat processing and export industry

The Australian processed meat industry consists of businesses engaged in:

- the slaughter of livestock;
- the preparation, preservation and packaging of meat; and
- the manufacturing food items from abattoir by products or rendering of lard and tallow.[66]

The industry does not include the live export of animals. The livestock processed by the meat processing industry are primarily beef, veal and lamb, whereas the processing of pigs, poultry and goats is on a lesser scale.

The vast majority of beef, lamb, and goat produced in Australia is exported, as shown in Table 12. In 2019, Australia was the largest exporter of sheep meat in the world[67] and the third largest exporter of beef and veal.[68] While 2019 data are not yet available in respect of goatmeat, in 2018 Australia was the largest exporter of goat meat.[69]

Table 12 – Australia meat exports

Type of meat	Proportion exported	Value of exports (2018/19)
Beef and veal[(1)]	72%	$9.5 billion
Lamb[(2)]	66%	$2.63 billion
Mutton[(2)]	96%	$1.23 billion
Goat meat[(3)]	90%	$182.6 million

Source: (1) Meat & Livestock, Fast Facts 2019: Australia's beef industry, November 2019; (2) Meat & Livestock, Fast Facts 2019: Australia's sheep industry, November 2019; (3) Meat & Livestock, Market snapshot | Goatmeat: Global summary, March 2019 (figures

[65] Department of Agriculture, Water and the Environment, *Agriculture outlook*, available at: https://www.agriculture.gov.au/abares/research-topics/agricultural-outlook/natural-fibres#:~:text=Australian%20cotton%20crop%20to%20begin,590%2C000%20bales%20in%202019%E2%80%9320.&text=However%2C%20area%20planted%20to%20cotton,expected%20to%20remain%20relatively%20low, accessed 10 August 2020.

[66] IBISWorld, *Meat Processing in Australia: Market Research Report*, May 2019, available: https://www.ibisworld.com.au/industry-trends/market-research-reports/manufacturing/food-product/meat-processing.html, accessed 10 August 2020.

[67] Meat & Livestock, *Fast Facts 2019: Australia's sheep industry*, November 2019, p 1.

[68] Meat & Livestock, *Fast Facts 2019: Australia's beef industry*, November 2019, p 2.

[69] Meat & Livestock, *Market snapshot | Goatmeat: Global summary*, March 2019, p 2.

are for 2017/18)

The farming and processing of livestock occurs across Australia, but varies in nature from state to state, eg:[70]

- beef cattle is predominately produced in the eastern states with Queensland being the largest red meat producer and home to the country's largest corporate beef cattle farms;
- Southern states like Victoria and Tasmania are characterised by many small beef cattle farms that operate as sole proprietors or partnerships; whereas
- sheep farming is focused in Victoria, New South Wales and Western Australia due the suitability of the climate and environment.

Australia exported approximately $18.3 billion of meat and meat preparations in the year to June 2020, which comprises approximately four per cent of total exports.[71] It follows that the exportation of processed meats makes a significant contribution to the Australian and state economies, and a much larger relative contribution to regional farming communities.

The vast majority of processed meat exports are shipped from the Port of Melbourne, Port Botany, and the Port of Fremantle, as illustrated in Table 13.

Table 13 – Meat exports by port of loading, 2019

Port	Tonnes, shipped weight	Percentage
Port of Brisbane	844,299	43%
Port Botany	264,361	14%
Port of Melbourne	672,064	34%
Port of Fremantle	124,732	6%
Other ports[72]	49,891	3%
Total	**1,955,347**	**100%**

Source: Department of Agriculture, Red meat export statistics 2019: Exports by Load Port, 2019, available: http://www.agriculture.gov.au/export/controlled-goods/meat/statistics/red-meat-stats-2019#december, accessed 7 August 2020

4.2.1 Economic effects of the potential industrial action

Meat products are inherently perishable, ie, once slaughtered, animal meat products have a limited 'shelf life' before they become unsafe for human consumption, even after allowing for chilling and freezing. A product's 'shelf life' will depend on the type of meat and how it is stored.

In general, chilled meats can be stored for period of between one and four weeks before spoiling. Frozen meats can be stored for longer periods of between four months and 24 months as microbiological growth is prevented, but the meat will still deteriorate over time due to oxidisation, thereby diminishing its value.[73]

It follows that delays to the exportation of meat will reduce its shelf life and value. For this reason, meeting delivery schedules agreed between exporters and international buyers is critical in generating meat export revenues.

[70] Meat & Livestock, *Fast Facts 2018: Australia's beef industry*, September 2018; Meat & Livestock, *Fast Facts 2018: Australia's sheep industry*, October 2018.

[71] ABS, *5368.0 International Trade in Goods and Services, Australia, TABLE 3. GOODS CREDIT, Original, Current prices*, Series ID A2717885K, August 2020.

[72] Export of chilled and frozen meats from 'other ports' predominantly relates to the Port of Adelaide, which shipped 50,782 tonnes in 2018.

[73] Food Science Australia, *Storage life of meat*, September 2002.

Export customers also have standards in terms of delivery and storage timeframes for meat products that demand supply chains are tight.

One meat producer explained that customers in Japan will reject beef if it has been sitting in cold rooms for more than 14 days, which then forces it to sell product in the domestic market at lower prices, eg, because the preferences of Australian's are such that it is ascribed a lower value in the domestic market.[74]

A back-log of meat for export may also lead to storage constraints, eg, the Chief Operating Officer of DP World, Andrew Adam, explained that:[75]

> Refrigerated cargo capacity [for exports] is diminishing in Melbourne... So there is concern in relation to export refrigerated cargo out of the largest port in the country.

It follows that the tightness of the supply chain, the inherently perishable nature of meat and the reliance on container ports means that industrial action has the potential to cause significant harm to the Australian meat processing and export industry.

4.2.2 Conclusion regarding the effect on the meat processing and export industry

In my opinion, the meat processing and export industry will be particularly affected by industrial action at the ports. Australian meat exporters are heavily reliant on containerised shipping to deliver their products to overseas markets and the output of this industry is inherently perishable. Once slaughtered, animal meat products have a limited 'shelf life' and a value that declines from the time of slaughter.

In my opinion, the primary effect on parties in the meat processing and export industry of an extended period of industrial action will be lost revenue from meat perishing or having to be sold locally at lower prices.

The consequent implications for the Australian and state economies are considerable, with meat exports of least $11 billion per annum and accounting for approximately four per cent of Australia's key industry exports in 2017/18.[76]

I note that over 97 per cent (table 13) of Australia's chilled and frozen meat exports are handled by the ports of Brisbane, Botany, Melbourne, and Fremantle and that fresh meat is one of the top two export categories by value at each of these ports.

4.3 Retail sector

The Australian retail sector is an important component of the economy in Australia and makes a significant contribution to employment.

The industry comprises more than 187,015 businesses, employs 2 million Australians and derives $572 billion of revenue per annum. [77]

International competitiveness rests on efficient supply chains achieved through well-functioning, just in time product processing. This is particularly relevant for large retail chains since they typically hold less stock and so even a short period of industrial action may inhibit their ability to stock shelves. For these retailers, the economic harm from delays in the movement of product to or from its point of production to end-customer carries a real risk of economic loss.

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[74] See *http://www.news.com.au/finance/business/strike-leaves-130000-kg-of-beef-to-rot/story-e6frfkur-1226063527325*, accessed 10 August 2020.

[75] Sydney Morning Herald, *DP World to shed another 200 wharfies as dock dispute escalates*, 16 July 2019, available at: https://www.smh.com.au/business/workplace/dp-world-to-shed-another-200-wharfies-as-docks-dispute-escalates-20190718-p528di.html, accessed 10 August 2020.

[76] Meat and Livestock Australia, *2019 state of the industry report | The Australian red meat and livestock industry*, 11 October 2019.

[77] IBIS World, *Retail trade – Australia market research report*, available: https://www.ibisworld.com.au/industry-trends/market-research-reports/retail-trade, accessed 10 August 2020.

While the goods of retailers are unlikely to perish like meat products, many are likely to have shelf lives of their own, owing to seasonality in demand, eg:

- many clothes are seasonal in nature, and fashions change quickly, meaning that clothes delivered materially late may be in lower demand;
- demand for some products spikes at particular times of the year, say, due to Father's Day occurring in early September each year – if goods cannot be delivered in sufficient time to be able to be stocked for this period of elevated demand then affected retailers are likely to have to sell delayed goods at a discount; and
- any 'fad' goods or goods being imported in an attempt to obtain a 'first mover' type advantage over competing retailers may in fact not be delivered in time to exploit any temporarily inflated demand/prices

The instances listed above would have a negative impact on the profits of these retailers.

By way of example, previous industrial action at VICT's terminal at the port of Melbourne in 2017 left:[78]

> ...stranded millions of dollars of Christmas retail goods, fresh food and medicine in containers on the wharves.

4.3.1 Conclusion regarding the effect on the retail sector

In my opinion, the Australian retail industry will be particularly affected by industrial action at DP World's terminals. This industry depends on imported goods to sell and, while these are unlikely to perish like meat products, many are likely to have shelf lives of their own associated with selling them when they are 'in demand'.

International competitiveness in the supply chains of Australian retailers demand cost efficiency achieved through well-functioning, just in time product processing. For these parties, the economic harm from delays in the movement of product to or from its point of production to end-customer carries a real risk of irrecoverable loss. Overall, the primary effect on retailers from any delay in the arrival of goods will be lost sales revenue.

4.4 Transport and logistics sector

The disruption to the flow of containers through each affected port will impact a variety of business involved in the logistics chain that facilitates the transport and processing of containers to/from vessels from/to their origin/destination in Australia. These businesses include:

- wharfside service providers such as pilots and tug boat operators; and
- landside service providers such as customs and road and rail transport operators.

In particular, industrial action by DP World stevedores will give rise to a reduction in business for the trucking industry that transports containers between each port and their point of origin/destination. On average, 4,864 trucks are used in the Vehicle Booking System (VBS) or Truck Appointment System (TAS) across all four affected ports each day, as set out in Table 14 below.

Table 14 – Number of trucks used in VBS/TAS operations and TEUs transported by road, rail or other means by Port on a daily basis, 2019

	Port of Melbourne	Port Botany	Port of Brisbane	Port of Fremantle

[78] Sydney Morning Herald, *MUA faces $100 million court claim over picket*, 18 January 2018, available at: https://www.smh.com.au/business/the-economy/mua-faces-100-million-court-claim-over-picket-20180118-p4yym8.html, accessed 10 August 2020.

Number of trucks used in VBS/TAS operations	1,811	1,923	911	405
Total TEUs handled	5,596	5,121	2,408	1,365
TEUs by VBS/TAS trucks	4,904	4,075	2,326	981
TEUs by rail	692	1,046	82	384

Source: BITRE, Maritime Waterline 65, December 2019, pp. 12 – 16.
Notes: (1) This is the count of trucks processed through either the VBS or the TAS. The count excludes trucks that perform bulk runs of empty containers between the container parks and container terminals. This indicator counts trucks on a round trip. That is, a truck entering a container terminal and the same truck exiting the container terminal is counted as one truck; (2) TEUs handled by trucks, rail and other means are derived by dividing reported annual figures by 365 to get a daily estimate

For example, The Container Transport Alliance Australia explained in respect of previous industrial action at the Port of Melbourne that:[79]

> It's affecting big and small logistics companies, and family businesses who have sent their trucks down there to pick up a container.
>
> The cost of the round trip will never be able to be recouped from the customer...

The Victorian Transport Association explained that, by consequence of industrial action at DP World's terminals:[80]

> ...trucking companies will be "hugely" affected as "schedules will be stuffed up, volumes will be down and there will be a backlog"
>
> It's not the lack of activity today, it's the extra activity in three or four days time. If I can't get into the terminal to pick up or return my boxes... [w]e'll likely have to pay demurrage and penalties.

It has also in the past been noted that trucking operators incur costs from a lack of work during a stoppage and, once industrial action ends, they have to pay higher wage bills since drivers have to work overtime to clear the backlog.[81]

The Director of the Freight & Trade Alliance, Paul Zalai, recently highlighted that the:[82]

> ...resulting supply chain costs included those for reefers held on power, higher transport to clear backlogs on a Sunday, truck delays and waiting times to return empty containers, which resulted in shipping line detention charges
>
> In addition to the logistics costs, these types of delays present a real and serious risk of loss of contracts or contract penalties arising from delayed sailings, the potential for exporters to miss transhipments due to delays and importers not having stock on time," he added, noting that previous stoppages had forced shipping lines to omit ports to maintain schedules

4.4.1 Conclusion regarding the effect on the transport and logistics sector

In my opinion, the transport and logistics sector will be particularly affected by industrial action at the ports. In particular, the disruption to the flow of containers through each affected port will impact a variety of business involved in the logistics chain that facilitates the transport and processing of containers for import or export.

[79] Anna Patty, Nick Toscano, *Ports dispute enters second week and stalls millions of dollars in Christmas deliveries*, The Sydney Morning Herald, December 2017, available: https://www.smh.com.au/business/workplace/ports-dispute-enters-second-week-and-stalls-millions-of-dollars-in-christmas-deliveries-20171206-gzzma0.html, accessed 10 August 2020.

[80] Jim Wilson, *Australian national longshoremens' strike underway for up to four days*, Freight Waves, 10 July 2019, available: https://www.freightwaves.com/news/australian-national-longshoremens-strike-underway-for-up-to-four-days, accessed 10 August 2020.

[81] Brad Gardner, *Trucking Feels the Pain from Patrick Strike*, ATN, 25 May 2011, available: https://www.fullyloaded.com.au/industry-news/1105/trucking-feels-the-pain-from-patrick-strike, accessed 10 August 2020.

[82] The Loadstar, *DP World to axe 200 more stevedore jobs in prolonged row with union*, 19 July 2017, available at:t https://theloadstar.com/dp-world-australia-to-axe-200-more-stevedore-jobs-in-prolonged-row-with-union/, accessed 10 August 2020.

5. Declaration

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