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Working paper

Australia's export exposure to China: Assessing the costs of disruption

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Executive Summary

- **Australia's exports to the People's Republic of China (PRC) are being recast in terms of risk rather than opportunity.** Exposure to the PRC market is seen as providing Beijing with coercive leverage that can erode sovereign decision-making in Canberra. Further, because this trade is mostly undertaken by private businesses that are focused on their own profits and not Australia's broader strategic and national security concerns, public policy intervention aimed at cutting this exposure is touted as both necessary and desirable. Amplifying this view is a campaign of disruption that Beijing has directed at Australia's exports since May 2020. Australia's recent experience has been held up as a warning for other countries, particularly liberal democracies, as to why exposure to the PRC market is potentially dangerous. There has also been much discussion about directing public policy resources and energy into re-purposing narrow coalitions like the ANZUS alliance, the 'Quad' and/or the Five Eyes intelligence-sharing arrangement for geo-economic objectives, including to deter and respond to economic coercion by the PRC.
- **A logical starting point to analysing these issues is to put Australia's export exposure to the PRC into perspective.** Medium-sized economies like Australia that require openness to prosper will inevitably develop significant aggregate exposures to much bigger ones. In 2020, just two economies – the PRC and the US – accounted for a combined 34.2 percent share of the global economy. The Australian Productivity Commission recently argued that Australia's exposure to its top 10 markets is not unusual compared with the global average. This paper finds that even if only the top market is considered and Australia is benchmarked against 'peer' economies, the degree of exposure to the PRC has, for the most part, not been unusual. It was only in 2020 when 41 percent of goods exports went to the PRC that Australia appeared as an outlier. However, this heightened exposure is a temporary phenomenon, reflecting historically high prices for iron ore. Further, it has not come with greater risk because what it demonstrates is the PRC's ongoing reliance on Australia to supply big-ticket items like this essential, steel-making ingredient. Even today, the annual value of goods exports to the PRC is 3.8 times that to Japan, Australia's second largest international customer. If iron ore is excluded, goods exports to the PRC remain 20 percent higher than those to Japan.
- **At an industry level, 'cost guides' are calculated to gauge the scale of the trade fallout from Beijing's campaign of disruption.** For nine of the 12 goods considered, these guides suggest that the cost incurred by Australian exporters has been less than 10 percent of the latest total export value. It is also shown that some of the industries with the highest proportion of exports going to the PRC, such as barley and cotton, have subsequently incurred the lowest costs when that market closed. The key issue is not exposure but access to an effective mitigation mechanism. Mitigation in the form of Canberra providing businesses with financial assistance, or supporting actions by Washington and other geopolitically-aligned capitals, has been almost entirely absent to date. The costs incurred by many Australian businesses have, however, been lowered significantly by markets. There are some exceptions, such as wine and wood (rough). And for others like rock lobster, the mitigation provided by markets is more perilous because it relies on PRC authorities turning a blind eye to a thriving 'grey trade'.

- **The implications of these results are several.** First, they serve as a corrective to the claim that Australian businesses with a high exposure to the PRC are necessarily naïve or irresponsible. In fact, the findings show that many business owners were able to secure premium prices in the PRC for an extended period, and when this opportunity closed, they quickly and successfully pivoted to alternative markets. This highlights an awareness of both opportunities and risks, which has bolstered not only private profits but the broader national interest too. Second, market access is revealed to be a weak coercive tool for Beijing. This means what the PRC may hope to achieve by disrupting trade is not the same as what it is likely to achieve. Put another way, exposure to the PRC market and Australian sovereignty can co-exist. Third, given that public policy resources are finite and interventions are not cost-free, and many Australian businesses already have access to effective risk mitigation mechanisms, the case for government to take a more prescriptive approach to business engagement with the PRC is more limited than commonly imagined. There is a case for government to invest in ‘collective action’ pushback against Beijing’s economic coercion but if the point is to get the PRC to ‘play by the rules’ and to expand the range of activities covered by these rules, narrow coalitions offer little positive return compared with multilateral institutions like the World Trade Organization (WTO) that have broad legitimacy.
- **A caveat that applies to the analysis is that it is concerned with a contemporary assessment of risk.** In the medium and long-term, there is the prospect of costs increasing. This could be because export disruption extends to services like tourism and education when borders reopen following the COVID-19 pandemic, the PRC market outperforms the alternatives that Australian producers still have access to, or Beijing successfully finds alternative suppliers for big-ticket items like iron ore. There is a recognition, too, that the costs to exports from the political breakdown between Canberra and Beijing is not the only, or the biggest, problem. Australia’s strategic, security and other national interest objectives are difficult to achieve in the absence of a productive, working relationship with the region’s dominant power.

1. Introduction

Australia's exports to the People's Republic of China (PRC) are being recast in terms of risk rather than opportunity. Exposure to the PRC is seen as providing Beijing with coercive leverage that can erode sovereign decision-making in Canberra. Further, because this trade is mostly undertaken by private businesses that are focused on their own profits and not Australia's broader strategic and national security concerns, public policy intervention aimed at cutting this exposure is touted as both necessary and desirable. In May last year, Peter Jennings, the Executive Director of the Australian Strategic Policy Institute, opined in *The Australian* that 'a view is hardening that economic dependence on the PRC is dangerous and steps must be taken to reduce that dependence'.¹ Such a contention has also become increasingly commonplace in the US. Since 2017, Washington has officially designated Beijing as a 'strategic competitor'.² In August this year, Matt Pottinger, a former Trump administration Deputy National Security Advisor, wrote in *Foreign Affairs*:³

Americans, Europeans, and people the world over are now increasingly clear-eyed about Beijing's intentions... Elected leaders must now take the next step: applying their tough new line not just to Beijing but also to elite institutions in their own societies that need to join the fight against the CCP [Chinese Communist Party]. Because companies are economic actors, not political ones, it is the government's responsibility to establish guidelines for engaging with adversaries.

Aside from prescriptive measures aimed at cutting business engagement with the PRC, there has also been much discussion about directing public policy resources and energy into re-purposing narrow coalitions like the ANZUS alliance,⁴ the 'Quad'⁵ and/or the Five Eyes intelligence-sharing arrangement⁶ for geo-economic objectives, including to deter and respond to economic coercion by the PRC.

The political relationship between Canberra and Beijing has been deteriorating since 2016.⁷ Yet through to the end of 2019 instances of PRC authorities disrupting Australia's exports to signal displeasure and attempt to change the political calculus in Canberra were rare. The few alleged

cases tended to be short-lived in application and/or have only a minor impact on trade volumes.⁸ Cracks began to appear in the apparent firewall between politics and trade in 2020. Against the backdrop of several years of political tension, when Australia's Foreign Minister, Marise Payne, made a unilateral call for an independent, international inquiry into the origins of the COVID-19 pandemic in April last year, and several other senior government ministers made with their own diplomatically provocative interventions, Beijing assessed that Canberra was engaged in 'political manoeuvring' on behalf of Washington.⁹ The following month PRC authorities suspended the certification of four Australian beef abattoirs to supply the PRC market and imposed an 80.5 percent tariff on Australian barley, claiming that Australian growers were dumping their output and receiving government subsidies that were inconsistent with World Trade Organization (WTO) rules. To be sure, the timing of the barley decision was not unexpected and followed a formal, 18-month long investigation that began in November 2018.¹⁰ The scale of the tariffs was surprising however, and it kicked off a campaign of disruption that has left around a dozen Australian goods with access to the PRC market either curtailed or removed entirely.¹¹ Australia's recent experience has been held up as a warning for other countries, particularly liberal democracies, as to why exposure to the PRC market is potentially dangerous.¹²

Section 2 begins by putting Australia's aggregate export exposure to the PRC into a comparative perspective. Section 3 then provides a guide to the costs that various Australian industries have incurred as a result of the campaign of trade disruption that Beijing began last year.¹³ Section 4 summarises the key findings and distils the implications.

2. Putting Australia's export exposure to China into perspective

A logical starting point for investigating issues related to Australia's export exposure to the PRC is to put this exposure into perspective. A report by the Australian Productivity Commission in August this year argued that 'Australia is often misconstrued for having especially concentrated export markets...but in fact, Australia is not an

outlier.¹⁴ Their analysis showed that Australia's top 10 markets accounted for 79.3 percent of total exports and that this was only marginally higher than a global average of 71.5 percent.

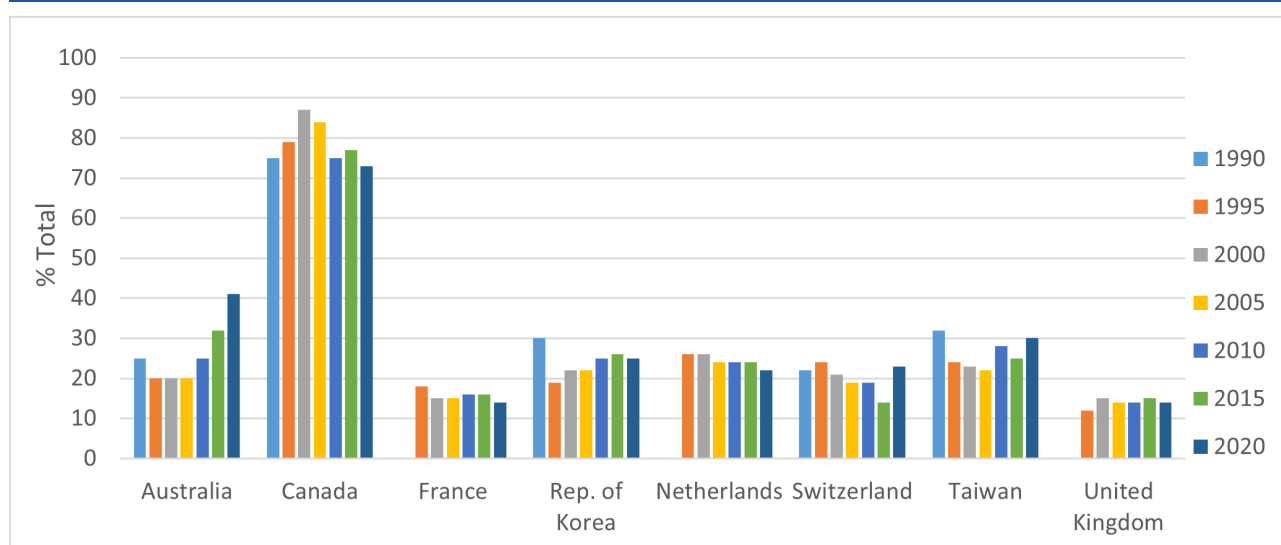
However, it could be contended that the Australian Productivity Commission's choice of metric does not accurately reflect the nature of the risk faced. Specifically, concerns around Australia's export market concentration do not relate to its top 10 markets but rather are more narrowly focused on the single top market. The refrain that Australia has 'too many eggs in the China basket' is a common one.¹⁵ It is also debatable whether a 'global average' represents an appropriate benchmark to gauge Australia's export market concentration given that this includes smaller, high-income economies like Singapore and New Zealand that lack Australia's economic and strategic weight, as well as a host of low and middle-income countries.

Yet if the benefits of openness are to be realised for a medium-sized economy like Australia, then economic gravity means this necessarily involves an exposure to the world's largest economies. According to the World Bank, in 2020 just two economies – the PRC and the US – were responsible for 34.2 percent of world gross domestic product (GDP).¹⁶ The practically relevant question then is whether Australia's exposure to its top market is 'unusually' high. This paper compares

Australia's top market concentration with that of other medium-sized, high-income 'peer' economies, including Canada, France, the UK, the Netherlands, the Republic of Korea and Taiwan. As shown in Appendix 1, these seven economies share broad similarities with Australia in terms of population, aggregate economic size and income per-person. There are, of course, also differences such as with respect to geographical size and the overall importance of exports for each economy. Still, this peer group makes for a potentially more instructive apples-with-apples comparison than a 'global average'.¹⁷

Figure 1 shows that amongst peer economies a top market share of 25-30 percent is par for the course over the period of analysis. In 2020, the top market share of Australia's goods exports was the PRC at 41 percent. This was significantly higher than the peer average of 30 percent and second only to Canada's top market share - the US, at 73 percent.

Figure 1. Top goods export market - share of total (1990 - 2020)



Source: UN Comtrade Database,¹⁸ Bureau of Foreign Trade (Taiwan)¹⁹ and authors' calculations.

Note: Due to availability of data, values for France, the Netherlands and the UK begin in 1995.

A qualification to the PRC's 41 percent share of Australia's goods exports in 2020 is that a component of this trade feeds into global value chains. Research by economists at the Reserve Bank of Australia (RBA) has found that a significant driver of the PRC's demand for raw materials from countries like Australia is the demand for its manufactured goods from countries like the US.²⁰ In other words, the final consumer of Australia's exports to the PRC may not reside in the PRC. According to Organization for Economic Cooperation and Development (OECD) data, if Australia's goods exports are calculated in value-added rather than gross terms – an adjustment that attempts to control for the impact of global value chains – the PRC's share of the Australian total is lowered by around five percentage points.²¹

Figure 1 also shows that Australia's relatively high exposure to its top market is only a recent phenomenon. In 2015, Australia's top market was the PRC with a 32 percent share, just three percentage points higher than the peer average in that year of 29 percent. In 2010, Australia's top market was the PRC with a 25 percent share, three percentage points below the peer average of 28 percent.

If the period of analysis was extended back further, other instances would appear in Australia's trade history when a top market other than the PRC has exceeded the 25-30 percent band: in 1972, Japan's share of Australia's goods exports stood at 30.8 percent, while in 1952 the UK's share was 40.7 percent.²² It might, nonetheless, be contended that the risk of these exposures were not as large as that with the PRC today because Japan and the UK were more geopolitically aligned with Australia, reducing the likelihood of bilateral political disputes spilling over to disrupt trade. Similarly, while Canada's top market share today is much higher than Australia's, it is exposed to the gravitational pull of the US economy, a 'like-minded' liberal democracy.

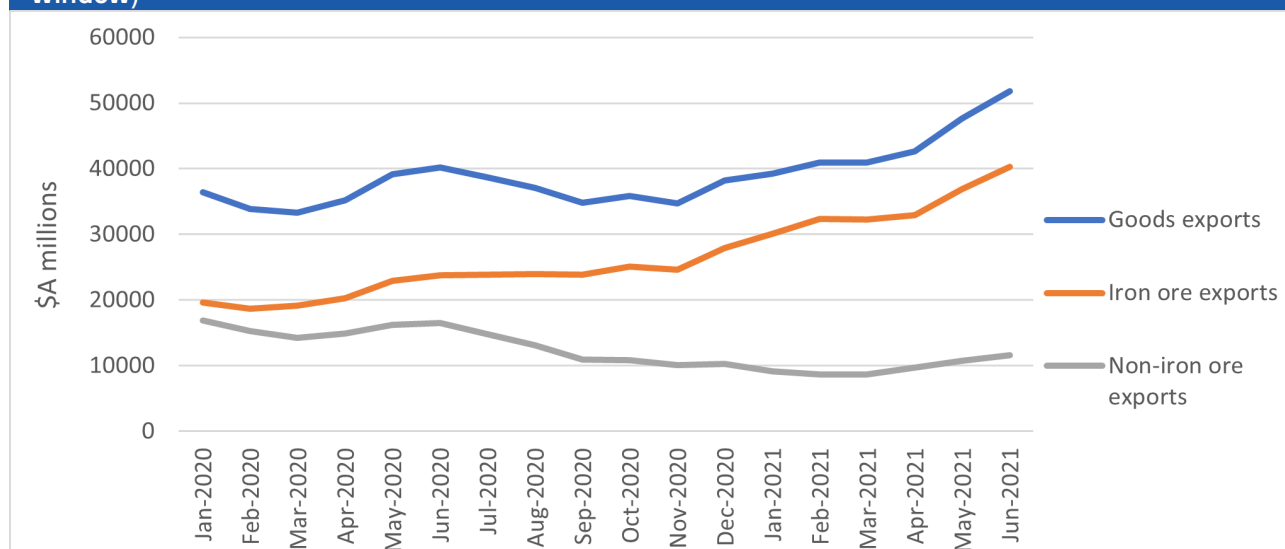
Yet for economies in the Asia-Pacific like Australia, having a significant exposure to the PRC is closer to the rule rather than the exception. Taiwan, for example, has had the PRC as its top market since 2005. In 2020, 30 percent of Taiwan's goods exports went to the PRC, despite geopolitical tensions on a level far exceeding that between

Australia and the PRC.²³ The PRC has also been the Republic of Korea's top market since 2015 with around a 25 percent share. The broader global context is that by 2020, nearly three-quarters of countries traded more goods with the PRC than with the US.²⁴ The extent to which geopolitical alignment protects or promotes trade should also not be overstated. In 1973, Australian agricultural producers were hit when the UK made the decision to join the European Common Market. In 2020, the US signed a bilateral trade pact with the PRC that included the latter committing to better market access and greater purchases of American goods, thereby placing some Australian exporters at a disadvantage. PRC Customs statistics also show that the US and Australia's other Five Eyes intelligence-sharing partners have been amongst those snapping up the share of the PRC market that some Australian producers have recently had to forfeit.²⁵

The data presented in Figure 1, therefore, reveals Australia to be an outlier in only a limited sense: having 41 percent of its gross goods exports going to the PRC in 2020. This raises the question of what led to the nine percentage point jump in the PRC's share since 2015. The answer is overwhelmingly an iron ore story. Even more specifically, it is an iron ore price story. Data from the PRC's General Administration of Customs (GACC) show the annual value of goods imports from Australia increased by US\$41 billion between 2015 and 2020. Iron ore accounted for US\$34.8 billion, or 85 percent of the increase. While the volume of the PRC's iron ore imports from Australia rose by less than 20 percent during this period, the value nearly doubled as prices rose sharply.²⁶ This carries several implications.

First, even with the PRC's current, relatively high aggregate share of Australia's goods exports, the additional risk for the Australian economy is low because what the exposure demonstrates is the PRC's ongoing reliance on Australia to supply big-ticket items like iron ore. In 2020, Australia accounted for 53 percent of global seaborne iron ore exports and was the only major supplier in the PRC's region. The other significant global supplier was Brazil, accounting for 24 percent of the world total.²⁷ While the following section will detail a number of Australian goods exports that have been hit with disruption, Figure 2 shows

Figure 2. Australia's goods exports to the PRC: iron ore versus non-iron ore (three-month rolling window)



Source: Australian Bureau of Statistics²⁸ and authors' calculations.

that the PRC's continuing demand for iron ore pushed the total value of Australia goods exports to the PRC steadily higher from September 2020 and throughout 2021. Despite ongoing bilateral political tensions and the breaking down of the firewall between politics and trade last year, the total value of Australia's goods exports to the PRC in the first half of 2021 was 36 percent higher than the previous record set in 2019.²⁹ Even today, the annual value of goods exports to the PRC is worth 3.8 times that to Japan, Australia's second largest international customer.³⁰

Second, the surge in the iron ore price that has been behind the PRC's rising share of Australia's goods exports reflects temporary factors like natural disasters in Brazil. The 2021-2022 federal budget assumes an iron ore price of US\$55 per tonne by the end of March 2022, down from around US\$200 more recently.³¹ The latest data suggest an adjustment in the global iron ore market is already underway. An implication is that the top market share of Australia's goods exports has already begun a drift back closer to the peer average.

Turning to Australia's exports of services, in 2018 Australia's top market was the PRC with a 20 percent share. While greater than the top market share for France, which was the US at 12 percent, this was less than the UK's exposure to the US at 23 percent³² and Canada's exposure to the US at 57 percent. Recent data for France, the Republic

of Korea, the Netherlands and Taiwan were unavailable.

3. Assessing the costs of trade disruption

There have been several attempts to shed some preliminary light on the costs associated with the Australian goods that have recently had their access to the PRC's market curtailed or cut off entirely.

An investigation by Rajah (2021) involved plotting monthly trade data until January 2021 to reveal a fall in the value of affected goods to the PRC occurring alongside an increase of these same goods to other markets.³³ This was particularly the case since November 2020. The author concluded that it appeared goods previously sent to the PRC were being successfully diverted elsewhere.

Wickes, et al. (2021) reached more pessimistic conclusions examining trade data until February 2021.³⁴ These authors compared recorded trade values with estimates of what trade would have been if PRC authorities did not intervene to disrupt imports from Australia. This counterfactual exercise suggested that foregone Australian exports to the PRC stood at A\$6.6 billion over the period July 2020 to February 2021 and that this was likely to grow to more than A\$20 billion over the full year. They also judged the evidence as suggesting

that while some goods like barley were being successfully diverted, more generally, 'changes in Australian exports to the rest of the world fell well short of offsetting the loss of sales to China'.

Economists at the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) have used a computable general equilibrium model to provide insights into the costs faced by two industries, barley and wine.^{35,36} The models used in these studies have the strength of linking consumption, production and export aspects of the industries considered, all of which have a bearing on the costs associated with trade disruption. Their relative weakness compared with Rajah (2021) and Wickes, et al. (2021), however, is they are more a 'black box' with results potentially being sensitive to assumptions embedded within the model and they also do not draw upon the latest observable trade data to inform their findings. In the case of barley, the modelling simulations suggested that in the medium term to 2025 just 40 percent of barley exports to the PRC would find alternative markets and that this diverted trade would yield lower unit prices compared with the PRC, a 'premium market'. To be sure, they did not conclude that the costs to Australia's barley industry would necessarily be devastating because first, the modelling only allowed for the possibility of exports being diverted to existing markets (i.e., not entering new ones), and second, because growers had access to additional mitigation measures, such as an ability to plant alternative crops. In the case of wine, another industry where the PRC represents a 'premium market' for Australian producers, the modelling suggested that in the medium term 60 percent of exports to the PRC would be diverted to alternative markets. The remaining 40 percent would be lost production value.

The approach taken in this paper most closely follows that of Wilkes, et al. (2021) in that it employs a limited number of straightforward and transparent assumptions and the latest available trade data to make judgements about the scale of costs incurred. Actual costs incurred are contingent on a host of domestic and external factors and for this reason we prefer to characterise our findings as 'cost guides' rather than specific estimates.

The general procedure is as follows. First, monthly data on export volume for an affected good are

summed to form a rolling, three-month series. This is done in order to smooth superficial volatility and 'noise'. Second, the latest trade data (June 2021) are then compared with that immediately prior to the trade disruption, with the month of disruption identified by Australia-China Relations Institute analysts Elena Collinson and Thomas Pantle.^{37,38} If the fall in export volumes to the PRC between these dates is matched, or more than matched, by an increase in export volumes elsewhere, it is assumed that all exports originally destined for the PRC have been successfully diverted to alternative markets. To the extent that the fall in volumes to the PRC is greater than the increase recorded elsewhere, it is assumed that these exports have been 'lost'.³⁹ These 'lost' export volumes are valued by the unit price to the PRC that prevailed immediately prior to the disruption. Unit prices are calculated by dividing export value by export volume. Third, to factor in the extent to which the PRC served as a 'premium market', the volume of successfully diverted trade is multiplied by the unit price differential compared with alternative markets that existed immediately prior to the disruption. For eight of the 12 goods considered below, the unit price to China was higher than to elsewhere. For some of these eight goods, like coal, the differential was relatively modest (<10 percent), while for others like wine it is extremely large (>200 percent). Finally, the scale of this cost guide is put into perspective by comparing it to the latest total export value of the good concerned.

This procedure plainly simplifies a complex reality. For example, a fall in export volume to the PRC might not only reflect reduced PRC demand due to coercive trade practices but other factors too – or reduced Australian supply, perhaps owing to herd restocking or sub-optimal crop growing conditions. Such factors on the Australian side might see exports to the rest of the world declining concurrently. In such cases, making the assumption these exports to the PRC are 'lost' and valuing them at the unit price that prevailed immediately prior to the trade disruption, the cost guide will be over-stating the actual costs. Nonetheless, the procedure is straightforward and transparent, homes in on cost concepts that need to be accounted for and can readily be rolled out to analyse all of the goods struck by disruption. There is, however, obvious scope for industry

specialists to sharpen the cost guides we present into more precise cost estimates.

3.1 Barley

As noted in the introduction, in May 2020 PRC authorities imposed an 80.5 percent tariff on barley imports from Australia.⁴⁰ This trade was captured by the HS code: 100390 – Barley (excluding seed for sowing).

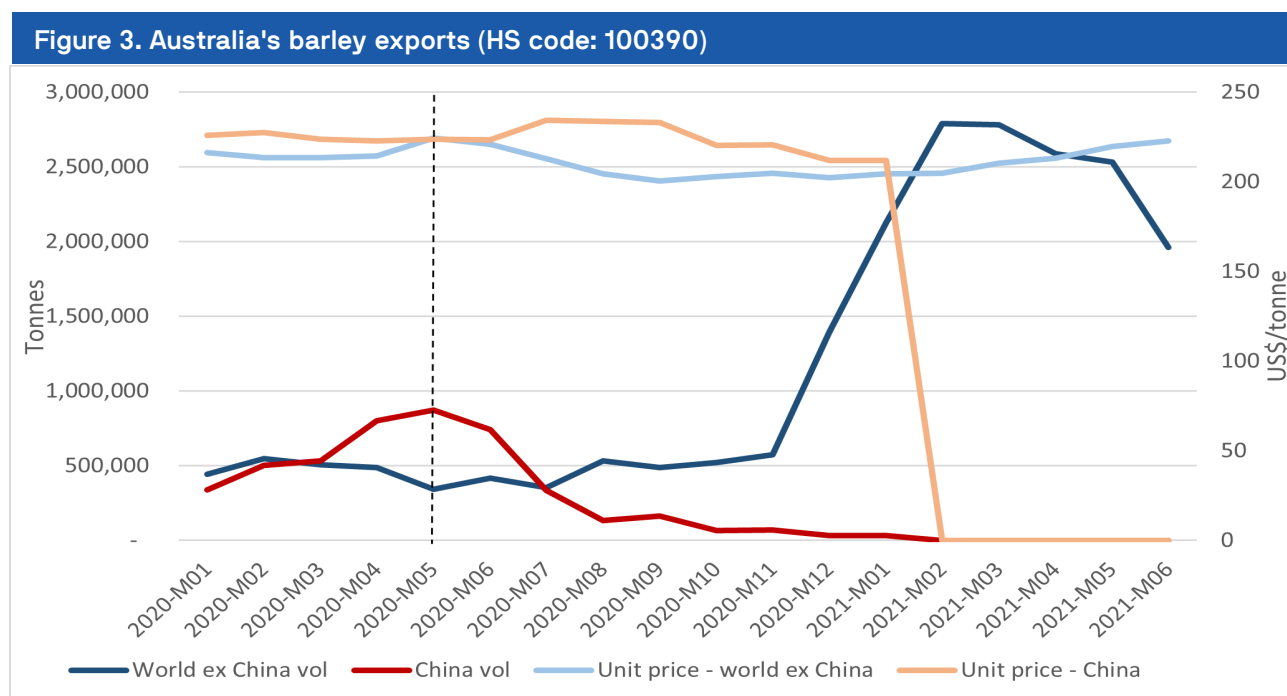
Figure 3 shows that in April 2020 (that is, the sum of February, March and April) Australia’s barley exports to the PRC totalled 802,792 tonnes. This compared with 488,157 tonnes elsewhere. In value terms, the PRC accounted for 63.1 percent of Australia’s barley exports. By June 2021 (that is, the sum of April, May and June), the volume of barley exports to the PRC had fallen to zero while the volume elsewhere had increased by 1,472,132 tonnes to 1,960,289 tonnes. It is, therefore, assumed that all of the barley that would otherwise have been exported to the PRC was successfully diverted to alternative markets: no export volume was ‘lost’. However, there remains a cost, albeit a modest one, because in April 2020 the unit price of barley exports to the PRC stood at US\$222.8/tonne compared with US\$214.5/tonne elsewhere. Accordingly, it is assumed that

the 802,792 tonnes that was successfully diverted from the PRC to alternative markets fetched a price US\$8.3/tonne lower than if the same level of access to the PRC market had been retained. This results in a cost guide of US\$6.7 million (802,792 tonnes × US\$8.3/tonne). This was marginal compared with the total value of Australia’s barley exports in June 2021 of US\$436.7 million.

The barley case is immediately instructive because it highlights that no simple link exists between exposure to the PRC market and the subsequent costs incurred if that market is closed. What matters more is access to an effective risk mitigation mechanism. Despite nearly two-thirds of Australia’s barley exports going to the PRC in value terms, global markets were able to quickly connect Australian barley growers with buyers elsewhere and at only a modest reduction in margins.

3.2 Beef

Alongside barley, beef was another good struck by disruption in May 2020, when a total of four abattoirs had their certification to supply the PRC market suspended. This was followed by two other facilities being suspended in August and December Australia exports beef to the PRC



Source: International Trade Centre⁴¹ and authors’ calculations.

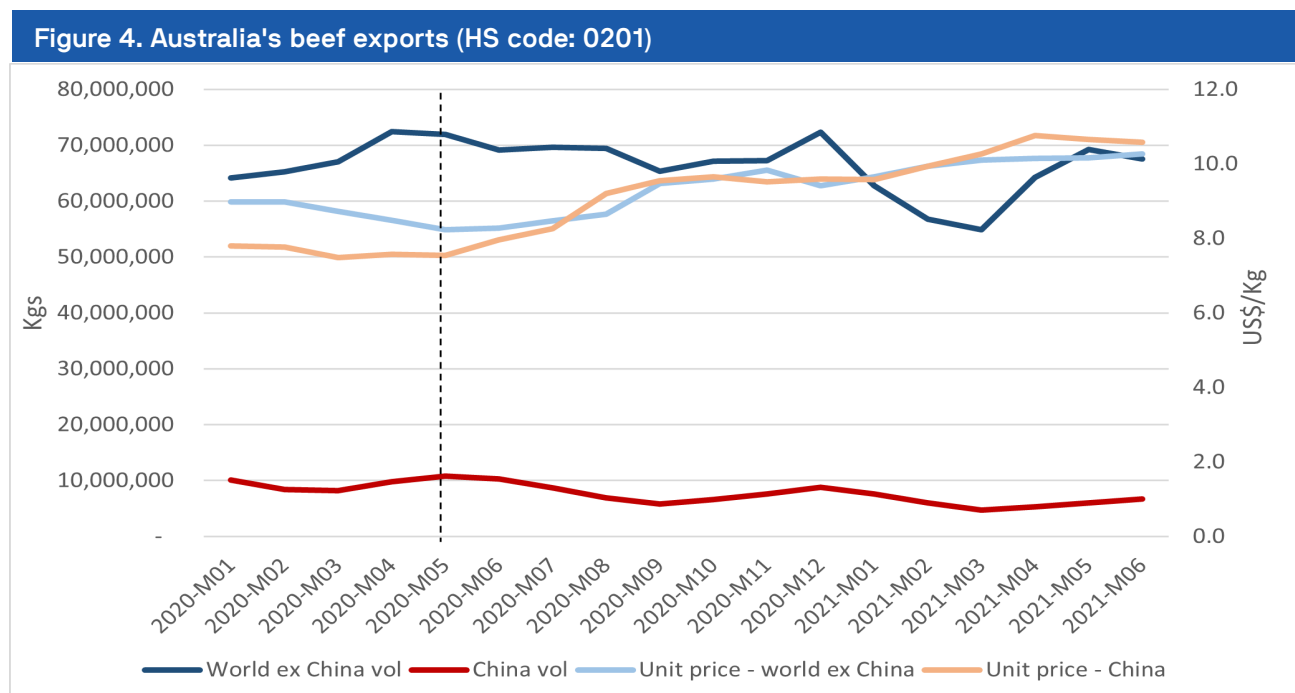
Note: Throughout this report, unit prices appearing as falling to zero are a calculation artefact of export volumes falling to zero.

under three main HS codes – 0201 (Meat of bovine animals, fresh or chilled), 0202 (Meat of bovine animals, frozen) and 0206 (Edible offal, fresh, chilled, or frozen).^{42,43,44}

Starting with HS code: 0201, Figure 4 shows that in April 2020, Australia exported 9,788,659 kgs to the PRC and 72,417,033 kgs elsewhere. In value terms, the PRC accounted for 10.8 percent of Australia's total exports. By June 2021, the volume of HS code: 0201 exports to the PRC had fallen by 3,051,182 kgs to 6,737,378 kgs, while the volume elsewhere also fell by 4,914,428 kgs to 67,502,605 kgs. It is, therefore, assumed that none of volume previously exported to the PRC was successfully diverted to alternative markets. Accordingly, given that the unit price of exports to the PRC in April 2020 was US\$7.6/kg, the cost guide is US\$23.1 million (3,051,182kg × US\$7.6/kg). This is in the context of total Australian HS code: 0201 exports in June 2021 of US\$764.1 million.

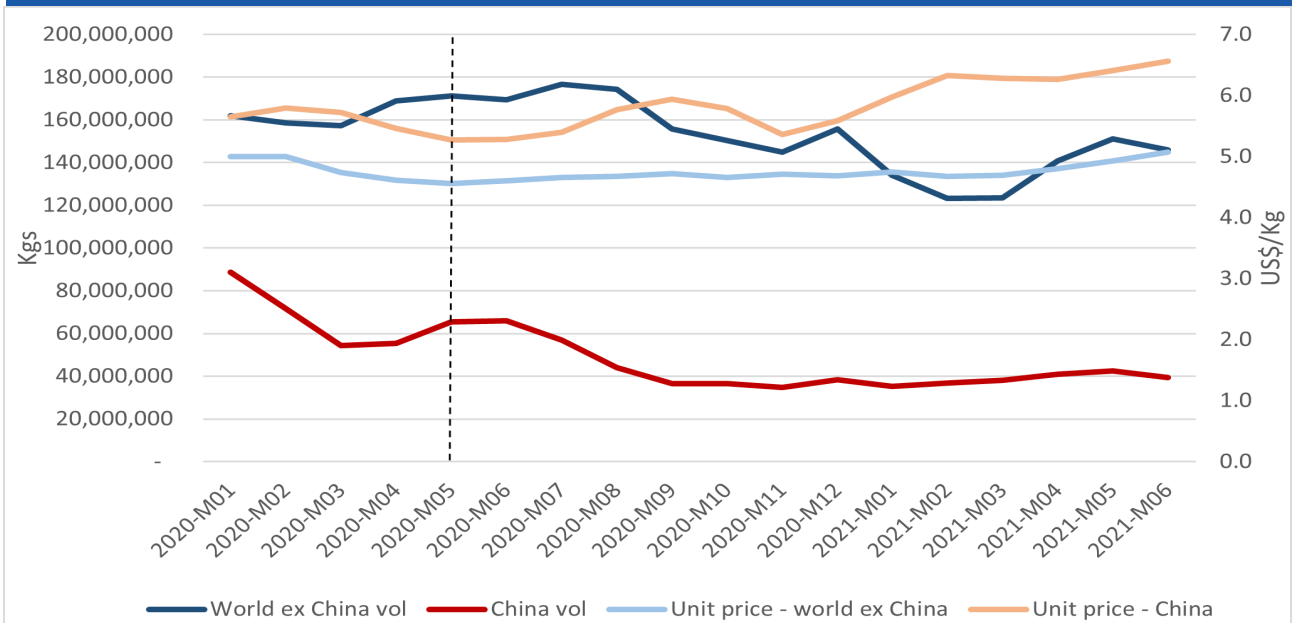
elsewhere also fell by 23,110,493 kgs 145,797,166 kgs. It is, therefore, assumed that none of volume previously exported to the PRC was successfully diverted to alternative markets. Accordingly, given that the unit price of exports to the PRC in April 2020 was US\$5.5/kg, the cost guide is US\$87.5 million (16,039,024kg × US\$5.5/kg). This is in the context of total Australian HS code: 0202 exports in June 2021 of US\$998.0 million.

Turning to HS code: 0202, Figure 5 shows that in April 2020, Australia exported 55,484,329 kgs to the PRC and 168,907,659 kgs elsewhere. In value terms, the PRC accounted for 28.0 percent of Australia's total exports. By June 2021, the volume of HS code: 0202 exports to the PRC had fallen by 16,039,024 kgs to 39,445,305 kgs, while the volume



Source: International Trade Centre⁴⁵ and authors' calculations.

Figure 5. Australia's beef exports (HS code: 0202)

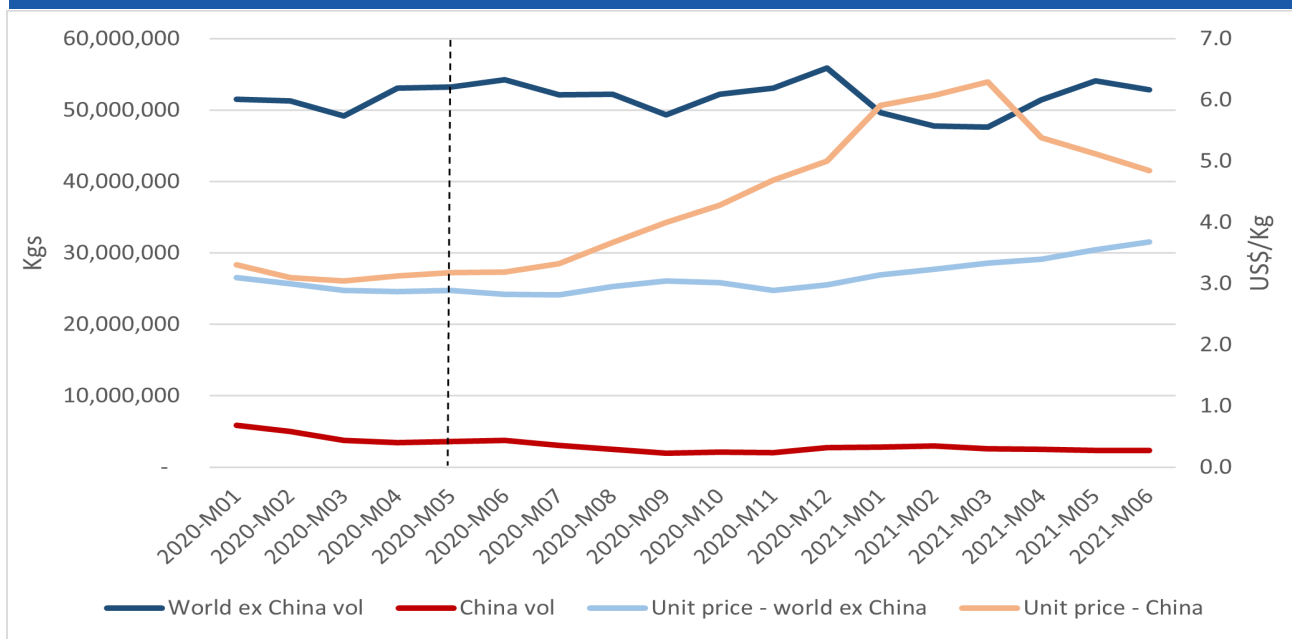


Source: International Trade Centre⁴⁶ and authors' calculations.

Finally, for HS code: 0206, Figure 6 shows that in April 2020, Australia exported 3,401,689 kgs to the PRC and 53,072,313 kg elsewhere. In value terms, the PRC accounted for 6.5 percent of Australia's total exports. By June 2021, the volume of HS code: 0206 exports to the PRC had fallen by 1,055,421 kgs to 2,346,268 kgs, while the volume elsewhere also fell by 258,231 kgs to 52,814,082 kgs. It is, therefore, assumed that none of volume previously exported to the PRC was successfully diverted

to alternative markets. Accordingly, given that the unit price of exports to the PRC in April 2020 was \$US3.1/kg, the cost guide is US\$3.3 million (1,055,421kg × US\$3.1/kg). This is in the context of total Australian HS code: 0206 exports in June 2021 of US\$205.7 million.

Figure 6. Australia's beef exports (HS code: 0206)



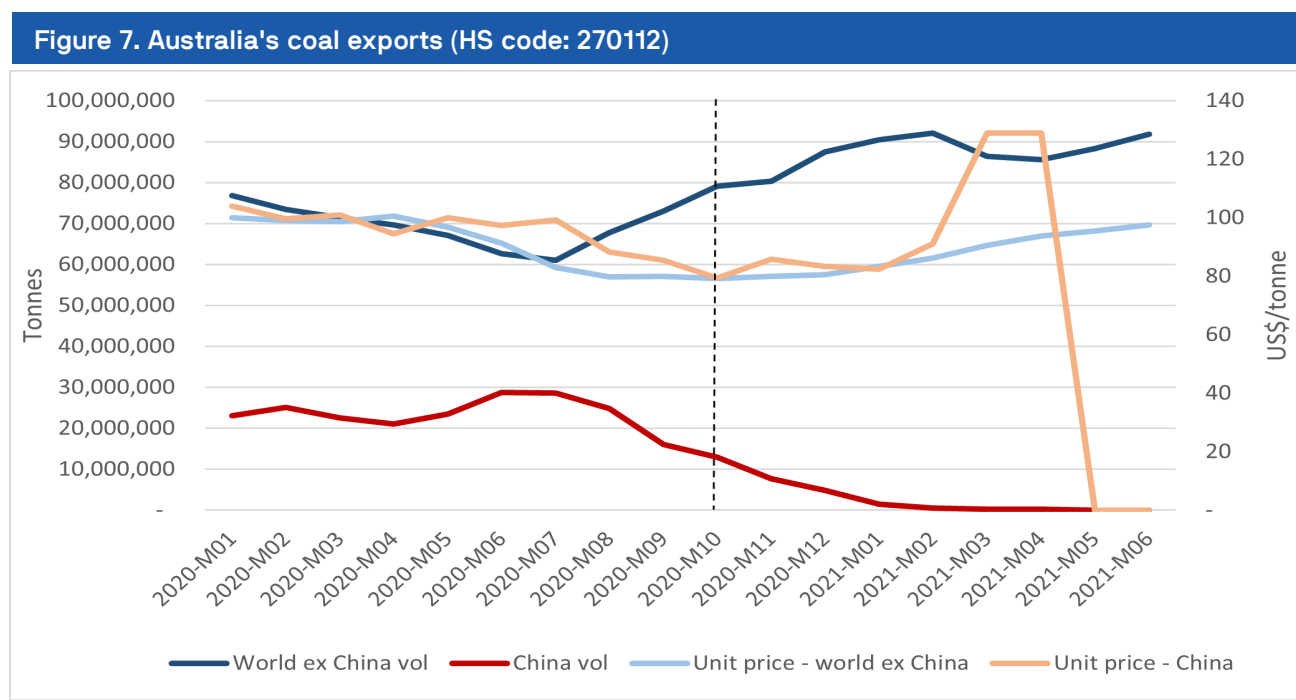
Source: International Trade Centre⁴⁷ and authors' calculations.

It is apparent that for all HS codes relating to beef, the volume of Australia's beef exports to the PRC declined alongside the volume to the rest of the world. This strongly suggests that an important factor behind the decline in volume to the PRC was not only the trade disruption initiated by Beijing, but also reduced Australian supply. Consequently, the above cost guides, while already modest relative to the total value of beef exports, are likely overstating the actual costs incurred.

3.3 Coal

In October 2020 media reports emerged of ships transporting Australian coal exports being refused permission to dock at PRC ports.⁴⁸ Trade data show that Australia's coal exports to the PRC are overwhelmingly captured by the HS code: 270112 – Bituminous coal.

Figure 7 shows that in September 2020, Australia exported 16,089,616 tonnes of coal to the PRC and 72,999,612 tonnes elsewhere. In value terms, the PRC accounted for 19.1 percent of Australia's coal exports. By June 2021, the volume of coal exports to the PRC had fallen to zero while the volume elsewhere had increased by 18,862,774 tonnes to 91,862,386 tonnes. It is, therefore, assumed that all of the coal that would otherwise have been exported to the PRC was successfully diverted to alternative markets. In September 2020, the unit price of coal exports to the PRC stood at US\$85.0/tonne compared with US\$79.9/tonne elsewhere. Accordingly, it is assumed that the 16,089,616 tonnes that was successfully diverted to alternative markets came at a cost to margins of US\$5.6/tonne. This leads to a cost guide of US\$89.4 million (16,089,616 million tonnes × US\$5.6/tonne).⁴⁹ This is in the context of total Australian coal exports in June 2020 valued at US\$9.0 billion.



Source: International Trade Centre⁵⁰ and authors' calculations.

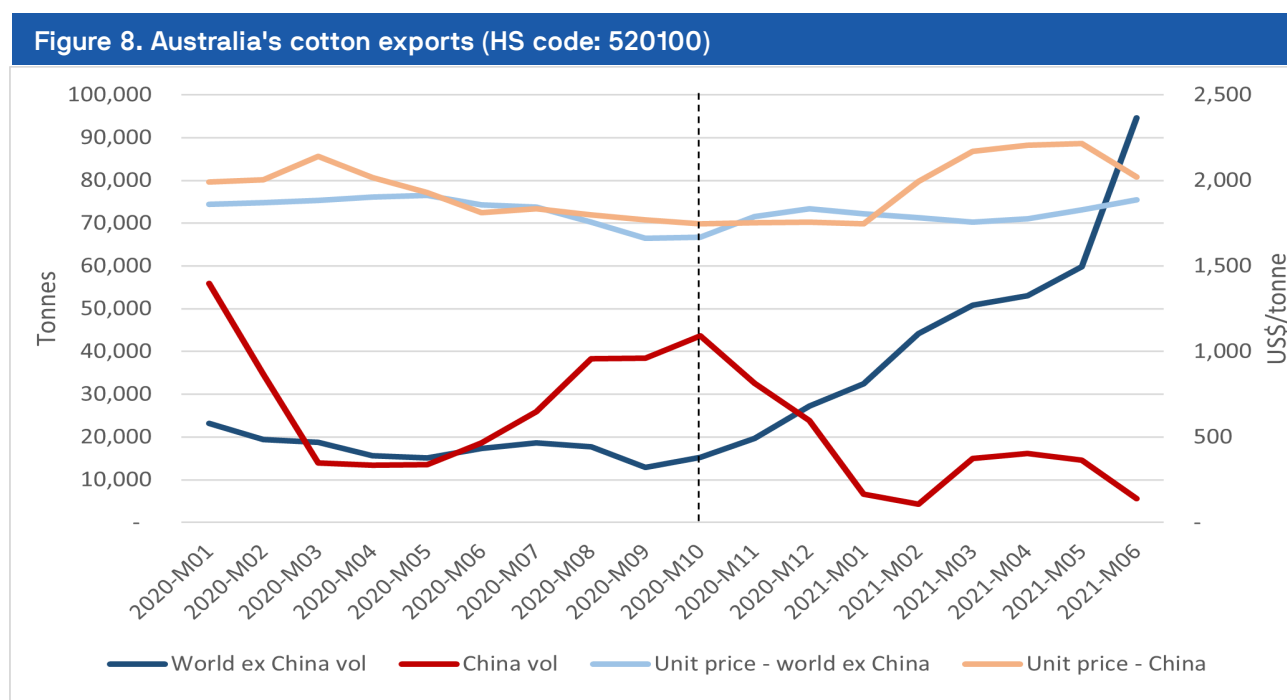
3.4 Cotton

Media reports in October 2020 contended that the PRC's peak economic planning agency, the National Development and Reform Commission (NDRC), had verbally discouraged local spinning mills from using Australian cotton.⁵¹ Australia's cotton exports to the PRC are covered by HS code: 520100 – Cotton, neither carded nor combed.

Figure 8 shows that in September 2020, Australia exported 38,488 tonnes of cotton to the PRC and 12,953 tonnes elsewhere. In value terms, the PRC accounted for 76.0 percent of Australia's cotton exports. By June 2021, the volume of cotton exports to the PRC had fallen by 32,869 tonnes to 5,620 tonnes, while the volume elsewhere had increased by 81,607 tonnes to reach 94,559 tonnes. It is, therefore, assumed that all of the cotton that

would otherwise have been exported to the PRC was successfully diverted to alternative markets. In September 2020, the unit price of cotton exports to the PRC stood at US\$1,770.4/tonne, compared with US\$1,661.3/tonne elsewhere. Accordingly, it is assumed that the 32,869 tonnes that was successfully diverted to alternative markets came at a cost to margins of US\$109.1/tonne. This leads to a cost guide of US\$3.6 million (32,869 tonnes × US\$109.1/tonne). The total value of Australia's cotton exports in June 2020 was US\$189.8 million.

Similar to barley growers, despite Australian cotton producers having had an extremely high proportion of their product going to the PRC, the costs incurred when this trade was disrupted was minimal because global markets provided them with access to an effective mitigation mechanism.



Source: International Trade Centre⁵² and authors' calculations.

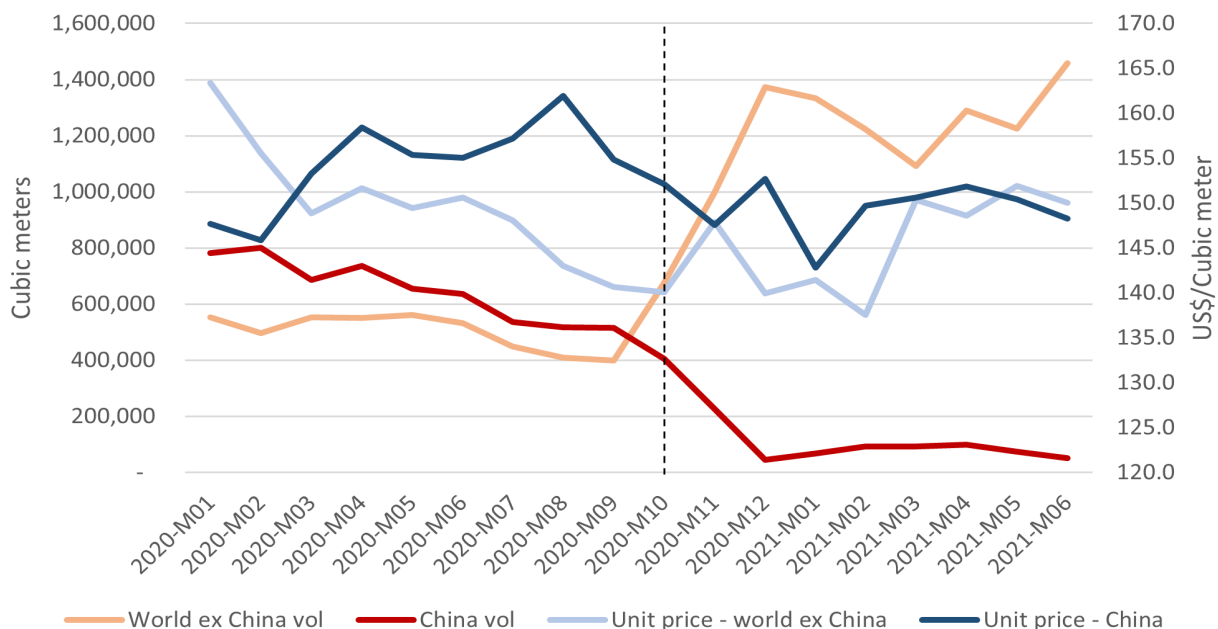
3.5 Timber

Australian timber exports from Queensland were subjected to import suspensions after the PRC's GACC alleged in October 2020 that it had detected 'many cases of live pests in time imported from Australia'.⁵³ Australia exports timber to the PRC under three main HS codes – 4401 (Fuel wood), 4403 (wood in rough) and 4407 (Wood sawn or chipped). This suspension was followed by additional suspensions in November⁴⁴ and December^{55,56} on timber exports from Victoria, Tasmania, South Australia, New South Wales and Western Australia.

Starting with HS code: 4401, Figure 9 shows that in September 2020, Australia exported 515,394 tonnes to the PRC and 398,770 tonnes elsewhere. In value terms, the PRC accounted for 58.7 percent of Australia's total exports. By June 2021, the volume of HS code: 4401 exports to the PRC had fallen by 464,612 tonnes to 50,782 tonnes, while the volume elsewhere rose by 1,060,406 tonnes to 1,459,176 tonnes. It is, therefore, assumed that all of the volume previously exported to the PRC was successfully diverted to alternative

markets. However, there remains a cost because in September 2020 the unit price to the PRC stood at US\$154.8/tonne compared with US\$140.7/tonne elsewhere. Accordingly, the 464,612 tonnes assumed to have been successfully diverted to other markets is further assumed to have yielded a unit price of US\$14.2/tonne less than had the trade disruption to the PRC not occurred. This puts the cost guide at US\$6.6 million (464,612 tonnes × US\$14.2/tonne). This is in the context of total Australian HS code: 4401 exports in June 2021 of US\$226.4 million.

Figure 9. Australia's timber exports (HS code: 4401)



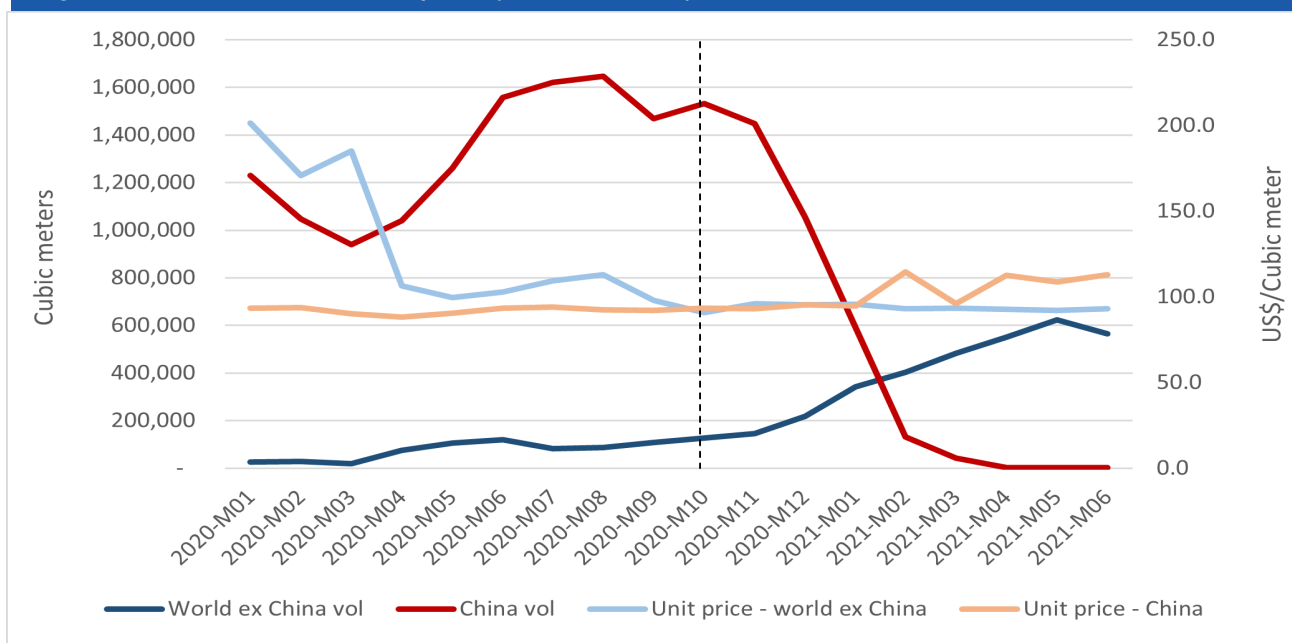
Source: International Trade Centre⁵⁷ and authors' calculations.

Turning to HS code: 4403, Figure 10 shows that in September 2020, Australia exported 1,469,309 tonnes to the PRC and 107,918 tonnes elsewhere. In value terms, the PRC accounted for 92.8 percent of Australia's total exports. By June 2021, the volume of HS code: 4403 exports to the PRC had fallen by 1,467,290 tonnes to 2,019 tonnes, while the volume elsewhere rose by 456,010 tonnes to 563,928 tonnes. It is, therefore, assumed that 456,010 tonnes of the volume previously exported to the PRC was successfully diverted to alternative markets. Meanwhile, 1,011,280 tonnes was 'lost'. Given that the unit price of exports to the PRC in September 2020 was US\$92.1/tonne, the cost associated with 'lost' export volume was US\$93.2 million (1,011,280 tonnes × US\$92.1/tonne). Given that the unit price of exports elsewhere in September 2020 was US\$98.0/tonne, the PRC did not serve as a premium market and so no further cost calculation owing to reduced margins is necessary for the volume that was successfully diverted. The US\$93.2 million cost guide is in the context of total Australian HS code: 4403 exports in June 2021 of US\$52.8 million. This points to a

major cost impact for Australian exporters of this good.

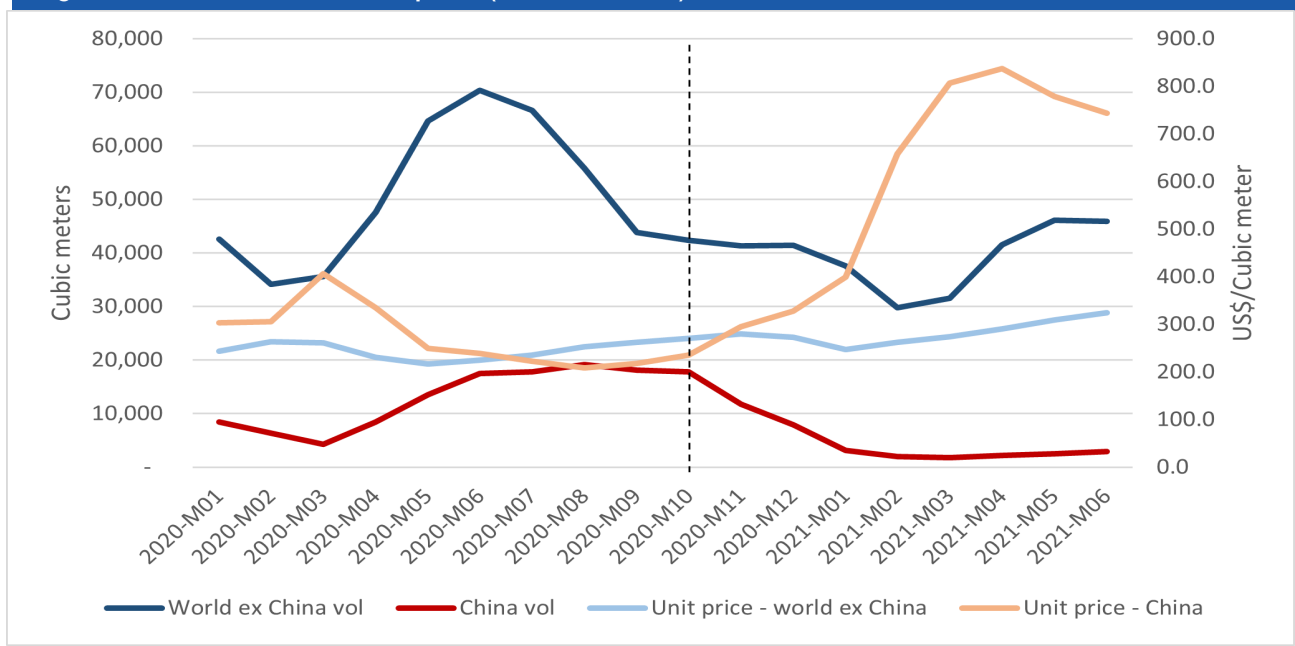
Finally for HS code: 4407, Figure 11 shows that in September 2020, Australia exported 18,073 tonnes to the PRC and 43,772 tonnes elsewhere. In value terms, the PRC accounted for 25.5 percent of Australia's total exports. By June 2021, the volume of HS code: 4407 exports to the PRC had fallen by 15,205 tonnes to 2,868 tonnes, while the volume elsewhere rose by 2,106 tonnes to 45,878 tonnes. It is, therefore, assumed that 2,106 tonnes was successfully diverted to alternative markets, while 13,099 tonnes was lost. Given that the unit price of exports to the PRC in September was US\$217.6/tonne, the lost export volume is costed at US\$2.8 million (13,099 tonnes × US\$217.6/tonne). The unit price elsewhere was greater than to the PRC and so no further adjustment to account for the impact on margins of the successfully diverted volume is needed. The US\$2.8 million cost guide is in the context of total HS code: 4407 exports of US\$17.0 million.

Figure 10. Australia's timber exports (HS code: 4403)



Source: International Trade Centre⁵⁸ and authors' calculations.

Figure 11. Australia's timber exports (HS code: 4407)



Source: International Trade Centre⁵⁹ and authors' calculations.

In the case of timber, the HS code: 4403 had the highest exposure to the PRC and also experienced the greatest loss in value. When viewed alongside the cases of barley and cotton, which also had a high exposure to the Chinese market but experienced low costs when the market was closed, this points to the complex link that exists between exposure and risk. Whilst demand from Vietnam, the Republic of Korea and India did help divert minimal volumes of HS code: 4403, the capacity of this combination to absorb Australia's export volume was limited when compared to the PRC market.

3.6 Rock lobster

At the beginning of November 2020, media reports emerged that the PRC's GACC was delaying the processing of Australian live rock lobster imports, citing a need to test for trace elements of minerals and metals.⁶⁰ The delay led to consignments perishing on the tarmac and an effective suspension of the trade. The relevant rock lobster

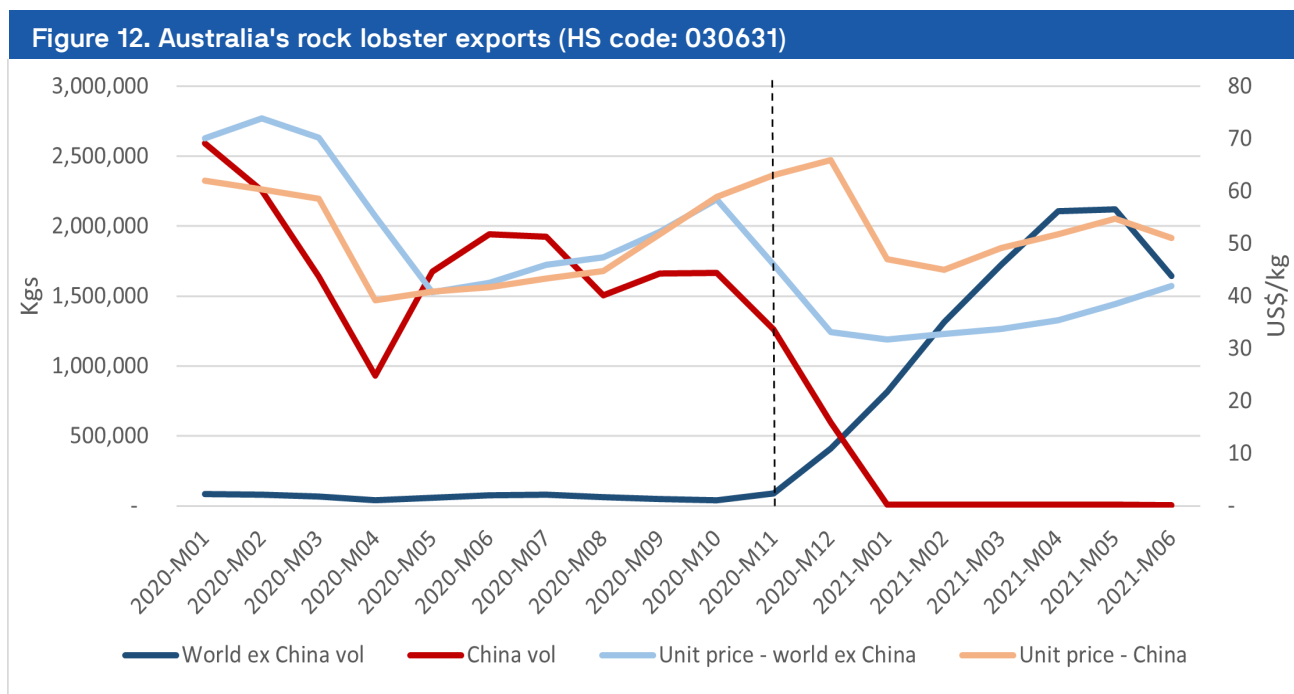
exports are covered by HS code: 030631 – Rock lobster and other sea crawfish, live, fresh or chilled.

Figure 12 shows that in October 2020, Australia exported 1,663,698 kilograms of rock lobster to the PRC and 40,271 kilograms elsewhere. In value terms, the PRC accounted for 97.7 percent of Australia's rock lobster exports. By June 2021, the volume of rock lobster exports to the PRC had fallen by 1,658,722 kilograms to 4,976 kilograms, while the volume elsewhere had increased by 1,601,692 kilograms to reach 1,641,963 kilograms. It is, therefore, assumed that 1,601,692 kilograms, or 96.6 percent of the fall in volume to the PRC, was successfully diverted to alternative markets, while just 57,030 kilograms was 'lost'. In October 2020, the unit price of rock lobster exports to the PRC stood at US\$58.9/kilogram, compared with US\$58.4/kilogram elsewhere. The export volume lost is, therefore, valued at US\$3.4 million (57,030 kilograms × US\$58.9/kilogram). Meanwhile, the volume successfully diverted is assumed to have fetched a price US\$0.5/kilogram less than it could have attained in the PRC market, or US\$0.8 million

(1,601,692 kilograms × US\$0.5/kilogram). The full cost guide then is US\$4.2 million (US\$3.4 million + US\$0.8 million). This compares with the total value of Australia’s rock lobster exports in June 2021 of US\$69.1 million.

This modest cost guide may seem surprising given that in 2020 the PRC accounted for 90.9 percent of world live rock lobsters imports. How was it possible for Australian rock lobster exporters to so successfully find alternative markets? The answer lies not in formal markets but in ‘grey markets’. Trade data show that Australian lobster exporters were able to send their produce to Hong Kong, which then made its way to the PRC mainland.⁶¹

In October 2020, Australia’s rock lobster exports to Hong Kong stood at 17,956 kilograms. By June 2021 this had reached 1,126,534 kilograms. While ‘grey markets’ have proven an effective risk mitigation mechanism for Australian lobster exporters to date, it remains to be seen whether PRC authorities will attempt to clamp down on this circuitous route. Accordingly, it is inherently less compelling compared with the global markets that Australian barley, beef, coal and cotton producers have access to.



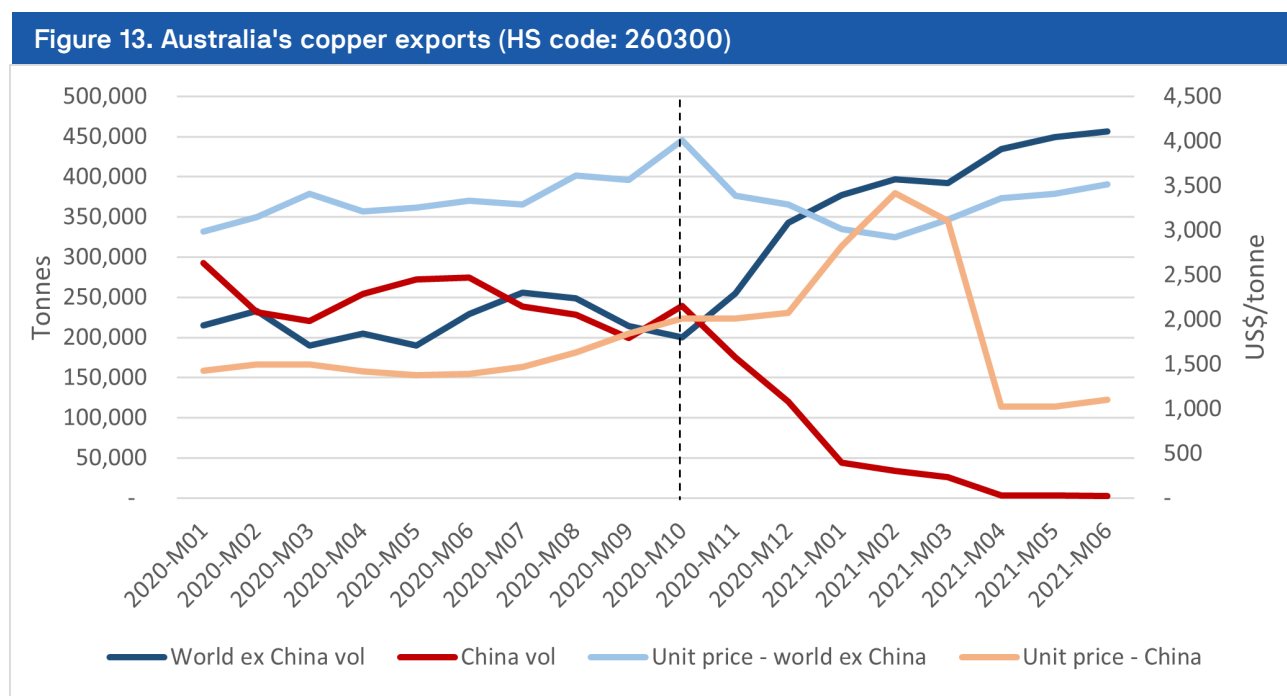
Source: International Trade Centre⁶² and authors’ calculations.

3.7 Copper

In early November 2020, the *South China Morning Post* cited 'multiple trade sources in China' to report that imports of copper from Australia were set to be banned by PRC authorities.⁶³ Australia's copper exports are covered by the HS code: 260300 - Copper ores and concentrates.

Figure 13 shows that in October 2020, Australia exported 239,153 tonnes of copper to the PRC and 199,945 tonnes elsewhere. In value terms, the PRC accounted for 37.5 percent of Australia's copper exports. By June 2021, the volume of copper exports to the PRC had fallen by 236,267 tonnes

to 2,886 tonnes, while the volume elsewhere had increased by 256,430 tonnes to reach 456,375 tonnes. It is, therefore, assumed that all of the volume that was previously exported to the PRC was successfully diverted elsewhere. In October 2020, the unit price of copper exports to the PRC was US\$2009.1/tonne, compared with US\$4011.8/tonne elsewhere. That is, the PRC did not serve as a 'premium market' in the case of copper. The combination of these two observations puts the cost guide of copper export disruption by the PRC at zero.



Source: International Trade Centre⁶⁴ and authors' calculations.

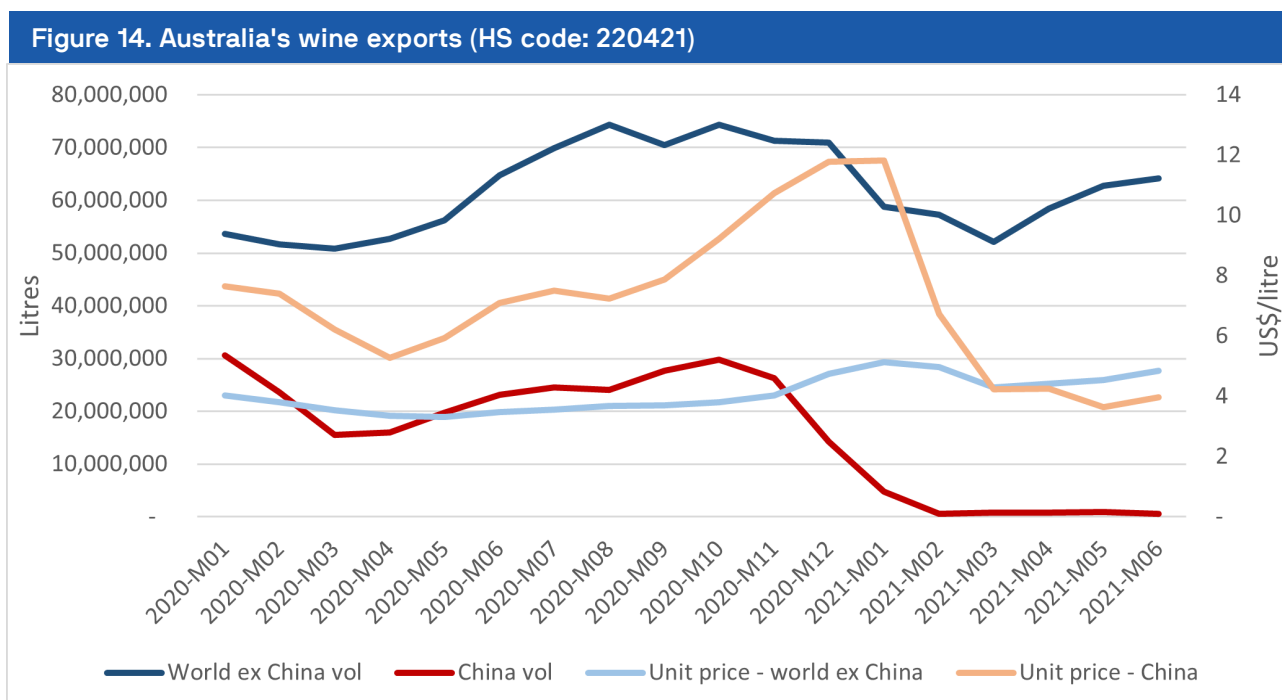
3.8 Wine

In November 2020 the PRC's Ministry of Commerce imposed a prohibitive tariff on imports of Australian wine, alleging dumping and that Australia producers were receiving government subsidies inconsistent with WTO rules.⁶⁵ The tariff applied to wine shipped in containers of two litres or less. This corresponds to the HS code: 220421 - Wine of fresh grapes, in containers <= 2L (excluding sparkling wine).

Figure 14 shows that in October 2020, Australia exported 29.8 million litres of wine to the PRC and 74.3 million litres elsewhere. In value terms, the PRC accounted for 49.3 percent of Australia's total wine exports. By June 2021, the volume of wine exports to the PRC had fallen by 29.2 million litres to 0.6 million litres. Those elsewhere also fell by 10.1 million litres to 64.2 million litres. It is, therefore, assumed that no exports to the PRC were successfully diverted to other markets. The unit price of wine exports to the PRC stood at US\$9.2/litre compared with US\$3.8 elsewhere. This

puts the cost guide of the fall in export volume to the PRC at US\$269.0 million (29.2 million litres × \$US9.2). In June 2021, the total value of Australia's wine exports stood at US\$313.8 million.

Unlike many of the other goods considered, the above results suggest that Australian wine exporters have incurred large costs as a result of vastly reduced access to the PRC market. This most directly reflects the differentiated nature of wine with a high unit price. Brand awareness and appreciation matter. A lack of homogeneity means there is no unified global market that can easily connect Australian producers with buyers elsewhere. It is also perhaps interesting to note that despite the PRC imposing prohibitive tariffs on the HS code: 220421, there is little evidence of this formal restriction being circumvented by instead shipping wine to the PRC under an alternative HS code such as 220429, which applies to product shipped in containers of two litres or more.



Source: International Trade Centre⁶⁶ and authors' calculations.

3.9 Cost guide summary

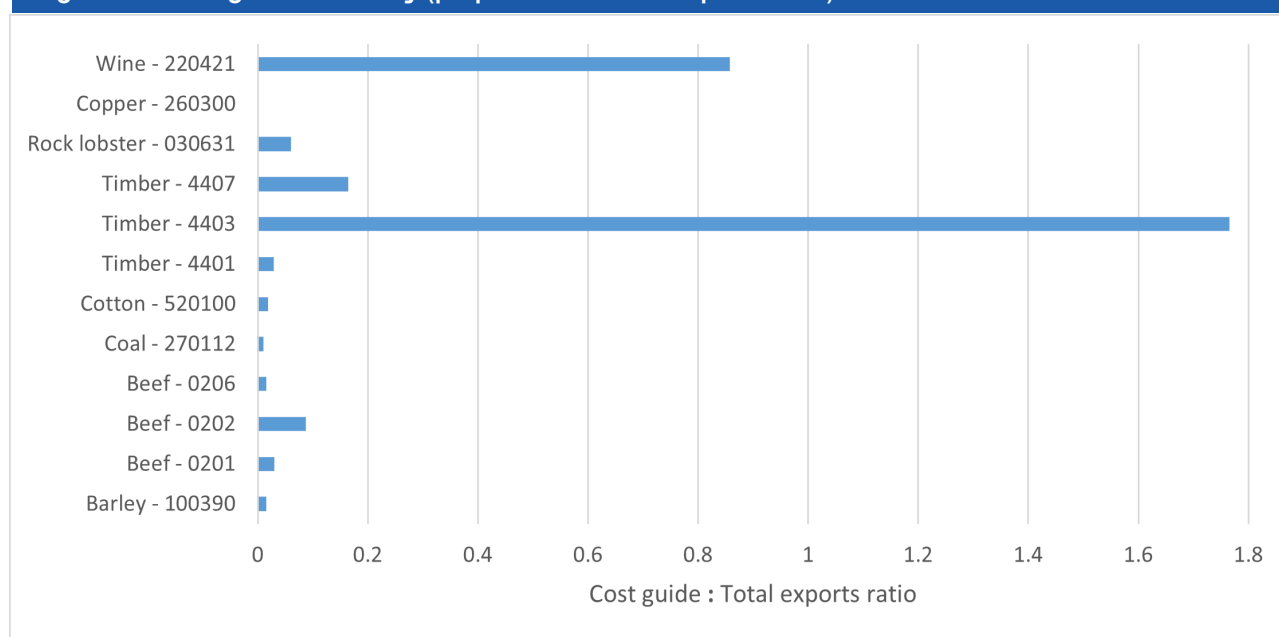
Figure 15 summarises the cost guides of goods in comparison to their latest export values. Two goods, wine (HS code: 220421) and a category of timber (HS code: 4403), clearly stand out. This confirms that at an industry level, exposure to the PRC market can potentially result in serious, negative consequences in the event that Beijing decides to employ coercive measures and the costs cannot be effectively mitigated. What these results more amply demonstrate however, is the limited usefulness of market exposure as a coercive tool for Beijing. For nine of the other 10 goods, the cost guide is less than 10 percent of the most recent total export value. Moreover, trade losses typically overstate the losses incurred by the Australian economy because they do not account for considerations like foreign ownership of businesses or the mobility of factors of production, such as the ability of labour to move from one industry to another.⁶⁷

4. Implications

The previous sections contain two key findings. First, economic gravity cannot be avoided:

inevitably, medium-sized economies like Australia that rely on openness for prosperity will develop a significant exposure to much bigger economies, such as the PRC and the US. Second, there is no indelible link between exposure to the PRC and risk, either at an aggregate or industry level. At the aggregate level, the link is weak because the PRC has an ongoing reliance on Australia as a supplier of big-ticket items like iron ore and so Beijing has left such goods untouched in its campaign of trade disruption. At an industry level, what is decisive is not exposure to the PRC per se but rather whether Australian producers have access to an effective risk mitigation mechanism. It is noteworthy that some of the Australian producers that have had the highest exposure to the PRC, such as cotton growers, also incurred the lowest costs when that market was closed. Mitigation in the form of Canberra providing businesses with financial assistance, or supporting actions of Australia by Washington and other geopolitically-aligned capitals, has been almost entirely absent. The costs incurred by many Australian businesses have, however, been lowered significantly by markets. For exporters of rock lobsters, 'grey markets' have also proven valuable.⁶⁹ At an industry level, mitigation mechanisms apart from markets might

Figure 15. Cost guide summary (proportion of total export value)



Source: International Trade Centre⁶⁸ and authors' calculations.

also be available. Barley growers, for example, have the option of planting alternative crops.

These findings carry a number of implications.

For starters, the findings serve as a corrective to the claim that Australian businesses with a high exposure to the PRC are necessarily naïve or irresponsible. In fact, what these results show is that many business owners were able to secure premium prices in the PRC for an extended period, and when this opportunity closed, quickly and successfully pivoted to alternative markets. This highlights an awareness of both opportunities and risks, which has bolstered not only private profits but the broader national interest too. This should not be surprising because the businesses that engage in trade are generally the best motivated and best equipped to accurately assess risks. They are also generally best motivated and best equipped to accurately compare these risks with opportunities. The fact that the overall level of risk facing Australian businesses exporting to the PRC has risen since last year is well understood in both government and business circles. In August last year, for example, the then-trade minister, Simon Birmingham, stated, 'Some of the regulatory decisions that China has made this year will obviously increase the risk profile that businesses would see when it comes to trading with Chinese counterparts.'⁷⁰ However, the scale of this risk varies enormously from industry to industry, as do the opportunities. For this reason, Minister Birmingham followed up this statement with the recognition that, 'To what extent that [the rise in risk] necessitates a change in business behaviour is a matter for each individual business'. For some businesses, the case for continuing to prize the PRC market will remain even in a heightened risk environment. As an illustration, in August 2021 the CEO of trans-Tasman dairy manufacturer, A2, told investors that, 'There's no avoiding the fact that the China infant nutrition market is – even though it is challenging at the moment – by far the largest and most interesting opportunity for us. So it is both the biggest risk and the biggest opportunity for us that we must embrace. We have to invest in that to capture that opportunity going forward.'⁷¹

Even in the case that an industry has a large exposure to the PRC and then incurs large losses in the event the market is closed is not proof of naivety or negligence. In some industries, the PRC market is not only the most lucrative in

terms of unit prices, but also by far the biggest source of global demand. Losing access to the PRC market, therefore, translates directly to lower export volumes in total. Rock lobster exporters, for example, face a market reality where China accounts for more than 90 percent of global imports. Accordingly, a rational evaluation of benefits and costs would involve selling as much as possible to the PRC market when the opportunity exists, and mitigating the risk this brings in other ways, such as by quarantining a portion of profits to provide a financial buffer in the event of disruption.

Next, market exposure, and an ability to disrupt it, is revealed to be a weak tool of coercion for Beijing. If a broad contingent of Australian exporters can readily mitigate the costs associated with losing access to the PRC market, they are unlikely to put serious lobbying pressure on Canberra to shift its political positions. This means that what the PRC may hope to achieve by disrupting trade is not the same as what it is likely to achieve. Put another way, exposure to the PRC market and Australian sovereignty can co-exist.

Finally, given that public policy resources are finite and interventions are not cost-free, and the fact that many Australian businesses already have access to effective mitigation mechanisms, the case for government to take a more prescriptive approach to business engagement with the PRC is more limited than commonly imagined, and potentially could even be counterproductive. The Australian Productivity Commission argues that the types of intervention that can be sensibly justified are likely to be modest.⁷² For example, they note that there could be a case for providing information to businesses about geopolitical and security threats, which the government has advanced and superior access to through its diplomatic and intelligence-gathering networks. Supporting the production and dissemination of research by academic and industry experts into the factors that might predispose PRC policymakers to target a particular import with disruption is perhaps another example,⁷³ although larger businesses and often industry peak bodies already have access to their own in-house research teams and external consultants to sharpen their judgements on such issues. Publically-funded agencies like Austrade and the Australian Bureau of Agricultural and Resource Economics and Sciences and university-based experts offer further

support. It requires clarification why taxpayers should pay more for the gathering of business intelligence when the profits from trade accrue to private companies. In the event of disruption, one possible justification for the government to offer financial support to a particularly hard-hit industry is that these producers are 'taking one for the team': they are being singled out for punishment by Beijing owing to decisions made in Canberra for the collective public benefit. Such support would, however, have to be carefully designed to avoid moral hazard and an expectation by business owners that they will be bailed out if their private business bets go wrong.⁷⁴ There is a case for government to invest in 'collective action' pushback against Beijing's economic coercion but if the point is to get the PRC to 'play by the rules' and to expand the range of activities covered by these rules, narrow coalitions like the ANZUS alliance, the Quad or the Five Eyes intelligence-sharing arrangement offer little positive return compared with multilateral institutions like the World Trade Organization (WTO) that have broad legitimacy. Putting a focus on the latter is at least a strategy consistent with making progress towards the goal, even if that progress is slow and compromises in negotiations mean that outcomes are less comprehensive than originally targeted.

To conclude, it is important to acknowledge a general caveat of the preceding analysis is that it is concerned with a contemporary assessment of risk. It can be expected that for some Australian industries the costs associated with trade disruption to the PRC are likely to ease over time. For example, as wine producers put more resources into marketing and distribution networks in alternative markets, connections with consumers elsewhere willing to pay a premium for their product can gradually be re-established. On the flipside, as borders re-open when the public health crisis associated with the COVID-19 pandemic subsides, this raises the possibility that trade disruption might extend to services like tourism and education. In the medium and longer-term, the passage of time also provides the PRC with more flexibility to develop alternative suppliers of the big-ticket items it currently must source from Australia. The potential for countries like Guinea to replace Australian supply has been much discussed, albeit with much scepticism too.⁷⁵ Further, if the PRC market continues to outperform alternative markets as it has done to date, the

opportunity cost for Australian producers who remain disconnected will grow.⁷⁶

There is a recognition, too, that the costs to exports from the political breakdown between Canberra and Beijing is not the only, or the biggest, problem. Australia's strategic, security and other national interest objectives are difficult to achieve in the absence of a productive, working relationship with the region's dominant power.

Appendix 1.

Appendix Table 1. Peer benchmarking by population, GDP and income per-capita - World rankings (2019)

Country	Population	GDP	Income per-capita
Australia	55	13	12
Canada	39	10	20
France	21	7	26
Korea	28	12	32
UK	22	6	23
Netherlands	67	18	13
Switzerland	100	21	4
Taiwan	56	22	39

Source: The World Bank⁷⁷ and authors' calculations.

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