



IN PERSPECTIVE:

THE NEW ZEALAND-CHINA TRADE AND BUSINESS RELATIONSHIP 2022 UPDATE

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Ko Te Kaunihera o Aotearoa me Haina

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新西兰-中国关系促进委员会



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FOREWORD

Since the end of 2019 the globe has been through social and economic upheaval that most of us have never experienced, nor wish to again.

One of the multitude of consequences of COVID-19 has been disruption to New Zealand's global trade. The situation at home and in our markets has fluctuated with little or no notice, compounded by production, logistics and other challenges.

It is therefore remarkable that New Zealand's total goods exports still grew in 2021, by 5.4 per cent.

Our Council's own focus has naturally been on China, where New Zealand's good exports increased by an even more impressive 19.8 per cent in 2021, although services exports (particularly tourism) will need more time to recover. And imports from China grew by 26 per cent.

This strong growth, combined with setbacks in some of New Zealand's other key markets, has had another consequence: goods market concentration on China has also increased, to over 30% of our total global goods exports.

The pros and cons of strong exposure to a market should always be carefully considered by exporters as part of their business strategy. Reminders of the inherent risks are timely and valid. But as one business leader commented to me recently, businesses face risks of all sorts every day. Balanced of course against the current and projected opportunities that the market in question offers.

It is also important, however, that we understand the reality behind a single headline figure, which can look dramatic. New Zealand's exports to China are not monolithic. As we saw during the global onset of COVID, even severe shocks rarely close down a market completely. Some sectors and some companies will be more affected than others. Australia's recent China trade experiences also show that not all sectors are affected in the same way by bilateral challenges.

This report, building on a 2020 Council report *How Many Eggs, in How Many Baskets?*, drills down into our current bilateral export profile, analysing the situation facing different sectors and products in the China market, and estimating the likely impacts in response to market disruptions.

It does not seek to advise exporters on the best response to the situations they face – this is best left for businesses themselves, armed with reliable information from a range of sources.

I trust readers will find this report a useful additional perspective and contribution to a highly relevant discussion of the issues around export market diversification.

My thanks to John Ballingall and team at Sense Partners for again undertaking this important research and analysis on behalf of the Council. And also to the funding partners that generously supported it: New Zealand Trade and Enterprise, New Zealand International Business Forum, ANZ Bank, the North Asia Centre of Asia-Pacific Excellence and MinterEllisonRuddWatts.

John McKinnon

Chairman, New Zealand China Council



Ko Te Kaunihera o Aotearoa me Haina

New Zealand China Council
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Executive summary

The New Zealand-China trade relationship is mutually beneficial and has played a significant role in pulling New Zealand through the economic implications of the COVID-19 pandemic.

While services trade has been impacted by the slowdown in tourism and education flows, goods exports to China have grown during this time. Exports to other markets have slowed, further elevating discussions around New Zealand's market concentration risks.

The New Zealand China Council (NZCC) has engaged Sense Partners to:

- Provide an update on New Zealand's trade and investment relationship with China.
- Examine how the relationship has been impacted by the COVID-19 pandemic.
- Consider the risks and mitigating factors for New Zealand exporters of increased market concentration in China.

This report updates and builds on a previous report by Sense Partners for the NZCC, "How many eggs, in how many baskets?"¹

Key findings

- The bilateral trade relationship amounted to \$37.70 billion of goods and services in 2021, up from \$31.30 billion in 2020 and \$33.41 billion in 2019.
- New Zealand exported \$21.45 billion of goods and services to China in 2021 and imported \$16.26 billion.

China has played an important role in pulling New Zealand through the COVID-19 economic downturn...

- In 2021, New Zealand's total goods exports rose by \$3.4 billion (5.4%) from 2020. This is despite exports to markets such as Australia and the UK falling.
- Our goods exports to China grew by \$3.3 billion (19.8%) over 2021, as the Chinese economy rebounded relatively strongly from its initial COVID-related output declines.
- New Zealand's goods imports from China also grew strongly over 2021, increasing by \$3.1 billion (26%) from the previous year.
- Export growth to China has resumed its strong trend after a very small drop in 2020 (\$100 million, or 0.6%). The 2021 growth rate of 19.8% is similar to pre-COVID growth of 23.3% in 2019 and 21.8% in 2018.
- It seems reasonable to suggest that China has played an important role in mitigating the disruption caused by COVID on the New Zealand economy.

¹ See <http://www.sense.partners/s/How-many-eggs-in-how-many-baskets-An-update-on-NZ-China-trade-patterns.pdf>



...which has pushed up our export concentration for goods to 32.6%

- In 2021, China accounted for 32.6% of our goods exports, up from 25% in 2018. Our next largest export partner, Australia, accounted for 11.5%.
- Our share of exports to China has grown faster than that of many other developed countries over the past decade, from 12.8% in the year to 2011 to 32.6% now.

Bilateral services trade has been hammered as tourism and education flows ground to a halt

- The pandemic has seen our exports of tourism services to China fall by over \$1 billion, (68%) in 2020, with a further \$390 million fall in 2021.
- Education exports dropped by 'only' \$250 million or 19% in 2020, reflecting the fact that there is an existing group of Chinese students in New Zealand that have stayed since the pandemic began. Education exports rose slightly in 2021 but will not recover until borders open fully and students are confident travelling overseas to study again.
- While there has been strong growth in sectors such as Insurance and pension services and cultural and recreational services in the past year, these are very small in comparison to education and tourism. No data is available on digital trade.
- Overall, the COVID-19 pandemic has not resulted in a structural change to New Zealand's goods and non-travel services trade with China.

Being concentrated on one key market is not unique to New Zealand

- New Zealand's overall export concentration of 32.6% to China is lower than that of APEC members Chinese Taipei (50.1%), Australia (40.3%) and Chile (39.8%).²
- Many economies have certain products for which China takes more than half of their total exports, such as metal ores (e.g. India, Indonesia, Colombia, Mexico, South Korea) and wood pulp, paper and paperboard (e.g. Malaysia, Singapore, Thailand).
- In 2020, other developed economies sent a much greater share of their exports to their main trading partner (albeit they are geographically much closer than New Zealand is to China):
 - Canada sent 72.1% of its exports to the US.
 - The UK sent around half of its exports to the EU.
- Both Canada (in the Trump administration period) and the UK (post-Brexit) provide examples that the risks of export concentration are not limited to China.

² We use the latest available data. For New Zealand this is for calendar year 2021 using StatsNZ data; for Australia and Chile it is calendar year 2020 using COMTRADE data.



FIGURE 1: TOP FIVE EXPORT DESTINATIONS: SELECTED ECONOMIES



SOURCE: COMTRADE

Trade disruptions come in many forms

- Many events can disrupt global and bilateral trade patterns, including income slowdowns, fuel price shocks, pandemics, economic coercion, sanctions regimes and conflicts. As a small, open economy, New Zealand is highly exposed to these shocks.
- The COVID-19 pandemic has exposed the vulnerability of global trade to sudden shocks. The impact of that sudden shock is giving way to more gradual shocks in the form of constrained supply chains, global inflation and an uncertain global recovery.
- Other more gradual shocks include increased domestic production within China, an objective of its “dual circulation” strategy. The initial impact may be on strategic goods, such as semiconductors, but it is possible that the range of goods considered strategic by China could potentially become broader in due course.
- Trade disruption between Australia and China, driven by foreign policy disagreements, has loomed large in the past 18 months. Recent research³ indicates that – in aggregate – the impacts of Chinese trade policy on the Australian economy have been relatively moderate to date, although specific sectors have felt the pain more keenly (e.g., timber, wine).
- In part this is because affected Australian exporters have redirected exports away from China towards alternative markets: the exports that were destined for China are not simply lost.

³ Australia-China Relations Institute. 2021. ‘Australia’s export exposure to China: Assessing the costs of disruption’.



- With this in mind, we have carried out some indicative scenario analysis to explore the potential impacts of disruption in our trade with China.
- This is not an exercise in forecasting or a prediction of what *will* happen. It is designed to provide some perspective on the risks to our export sector from being highly exposed. A formal model of global trade would provide more nuanced estimates.⁴

We need to consider competing suppliers to China as well as our export concentration

- A product is *a priori* most exposed to trade disruption when:
 - New Zealand sends a large share of total exports of that product to China (we are highly exposed); and
 - China has many other large import sources for that product to which it could switch (we have a low market share in China, and hence low leverage).
- Many other factors also determine exposure. They include consumer preferences, the quality of the good, whether the product is essential or a luxury good, where it fits into value chains, and the ability of other producers to scale up to meet supply gaps. For this simple analysis, we focus only on export and import shares.
- Using an arbitrary threshold of 50% for exposure and leverage, we can divide up our key export products into risk quadrants, as shown overleaf.⁵
- The products in Quadrant 4 are, *prima facie*, the most exposed into the China market. For example, China takes 97% of New Zealand's total exports of lobsters and crabs (HS0306), but it sources about 95% of its total imports of these products from markets other than New Zealand.
- The other products in this high-risk quadrant are live cattle (0102), logs (4403), milk and cream (0401), infant formula (1901), raw hides (4101), wood pulp (4705) and green offal (0504).
- Each product has its own context. For example:
 - Live cattle exports from New Zealand will be banned from 2023.
 - Green offal⁶ was previously a waste product until a market was found in China, though uses are increasing elsewhere.
 - And as we have seen through COVID-19, the New Zealand dairy industry, including for milk, cream and infant formula, does have the ability to pivot in its product mix. This enables production to be shifted between types of dairy products and/or channels, mitigating the impact of trade disruption.

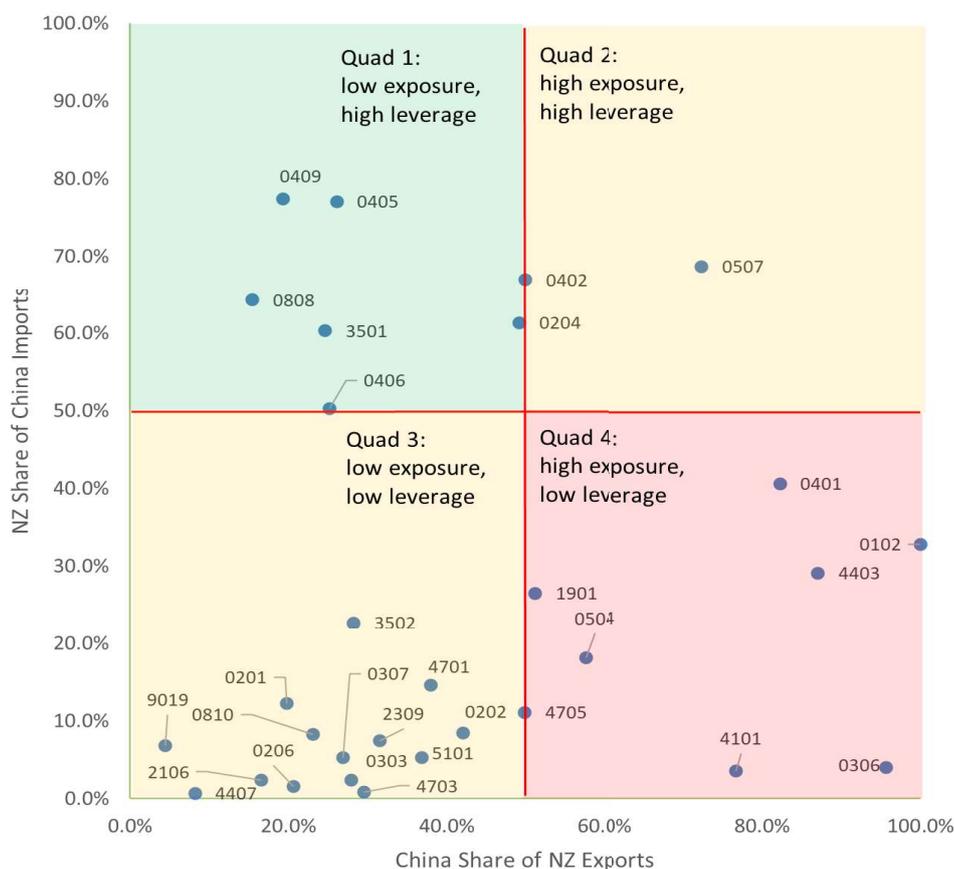
⁴ See for example, Giesecke, J., N. Tran and R. Waschik. 2021. 'Should Australia be concerned by Beijing's trade threats: modelling the economic costs of a restriction on imports of Australian coal'. Australian Journal of Agricultural and Resource Economics, Vol.65, 1.

⁵ A full list of products is shown at Appendix B.

⁶ Green offal includes the stomach, intestines, and other parts of the digestive tract. This differs from red offal, which includes the heart, kidneys, lungs, and liver.



FIGURE 2 NEW ZEALAND EXPORTS CATEGORISED BY RISK



SOURCE: COMTRADE

The redirection of exports from China to other existing markets would mitigate much of the economic cost of trade disruption

- We built a simple scenario model to illustrate how exports of the products listed above could be redirected to alternative markets in the event of a one-year disruption to imports from New Zealand, and the impact of such a disruption on New Zealand’s export revenue.
- We assume 10% of those exports cannot be redirected and the remaining 90% is spread across existing markets based on their share of current non-China exports.⁷ Prices in these alternative markets decline, with a price elasticity of demand of -0.2.
- As noted above, each product has its own context. Some sectors, like dairy, can shift between different types of product. As a result, the amount of dairy products which cannot be redirected is likely to be significantly less than 10%.
- Table 1 overleaf summarises the potential impacts on total New Zealand export revenue by product.

⁷ We put to one side quota access limits on some products in key markets.



TABLE 1: ILLUSTRATIVE CHANGES IN TOTAL EXPORT REVENUE

HS10 Code ⁸	Shorthand Description	Revenue Change	% Change
0306310010	Rock lobsters	-\$80m	-24.7%
4403210010	Logs	-\$445m	-16.1%
0401500019	Cream, shelf stable	-\$221m	-26.3%
1901100900	Infant formula	-\$343m	-25.1%
4101200015	Hides and skins	-\$6m	-18.2%
4705000001	Wood pulp	-\$11m	-9.0%
0504000051	Green offal (beef and veal tripe)	-\$39m	-33.8%

SOURCE: INPUT DATA SOURCED FROM COMTRADE

- These illustrative impacts are not trivial and could be material for smaller sectors. But neither are they particularly large relative to our total goods exports to China of \$20 billion or our aggregate exports to the world of \$63 billion.

Opening up new trade opportunities is the most meaningful way of supporting optionality for exporters

- New Zealand's high exposure to the Chinese market has delivered exporters significant benefits. But such exposure comes with obvious risks too. If the Chinese economy slows materially or barriers are imposed on New Zealand exports for any reason, some exporters will face challenges.
- Calls to diversify New Zealand's export profile have become louder since our last report. This is fine in theory, but difficult to achieve in practice.
- Individual companies assess risk and make decisions based on many factors, including selling into markets with existing customer relationships and which provide the greatest returns.
- New Zealand's aggregate exports to China represent the sum of thousands of individual business decisions. Who determines which companies should export which products to China, and how much is too much?
- Our trade negotiators are working hard at opening up other markets for New Zealand exporters to give them more options, most notably via the UK and EU at present. This is the most meaningful way of supporting optionality for exporters.⁹
- Our scenario modelling indicates that the ability to redirect exports to other markets reduces the overall economic costs of hypothetical disruption to the China market for any product. Investing resources in these alternative markets to deepen commercial relationships would seem to be a prudent option. The ability to pivot production toward different products will also enhance New Zealand's trade resilience.

⁸ We use HS10 level data here to identify specific products impacted and avoid issues of HS4 composition.

⁹ Government can also play a useful role in providing firms with information on a wide range of potential markets and continuing to reduce regulatory or market access barriers through diplomatic channels.



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1. Objective and scope

The New Zealand China Council (NZCC) has engaged Sense Partners to provide an update on New Zealand's trade and investment relationship with China and how it has been impacted by the COVID-19 pandemic.

This report updates and builds on a previous report done by Sense Partners for the NZCC, "How many eggs, in how many baskets?"

This report has three objectives:

1. Provide a stocktake of the New Zealand China trade relationship.
2. Analyse the impact of the COVID-19 pandemic on the relationship.
3. Explore the risks of economic concentration.

The focus of the report is on the goods, services and investment relationship between the two countries. We recognise that New Zealand's interactions with China span a much wider range of economic, political, and security dimensions, but those aspects are much harder to analyse empirically, so we leave them to foreign policy experts to dissect.

Where possible, we use trade data for 2021. However, for our international comparisons, not all countries have reported this recent data. We use the latest available trade data in this case.

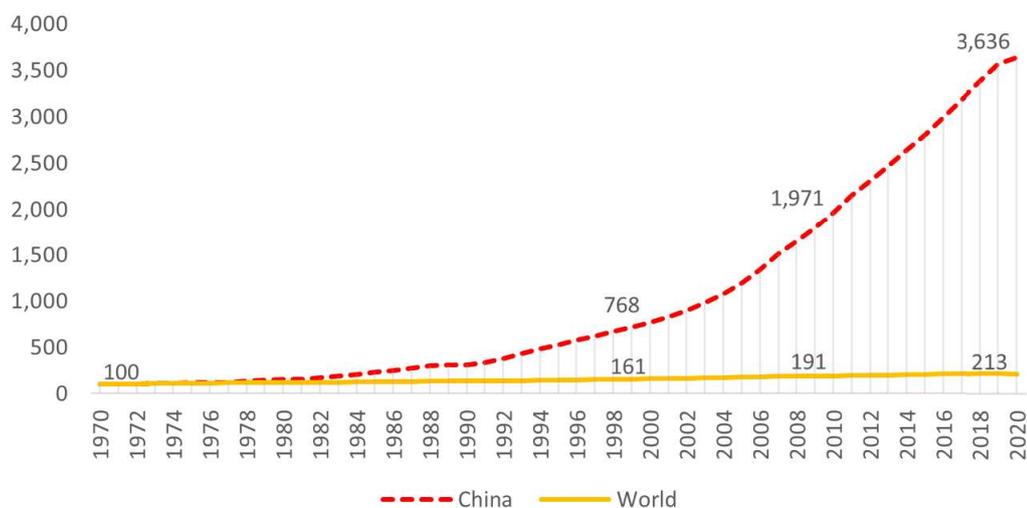


2. Stocktake of the relationship

In the 21st century, China is the engine of the world economy

China's entry into the world economic system in the late 1970s has come to be one of the defining chapters of the global economic story. China's 1.4 billion people are highly urbanised (61.4%)¹⁰ and, as Figure 3 shows, increasingly affluent.

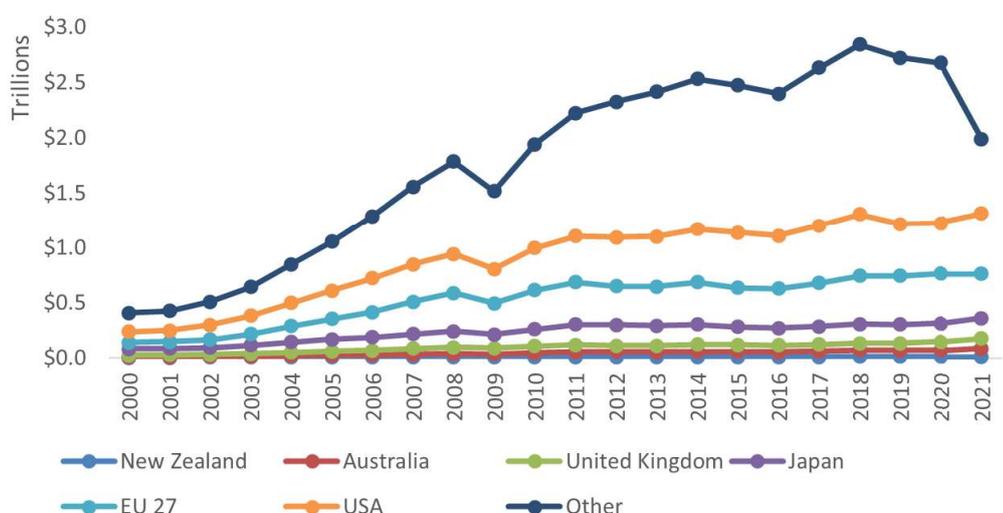
FIGURE 3: INDEX OF PER CAPITA GDP: 1970 = 100



SOURCE: UNCTAD

The rise in per capita incomes has been driven by export led economic growth. China has become a global hub of manufacturing and trade. This is reflected in China's exports over the past two decades, shown in Figure 4 below.

FIGURE 4: CHINA'S EXPORTS IN THE 21ST CENTURY, USD



SOURCE: COMTRADE

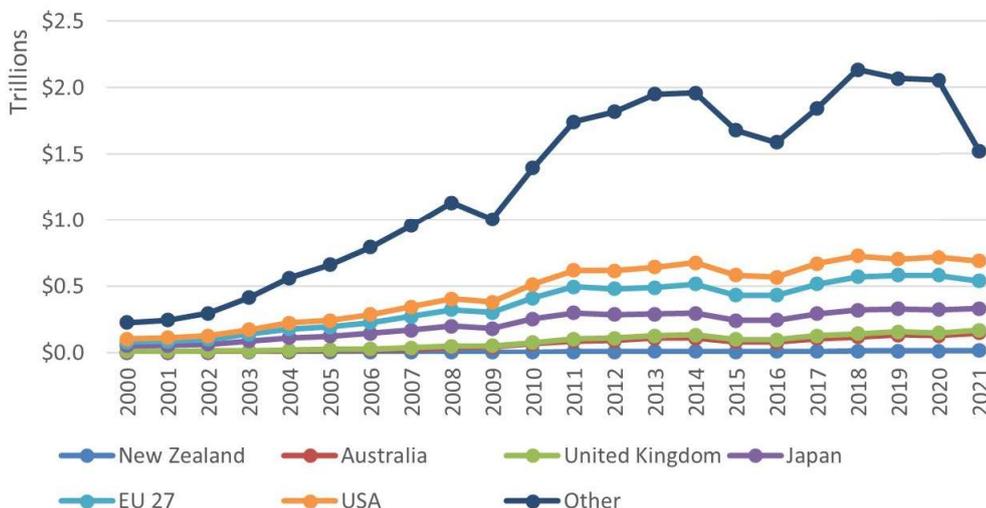
¹⁰ UNCTADSTAT. 2021. *Total and urban population, annual*.

<https://unctadstat.unctad.org/wds/TableViewer/tableView.aspx?ReportId=97>



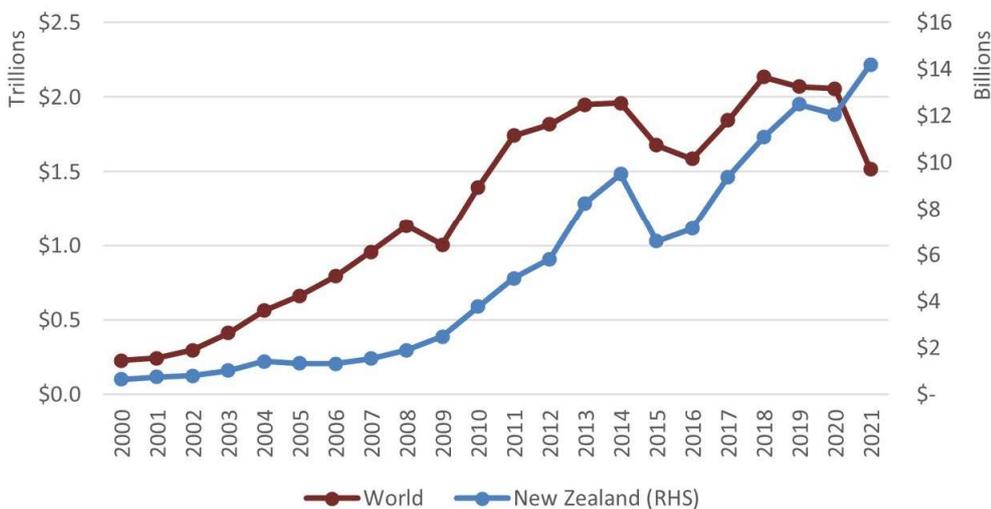
Export led growth has resulted in a similar surge in imports. In part, this is for raw materials to feed into manufacturing for eventual export. Chinese imports of coal and iron ore have hugely benefited our Tasman neighbours, while demand for logs has made this product our primary bulk commodity export.

FIGURE 5: CHINA'S IMPORTS IN THE 21ST CENTURY, USD¹¹



SOURCE: COMTRADE

FIGURE 6: CHINA'S TOTAL IMPORTS AND IMPORTS FROM NEW ZEALAND, USD



SOURCE: COMTRADE

New Zealand has benefited from China's growth

Growth in Chinese imports has not been exclusively inputs for manufacturing. As China's wealth has grown, so too has its middle class. This has driven higher levels of household spending and shifts in dietary preferences.

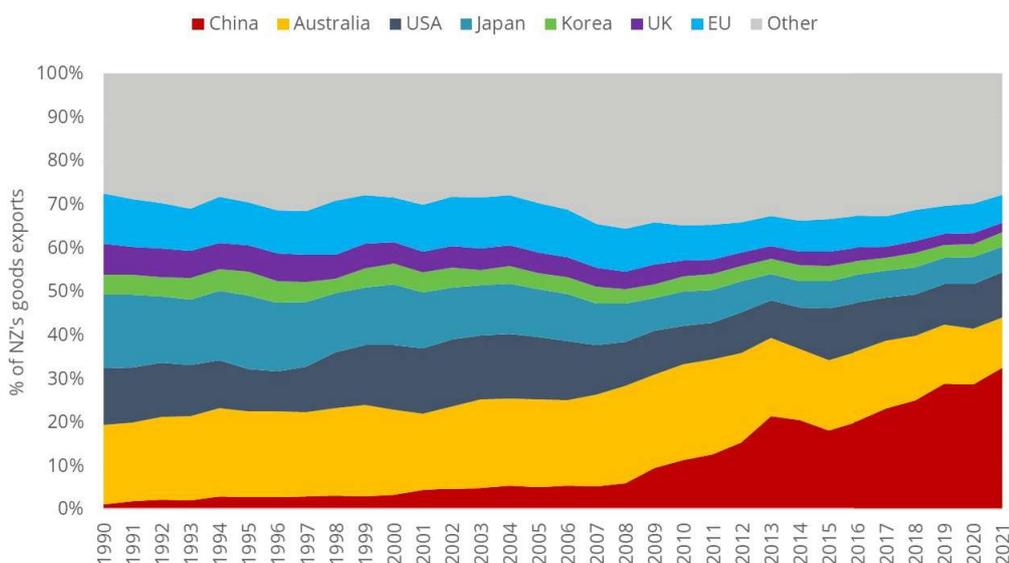
¹¹ Due to data availability, 2021 Chinese import data is calculated using export data for all partners.



As Chinese demand for quality foodstuffs has grown, so too have our exports. New Zealand's exports to China, particularly dairy and meat, have subsequently grown by US\$13.6bn (NZ\$19bn) since the start of the 21st century.

This has helped underpin growth in New Zealand's total exports to the world. It has also led to an increasing share of total exports being sent to China: China's share of our exports has risen from 12.8% in 2011 to 32.6% in 2021 (see Figure 7 below).

FIGURE 7: NEW ZEALAND GOODS EXPORT MARKETS



SOURCE: STATSNZ

The relationship plays to our strengths

New Zealand has a comparative advantage in many agricultural goods globally. Measures of revealed comparative advantage¹², where a figure above 1 indicates an export strength, show we have a sharp edge in butter (105.2), milk (65.8), beef (20.4), and cheese (19.1) among other agricultural products.

Figure 8 below displays the value of Chinese imports in 2020 from their 10 largest sources for six categories of agricultural and forestry products.¹³ It also shows, as column labels, the share of each supplier's exports of each product that go to China.

New Zealand has a revealed comparative advantage in each of these categories, which alongside our Free Trade Agreement, helps explain why we are the only country to be a top 10 supplier to China across all these categories.

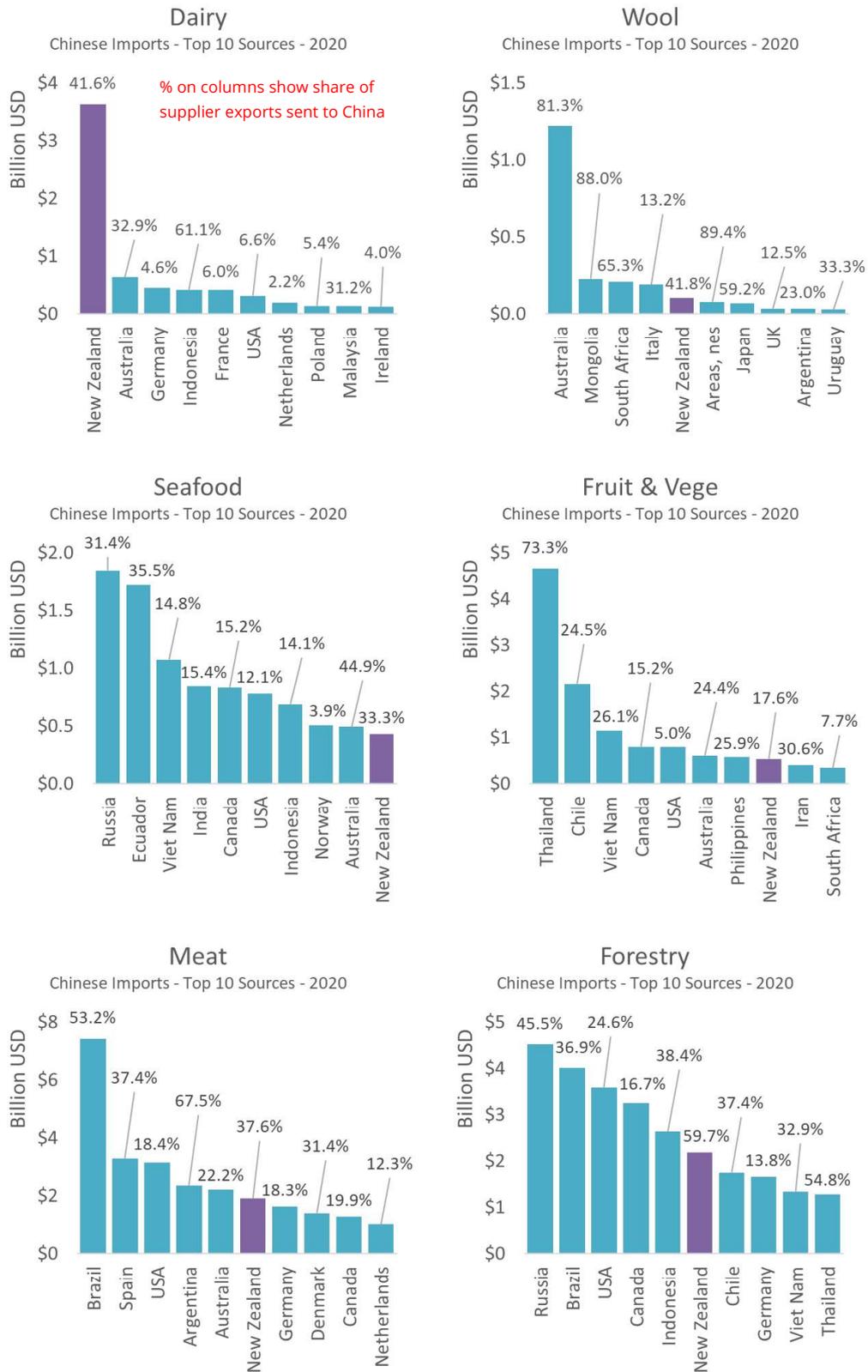
The trade relationship with China has thus played to our strengths. It has allowed us to do what we are good at, and to earn significant export revenue doing so.

¹² UNCTAD. 2019. *Revealed Comparative Advantage*. <https://unctadstat.unctad.org/EN/RcaRadar.html>

¹³ Data for 2021 is not yet available.



FIGURE 8: CHINESE IMPORTS BY SOURCE, SELECT PRIMARY GOODS, USD



SOURCE: COMTRADE



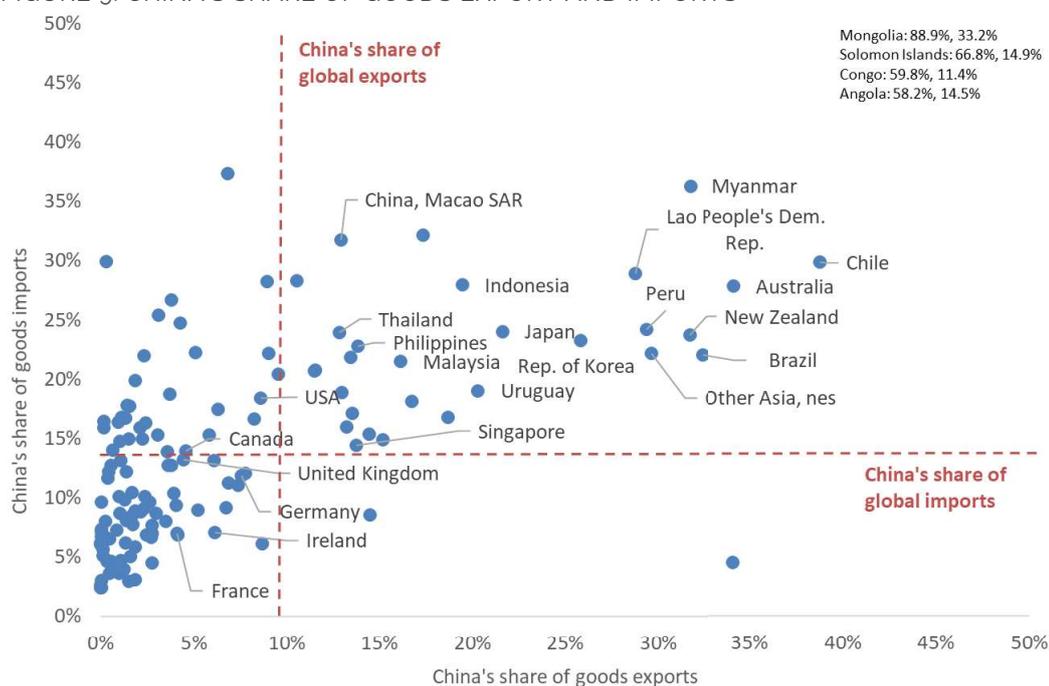
The relationship has resulted in concentration in the Chinese market

The growth in New Zealand exports to China from 2010 to 2021 (210%) has outpaced total export growth (24%). Likewise for imports, with growth in imports from China in the past decade (71%) outpacing total import growth (21%).

The result is a growing concentration of exports and imports in the Chinese market. This is the perhaps inevitable result of a trade relationship that has proven to be highly mutually beneficial. It comes with both benefits and risks.

Figure 9 below plots China's share of imports and exports for each trading partner. This approximates the Chinese market share of each country's trade. As discussed in section 4 of this report, this can also be used as a proxy for exposure to China, and the associated risk.

FIGURE 9: CHINA'S SHARE OF GOODS EXPORT AND IMPORTS¹⁴



SOURCE: COMTRADE, GLOBAL TRADE ATLAS

New Zealand is not unique in its trade concentration with China

Figure 10 below shows the export concentrations of select developed countries for comparison. Australia, primarily exporting commodities, sends a larger share of its goods exports to China than New Zealand. Our trade concentration is not unique, nor is it the highest concentration to the Chinese market compared to other economies.

For example, the UK and Canada both have significantly higher concentration in their primary trading partners, the difference being this partner is not China.

In our view, it is challenging to determine whether New Zealand's trade is "too exposed" or "too concentrated" in the Chinese market. That is a value judgement, and there is no right or wrong answer. But there are certainly trade-offs to consider and it is absolutely appropriate to

¹⁴ Data availability for 2019, 2020, and 2021 is limited. Latest data for each country is used.



acknowledge that being exposed to a single market brings risks, both for individual firms and the export sector as a whole.

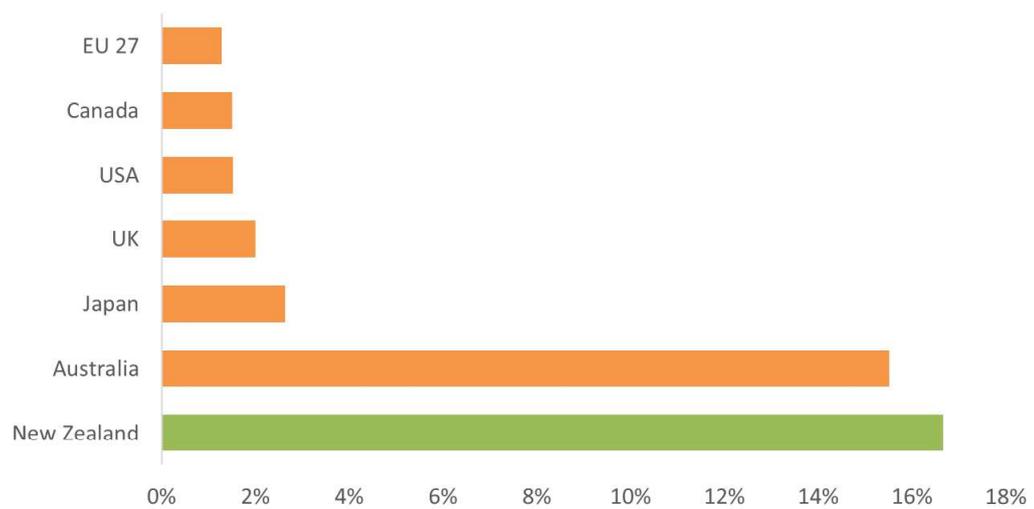
FIGURE 10: TOP FIVE EXPORT DESTINATIONS



SOURCE: COMTRADE

Figure 11 below shows how trade concentration with China has changed over the past decade. Though we are not the *most* exposed to China (Australia is higher), our export concentration is growing *faster* than that of most countries.

FIGURE 11: CHANGE IN CHINA'S SHARE OF GOODS EXPORTS, 2010 – 2021¹⁵



SOURCE: COMTRADE

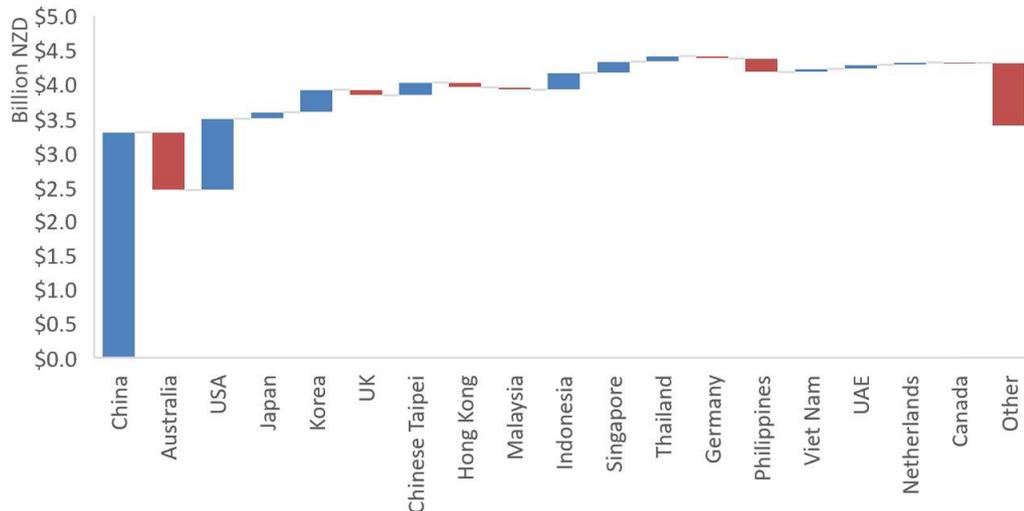
¹⁵ Data for EU27 is 2010-2020 due to limited data availability.



3. The pandemic impact

Trade with China is key to our ongoing economic recovery

FIGURE 12: CHANGE IN EXPORTS, 2019 - 2021



SOURCE: GLOBAL TRADE ATLAS

Figure 12 above shows the contribution of each of our major export partners to the change in our overall goods export revenue between 2019 and 2021. Trade with several key markets (e.g., Australia, Japan, UK, Malaysia) has fallen or stayed relatively unchanged. The increase in New Zealand’s total goods exports since 2019 (5.4%) is primarily due to Chinese demand.

Considering the outlook for Chinese economic growth through to 2023 (see section 5 later), and in the absence of any significant shifts in China’s preferences, this bodes well for Kiwi exporters in the short term, and for our economic recovery as a whole.

Disruption to trade from COVID-19 has been temporary

FIGURE 13: ANNUAL NZ-CHINA GOODS IMPORTS AND EXPORTS



SOURCE: GLOBAL TRADE ATLAS



Looking at goods exports:

- Annual exports to China fell by \$100m (0.6%) over 2020. With exports rebounding by 19.8% in 2021, growth is returning toward recent trends of 23.3% in 2019 and 21.8% in 2018.

However, considering exports are higher than pre-COVID levels, and that the growth rate of exports (Figure 14 below) is trending back upward, the outlook appears solid.

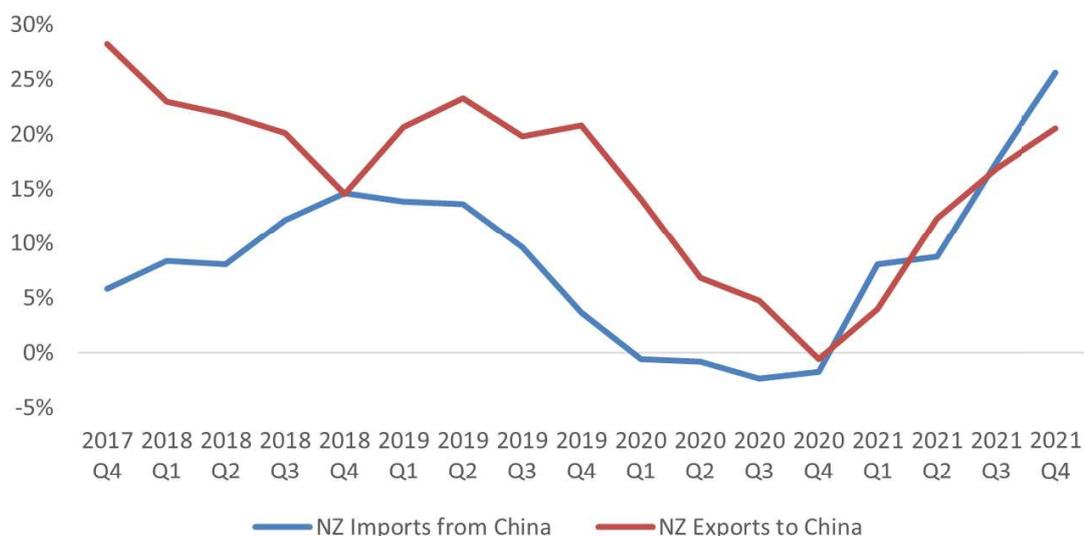
Looking at goods imports:

- Annual imports fell by \$216m (-1.7%) in 2020 as New Zealand households and businesses tightened their belts due to economic uncertainty.
- They then rose by \$3.1bn (21%) in 2021. This compares to pre-COVID import growth of 23.3% in 2019 and 21.8% in 2018.

Growth rates confirm a recovery is underway

To get a better sense of the trade impacts of the pandemic, we look at 12-month rolling percentage change for each quarter. This compares (for example) exports in the 12 months to Q1 with exports in the 12 months to Q1 of the previous year.

FIGURE 14: 12 MONTH ROLLING % CHANGE IN IMPORTS AND EXPORTS



SOURCE: GLOBAL TRADE ATLAS

The first lockdown in Wuhan began in January 2020, which led to production shutdowns across China. As we import what they produce, this – along with a temporary cautionary approach to spending by Kiwi households and firms – resulted in a fall in imports over 2020.

Exports stayed relatively buoyant throughout the pandemic. This is because we primarily sell food products to China. While there was disruption during the initial set of lockdowns, this was primarily a logistics issue. Consumer and ingredient demand either remained strong or rebounded quickly.

While there was a slowdown in export growth, this took another quarter to set in. By the time export growth went briefly and minorly negative, lockdowns in China had ended.



Consequently, the fall in New Zealand's exports to China due to the pandemic was shorter than for imports, but sharper.

Annual growth rates have recovered in 2021 and are moving towards growth seen in the years leading up to the pandemic

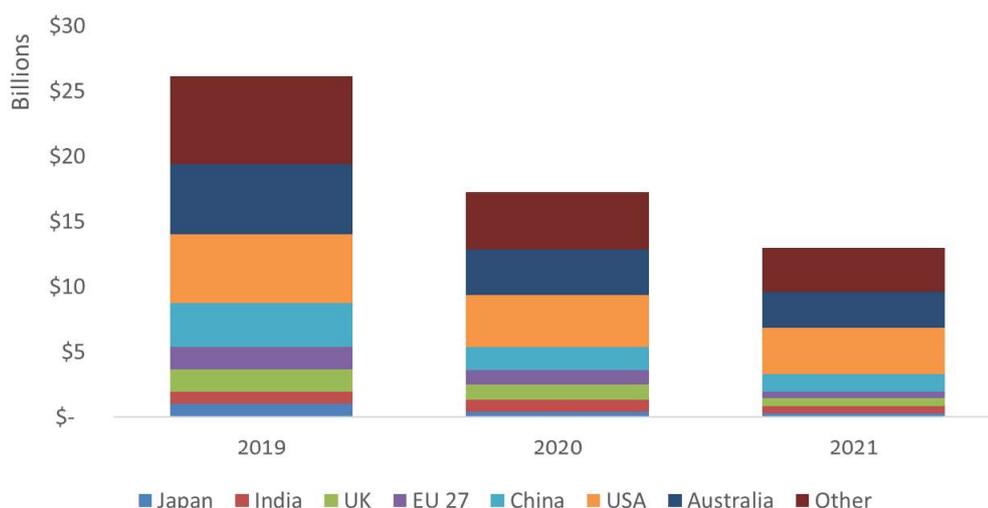
The high cost of shipping is a headwind

A source of risk to New Zealand's goods trade is the high demand for global shipping relative to available supply. This demand has been generated by the robust global recovery and is evidenced in the cost of shipping.

The Drewry World Container Index showed a shipping cost of US\$8,832 per 40ft container on 17 March 2022. This is up 79% since March in 2021, however it is down from a peak of \$10,337 in September 2021¹⁶. The high cost of shipping could impede our ability to capitalise on China's growth through an export led recovery.

Services exports have crashed due to border restrictions

FIGURE 15: TOTAL SERVICES EXPORTS, DECEMBER YEARS



SOURCE: STATSNZ

Looking now at services, New Zealand's total exports fell 33% in the year to December 2021. In the three years prior to the emergence of COVID-19, travel services (tourism, education) made up two thirds of total services exports.

Pre-COVID-19, China accounted for 13% of New Zealand's services exports. This fell to 10.8% in 2021, as Chinese tourists and students were unable to visit.

¹⁶ <https://www.drewry.co.uk/supply-chain-advisors/supply-chain-expertise/world-container-index-assessed-by-drewry>

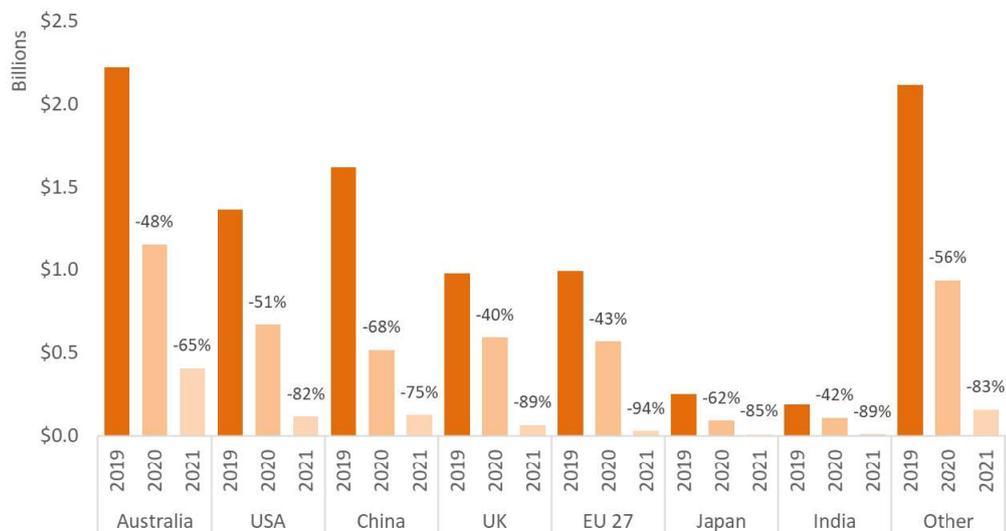


Tourism has suffered severely

Border closures and limited spaces in MIQ facilities mean that international tourism has been severely impacted. Our exports of tourism services to China fell by just under \$1.5 billion, or 92% over the 2019-2021 period.

Until border restrictions are lifted, we will not know whether there has been a structural change in our tourism relationship with the world, and with China particularly.

FIGURE 16: TOURISM REVENUE BY MARKET



SOURCE: STATSNZ

Continued economic growth in China means that Chinese tourists will certainly have the income and spending power to come to New Zealand post-COVID. The experience of lockdowns in New Zealand and globally indicates that pent up demand might result in a surge of tourism once the borders open and provided health concerns are managed.

For education, there is still water in the bucket

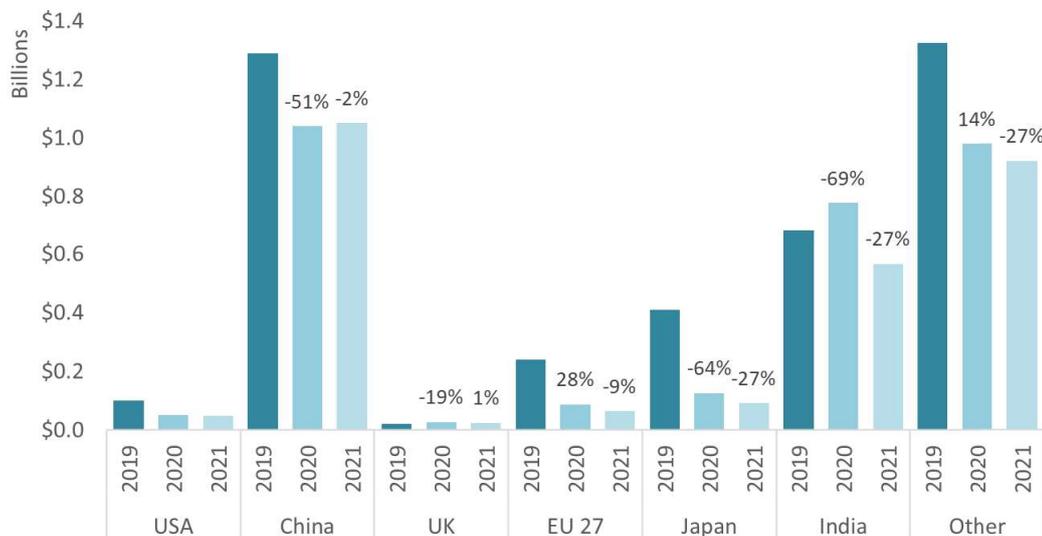
New Zealand's exports of education services to China fell by \$250 million or 20% from \$1.3bn in 2019 to \$1.04bn over 2020. This decline, while substantial, is considerably less than for tourism exports. Education exports to China stabilised in 2021, at \$1.05bn.

This is due to existing students remaining within New Zealand, with new students generally prevented from entering the country. The impact on all travel related services has been to turn off the tap, impacting the *flow*.

But unlike tourism, where holidaymakers spend perhaps a few weeks in-country, education brings in students for multiple years. The *stock* will diminish over time, but at a slower pace compared to tourism. The stabilisation in 2021 suggests that the existing stock of students may be quite resilient. It's possible that undergraduate students, who would normally leave the country on graduation, are instead opting for post-graduate study in New Zealand.



FIGURE 17: EDUCATION EXPORTS BY MARKET



SOURCE: STATSNZ

Non-travel services have generally held steady

Transportation services exports to China have fallen 46%. Given this requires movements across largely closed borders, this comes as no surprise.

For services which do not rely on cross border movements, the pandemic has not had a material impact (see Figure 18).

This relative stability in non-travel services is of limited importance to the New Zealand-China relationship as they make up a small portion of total services exports. Over the period 2017 – 2019, non-travel services made up only 10% of services exports.

However, we have seen strong export growth to China in some of these small services sectors, such as Insurance and pension services (mainly reinsurance services).¹⁷ These were valued at \$3.4 million in 2019 and rose to \$10.7 million 2021. China now accounts for 14.4% of New Zealand's total exports of insurance and pension services, up from 3.1% two years ago.

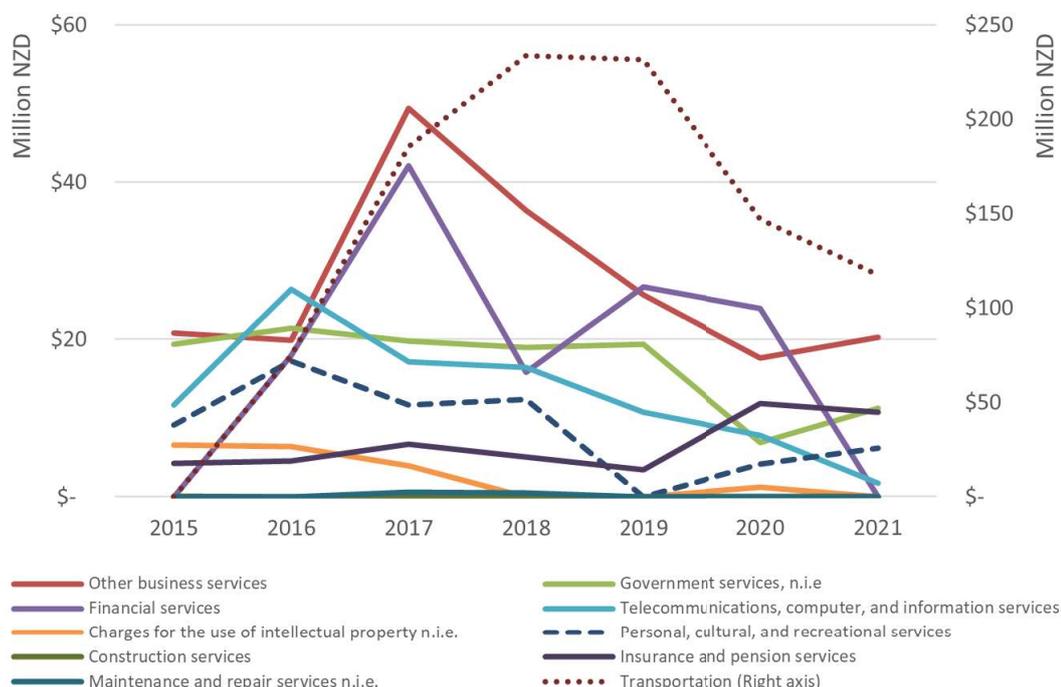
Exports to China have been falling in other non-travel services sectors, such as:

- Telecommunications, computer and information: from a peak of \$26.3 million in 2016 to \$1.7 million in 2021. China accounted for just 0.1% of New Zealand's total exports of these services in this period, compared to 1.3% in 2016.
- Financial services: from a peak of \$42 million in 2017 to \$23 million in 2020, data for 2021 shows an export value of zero. China accounted for 1.8% of New Zealand's total exports of financial services in 2020.

¹⁷ Data from https://statisticsnz.shinyapps.io/trade_dashboard/



FIGURE 18: NON-TRAVEL SERVICES EXPORTS TO CHINA, DECEMBER YEARS



SOURCE: STATSNZ

Overall, we can expect to continue benefitting from China's growth

Despite the global slowdown and the high cost of shipping, the COVID-19 pandemic has not resulted in a structural change to the goods and non-travel services trade with China:

- Annual volumes of goods exports and imports have recovered and are now higher than pre-pandemic levels.
- While growth rates are somewhat lower than in previous years, they are picking up. This indicates a positive outlook for the New Zealand-China trade relationship.

While borders remain largely closed, services exports will remain severely reduced. Once pandemic restrictions lift, it is a reasonable bet that there will be a surge in pent-up demand for tourism from China.

Bilateral direct investment remains moderate

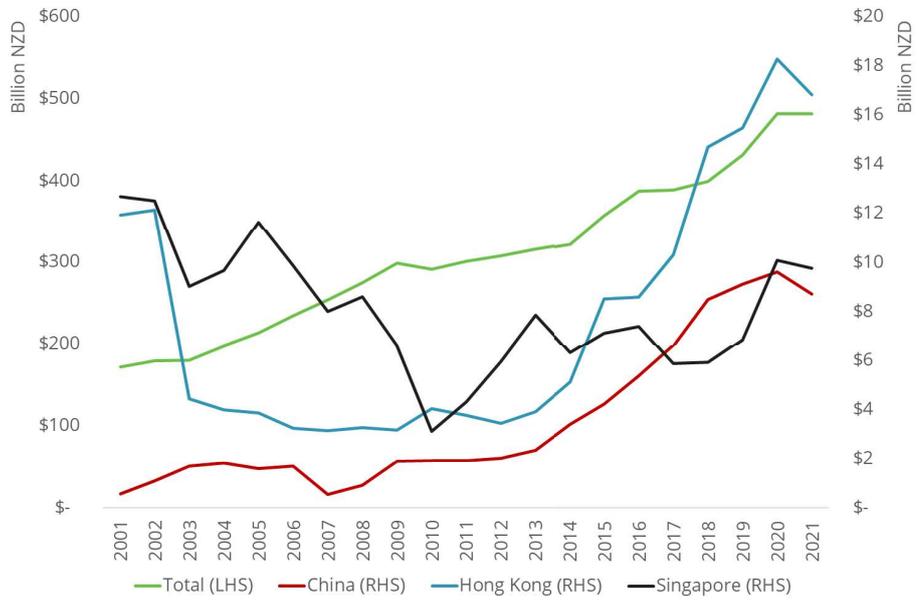
Contrary to popular perception, Chinese foreign investment in New Zealand remains at low levels, making up 1.8% of total foreign investment stocks in New Zealand in 2021. Singapore and Hong Kong, both major Asian financial centres through which Chinese investors may also access New Zealand, make up 2.0% and 3.5% of foreign investment respectively¹⁸.

Likewise, the level of New Zealand investment in China remains low, at just 1.6% of total New Zealand overseas investments.

¹⁸ Statistics NZ. 2021. *BPM6 Annual, Directional basis stock of direct investment by country (Annual-Mar)*. <http://infoshare.stats.govt.nz/ViewTable.aspx?pxID=ac3aca2c-293c-4b6b-8e1a-55d6f6cb8040> More recent data is not yet publicly available.



FIGURE 19: STOCK OF DIRECT INVESTMENT IN NEW ZEALAND, MARCH YEARS



SOURCE: STATSNZ



4. Policy considerations

Market concentration can be seen as a foreign policy risk

A common theme in discussions on the New Zealand-China trade relationship, in particular in the media, has been the level of exposure to China it has generated. Given the relatively high proportion of our exports going to the Chinese market, any disruption to trade risks negative economic consequences for New Zealand.

From an economic perspective, concentration can be a risk. Should China's economic growth slow, it will have implications for our own economic growth through weaker export demand.

However, in many respects this concentration is a risk that has been well compensated for. In our view, Kiwi exporters will generally be well aware of the risks of concentration in a single market. They have decided the risk is justified by the returns they have been making and, in some cases, have with limited alternative options in terms of open markets that would deliver the same economic return and value.

Australia's experience highlights the potential risks (or not) of exposure

Figure 10 in section 2 above shows that 42% (NZ\$178bn) of Australia's total goods exports (NZ\$425bn) are sent to China, considerably higher than the 32.6% of New Zealand exports bound for the same destination.

The risk of exposure has come into play over the past year as China has imposed several trade barriers against Australian imports.

This began in May 2020 with the introduction of an 80% tariff based on the perceived dumping and subsidisation of Australian barley imports. This has been followed by Chinese government directives on coal, crustaceans, logs, and blocks against several Australian meat exporters. A 200% anti-dumping tariff has been placed on wine exports, and 40% on cotton.

To inform the debate in New Zealand, it is therefore helpful to look at what has happened to Australia's exports of products into China, as an example of the economic implications of for exporters when trade is disrupted. For example, the value of coal exported to China fell 99.8% (US\$9.4bn)¹⁹ between 2019 and 2021. But China 'only' accounted for around 21% of Australia's total coal exports prior to the trade disruption – 79% already went to other markets.

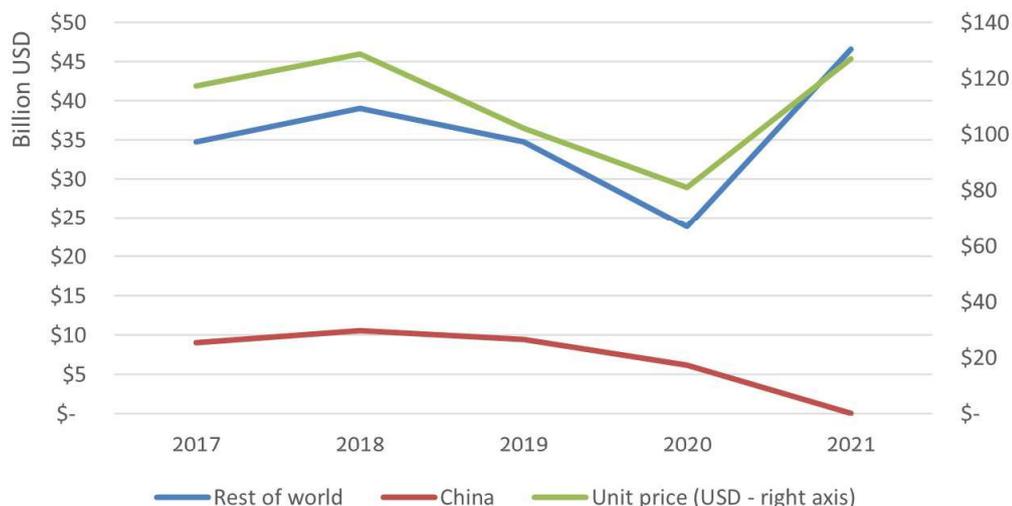
While coal exports to China collapsed, overall coal exports (in tonnes) only fell 3.8% by 2020. Australian coal exporters were able to mostly reallocate their product to other markets, though this came with some price impacts. The value of exports fell 32% in 2020.

And as Figure 20 shows, this was in the context of a more general fall in Australian coal exports, global coal imports, and the price of coal, dating back to at least 2018. 2021 has seen a global commodity boom, alongside a rapid increase in prices and exports for Australian coal producers.

¹⁹ Data Source: Global Trade Atlas



FIGURE 20: AUSTRALIAN COAL EXPORTS



SOURCE: COMTRADE

Figure 21 overleaf shows the top ten suppliers to China of wool and dairy products.

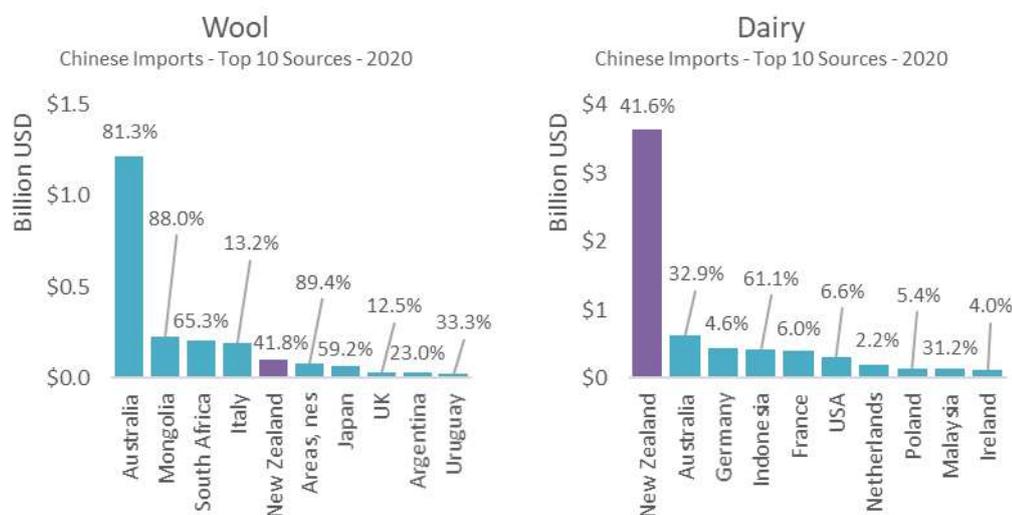
China accounts for over 80% of Australia's overall wool exports (see labels on columns). We might initially think this positions wool as an export at significant risk of economic coercion. However, Australia is by far China's main source of wool (53%). This implies a degree of leverage for Australian wool exporters, as China may have few viable alternatives in the short term.

And so it appears in reality: not only have no formal or informal trade barriers been imposed on Australian wool since trade tensions started, tariff-free quotas have *expanded* in line with FTA commitments.

This wool example demonstrates that simply having a high exposure to China in any given product is not necessarily a good indicator of potential economic risk from coercion. We also need to consider who else China buys from.



FIGURE 21: CHINA'S WOOL AND DAIRY IMPORTS, TOP 10 SUPPLIERS



SOURCE: COMTRADE

Canada shows that exposure risk is not limited to China

In 2020, over 70% of Canada's exports went to the US, while over 50% of Canadian imports came from the US²⁰. This is hardly surprising given the 8,891km shared terrestrial border, that two-thirds of the Canadian population lives within 100km of that border²¹, and that some form of free trade agreement (CUSFTA, NAFTA, USMCA) has existed between the two nations since 1988.

The proximity of Canada and the US, the large size of the US economy, the presence of free trade policies, and existing cultural and institutional links have all worked together to result in a very high concentration of Canadian exports into the US.

This dependence is recognised within Canada, and export diversification has long been a theme of government policy²². However, diversification went from being a theme to a policy imperative during the Trump administration in the US²³. President Trump became the first US president to explicitly threaten Canadian economic prosperity in the process of renegotiating NAFTA.

This highlights that exposure risk is by no means limited to trade with China. Even in two advanced democracies with a long history of close relationships, exposure can be deemed a risk. The UK's ongoing challenges with exiting the EU offer another non-China example.

²⁰ World Bank WITS

²¹ Statistics Canada. 2017. *Population size and growth in Canada: Key results from the 2016 Census*.

<https://www150.statcan.gc.ca/n1/daily-quotidien/170208/dq170208a-eng.htm> Accessed: 16:30 3/08/2021

²² See, for example: Department of Finance Canada. 2018. *Fall Economic Statement 2018*. Government of Canada. pp 63; and Global Affairs Canada. 2019. *Canada's State of Trade 2019*. Government of Canada. pp 89 – 137.

²³ S. Goldfeder, & E. Miller. 2019. *The Imperative of Trade Diversification: Why Canada Should Embrace Taiwan's Accession to CPTPP*.



Which New Zealand products are most exposed?

We can think of exposure as a combination of two main factors:²⁴

1. The share of exports of a product that is destined for China. If we send a large proportion of our exports of a product to a single market, that creates concentration risk. Who else might we sell to if our main market is less accessible?
2. The share of Chinese imports of a product that China buys from New Zealand. If our exports of a product make up a large share of China's imports, it could make it difficult for China to find an alternative should trade be disrupted.

A product is thus most at risk when New Zealand sends a large share of total exports of that product to China and China has many other large import sources for that product to which it could switch. Our indicator of risk is a combination of these two measures.

- **New Zealand exposure** comes from the share of exports being sent to China. The higher this value, the more exposed the product is.
- **New Zealand leverage** reflects the share of imports China sources from New Zealand. The lower this number, the lower the leverage New Zealand exporters have, as there are more alternative major suppliers available.

There is no exact proportion to determine whether a product is exposed or has leverage or not. For this exercise we arbitrarily use 50%.

Figure 22 below shows our top 30 HS4 exports to China plotted by these two measures. These exports make up 81% of our total goods exports to China.

The horizontal axis shows the share of New Zealand exports of each product which are sent to China (exposure). The vertical axis shows the share of China's total imports of each product which are sourced from New Zealand (leverage).

Adding in the 50% threshold produces a set of quadrants. The quadrants are named based on their relative exposure and relative leverage.²⁵

The products of highest risk are in Quadrant 4. These products are **highly exposed** as China takes a majority of New Zealand's exports. At the same time, these products have **low leverage** as China is likely able to find alternative suppliers. In addition, some products may be luxury items rather than necessities, leaving China with no need to source an alternative.

For example, China takes 97% of New Zealand's total exports of lobsters and crabs (HS0306), but it sources about 95% of its total imports of these products from markets other than New Zealand – it has plenty of choices about who to buy lobsters from. And, as lobsters are a luxury item, China may opt to simply reduce its consumption.

Quadrant 4 contains the products listed in Table 2 below.

²⁴ There are many other factors which play into exposure, such as consumer preferences, whether the product is essential or a luxury good, and where it fits into supply chains. The ability to pivot production toward alternate, unaffected products is also an important consideration. For the purpose of this analysis, we focus only on export and import shares.

²⁵ A full list of products is shown at Appendix B.

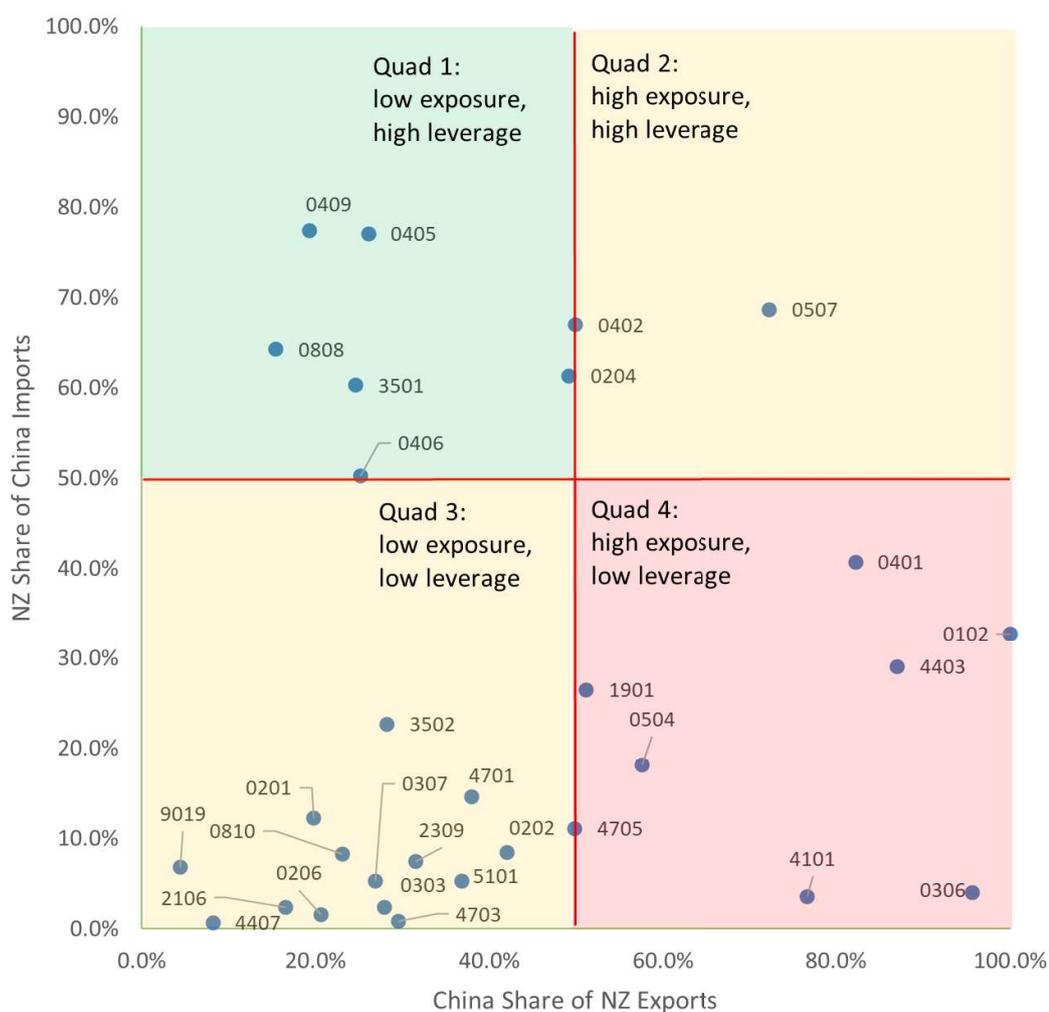


TABLE 2: NEW ZEALAND EXPORT PRODUCTS WITH HIGH DEPENDENCE ON CHINA AND WHERE CHINA HAS MANY OTHER SOURCES

HS4 Code	Shorthand description	NZ exports to world (2021 NZD)	% sent to China	% of Chinese imports
0102	Live cattle	\$334m	100%	33%
0306	Lobsters and crabs	\$390m	96%	4%
4403	Logs	\$3,985m	87%	29%
0401	Milk and cream	\$1,226m	82%	41%
4101	Raw hides	\$81m	77%	4%
0504	Green offal	\$351m	58%	18%
1901	Infant formula	\$1,798m	51%	26%
4705	Wood pulp	\$127m	50%	11%

SOURCE: GLOBAL TRADE ATLAS AND COMTRADE

FIGURE 22 NEW ZEALAND EXPORTS CATEGORISED BY RISK



SOURCE: COMTRADE



Table 3 below shows the lower risk products in Quadrant 1: New Zealand products which account for more than 50% of China's imports of that product from the world (we have leverage), and in which New Zealand sends *less* than 50% of total exports to China (our exposure is lower).

TABLE 3: CHINESE IMPORT PRODUCTS WITH DEPENDENCE ON NEW ZEALAND

HS4 Code	Shorthand Description	NZ exports to world (June year 2021) NZD	% Sent to China	% of Chinese imports
0409	Honey	\$334m	19%	77%
0405	Butter	\$390m	26%	77%
0402	Milk powder	\$1,226m	50%	67%
0808	Apples & pears	\$81m	15%	64%
0204	Lamb & mutton	\$74m	49%	61%
3501	Casein	\$351m	25%	60%
0406	Cheese	\$1,798m	25%	50%

SOURCE: GLOBAL TRADE ATLAS AND COMTRADE

Appendix B provides the data on all quadrants in Figure 22.

The cost of trade disruption is not equal to the value of exports

We now have a sense of which products are most at risk, but what might be the actual cost of trade disruption?

A simple assessment is to look at the total value of the at-risk exports which are sent to China and take that as the potential cost.

However, this is misleading. The actual cost to New Zealand would depend on:

- How much of the affected product(s) can be reallocated to other markets.
- The speed at which this reallocation can be done.
- The price at which the affected product(s) can be sold elsewhere.
- The extent to which China obtains substitute products from other markets.
- The ability to pivot industry production to unaffected products or products in demand elsewhere.

An accurate understanding of the costs of trade disruptions would require a detailed model of global trade. In lieu of this we have done a simple exercise that illustrates how exports might be reallocated across existing trade partners and how this might impact prices and export revenue.

This exercise assumes:



- New Zealand trade to China is completely disrupted, resulting in no trade, for a one-year period, and China does not source additional imports from other exporters.²⁶
- 10% of exports of the given product cannot be reallocated.²⁷
- The remaining 90% of exports are reallocated among existing export partners proportional to the exports currently sent their way – essentially assuming that New Zealand exporters can use their existing non-China commercial relationships to reallocate exports.
- Each export market pays a different unit price based on existing commercial agreements (using unit price by market data from the Global Trade Atlas).
- There is a price impact of exporting less to China, as convincing export partners to buy more is assumed to require a discount on the current unit price paid by each exporter (i.e., exporters face downward sloping export demand curves). This price elasticity of demand is assumed to be -0.2, taken from a Treasury Working Paper²⁸.

This set of calculations is repeated over each other current export destination. Hypothetical post-disruption export revenue for the Quadrant 4 products is contrasted with revenue for 2020 in the table below.

TABLE 4: ILLUSTRATIVE CHANGES IN TOTAL EXPORT REVENUE GIVEN ONE YEAR TRADE DISRUPTION IN CHINA

HS 10 Code ²⁹	Shorthand Description	Revenue Change	% Change
0306310010	Rock lobsters	-\$80m	-24.7%
4403210010	Logs	-\$445m	-16.1%
0401500019	Cream, shelf stable	-\$221m	-26.3%
1901100900	Infant formula	-\$343m	-25.1%
4101200015	Hides and skins	-\$6m	-18.2%
4705000001	Wood pulp	-\$11m	-9.0%
0504000051	Green offal (beef and veal tripe)	-\$39m	-33.8%

SOURCE: INPUT DATA SOURCED FROM COMTRADE

It is important to keep in mind that this illustration assumes that China does not seek to replace its imports from New Zealand. In reality, Chinese consumers are likely to try find alternative sources for the good currently imported from New Zealand. This is similar to the experience of Australian coal exporters, discussed above.

²⁶ This is obviously a simplifying assumption, the relaxation of which is discussed later.

²⁷ Arbitrary assumption, which will in reality differ by sector. This product loss assumption could also be seen as a proxy for the adjustment costs to businesses of switching markets. We acknowledge that adjustment costs may be proportionately larger for smaller exporters. See Appendix A for sensitivity analysis with 20% and 30% as the share of exports to China which cannot be redirected. This increases export revenue losses of Chinese trade disruption by 33% and 65% respectively.

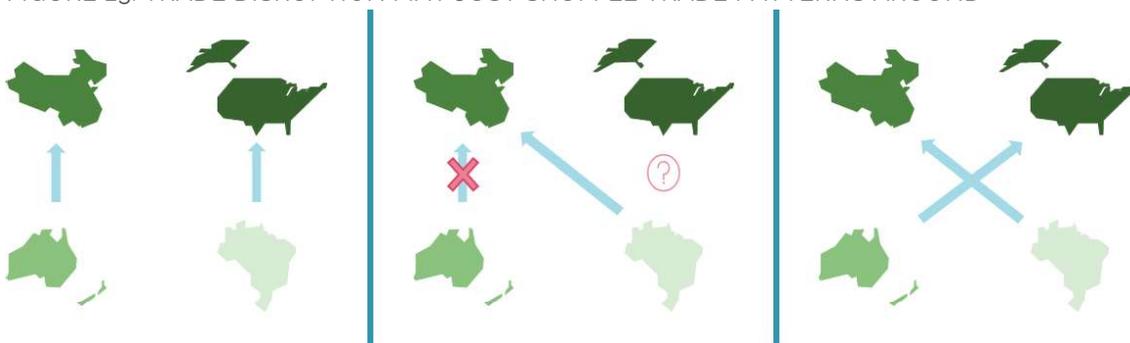
²⁸ M. Genç, D. Law. 2014. *A Gravity Model of Barriers to Trade in New Zealand*. NZ Treasury, Wellington.

²⁹ We use HS10 level data here to identify specific products impacted and avoid issues of HS4 composition.

Wherever Chinese consumers opt to source this alternative, they will need to displace existing customers. Those customers, in turn, will seek to find their own alternative. That alternative may very well be New Zealand.

The end result may be a global reshuffle of trade patterns, with no substantial fall in overall demand or prices, and therefore minimal impacts on export revenue.³⁰

FIGURE 23: TRADE DISRUPTION MAY JUST SHUFFLE TRADE PATTERNS AROUND



Caveats with our illustrative exercise

The illustration discussed above is not a forecasting exercise with any suggestion of precision. It is a scenario modelling effort to demonstrate that the economic value of risks associated with being both exposed to China and with little leverage are unlikely to be as significant as a simple check of export data might suggest.

The analysis is built on some quite possibly pessimistic assumptions that may lead to an overstatement of costs:

- We assume China does not seek to lift its imports from other sources when trade with New Zealand is disrupted. In reality, especially for necessities such as infant formula, it would certainly seek alternative sources.
- It assumes 10% of output cannot be reallocated to other markets (and is thus wasted).
 - It is possible of course that almost all exports to China could be redirected to other markets, and that spoilage would be minimal, perhaps due to efficient storage of product. The example of dairy during the COVID-19-induced disruption highlights the ability to some firms – especially larger ones – to redirect or reconfigure exports.
 - On the other hand, we do not consider market access barriers such as quotas or tariffs in alternative markets. These barriers will limit the additional exports that could be redirected to some markets.

³⁰ A global model of trade, such as the GTAP model, automatically captures such reshuffling of markets, and is therefore a good option for any future work in this area. Also see for example, Giesecke, J., N. Tran and R. Waschik. 2021. 'Should Australia be concerned by Beijing's trade threats: modelling the economic costs of a restriction on imports of Australian coal'. *Australian Journal of Agricultural and Resource Economics*, Vol.65, 1.



- We assume there is a definite negative price impact as demand from China drops. This may not be the case, especially if China starts seeking supply from other markets, which would tend to push up prices elsewhere.
- We do not include consumer preference as a factor in these estimates, nor do we consider the ability for producers to pivot to other, related and unaffected products.

Despite these caveats, this exercise shows fairly similar results to analysis completed on actual data for Australian exports that have been subjected to trade disruption with China.³¹

³¹ See Australia-China Relations Institute. 2021. 'Australia's export exposure to China: Assessing the costs of disruption'.
https://www.australiachinarelations.org/sites/default/files/Australia%27s%20export%20exposure%20to%20China%20-%20assessing%20the%20costs_JL%20and%20TP.pdf

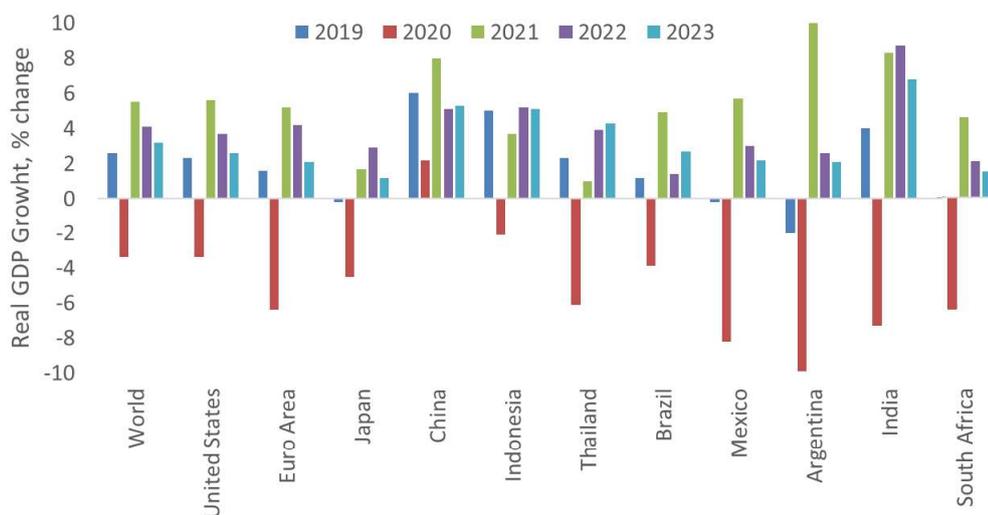


5. Looking ahead

China is expected to continue driving global growth

It is widely expected that China's strong growth will continue for the foreseeable future.

FIGURE 24: GLOBAL ECONOMIC GROWTH OUTLOOK



SOURCE: WORLD BANK

China, unlike almost all other nations, is expected to avoid recession during the COVID-19 pandemic. Rather, its growth temporarily dipped toward 2% before recovering in 2021.

Our close trading relationship with China, one that plays to our strengths, places us in a strong position as the world gradually emerges from the pandemic.

Diversification for thee, but not for me?

There have been calls over the past year or two that we need to diversify away from China. As our 2020 report noted, it's never clear who the royal "we" is.

In our view, one should be careful not to overstate the role of government policy in driving diversification. Our aggregate exposure to China is the sum of thousands of individual business decisions, each of whom will be weighing up the risks and rewards of exporting to China.

However, government *can* play a useful role in providing information to businesses about alternative markets (e.g. through NZTE's services and the economic diplomacy reporting of MFAT) and identifying and addressing barriers to trade in those markets.

Our trade negotiators are continuing to push hard on providing more options for improved market access to key markets. The recently-concluded New Zealand-UK FTA is a very welcome development and expectations are high for finalising an FTA with the EU this year. Efforts to improve market access in other priority markets such as the US and India continue to be challenging, but hope springs eternal.



More can always be done to pursue further market openings in regions where New Zealand's trade and diplomatic footprint is more limited (e.g. Africa), but this is likely to be a longer term play.

And beyond existing FTA negotiations, the economywide opportunities from further agreements start to diminish rapidly.³² There just aren't that many alternative markets which:

- Want the range of things we produce
- Are large
- Are growing rapidly
- Have materially reduced (or are likely to do so) their trade barriers on our agricultural products.
- And are prepared to pay a premium for high-quality, high-value, sustainable New Zealand products.

China's dual circulation strategy aims to close the gap with the West

Dual circulation is an economic strategy adopted by the Chinese government. It has two components, internal circulation, and external circulation. Internal circulation describes domestic economic activity, namely consumption, investment, and government spending. External circulation consists of exports and imports and capital (i.e., investment)³³.

The aim of this strategy is twofold:

1. To sustain high growth rates by transitioning China from an export economy to a consumption economy, much like the US and Europe. It builds on earlier economic strategies, particularly the "great external circulation" strategy adopted under Deng Xiaoping³⁴. However, the emphasis has shifted from export led growth toward consumption led growth.
2. To accelerate a decoupling from western economies, particularly the US. Reducing reliance on exports to drive growth seeks to help shield the Chinese economy from geopolitical issues. This will also help close the gap on specific technologies, such as semi-conductors³⁵.

Dual circulation is not the only economic strategy being adopted. The Belt and Road Initiative (BRI) largely aims to create new exports markets within Asia and beyond. It aims to do so by connecting the region with high quality transport infrastructure, as well as building institutions

³² See our recent report to the New Zealand International Business Forum titled 'Wanted: new FTA partners', available at <http://www.sense.partners/s/NZIBF-new-FTA-partners-final-report-with-foreword-29-April-2021.pdf> for more detail.

³³ Yifu, J. & Wang, X. 2021. "Dual Circulation: a New Structural Economics view of development." *Journal of Chinese Economic and Business Studies*. <https://doi.org/10.1080/14765284.2021.1929793>

³⁴ Jia, K. 2021. "Accelerating the construction of a new development pattern with the domestic circulation as the mainstay and mutual promotion of dual circulation." *Journal of Chinese Economic and Business Studies*. <https://doi.org/10.1080/14765284.2021.1929785>

³⁵ Yifu & Wang 20201, see 19 above.



and reducing barriers to trade³⁶. In turn, the objective is to help China sustain its high level of economic growth and move it towards entry into the high income grouping of economies.

In addition, the “Made in China 2025” strategy aims to lift the sophistication of Chinese manufacturing and the close the capability gap with the West³⁷. This goes hand in hand with internal circulation, as key technologies will need to be produced domestically to successfully shift the emphasis away from exports and imports.

Dual circulation could boost demand for New Zealand exports

The emphasis on internal circulation may imply a move away from imports, particularly of consumer goods. China could endeavour to develop its own domestic sources of many of our major exports, particularly dairy products. For example, some provincial governments have implemented subsidies aimed at improving dairy productivity by subsidising larger farms³⁸.

However, expected growth in Chinese per-capita incomes means that consumption of dairy products is projected to outpace the growth in China’s domestic production³⁹. This means that imports of many dairy products, e.g., Whole Milk Powder (WMP), will remain important in satisfying consumer demand.

The degree to which Chinese consumers opt for imports will vary from product to product. Two key factors are:

1. Whether domestic producers can fully satisfy demand. The case of dairy highlights that rapid income growth means that demand is likely to outpace production across many products.
2. How much Chinese consumers value New Zealand products over domestic sources and other third-country dairy competitors. Demand for food products, especially infant formula, are sensitive to perceptions of quality and sustainability, and New Zealand products are able to consistently deliver to these expectations.

We also have to consider how dual circulation is actually implemented. It may be that the initial focus is on products identified as strategic, such as semi-conductors. Any product high in demand and for which an equivalent indigenous alternative is not available will likely be prioritised. As a result, many of our (less strategic) exports may remain unaffected for some time.

In addition, the Chinese government may be satisfied with insourcing of only segments of certain supply chains. A domestic food processing industry may still demand raw inputs from New Zealand and elsewhere.

China will continue to demand imports to feed growing consumption. The more successful the Chinese government is at stimulating domestic consumption, the more likely they will be

³⁶ Scobell, A. Burke, E. Cooper, C. Lilly, S. Ohlandt, C. Warner, E. Williams, J. 2020. *China's Grand Strategy: Trends, Trajectories, and Long-Term Competition*. Rand Corporation, Santa Monica.

³⁷ Scobell, et al. 2020. See 22 above.

³⁸ Dairy Global. 2021. *Country report: Uncovering China's dairy sector.* Accessed 8 September 2021. <https://www.dairyglobal.net/Market-trends/Articles/2021/11/Country-report-Uncovering-Chinas-dairy-sector-696381E/>

³⁹ OECD/FAO. 2020. *OECD-FAO Agricultural Outlook 2020-2029*.

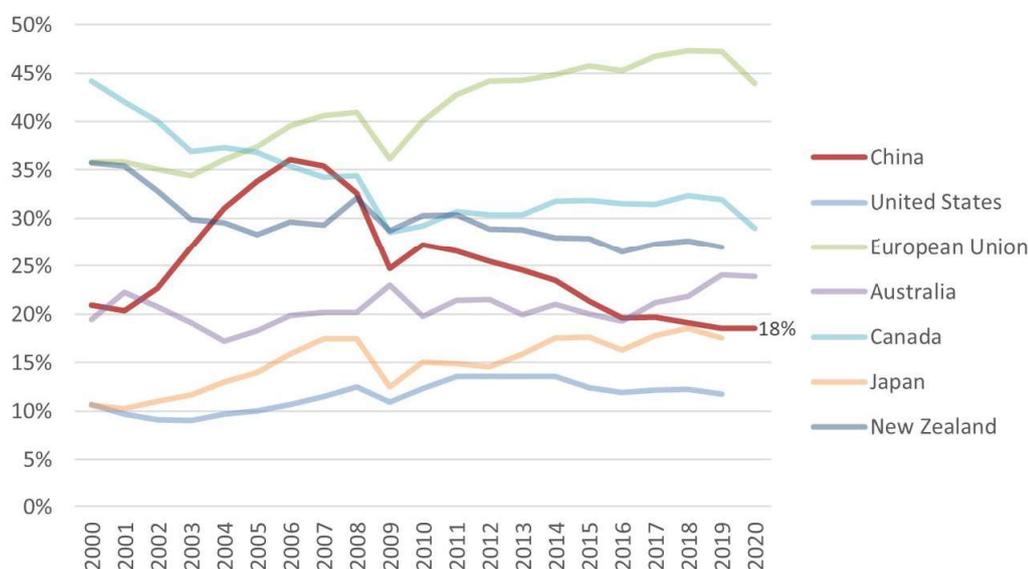


unable to satisfy that demand locally. In adopting *dual* circulation, as opposed to solely internal circulation, they have recognised this reality.

An important caveat: Dual circulation is new only in name

Since at least 2006 the Chinese government has publicly acknowledged that there needs to be a shift toward consumption led growth. The 11th Five Year Plan (2006-2010) equates “stable and fast economic development” with expanding domestic demand⁴⁰ and acknowledges a need to focus on the latter⁴¹. Indeed, as shown in Figure 25 below China’s exports as a proportion of GDP peaked in 2006 at 36% and have since fallen to 18% in 2020⁴².

FIGURE 25: EXPORT TO GDP RATIOS, 2000-2020.



SOURCE: WORLD BANK

This means the dual circulation strategy is unlikely to signal a dramatic shift in Chinese trade and consumption patterns. A Chinese emphasis on domestic production is likely to focus on those high-tech products which cannot be produced domestically, and those products sourced from geopolitical rivals.

⁴⁰ National People’s Congress. 2006. *Guidelines of the Eleventh Five-Year Plan for National Economic and Social Development*. pp. 3-4. <https://policy.asiapacificenergy.org/node/115>

⁴¹ Yongding, Y. 2021. “Decoding ‘dual circulation’ strategy”. *China Daily*. <https://global.chinadaily.com.cn/a/202010/12/WS5f839118a31024ad0ba7df1e.html>

⁴² World Bank national accounts data. 2021. “Exports of goods and services (% of GDP) – China.” <https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?view=chart&locations=CN>



Appendix A

Tables 5 and 6 below show the results of our simple analysis using alternate assumptions regarding how much affected product is successfully redirected. In Table 5, this is set to 20%, and in Table 6 to 30%.

TABLE 5: ILLUSTRATIVE CHANGES WITH ASSUMED 20% OF EXPORTS NOT DIVERTED

HS 10 Code	Shorthand Description	Revenue Change	% Change
0306310010	Rock lobsters	-\$108m	-33.0%
4403210010	Logs	-\$673m	-24.3%
0401500019	Cream, shelf stable	-\$275m	-32.7%
1901100900	Infant formula	-\$395m	-28.9%
4101200015	Hides and skins	-\$7m	-22.5%
4705000001	Wood pulp	-\$18m	-14.1%
0504000051	Green offal (beef and veal tripe)	-\$42m	-36.4%

SOURCE: INPUT DATA SOURCED FROM COMTRADE

TABLE 6: ILLUSTRATIVE CHANGES WITH ASSUMED 30% OF EXPORTS NOT DIVERTED

HS 10 Code	Shorthand Description	Revenue Change	% Change
0306310010	Rock lobsters	-\$135m	-41.4%
4403210010	Logs	-\$901m	-32.6%
0401500019	Cream, shelf stable	-\$329m	-39.2%
1901100900	Infant formula	-\$447m	-32.8%
4101200015	Hides and skins	-\$9m	-26.8%
4705000001	Wood pulp	-\$24m	-19.2%
0504000051	Green offal (beef and veal tripe)	-\$45m	-38.9%

SOURCE: INPUT DATA SOURCED FROM COMTRADE



Appendix B

Table 7 below shows all the products displayed in Figure 22.

TABLE 7: TOP 30 NZ EXPORTS TO CHINA (HS4 LEVEL)

HS4	China share of NZ exports	NZ share of China imports	NZ exports to the World 2021	HS4 description
0402	49.9%	66.9%	\$4,596,930,095	Milk And Cream, Concentrated Or Containing Added Sweetening
4403	87.0%	29.0%	\$2,223,761,553	Wood In The Rough, Whether Or Not Stripped Of Bark Or Sapwood, Or Roughly Squared
0204	49.1%	61.3%	\$2,391,201,824	Meat Of Sheep Or Goats, Fresh, Chilled Or Frozen
0202	42.0%	8.4%	\$2,113,215,251	Meat Of Bovine Animals, Frozen
1901	51.1%	26.5%	\$1,896,780,842	Malt Extract; Food Preparations Of Flour, Meal Etc. Containing Under 40% Cocoa Neso; Food Preparations Of Milk Etc. Containing Under 50% Cocoa Neso
0401	82.2%	40.7%	\$649,959,513	Milk And Cream, Not Concentrated Nor Containing Added Sweetening
0405	26.1%	77.0%	\$1,528,117,997	Butter And Other Fats And Oils Derived From Milk
0810	23.1%	8.2%	\$1,896,895,239	Fruit Neso, Fresh
0406	25.2%	50.3%	\$1,156,902,160	Cheese And Curd
0306	95.7%	4.0%	\$237,635,114	Crustaceans
0102	100.0%	32.7%	\$180,699,837	Bovine Animals, Live
3501	24.6%	60.2%	\$674,332,029	Casein, Caseinates And Other Casein Derivatives; Casein Glues
2106	16.6%	2.4%	\$177,878,909	Food Preparations Neso
0504	57.5%	18.1%	\$741,832,030	Animal Guts, Bladders And Stomachs (Other Than Fish), Whole And Pieces Thereof, Fresh, Chilled, Frozen, Salted, In Brine, Dried Or Smoked
0307	26.8%	5.3%	\$217,952,952	Molluscs
5101	36.8%	5.2%	\$249,416,949	Wool, Not Carded Or Combed
4703	29.5%	0.8%	\$315,862,460	Chemical Woodpulp, Soda Or Sulfate, Other Than Dissolving Grades
0808	15.4%	64.2%	\$655,405,050	Apples, Pears And Quinces, Fresh
0303	27.9%	2.3%	\$474,849,524	Fish, Frozen, Excluding Fish Fillets And Other Fish Meat Without Bones; Fish Livers And Roes, Frozen
4407	8.2%	0.6%	\$187,491,218	Wood Sawn Or Chipped Lengthwise, Sliced Or Peeled, More Than 6 Mm (.236 In.) Thick
2309	31.6%	7.5%	\$209,817,217	Preparations Of A Kind Used In Animal Feeding
3502	28.2%	22.6%	\$313,266,179	Albumins (Incl Cncentrtes Two/More Whey Proteins, Cntng By Weight More Thn 80% Whey Proteins Calculated On Dry Mattr), Albuminates & Oth Albumin Deriv
0409	19.3%	77.3%	\$208,213,789	Honey, Natural
0201	19.8%	12.2%	\$230,982,143	Meat Of Bovine Animals, Fresh Or Chilled



HS4	China share of NZ exports	NZ share of China imports	NZ exports to the World 2021	HS4 description
4705	49.8%	11.0%	\$32,943,044	Wood Pulp Obtained By A Combination Of Mechanical And Chemical Pulping Processes
0206	20.6%	1.5%	\$206,035,657	Edible Offal Of Bovine Animals, Swine, Sheep, Goats, Horses Etc., Fresh, Chilled Or Frozen
9019	4.4%	6.8%	\$143,550,841	Mechano-Therapy, Massage, Psychological Aptitude-Testing Appliances And Apparatus; Ozone Etc. Therapy And Respiration Apparatus; Parts And Accessories
4701	37.9%	14.6%	\$57,225,238	Mechanical Woodpulp
4101	76.7%	3.5%	\$686,121,909	Raw Hides And Skins Of Bovine Or Equine Animals (Fresh Or Preserved, But Not Tanned Or Further Prepared), Whether Or Not Dehaired Or Split
0507	72.4%	68.6%	\$46,037,040	Ivory, Tortoise-Shell, Whalebone And Whalebone Hair, Horns, Hooves, Claws Etc., Unworked Or Simply Prepared, Not Cut To Shape

SOURCE: GLOBAL TRADE ATLAS

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