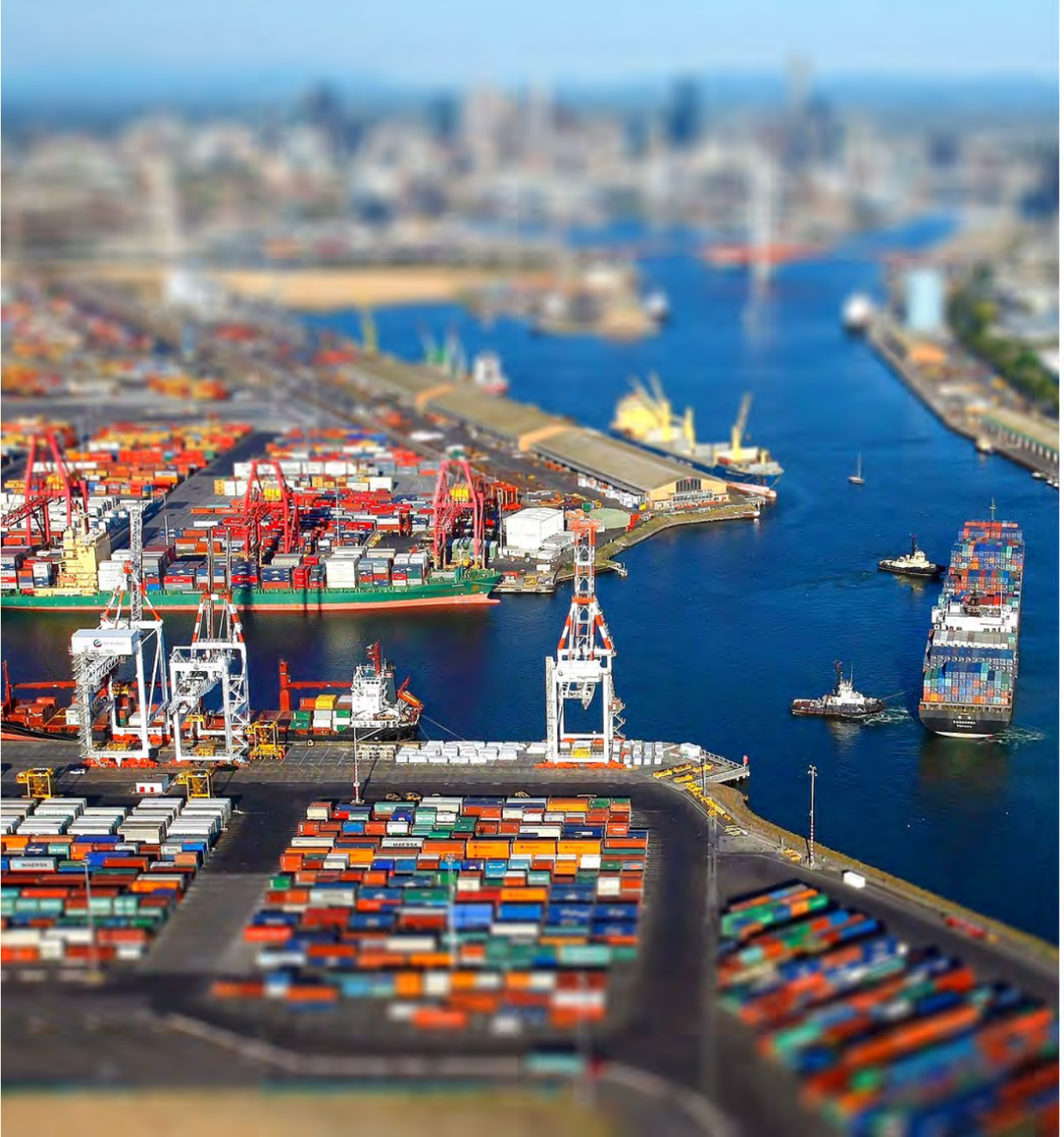
BIS OXFORD ECONOMICS

PORT OF MELBOURNE TRADE FORECASTS

DETAILED OUTLOOK TO FY21

1 APRIL 2020



Contents

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OVERVIEW

Macroeconomic Outlook – Global – Near Term

Relative to our pre-coronavirus forecast, we have made huge downgrades to the outlook for economies around the world. We cannot rule out further downgrades to the baseline due to more measures to curb the spread of coronavirus.

The largest quarterly contraction in the global economy in living memory

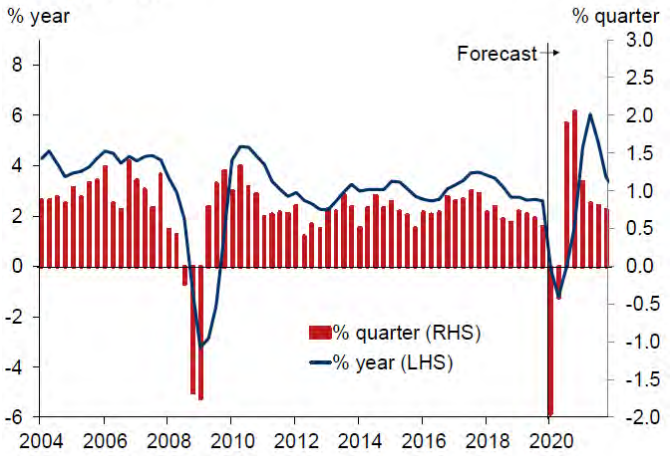
In recent weeks we have revised down our baseline forecasts as more countries announced draconian policy measures to limit the spread of coronavirus. Our latest forecasts now show the global economy and many major economies entering a deep recession in the first half of 2020. Over the full year, we expect a rate of global growth of 0%, the second-weakest rate in almost 50 years.

The near-term outlook is extremely challenging. But we believe that, consistent with historical experience, the bounce back in activity will be very strong once social distancing measures are relaxed, and monetary and fiscal stimulus combine with a resumption in discretionary spending. Businesses that can weather the crisis should be prepared for a strong end to 2020 and start to 2021, with global growth rising as high as 5% in annual terms.

Still, as the rapid downgrades to our baseline demonstrate, we see huge uncertainty in this rapidly evolving environment. Therefore, we have updated our downside scenario to incorporate a worsening of the outbreak, the imposition of social restrictions, and financial stress. This scenario sees the global economy enter outright contraction in 2020, with GDP falling by 1.3%.

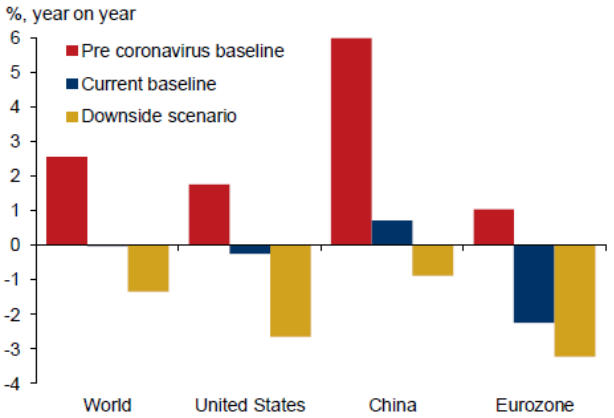
In China, the latest official data for February was even worse than our already dire expectations, prompting us to cut our Q1 growth forecast from 2.3% to -5%, on an annual basis. For the eurozone, considering widespread lockdowns, factory closures, and travel restrictions, we have reduced our growth forecast by more than 5ppts for Q2 2020 with Italy and Germany particularly badly affected. Lockdowns in major US cities led us to lower our Q2 GDP forecast by more than 3ppts since early March.

World: GDP



Source : Oxford Economics/Haver Analytics

Global: real GDP growth in different scenarios



Source : Oxford Economics/Haver Analytics

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Macroeconomic Outlook – Global – Baseline

These truly staggering GDP contractions mean the global economy is set to shrink by 2% on a quarterly basis in Q1 and 0.4% in Q2 –well past the GDP per capita contraction definition of a global recession.

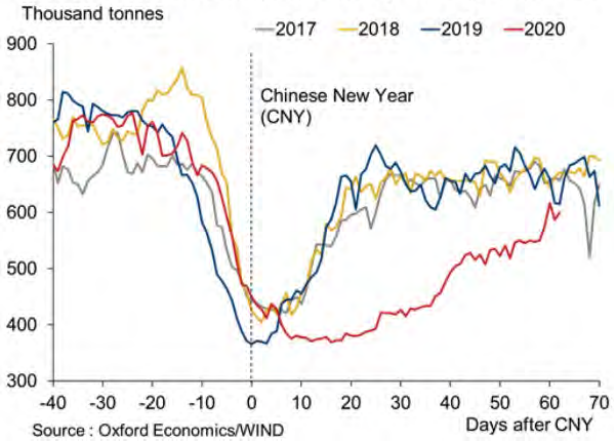
The speed and scale of the falls in GDP across so many countries will make the first half of 2020 look very much like the global financial crisis.

The impact on the wider economy is likely to be profound. We expect world trade for the year to contract for only the second time since the mid-1980s. As a consequence of the collapse in activity and likely insolvencies, employment is set to fall by more than 1ppt in H1 2020, relative to the end of 2019. Global CPI inflation is set to undershoot even our pessimistic expectations and fall to 2.8% in 2020 from 3.2% in 2019.

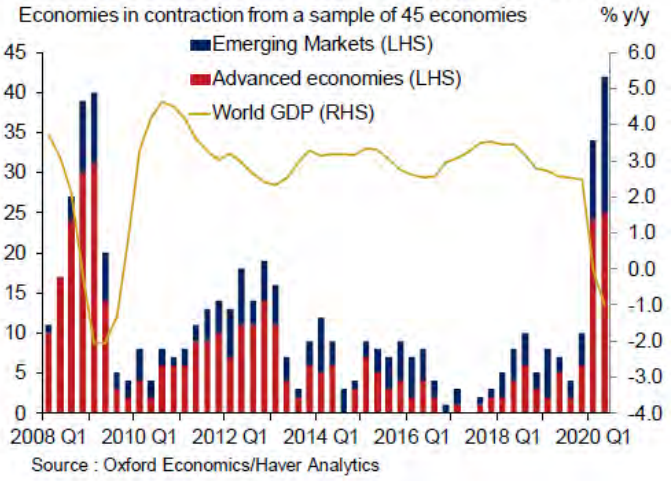
A key element in our existing baseline is that by early April China's regions will be out of lockdown. Wuhan's shutdown will be the last to be lifted and this is set to occur on April 8. True, some sectors of the Chinese economy have been slow to recover despite the easing of restrictions. But it appears that the resumption of activity may have recently started to pick-up. Even if China begins to face supply chain disruption from abroad along with external demand weakness, the collapse in activity in February should still ensure that the economy records a fairly punchy positive quarter-on-quarter GDP growth rate in Q2.

However, we do expect the economy to bounce back toward the end of 2020 in our baseline scenario. As historical experience from short recessions and previous outbreaks shows, most activity tends to be delayed rather than destroyed entirely. The resumption of activity combined with growing levels of policy stimulus should create the conditions for growth to return to our pre-coronavirus baseline relatively quickly – potentially during 2021.

China: Coal consumption of 6 power producers



Economies in contraction in any given quarter



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Macroeconomic Outlook – Global – Downside

In this scenario, the global economy suffers an outright contraction of 1.3% in 2020 with severe recessions in all major economies during 2020. In general, the impacts and channels are similar to those in the current baseline, but amplified and for longer.

As in 2008, forecasting the economy at the moment is like trying to predict where the next lightning bolt will strike.

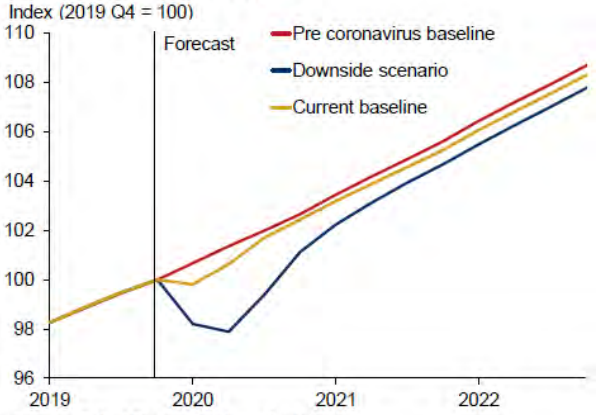
The imposition (and lifting) of public health measures have dramatic impacts on the economy and financial markets, but are virtually impossible to anticipate from week to week. Needless to say, the lack of any exact historical precedent for the current crisis makes predicting what happens next all the more difficult. Because of this extremely volatile environment, we do not have the usual high degree of confidence in our baseline forecast.

As such, despite the downward revisions in recent months, we see ongoing, sizeable downside risks. First is the duration of the current outbreak and the possibility of further waves, alongside associated policy measures to limit the spread. Second is the ability of policy makers to stem panic among market participants and firms, helping to limit the spike in unemployment. Third is the degree to which the crisis has lasting effects on the behaviour of firms and individuals.

Building on our previous pandemic scenario, we model a worse, yet plausible downside for the global economy. In this alternative scenario more countries suffer even worse effects that are longer lasting, while the financial market spillovers are greater than in our current baseline (see calibration details below). **Rather than being a low probability, extreme case, to us this scenario represents a plausible alternative baseline that, if the situation continues to deteriorate at the current pace, could become our central view in the coming months.**

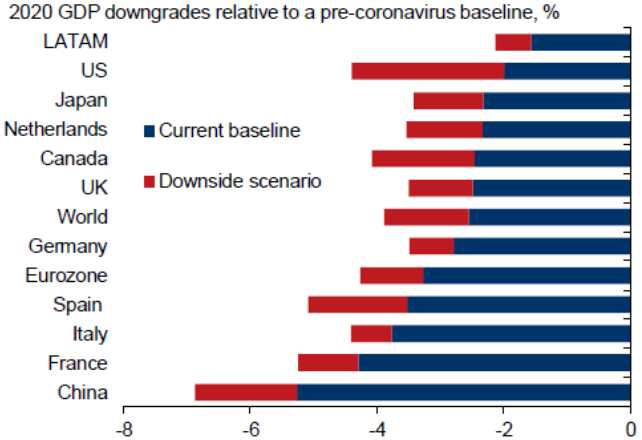
The magnitude of the revisions to 2020 growth in the downside scenario illustrate the risks to our current baseline for the major economies. Clearly, in countries that are currently very badly affected (China and Italy), further downside risk is limited. But in countries where the impact on the forecast is relatively (in the current environment) small, the risks to the downside are far bigger.

Global: real GDP levels



Source : Oxford Economics/Haver Analytics

Global: revisions to GDP under the scenarios



Source : Oxford Economics/Haver Analytics

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Macroeconomic Outlook – Global Industry

Lockdowns and social distancing measures have been damaging for service sectors reliant on "social consumption" such as tourism and hospitality. The disruption is also spreading to manufacturing.

Q1 2020 output will shrink at a sharper pace than during the global financial crisis

In China, activity data for February was dismal, and with high-frequency indicators such as coal consumption suggesting a slow pace of recovery in March, it seems likely that China will exert an even bigger drag on global industry in Q1 2020 than we previously expected. We've cut our Chinese industrial production forecast for Q1 dramatically to -14% quarter-on-quarter (q/q), down from -4.6% in our February update. However, we expect a sequential recovery from Q2 onwards as daily life gets back to normal and businesses work overtime to catch up on backlogs and lost activity.

Weaker consumer spending will also hit production of consumer-facing goods. **Automotive, textiles, and furniture manufacturing are among the most vulnerable to the postponement of consumer spending as containment measures around the world discourage "social consumption"**. This is may be amplified by weak confidence and reduced disposable income, which could lead to a permanent loss in spending.

We still expect a strong recovery in H2.

Our baseline forecasts assume most of the virus-induced hit to industrial activity will be felt in the first half of the year. Thereafter, we expect a strong bounce-back in activity as lockdowns are lifted, social distancing measures are eased, and monetary and fiscal policy succeeds in cushioning household incomes and minimising business bankruptcies during the crisis. In the manufacturing sector, firms that can weather the crisis should see a rebound in production towards the end of 2020 and at the start of 2021 as inventories are replenished and pent-up demand is met. We expect global industrial production growth of nearly 5% in 2021

China: Key cyclical indicators

Source: Oxford Economics/CEIC

World: Industrial production

Source: Oxford Economics

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Australia – Economic Conditions

Although we have substantially downgraded our baseline forecast over the last two months, the risks remain to the downside

Recession inevitable

Our baseline forecast assumes that the outbreak is contained over the next six months, with conditions beginning to return to normal in Q4 2020.

The main sources of uncertainty are: the speed with which conditions are changing, uncertainty around how long it will take to contain the pandemic, how much policy can mitigate the impact, and how quickly restrictions can be removed.

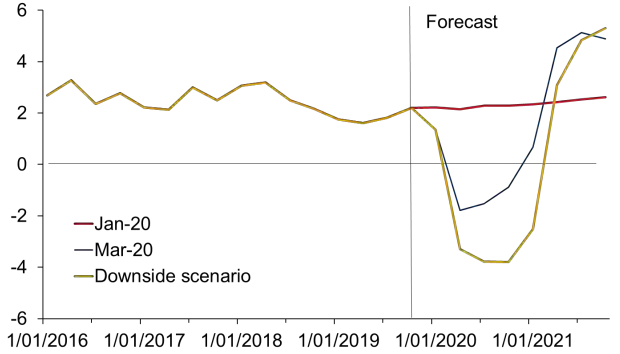
But we must also consider a plausible downside case, where it takes substantially longer to contain the outbreak. In this scenario, despite policymakers' best-efforts, there is a permanent negative impact on productive potential; businesses and households become permanently more risk averse, leading to lower levels of investment and employment, and a permanent reduction in the level of GDP.

In this alternative the downturn is more substantial, with the economy recording its biggest contraction in GDP in over 40 years. Firms are forced to retrench employment significantly. Although the pandemic is eventually controlled and conditions normalise in 2021, the episode leaves a permanent scar on the economy; firms and households become permanently more risk averse, which weighs on employment, investment and ultimately the level of GDP.

The normalisation of conditions is assumed to begin in the middle of 2021 and be largely complete six months later. Growth rebounds during this period, but the level of GDP is permanently lower. For many workers, a protracted period of unemployment reduces their productivity permanently, and firms are assumed to experience a permanent increase in risk aversion, which dampens capital expenditure and increases their caution in hiring new staff. This shift is self-reinforcing, and as a result output remains substantially below baseline in the long run.

Australia: GDP growth*

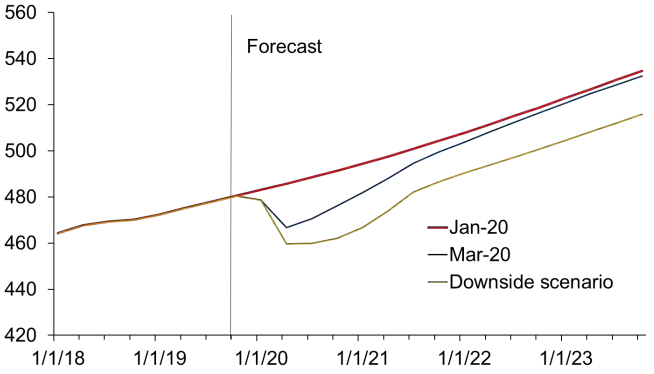
% y/y



Source: BIS Oxford Economics/Haver Analytics
*includes downgrade due to bush fires

Australia: GDP

A$bn, 2017/18 prices



Source: BIS Oxford Economics/Haver Analytics

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Australia – Policy

The policy announcements so far are only the starting point for fiscal support. To the extent that the pandemic lingers on, or containment measures are intensified, further emergency measures will be required.

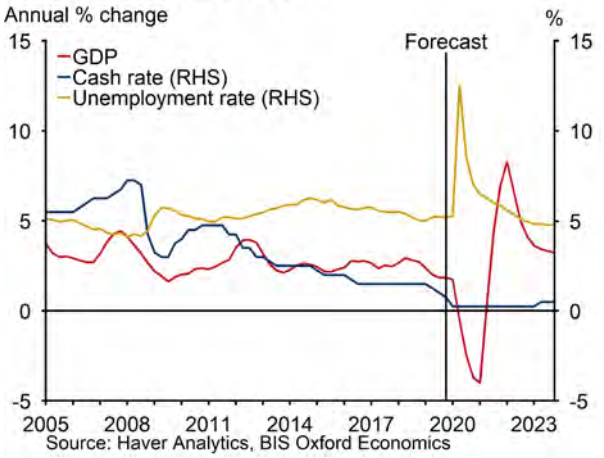
Policy is moving to make the looming recession as shallow as possible

The COVID-19 outbreak and associated containment measures have caused a drastic re-evaluation of the economic outlook. Disruptions to goods supply chains, restrictions on travel and the effective shutdown of a number of sectors will send the Australian economy into recession in 2020. Increasing restrictions on consumer-facing service industries, such as tourism, travel and hospitality will lead a severe curtailing of activity and a large dislocation of labour, with the unemployment rate expected to shoot up above 10%.

In light of this, fiscal policy has dramatically reversed course, with the government taking unprecedented steps in order to mitigate (as far as possible) the damage wrought on the economy by the pandemic. Set against the backdrop of limiting the spread, the overarching current policy is for partial restrictions on activity, which encourages those that can to stay home while essential industries, other manufacturing, construction and some consumer facing services continue to operate. The government has stated that they are explicitly trading off the economic damage caused by the forced closures of parts of the economy with the public health response to the pandemic.

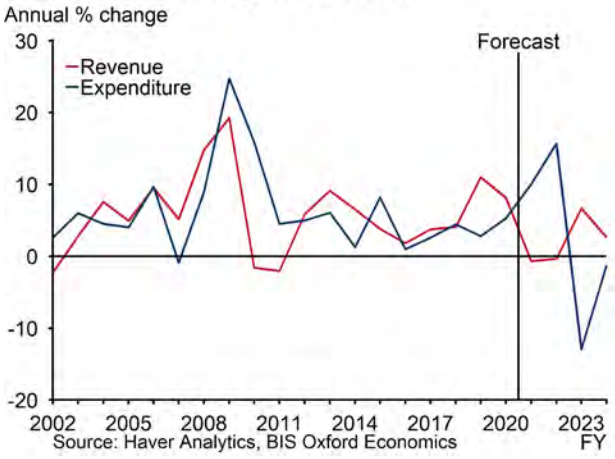
Despite the unprecedented nature of the policies announced, their effectiveness will crucially depend on the duration of the disruption to economic activity. Beyond the direct impact of forced business closures, the uncertainty created by the length of time it will take to control the pandemic (and the accompanying financial stress), and the possibility that the current lockdown conditions will extend until well into the second half of the year are prompting many firms to adopt a conservative approach and retrench. This risks the creation of a negative feedback loop, with an increasing number of businesses closing and financial conditions tightening despite the support measures put in place. If this were to transpire, the recovery of the economy would be much weaker and more protracted than our baseline forecast assumes.

Economic conditions



While there is considerable uncertainty around the size of the downturn, the economy will tip into recession in 2020. This will be coupled with a sharp rise in the number of people effectively unemployed (those stood down won't show up in the official series).

Government Budget Position



Government support payments will increase expenditure dramatically, while the increase in unemployment will put revenue under pressure. But years of hawkish policy have given the government the fiscal space to support the economy.

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Australia – Construction

The outlook for total building has been revised sharply downwards in response to the COVID-19 pandemic. Uncertainty is elevated and the environment is changing rapidly.

Risk is weighted heavily to the downside.

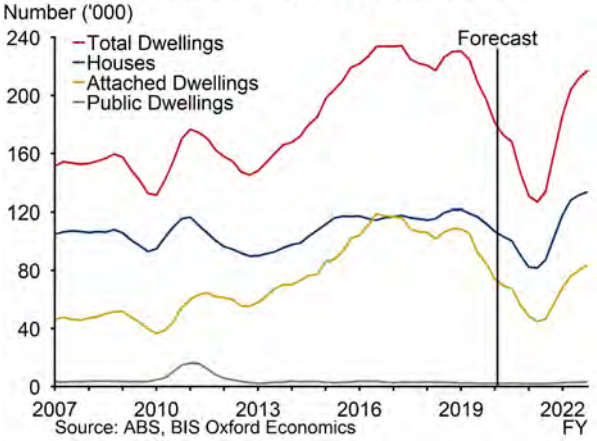
The increasing disruption to day-to-day life resulting from the COVID-19 pandemic is set to weigh significantly on the construction sector. Although our previous building construction projections are only a few weeks old, the accelerated spread of the coronavirus and the deterioration in economic conditions that have accompanied it means they are now out of date. Even the revised forecasts in this briefing, which were finalised early this week, may now represent an optimistic scenario given developments over the past few days including the banning of public open houses and auctions, and further travel restrictions.

With projects either unable to proceed or too risky to progress in a lockdown, commencements in Q2 and Q3 2020 will be significantly lower. Total building commencements are now expected to slump 26% y/y to a trough of $80.94 billion in CY20. This is a record pace of decline that sees activity fall to its lowest level since 2005. In financial year terms, the COVID-19 shock is evened out a little, with activity down 16% in FY20, followed by a flat result for FY21. A further leg down will play out in the residential sector, just as it was looking to turn the corner. Commercial & industrial building is expected to see a decline comparable to the GFC in speed and magnitude.

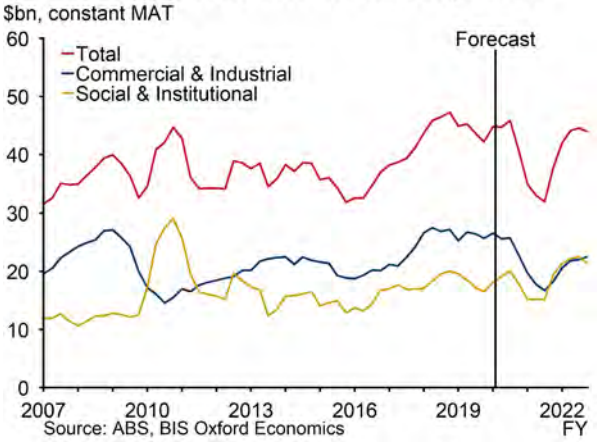
The gradual return to normality from late 2020 as the pandemic is broadly brought under control, along with the huge volume of fiscal and monetary stimulus that has been announced (with more likely to come), is forecast to power strong growth into FY22, with total building activity lifting 26% to $122.06 billion.

Uncertainty is elevated and the environment is dynamic. Even with this sizable downward revision, risk remains heavily weighted to the downside. Construction is currently regarded as essential work, but this could change. While steep falls have been factored into Q2 and Q3 2020, they would be worse under more extensive lockdown measures. If the economy struggles to gain momentum from late 2020, private investment will remain weak, significantly slowing the pace of recovery.

Dwelling commencements, Australia



Non-residential commencements, AUST



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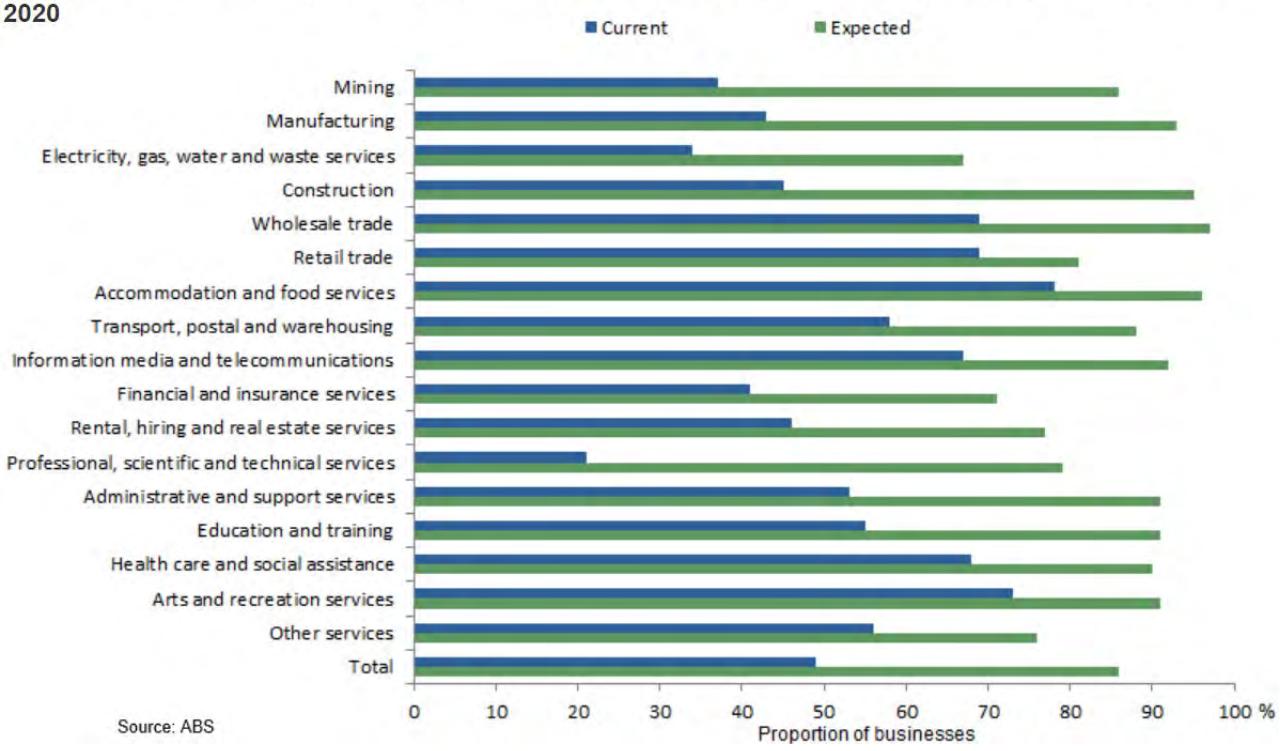
Australia – Impact on Businesses

The ABS has launched a new business survey to capture the effects of the COVID-19 outbreak on businesses. Around 50% of Australian businesses have already experienced negative impacts, with close to 90% of businesses expecting to see adverse impacts in the future.

Impact is broadening

In response to the COVID-19 outbreak, the ABS is expanding its coverage of some existing services and has launched a new business survey. The first release on 26 March shows that half of respondents had experienced adverse impacts on their business due to the virus in the two weeks prior to the survey period (16-23 March). Unsurprisingly, businesses in the accommodation & food and arts & recreation services have so far been the worst-affected (around 75% of firms affected). Health care & social assistance firms also reported high rates of impact, as did firms in the goods distribution supply chain. Businesses in professional, scientific and technical services have been the least impacted. The strongest channel by which firms have been affected has been through reduced local demand, while staff and supply shortages have also been reported.

Businesses adversely impacted by Coronavirus (COVID-19), current and expected, by industry, March 2020



Source: ABS

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Approach to trade forecasts

The trade forecasts will use the baseline macroeconomic outlook as guidance, but the relationships have become disconnected as the composition of the local and international economies undergo shocks and significant (but temporary) transformations

Outlook has gone from soft to bleak

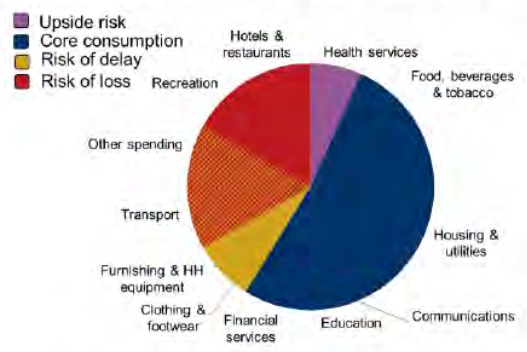
The 'hard' data continues to relate to the period before the coronavirus pandemic began to have a material impact on the Australian economy so, given the dramatic turn of events, it offers little more than curiosity value.

We are therefore applying an approach over the next three years of mechanically playing through the implications of the baseline outlook onto each trade class, considering how businesses and consumers in Australia and globally will react to the state of affairs.

Concerns regarding the trading outlook in early March were largely centred around the impacts COVID-19 was having upon supply chains and how supply may be unable to meet demand.

These concerns have now been swamped by collapsing demand across Australian sectors, and China has rapidly gone from a risk to an insulating factor as it emerges as one of the few countries who have been able to bring the outbreak under control.

Australia: Consumer spending breakdown



Source: BIS Oxford Economics/Haver Analytics

Trade Forecast Approach

For each trade category, we follow the same logic flow

Step One
Acknowledge Common Characteristics

Major Australian container terminals tend to have the same basic characteristics:

1. The dominant full container trade flow tends to be imports (Burnie and Adelaide being the exception).
2. Each tends to be the only container terminal servicing an individual state, centred on the major population centre of that state (Burnie being the exception).
3. Strong growth between the 1990s and mid-2000s, with slower growth since the GFC.

These common features inform BIS Oxford Economics' trade analysis.

- For containerised imports, the outlook tends to track the national macroeconomic outlook with state-specific demand factors.
- Similarly, for containerised exports, we overlay national production outlooks with local specialisation within Melbourne.

Step Two
Identify drivers

As a rule, we would expect import (or export) volumes to track demand (or production) taking into account changes in domestic substitutes (or demand).

This ratio should be 1:1 over the past 20 years with few exceptions.

Major shutdowns of domestic manufacturing (historically has included cement factories, motor vehicle manufacturing) can be used to calibrate the substitution effect between domestic demand and overseas imports. This adds rigour to the outlooks regarding the future structural changes.

Note that there are some questions around data quality, but as expected, these appear to be most evident when the trade is examined at finer levels of categorisation. Accordingly, BISOE has grouped imported commodities according to six broad categories linked with common drivers to minimise the chance of a historical mis-categorisation creating a spurious result in the historical time series.

Step Three
Explain variance from drives

Sudden shifts in volumes at the Port of Melbourne that deviate from this principle reflect either a change in modal choice, port facilities, or local production factors.

These are rigorously examined to explain historic variances and then re-examined to see if there should be any changes over the forecast horizon.

These tend to be particularly relevant for exports as opposed to imports.

Step Four
Apply macroeconomics drivers

Once the relationship between the trade volumes and the macroeconomic drivers are established, and future structural changes are identified, the forecast trade volumes simply leverage off of the forecast macroeconomic outlook.

This report will explicitly identify the macroeconomic drivers used for each trade and then reference back to a section in Appendix A report for further information.

On top of this, we are applying an additional layer which quantifies the impact on trades above and beyond the changes in the macroeconomic situation (declines in jet fuel and motor spirit being excellent examples of this disruption).

Imports (full, excl Bass Strait)

Only food imports are expected to be unaffected by COVID-19

Annual % Change	2016-17	2018-19	2019-20	2020-21
Consumption (Food & Beverages)	7.6%	-2.0%	**-0.6%**	4.7%
Consumption (Non-Food)	1.2%	4.6%	**-5.4%**	8.3%
Capital Goods (& Parts)	5.3%	1.6%	**-10.6%**	-22.0%
Parts for Transport Equipment	-4.7%	1.1%	**-13.6%**	-0.9%
Processed Industrial Supplies	5.0%	0.9%	**-7.8%**	-15.1%
Other Intermediate Goods	2.5%	3.4%	**-15.9%**	14.1%
Total Imports (excl. Bass Strait)	**3.4%**	**1.7%**	**-8.9%**	**-0.1%**

Drivers

Capital Goods are impacted largely by uncertainty and falling demand. This will be slow to recover until COVID-19 is under control.

Parts for Transport Equipment are to be directly impacted by working from home arrangements and social distancing, but will be quick to recover.

Processed Industrial Goods will fall as the slowdown in construction activity extends a further year.

Other Intermediate Goods are impacted by the slowdown in the service sector, working from home, and slow downs across manufacturing.

Overview

Consumer goods will be hit hard as retail outlooks have reduced traffic foot, and then by an expected surge in unemployment through the year. Goods sales will hold up relatively well as compared to other classes (such as cafes and restaurants and motor vehicles).

All other categories will likely perform even weaker over the near-term, as activity slows through 2020. Recoveries are likely to take until 2022 to return to our previous baseline.

Drivers

Over the long term, both population growth slowing and declining productivity improvements will slow the need for other intermediate goods and will reduce growth in consumer goods imports.

Generally, countries become larger consumers of international goods over time. This comes about either through retailers switching to low cost alternatives to domestically produced goods or consumers developing preferences for international substitutes of domestics products. This is what allows for imports (in volume terms) to continue to grow faster than domestic demand (in value terms).

Exports (full, excl Bass Strait)

Below average rainfall impacts exports

Annual % change	2016-17	2018-19	2019-20	2020-21
Agriculture	13.3%	-15.1%	**-1.5%**	9.4%
Manufacturing	12.1%	0.0%	**-9.1%**	0.5%
Paper	-7.0%	-15.5%	**-4.4%**	-1.0%
Timber	22.8%	2.6%	**-20.0%**	-37.5%
Other	-1.7%	3.1%	**1.3%**	0.9%
Total Exports (excl. Bass Strait)	8.5%	-8.0%	**-4.8%**	0.4%

Overview

Agricultural exports will continue to drive the volatility in containerised exports. A drought in NSW and Queensland impacting the FY20 harvest will mean that Victorian production is anticipated to be diverted north to meet domestic demands.

Reduced sailings are expected to result in container volumes down 3% over FY20 against baseline.

Drivers

However, growth in manufacturing exports projected to suffer through FY20 and FY21 due to COVID-19 impacting Australia's trading partners, mirroring the decline in manufactured imports into Australia.

Paper exports forward outlook is a return to trend based on growth in the underlying market.

Drivers

Timber exports are expected to undergo a rapid decline as current harvest rates are unsustainable, however it remains unclear how many of the trees which were damaged during the recent bush fires can be salvaged for the export market.

It is noteworthy that China appears to have record stockpiles of saw logs in their ports, which may take until September to clear, as COVID-19 reduced construction activity through the beginning of 2020.

Imports (Bass Strait)

A weak Tasmanian economy will drive lower volumes in both directions.

Annual % change	2016-17	2018-19	2019-20	2020-21
Agriculture	-2.3%	-2.5%	**-2.2%**	2.7%
Manufacturing	-2.4%	64.2%	**-2.0%**	0.2%
Paper	7.2%	-7.6%	**-10.4%**	-1.0%
Timber	3.8%	-33.2%	**-34.8%**	-1.0%
Other	-5.9%	-1.4%	**3.5%**	3.0%
Bass Strait Imports	-2.3%	3.1%	**-2.0%**	2.1%
Bass Strait Exports	-2.7%	0.8%	**-12.0%**	0.8%
Bass Strait (Full)	-2.6%	1.7%	**-8.1%**	1.4%

Overview

Half of all imports from Tasmania are agricultural products.

The imports of food products (agricultural goods and prepared foodstuffs) from Tasmania slowed in FY20 for the second straight year, primarily due to a fall in meat production, but also slowing horticulture production.

COVID-19 is expected to impact shipping volumes primarily of consumables and intermediate goods, which are primarily exports to Tasmania.

Drivers

The Tasmanian economy is now slowing, after experiencing a brief population and building boom which generated growth in spending and exports.

Wheeled Unitised trade to Tasmania is not expected to gain or lose market share vis-à-vis containers, and as such has the same market outlook.

Commentary

A reduction in international tourism, first from the bushfires and now COVID-19, is likely to weigh heavily on the state. The full impact of this developing issue has not been incorporated into the Long-Term Macroeconomic Outlook for Tasmania, but is likely to result in downward revisions in both production and consumption drivers.

Liquid Bulk

COVID-19 is decimating travel, and fuel demand.

Annual % change	2016-17	2018-19	2019-20	2020-21
Crude Oil	0.4%	18.9%	**-16.0%**	30.8%
Distillate Fuels	35.9%	-1.6%	**8.3%**	-17.3%
Motor Spirit	-17.8%	-52.5%	**66.5%**	-100.0%
Kerosene	-3.1%	-6.2%	**-10.1%**	-44.0%
Total Bulk Liquid Imports	3.8%	5.0%	**-8.0%**	5.0%

Overview

Trade in FY20 was significantly impacted by major periodic maintenance at a refinery, decreasing demand for crude and increasing demand for refined products. These are expected to unwind over FY21 and reflect changes in market demand thereafter.

All refined fuels are projected to be well down through to the end of 2020 (compared to average levels) as a result of decreased travel due to COVID-19.

Drivers

Automotive petrol will continue to decline in absolute levels over the long-term, and kerosene imports will be buoyed by strength in international flights.

Commentary

Crude imports are projected to grow as pipelines volumes via the WAG.

Non-containerized/ General Cargo

Trade with Tasmania determine wheeled unitized trade.

Annual % Change	2016-17	2018-19	2019-20	2020-21
Break Bulk Exports	-93.4%	-2.9%	**5.4%**	0.0%
Break Bulk Imports	-57.9%	3.1%	**-15.2%**	0.0%
Wheeled Unitised Exports	-51.2%	7.3%	**-20.7%**	2.5%
Wheeled Unitised Imports	-53.9%	16.6%	**-20.6%**	3.8%
Total Break Bulk	**-60.5%**	**8.5%**	**-18.2%**	**2.1%**

Overview

Break Bulk Imports and Exports are expected to remain at constant level over the short and long term forecasts.

Wheeled Unitised Exports are expected to fall as a result of a loss of market share to TT line starting in April 2019, before experiencing moderate growth from FY21 onwards.

Drivers

Trade with Tasmania determines Wheeled Unitised trade. Further details are available on the Bass Strait section.

Commentary

Due to the ad hoc nature of break bulk imports and exports, we assume mean reversion after FY20. This is likely to understate the level and temporal distribution of the break bulk trade. However, due to the “lumpy” nature and small quantities of this trade, this is the best practice approach.

Roll on – Roll off

Motor Vehicles will be in free-fall during periods of social distancing.

Annual % Change	2016-17	2018-19	2019-20	2020-21
New MV Imports	2.0%	-6.7%	**-22.5%**	17.2%
Transport Equipment, NEI, Imports	3.2%	-1.2%	**-27.0%**	31.4%
Second Hand MV Imports	-28.5%	-12.6%	**-18.4%**	15.6%
New MV Exports	-11.1%	-39.4%	**8.4%**	1.0%
Transport Equipment, NEI, Exports	0.5%	10.7%	**-14.6%**	-14.8%
Second Hand MV Exports	-26.8%	14.9%	**2.0%**	1.6%
Total MV Trade	**-0.9%**	**-6.3%**	**-21.3%**	**17.3%**

Overview

After a flurry of investment in Victoria, Transport Equipment imports and exports (including non-road vehicles) are expected to ease back in FY20, but return in line with investment and engineering construction activity.

Motor vehicle volumes are projected to fall even further due to COVID-19 and decreased global production.

Drivers

Growth in SUV share of total car sales is increasing the volume to unit ratios, and driving growth in revenue tonnes above and beyond growth in units.

Some new MV are effectively forwarded on other Asian Pacific countries after arriving into Australia.

Commentary

Import volumes of motor vehicles are mirroring the poor sales figures in Victoria and across the wider Australian economy.

The sales volumes were initially a short-term phenomena stemming from falling housing prices and perceived wealth effects, but the long-term structural drivers remain unchanged so a bounce back over the next three years is currently projected.

Dry Bulk

A boom in civil engineering partially offsetting declines in building activity

Annual % change	2016-17	2018-19	2019-20	2020-21
Cement	-1.5%	1.4%	**-8.8%**	-4.2%
Gypsum	-2.5%	4.1%	**-8.8%**	-14.7%
Crude Fertilizers	15.3%	-0.4%	**-5.4%**	-7.3%
Sugar, raw	-24.1%	-17.2%	**15.4%**	-2.6%
Total Dry Bulk Imports	-3.5%	4.3%	**-7.9%**	-10.7%
Total Dry Bulk Exports		-94.8%	**35.7%**	630.6%

Overview

Dry bulk imports are expected to grow relatively steadily over the short and long term forecast horizons after the current weakness in building activity dissipates.

Crude fertilizers include slag from Japan and fly ash from Gladstone, both of which are used with clinker to make concrete.

Drivers

The Victorian economy is transitioning from an apartment led boom to a public infrastructure boom. The latter, however, involves more civil engineering, and is less intensive in terms of concrete and plasterboard demand per dollar spent.

This in turn will lessen demand for bulk minerals until building activity picks up in 2022.

Commentary

Bulk exports of wheat are not anticipated over CY20 as cereals are diverted north into NSW and Queensland which had near record low harvests for the second straight year.

In FY19, Brisbane imported nearly 2 million tonnes of wheat, and another million entered NSW via Port Kembla and the Port of Newcastle.

01

CONTAINERISED IMPORTS (EXCL. BASS STRAIT)

History and Composition

Short-term change in composition can be explained by cycles (AUD/USD, building activity)

Economic cycles

The strong AUD/USD help boost **consumables** (both food and non-food), including **motor vehicle parts**, through the mid-2000s, but this unwound as the dollar returned below its long-run average.

The increasing share of processed **intermediate good**s over the late-2010s reflect the building boom going on in the state, and recent reversals the contractions in building activity since the peak in 2018.

Similarly, boosts in **capital goods** have reflecting investment booms (including in solar panels over the last two years).

Echoing these cycles, **other intermediate goods** have reflected employment booms and busts.

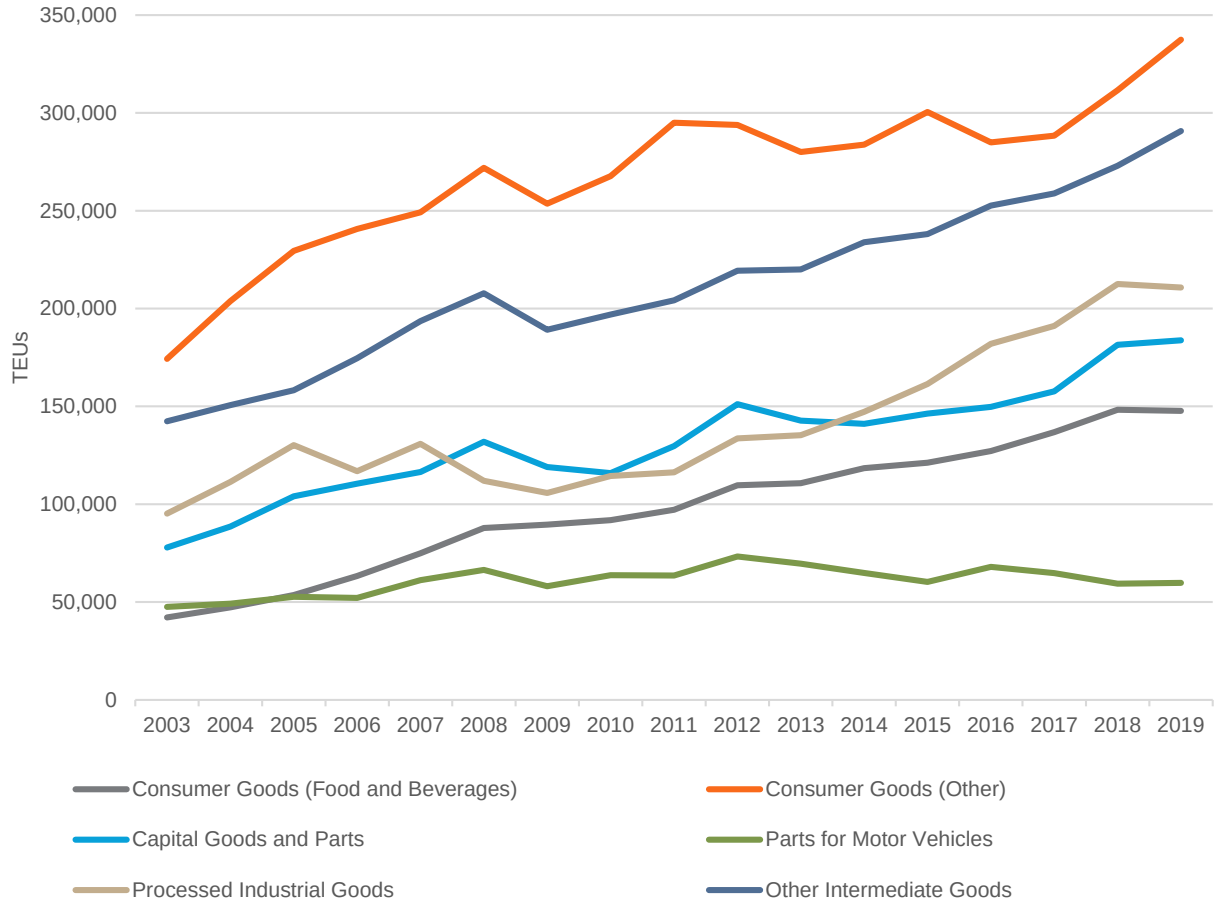
Structural changes

Structurally, growth in **motor vehicles** is the weakest as the count of vehicles only mildly out-paces population.

Both classes of **consumables** benefit from increasing import penetration over the long-term, but **non-food** outpaces **food** as retail turnover per capita grows.

Intermediate goods growth in line with broad based indicators.

Historic Growth by Balance of Payment Broad Economics Categories, Financial Year, TEUs



BIS OXFORD ECONOMICS

Forecast Mass Tonnes of Imports

We use a mix of state and national demographic / industry / macroeconomic drivers to model the import demand in mass tonnes.

Import Class	Cyclical & Structural Drivers	Commentary
Consumer Goods (Food and Beverages)	• AUD/USD (cyclical) • Population (structural)	The current import penetration estimated to be at 172kg per capita. There is some evidence that the increase in import penetration has coincided with a decline in manufacturing of food and beverage products. However, the manufacturing outlook for food and beverages is not used to calculate the import penetration going forward, rather it is assumed to increase at a linear rate over the forecast horizon.
Consumer Goods (Non-Food)	• AUD/USD (cyclical) • Retail Turnover (structural)	This is a more diverse market. While the decline in manufacturing has coincided with an increase in import penetration, this isn't so clear cut as it is for food and beverages, and most of the increase seems to be due to increasing rates of replacement and substitution between product types.
Capital Goods (and Parts)	• Machinery and Equipment Expenditure	Historically, the import volumes (in TEUs) of capital goods (which is mostly Machinery and Equipment) track state expenditure on Machinery and Equipment. We use this as both a cyclical and structural driver.
Parts for Motor Vehicles	• AUD/USD (cyclical) • Stock of Motor Vehicles (structural)	Dominated by motor vehicle consumables (like tyres and lead acid batteries), stock of vehicles is the dominant driver. Historically, volumes imported per capita was very dependent upon the exchange rate, but it may no longer be as relevant since the closure of the domestic motor vehicle manufacturing plants and shuttering of many supporting industries.
Processed Intermediate Goods	• State building activity (cyclical) • State final demand (structural)	Dwelling and non-dwelling building requires significant volume of containerised imported building materials. Longer term, we use state final demand of the need for goods.
Other Intermediate Goods	• Employment (cyclical) • State final demand (structural)	Other intermediate goods are used across the manufacturing and service sectors. Historically, import volumes have been highly sensitive to changes in employment (almost 10x) through a cycle, but structurally have grown in line with general economic growth (measured as state final demand).

Forecasting Methodology

Having generated mass tonnes, we undertake further analysis to undertake projections in TEUs.

1	**Australian tonnes**	Each of the six categories has a cyclical and structural driver which are used over the short/medium term and long-term forecasts respectively. This is assigned to forecasts of mass tonnes.
2	**Port Tonnes**	Historical calculations of the Port of Melbourne's market share use the ABS's definition of the share of tonnes for the BoPBEC subset, with confidential ports statistics allocated to individual ports by BISOE. Forecast tonnes use the Port of Melbourne's own statistics, and grow in line with the forecast market share and national tonnes.
3	**Port Containerised Tonnes**	Cargo is split between containerised and bulk. The forecast for all six major BoPBEC subsets is for the containerised share to remain unchanged over the forecast horizon.
4	**Containerised 20s vs 40s**	Historical share (by mass tonnes) are cargo in 20s is calculated as a share of total containerised cargo by cargo type. The shift away from 20s is most pronounced for consumer goods, and least pronounced (but still material) for intermediate goods. This trend is observed at all east-coast ports.
5	**Tonnes per Container**	When evaluated separately for 20s and for 40s at all east-coast container ports, BISOE does not observe a change in the mass per container over time (by BoPBEC subset). This is in sharp contrast to earlier estimates which examined individual ports in isolation. However, as there is a shift from 20s to 40s in all commodity classes, the average mass per TEU does decline.

Technical Note – Mapping to BoPBEC

We first look at import volumes at all international container ports using the same categorisation which we then use to understand trends and market share

Australian Transport Freight Commodity Classification (ATFCC)

Not all ports record trade in the same way making it difficult to directly compare the imports into the major container ports.

However, most ports (other than Port Botany) do use a system which has its origins in the Australian Transport Freight Commodity Classification (ATFCC). This was developed in the early 1980s - the last time there was a concerted effort to generate a standardised classification of goods transported to, from and within Australia. It has been designed for use in the capture and presentation of data by organisations responsible for recoding information on Australian cargo or freight movements.

In practical terms, what happened was each of the major Australian Ports selected a subset (typically 100) of these classifications to report container volumes on, and have generally maintained this system ever since.

The structure of the ATFCC is based on the Standard International Trade Classifications (SITC) Revision 3, with adjustments to suit Australian requirements, but this ended up being superseded by a new system in 1988, but most ports remained on the older system.

Harmonised System & Customs Codes (HS)

International classification developments aimed at the harmonisation of commodity statistics led to the development of the Harmonised System in 1988 for the collection and dissemination of foreign trade statistics. Australian customs have expanded upon the international 6-digit HS codes to become 10-digit imported customs codes.

Imports are recorded in international trade statistics in the calendar month in which the import entries are finalised by the Australian Customs Service. Normally this is within a few days of discharge of cargo although, on occasion, import entries may be delayed before being passed on to the ABS. For that reason, recorded imports for a particular month do not necessarily represent either entries lodged or commodities actually imported during that month. Analysis of recorded imports data has shown that, in aggregate, about 90 per cent of imports by value recorded for a particular month actually arrive during that month; of the balance, the majority have actually arrived during earlier months, with the remainder yet to arrive. For individual commodities, the percentage by value representing actual arrivals in a month can vary considerably.

Balance of Payments Broad Economic Categories (BoPBEC)

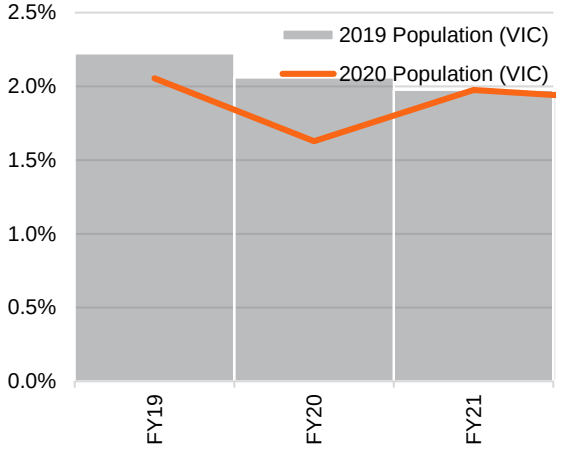
General merchandise goods debits (imports) are broken down into three 'end-use' categories—*consumption goods, capital goods* and *intermediate and other goods*—in broad accordance with the United Nations' *Classification By Broad Economic Categories (BEC)*, with further refinements by the ABS (combining the BEC with Standard Industrial Trade Classifications (SITC) Revision 4) as the Balance of Payments Broad Economic Categories (BoPBEC).

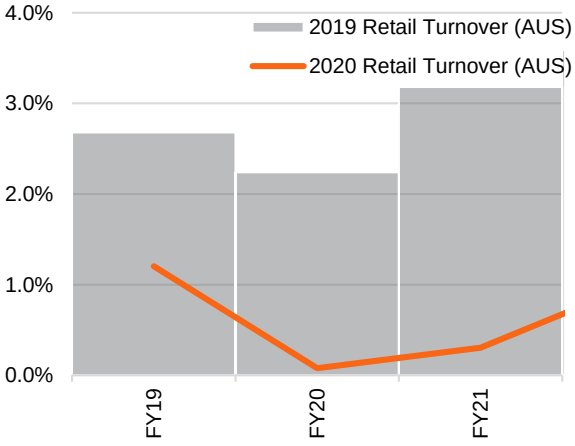
There are 26 such categories at the 2-digit level, with detailed data available from the ABS on monthly imports into each ports and airport measured in tonnes and dollar value going back to the 1988.

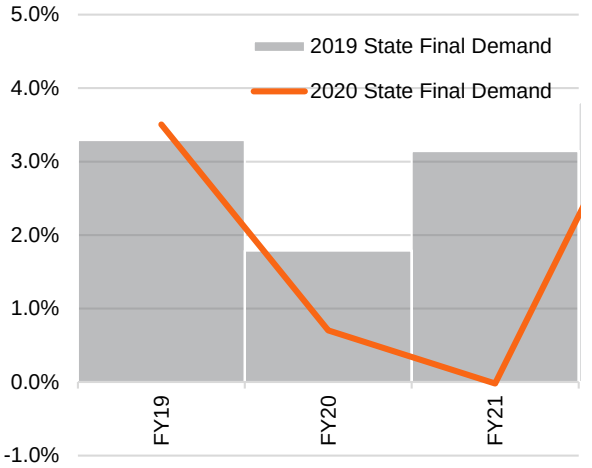
BIS Oxford Economics uses this information to recut the Port's trade volumes into the BoPBEC, first in tonnes and then into TEUs, and uses this information to establish eight time series of imported TEUs (two of which are less than 1% of imports**).**

Macroeconomic Drivers

Population and retail turnover forecasts have been revised downwards over the near-term.







Victorian Population

Victoria's rate of population growth is set to ease back over the medium term, falling below 2% per annum (interstate migration is expected to moderate, with workers attracted to improving conditions elsewhere).

Nonetheless, it will remain at an elevated level, enough to drive a continued high level of underlying demand for new dwellings.

Australian Retail Turnover

Retail sales volumes picked up in Q4 2019 after flatlining for the previous four quarters, with low interest rates and higher tax offsets helping to boost spending.

However, Q1 is set to be much more challenging, with the lingering effects from the bushfires and the coronavirus outbreak expected to slow retail sales and consumption growth. We remain cautious and have downgraded our outlook for consumption for the next three years.

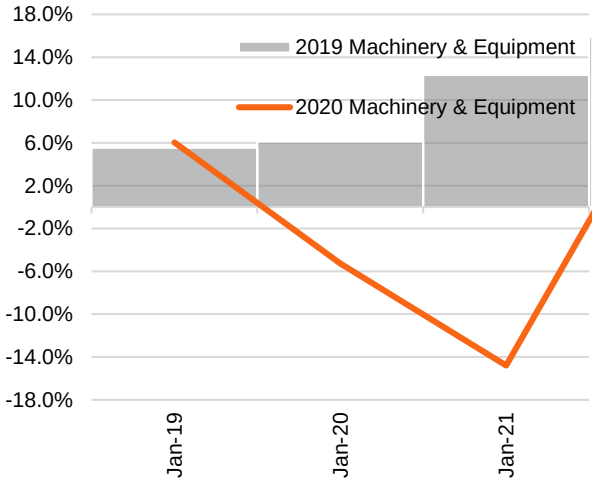
Over the long-term, we have switched our outlook to mirror State Final Demand.

Victorian State Final Demand

Although momentum has moderated, the Victorian economy has continued to outperform the rest of the economy, with GSP rising 3% in FY19. Looking forward, growth is expected to soften, hampered by the residential downturn and lower turnover in the housing market. Momentum in consumer spending is also weakening, as slower population growth and moderate rises in wages and other sources of income weigh on households.

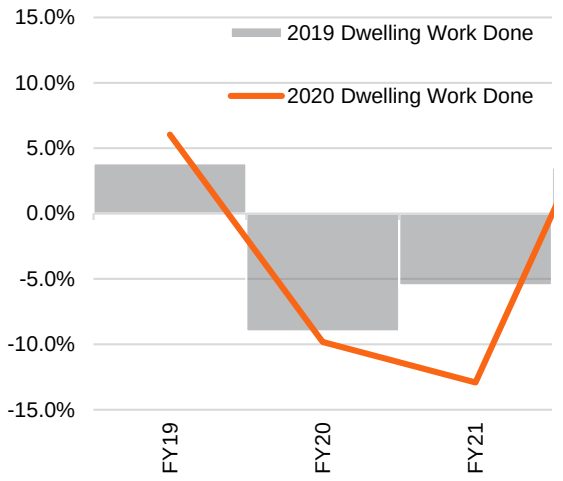
Macroeconomic Drivers

Full imports each have very different historical trajectories



Victorian Machinery and Equipment

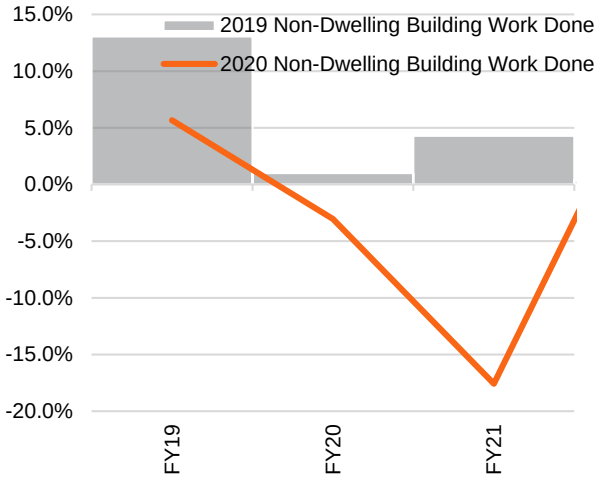
Capital expenditure on buildings and structures has been particularly weak, falling by 9.6% over the past year, while equipment, plant & machinery expenditure has fared better, but is still 1.3% lower than a year earlier. By industry, expenditure in the mining sector fell in the quarter, unwinding some of the sharp growth in Q3. Manufacturing investment also fell, while expenditure in other industries has fallen sharply over the last year (-8.6%).



Victorian Dwelling Work Done

Victoria is currently moving in to its downturn phase in the building cycle. Lead indicators suggest this will be larger than forecast last year. However, the uptick as the residential building cycle moves into its boom phase is also expected to be larger than forecast in 2019.

This is exacerbated by a slowing population growth.

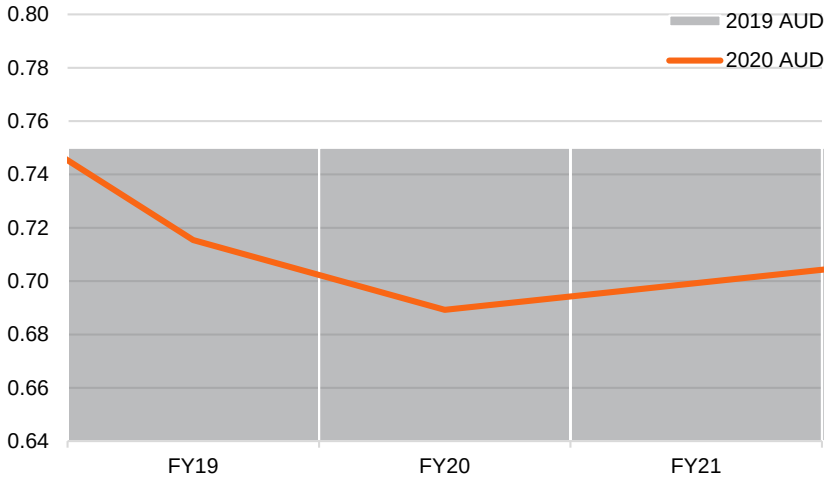


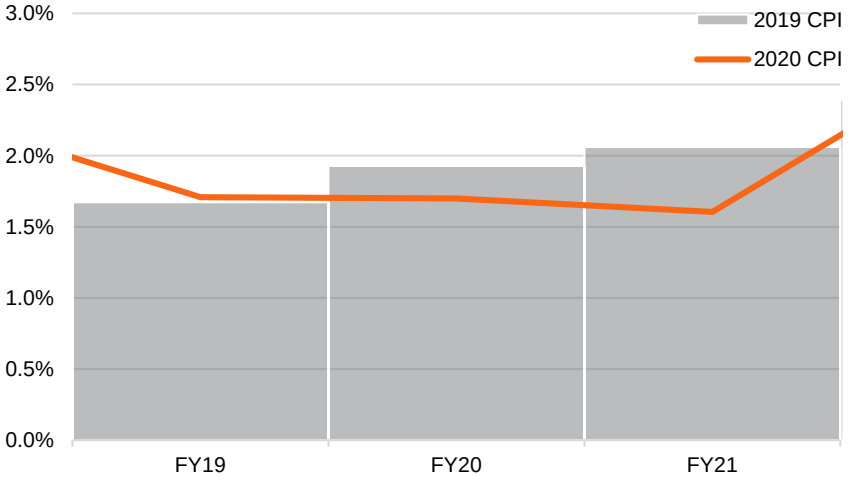
Vic Non-Dwelling Building Work Done

While non-residential building commencements have jumped up and down over the past decade, the underlying upwards trend has continued. Backed by a strong economy, rapid population growth and rising public sector investment, total non-residential starts have surged in Victoria over recent years, hitting a record $15.12 billion in 2017/18 (+38%). The improvement has been broad, but especially strong for offices, education and accommodation.

Macroeconomic Variables

Prices have moved rapidly in early 2020 with the onset of COVID-19





AUD/USD (year average)

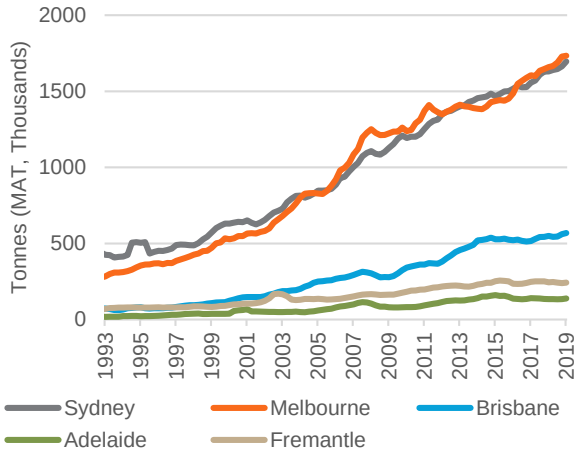
Concerns over the outlook for China and safe haven flows have seen the AUD trade at decade-low levels against the USD, reaching $0.65. Movements against the trade-weighted basket have been more subdued, as many of Australia's major trading partners are also facing the same safe haven flows away from their currencies. The AUD will remain under pressure until the COVID-19 episode resolves.

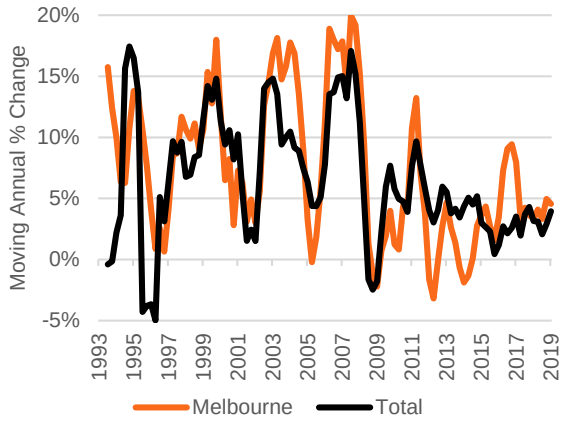
CPI (year average change)

The outlook for CPI inflation has fallen sharply in the near term due to the recent plunge in global oil prices. Adding to the drag from COVID-19, the failure of the OPEC-Russia production limits agreement has resulted in the Brent crude spot rate falling well below $40 a barrel. While prices will recover eventually, the near-term outlook has been revised lower. Supply chain disruptions have the potential to increase prices for some goods, but overall, weaker demand is expected to weigh on inflation. The revision to our labour market profile has also led us to push out the recovery in wage growth, which will put further downward pressure on core inflation. We expect CPI inflation to be very weak through the COVID-19 medium term.

Consumer Goods (Food & Beverages) – History

Food and Beverage imports are not expected to be impacted by COVID-19 in the aggregate





Calendar Year	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Total	3.1%	2.1%	2.9%	4.0% y/y
	1.5%	2.7%	6.7%	4.7% q/q
Sydney	4.4%	2.3%	2.2%	4.0%
	2.3%	1.6%	4.5%	6.9%
Melbourne	4.1%	3.3%	5.0%	4.5%
	1.8%	6.1%	9.2%	1.4%
Brisbane	2.6%	0.6%	3.3%	3.5%
	-4.4%	1.1%	12.8%	4.8%
Adelaide	-3.8%	-3.7%	-0.9%	3.3%
	-0.1%	-5.1%	4.6%	11.6%
Fremantle	-1.9%	-3.4%	-4.4%	-1.0%
	2.7%	-7.6%	-4.3%	4.1%

Overview

Roughly 78% of food and beverages arrives via the Port of Melbourne and Port Botany. Reflecting the industry's distribution network concentration within these states, rather than local demand.

These two states make up roughly 58% of the Australian population, suggesting that a significant volume of imported food and beverages per annum are moved via road and rail out of NSW and VIC.

Drivers

Imports are exchange rate sensitive, with generally stronger growth with an appreciating AUD/USD. Imported food and beverages (in tonnes) per $ of domestic expenditure has climbed by 65% since 2004, when the dollar last averaged USD 0.70.

Consumer preferences are one of the main drivers of food and beverage imports. Growing migrant populations may increase the proportion of certain food imports (e.g. pork) should the Australian market not be able to fully service this demand.

Domestic manufacturing of packaged foodstuffs, in particular, home brand products, has slowed as this is moved offshore in an attempt to reduced costs. This has driven an increase in imports of these goods.

Commentary

In mass terms, food and beverage imports per capita increase by 5kg per annum (stronger while the dollar is appreciating, and less while the dollar is falling).

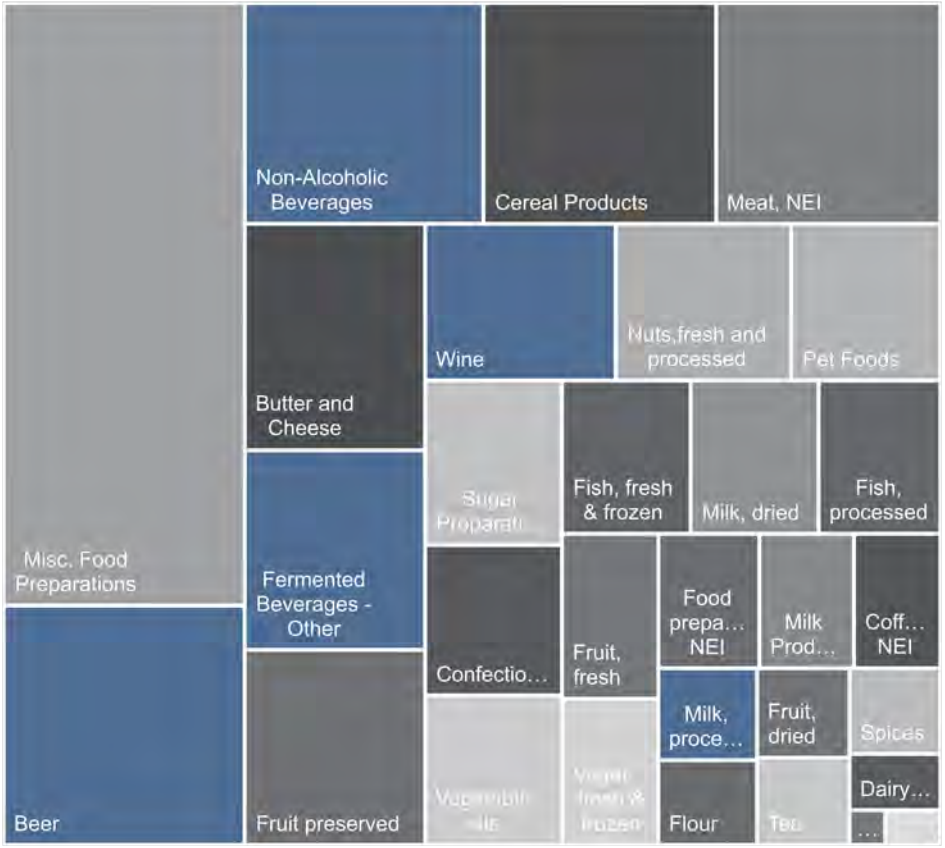
Current imports are 172kg per capita (roughly three quarters of this food).

Additionally, there is an increasing movement of consumer tastes towards more food products (wine, beer, water, packaged foodstuffs) imported from overseas resulting in an uptick in food and beverage imports over the past 30 years.

Consumer Goods (Food & Beverages) – Composition

Making up 12% all TEU imports, the primary drivers are population growth (Australia and Victoria) and increases in tonnes imported per capita.

CY19 Imports (PoM classifications) TEUs



Drivers of Growth

Around a quarter of the imports into the Port of Melbourne are beverages, mirroring the import composition nationally.

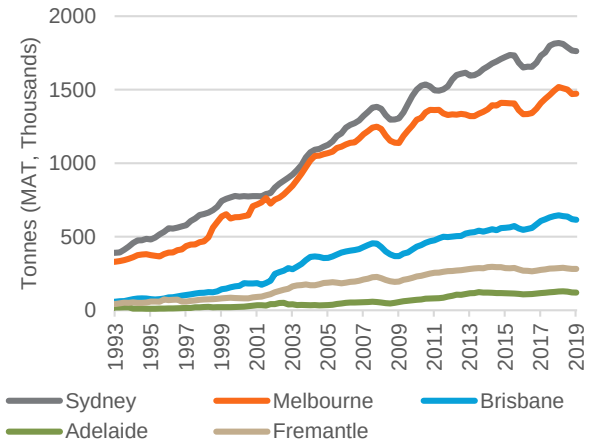
Earlier forecasts by BISOE focused on volume is being driven by retail turnover. However, volume growth has been maintained over the past two years despite weaker retail activity.

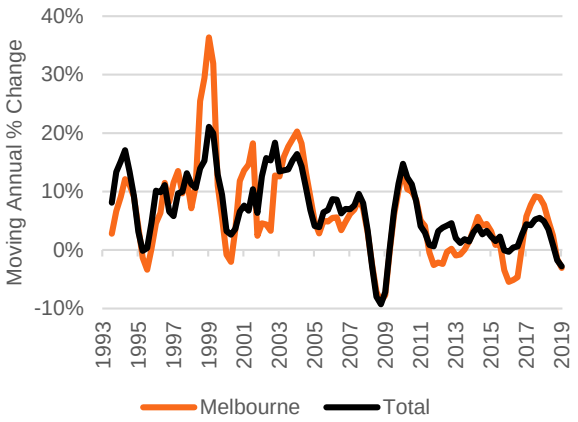
As such, the forecasts now are run on an increase in the mass (kg) per capita, which can vary in line with movements in the exchange rate. Estimates of the exchange rates sensitivity are about 1kg per capita every 2 cents in the AUD/USD.

Continued (linear) trade growth over the forward outlook as per capita food consumption is circa 570kg per annum, with less than a quarter of that currently being met by imports.

Consumer Goods (Non-Food) – History

Import trends tied to movements in household wealth and stagnating wage growth





Calendar Year	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Total	3.5%	0.9%	-1.7%	-2.8% y/y
	-1.2%	-3.4%	-6.1%	-0.4% q/q
Sydney	3.3%	-0.6%	-2.6%	-3.1%
	-1.6%	-5.0%	-4.6%	-1.0%
Melbourne	5.0%	2.5%	-1.5%	-3.1%
	-2.4%	-2.6%	-7.6%	0.4%
Brisbane	3.5%	0.8%	-3.2%	-4.6%
	-3.4%	-2.7%	-10.0%	-2.0%
Adelaide	7.9%	3.3%	-3.1%	-6.0%
	3.3%	-4.9%	-17.6%	-3.3%
Fremantle	4.0%	0.6%	-1.1%	-2.1%
	2.8%	-5.8%	-4.9%	-0.5%

Overview

While stronger growth was experienced for all ports earlier in FY19, this has trended distinctly down over the last 4 quarters in year on year terms. Overall, CY19 saw stagnation or modest declines in import volumes across all ports bar Melbourne.

Q3 CY19 saw the largest fall relative to the same quarter in CY18 across the four quarters of the calendar year. This leads the downturn in Food and Beverage imports by a quarter.

Drivers

Import volumes move sharply in line with major movements in the AUD/USD. Weak growth since 2012 reflect both the lower dollar as well as anemic consumer spending.

Consumables tend to grow faster than Retail turnover and household incomes due to falling import costs.

The building cycle is one of the main drivers of furniture demand. The downward trend seen this year in the building cycle has seen to weak growth in furniture demand.

Commentary

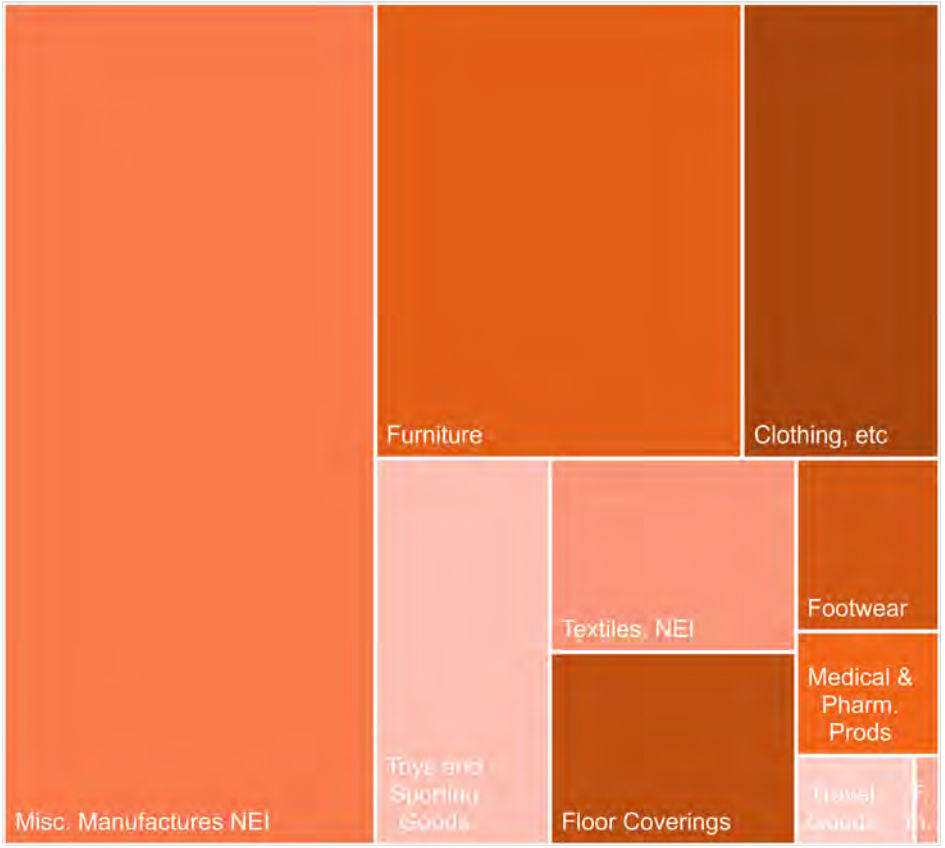
Household wealth has been propped up in recent years by high real estate prices. However, the recent downwards correction in property prices have eroded wealth and consumer confidence. Combined with persistently low real wage growth, this has begun to dampen retail expenditure and domestic demand for consumer goods.

Consumer sentiment was below average for most of CY19, and has started out noticeably poorer in 2020 due to first bush fires and most recently COVID-19, but Melbourne housing prices bottomed out mid-2019, and have only recently exceeded 2018 highs.

Consumer Goods (Non-food) – Composition

Making up 27% all TEU imports, the primary drivers are Australian retail turnover, Queensland economic outlook, and an increasing import penetration.

CY19 Imports (PoM classifications) TEUs



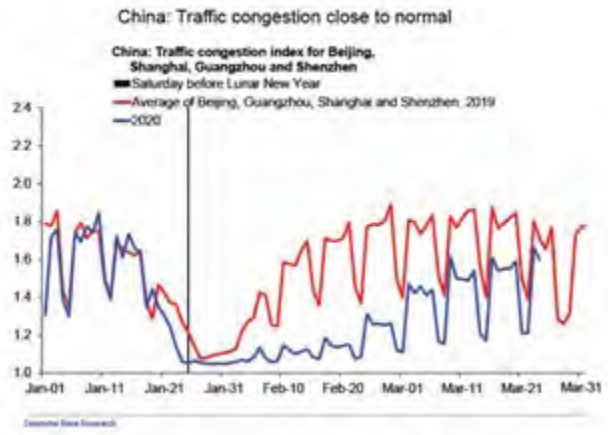
Furniture makes up a quarter of all consumable imports in volume terms. Recently, furniture volumes spiked due to the building construction boom taking place in Brisbane (as well as in Melbourne and Sydney), covering both dwelling and non-dwellings.

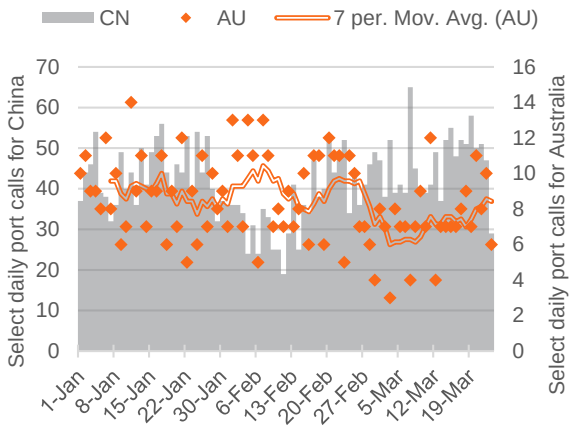
To date, consumables have grown strongly because of an increase in the replacement rate for several classes of consumables. There is a risk that this slows or even reverses.

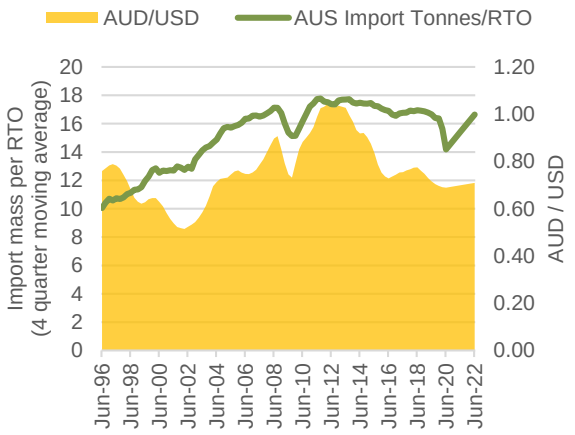
There is a further risk that consumptions shifts towards digital products, which are not traded at the ports at all. The nature of this is unclear, but the collapse in the volume of CDs, DVDs and more recently, newspapers, may be a harbinger of future creative destruction.

Consumer Goods (Non-Food) – Outlook

First supply constraints, and now demand weakness, will decimate imports through 2020







Supply constraints

When COVID-19 was only impacting China, concerns on imported cargo into Australia focused on the 50% of consumer goods which were made in that country and the impact that it would have on manufacturing.

Data suggests that the reduction in manufacturing capabilities was short-lived, and is back to near full strength two months following the outbreak.

Container Port Calls

The weakness in manufacturing and the COVID-19 outbreak through to early February resulting in fewer vessel leaving China after Chinese New Year, returning to typical levels by mid-February.

Almost a month later, vessel visits into Australia were down by more than a third, with TEUs exchanged down due to blank sailings at key origin ports in China for those vessels which made the journey.

Now that China is nearly back into capacity, concerns have shifted to weakness in consumption.

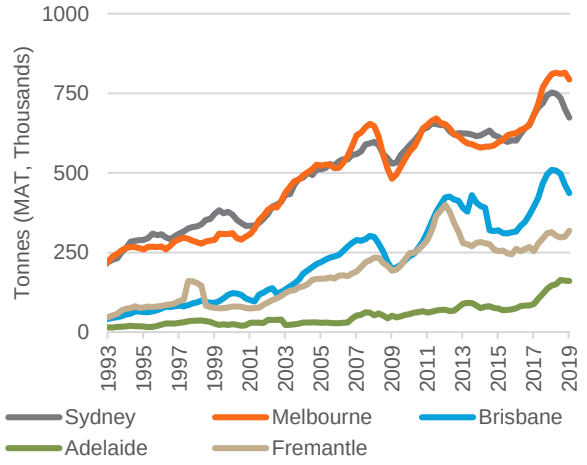
Demand weak, but muddied

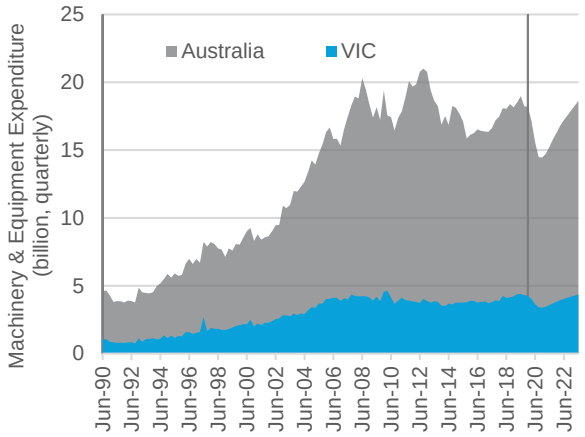
US data is suggestive that retail sales are up in March due to increasing in stockpiling. To date, the soft shutdown has impacted services to a much greater degree than goods (in the aggregate), and goods themselves are finding winners and losers.

In volume terms, we are adopting a crash in imports in line with what happened during the GFC, as the macroeconomic data and retail trade forecasts are poor indicators of what is to come, with risks (as with all of the outlook for this trading update) still to the downside.

Capital Goods and Parts – History and Outlook

Substantial regional volatility from mining investment, populous industrial bases drive inflow trends





Calendar Year	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Total	-6.5%	-7.8%	4.1%	1.0% y/y
	2.6%	9.9%	-3.5%	-4.4% q/q
Sydney	6.1%	2.4%	-5.8%	-10.5%
	-2.1%	-7.2%	-17.8%	-13.5%
Melbourne	13.7%	5.6%	2.9%	-2.1%
	2.3%	-1.9%	2.1%	-10.4%
Brisbane	20.3%	6.6%	-6.7%	-14.3%
	-1.8%	-7.5%	-25.8%	-19.8%
Adelaide	43.0%	36.6%	18.8%	9.6%
	9.5%	38.1%	-6.7%	-2.0%
Fremantle	8.8%	1.2%	-3.4%	1.4%
	-13.5%	-7.3%	2.8%	24.9%

Overview

Over 2018 and 2019, installed PV capacity in Australia doubled, resulting in an estimated 93,000 TEU of imports, 26% of which arrived through the Port of Melbourne.

Long-term forecasts of the growth in installed PV by AEMO, however, are for a reversion back to the historical growth profile, which would decrease imports by three-quarters from current levels.

Evidence of the mining boom are reflected in peak in volumes in 2013, with a spike in volumes arriving into not only Fremantle and Brisbane, but also regional bulk ports.

Drivers

The quarterly import volumes are expected to take a heavy hit as uncertainty dominate decisions over the near-term.

Similar to the mixed bag with consumer goods, there will be winners and losers from the sudden change in composition of demand. A re-tooling of several industries to simplify supply chains may result in some sectors experiencing a surge of investment, but this is unlikely to exceed the foregone investment decisions as decision makers choose to wait for the impact of COVID-19 to wash through the economy.

Commentary

AEMO's Solar PV installation projections 2019 are already hopelessly out of date. Similarly, the IEA has persistently failed to anticipate the rate at which renewables have grown over the past decade.

It is possible that Solar PV will be able to maintain the current levels of investment into the 2030s, but a lack of policy which may facilitate this makes this outside of the base case forecast.

Capital Goods and Parts – Composition

Making up 15% all TEU imports, the primary driver is investment in machinery and equipment.

CY19 Imports (PoM classifications) TEUs

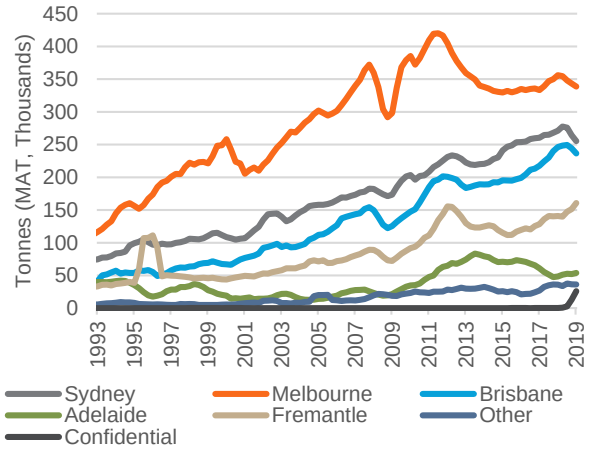
A by-product of the mining investment boom was a fall in non-mining business investment's share of the economy. While the mining boom generated spill over demand for some non-mining sectors, conditions facing many firms became more difficult. The exchange rate appreciated considerably, impacting competitiveness, and other inputs, including labour, became more expensive. As a result, non-mining investment fell from 12% of GDP in the mid-2000s to just 8% in 2014.

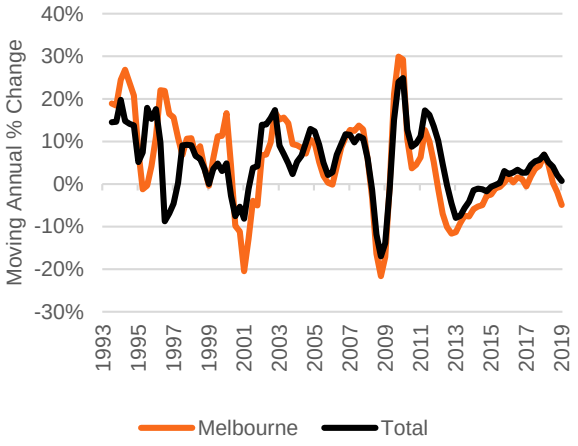
However, part of the fall in investment rates can be explained by the type of investment firms are undertaking. Production processes have generally become less reliant on machinery & equipment investment. In contrast, investment in intellectual property has become increasingly important over the last decade. This includes investment in information technology systems and automation, which have been a focus of many firms' cost containment endeavours.

Looking ahead, we expect these trends to continue. Machinery and equipment's share of capex will continue to decline, replaced by intellectual property assets and buildings & structures.

Parts for Motor Vehicles – History

Import volumes to track population growth over the long-run





Calendar Year	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Total	5.1%	4.1%	2.1%	0.7% y/y
	2.6%	2.6%	-3.0%	0.8% q/q
Sydney	4.9%	4.0%	-1.4%	-5.9%
	9.9%	-2.6%	-16.7%	-12.8%
Melbourne	4.5%	0.3%	-1.9%	-4.9%
	-2.0%	-7.0%	-5.2%	-5.2%
Brisbane	10.7%	8.4%	1.8%	-4.0%
	3.6%	1.7%	-8.2%	-12.9%
Adelaide	-7.4%	2.1%	9.8%	11.0%
	24.9%	10.9%	-2.9%	13.7%
Fremantle	2.9%	4.6%	7.8%	14.1%
	-2.3%	21.4%	11.1%	28.1%

Overview

The share of imports into secondary markets (Adelaide and Fremantle) increased over CY19 relative to CY18. This is likely due to an enforced substitution from domestic production to imports of these goods following the ceasing of domestic manufacturing.

Correction from the closure of domestic manufacturing making each port's share of total imports more reflective of the underlying demand.

Drivers

Since 2011, imports into Melbourne has grown consistently slower than that into the other states.

Victoria is unique amongst each of the states where vehicles per capita haven't increased in almost a decade, due to a mix of an increase in public transport, but primarily due to a large increase in density with new residences in the CBD.

Commentary

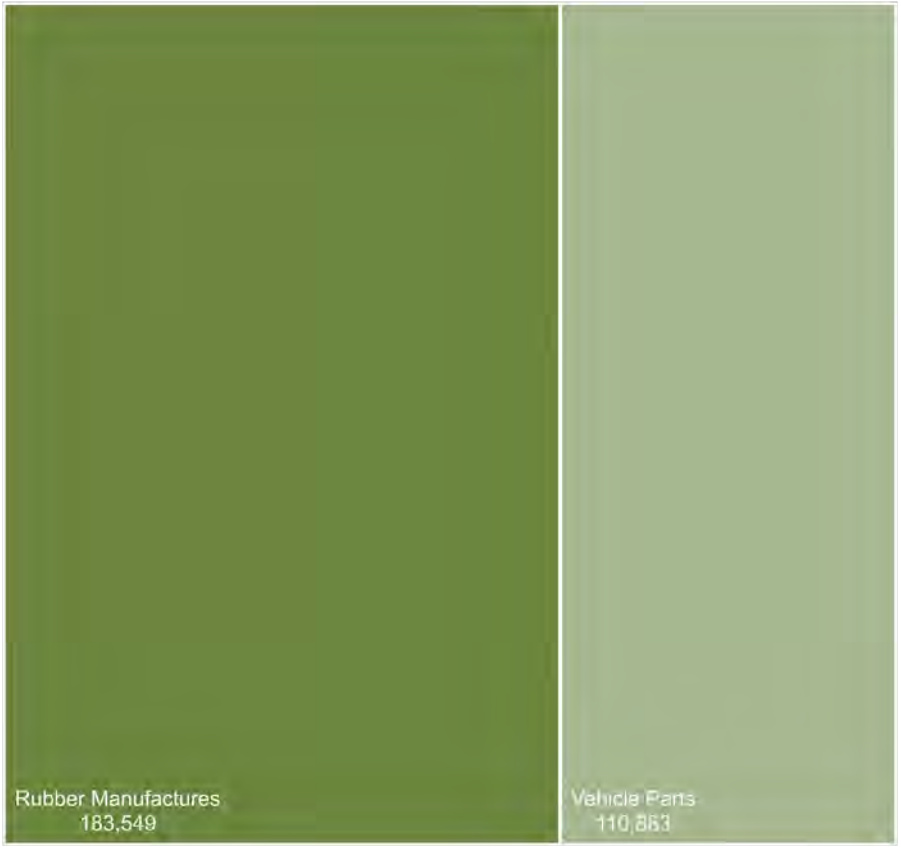
Observed changes (sudden declines) in international imports into Sydney and Melbourne in Q3 and Q4 is primarily a result of an expansion in the Confidential Commodities list.

With half of all motor vehicle parts imports being tyres, and electric vehicles still making up less than 0.3% of new car sales, we are not yet seeing an impact of new technologies on the composition of vehicle parts.

Parts for Motor Vehicles – Composition

Making up 5% all TEU imports, the primary driver is the stock of vehicles.

CY19 Imports (PoM classifications) TEUs



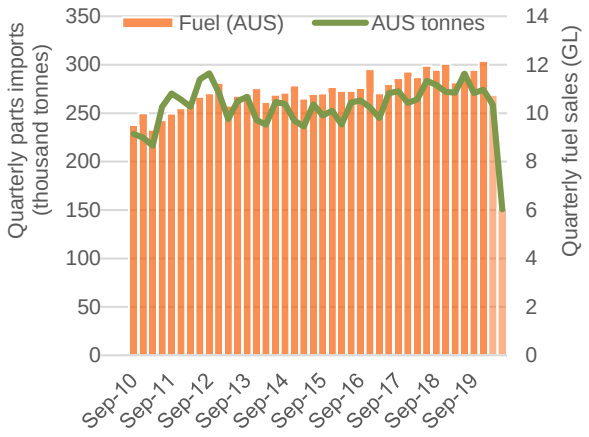
Even though the distance travelled per capita peaked in 2004, the imports of motor vehicle parts into Australia has continued to grow at a steady pace from 30kg / capita then to now 43kg / capita.

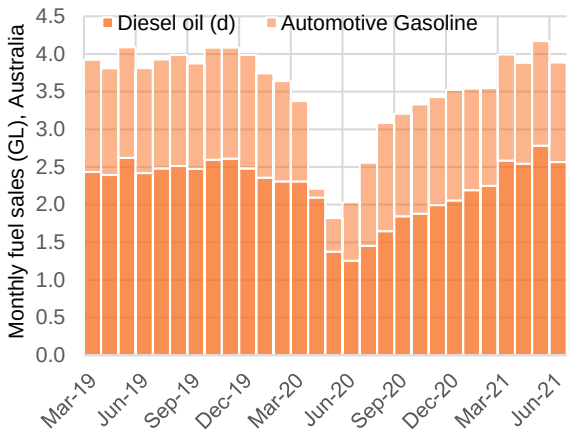
Furthermore, imports surged by 10kg per capita when the AUD/USD spiked between the GFC and the mining boom, only to fall away by the same amount as the dollar fell to US 0.75.

These changes are not (fully) attributed to changes in demand and relative prices, but rather domestic manufactures whose production profiles are impacted by exchange rate competitiveness.

Parts for Motor Vehicles – Outlook

Vehicle usage will be well down over 2020, which will reduce the requirements for parts





Parts are consumables

With most imports consisting of tyres and other consumables (such as lead acid batteries), decreased vehicle usage and wear and tear will reduce demand.

Distance down

We are using the reduction in fuel demand as a proxy for distance travelled by motor vehicles.

This modelling is outlined in detail in Section 05.

Recovery anticipated

We are not anticipating that Australia rebounds as quickly as China did to the COVID-19 slowdown. In part, this is because the knowledge based economy will be able to continue to work from home in high numbers, and social distancing in some form will likely be encouraged until community transmission falls to an acceptable level.

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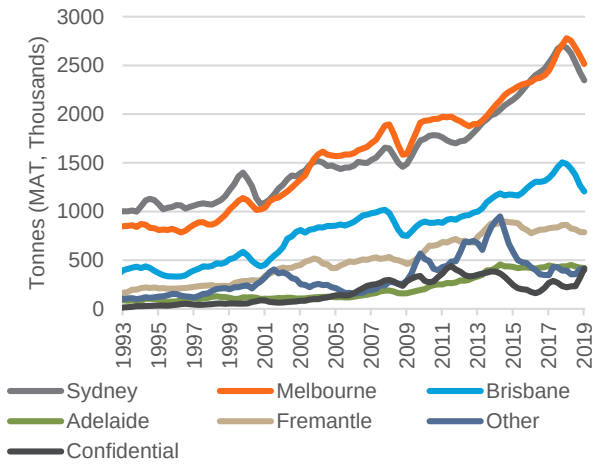
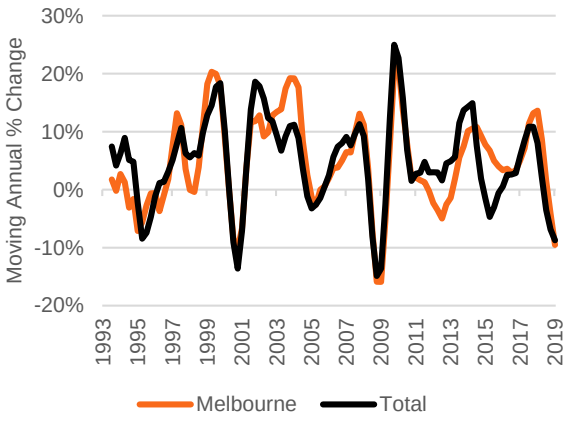
Processed Industrial Goods – History

Import volumes tied to construction booms and busts





Calendar Year	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Total	2.1%	-3.5%	-6.9%	-8.7% y/y
	-7.8%	-11.9%	-8.4%	-6.8% q/q
Sydney	1.3%	-5.3%	-10.2%	-12.5%
	-8.5%	-13.9%	-14.9%	-12.3%
Melbourne	8.7%	1.5%	-4.1%	-9.5%
	-3.9%	-10.4%	-11.4%	-12.2%
Brisbane	3.5%	-5.8%	-15.7%	-18.9%
	-12.9%	-18.2%	-26.3%	-17.8%
Adelaide	3.4%	1.8%	-3.0%	-3.9%
	14.3%	-15.8%	-11.1%	-2.9%
Fremantle	-1.1%	-2.6%	-8.3%	-8.6%
	-13.8%	-5.1%	-12.9%	-1.0%
Other	-17.6%	-16.4%	4.3%	1.4%
	-22.5%	3.1%	74.5%	-10.8%

Overview

CY19 saw declines in processed industrial goods imports at all container ports as the building construction market turned from their recent highs.

The size of the declines by state are directly attributable to the relative downturn in residential work done and commencements across all major states.

Drivers

Non-bulk Processed Industrial goods move with the building cycle. Over CY19, the dwelling and non-residential building cycle moved into a downturn. This can be seen in the reduced demand for these imports over the last year.

The forecast trough in building activity in Victoria for the current cycle is in the March quarter of 2021, as high density building activity bottoms out at levels last experienced in 2012.

Commentary

Processed industrial goods are a mix of both containerised and non-containerised goods, with the later predominately dry bulk goods, such as cement clinker and gypsum.

Containerised volumes include products such as sinks, baths, lights, windows, wood paneling, lamps, tiles, bricks, tiles, pavers, aluminum articles, and articles of iron and steel.

Processed Industrial Goods – Composition

Making up 18% all TEU imports, the primary driver is dwelling and non-dwelling building activity in Victoria

CY19 Imports (PoM classifications) TEUs

The construction of modern buildings is heavily reliant upon overseas produced building materials. Excluding plasterboard and concrete, which is manufactured domestically using bulk materials (imported or otherwise), and sawn timber which is harvested and milled in Australia, most building materials arrive from overseas via container.

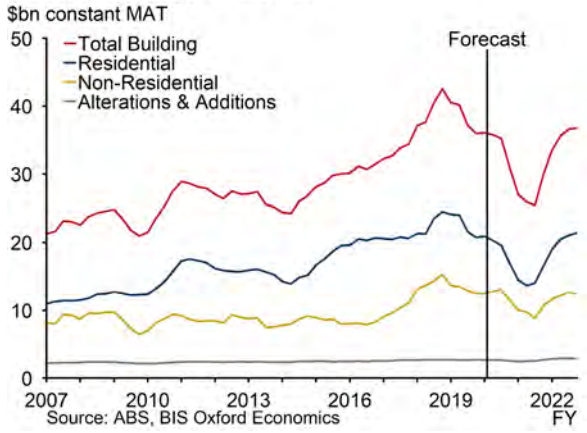
In 2018, at the peak of the building boom, the Port of Melbourne imported 335 kg of building material per person in Queensland. This was more than double the rate of the 1990s.

The increase is partially attributable to the gradual shutdown of domestic manufacturing over the past four decades, a phenomena which is unlikely to unwind. Building activity as a share of the economy is very sensitive to population growth rates (with a bit of a lag), which in turn are impacted by migration levels.

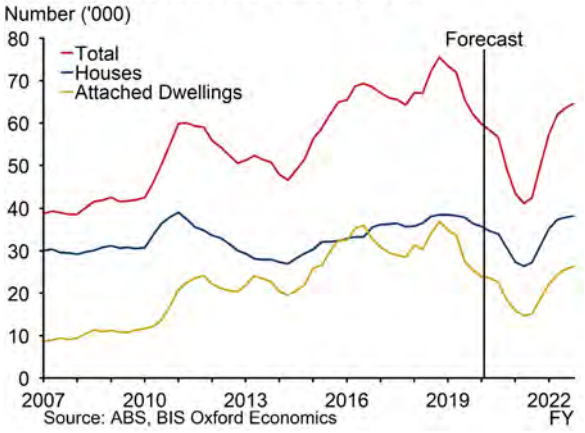
Processed Industrial Goods – Outlook

Just as green shoots were beginning to show, the COVID-19 shock will drive a double dip downturn in total building commencements.

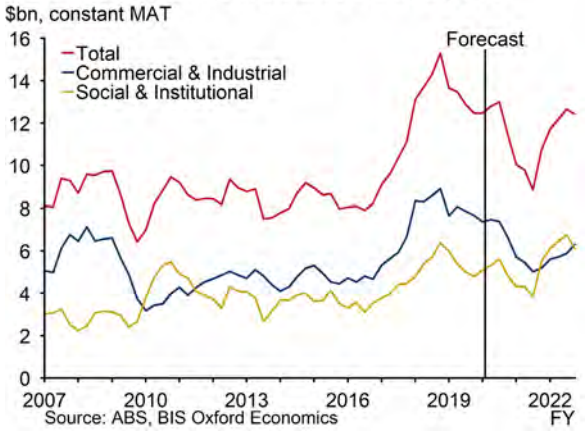
Total building, Victoria



Dwelling commencements, VIC



Non-residential commencements, VIC



Residential – VIC

Regardless of starting market position, activity has been revised downwards significantly across the board in FY21.

Revisions and a stronger than expected approval lead through to January 2020 are cushioning the COVID-19 shock for **Victoria** relative to our December 2019 forecast update. It is expected that total commencements will bottom out at 41,100 in CY20, rebounding sharply into CY21 (+51%). Given Melbourne's relative high share of service exports, the state economy is perceived to be more vulnerable than others.

Non-Residential (Australia)

The COVID-19 pandemic has paralysed the global economy and is expected to push the Australian economy into a recession – its first in almost three decades. Business investment will take a big hit, with our short-term outlook for non-residential building revised sharply downwards from that published in Dec-2019. In cumulative terms, the three years to FY22 have been cut by $22 billion.

With projects either unable to proceed or too risky to progress in a lockdown environment, commencements in Q2 2020 are expected to tumble 48% in y/y terms, remaining at a very weak level into Q3.

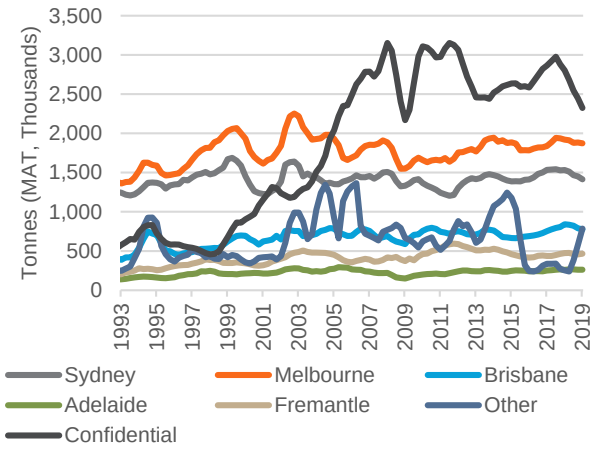
Non-Residential (VIC)

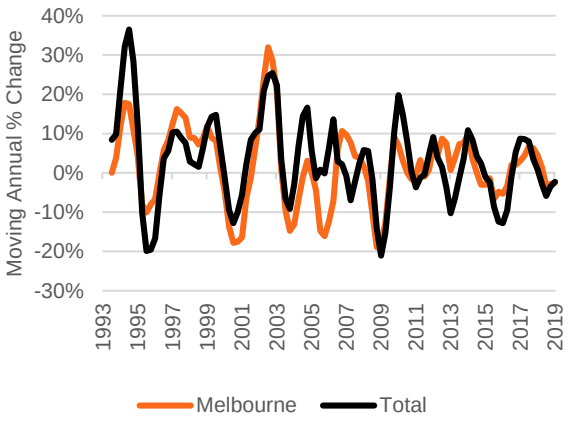
All states and territories are expected to be impacted significantly and have been downgraded accordingly. The impact of the COVID-19 outbreak will differ by region due to the varied industry mix and starting positions going into this shock.

While **Victoria** has a solid project pipeline, its relative high exposure to service sector exports makes it vulnerable to the COVID-19 shock. Over recent years, accommodation and university related building have played a big role is supporting an elevated profile for total non-residential building, both segments anticipated to struggle over the short-term.

Other Intermediate Goods – History

Imports are down into most of the major markets in CY19





Calendar Year	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Total	-2.8%	-5.9%	-3.5%	-2.3% y/y
	-7.8%	-4.9%	2.6%	1.5% q/q
Sydney	-1.7%	-4.9%	-5.1%	-7.7%
	-5.5%	-11.6%	-4.5%	-9.0%
Melbourne	1.5%	-3.3%	-2.8%	-2.5%
	-1.7%	-6.9%	0.7%	-2.0%
Brisbane	7.7%	3.5%	-2.0%	-7.9%
	-3.2%	-6.4%	-14.7%	-6.8%
Adelaide	4.4%	1.4%	-1.2%	0.8%
	7.7%	0.5%	-6.5%	0.4%
Fremantle	8.6%	2.0%	-1.6%	-2.1%
	0.3%	-12.9%	-2.0%	7.2%

Overview

The state level distribution has remained relatively constant between the main ports over the past decade.

Note that the confidential commodities list has generally increased in scope over the past two decades, and now account for almost a * third * of imports (mostly steel products).

Drivers

Previously seen major changes in the import of Other Intermediate Goods have been driven by the closer of domestic manufacture.

Recently, those firms still operating in this market are either able to compete internationally or have become export focused.

Nationally, imports have recently under-performed changes in domestic demand, this is likely due to select building materials, particular steel angles, bars, and rods being included within the Other Intermediate Goods.

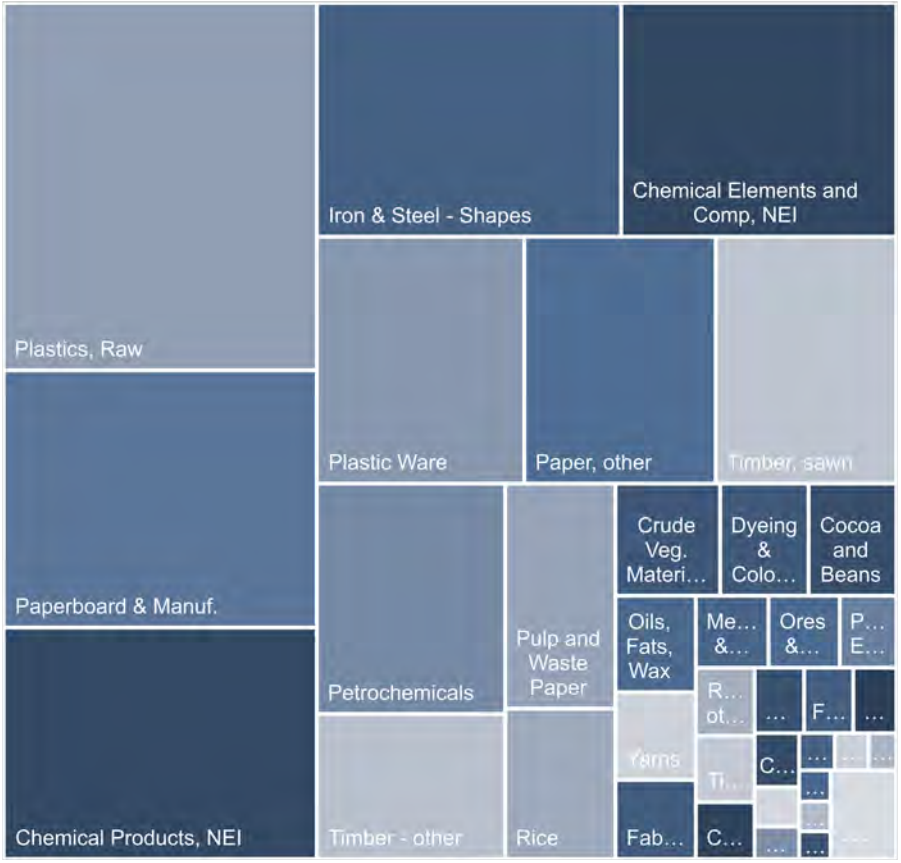
Commentary

Due to the high proportion of confidential data it is difficult to discuss trends and drivers of other intermediate goods in detail, even at a state by state level.

Other Intermediate Goods – Composition and Outlook

Making up 23% all TEU imports, the primary driver is general economic activity in Victoria.

CY19 Imports (PoM classifications) TEUs



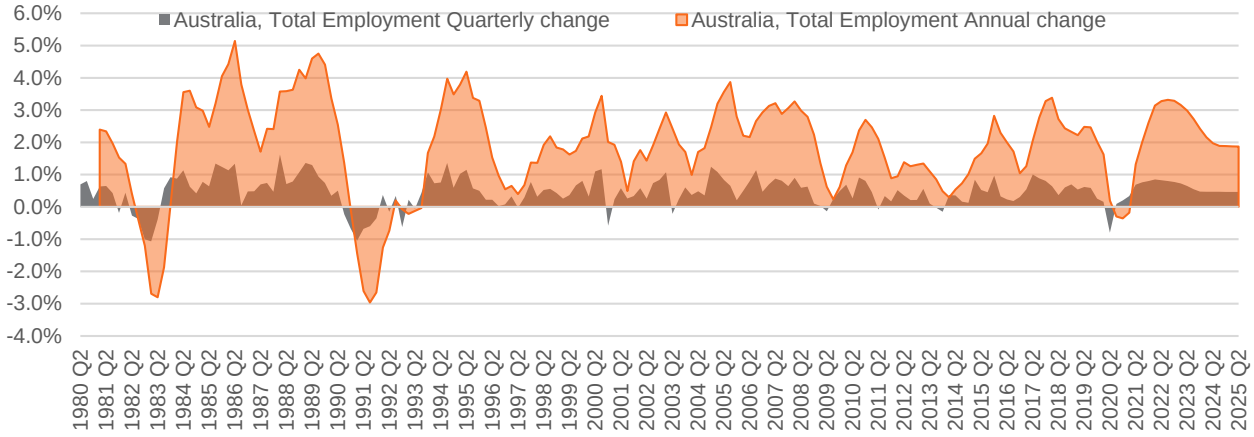
While paper and carboard are the most prominent class of imports, fabrics and iron/steel products (which may be used in building activity) also stand out.

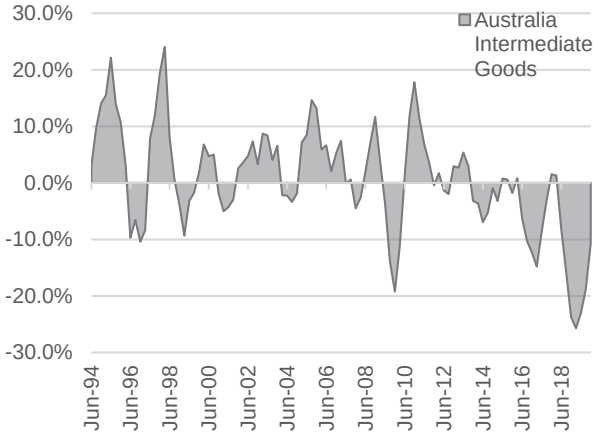
Nationally, growth has been in line with broad economic activity indicators, and are expected to remain so.

The modelling framework takes into account both employment and general economic activity.

Other Intermediate Goods – Outlook

Falls in employment have an outsized impact on imports of intermediate goods





Unemployment

The COVID-19 outbreak and associated containment measures have caused a drastic re-evaluation of the economic outlook. Disruptions to goods supply chains, restrictions on travel and the effective shutdown of a number of sectors will send the Australian economy into recession in 2020. Increasing restrictions on consumer-facing service industries, such as tourism, travel and hospitality will lead a severe curtailing of activity and a large dislocation of labour, with the unemployment rate possible to shoot up above 10%, but the recently announced JobKeeper program may keep it down.

The impact may be more pronounced

The JobKeeper program might stem massive employment falls, but **will not** stop the corresponding fall in demand for goods.

The nature of intermediate imports is that they feed into general business activity (not employment), which as been severely disrupted:

- cafes and restaurants shuttering,
- officer workers operating from home, and
- manufacturers hit by a trifecta of supply chain interruptions, falling demand, and social distancing impairing production.

Historical benchmarks

We don't have good data on the fall in imports during the last recession back in the early 1990s, but the economic projections used in this report (*developed on 17 March 2020*), are currently projecting a fall in employment equivalent to the fall experienced during the GFC from peak to trough, just faster (on the way down).

As such, we are projecting a similar fall in volumes during that period (which dropped 20% for a 2% fall in employment, but with **significant risks on the downside**.

Outlook to FY21

The near-term outlook was negative even before the impact of COVID-19 is taken into account.

Medium-term outlook

Almost all import classes are being impacted by the impacts of COVID-19.

Consumption (Food & Beverages) is escaping unscathed.

Consumption (Non-Food) will be hit hard as retail outlooks have reduced traffic foot, and then by an expected surge in unemployment through the year. Goods sales will hold up relatively well as compared to other classes (such as cafes and restaurants and motor vehicles).

Capital Goods are impacted largely by uncertainty and falling demand. This will be slow to recover until COVID-19 is under control.

Parts for Transport Equipment are to be directly impacted by working from home arrangements and social distancing, but will be quick to recover.

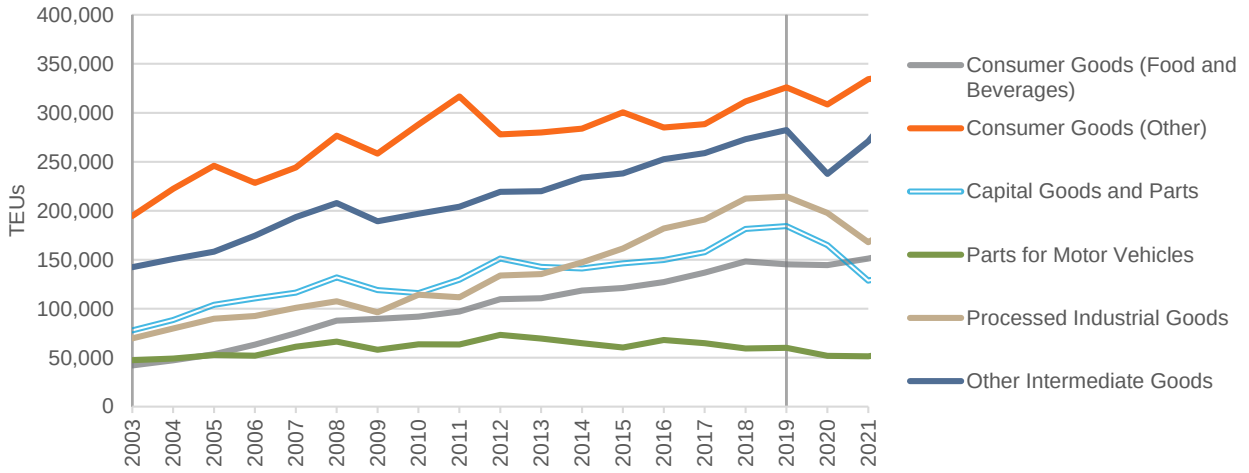
Processed Industrial Goods will fall as the slowdown in construction activity extends a further year.

Other Intermediate Goods are impacted by the slowdown in the service sector, working from home, and slow downs across manufacturing.

Forecast Imported Container Volumes by Class

Annual % Change	2016-17	2018-19	2019-20	2020-21
Consumption (Food & Beverages)	7.6%	-2.0%	**-0.6%**	4.7%
Consumption (Non-Food)	1.2%	4.6%	**-5.4%**	8.3%
Capital Goods (& Parts)	5.3%	1.6%	**-10.6%**	-22.0%
Parts for Transport Equipment	-4.7%	1.1%	**-13.6%**	-0.9%
Processed Industrial Supplies	5.0%	0.9%	**-7.8%**	-15.1%
Other Intermediate Goods	2.5%	3.4%	**-15.9%**	14.1%
Total Imports (excl. Bass Strait)	**3.4%**	**1.7%**	**-8.9%**	**-0.1%**

Forecast Imported Container Volumes by Class



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02

CONTAINERISED EXPORTS (EXCL. BASS STRAIT)

Classifications and mapping

Similar to how we mapped containerised imports to a BoPBEC, we categorised each of the Port of Melbourne exports into a sets with common drivers

Key Drivers

There are five key drivers for exports flowing through the Port of Melbourne. These are:

1. Agriculture
2. Manufacturing
3. Other
4. Paper
5. Timber

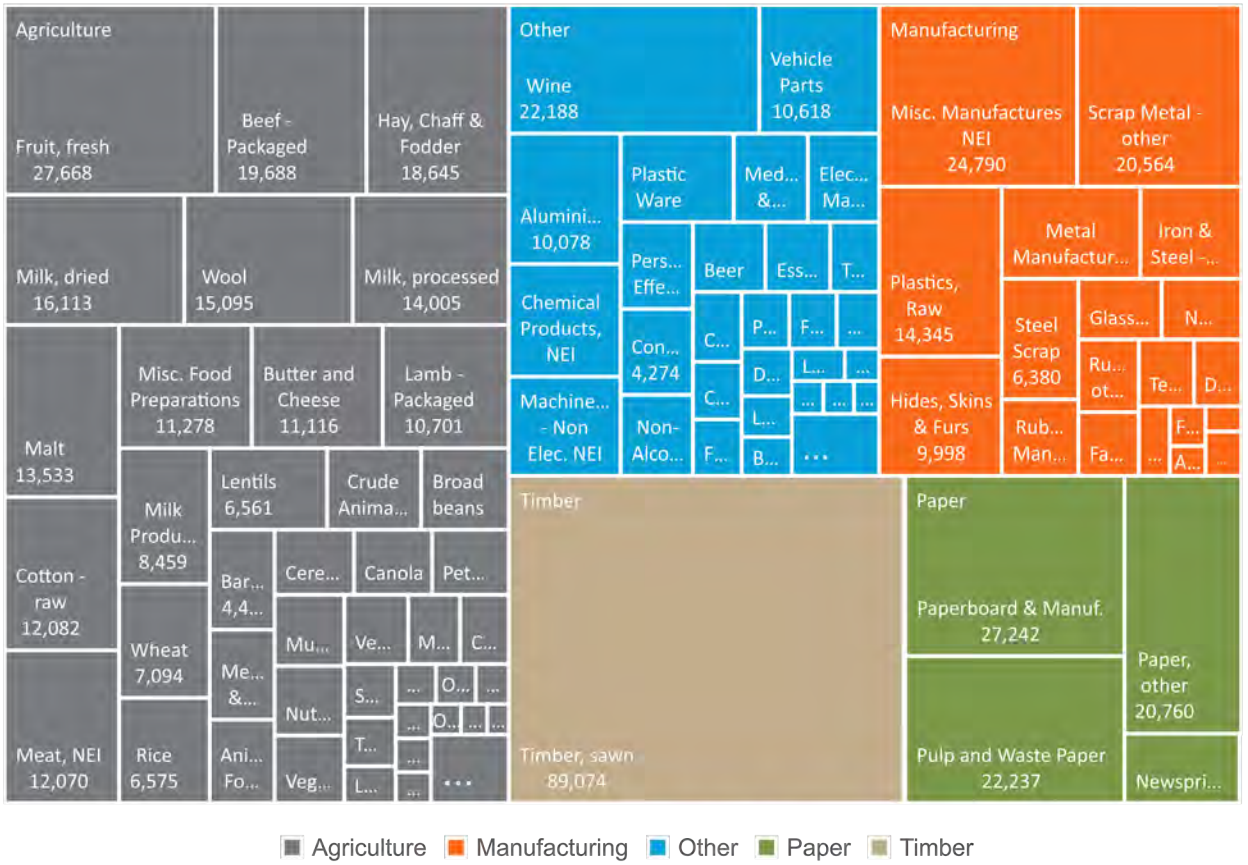
Historically, these drivers have proven to be a very good reflection of the growth in export volumes out of the Port of Melbourne.

In CY19,

1. Agriculture accounted for 41%
2. Manufacturing for 17%
3. Other for 18%
4. Paper for 11%
5. Timber for 13%

Each of these drivers including current and future trends are discussed in the following section.

CY18 Full exports by Driver (TEUs)



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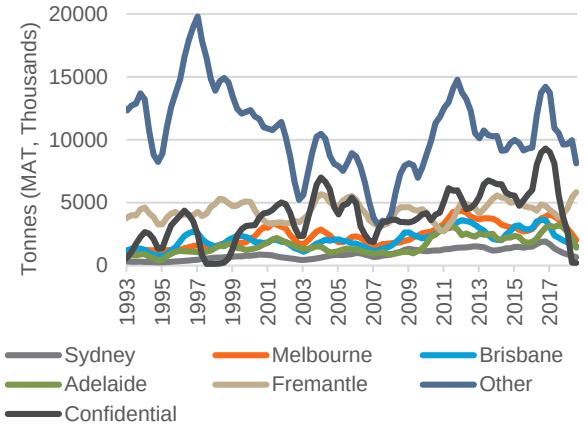
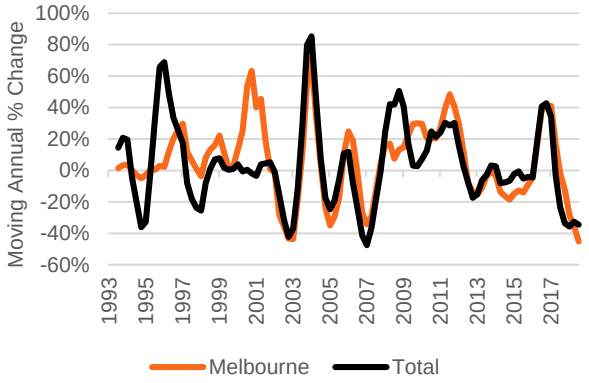
Agricultural – History

Drought conditions have resulted in national agricultural exports falling by a third on CY18 values





Calendar Year	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Total	-32.6%	-34.5%	-31.3%	-25.5%
	-30.4%	-37.8%	-22.6%	4.6%
Sydney	-43.9%	-42.7%	-39.2%	-28.3%
	-44.4%	-35.8%	-28.9%	18.7%
Melbourne	-35.6%	-45.2%	-44.6%	-31.3%
	-47.5%	-50.6%	-18.5%	28.3%
Brisbane	-25.8%	-30.3%	-25.4%	-17.2%
	-19.2%	-39.1%	-11.1%	14.4%
Adelaide	-28.6%	-55.8%	-65.4%	-56.7%
	-66.9%	-71.6%	-55.5%	42.1%
Fremantle	30.2%	52.3%	40.3%	30.3%
	98.8%	30.3%	-6.2%	14.9%
Other	-8.8%	-22.9%	-20.7%	-23.5%
	15.3%	-49.1%	-23.1%	-14.8%

Overview

Melbourne and Sydney have fallen by approximately 30% of the 2018 annual exports. Adelaide has fallen to almost 40% of the 2018 MAT. As the three states of the green Triangle, this is not unexpected given the environmental conditions of the last 24 months.

Interestingly, Fremantle has increased by 30% in MAT terms on CY18. due to the climatic conditions in Western Australia, wheat production has continued to increase over CY19.

Drivers

The persistent drought conditions have resulted in lower levels of production for both summer and winter crops.

Domestic producers are unable to supply sufficient levels of production to service international demand to the same extent as CY18. This is expected to continue to some extent as the Agricultural sector recovers from drought conditions.

Commentary

Rural exports will be particularly impacted by reducing in shipping frequency to China over H1 2020.

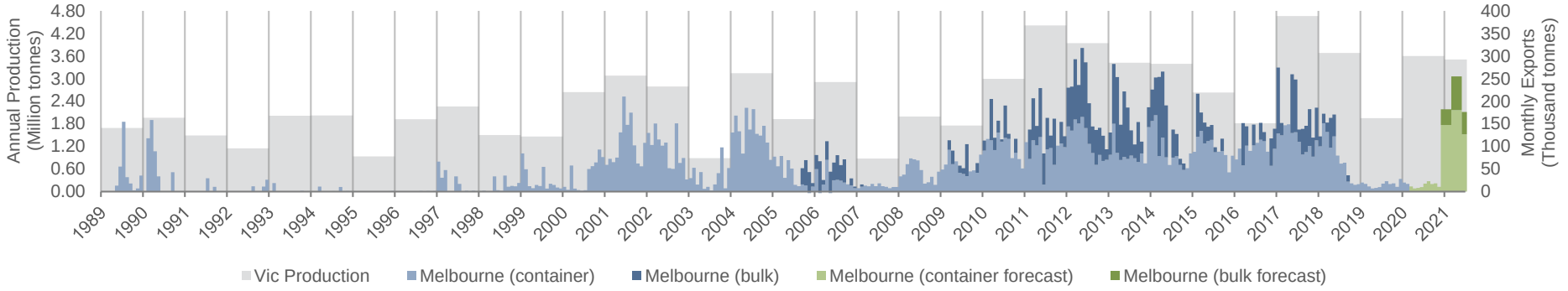
China is the largest (or second largest) customer for Dairy, Meat, Fruit & Vegetables, and Beverages exported from the Port of Melbourne.

Reduced consumer confidence will weigh on purchasing in China even once shipping schedules return.

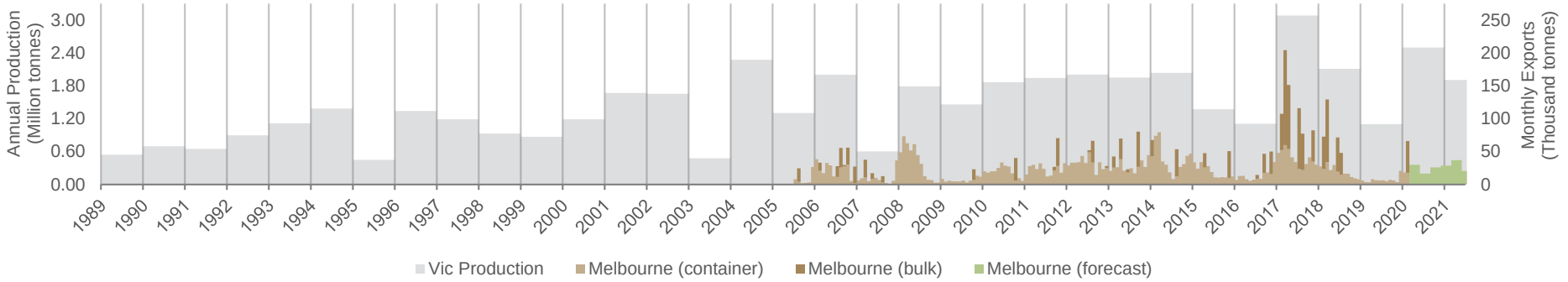
Agricultural Seeds

Agricultural seeds (wheat and barley) are modelled on the basis of the Victorian harvest and the historical tendency to export via bulk and container terminals at the Port of Melbourne. Note that bulk is more common following strong harvests, and is more seasonal.

Victoria **Wheat** Production and Port of Melbourne Exports



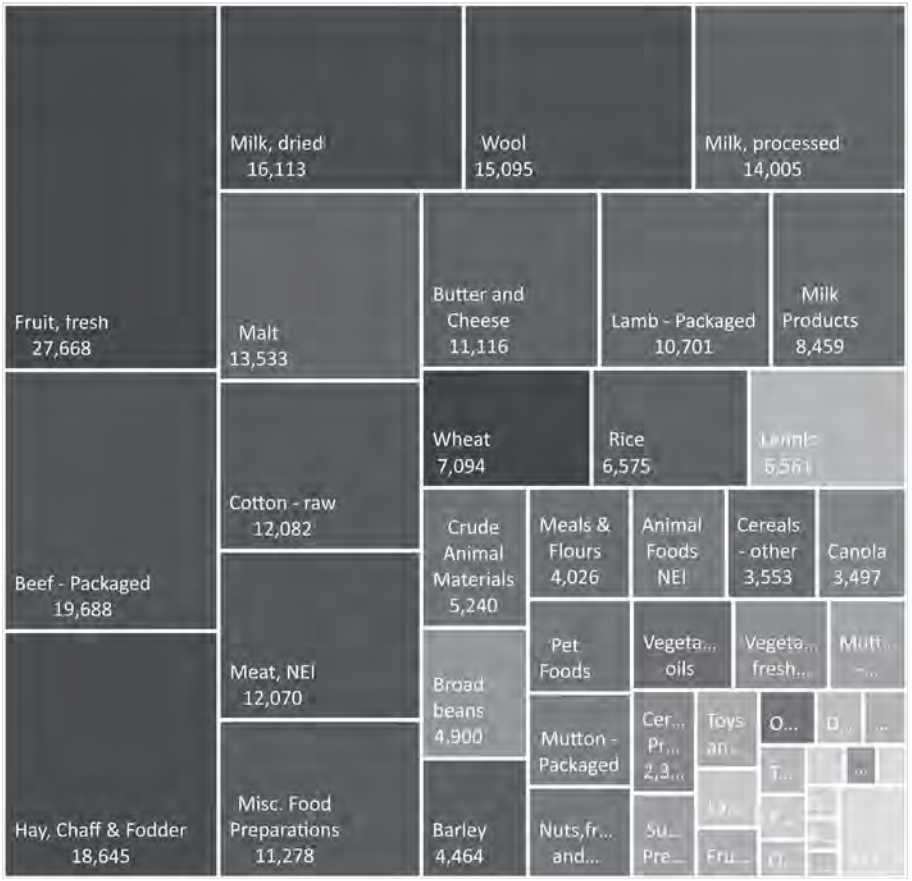
Victoria **Barley** Production and Port of Melbourne Exports



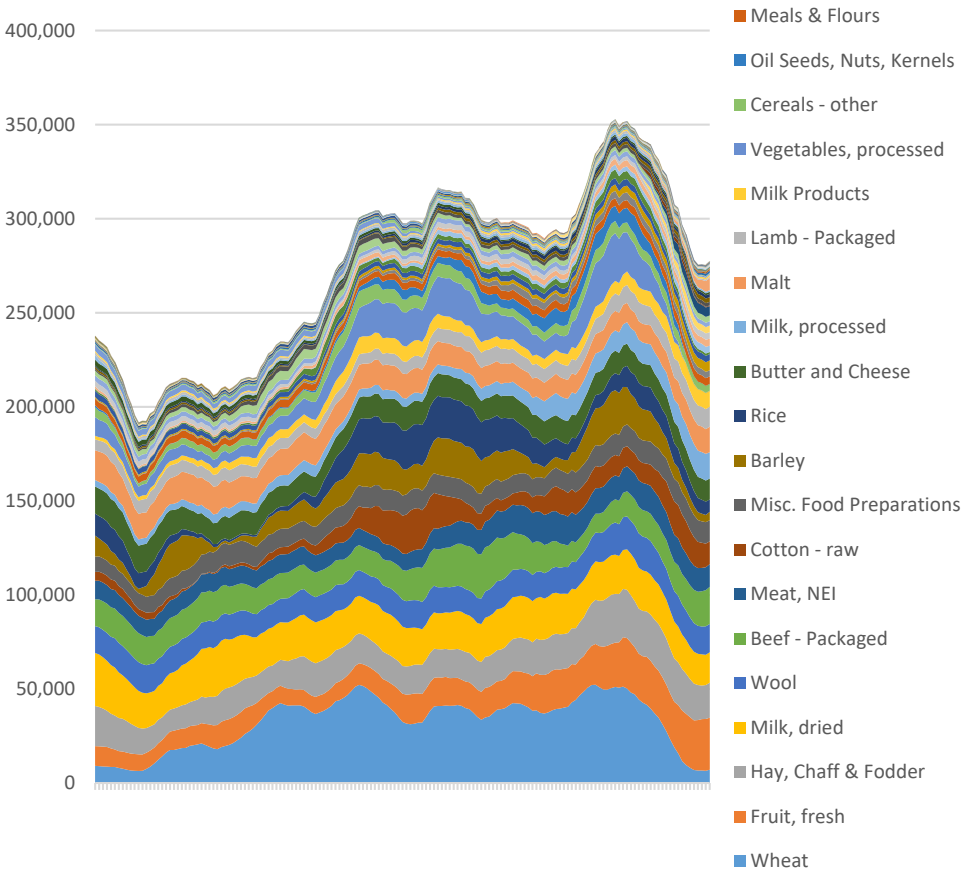
Agricultural Exports – Composition

Drought conditions have resulted in wheat exports falling to near zero as domestic demand from NSW and QLD increases

CY19 Agricultural goods - TEUs



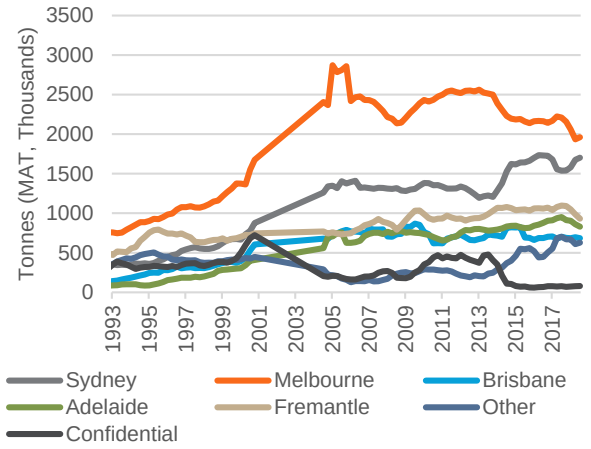
Historical volumes

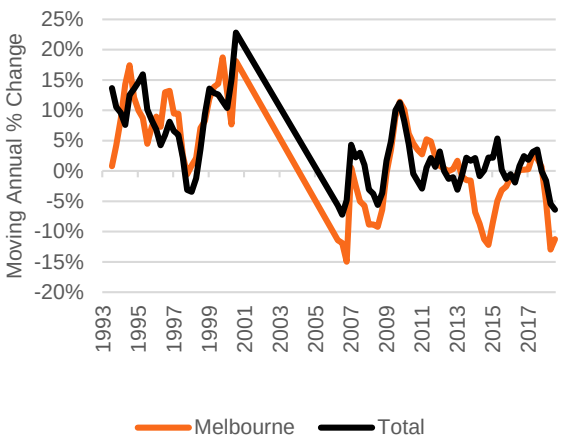


BIS OXFORD ECONOMICS

Manufactured Exports – History

Substantial regional volatility from mining investment, populous industrial bases drive inflow trends





Calendar Year	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Total	0.6%	-1.4%	-0.2%	1.2%
	-3.5%	0.2%	3.7%	4.2%
Sydney	26.3%	0.7%	-16.4%	-26.0%
	2.0%	-25.0%	-41.3%	-25.7%
Melbourne	-37.1%	-32.7%	-32.3%	-38.6%
	-52.5%	-20.2%	-33.9%	-37.7%
Brisbane	-2.0%	-10.5%	-5.1%	-9.9%
	-5.8%	-18.7%	13.3%	-25.6%
Adelaide	-76.3%	-68.7%	-55.0%	-41.6%
	-66.8%	-45.7%	-9.1%	-4.7%
Fremantle	-37.5%	-36.4%	-30.8%	-20.0%
	-55.9%	-18.2%	4.1%	11.9%
Other	2.0%	-0.1%	0.7%	1.7%
	-2.7%	0.9%	3.8%	4.6%

Overview

Sydney has been increasing it's share of Manufacturing exports since 2014. The port's Manufacturing exports grew strongly in the Q1 CY19 with a 26.3% increase in MAT terms before falling in Q4 by 26.0%

Over this same time, Melbourne has seen a decrease in the volume of Manufacturing exports. In MAT terms, Melbourne has seen a persistent 30% decrease on CY18 volumes.

Brisbane, Adelaide , and Fremantle experienced similar downward trends as Melbourne

Drivers

All states have experienced similar growth paths over the past two decades. However, over the past two years, Sydney has been cannibalizing Melbourne's markets share of Manufacturing exports. This is due to significant manufacturing located in the Riverina and nearby areas which are able to be serviced by both ports.

Changes in market share between Melbourne and Brisbane dominate changes on a year-to-year basis as opposed to changes in Australia's productive capacity.

Commentary

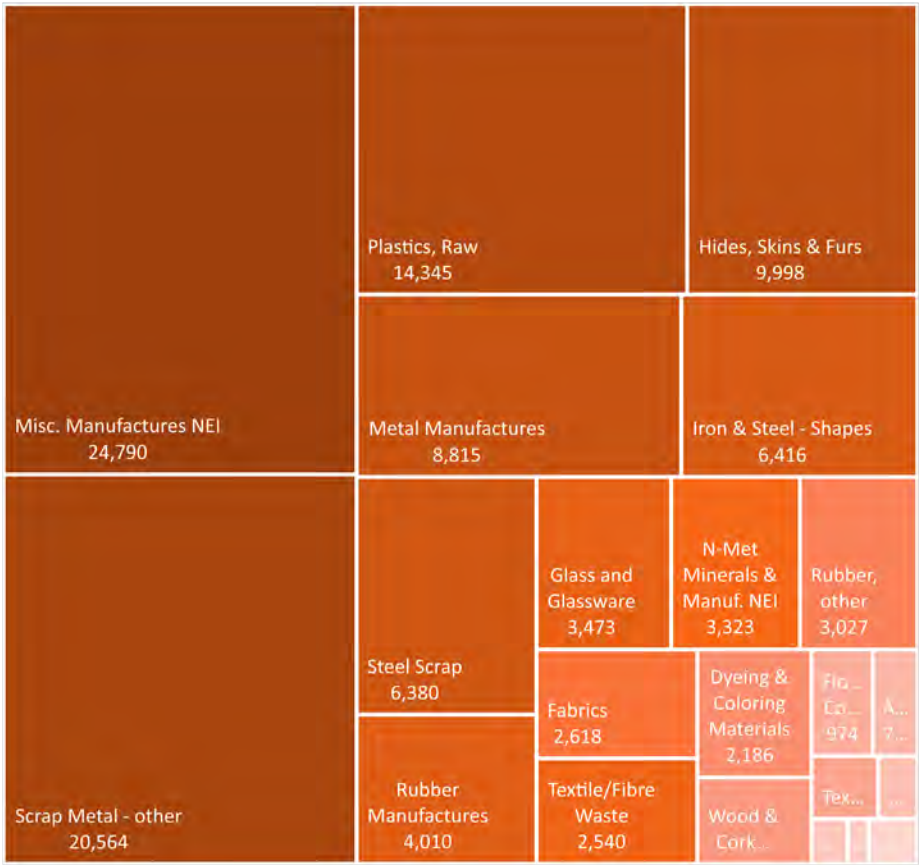
Manufacturing exports have seen a slight weakening over the past two years. This is due to lost market share in the key destinations of China, the US, and New Zealand despite a falling dollar. This is an area of concern and will be monitored.

There has been a tendency for Australian manufacturing to move away from low value bulk items into higher value goods. This may be the underlying cause of the underperformance in TEU volumes against growth in our trading partners.

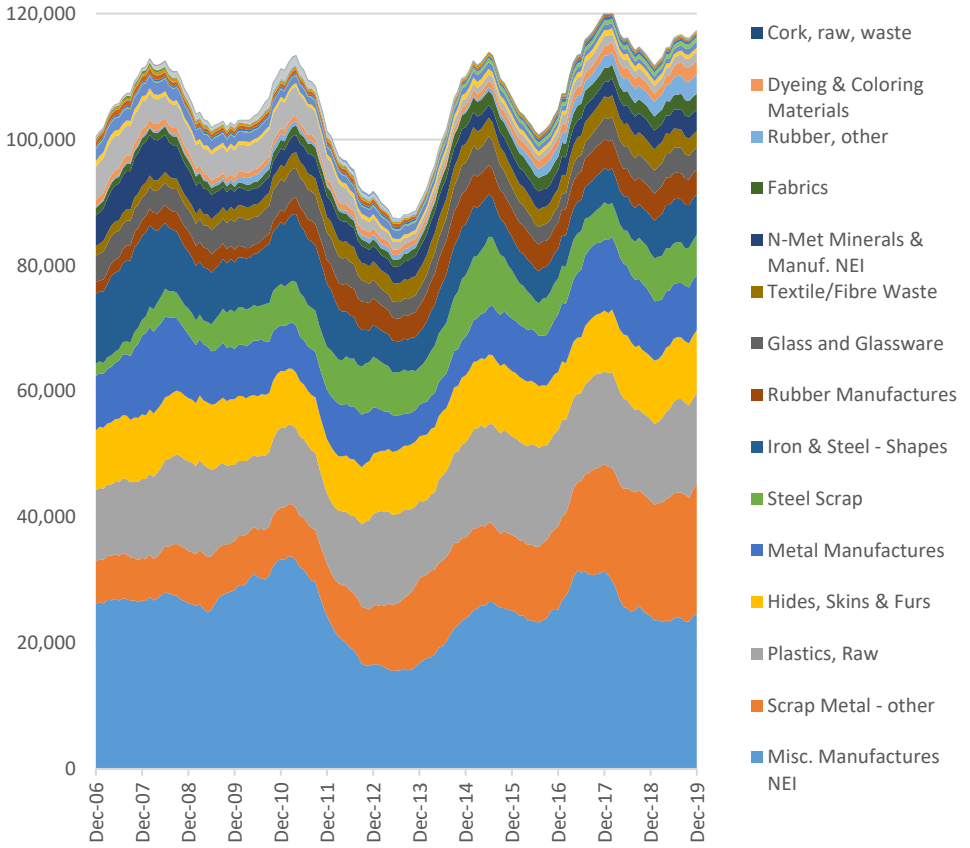
Manufactured Exports – Composition

Manufacturing growth has been experienced by all product categories

CY19 Manufacturing Exports
(Port of Melbourne classifications) TEUs



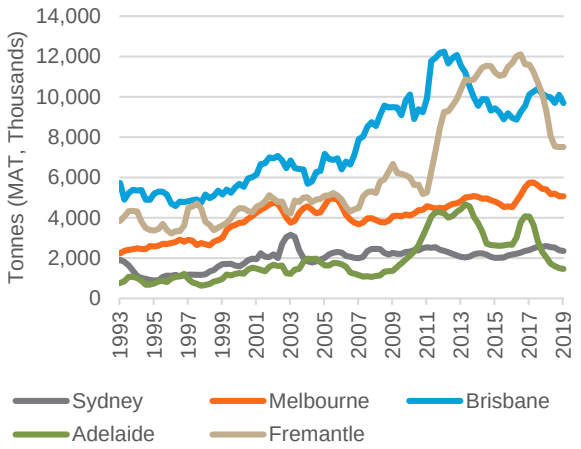
Historical volumes

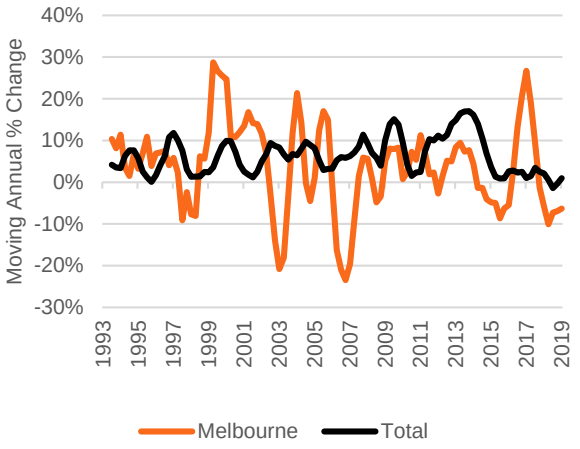


BIS OXFORD ECONOMICS

Other Exports – History

Import volumes to slightly outpace population growth over the long-run





Calendar Year	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Total	0.5%	-1.4%	-0.4%	1.0%
	-3.5%	0.0%	3.2%	3.9%
Sydney	2.2%	-1.6%	-6.3%	-9.4%
	-9.2%	-4.6%	-17.0%	-6.0%
Melbourne	-10.1%	-7.3%	-6.9%	-6.3%
	-16.5%	2.6%	-10.3%	0.1%
Brisbane	-2.8%	-6.8%	-0.7%	-3.4%
	-2.6%	-10.3%	16.2%	-15.8%
Adelaide	-52.7%	-43.6%	-35.2%	-28.0%
	-45.7%	-22.2%	-23.9%	-9.7%
Fremantle	-28.3%	-29.6%	-26.2%	-19.3%
	-42.4%	-21.7%	-1.5%	-0.2%
Other	1.9%	-0.1%	0.6%	1.7%
	-2.7%	0.9%	3.8%	4.7%

Overview

Melbourne saw a persistent decline in MAT terms relative to CY18 across the past four quarters. Adelaide experienced a similar trend. Sydney saw persistent growth in MAT terms in each of the past four quarters averaging 9% p.a. However, Sydney accounts for approximately 10% of total national Manufacturing exports so this strong growth had little affect at the national level.

Drivers

Brisbane and Fremantle account for approximately 60% of the national Other exports. These two ports have been inversely related over the past seven years. Both ports are subject to trends in the refined ore and crude mineral demand.

Other exports experienced positive growth over the last five years. This has recovered from the impacts of a high dollar resulting in the closure of trade exposed domestic producers. This has been a broad based recovery despite wine exports flat to falling over the same time period.

Commentary

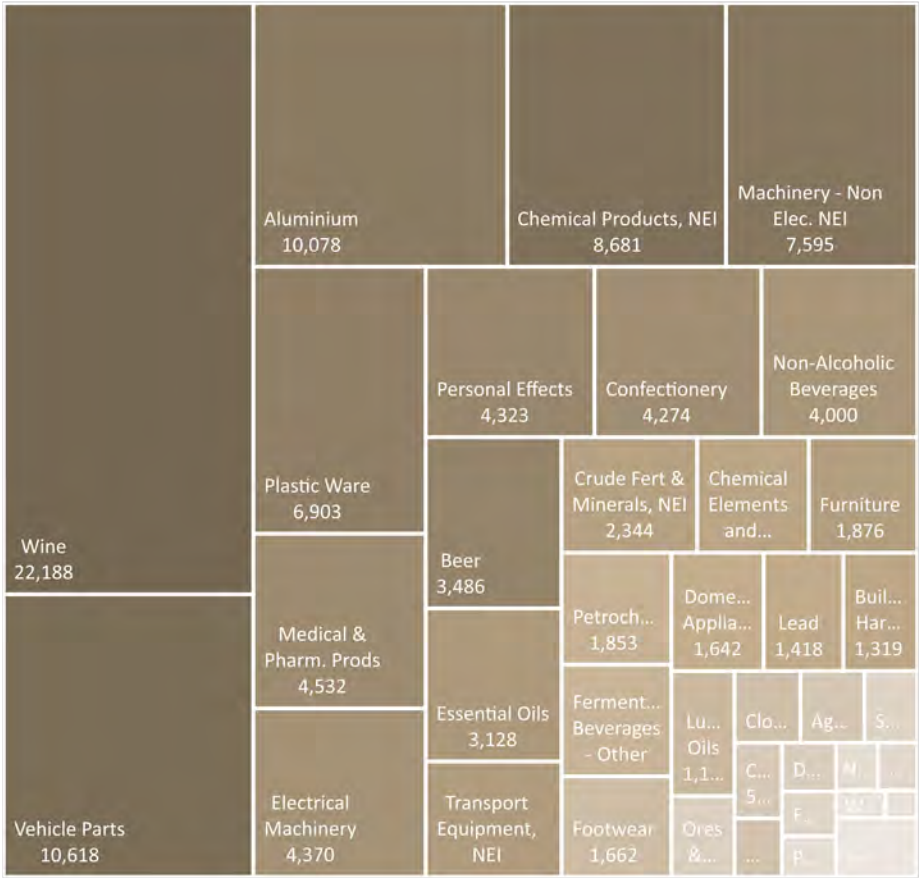
Melbourne and Adelaide are not as exposed to refined ore and crude mineral within their catchment goods as other large container ports such as Brisbane and Fremantle.

There is some risk with Aluminum as the ongoing Portland smelter operations is highly at risk of closure.

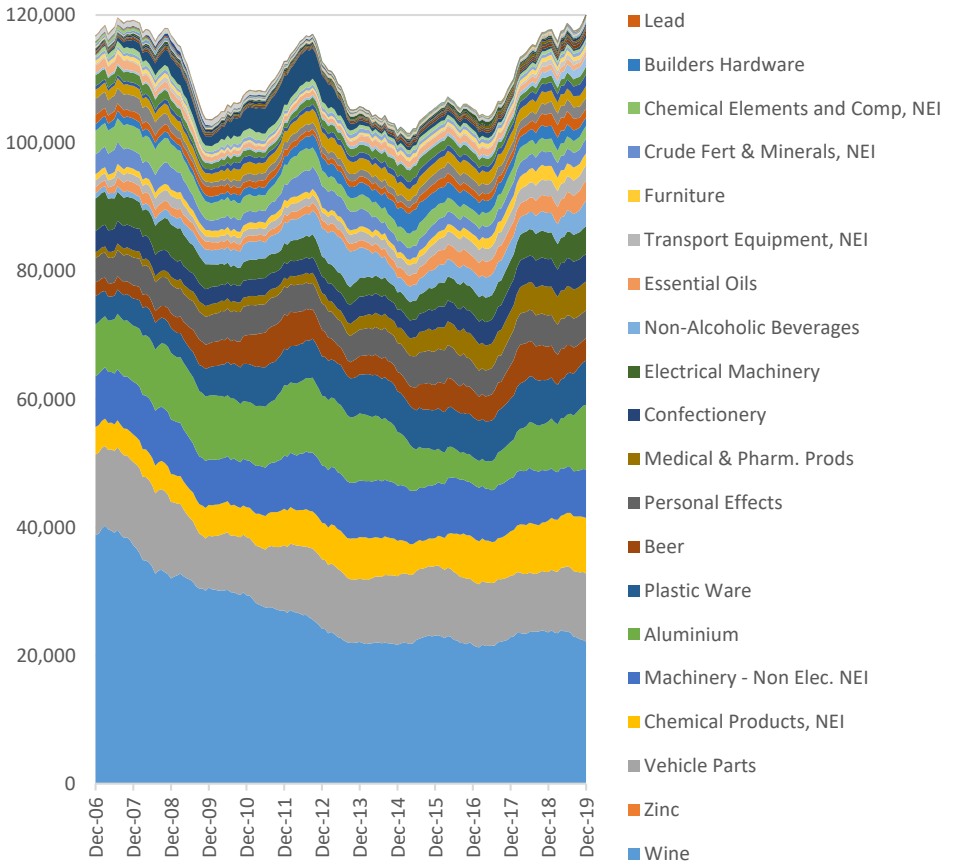
Other Exports – Composition

Wine imports have fallen slightly over the last 12 months while general Other imported have increased since CY17 as they recover from the high Australian dollar

CY19 Rural Exports
(Port of Melbourne classifications) TEUs



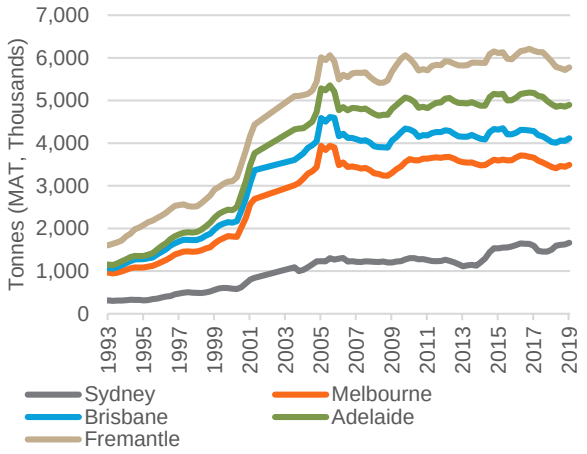
Historical volumes

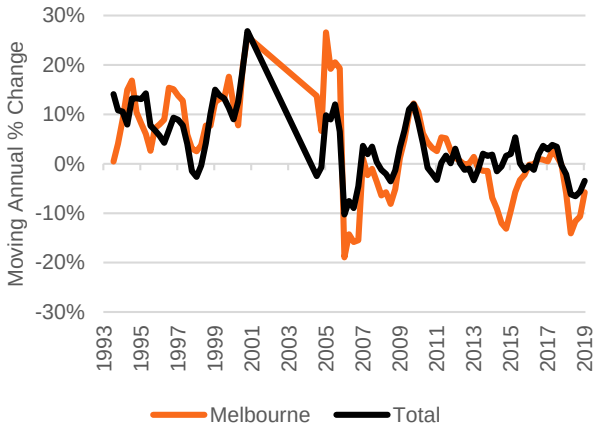


BIS OXFORD ECONOMICS

Paper Exports – History

Import volumes tied to construction booms and busts





Calendar Year	Q1 2019	Q2 2019	Q3 2019	Q4 2019
Total	-6.2%	-6.6%	-5.6%	-3.5%
	-10.7%	-0.6%	-4.5%	2.3%
Sydney	8.2%	10.9%	11.5%	10.8%
	30.3%	4.9%	2.9%	9.4%
Melbourne	-14.1%	-11.6%	-10.7%	-5.8%
	-22.0%	6.5%	-6.3%	1.9%
Brisbane	-0.3%	-2.5%	1.0%	6.4%
	7.5%	-0.5%	7.0%	12.4%
Adelaide	-8.4%	-12.3%	-10.0%	-11.9%
	-20.4%	-12.0%	-5.4%	-9.3%
Fremantle	-9.1%	-15.6%	-17.1%	-12.0%
	-22.4%	-19.8%	-8.1%	8.7%
Other	-11.5%	-10.9%	-11.8%	-14.2%
	-30.7%	13.1%	-23.9%	-9.9%

Overview

Paper products fall under the Manufactured goods category. As such, the results presented above contain reference to other export goods beyond Paper. This is a data granularity issue.

Paper exports have fallen 3.5% in MAT terms as of Q4 CY19. this has been driven by declining exports in all ports except Sydney.

Sydney had grown 10.8% in MAT terms in Q4 CY19. This is due to the switching of export ports by the producers.

Drivers

There has been a decline in the volume of all Paper product exports since CY13. This is due to the closure of the Amcor mill reducing supply available for export.

Newsprint paper has seen a slight increase over the last five years due to increased focus by producers on this product.

Paper exports are roughly evenly split between Paperboard & Manufactures, Pulp and Waste Paper, and Other Paper with each category accounting for approximately a third of total Paper exports.

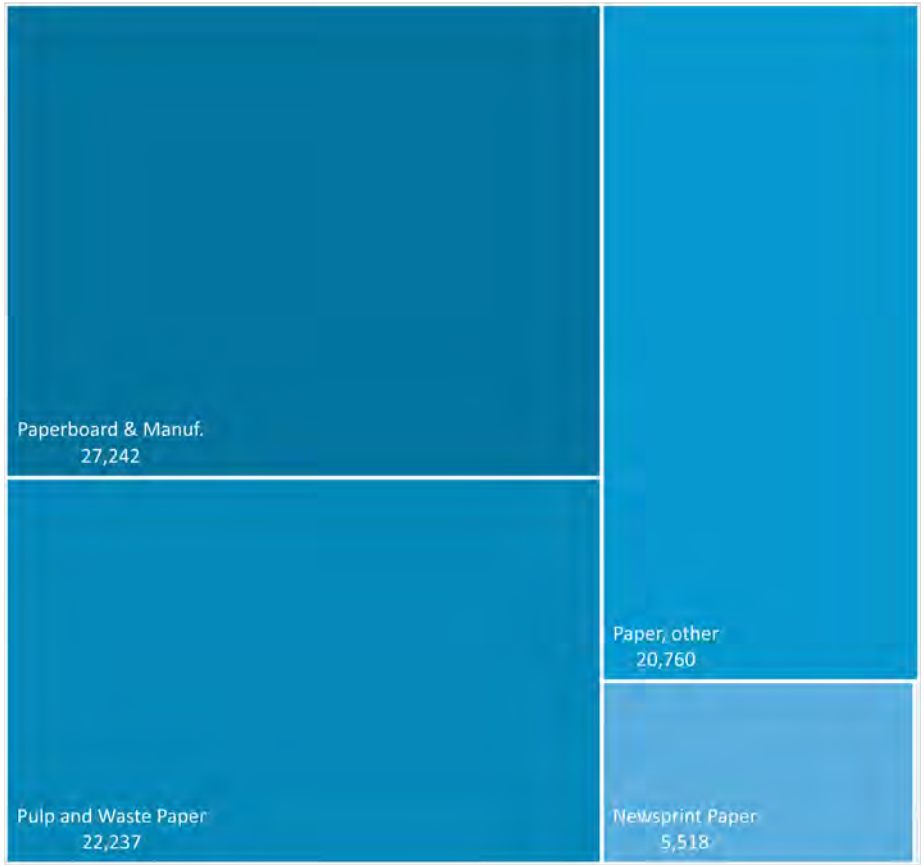
Commentary

There has been a general stagnation in export volumes of paper products over the past five years. This is likely due to lost market share in the key destinations of China, the US, and New Zealand despite a falling dollar.

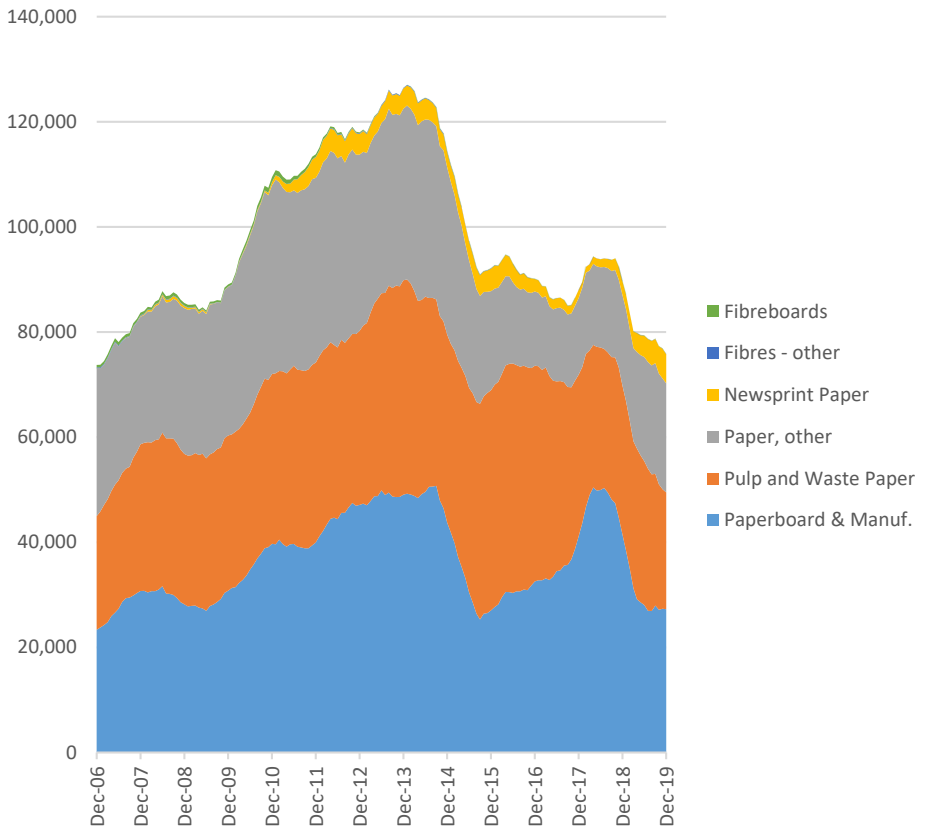
Paper Exports – Composition

Paper exports have fallen to 2006 levels due to lost market share to competing container ports.

CY19 Rural Exports
(Port of Melbourne classifications) TEUs



Historical volumes



BIS OXFORD ECONOMICS

Timber Exports – Composition and History

Sawn timber exports are likely to be impacted by the 2019 bushfires, accelerating a return to sustainable levels.

Despite increasing levels of sawn timber production, Victorian exports of sawn timber have been declining over the past two years. Victoria experienced a building boom which peaked in FY17. The local demand for sawn timber products follows the rough path of the Victorian Sawn Timber exports. Timber exports have fallen with the dollar as local consumption substitutes imported timber for local production.

CY19 Timber Exports

(Port of Melbourne classifications) TEUs

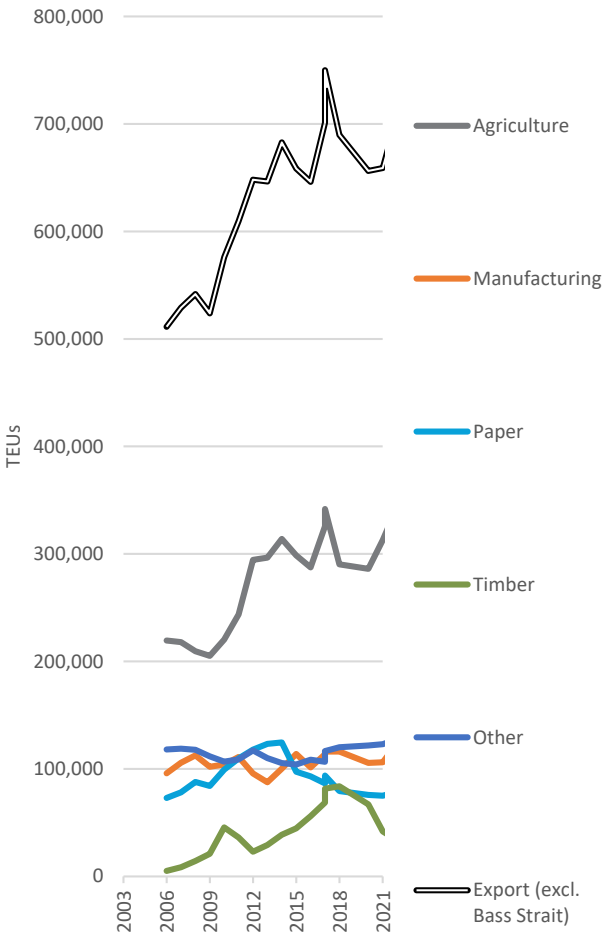
Historical volumes

BIS OXFORD ECONOMICS

Outlook

Agricultural exports are expected to rebound from drought conditions over the forecast horizon

Annual % change	2016-17	2018-19	2019-20	2020-21
Agriculture	13.3%	-15.1%	**-1.5%**	9.4%
Manufacturing	12.1%	0.0%	**-9.1%**	0.5%
Paper	-7.0%	-15.5%	**-4.4%**	-1.0%
Timber	22.8%	2.6%	**-20.0%**	-37.5%
Other	-1.7%	3.1%	**1.3%**	0.9%
Total Exports (excl. Bass Strait)	8.5%	-8.0%	**-4.8%**	0.4%



Sectoral Outlook to 2025

Growth in all sectors is expected to increase over the next five years.

Agriculture is expected to rebound slowly from drought conditions and is expected to approach normal levels of production by 2023-24.

This growth trend is then expected to continue over the long term forecast horizon.

Paper exports are expected to continue to grow over the short and long terms due to increasing international demand for paper products – namely paperboard.

Timber production in Victoria is expected to slow over the short term due to a reduced yield following the bushfires. Depending on the degree to which the product has been burnt, timber product can be salvaged through a multi-year soaking process. Production and exports are then expected to resume.

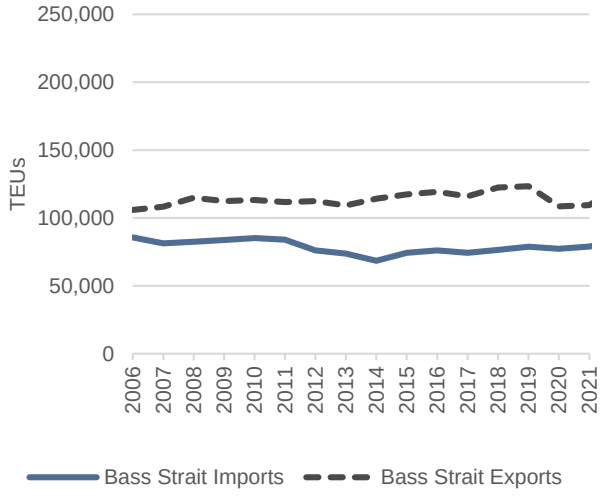
Manufactured and **Other** goods exports are the sectors that will be hit the hardest by **COVID-19**. The impact is expected to be similar in timing and magnitude as the drop off in non-food import volumes (i.e. a fall in FY20, low FY21, and corresponding uplift in FY22).

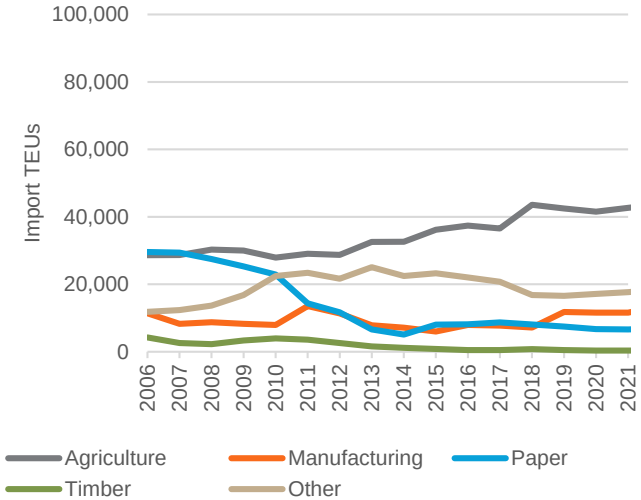
03

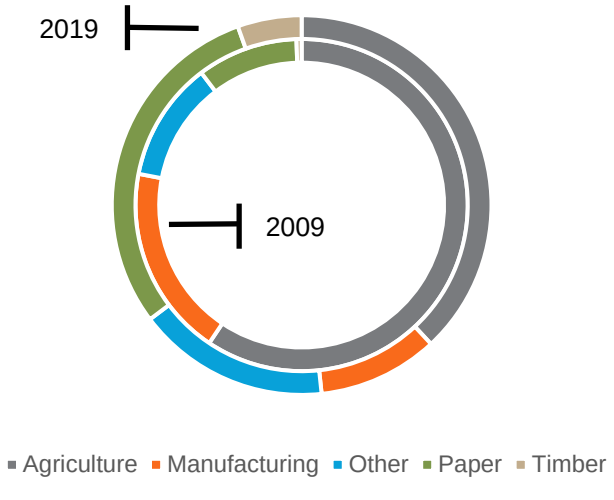
BASS STRAIT TRADE

Bass Strait – Overview

BIS Oxford Economics is forecasting weaker growth in exports than in previous decades







Using the conventions that we have from international trade into Australia (demand for imports driven by demand for goods, and exports driven by production levels), we flip it around to explain trade with Tasmania.

All containerised trade going through Tasmania travels through Melbourne, either directly from Victoria, or transshipped at the port itself.

As with Victoria's trade with the rest of the world, there are five main drivers

1. Agriculture (59%)
2. Manufacturing (19%)
3. Other (12%)
4. Paper (10%)
5. Timber (<1%)

We expect to see growth across most categories of exports over the forecast horizon. While across Australia, the resource sector is expected to lead export growth, this will have little impact on the Port of Melbourne. Export volumes will be supported by the weaker Australian dollar and an expected improvement in world economic conditions in the medium to long term.

Bass Strait Imports – Composition

Drivers

The top five trading categories between Tasmania and Victoria in 2019 were

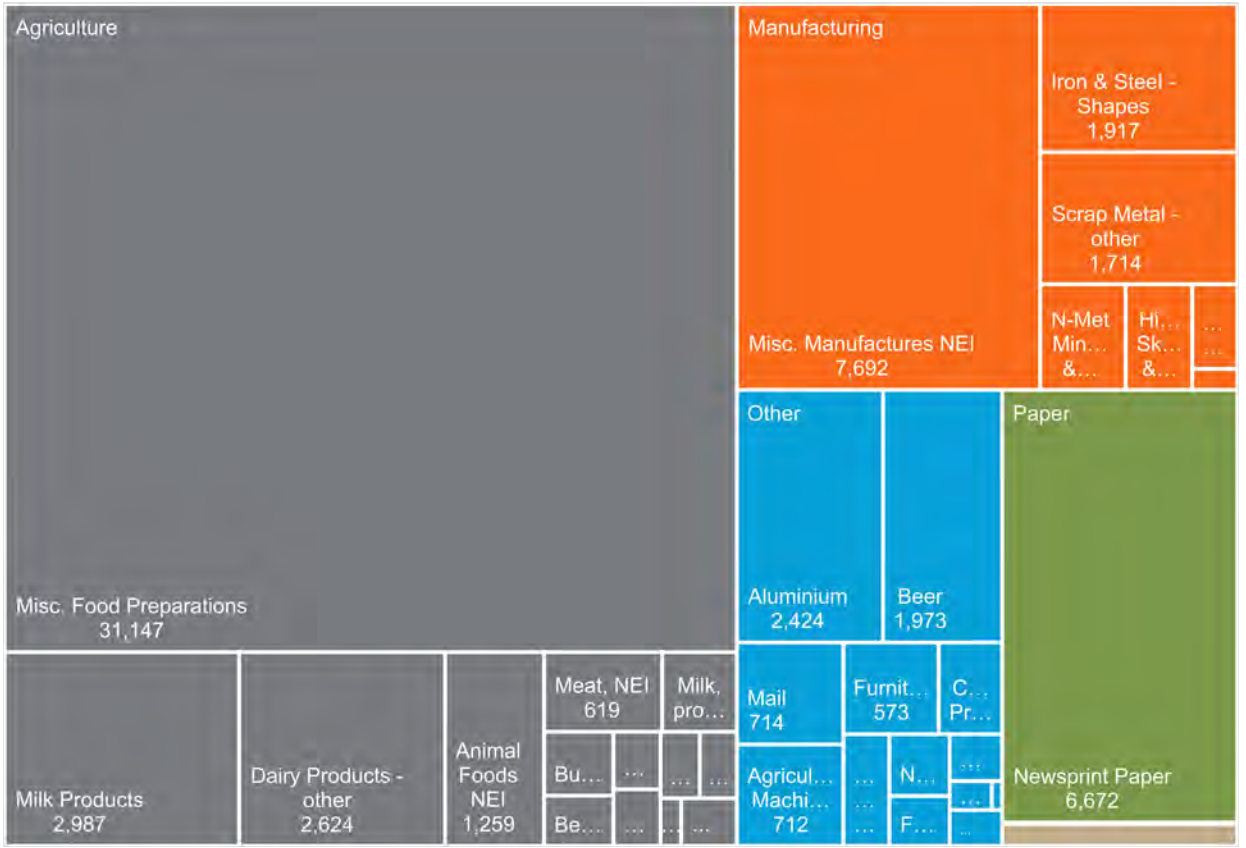
1. Misc. Food Prep
2. Misc. Manufacturing
3. Newsprint paper
4. Milk Products, and
5. Dairy Products

This is in contrast to the top five categories in 2009 which were

1. Vegetables, fresh and frozen (recoded to Misc. Food Preparations in 2013)
2. Newsprint paper
3. Paper, other
4. Beer
5. Misc. Manufactures

This suggests a shift towards manufacturing, milk, and dairy from beer and other paper products as Tasmania has increased its exposure to international markets (predominately China).

CY19 Full Imports by Driver (TEUs)



BIS OXFORD ECONOMICS

Bass Strait Imports – Agriculture

Agriculture may escape COVID-19 relatively unscathed.

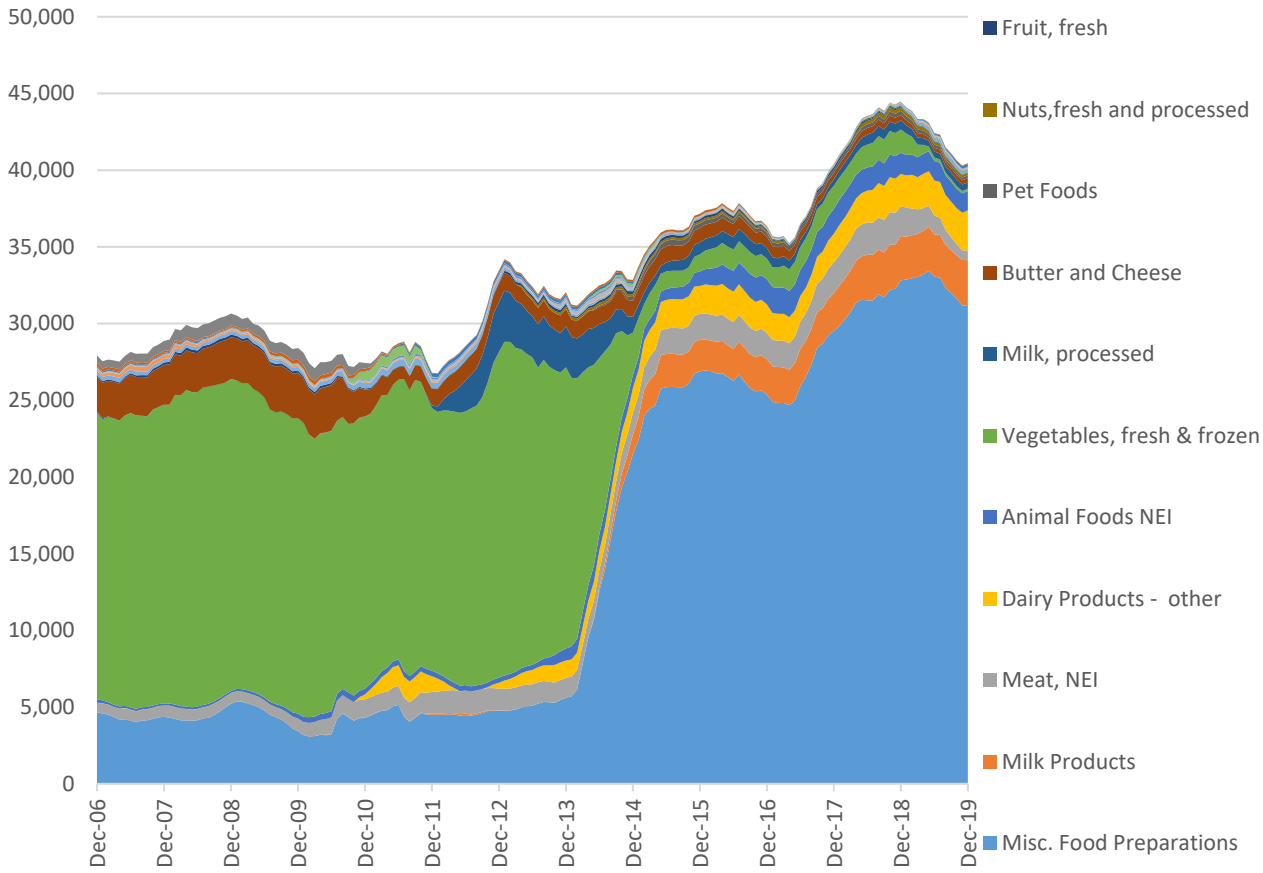
Commentary

All agricultural imports have experienced a decline over the past year.

A key component has been weakness in meat exports which BIS Oxford Economics attributes to the mainland drought which in turn has driven high animal slaughters and weak prices.

Fruit and Vegetables continue to dominate trade across the Bass Strait.

H1 2020 is projected to indirectly be impacted by the decline in container traffic to China, mirroring the decline in overseas. export trade from Melbourne, but is expected to be otherwise unaffected by the looming global and domestic recessions.



BIS OXFORD ECONOMICS

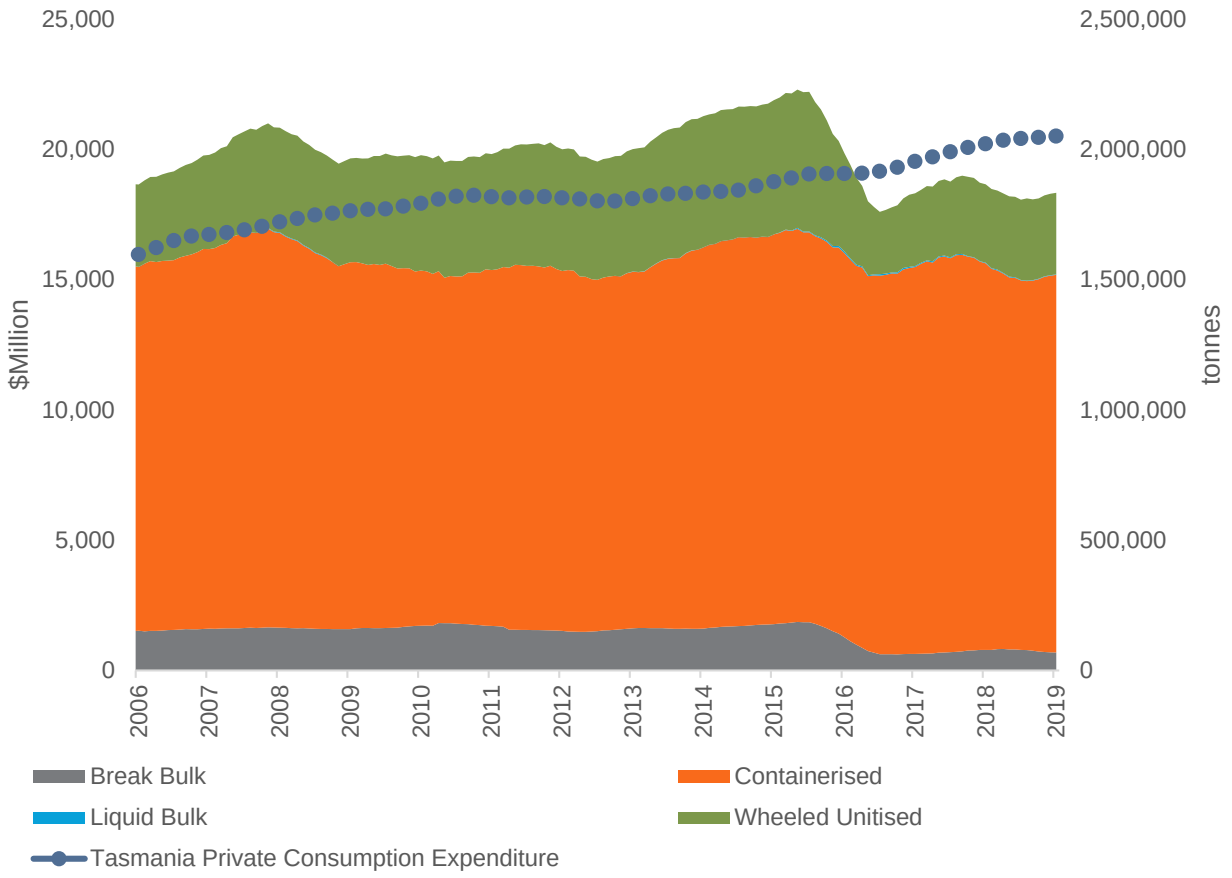
Bass Strait Exports – History

BIS Oxford Economics is forecasting weaker growth in exports than in previous decades

Commentary

Bucking the national trend, growth momentum in TAS has picked up in the last three years. Against a backdrop of a weaker AUD, the economy has benefitted from a surge in tourist arrivals and the continued development of high value add manufacturing sectors, such as food processing. These developments have driven a rebound in business investment and encouraged migration into the state, which has in turn fuelled growth in private consumption. GSP grew 3.5% in FY18 and maintained similar pace (3.6%) in FY19.

Looking forward, GSP is expected to slow over the 2020s, reverting to a trend pace that is moderately slower than the national average. Driving this will be a moderation in inward migration, with workers attracted to other states as their economic outlook improves.



BIS OXFORD ECONOMICS

Bass Strait – Outlook

All four of the major trade categories are expected to experience declining positive annual growth rates over the next five years.

Annual changes

Annual %change	2016-17	2018-19	2019-20	2020-21
Agriculture	-2.3%	-2.5%	**-2.2%**	2.7%
Manufacturing	-2.4%	64.2%	**-2.0%**	0.2%
Paper	7.2%	-7.6%	**-10.4%**	-1.0%
Timber	3.8%	-33.2%	**-34.8%**	-1.0%
Other	-5.9%	-1.4%	**3.5%**	3.0%
Bass Strait Imports	-2.3%	3.1%	**-2.0%**	2.1%
Bass Strait Exports	-2.7%	0.8%	**-12.0%**	0.8%
Bass Strait (Full)	-2.6%	1.7%	**-8.1%**	1.4%

COVID-19 impacts

Initially, Tasmanian agricultural exports were impaired due to weakness in the demand from China in Q1 2020, but the domestic Australian market for foodstuffs as households increase stockpiles through Q1 and Q2 will outstrip supply.

Manufactured imports and trade to Tasmania are projected to decline in line with falls in non-food tradable goods over FY20 and FY21. We estimate this to be in the neighbourhood of 10% below baseline for both years.

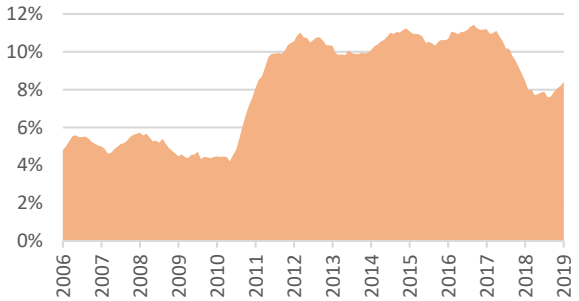
04

EMPTIES AND TRANSSHIPMENTS

Transshipments

Outbound Transshipments

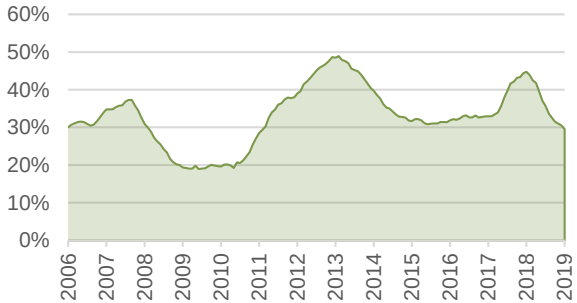
Bass Strait, Share of Full Bass Strait Exports



Transshipments to Tasmania account for approximately 8% of full exports. This has declined form the 11% of total exports in 2017.

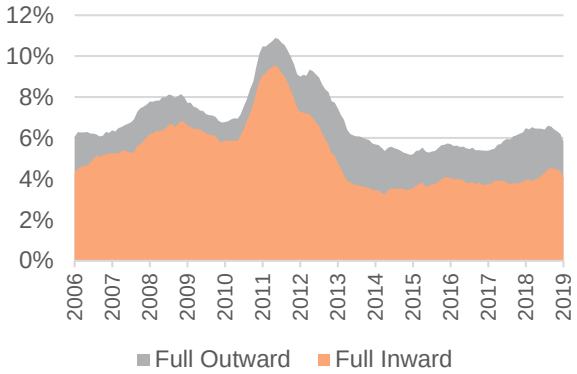
Inbound Transshipments

Excl. Bass Strait, Share Full Imports



Transshipments from Tasmania are approximately 30% of full imports.

Share Full Imports



Transship imports make up approximately 4% of full mainland and international imports.

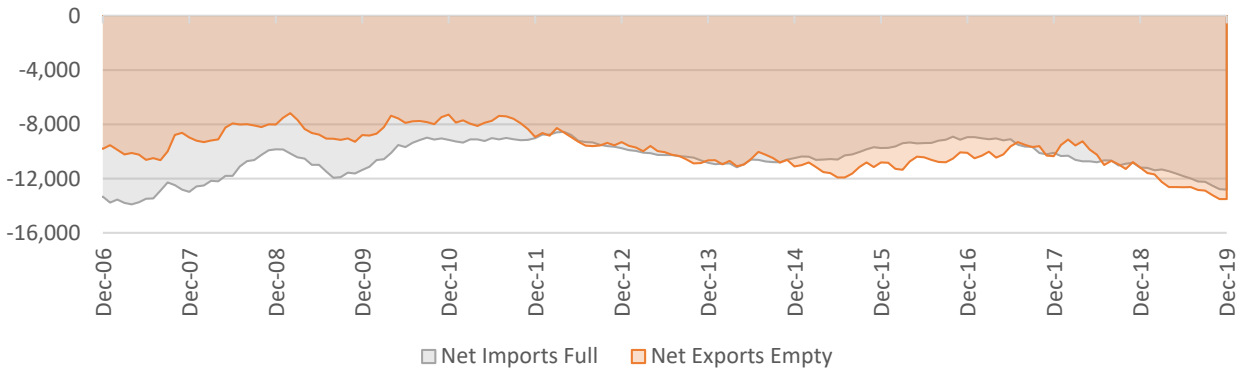
Empties - Reefers

The Port of Melbourne is exporting increasing number of empty reefers – both 20' and 40'.

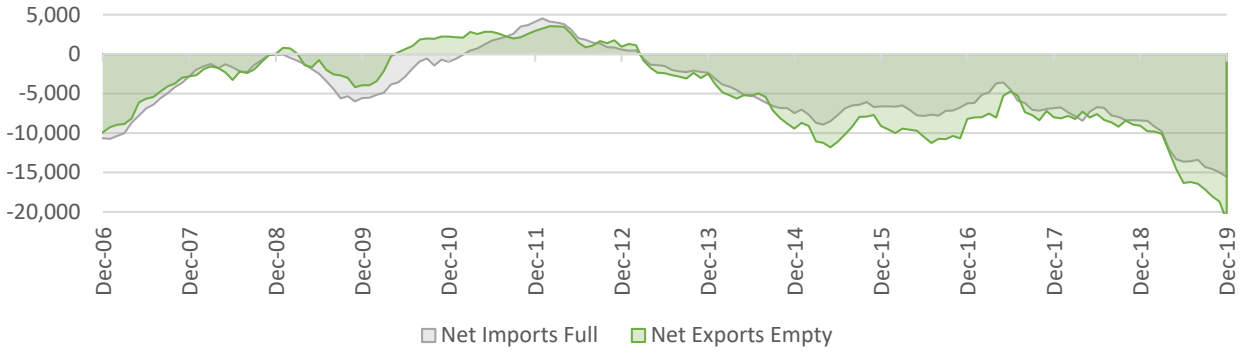
The net export of full reefers is slightly higher than the empties for both 20' and 40'. This implies higher levels of containers being exported than imported. As previously, this can be explained by reefers being sourced in other import terminals (e.g. Port Botany) and being loaded for export through Port of Melbourne.

Agricultural exports are largely responsible for this trend.

20' Reefer – Net Trade Flows



40' Reefer – Net Trade Flows



BIS OXFORD ECONOMICS

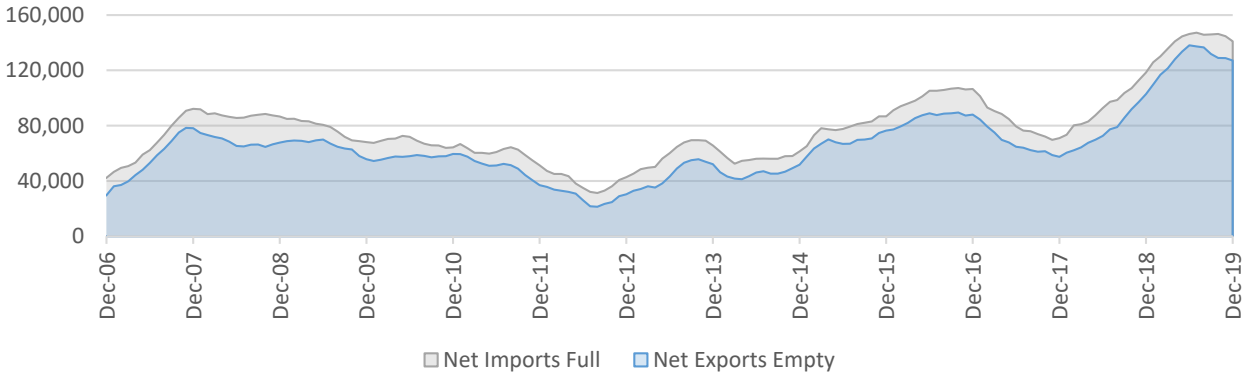
Empties – Dry Containers

Commentary

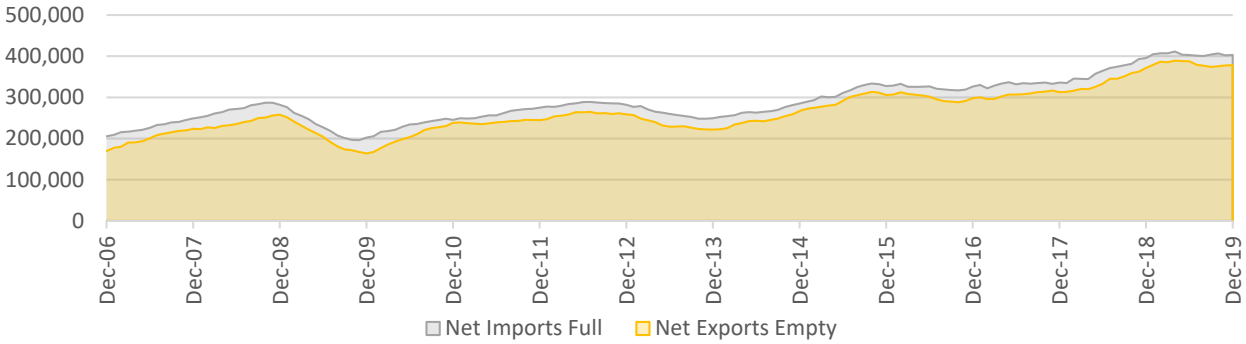
The major container ports in Australia import more full containers than they export. This is particularly the case for 40ft containers, which are ideal for the consumer and light-weight intermediate goods imported from overseas, but sub-optimal for the heavier (denser) items that Australia tends to exports (preferring instead 20ft containers, which are being generally phased out along most trade routes.

Over the forecast period, BISOE maintains the difference between full and empty containers as observed in 2019 and maintains this over the forward outlook, running it off of the modelled full exports and imports.

20' Dry Containers – Net Trade Flows



40' Dry Containers – Net Trade Flows



BIS OXFORD ECONOMICS

05

BULK LIQUID

Overview

COVID-19 impacts are anticipated to be to refined imports, not crude, as the competitive position of the Victorian refineries are improved with under low crude prices.

Forecasting approach:

Step 1 – Underlying demand in Victoria

Petroleum products into Victoria are for one of four sectors of the economy:

1. Passenger Cars (LPG and Automotive Petrol)
2. Commercial Freight (Diesel)
3. Jet Fuel
4. Non-transport

These sectors each have markedly different drivers.

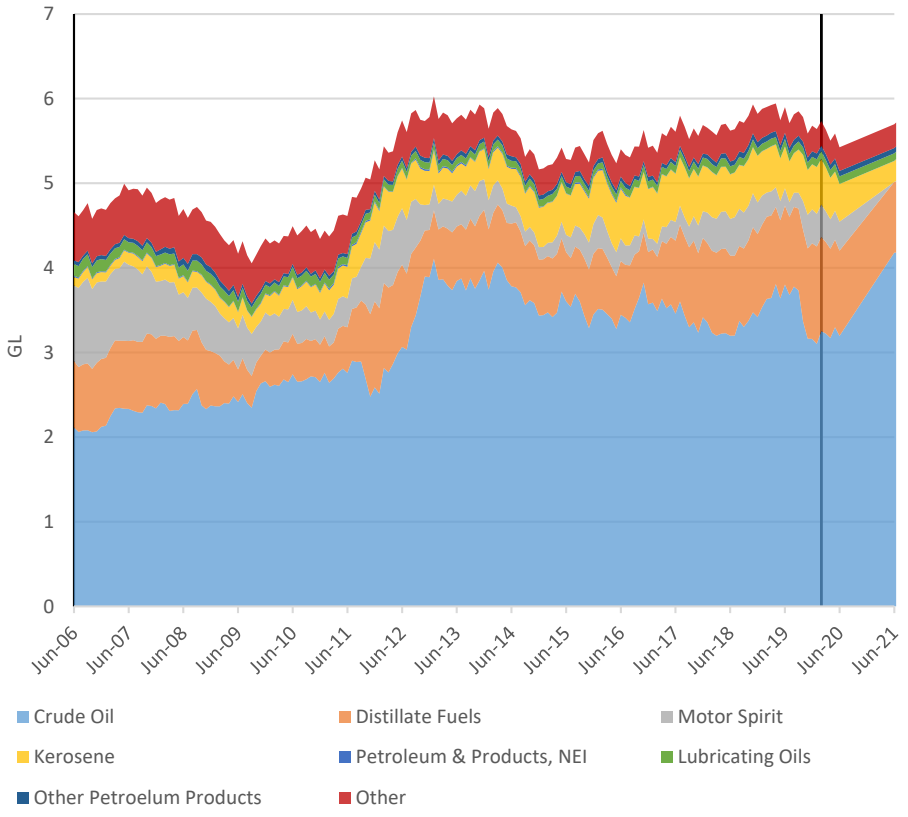
Passenger Cars demand has been weakening since the mid-2000s, primarily due to engine efficiency standards put in place in the US and Europe. This is expected to continue for at least another decade for new cars and another 30 years as the fleet composition changes.

Diesel demand has been climbing to reflect the requirements to move goods. There was also some growth from a shift towards diesel in the passenger car market up to 2010. Long-term, growth in this space is likely to be around 2% p.a.

Jet Fuel has had a strong run for the past decade, in large part because of increased overseas flight distances (which increases the fuel uplift for outbound flights). This too will continue for at least another decade to reflect the new aircraft fleet and desired stoppage route into China and the Middle East.

Non-transport demand tends to reflect broad economic activity.

Medium-term volume forecasts at the Port of Melbourne



BIS OXFORD ECONOMICS

Impacts of COVID-19: Automotive Petrol

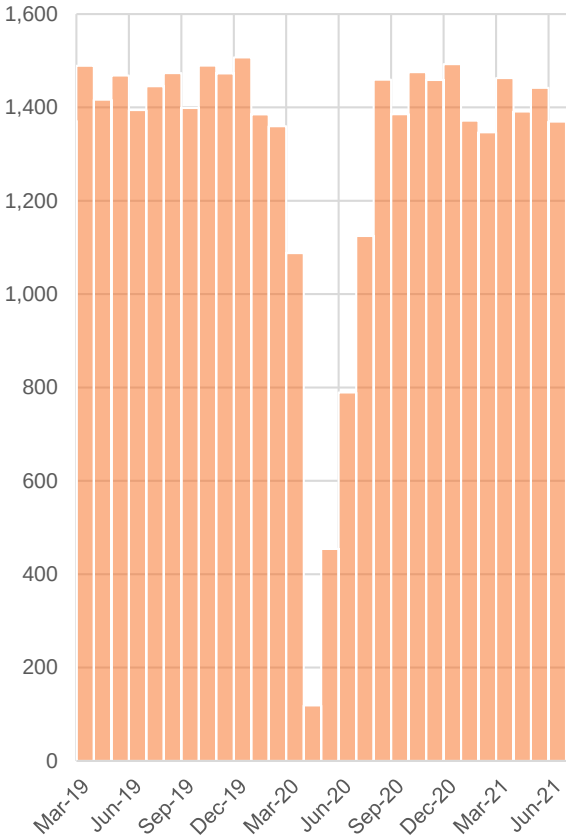
Limits on travel will significantly impair petroleum consumption. Petroleum demand through FY20 and FY21 is expected to be down over 1.3GL, rendering no need for imported refined motor spirit until FY22.

Motor vehicle use follows a 'business as usual' pattern until mid-March. The second half of the month of March is a linear transition to 20% of previous volumes based on daily City Mapper data. This is assumed to fall further to 5% in the following month as Australian cities fall in line with measures enacted in other regions.

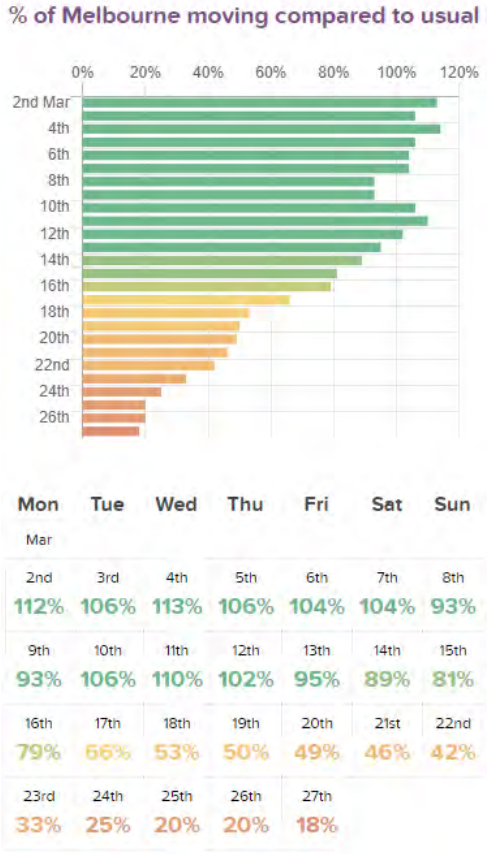
For Australia, we are assuming a six-weeks to the trough in commuting behavior is at the end of April, and then a gradual return to previous working patterns over the following three months.

This is a longer adjustment period than what has happened in China – with what appears to be something close to a return to normal in traffic congestion in China in the last week of March – which is currently seen as an upside.

Australia – monthly motor spirit sales (ML)



Estimated daily traffic



Daily Traffic Source: City Mapper

BIS OXFORD ECONOMICS

Impacts of COVID-19: Diesel

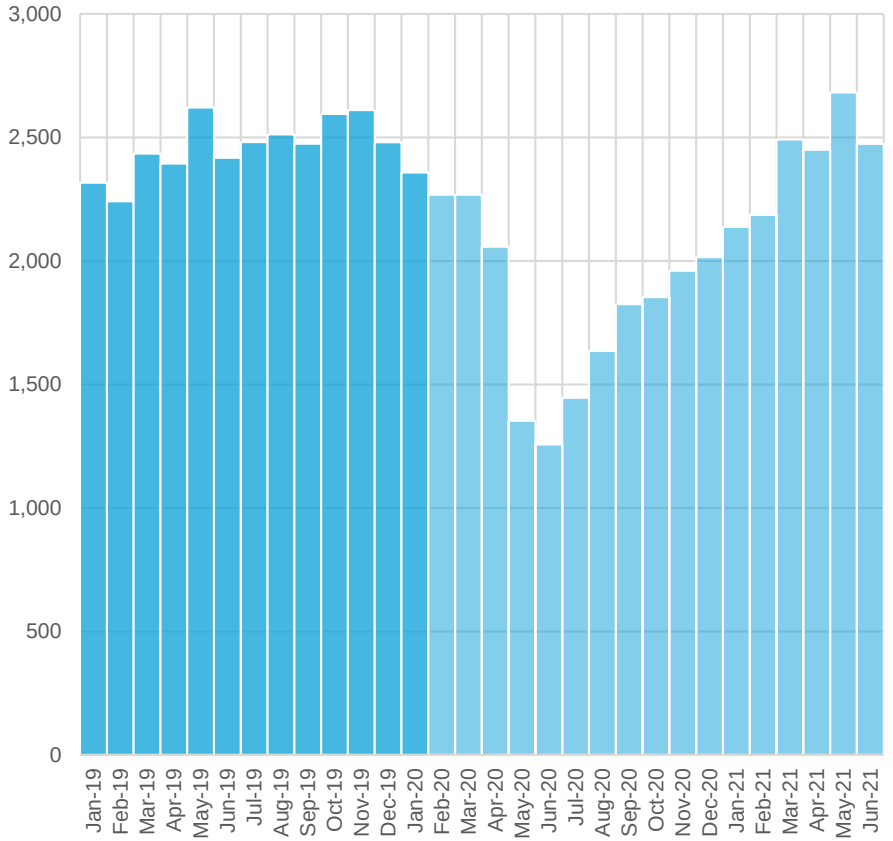
Limits on travel plus lower goods demand weighs on diesel vehicle movements

In aggregate **diesel** demand falls less than petrol but takes longer to recover. Diesel consumption is broken up into three components: Trucks, Cars, and Light Commercial Vehicles (LCVs). Diesel car use is assumed to track the above motor spirit profile. Trucks have a much milder decline.

Toll road data suggests that heavy vehicle traffic declines to approximately 80% of normal levels by the end of March. The recovery is expected to be somewhat slower than cars however. The shape of the recovery is pegged to employment forecasts. As a result of this, full recovery only occurs by Q1 2021.

LCVs follow an average of the growth paths for cars and trucks.

Australia – monthly diesel oil sales (ML)



BIS OXFORD ECONOMICS

Impacts of COVID-19: Jet Fuel

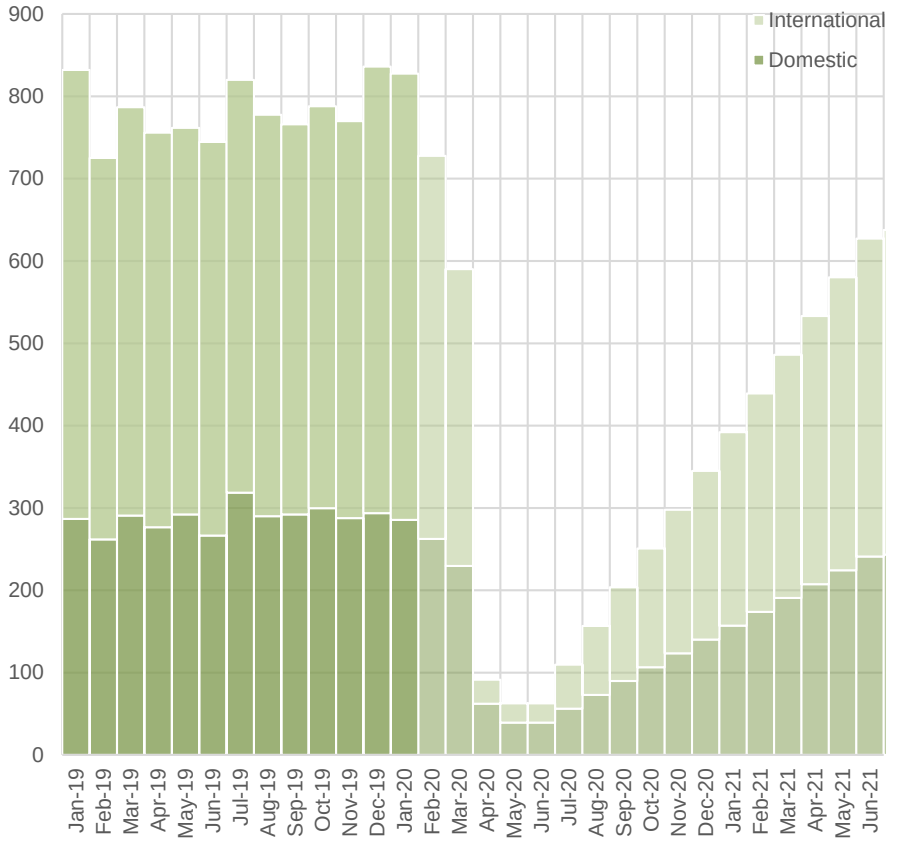
With risks to the downside, we have taken a conservative view on the recovery of flights both domestically and internationally. We assume kerosene continues to be imported through the during the downturn, but it may cease as domestic refineries may have sufficient production.

As Qantas (among others) halts international travel by the end of March, until at least the end of May, jet fuel demand is expected to suffer. We expect international flights to fall to 10% of normal levels by the end of March and 5% by April as business and passenger travel cease and give way to air freight and essential travel.

Chinese restrictions on international travel have not eased, even as motor vehicle use is recovering. Similarly, for Australia we expect the recovery in air travel to be delayed. From July 2020 we see restrictions easing and returning linearly to 80% of normal levels by June 2021. With full recovery by June 2022.

Domestic travel has seen fewer cuts than international travel so far, and the reaction has been slower. We expect a milder decline by the end of March, bottoming out at 15% of normal levels in April. The shape of the recovery is assumed to track that of international travel, where restrictions ease from July 2020 and travel returns to 90% of normal levels by June 2021.

Australia – monthly aviation turbine fuel (ML)



BIS OXFORD ECONOMICS

Diesel vs Petrol

It is noteworthy that in the European markets, the aftereffects of Volkswagen's diesel-gate were a rapid decline in the share of diesel vehicles sold. That doesn't seem to have impacted purchasers in Australia.

Commentary

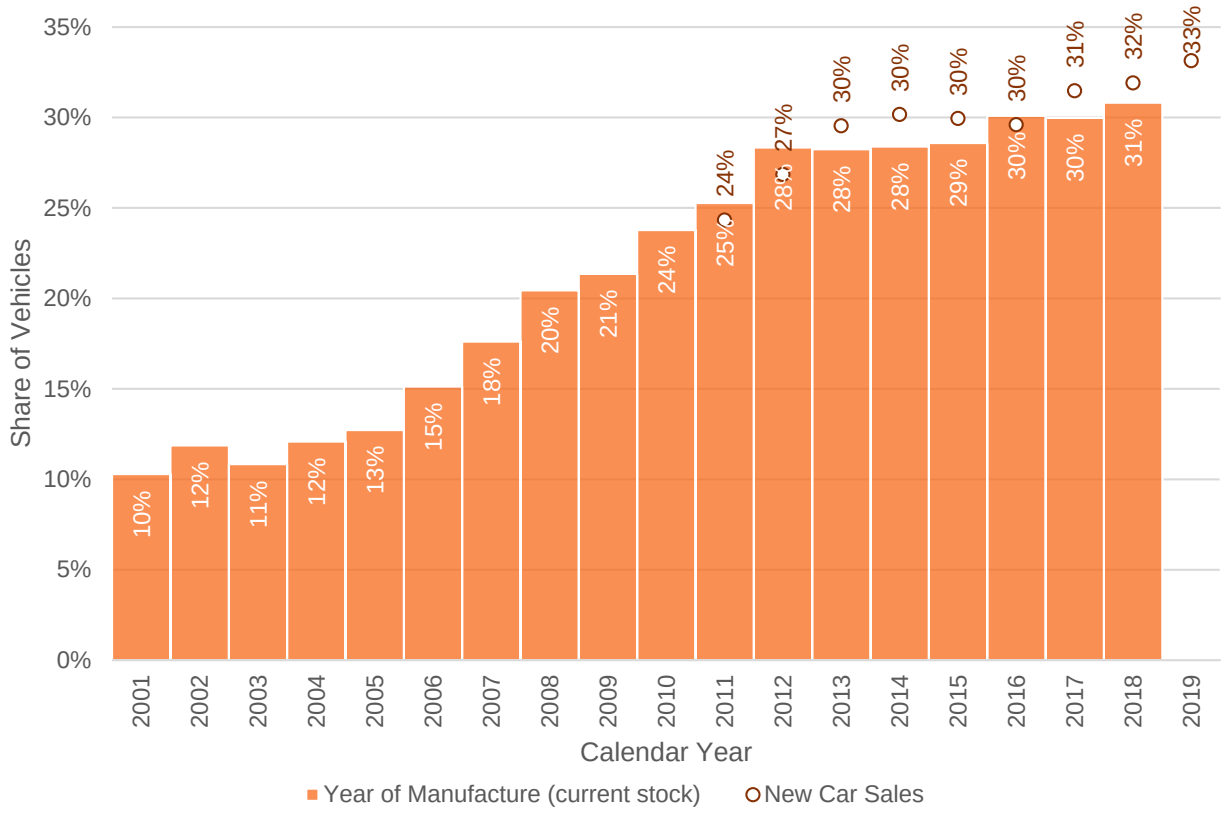
The share of new vehicles which use diesel will mean that the share of the fleet using diesel is expected to trend upwards for the next decade, as the average age of retiring stock 18 years.

Fuel efficiency improvements over the forward outlook will be dwarfed by the change in the fleet composition.

However, for petrol cars, both of these changes compound to drive demand lower each year over the forecast horizon.

A current outstanding area of uncertainty is the future of the CAFE standards in the US, which tend to drive our new vehicle fuel efficiency (as Australia has no policy regarding fuel economy or composition). This was expected to rapidly improve the fuel economy over the forward outlook, and remains the base case for modelling purposes.

Diesel Motor Vehicle Fleet - Victoria



BIS OXFORD ECONOMICS

Crude Supply

Imports of crude are projected to increase in response to declines in production in the Gippsland.

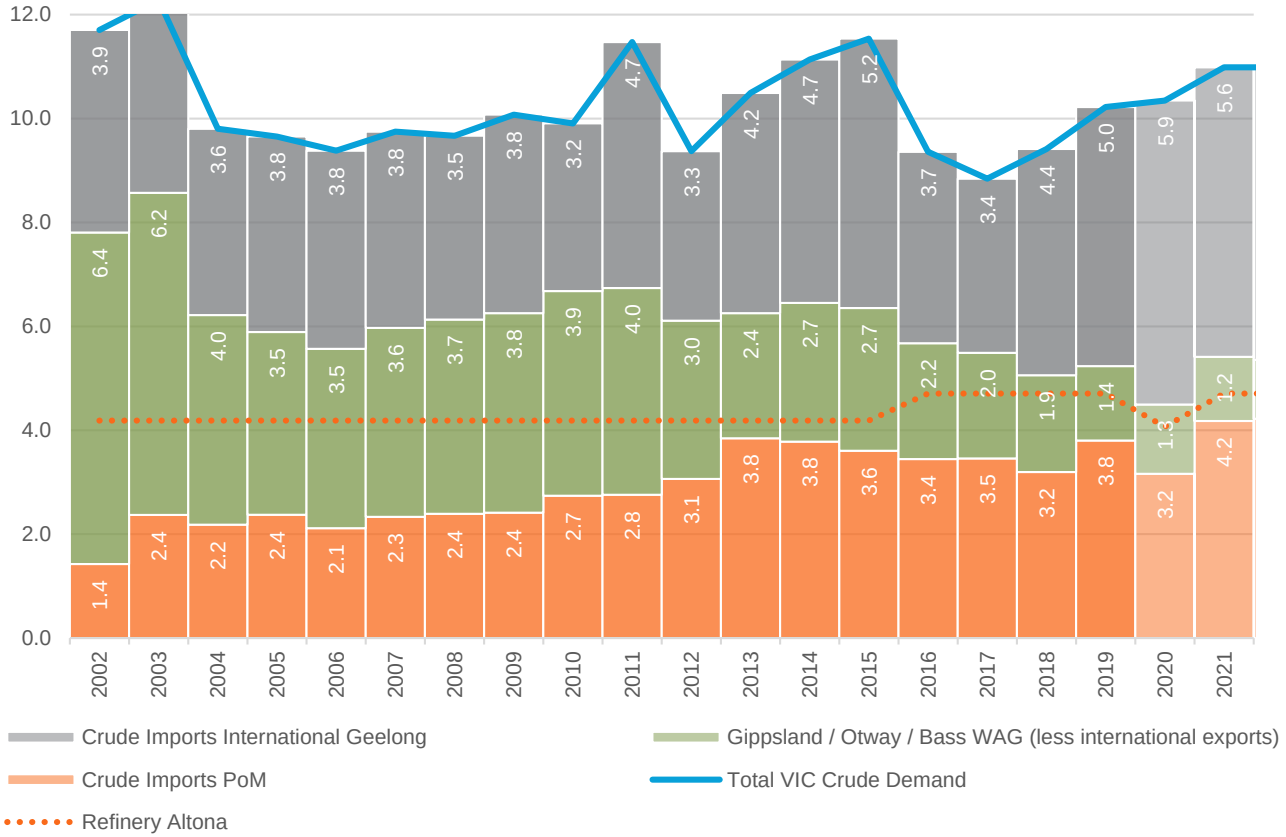
Forecasting Methodology

Based on reported trade volumes at the Port of Geelong, and Geelong Refinery tables, the residual crude movements (the gap between the blue line and the stacked bars in the chart to the left) are an accurate reflection of domestic movements, given uncertainty around actual refinery production year-to-year. We are letting domestic imports into Geelong remain unchanged over the forecast horizon.

Note that *on average*, Gippsland production arriving via the WAG pipeline appears to be evenly split between the Altona and Geelong refineries, which is supported by reported figures in several publications of various vintages.

BISOE have assumed that Gippsland production continues to decline by 0.1GL per annum, offset by increases in international imports evenly split between the two importing ports.

Crude Supply for Refineries (GL)

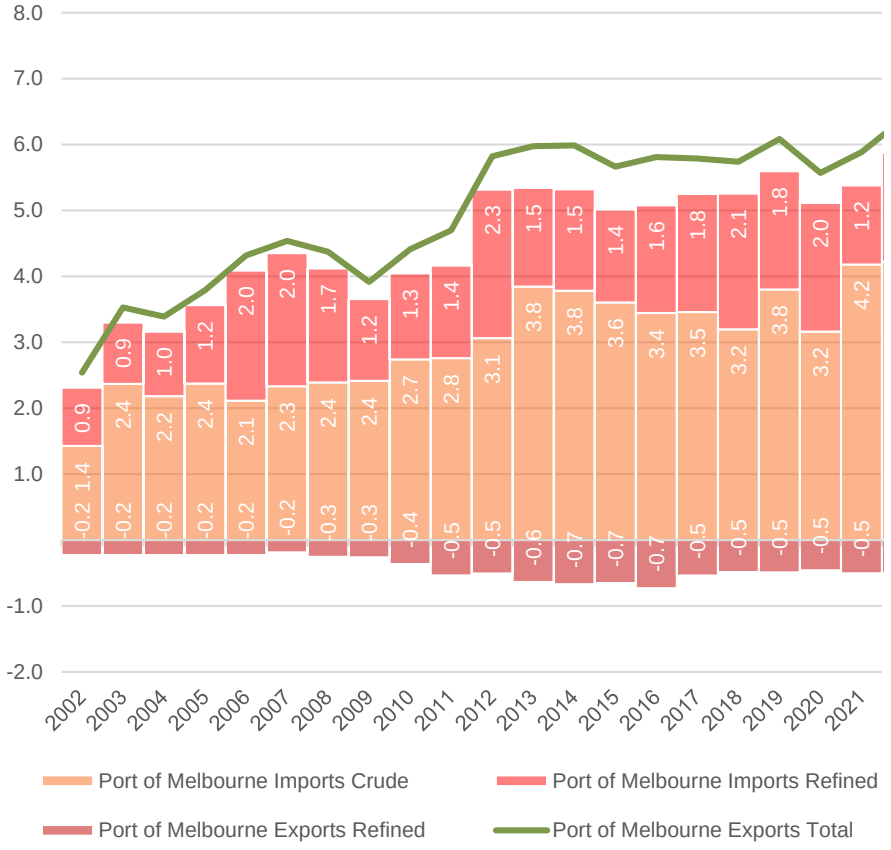


BIS OXFORD ECONOMICS

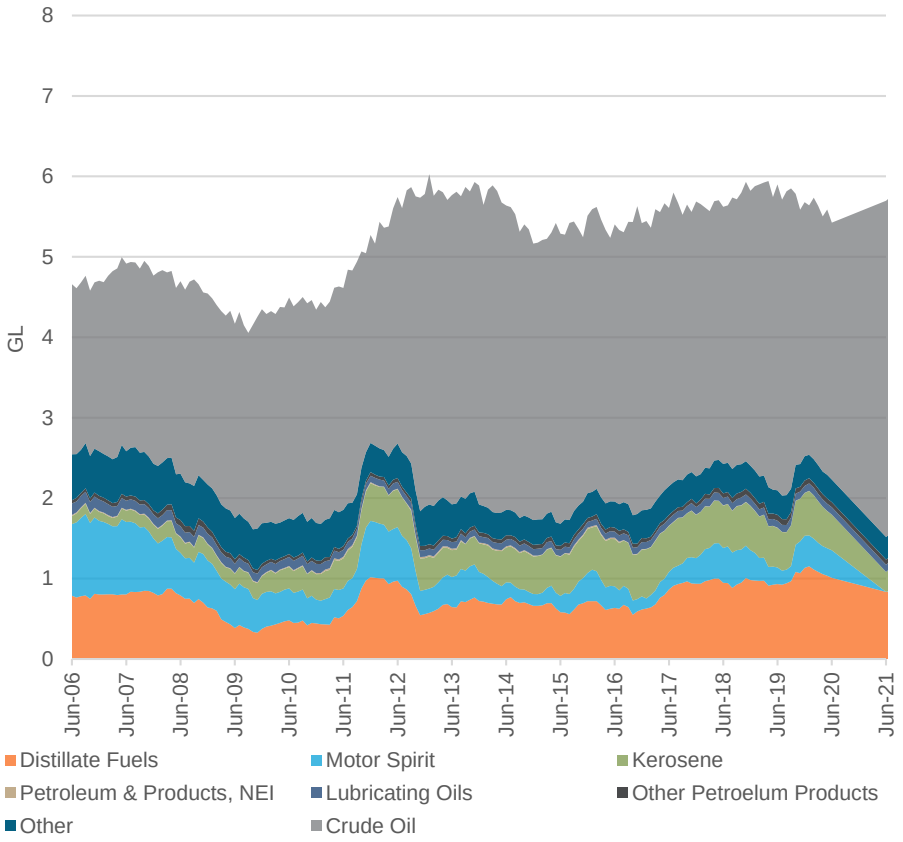
Port of Melbourne Outlook

The return of the refineries to full operating capacity will sustain import and export volumes through FY21.

Trade flow of Petroleum at the Port of Melbourne (GL)



Port of Melbourne Bulk Liquid Imports - Year Ended June



BIS OXFORD ECONOMICS

Forecast Outlook

Crude oil is expected to grow to offset declines in domestic production
Refined imports are expected to grow strongly once demand outpaces refinery production.

Annual Change

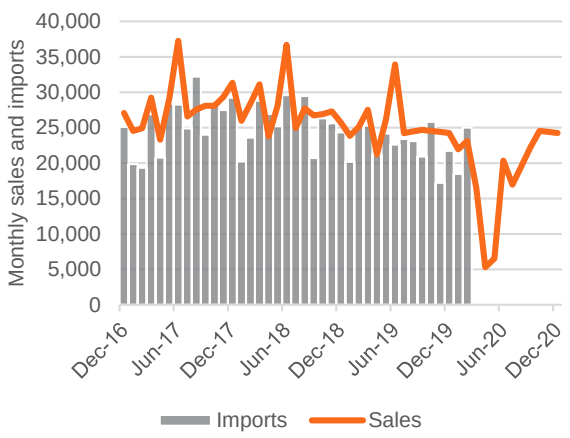
Annual % change	2016-17	2018-19	2019-20	2020-21
Crude Oil	0.4%	18.9%	**-16.0%**	30.8%
Distillate Fuels	35.9%	-1.6%	**8.3%**	-17.3%
Motor Spirit	-17.8%	-52.5%	**66.5%**	-100.0%
Kerosene	-3.1%	-6.2%	**-10.1%**	-44.0%
Total Bulk Liquid Imports	3.8%	5.0%	**-8.0%**	5.0%

06

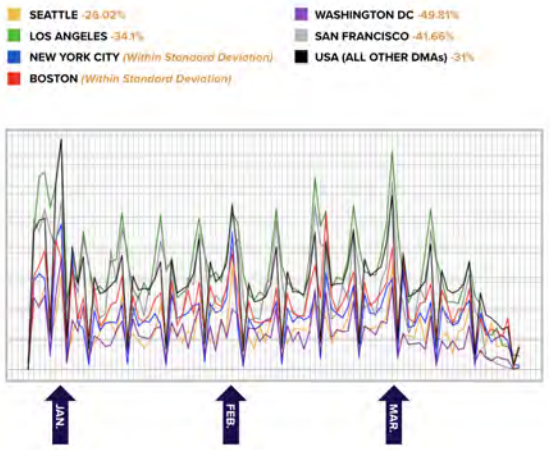
BREAK BULK, WHEELED UNITISED, MOTOR VEHICLES

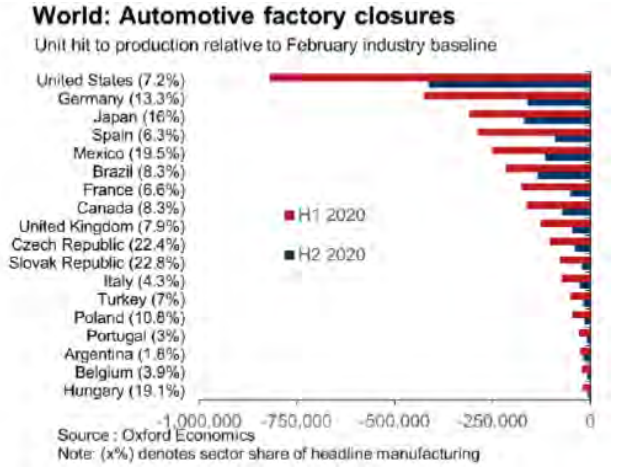
Motor Vehicles – COVID-19 Impact

A bad year just got worse.



Daily dealer visits (US Markets)





Victoria Motor Vehicle Sales

While motor vehicles were previously anticipated to bottom out through 2020 after two years of declines, with housing prices strengthening and consumer confidence returning, this was aborted at the end of February.

High unemployment, constrained movements, and unprecedented uncertainty will weigh heavily on new vehicle sales. The trough is anticipated to be in Q2 (with sales less than a typical month), and a gradual recovery to normality thereafter.

Sales are not expected to return to trend until FY23.

Global Motor Vehicle Sales

Sales during lockdowns are strongly down.

With only a few countries reporting sales activity since the onset of social distancing or lockdowns, the impact has some uncertainty.

- China sales down 79% in February
- France sales down 87% 15-23 March

South Korea bucked the trend with only a 20% fall in February, but it remains one of the few countries who was able to get a handle on the outbreak so quickly.

Global Production down

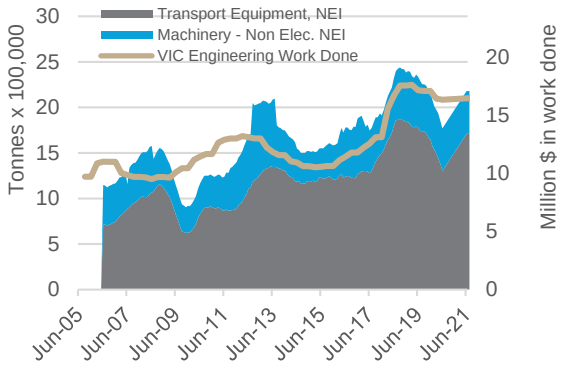
In the automotive sector, just as factories in China are restarting, the rest of world has seen the largest shutdown in modern peacetime history. Auto production in all major regions is seeing a temporary idling of plants, driven by weak demand, parts shortages, supply-chain bottlenecks, and containment measures.

This will lead to a loss of at least 4 million units of automotive production in the first half of 2020, sparking a double-digit fall in the global automotive sector this year.

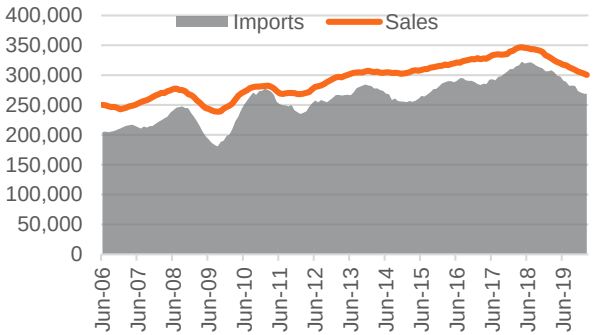
Break Bulk – Motor Vehicles, Machinery, Iron & Steel

Sales of motor vehicles have collapsed. Machinery and Equipment and Iron and Steel will likely follow the forecast growth in Engineering and Construction.

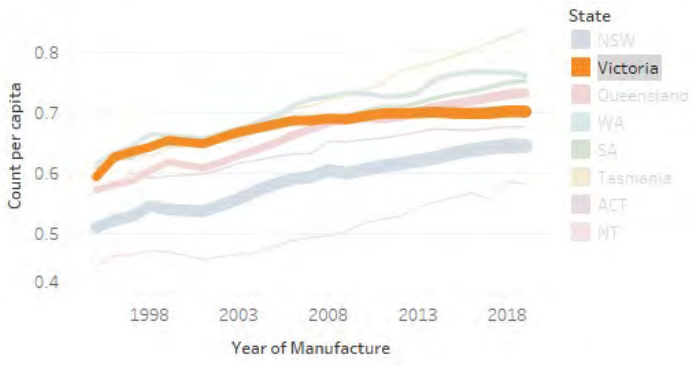
Engineering Imports and Work Done



Melbourne Motor Vehicle Imports and Victoria Sales (Units, Moving Annual Total)



Long-term growth outlook for Motor Vehicles driven by population



Overview

Excluding oil and gas, total Australian engineering construction activity has trended upwards since FY16. We expect this growth to continue through to FY24, to reach a peak of $95.9bn. Transport construction activity continues to boom, driven by a strong pipeline of major projects, particularly in the eastern states.

This boom is forecast to offset near term downturns in electricity and telecoms construction.

Drivers

Motor vehicle sales have been falling for almost two years in each of the major Australian markets, lining up with the turning in the housing market.

Tonnes/vehicle have been increasing in line with growth in the SUV share, which will likely max out by mid-decade at current growth rates.

Commentary

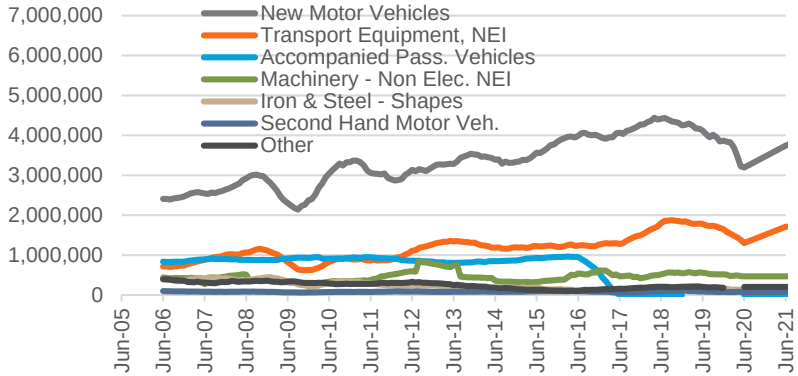
BISOE's analysis is based on the current depreciation schedule. We expect that sales to replace retired stock will grow faster than sales due to net increase in stock (driven by population and motor vehicles per capita) for the next decade. From the beginning of the next decade this relationship is expected to reverse.

Long-term, motor vehicle sales are modelled as 3.0% of the population (stock turnover) plus change in population.

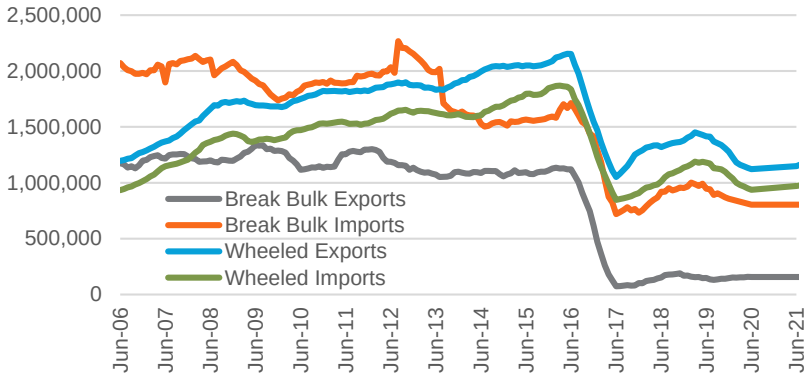
Roll-on Roll-of, Non-containerized/ General cargo

Moving forward, BISOE is forecasting the volumes of Wheel Unitised to roughly track containerised Bass Strait volumes, and for Break Bulk volumes to remain unchanged from current levels. Note that the Port of Melbourne has lost about 15% of its market since April, with a gradual return projected.

Roll-on Roll-off Import and Export Volumes to FY21



Non-containerised/ General Cargo Import and Export Volumes to FY21



Annual Changes for Roll-on Roll-off Imports and Exports

Annual % Change	2016-17	2018-19	2019-20	2020-21
New MV Imports	2.0%	-6.7%	**-22.5%**	17.2%
Transport Equipment, NEI, Imports	3.2%	-1.2%	**-27.0%**	31.4%
Second Hand MV Imports	-28.5%	-12.6%	**-18.4%**	15.6%
New MV Exports	-11.1%	-39.4%	**8.4%**	1.0%
Transport Equipment, NEI, Exports	0.5%	10.7%	**-14.6%**	-14.8%
Second Hand MV Exports	-26.8%	14.9%	**2.0%**	1.6%
Total MV Trade	**-0.9%**	**-6.3%**	**-21.3%**	**17.3%**

Annual Changes for Break Bulk and General Cargo

Annual % Change	2016-17	2018-19	2019-20	2020-21
Break Bulk Exports	-93.4%	-2.9%	**5.4%**	0.0%
Break Bulk Imports	-57.9%	3.1%	**-15.2%**	0.0%
Wheeled Unitised Exports	-51.2%	7.3%	**-20.7%**	2.5%
Wheeled Unitised Imports	-53.9%	16.6%	**-20.6%**	3.8%
Total Break Bulk	**-60.5%**	**8.5%**	**-18.2%**	**2.1%**

07

DRY BULK

Dry Bulk Imports – Historical

Three of the top dry bulk imports are inputs into the building industry. As a demand driver, the fall in dwelling building will more than offset the boom in road construction over the next three years.

End use sectors

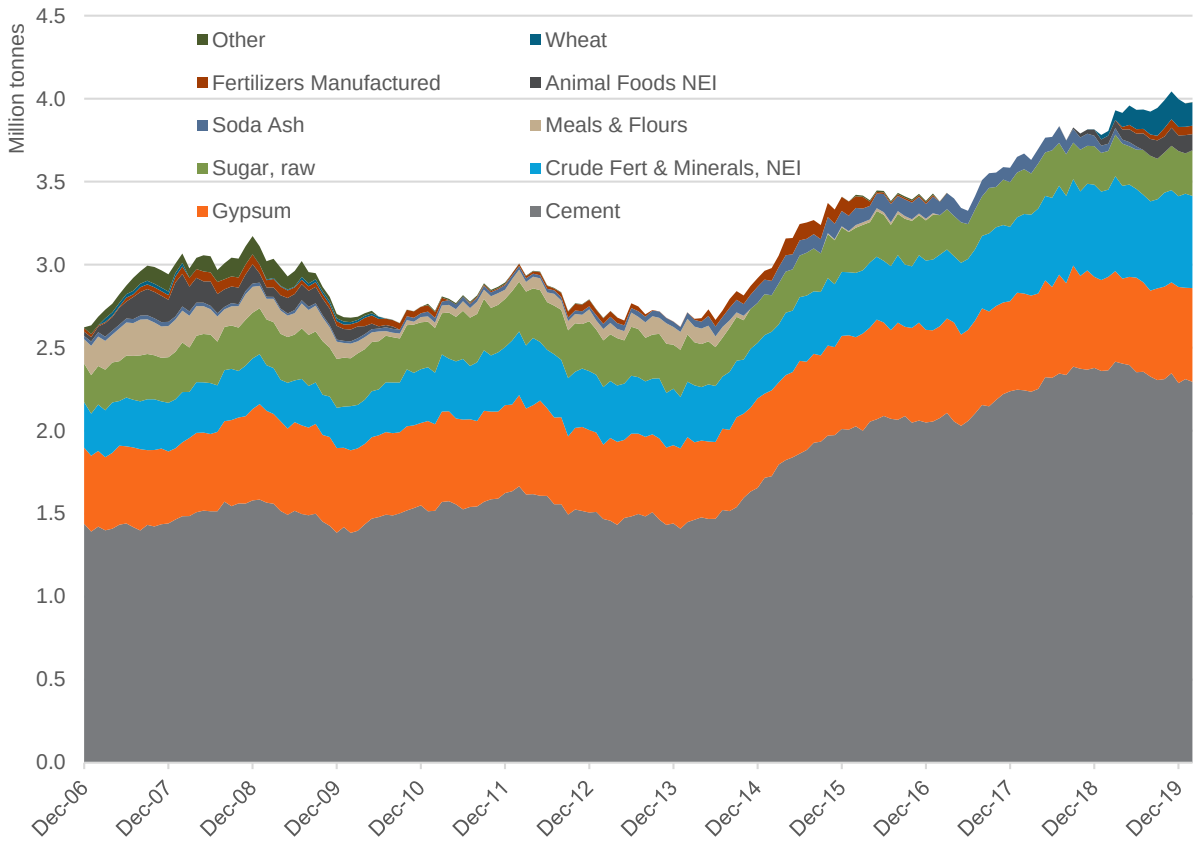
Cement clinker, fly ash and slag (reported as **cement** and **crude fertilizer & minerals** in the trade statistics) are all used to make concrete.

We have estimated the end use sectors for concrete based on an intensity factor (tonnes per million spend), as well as for **gypsum**. While gypsum is used as a binding agent in concrete, our estimates suggest that as much as 90% is used to create plasterboard for use in buildings.

Sugar volumes have been generally flat for over a decade with a regular shipment of 30,000 tonnes arriving roughly every five weeks, and **soda ash** volumes (used in the manufacturing of glass) has been diverted to the Port of Geelong in recent years.

Wheat imports which were brought in during the 2018-19 drought ceased in late 2019 just before the winter harvest (which was a return to an average yield).

Port of Melbourne Dry Bulk Imports

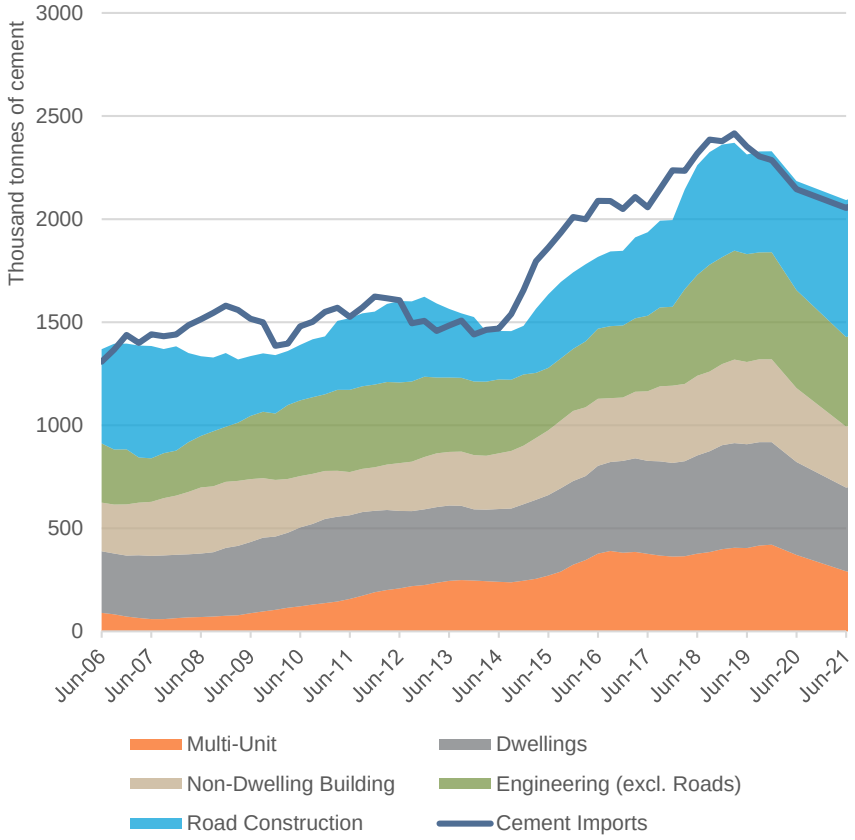


BIS OXFORD ECONOMICS

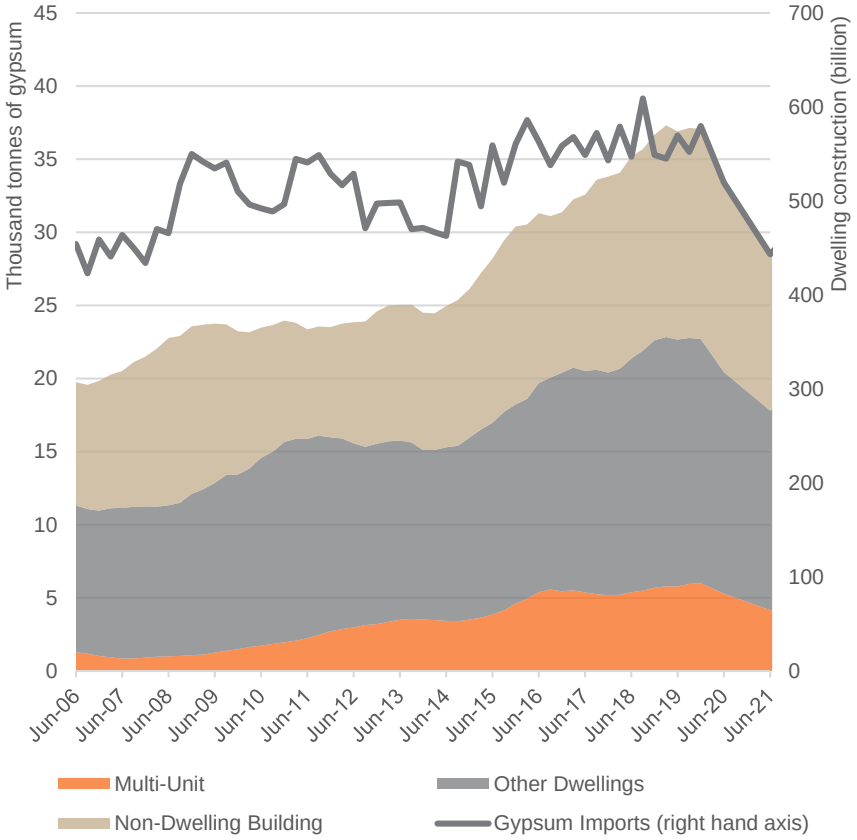
Dry Bulk Imports – Outlook

Even before COVID-19, the building boom was expecting to continue to ease, bottoming out in 2021. The slowdown is now accelerating and will be deeper.

Forecast demand for Cement
by end use sector



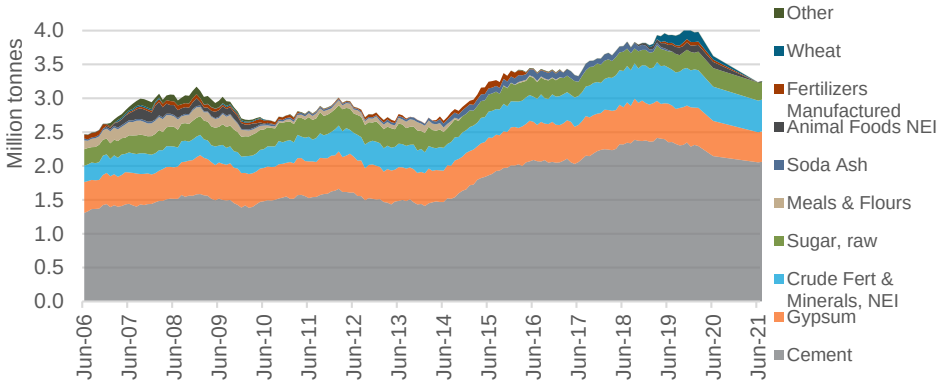
Forecast demand for Gypsum & Crude Fertilizers
by end use sector



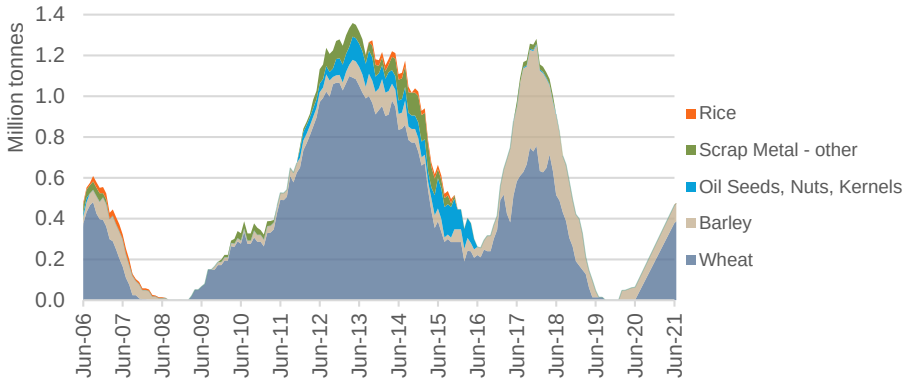
Dry Bulk Forecasts

Dry bulk imports predominantly relate to the building industry. Crude Fertilizers and Minerals mostly consist of slag (from Japan) and fly ash (from Gladstone). Both are used to make cement. Bulk wheat and barley exports are not expected to be exported in large volumes until Dec-2020.

Dry Bulk – Import Volumes



Dry Bulk – Export Volumes



Annual changes

Annual % change	2016-17	2018-19	2019-20	2020-21
Cement	-1.5%	1.4%	**-8.8%**	-4.2%
Gypsum	-2.5%	4.1%	**-8.8%**	-14.7%
Crude Fertilizers	15.3%	-0.4%	**-5.4%**	-7.3%
Sugar, raw	-24.1%	-17.2%	**15.4%**	-2.6%
Total Dry Bulk Imports	-3.5%	4.3%	**-7.9%**	-10.7%
Total Dry Bulk Exports		-94.8%	**35.7%**	630.6%