

# Data on exports of Australian wastes

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## Background

Exports of wastes came to public prominence after China made a series of four announcements during 2017 and 2018 that restricted the import of certain materials, mainly by specifying a threshold contamination rate of 0.5%. The restrictions had global consequences, reducing prices for recycled commodities and causing market blockages, stockpiling and some instability in the provision of recycling collection services.

This analysis looks at exports of wastes from Australia to all countries. The export tonnages and values are Australian Border Force data obtained via the Australian Bureau of Statistics.

On a tonnage basis nearly all these exports are materials recovered from our waste streams for recycling or energy recovery, rather than for disposal fates such as incineration or landfill. For convenience, the term ‘wastes’ is used in this document to include these recovered materials.

The data presented here updates the information presented in Section 3.4 of the [National Waste Report 2018](#). It uses updated export data from the Australian Bureau of Statistics, and reclassifies the export code 40040000 Waste, parings and scrap of rubber (excluding hard rubber) and powders and granules (mainly shredded tyres exported for energy recovery) from ‘plastics’ to ‘hazardous’. This code was previously classified as plastic in line with the [2016-17 Australian Plastics Recycling Survey](#) but has been switched to ‘hazardous’ in line with the broad classification system used for national waste data.

## Annual trends in waste exports

Figure 1 shows the quantity of waste exports from Australia to China by financial year (July 1 to June 30) and type during the 12 years to 2017-18. Waste exports to China started to fall from 2008-09, primarily due to declining scrap metal exports. In 2017-18 the impact of the China restrictions is readily apparent – exports of waste metals fell by 23%; plastics by 77%; and paper and cardboard by 39%. Overall, between 2016-17 and 2017-18 waste exports to China decreased from 1.26 million tonnes (Mt) to 0.75 Mt, a decline of 41%.

Figure 1 Exports of waste from Australia to China by financial year and type

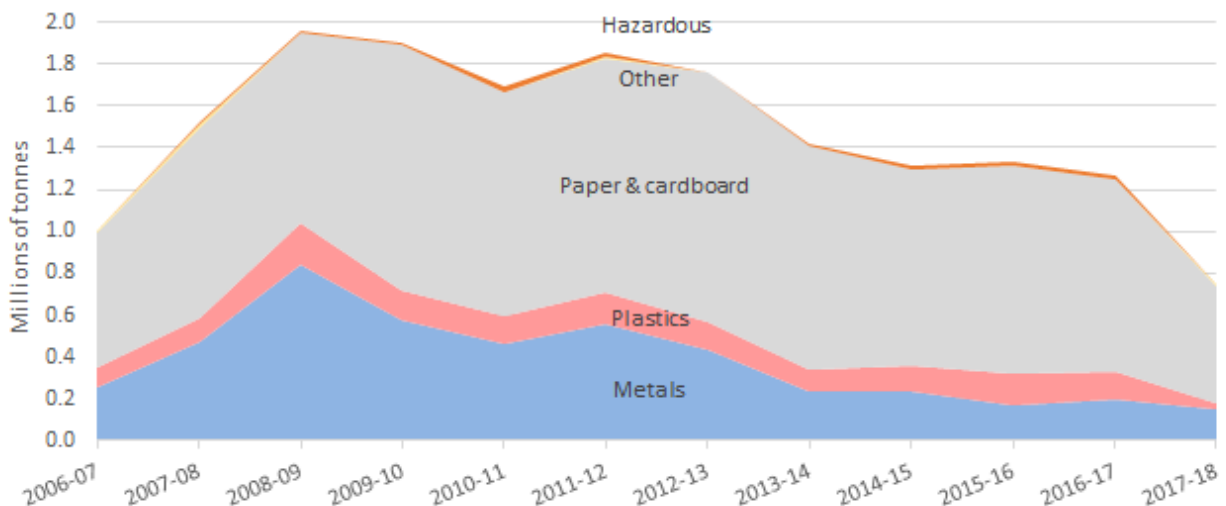


Figure 2 shows the value of exports of waste from Australia to China by financial year and type during 12 years to 2017-18. In line with tonnages, the value of waste exports to China fell from 2012-13, led mainly by decreases in the value of metals. Between 2016-17 and 2017-18 the value of waste exports to China declined by 31% for paper and cardboard and by 78% for plastics. The overall value for scrap metals increased by 12%, spurred by a 47% increase in the value of waste copper exports.

Figure 2 Value (\$A) of waste exports from Australia to China by financial year and type

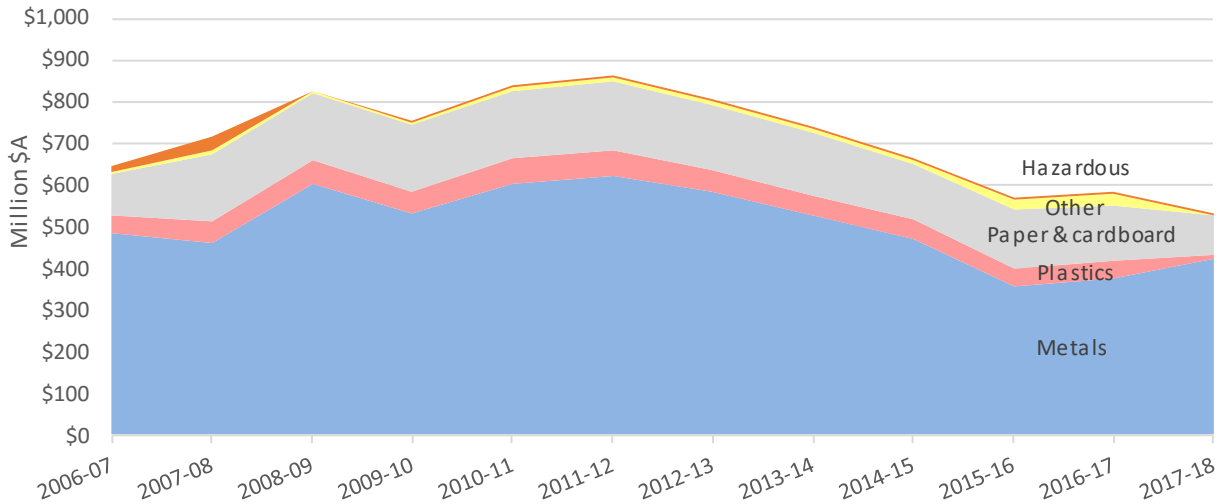
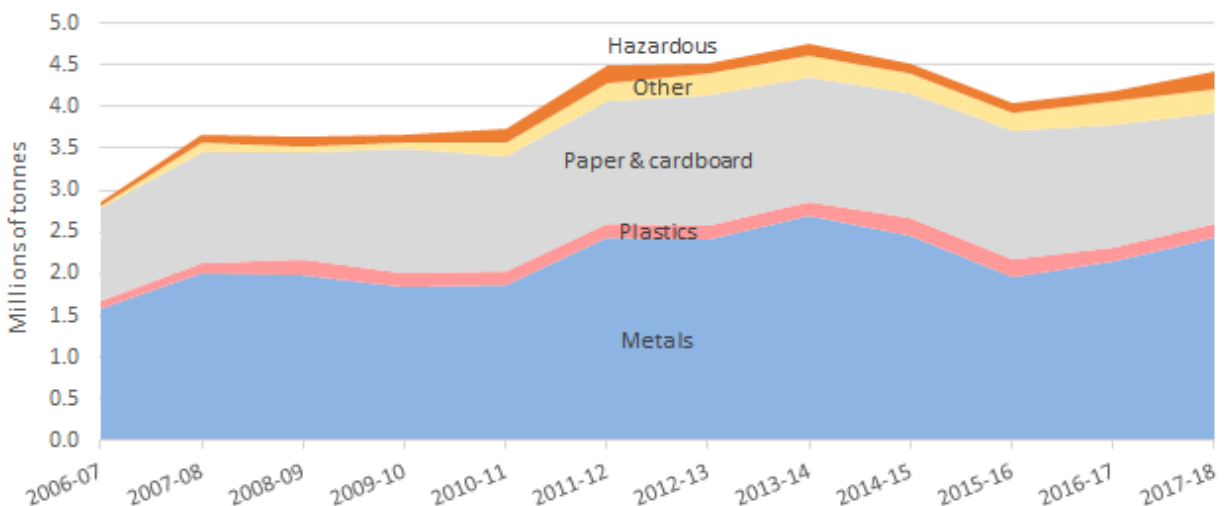


Figure 3 displays exports of waste tonnages to all destinations over the same time period. The effect of the China announcements is not readily apparent in this chart. Waste exports increased last year and the year before, consistent with the long-term trend. Between 2016-17 and 2017-18 exports of all wastes grew by 0.21 Mt (5%) to reach 4.42 Mt. There is some variability by material type – the years of highest export tonnages were for plastics 2015-16, for metals 2013-14 and for paper and cardboard 2012-13.

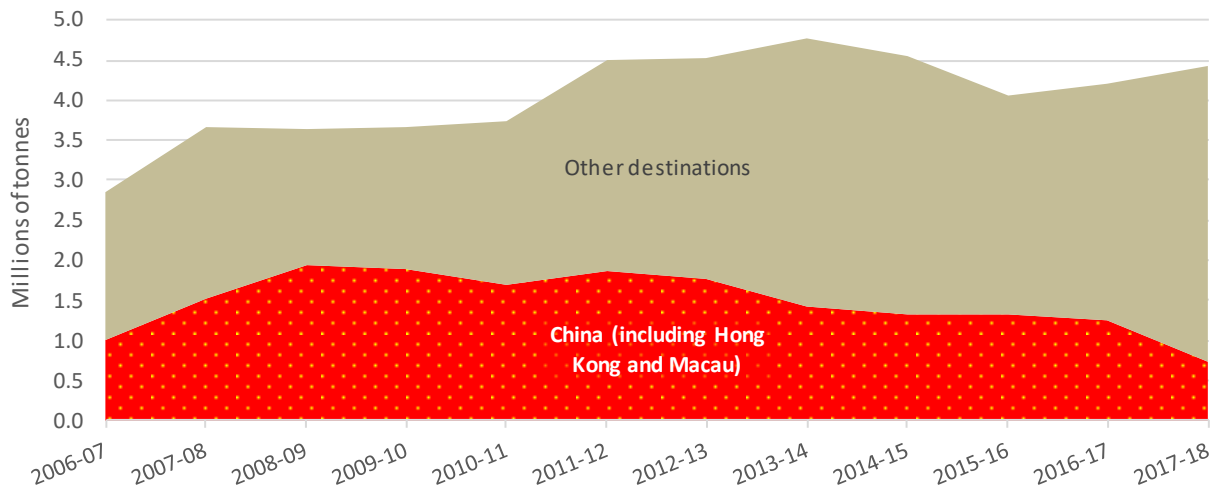
Figure 3 Exports of waste from Australia to all destinations by financial year and type



The value of 2017-18 waste exports was \$A307 million (12%) higher than in 2016-17, despite a 2.8% rise in the average value of the Australian dollar against the US dollar, in which currency most trades occur. However, the value of waste plastics exports fell by 25% and paper and cardboard by 5%.

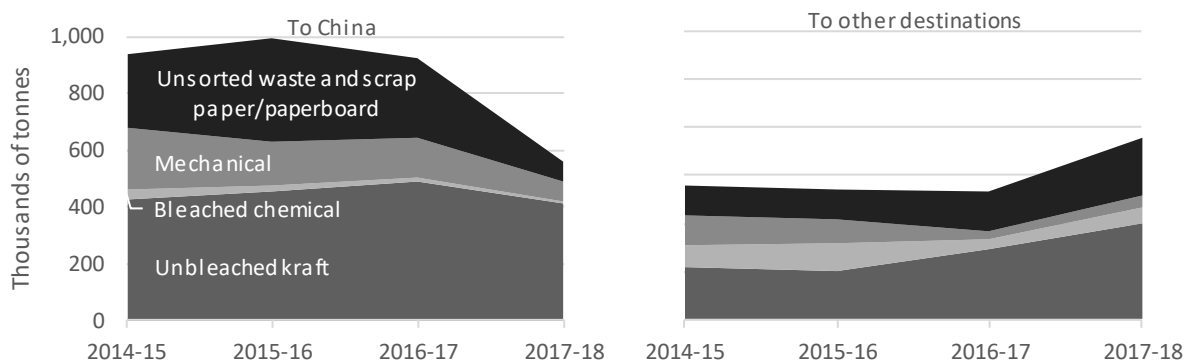
Figure 4 confirms that the decline in the quantity of waste exports to China was more than offset by higher exports to other countries.

Figure 4 Exports of waste from Australia to China and other destinations by financial year



The waste type most affected by the China restrictions, in tonnage terms, was paper and cardboard. Figure 5 examines the trend in exports of paper and cardboard over the past four years. It distinguishes exports to China (on the left) from those to other destinations (on the right) and shows material grade. In 2017-18 exports of all grades to China dropped and other destinations received increased volumes of ‘unbleached kraft’ (comprising packaging and industrial grades including old corrugated containers) and ‘unsorted waste and scrap’ (primarily from household recycling bins). Exports of mechanical pulp (newsprint) to all destinations declined.

Figure 5 Exports of scrap paper and cardboard from Australia to China and other destinations by financial year



In proportional terms, exports of waste plastics were most affected by the China restrictions, declining by 77% from 2016-17 levels. Figure 6 overleaf examines the trend in exports of plastics over the past four years, displaying exports to China on the left and to other destinations on the right, and showing the main export grades. In 2017-18 exports of the two main grades exported to China – polymers of ethylene and mixed plastics – fell markedly. For both, exports to other destinations increased. Overall exports of waste plastics decreased by 25%.

Figure 6 Exports of waste plastic from Australia to China and other destinations by financial year

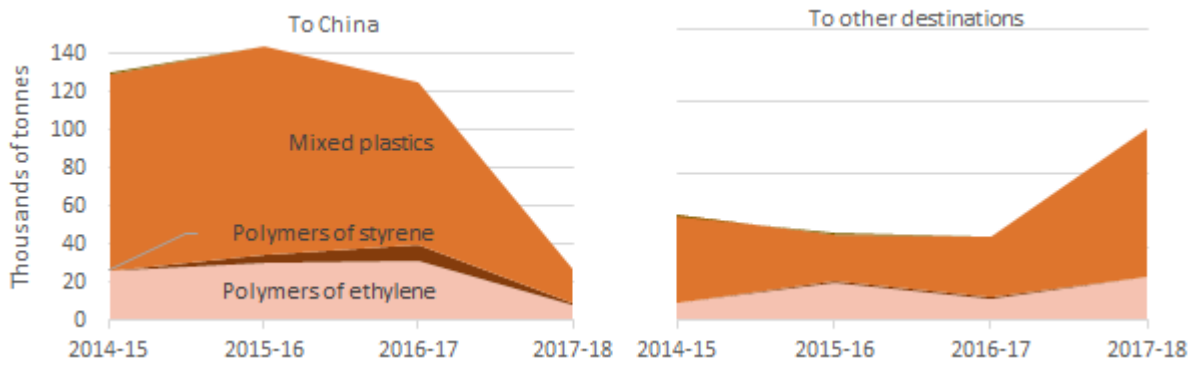
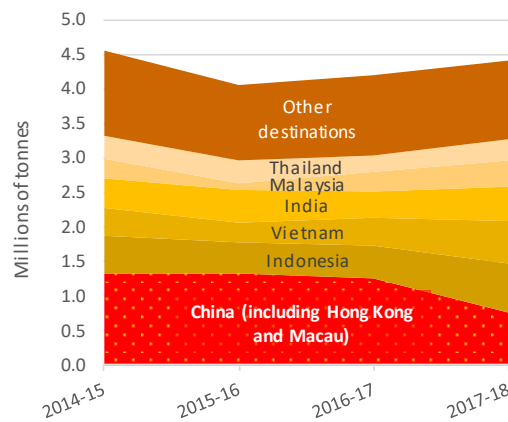


Figure 7 breaks down all waste exports by destination, ranking the six destinations that received the most materials over the past four years. China was the top ranked destination in each of these years. As its tonnages declined in 2017-18 there was no single substitute. Exports increased to each of Indonesia, Vietnam, India and Malaysia, as well as some other countries.

Figure 7 Exports of waste from Australia by financial year, showing the top six recipient destinations



## 2017-18 in focus

Figure 8 shows exports of waste to China by type and by month during 2017-18. Scrap metals exports declined in the early part of the year, spiked in February, then grew in the last quarter. Plastics shrank and remained weak. After significant falls, exports of waste paper and cardboard recovered strongly in the last quarter. The growth was across the various grades but mostly unbleached kraft.

Figure 8 Exports of waste from Australia to China by month and type, 2016-17

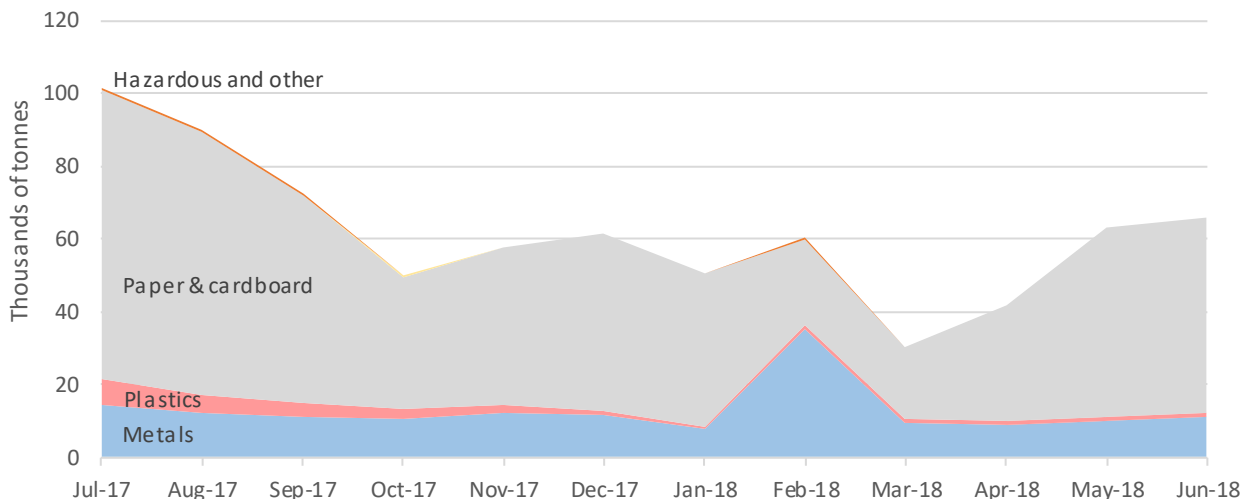
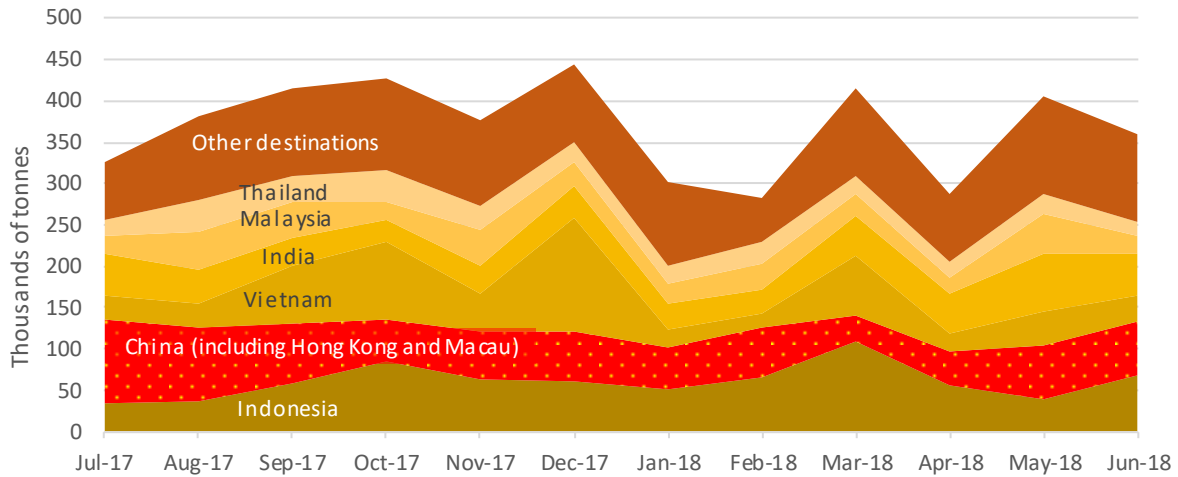


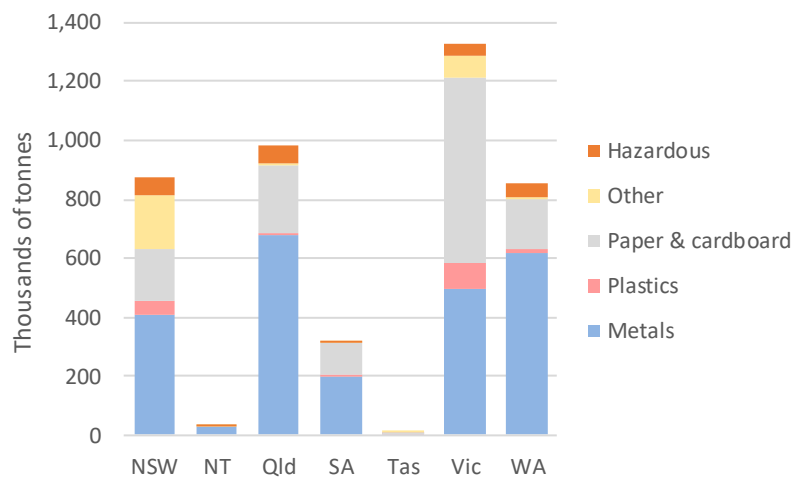
Figure 9 shows exports from Australia in 2017-18 by month, again ranking the six destinations receiving the most materials. China started the year as the top ranked destination and ended as the second highest ranked, but its share was falling for most of the year and in March it was ranked fifth. Again, there was no single obvious substitute destination for China – exports increased to each of the top destinations.

Figure 9 Exports of waste from Australia by destination and month, 2016-17



Australia’s 2017-18 exports of waste materials were exported from ports in the jurisdictions shown in Figure 10. The fact that material was exported from a jurisdiction does not necessarily mean it was generated within that jurisdiction – it may have been transported from interstate.

Figure 10 Australian 2017-18 waste exports by jurisdiction of origin



### Context – Australian waste exports compared with overall waste flows

The most recent published national data (2016-17) had Australia generating 67 million tonnes (Mt) of waste, sending 55% (37 Mt) to recycling, 3% to energy recovery and nearly all the remainder to disposal in landfill and incineration. In 2017-18 Australia exported 4.3 Mt of waste (about 12% of national recycling and 6% of national waste generation) including 0.75 Mt to China (17% of all exports and 2% of national recycling). Table 1 compares quantities recycling in Australia with exports of waste materials, noting that nearly all exports are destined for recycling or energy recovery.

The table suggests that about half of recovered metals, plastics and paper and cardboard were exported in 2017-18. Nearly all other recovered materials were recycled in Australia. These encompass a wide range

of materials but the majority of the tonnes were demolition materials, organic wastes and fly ash from coal-fired power stations.

**Table 1** Data comparing Australian exports and overall recycling of wastes

Waste material type	Quantity recycled in 2016-17 <sup>1</sup> (thousands of tonnes)	Quantity exported in 2017-18 (thousands of tonnes & percent of 2016-17 recycling)	Quantity exported to China <sup>2</sup> in 2017-18 (thousands of tonnes & percent of all exports)
Metals	4,982	2,446 49%	156 6%
Paper & cardboard	3,361	1,317 39%	559 42%
Plastics	306	219 72%	27 12%
Other, incl. hazardous	28,381	440 2%	4 1%
<b>All wastes</b>	<b>37,030</b>	<b>4,422 12%</b>	<b>746 17%</b>

Notes:

- 1 The most recent published national data set (2016-17), taken from the [National Waste Report 2018](#). Comprises materials entering recycling processes.
- 2 Including Hong Kong and Macau.

## Analysis

The China restrictions delivered a major shock to the recycling sector, particularly operators of materials recovery facilities processing household recyclables. The waste products most affected are waste plastics and paper and cardboard, especially lower grade mixed products. Scrap metals exports have been less impacted because China was receiving a much smaller proportion of these materials prior to its announcements.

Notwithstanding the disruption, waste exports increased in quantity during 2017-18. The waste sector, it would seem, was able to find alternative export markets. These were largely Asian countries. Exports increased to each of the top five recipients of Australian waste products after China – Indonesia, Vietnam, India, Malaysia and Thailand. The value of exports increased overall but fell for paper and cardboard and fell significantly for plastics.

Further, while exports to China tumbled during 2017-18 – reaching one third of their July 2017 quantity in March 2018 – they subsequently recovered strongly, mainly through growth in exports of paper and cardboard. Paper industry expert Tim Woods of IndustryEdge nominates three factors that may help explain this:

1. Some operators applied higher levels of sorting, particularly of existing inventories, to meet China’s new 0.5% contamination limit. This is apparent in Figure 4, which shows the overall quantity of unsorted waste and scrap contracted while unbleached kraft and bleached chemical grades grew, suggesting some conversion between grades.
2. The China restrictions diverted demand towards higher grades, and some Australian operators were able to respond by redirecting higher grade materials to export and lower grades to their domestic production.
3. Chinese compliance efforts may have focused on waste imports from the USA.

Recent reports suggest that several Asian countries are reviewing their policies in relation to waste imports. Malaysia and Thailand have since announced a ban on plastic waste imports by 2021; others are taking immediate actions to tighten controls on imports. If Malaysia, Vietnam and Thailand enacted waste import bans similar to China’s, Australia would need to find substitute domestic or export markets for approximately 1.29 Mt (or \$530 million) of waste a year, based on 2017-18 export amounts.