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far.rabobank.com

[Natasha Valeeva](#)

Senior Analyst – F&A
Supply Chains
+31 30 712 2773

Recovered Paper and Pulp World Map 2020

A New Round of Transition in the Global RCP Trade – All Driven by China

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Summary

- Over the past 20 years, China has proven its massive influence on the global recovered paper (RCP) market.
- Driven by China's RCP supply/demand imbalances, the RCP market has undergone a gradual transition, from being a rather local product to a global commodity. As a result, global trade in RCP increased by a CAGR of 8.5% between 2000 and 2012. Exports to China accounted for about half of trade volumes.
- Between 2012 and 2019, changes in China's RCP import policies initiated a new round of transition. This resulted in a gradual decline in global trade by a CAGR of 3.1% in that period, which accelerated after the introduction of major restrictions in 2016. A redirection of exports away from China to India and Southeast Asia, and the emergence of recycled pulp imports to China also arose from this transition. There are currently no grounds for global RCP trade growth.
- For the main RCP exporters like the US and Europe, China's import restrictions have implied that much RCP export tonnage will now stay in the regions. This – in combination with marginal RCP supply challenges owing to Covid-19 and the increasing commitments to sustainability globally – continue to challenge players across the paper packaging supply chain to look for new local strategic solutions.

RCP Is Vital in Paper Packaging Production

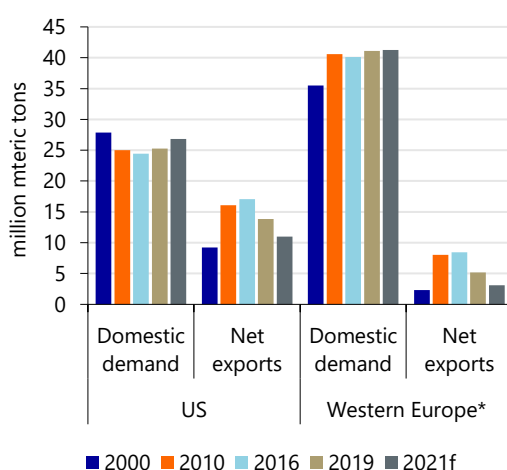
In the last two decades, recovered paper (RCP) has become a vital raw material. Players in the global paper packaging industry now rely heavily on recycled fiber/RCP, which is not always sufficiently available domestically. The challenging global RCP market environment creates opportunities for some companies and threats for others. Therefore, understanding RCP dynamics and anticipating market changes are of strategic importance for all participants along the paper packaging supply chain. Our recently published [Recovered Paper and Pulp World Map](#) highlights the main structural changes the global RCP market has undergone since the introduction of China's new RCP policies in 2013.

From Local Product to Global Commodity

Over the past two decades, the uneven geographic distribution of RCP recovery and consumption has boosted global RCP trade (*see Figure 1*). The mature markets of western Europe, Japan, and North America have established sufficient domestic RCP supply. However, the efforts these markets have put into RCP collection and recovery varied, depending on local [availability of virgin fiber and other market specifics](#). At the same time, in emerging regions of Asia, especially in

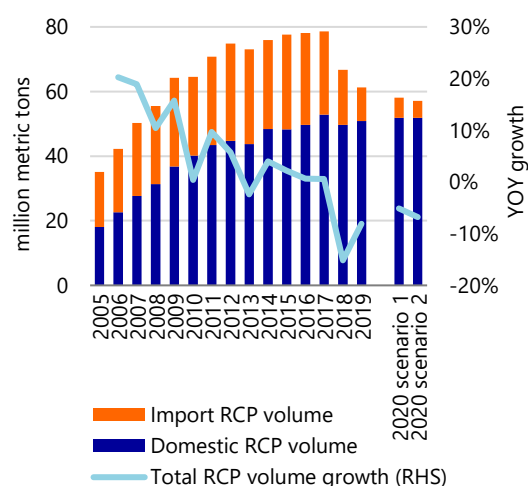
China, the local industry has had to catch up quickly with growing paper packaging demand to serve both domestic and export markets. China's domestic RCP supply was getting increasingly strained, given that a large share of corrugated boxes produced in China was leaving the country through exports and was subsequently recovered in other regions. Domestic RCP collection and recycling have lagged behind in supplying the necessary RCP volumes (see Figure 2). For a long period of time, this stimulated RCP exports from markets with efficient infrastructure and oversupply of RCP to China and, in this way, stimulated the entire global trade. Availability of empty freight containers (after delivering export goods from China) to bring back cargo 'for free' has encouraged this trade as well, especially from Europe. In this way, the supply of RCP has undergone a gradual transition, from being a rather local product to a global commodity.

Figure 1: US and European RCP demand and supply, 2010-2021f



Source: Fastmarkets RISI, Rabobank 2020
 * Western Europe = Germany, France, Italy, and the UK.
 RCP includes OCC, ONP, and mixed paper.

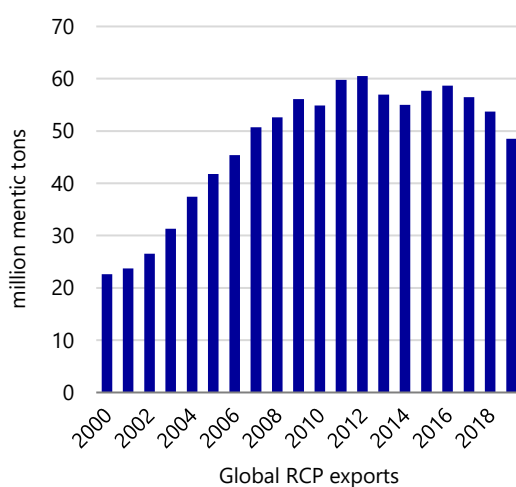
Figure 2: China's RCP balance – domestic production and imports, 2005-2020f



Source: China Customs, China Paper Association, Rabobank 2020

As a result of this trend, global RCP trade reached 60.5m metric tons in 2012, growing at a CAGR of 8.5% between 2000 and 2012. Exports to China accounted for about half of these volumes, making [both the US and western Europe interdependent with China in this trade](#) (see Figures 2 and 3).

Figure 3: Global RCP exports by volume, 2000-2019



Source: UN Comtrade, Rabobank 2020

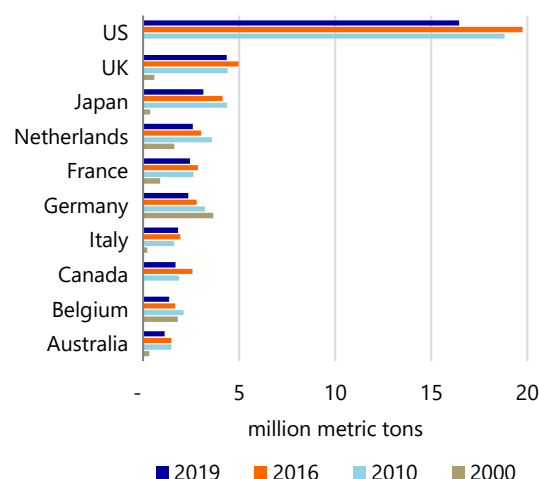
From 2013 onwards, China started implementing its long-term strategy to strengthen domestic supply by building its own efficient waste infrastructure, reducing import quotas, and introducing tighter contamination thresholds. As a result, global RCP trade has declined by a CAGR of 3.1% from 2012 to 2019, to reach 48.9m metric tons (see Figure 3). The most notable decline took place from 2016 to 2019 (-5.9% CAGR), when the major Chinese RCP import restrictions came into force. With the looming total import ban on RCP, Rabobank expects Chinese imports to be around 5m to 6m metric tons in 2020 (see Figure 3). China's policies are, therefore, driving a new transformation in the global RCP market.

China Is Still the Biggest RCP Export Destination, but Global Trade Flows Are Changing

As our recently published [Recovered Paper and Pulp World Map](#) shows, in 2019, the largest trade flows, in volume terms, of the main exporting countries – the US and UK – still went to China and accounted for 3.8m and 0.9m metric tons, respectively, of old corrugated containers (OCC). The third-largest flow was old newsprint (ONP) from the US to China. These top 3 flows were followed by flows of OCC and mixed paper from the top 10 RCP-exporting countries to China, India, and Southeast Asian countries – mainly Indonesia, Vietnam, and Thailand (see Figure 4). Germany and France were exceptions among these top exporters, as their main RCP exports went to European countries.

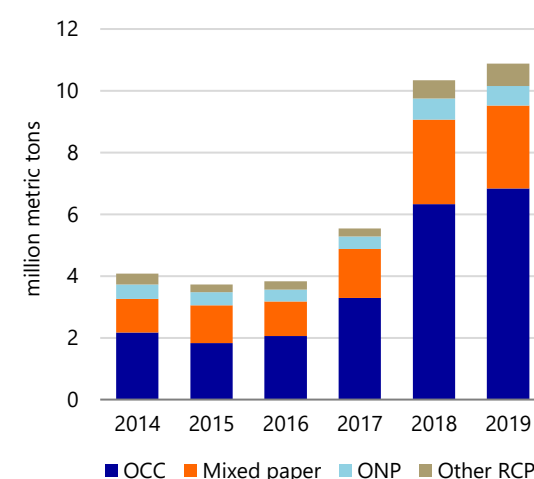
As discussed in a [previous study](#), the uncertainties about RCP export opportunities to China started to redirect flows of the largest RCP exporters – the US and Europe – to India and Southeast Asia. In 2018, total exports of OCC and unsorted mixed paper (banned by China) to these countries nearly doubled. However, as we expected, this trend didn't continue at the same pace in 2019, when total RCP exports increased only by 0.5m metric tons, driven by OCC (see Figure 5).

Figure 4: Top 10 RCP-exporting countries by volume, 2000-2019



Source: UN Comtrade, Rabobank 2020

Figure 5: US and EU exports of RCP to India and Southeast Asia, per RCP grade, 2014-2019



Source: UN Comtrade, Rabobank 2020

Between 2016 and 2019, total RCP exports of the main RCP exporters saw declines, since the total additional volumes shipped to all Asian countries were far less than the tonnages lost in China (see Figure 4). The top 10 ranking countries in global RCP exports have hardly changed since 2016. Although both the US and the UK have lost about 15% of their RCP exports in the last three years, the US is still by far the biggest exporter of RCP (in all grades), followed by the UK and Japan. Japan lost about 25% of its RCP exports in the same years. The decreased exports mainly resulted from a near halt in mixed paper exports. Italy improved its rank from the eighth to the seventh position, with a slight increase in RCP exports driven by increasing exports of RCP of all grades to Turkey.

In the next few years, we expect a further decline in global RCP exports. Given China's intention to "ban importing solid waste" permanently by the end of 2020, about 5m to 10m metric tons might need to either stay in their 'home' countries or find new export destinations.

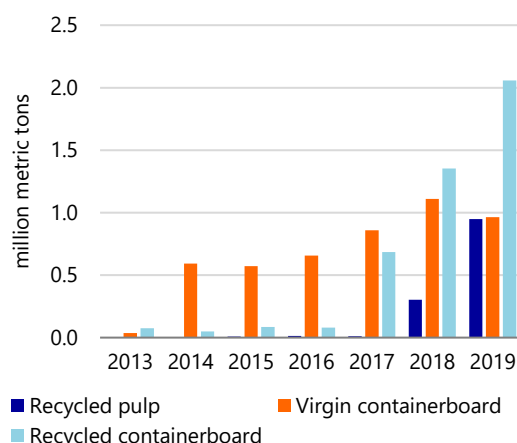
However, opportunities in Asian markets are limited. As we expected, governments across Asia are also tightening their RCP import policies. The Indian government is considering the imposition of a 1% contamination limit on imports of mixed paper in 2020, and it has already banned the

import of stock lots¹ from January 2020 across all RCP grades. In turn, in May 2020, Indonesia introduced a phased reduction of the contamination limit, starting from 2% and declining to 0.5% in the next two years. By the end of 2020, the Indonesian government will develop a roadmap that will also lead to reduced RCP import quotas and gear toward increased domestic RCP supply. The government is considering prohibiting shipments from brokers and traders. Only direct shipments will be allowed – for example, defined as direct from the US to Indonesia (no transshipment via Singapore). For now, the government continues to crack down on the quality of RCP bales – particularly in terms of moisture content – as well as on illegal RCP imports. Extra permits are now needed before RCP can be imported, and customs inspections have been tightened. As a result, hundreds of containers carrying RCP with overly high contamination levels have been denied entry. Vietnam is also considering adopting national standards for scrap, including which RCP quality will be allowed for imports.

China to Rely on Imports, but Switching to ‘New’ Recycled Fiber

With China’s move toward zero RCP imports, the country will need to fill the gap of recycled fiber to meet the demand of its domestic paper packaging production. It is, however, difficult to substantially increase China’s domestic RCP supply because the average recycling rate of OCC has already reached 95% nationally and 99% in developed coastal cities. And China’s forest resources are, by far, also not enough to fill the gap.

Figure 6: China’s imports of recycled pulp and containerboard, 2013-2019



Source: UN Comtrade, China Customs, Rabobank 2020

[In a recent study](#), we highlighted investments made by Chinese companies in the production of recycled pulp abroad to supply containerboard mills in China as one strategy to secure recycled fiber supply. The Chinese government classifies recycled pulp as a separate product (not as solid waste), which is allowed to be imported. According to local industry sources, recycled pulp imports are more cost-efficient compared to containerboard imports. So, in 2018 and 2019, China imported about 0.3m and 0.95m metric tons of recycled pulp, respectively (see *Figure 6*). Due to additional recycled pulp capacity coming online soon, we estimate these imports to increase by about 1.5m and 1m metric tons

in 2020 and 2021, respectively. In this way, China continues to influence and reshape the global recycled fiber trade with the emergence of trade in recycled pulp.

Global RCP Trade to Stay, but Local Focus to Become More Prominent

We expect the export market for RCP to remain essential for the main RCP exporters, due to the existing regional RCP supply/demand imbalances. However, we do not foresee any increase in trade. Stimulated by China’s RCP policy changes and growing commitment to sustainability, the main RCP-exporting as well as importing countries will need to turn more efforts toward local RCP recycling solutions and to improve the overall quality of traded RCP.

¹ Stock lots refer to imports of RCP in bales of odd sizes and unsold old stocks, for which lower import duties are applied. This was misused by some traders.

As mentioned above, RCP export flows to China will eventually dry out, which will lead to constant decline in global RCP trade. Next to tightening RCP import policies – and, in this way, further driving demand for higher-quality traded RCP – India and Southeast Asian countries will be focusing on the development of local RCP collection, sorting, and recycling infrastructure. This might reduce RCP exports to these countries in the future.

The missing RCP export flows to China will need to be substituted by recycled pulp and containerboard imports to China. So, RCP collected in the US, western Europe, or Japan still has an opportunity to flow to India and Southeast Asia, where additional capacities for these products are being built. China's current recycled pulp investments in Southeast Asian countries might, however, be less suitable for further capacity growth, due to the import tightening in these countries described earlier. This might drive the US and Europe – where most RCP is generated – to explore investments in recycled pulp mills, since these regions still need to find the most economically and environmentally sustainable local solutions for the surplus of imported packaging produced outside of these regions (i.e. in Asia).

Also, in the main RCP-exporting countries, declining export volumes and lower prices stimulate higher domestic RCP consumption. In the US, this might even stimulate a growth of recycled containerboard market share vs. virgin-based. Driven by structural OCC oversupply and historically low prices (before Covid-19), a number of recycled containerboard mill projects have been announced (e.g. Green Bay Packaging, Cascades, and Bio Pappel subsidiary McKinley). This trend indicates that 60% of capacity that has come online since 2018 is recycled capacity. Remarkably, in the meantime, 68% of new virgin mill projects have been delayed or cancelled, due to geopolitical tensions and the Covid-19 crisis. The projects based on recycled feedstock are weathering the uncertain market conditions better. If all announced projects go through eventually, the market share of recycled containerboard capacity in the US will reach 36% in 2022, compared to 33% in 2019.

Covid-19 Exerts Pressure on RCP Supply and Trade

Covid-19 has brought various challenges to the domestic RCP markets of the main exporting regions (the US and Europe). Addressing these challenges will require time and local solutions to stabilize RCP supply and bring it to a new balance, which will eventually lead to lower RCP volumes available for overseas export, both in the short and long term.

- **RCP availability.** RCP availability has fallen temporarily, due to various supply chain disruptions caused by lockdowns. For example, in Germany, according to EUWID, the closure of many stores and industrial operations has caused a sharp drop in RCP normally collected via these sources. According to market players, volumes were down by as much as 30% from March to May 2020. A temporary increase of RCP supply came from a brief uptick in volumes collected via supermarkets, owing to panic-buying, but didn't fully make up for the losses from other channels. Another example is France, where the paper recycling market was down to 65% of normal business levels, due to low collection rates and the closure of multiple sorting plants (according to BIR). The latter led to large volumes of RCP being incinerated or sent to landfill. We've seen the same pattern across the US and in other countries during lockdowns. With an easing of lockdown measures, we believe the situation with logistics of RCP sourcing and sorting will normalize in Q3 2020. However, a general decline of economic activity will also likely be seen in 2021, which means a smaller number of corrugated containers will be produced and returned in the RCP system.
- **RCP quality.** An increase in online food and non-food sales has redirected some volumes of high-quality RCP (OCC) from supermarkets to households' waste bins, where they are mixed with other RCP and thus become of lower quality than if they were collected via institutional channels (e.g. physical retailers, food supermarkets). This is bringing new challenges of sorting and collecting small volumes over distributed areas. We expect the online trend to stay, and

perhaps even accelerate, post-Covid-19. As a result, paper producers might face challenges in accessing the required volumes of good-quality OCC/RCP. The structural decline in demand for printing and writing paper was accelerated by Covid-19, which will imply a smaller amount of virgin-based RCP in the system, but also a structural decrease in RCP supply in general.

- **RCP trade.** Although RCP shipments within the EU have continued, supply chain disruption in some European countries did result in extra RCP supply pressure in other countries. For example, Germany, as a net importer, experienced even tighter supply of RCP, due to significantly lower imports (e.g. from France) because of the above-mentioned disruptions. At the same time, according to BIR, European shipments to Southeast Asia were proving almost impossible in March and April 2020. In June, we still heard reports of stalled and cancelled shipments to India and Indonesia, as well as congested ports.

Successful Fiber Strategies Will Determine Winners

RCP remains one of the major competitive differentiators in the paper packaging industry. An assured RCP supply at the lowest possible cost is of high strategic importance for paper packaging companies. Global and regional RCP markets do not remain static. Over the past two decades, China has proven its massive influence on the global RCP market. So, it's crucial to understand what happens in China, as every move in China makes other regions search for new solutions. Our recently published [Recovered Paper and Pulp World Map](#) will very likely be a completely different map in 2021, mainly due to China, while the impact of Covid-19 will be marginal. Paper packaging players need to adapt promptly to the changes that are currently reshaping the RCP market and affecting their upstream operations when dealing with RCP supply.

We expect Chinese companies to continue to pursue a strategy of investment in overseas recycled pulp capacity to assure fiber supply for domestic containerboard production. At the same time, the emergence of recycled pulp also invites other players to develop new fiber-sourcing strategies. Potential challenges in accessing the required RCP volumes domestically – as we saw with Covid-19 lockdowns – might prompt producers of paper for packaging to consider cooperating more closely or (further) vertically integrating with RCP suppliers.

Especially in North America, producers of recycled paper grade are searching for a new balance in their fiber basket by modifying their machines to take in a large share and lower grades of RCP. Even producers of virgin-based paper grades are incorporating larger shares of RCP. Such strategies of modifying the input composition might imply a change in the performance characteristics of the finished paper. The paper might become less suitable for specific customer product needs. So, when switching qualities of feedstock, paper product innovations become essential to keep a required paper performance and its added value. Another strategic choice might involve investigating new applications of recycled fiber and new products made of it.

Overall, we expect companies to focus more on local, resilient RCP supply and consumption (e.g. investments in new mills). And, as discussed in [our previous study](#), investments in local 'quality' recycling infrastructure remain a necessary step across all regions and across the entire supply chain, including waste management.

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Natasha Valeeva	Senior Analyst – F&A Supply Chains	natasha.valeeva@rabobank.com +31 30 712 2773
Xinnan Li	Analyst – F&A Supply Chains	xinnan.li@rabobank.com +1 647 258 2023
Stacie Wan	Analyst – F&A Supply Chains	stacie.wan@rabobank.com +86 21 2893 4620
Shiva Mudgil	Analyst – F&A Supply Chains	shiva.mudgil@rabobank.com +91 22 2481 7724

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