Fastmarkets RISI
Global Boxboard Outlook

Forces shaping the boxboard industry

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Riding the down cycle

2017 was a strong year, 2018 not so much and 2019 even worse

- Deceleration in the global economy
- Boxboard demand slowing
- Markets growing oversupplied
The evolution of consumers and their shopping experience

Covering our needs
- Population growth
- Urbanization

Convenience
- Discount retailers

Consumer wellbeing
- E-commerce

Hyper-convenience
- Convenience

Blue planet effect
- Move away from plastics
- Loop

The evolution of consumers and their shopping experience
• Economy to affect growth in the short term

• Population and urbanization will increase per capita consumption, especially in emerging economies

• Consumers are expected to remain loyal to boxboard

• E-commerce effect still relatively small

• What if fiber-based packaging solutions are not enough? — Blue planet effect

• Plastic substitution from a legislative point of view
Let’s state some facts

- 6.5 Million tonnes: Lost opportunities between 2018 and 2021
- 4.1 Million tonnes: Closures or delayed/cancelled new starts
- 84%: Weaker balances, pressure on prices
Global boxboard demand is weaker

Lost opportunities between 2018 and 2021

Million tonnes

Change in demand, global boxboard


Million tonnes

-1.0 0.0 1.0 2.0 3.0 4.0 5.0

Current  Previous
Economic growth matters

- **US** economy **doing better** than other global regions
- **China** continues with its **transformation**; recent growth affected by **trade war** with US
- **Europe** slowed since the second half of 2018 (trade wars, Brexit)

**What is driving the demand losses in China?**
- Ongoing economic slowdown
- Imported fiber restrictions
- Higher paper prices

**Most of the losses are in Asia**

- **Rest of World**: -376,000 tonnes
- **Europe**: -1.1 million tonnes
- **North America**: -209,000 tonnes

-1.0 0.0 1.0 2.0 3.0 4.0 5.0

Million tonnes

Previous

- 376,000 tonnes
- 1.1 million tonnes
- 209,000 tonnes

Current

- 4.8 million tonnes

Global boxboard demand

- North America: 9%
- Europe: 21%
- Asia: 51%
- Rest of World: 22%
A respite from overinvesting in capacity?

Global boxboard demand and capacity changes

Global market balances

Operating rates back below 84% due to stronger demand reductions in 2019

Capacity changes, 2018-2021
• Disruption of global supply chains
• Consumption lower than expected
• Fragile economies at risk of recession
• Rise in e-commerce shopping (incl. groceries)
• Potential production disruption at pulp and paper assets (no stops confirmed so far)
China and Europe more at risk

Million tonnes

North America | Europe | China | Other Asia | Latin America | RoW
---|---|---|---|---|---
Paper and board | Pulp & PfR

2019 | Fastmarkets | Global Boxboard Outlook
Imports taking most of the demand growth in folding cartons
Demand growing moderately

Demand growth, 2018-2021

220,000
Thousand tonnes

Nondurables set the tone for demand

Good performance on food service board

Weak performance in dry foods, soap & detergent

Downward pressure on exports due to expected strengthening of the US dollar
North American boxboard grades

Demand growth, 2018-2021

Of the 220,000 tonnes of demand growth

- Folding carton: -34,000
- Liquid packaging*: +179,000
- Other: +75,000

* Includes food service board (cup & plate stock).

- 55% Folding cartons
- 18% Liquid packaging, cup & plate stock
- 27% Other

Demand down 1.9% in 2019

Million tonnes

Folding carton Liquid packaging, cup & plate stock Other
North American folding cartons

CAGR 19-21

-8.4%

-1.8%

+2.4%

2012 2014 2016 2018 2020

Million tonnes

Bleached

Recycled

Unbleached

Changing consumer preferences affecting coated recycled board

Lower beverage production and SBS substitution

Upside risk: green image

Slowing food production is a limiting factor

Heavy competition with FBB and ivoryboard

War on plastic to have small impact on folding cartons (food service board)
CUK prices above SBS in the USA

- Historical premium for SBS close to US$80/ton
- Currently, CUK prices US$80/ton above SBS

Factors behind higher CUK prices

- Far more concentrated supply
- Perception that brown products are more environmental friendly
- CUK increasing popularity within food service board

Factors holding SBS prices down

- Imports of multi-ply from Europe and Asia affecting domestic SBS markets
- Sappi conversion at Somerset mill

Any grade shifting out of CUK will impact CRB more than SBS

Pricing gap between folding cartons and food service board continues
Cupstock markets tighter than folding cartons

**Cupstock**

- Better demand trends for cupstock, as it has better exposure to processed food packaging and plastic substitution.

**Folding cartons**

- Most intense competition from imports and new entrants like Sappi.
- Closure of Georgia-Pacific Crossett mill in October influenced by this.
US boxboard trade

Exports

- The shift of Chinese boxboard producers to virgin grades and overcapacity in Europe will keep US boxboard exports constrained
- Strengthening US dollar not helping

Imports

- Most of the growth in folding carton demand will likely be met by increased imports produced overseas
- Flat prices in the US is pushing consumers to look for alternatives elsewhere (imports)
- Imports to increase 4.1%, while domestic production will increase only 0.8%, annually, during the next five years
Virgin boxboard markets weakens amid soft demand and more capacity starts
Demand still lagging behind historical average

Asian boxboard

- Investment decelerated since 2014
- Slowing in Chinese economy and fiber import restrictions changing the landscape
- Consumption still constrained
- High paper prices contributed to the accelerated demand decline in 2018
Asian boxboard grades

Virgin boxboard demand will perform better

- Urbanization and increasing health awareness driving demand for packaged food for convenience and food safety
- Shift to higher quality for brand image purposes
- Recovered paper policies (import restrictions) stimulating grade shifts from CRB to ivoryboard
China & Hong Kong SAR

60% of Asian boxboard demand, 31% of global boxboard demand and 75% of regional volume growth (2004-2017)

Chinese demand down 6% (-1.3 million tonnes) in 2018
- Slower economic growth
- Plastic substitution in light of steep rise in prices in 2017

Outside China & Hong Kong SAR, demand growing 3.8%

Main Asian markets

60% of Asian boxboard demand, 31% of global boxboard demand and 75% of regional volume growth (2004-2017)

Chinese demand down 6% (-1.3 million tonnes) in 2018
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Imbalance between duplex and ivoryboard

Changes 19 – 21: China

- Ivoryboard weakening due to capacity outgrowing demand
- Duplex market might tighten due to upcoming capacity reductions
• Asia is a net importer of boxboard. Balance has changed little over the past ten years
• Oversupply led China to become a major net exporter, mostly to other Asian markets
• Chinese exports (ivoryboard) will increase due to capacity additions outpacing demand growth
• Investment by Chinese companies in Other Asia (coated duplex) to increase Chinese imports
Higher imports of coated duplex

Chinese coated duplex board imports and production

- CBO imports will rise from 6% of the total to more than 40% in the coming years
- Closures (environmental reasons) and fiber restrictions causing lower production of coated duplex board
- Imports of all other boxboard grades to remain relatively flat to slightly down
Chinese exports linked to capacity and pulp prices

- Exports also have an inverse relationship with pulp prices
- Lower market pulp prices usually boost Chinese exports
- With pulp prices trending down, we can expect China to export more
- Pulp prices as an indicator of Chinese cost competitiveness
2017 was a strong year; demand has since weakened
Market conditions are changing rapidly

Coated boxboard Europe

Strong exports helping to tighten the market since 2016

Industry reached its peak in late 2017/early 2018

Since then, demand has weakened considerably

Capacity additions have contributed to the collapse in operating rates since 2018
European capacity starts, 2018-2020

A few additional noteworthy changes

- Iggesund cancelling 100,000 tonne capacity increase in Sweden (SBS)
- Stora Enso not going forward with Oulu conversion to CUK (450,000 tonnes)

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Demand growth, 2018-2021

Strong correlation between production of nondurable goods and coated boxboard demand

Production of durable goods (consumer electronics, toys, jewellery) are also packed in coated boxboard
Demand for virgin boxboard (CBB, CBU, CBV, CBP) has grown 1.5% per year since 2005, more than twice as fast as coated recycled board.

Coated recycled board exposure to underperforming industry segments (dry foods, household chemicals) resulting in slower demand growth.

The recovery in the European economy and the reactivation in construction since 2015 lifted uncoated boxboard demand.
- Manufacturing of tobacco products in clear decline, affecting demand for folding boxboard and solid bleached board
- Pharmaceuticals and manufacturing of prepared meals doing better than overall manufacturing
- FBB is the most common substrate for pharmaceutical packaging; WLC can also be used, although less
- Prepared meals can use a wide array of coated and uncoated grades
Capacity clearly outgrowing demand growth

**Folding boxboard**

Capacity increasing faster than demand through most of the forecast.

Exports not increasing sufficiently to offset upcoming capacity increases.

Operating rates to trend down in 2020.
Recycled board growing at slower pace

No major changes in capacity foreseen

Exports trended down in 2019 despite Chinese import fiber restrictions

Demand to recover from 2021 onward

Weak demand and lack of capacity curtailments will bring operating rates down
Coated virgin boxboard prices

United States
Imports of multi-ply from Europe and Asia affecting domestic SBS markets
Sappi conversion at Somerset mill

Europe
Prices rose by €30-35/tonne in January and February 2019
Prices under pressure due to weaker demand, rising capacity and lower market pulp and wood prices

Asia
Oversupply (weak demand in 2018) drove prices back down
Downtime and increased market concentration supporting higher paper prices
Coated recycled boxboard prices

**United States**

- Strengthening of the USD lifting prices (in euro terms) between 2014 and 2015
- Removal of capacity in 2017 and 2018 (PaperWorks & Graphic Packaging International) tighten the market

**Europe**

- Prices under pressure due to demand weakness and low PfR prices

**Asia**

- Chinese fiber restrictions behind price increases between 2016 and 2018
- Prices moved down from June 2018 onwards due to demand weakness and ample supply
- Announced capacity closures kept prices from declining more
Take home points

01 Boxboard demand growth is slowing down
We estimate 6.5 million tonnes of lost opportunities by 2021

02 Asia demand decelerating
However, big imbalances between markets. Ivoryboard weakening due to capacity overshooting demand
Coated duplex tightening due to capacity curtailments (PfR import ban)

03 North America becoming an attractive market for exporters
Domestic producers under pressure, especially in SBS Cupstock markets tighter than bleached folding cartons

04 Europe becoming more oversupplied
New capacity entering the market amid weak domestic consumption will drag operating rates down
The general picture across the containerboard market continues to point at further price deflation and oversupply. Recycled containerboard, despite the number of maintenance stops and idles, and slower than expected ramp-up of new machines, it is still a buyer’s market. Demand is growing slowly, and it is not enough to eat up the inventories and raw material volumes. Fundamentally, the market will continue to be oversupplied through 2019. However, as the year continues, we expect to see a temporary stabilization along with a lot of announced mill divestitures.

Prices continue to decline in both recycled and virgin containerboard. Prices in Germany and France have already fallen by €50/MT over the year for both grades. UK prices continue to lag behind but will eventually close the gap with Continental ones. We expect price stabilization toward summer, followed by further declines over the end of the year. However, US linerboard import prices will continue to gradually drop through the year. The price corrections in Germany (down €10/MT) and France (down €5/MT) are expected to continue in the second half of the year. In Italy, prices are expected to remain stable at €380/MT for RCT and €500/MT for SCT. In Spain, the drop in the fourth quarter will be less severe, about €30/MT in the top of the decline in the first quarter of 2019.

Paper for recycling prices are declining after a relatively stable period. At the end of 2018, the absence of Chinese buyers was used by European mills to stock up some good quality material, supporting the stable pricing of Western linerboard. In February, however, Western and Chinese buyers are active in Continental Europe. OCC and mixed paper prices have declined by about 50% over the first quarter in Germany.

Containerboard prices remained stable in February, following the price increase in virgin containerboard in January. Raw material prices are under downward pressure, improving producer margins. The biggest news recently was related to capacity projects, particularly the completion of around 100,000 TPA in new capacity in the pan-European setting of Zappe Maschinenfabrik.

Changes to the forecast

Our demand forecast was scaled down due to the weakening macroeconomic outlook. This in turn has affected our baseline price forecast, particularly for containerboard grades.

Economic Insights
- Containerboard prices continue to fall
- Paper for recycling prices are declining
- Demand continues to be weak across all grades

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