



Forestry & Paper

Industry Insights

Key message: Chinese pulp prices up 7%, Graphic Paper prices all in the green, and containerboard prices stable.

Date: 16 February 2022

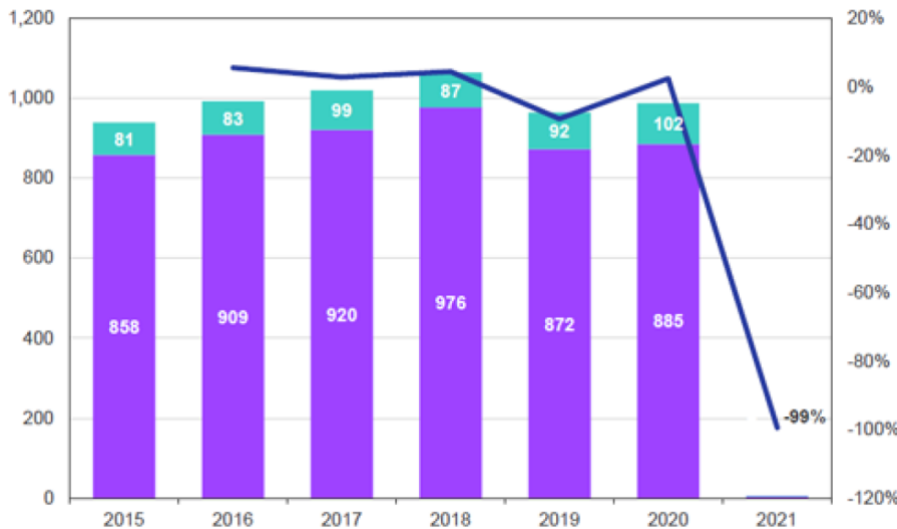
Analyst

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- Pulp prices in the green, with China hardwood pulp leading gains:** Suzano expects global pulp supply to remain constrained in Q1 22E, with low inventories across the board and scheduled and unexpected stoppages at mills that combined can curtail c.1mt of pulp during the period. Suzano's own pulp inventories are "below optimum operational levels" and pulp demand in China is "healthy" as paper production has been improving since December (paper and board inventories are lower y/y) and after the Chinese New Year, the industry should meet the high season demand. New capacity starting up this year includes Arauco's 1.56mtpa MAPA project expected for March. In Europe, Södra and SCA are raising NBSK prices by EUR 50/t for all February deliveries. In North America, Domtar is set to increase both softwood and hardwood grades by USD 70-110/t from 1 March. NOREXECO pulp futures for 23E imply a 11-15% decline in Europe, while prices in China are expected to decline by 5-6%.
- Graphic Paper in the green, with newsprint leading gains (+7%):** After factoring in a 30% discount to list pulp prices, the CWF/HW spread improves to EUR 184/t (UWF margin EUR 321). The Navigator Company is set to increase UWF prices in Europe by 8-15% from March 1.
- European containerboard prices remain steady, but further price increases announced:** DS Smith to increase testliner prices by EUR 50/t in Europe (with immediate effect) due to strong demand and high input costs. In North America, following numerous containerboard price increases announced (USD 70/t from 1 March), IP (largest NA containerboard producer and corrugated converter: 32%) and WestRock (2nd largest: 22%) have announced a 14-16% corrugated price increase from March.
- European sack kraft exports dropped 99% (from 885kt to 4kt) in 2021:** Demand was strong in 2021, driving record domestic demand in Europe. This included cement production, construction, and rapid activation of consumption, coupled with an uptick from e-commerce (double digit growth since the pandemic started). Additionally, single-use plastics policies in Europe will be another positive driver for kraft paper demand as consumers shift from lightweight plastic carriers to kraft paper bags.

European sack kraft exports (ktpa)



Source: Chronux Research, RISI, Investing.com

Forestry & Paper Key w/w price changes

| Details | w/w % chg. | YTD % chg. | y/y % chg. |
|---|------------|------------|------------|
| Pulp (USD/t) | | | |
| NBSK Europe | 1% | 3% | 36% |
| BHKP Europe | 0% | 0% | 50% |
| NBSK Europe (EUR) | 0% | 2% | 44% |
| BHKP Europe (EUR) | -1% | -1% | 59% |
| US NBSK (gross) | 1% | 0% | 21% |
| China BHKP net | 7% | 14% | 8% |
| China NBSK net | 0% | 10% | 1% |
| Paper (EUR/t) | | | |
| LWC | 1% | 20% | 50% |
| Ctd WF | 2% | 15% | 44% |
| A4 B-copy | 0% | 6% | 26% |
| Newsprint | 7% | 49% | 76% |
| Packaging (EUR/t) | | | |
| Kraftliner | 0% | 3% | 48% |
| White-top Kraftliner | 0% | 3% | 25% |
| Testliner 2 | 0% | 1% | 53% |
| Testliner 3 | 0% | 0% | 58% |
| RB-Fluting | 0% | 1% | 63% |
| PIX OCC 1.04 dd | 0% | 0% | 48% |
| PIX ONP/OMG 1.11 dd | 1% | 3% | 62% |
| Spreads (EUR/t) | | | |
| SW/HW Europe (USD) | 11% | 29% | -53% |
| SW/HW China (USD) | -19% | -4% | -16% |
| NBSK China/Europe (USD) | 17% | -38% | -41% |
| BHKP China/Europe (USD) | 0% | -180% | -120% |
| A4 B-copy/BHKP (30% discount to list price) | 3% | -717% | 50% |
| CWF/BHKP (30% discount to list price) | 18% | -173% | 5% |
| Kraftliner/testliner 2 | 0% | 10% | -58% |
| White-top Kraftliner/kraftliner | 2% | -7% | -87% |
| Testliner 2/OCC | 0% | 1% | 55% |

Source: Chronux Research, FOEX

NOREXECO futures price

| | Q2 22E vs. spot | Q3 22E vs. spot | CY 23E vs. spot |
|---------------------|-----------------|-----------------|-----------------|
| NBSK Europe | -2% | -2% | -11% |
| BHKP Europe | 0% | 0% | -15% |
| SW/HW spread | -14% | 22% | 22% |
| China NBSK net | 0% | 0% | -5% |
| China BHKP net | 1% | 1% | -6% |
| SW/HW spread | -3% | 1% | -1% |

Source: Chronux Research, FOEX

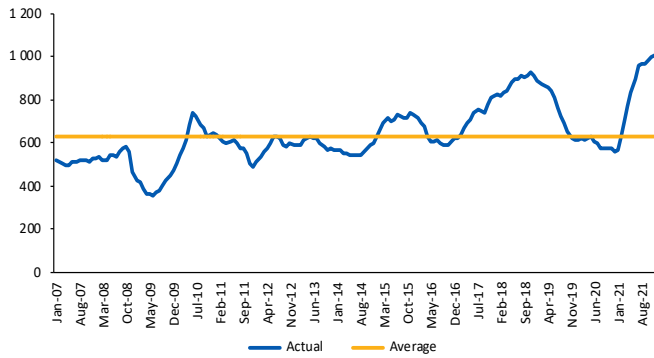
NOREXECO futures price (USD/t)

| | Q2 22E (NEW) | % chg. | Q2 22E (NEW) | % chg. | CY 23E (NEW) | % chg. |
|---------------------|--------------|---------------|--------------|--------------|--------------|-------------|
| NBSK Europe | 1 273 | 1.8% | 1 220 | 0.8% | 1 160 | 0.0% |
| BHKP Europe | 1 140 | 3.6% | 1 030 | 3.0% | 970 | 0.0% |
| SW/HW spread | 133 | -11.3% | 190 | -9.5% | 190 | 0.0% |
| China NBSK net | 833 | 2.5% | 812 | 1.9% | 789 | 0.0% |
| China BHKP net | 658 | 4.8% | 630 | 3.3% | 611 | 0.0% |
| SW/HW spread | 175 | -5.4% | 182 | -2.7% | 178 | 0.0% |

Source: FOEX, Chronux Research

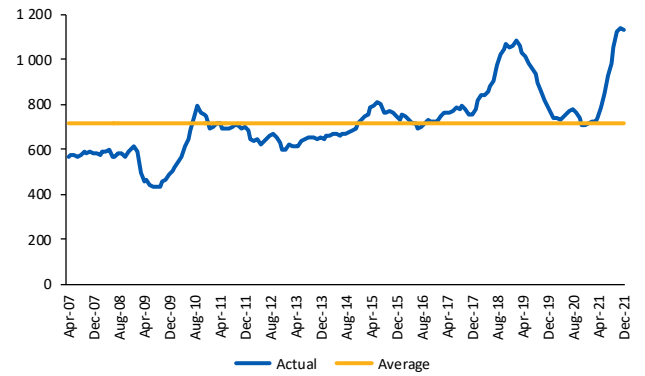
Prices

Europe hardwood pulp price (EUR/t)



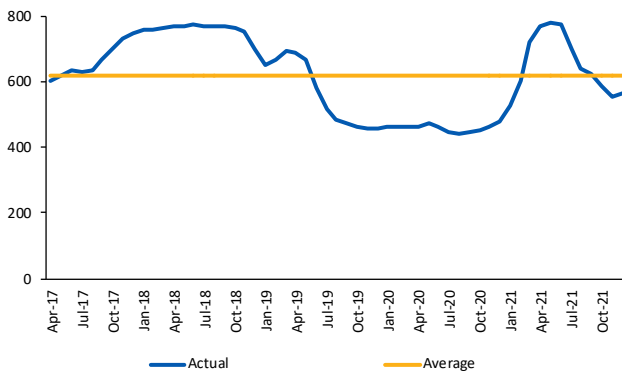
Source: Chronux Research, FOEX

Europe softwood pulp price (EUR/t)



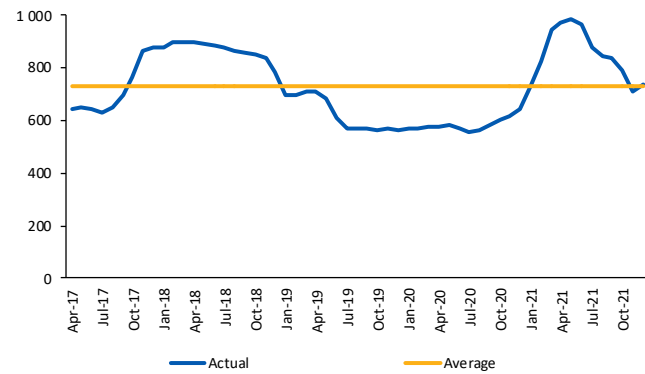
Source: Chronux Research, FOEX

China hardwood pulp price (USD/t)



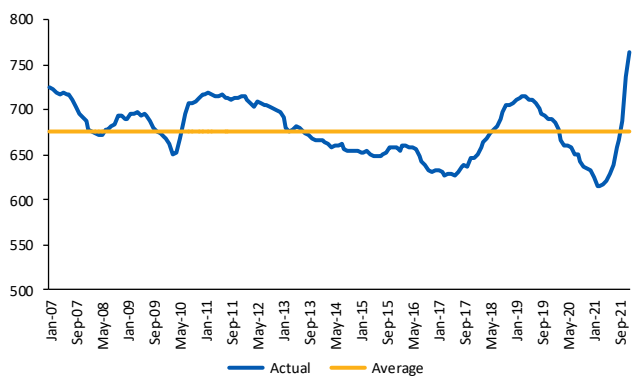
Source: Chronux Research, FOEX

China softwood pulp price (USD/t)



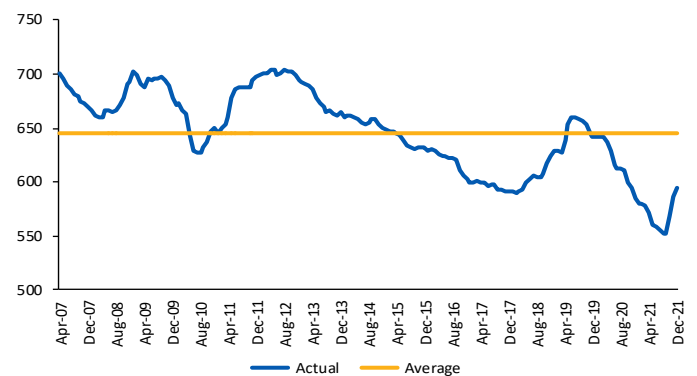
Source: Chronux Research, FOEX

Europe CWF price (EUR/t)



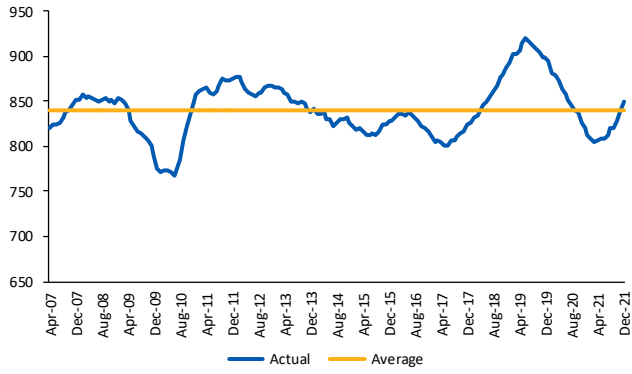
Source: Chronux Research, FOEX

Europe CM price (EUR/t)



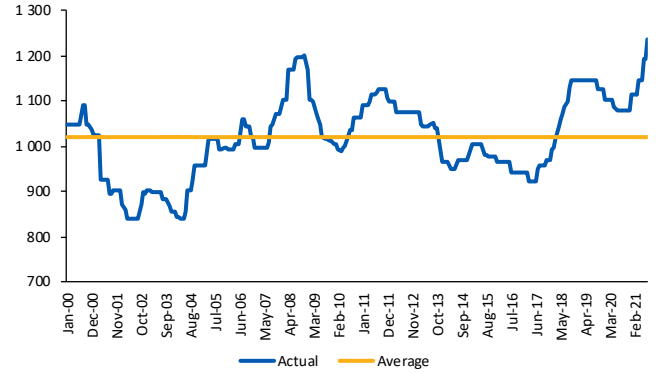
Source: Chronux Research, FOEX

Europe UWF price (EUR/t)



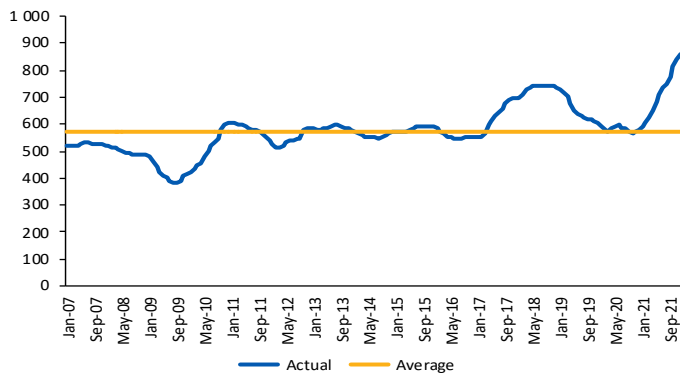
Source: Chronux Research, FOEX

US CFS price (USD/t)



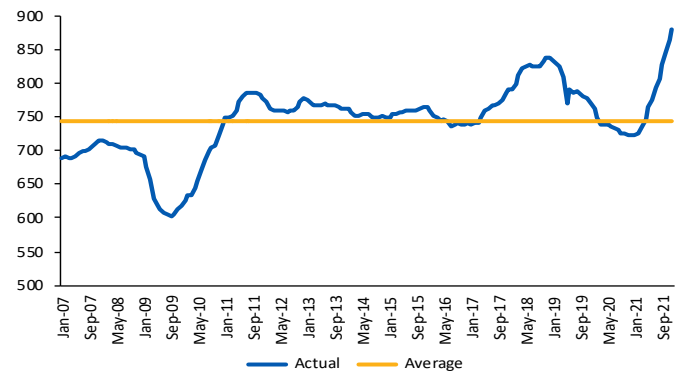
Source: Chronux Research, FOEX

Europe kraftliner price (EUR/t)



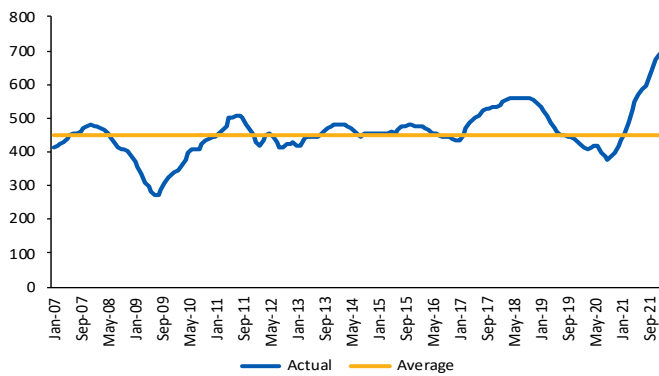
Source: Chronux Research, FOEX

Europe white-top kraftliner price (EUR/t)



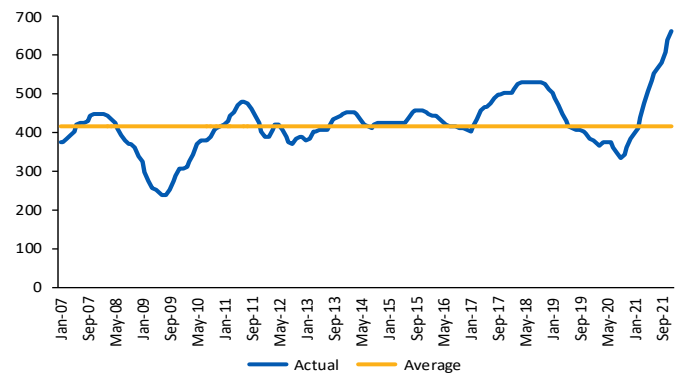
Source: Chronux Research, FOEX

Europe testliner price (EUR/t)



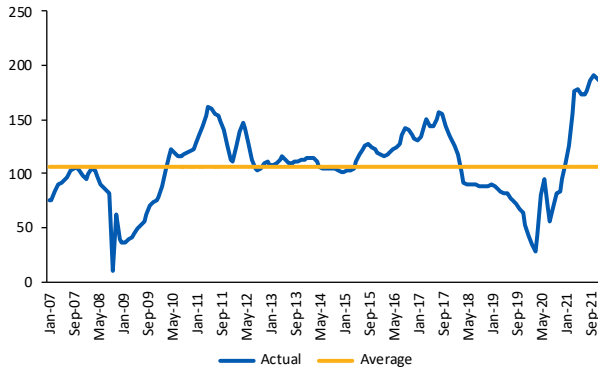
Source: Chronux Research, FOEX

Europe RB-fluting brown price (EUR/t)



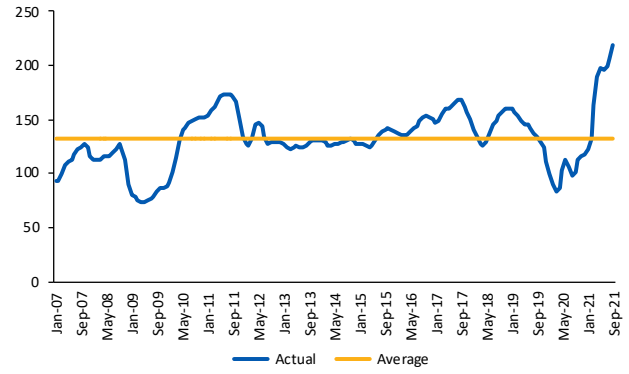
Source: Chronux Research, FOEX

Europe OCC price (EUR/t)



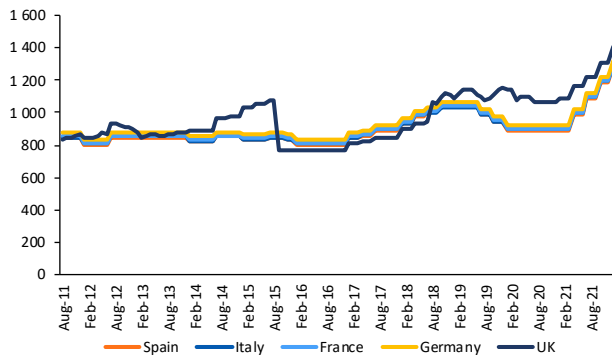
Source: Chronux Research, FOEX

Europe ONP/OMG price (EUR/t)



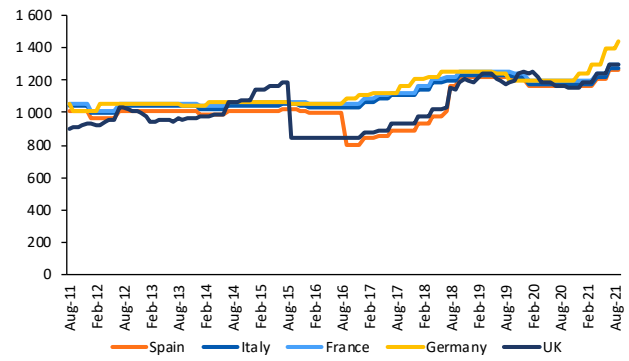
Source: Chronux Research, FOEX

Europe Unbleached Sack kraft price (EUR/t)



Source: Chronux Research, FOEX

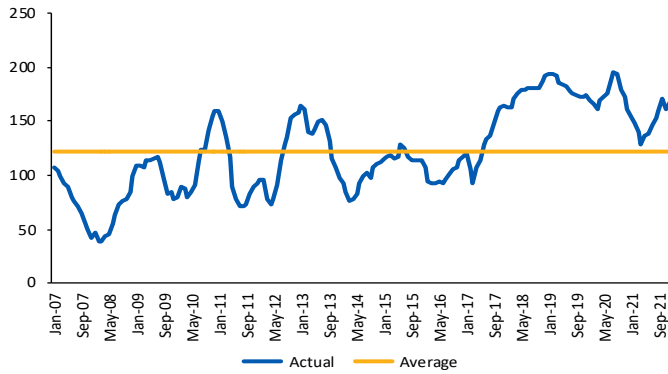
Europe Bleached Sack kraft price (EUR/t)



Source: Chronux Research, FOEX

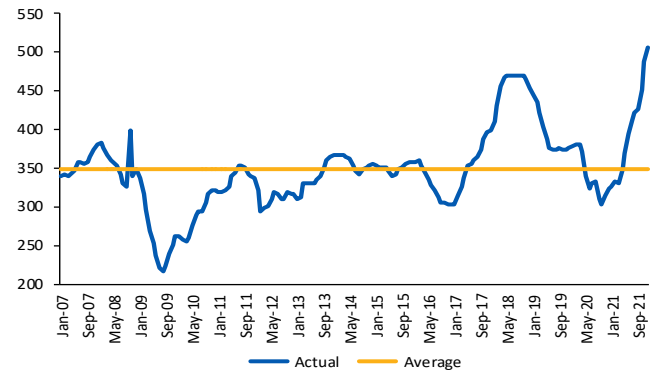
Spreads

Europe kraftliner/testliner spread (EUR/t)



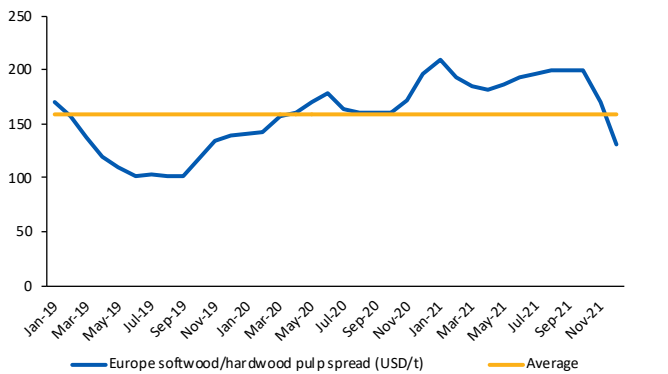
Source: Chronux Research, FOEX

Europe testliner/OCC spread (EUR/t)



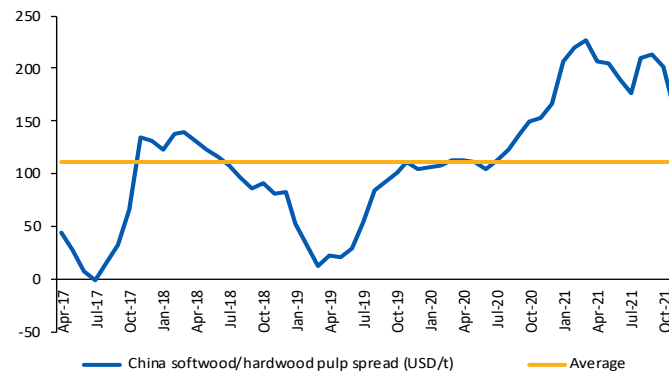
Source: Chronux Research, FOEX

Europe softwood/hardwood pulp spread (USD/t)



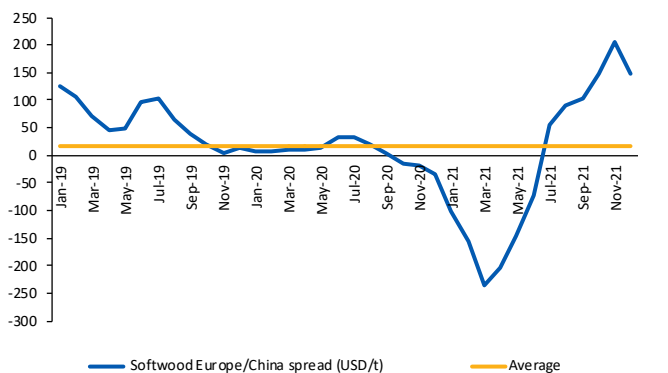
Source: Chronux Research, FOEX

China softwood/hardwood pulp spread (USD/t)



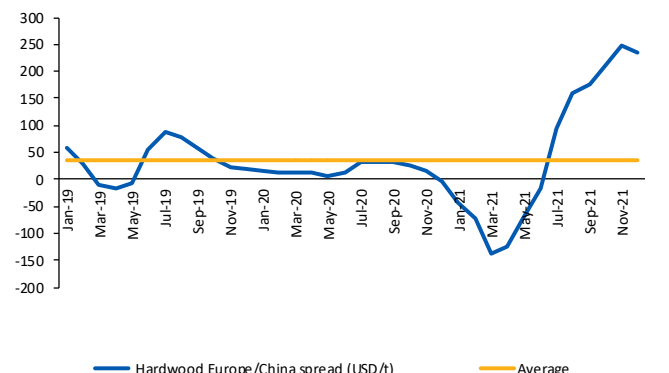
Source: Chronux Research, FOEX

Softwood Europe/China spread (USD/t)



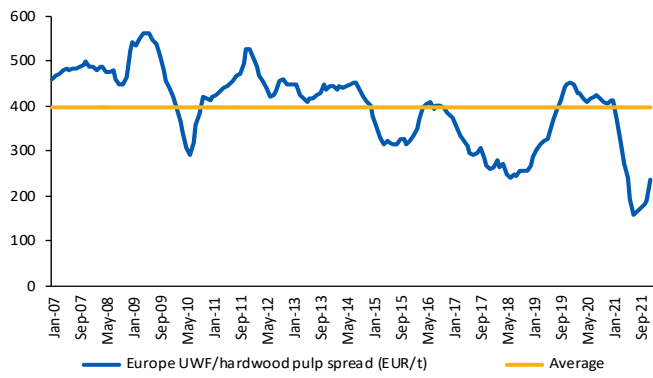
Source: Chronux Research, FOEX

Hardwood Europe/China spread (USD/t)



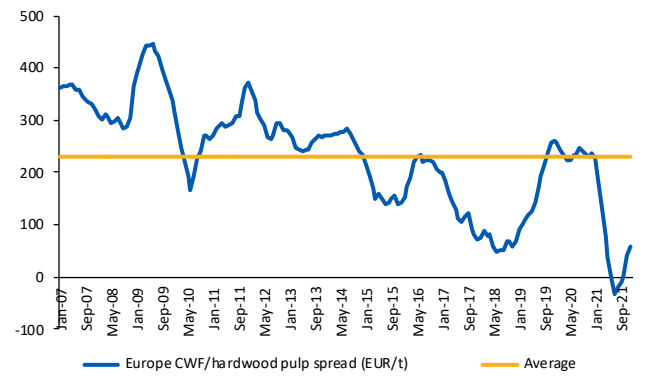
Source: Chronux Research, FOEX

Europe UWF/ hardwood pulp spread (EUR/t)



Source: Chronux Research, FOEX

Europe CWF/ hardwood pulp spread (EUR/t)



Source: Chronux Research, FOEX

Industry stats

Europe Graphic Papers 2021 YTD Printing-writing stats (%)

| Details | Jan-21 | Feb-21 | Mar-21 | Apr-21 | May-21 | Jun-21 | Jul-21 | Aug-21 | Sep-21 | Oct-21 | Nov-21 | Feb-21 | Mar-21 | Apr-21 | May-21 | Jun-21 | Jul-21 | Aug-21 | Sep-21 | Oct-21 | Nov-21 | |
|--|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| Graphic Papers | <i>y/y % change</i> | | | | | | | | | | | <i>q/q % change</i> | | | | | | | | | | |
| Total European Shipments | -22.3% | -14.1% | -4.7% | 13.9% | 27.3% | 33.9% | 10.6% | 16.2% | 5.8% | -3.0% | 2.9% | 3.3% | 16.1% | -10.3% | 2.1% | 6.5% | -8.6% | 4.7% | 3.9% | -5.5% | 1.6% | |
| To Europe | -22.1% | -14.6% | -2.9% | 20.0% | 35.5% | 32.0% | 5.7% | 11.0% | 3.9% | -4.1% | 3.4% | 3.7% | 14.5% | -12.3% | 1.5% | 8.4% | -7.6% | 4.0% | 6.6% | -2.9% | 3.0% | |
| To Outside Europe | -22.9% | -12.0% | -10.9% | -2.8% | 6.2% | 41.2% | 34.1% | 40.5% | 15.0% | 2.4% | 0.6% | 1.6% | 22.5% | -2.6% | 3.8% | 0.2% | -12.5% | 7.2% | -6.2% | -16.2% | -5.3% | |
| European demand | -22.3% | -15.1% | -4.5% | 17.5% | 32.9% | 30.7% | 4.5% | 9.9% | 2.5% | -5.0% | 2.8% | 3.3% | 14.1% | -11.9% | 1.1% | 8.0% | -7.7% | 3.4% | 6.7% | -2.5% | 3.1% | |
| Newsprint | #DIV/0! | | | | | | | | | | | | | | | | | | | | | |
| Total European Shipments | -23.2% | -20.3% | -12.2% | 1.5% | 8.5% | 11.4% | 6.9% | 6.1% | 0.9% | -6.4% | -0.5% | -4.4% | 20.5% | -10.7% | 3.2% | 1.9% | -3.2% | 0.0% | 2.6% | -8.2% | 5.9% | |
| To Europe | -26.1% | -24.0% | -11.2% | 5.6% | 27.7% | 16.3% | 10.8% | 8.4% | 0.9% | -6.7% | -1.8% | 0.0% | 20.4% | -7.4% | 3.0% | 3.9% | -0.9% | -2.8% | 4.5% | -5.9% | 5.9% | |
| To Outside Europe | -13.5% | -9.7% | -14.6% | -8.3% | -23.0% | -0.9% | -3.9% | 0.0% | 1.0% | -5.3% | 4.4% | 16.7% | 20.5% | -18.5% | 3.6% | -3.5% | -10.0% | 9.1% | -2.8% | -15.2% | 5.6% | |
| European demand | -26.7% | -24.3% | -12.3% | 4.4% | 23.7% | 14.0% | 8.0% | 6.1% | -0.6% | -7.4% | -2.1% | 14.7% | 19.8% | -13.8% | -5.7% | 8.8% | -2.7% | -3.4% | 5.8% | -5.4% | 6.4% | |
| SC-Magazine | #DIV/0! | | | | | | | | | | | | | | | | | | | | | |
| Total European Shipments | -26.7% | -15.7% | 2.4% | 20.9% | 17.1% | 27.9% | 9.0% | 7.6% | -2.3% | -12.5% | -8.5% | 18.8% | 16.7% | -12.4% | -3.6% | 8.0% | 0.9% | 3.9% | 5.4% | -11.5% | -4.5% | |
| To Europe | -22.4% | -15.4% | 3.2% | 23.7% | 11.7% | 20.0% | 1.0% | 2.9% | -3.5% | -11.8% | -7.1% | 14.7% | 19.8% | -13.8% | -5.7% | 8.8% | -1.5% | 8.7% | 4.2% | -9.0% | -2.0% | |
| To Outside Europe | -51.4% | -17.6% | -3.6% | 3.8% | 66.7% | 121.4% | 89.5% | 64.7% | 6.7% | -17.9% | -22.7% | 55.6% | -3.6% | 0.0% | 11.1% | 3.3% | 16.1% | -22.2% | 14.3% | -28.1% | -26.1% | |
| European demand | -22.4% | -15.4% | 3.2% | 23.7% | 11.7% | 20.0% | 1.0% | 2.9% | -3.5% | -11.8% | -7.1% | 14.7% | 19.8% | -13.8% | -5.7% | 8.8% | -1.5% | 8.7% | 4.2% | -9.0% | -2.0% | |
| Coated Mechanical Reels | #DIV/0! | | | | | | | | | | | | | | | | | | | | | |
| Total European Shipments | -25.2% | -15.3% | -12.4% | 10.3% | 25.7% | -29.0% | 10.7% | 20.5% | 2.9% | -7.7% | 3.3% | 2.6% | 13.8% | -5.9% | 1.5% | -47.0% | 73.2% | 19.4% | -5.1% | -3.7% | 1.2% | |
| To Europe | -25.0% | -15.4% | -9.6% | 15.3% | 29.5% | -27.1% | 2.6% | 11.9% | 2.9% | -8.7% | 6.3% | 10.5% | 8.3% | -11.7% | 3.7% | -40.8% | 58.1% | 20.5% | -0.7% | -2.9% | 6.3% | |
| To Outside Europe | -25.7% | -14.5% | -20.6% | -1.1% | 15.8% | -36.7% | 46.2% | 60.0% | 2.9% | -2.9% | -10.2% | -21.3% | 37.3% | 13.6% | -4.3% | -64.8% | 145.2% | 15.8% | -19.3% | -7.0% | -19.7% | |
| European demand | -25.0% | -15.4% | -9.6% | 15.3% | 29.5% | -27.1% | 2.6% | 11.9% | 2.9% | -8.7% | 6.3% | 10.5% | 8.3% | -11.7% | 3.7% | -40.8% | 58.1% | 20.5% | -0.7% | -2.9% | 6.3% | |
| Uncoated Mechanical (Improved & others) | #DIV/0! | | | | | | | | | | | | | | | | | | | | | |
| Total European Shipments | -20.0% | 2.4% | 0.6% | 17.1% | 14.0% | 152.8% | 6.0% | 8.8% | 2.4% | -11.0% | -6.8% | 17.4% | 5.9% | -4.5% | 0.0% | 109.9% | -55.7% | 1.3% | 6.2% | -5.8% | -6.8% | |
| To Europe | -18.6% | 2.3% | 5.6% | 30.8% | 30.3% | 143.4% | 0.8% | 3.1% | 1.4% | -7.9% | -4.3% | 15.3% | 11.8% | -7.9% | 1.4% | 93.7% | -52.7% | 1.5% | 9.8% | -3.4% | -5.7% | |
| To Outside Europe | -25.7% | 3.1% | -20.6% | -20.5% | -29.3% | 189.7% | 38.1% | 45.0% | 8.3% | -27.6% | -21.7% | 26.9% | -18.2% | 14.8% | -6.5% | 189.7% | -65.5% | 0.0% | -10.3% | -19.2% | -14.3% | |
| European demand | -18.6% | 2.3% | 5.6% | 30.8% | 30.3% | 147.8% | 0.8% | 3.1% | 1.4% | -7.9% | -4.3% | 15.3% | 11.8% | -7.9% | 1.4% | 97.2% | -53.6% | 1.5% | 9.8% | -3.4% | -5.7% | |
| Coated Woodfree | #DIV/0! | | | | | | | | | | | | | | | | | | | | | |
| Total European Shipments | -27.4% | -19.2% | -2.8% | 18.9% | 49.5% | 56.8% | 30.5% | 31.9% | 19.5% | 13.1% | 13.6% | 2.3% | 21.9% | -16.9% | 3.5% | 10.1% | -7.0% | 2.7% | 14.3% | -3.1% | -1.1% | |
| To Europe | -29.9% | -21.9% | -3.6% | 34.7% | 72.5% | 52.8% | 15.0% | 17.0% | 14.5% | 5.2% | 12.6% | 1.3% | 20.7% | -20.2% | 2.1% | 15.5% | -8.0% | 3.2% | 21.1% | -3.2% | 2.3% | |
| To Outside Europe | -16.7% | -8.0% | 0.0% | -10.9% | 10.0% | 71.4% | 125.0% | 121.6% | 46.2% | 64.4% | 18.9% | 6.2% | 26.1% | -5.7% | 7.3% | -4.5% | -3.6% | 1.2% | -7.3% | -2.6% | -14.9% | |
| European demand | -29.7% | -22.3% | -4.5% | 33.7% | 70.6% | 52.2% | 14.2% | 16.2% | 13.5% | 4.0% | 12.0% | 0.4% | 20.6% | -18.8% | 0.8% | 14.8% | -8.2% | 3.5% | 20.3% | -3.1% | 2.6% | |
| Uncoated Woodfree | #DIV/0! | | | | | | | | | | | | | | | | | | | | | |
| Total European Shipments | -15.0% | -8.1% | 2.4% | 21.7% | 46.5% | 41.7% | 5.7% | 20.2% | 8.8% | 0.0% | 7.0% | -6.0% | 13.6% | -9.3% | 3.4% | 7.7% | -12.7% | 1.4% | 3.2% | -3.5% | 5.9% | |
| To Europe | -13.2% | -5.9% | 3.4% | 22.9% | 44.0% | 38.8% | 2.8% | 16.5% | 5.1% | 0.2% | 7.0% | -3.7% | 9.0% | -11.8% | 2.3% | 8.4% | -8.9% | -1.5% | 4.3% | 2.7% | 4.5% | |
| To Outside Europe | -23.0% | -19.1% | -1.9% | 17.0% | 55.3% | 53.9% | 21.4% | 38.0% | 27.6% | -1.4% | 6.8% | -17.2% | 40.3% | 2.0% | 7.8% | 5.4% | -27.4% | 15.3% | -1.0% | -29.9% | 14.7% | |
| European demand | -13.7% | -8.3% | -1.6% | 15.4% | 38.0% | 35.5% | 0.9% | 13.7% | 1.4% | -2.6% | 5.5% | -4.0% | 7.9% | -11.0% | 1.8% | 6.8% | -8.2% | -2.5% | 4.3% | 3.6% | 4.6% | |

Source: Chronux Research, EURO-GRAPH, * Western and Eastern Europe excluding Russia

US 2021 YTD Printing-writing stats (%)

| Printing-writing stats (y/y % chg.) | Jan-21 | Feb-21 | Mar-21 | Apr-21 | May-21 | Jun-21 | Jul-21 | Aug-21 | Sep-21 | Oct-21 | Nov-21 | Dec-21 |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Total printing-writing paper shipments | -25% | -29% | -20% | -3% | 11% | 10% | 5% | 14% | -4% | 1% | 1% | 0% |
| US purchases of total printing-writing papers | -22% | -24% | -18% | -6% | 6% | 16% | 9% | 12% | -1% | 6% | 9% | 8% |
| Total printing-writing paper levels (m/m) | 3% | -1% | -5% | -2% | 0% | -4% | 0% | -3% | -2% | -1% | -2% | 1% |
| UFS | | | | | | | | | | | | |
| Shipments | -20% | -19% | -14% | 13% | 22% | 16% | 7% | 12% | -8% | 4% | 4% | 2% |
| Inventory level m/m | 3% | 0% | -6% | -3% | 2% | -3% | 0% | -3% | -1% | -1% | -4% | 1% |
| Imports | 41% | 39% | 5% | -21% | 10% | -5% | 4% | 13% | 31% | 15% | 17% | 16% |
| Exports | -40% | -32% | -39% | 14% | 25% | 33% | 18% | 17% | 19% | -9% | 4% | -31% |
| CFS | | | | | | | | | | | | |
| US purchases | -32% | -32% | -29% | -17% | -16% | -4% | 3% | 20% | 15% | -6% | 15% | 3% |
| Inventory level m/m | 2% | -2% | -6% | -1% | -1% | -6% | -2% | -3% | -4% | 0% | 2% | 4% |
| Imports | -21% | -26% | -23% | -21% | -14% | -6% | 32% | 46% | 50% | 56% | 63% | 62% |
| Exports | -6% | -3% | -2% | 14% | 32% | 58% | 53% | 6% | -3% | -4% | -13% | -7% |
| CM | | | | | | | | | | | | |
| Shipments | -33% | -38% | -40% | -35% | -14% | 41% | 16% | -5% | -9% | 0% | -27% | 8% |
| Inventory level m/m | 0% | -3% | -2% | -3% | 1% | -3% | -3% | -3% | -5% | -9% | -1% | -2% |
| Imports | -34% | -22% | -2% | -9% | -17% | 29% | 60% | 27% | 1% | 4% | 12% | 9% |
| Exports | 12% | 24% | -9% | -29% | 5% | 41% | 31% | 15% | 27% | -9% | 26% | -1% |
| UM | | | | | | | | | | | | |
| US purchases | -24% | -31% | -15% | -21% | 16% | -9% | 28% | 14% | -1% | 34% | 21% | 5% |
| Inventory level m/m | 14% | -6% | -8% | 12% | -15% | -5% | -4% | -6% | 16% | 2% | 2% | -4% |
| Imports | -19% | -22% | -20% | -1% | 10% | 26% | 61% | 33% | 14% | 13% | 5% | 3% |
| Exports | -8% | 24% | -28% | -47% | -17% | 52% | 180% | 33% | 15% | 96% | 49% | 34% |

Source: AF&PA, Chronux Research

US 2021 containerboard stats (%)

| Containerboard (y/y % chg.) | Q1 21A | Q2 21A | Q3 21A |
|--------------------------------------|----------|----------|--------|
| Production | | | |
| Monthly total | 9% | 9% | 9% |
| YTD | 2% | 5% | 7% |
| Exports | | | |
| Monthly total | -15% | -15% | 10% |
| YTD | -25% | -25% | -15% |
| Operating rates | | | |
| Actual | 98.4% | 92.7% | 95.6% |
| y/y chg. (points) | 2.8 | 1.4 | 1.7 |
| YTD y/y chg. (points) | -0.3 | 1.4 | 1.5 |
| Mill inventories (short tons) | | | |
| Monthly total | (77 000) | (74 000) | 35 000 |
| YTD | (56 000) | (76 000) | 19 000 |

Source: AF&PA, Chronux Research

Stocks of Wood Pulp in European Ports (y/y & m/m % chg.)

| Country | y/y % chg. | | | | | | | | | | | | m/m % chg. | | | | | | | | | | | |
|---------------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | Jan-21 | Feb-21 | Mar-21 | Apr-21 | May-21 | Jun-21 | Jul-21 | Aug-21 | Sep-21 | Oct-21 | Nov-21 | Dec-21 | Jan-21 | Feb-21 | Mar-21 | Apr-21 | May-21 | Jun-21 | Jul-21 | Aug-21 | Sep-21 | Oct-21 | Nov-21 | Dec-21 |
| Netherlands/Belgium | -35% | -15% | 25% | -11% | -6% | -41% | -41% | -33% | -27% | -17% | -21% | -11% | -7% | 11% | 14% | -25% | 11% | -26% | -7% | 33% | 4% | -7% | 3% | -2% |
| France/Switzerland | -7% | -37% | -23% | -50% | -32% | -34% | -53% | -32% | -15% | 2% | -31% | -11% | 17% | -27% | 19% | -28% | 23% | 1% | -32% | 49% | 18% | 4% | -26% | 7% |
| UK | -42% | -9% | -5% | -41% | -33% | -14% | -37% | -10% | 42% | 20% | -19% | -54% | -50% | 20% | 49% | -18% | 2% | 6% | 15% | 32% | 16% | -28% | -19% | -43% |
| Germany | 0% | 0% | 1% | -25% | -17% | -47% | -41% | -43% | -37% | -33% | -33% | -28% | 0% | -6% | -4% | -18% | 12% | -19% | 1% | -3% | 5% | 0% | -2% | 4% |
| Italy | -21% | -26% | -21% | -23% | -27% | -29% | -19% | -28% | -18% | -32% | -13% | -7% | -12% | -5% | 10% | -2% | -4% | 4% | 9% | 12% | -6% | -19% | 16% | -4% |
| Spain | -11% | -20% | 4% | -46% | -13% | -3% | -18% | -23% | -2% | -16% | -13% | -6% | 50% | -12% | 2% | -28% | 29% | 19% | -18% | 1% | 19% | -21% | 6% | -23% |
| Total | -23% | -18% | 1% | -24% | -17% | -35% | -34% | -32% | -22% | -22% | -21% | -14% | -3% | -1% | 11% | -19% | 9% | -12% | -4% | 19% | 4% | -11% | 2% | -4% |

Source: Chronux Research, EUROPULP

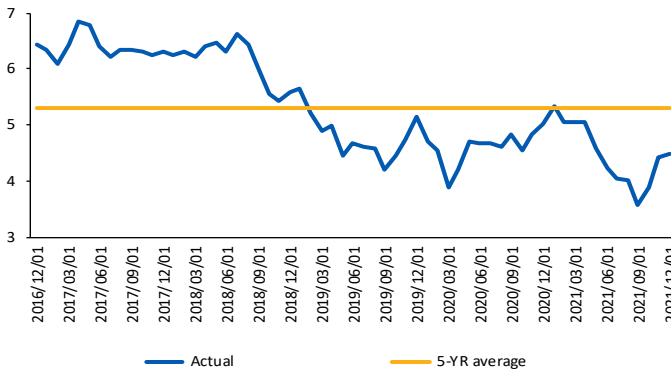
***UTIPULP STATS – EUROPEAN PULP CONSUMPTION, INVENTORY & INVENTORY DAYS**

| | Nov-21 | y/y % chg. Nov-21 | m/m % chg. Nov-21 |
|---|----------------|----------------------|----------------------|
| Consumption of chemical market pulp in UTIPULP countries (t) | | | |
| Unbleached (sulphite & kraft) | 12 603 | 44% | 17% |
| Bleached or semi-bleached | | | |
| <i>Sulphite</i> | 38 225 | -16% | -16% |
| HW | 9 141 | -25% | -33% |
| SW | 29 084 | -13% | -9% |
| <i>Kraft</i> | 936 081 | 3% | -6% |
| HW | 628 740 | 5% | -6% |
| SW | 307 341 | 0% | -6% |
| Total | 986 909 | 2% | -6% |
| Inventory of chemical market pulp in UTIPULP countries (t) | | Nov-21 # | Nov-21 |
| Unbleached (sulphite & kraft) | 9 264 | 50% | -12% |
| Bleached or semi-bleached | | | |
| <i>Sulphite</i> | 25 690 | -1% | 7% |
| HW | 9 946 | 22% | 23% |
| SW | 15 744 | -12% | -1% |
| <i>Kraft</i> | 608 384 | -16% | 1% |
| HW | 394 116 | -18% | 2% |
| SW | 214 268 | -11% | -1% |
| Total | 643 338 | -15% | 1% |
| Inventories in days of chemical market pulp in UTIPULP countries | | Nov-21 # | Nov-21 |
| Unbleached (sulphite & kraft) | 25 | 19% | -17% |
| Bleached or semi-bleached | | | |
| <i>Sulphite</i> | | | |
| HW | 24 | 9% | 26% |
| SW | 16 | -11% | 0% |
| <i>Kraft</i> | | | |
| HW | 19 | -27% | 0% |
| SW | 21 | -13% | 0% |
| Total | 20 | -20% | 0% |

Source: Chronux Research, UTIPULP. *UTIPULP statistics include information from Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands, Portugal, Spain, Switzerland and the UK for sulphite and kraft pulp.

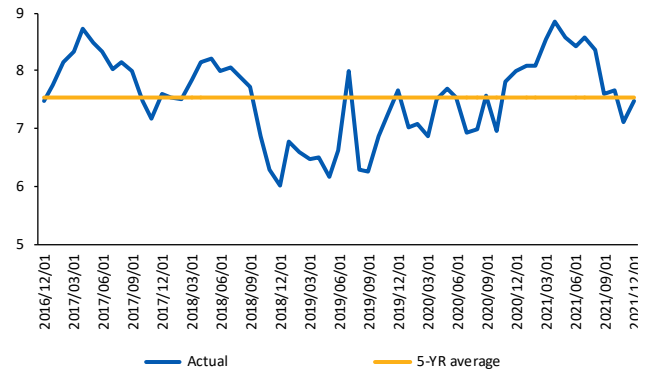
Peer rolled EV/EBITDA (x)

Sappi EV/EBITDA (x)



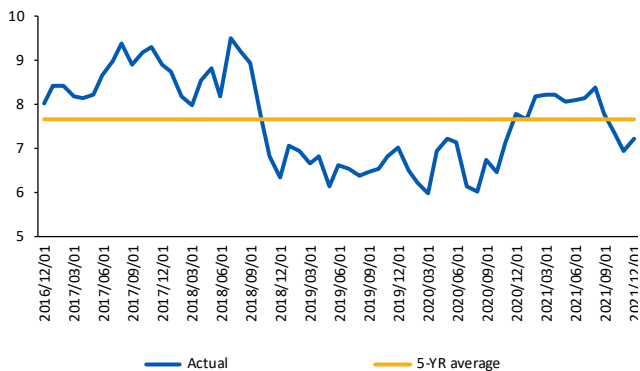
Source: Chronux Research, Bloomberg

Mondi EV/EBITDA (x)



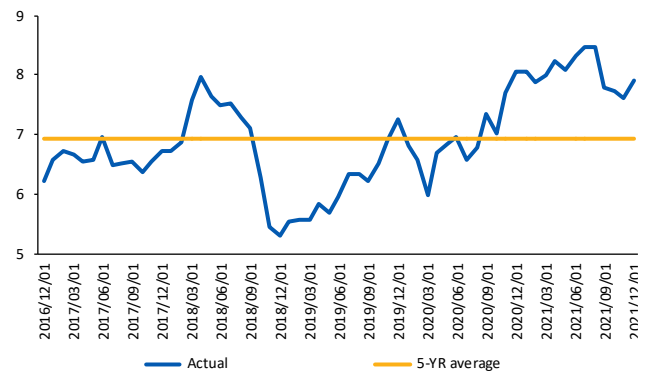
Source: Chronux Research, Bloomberg

DS Smith EV/EBITDA (x)



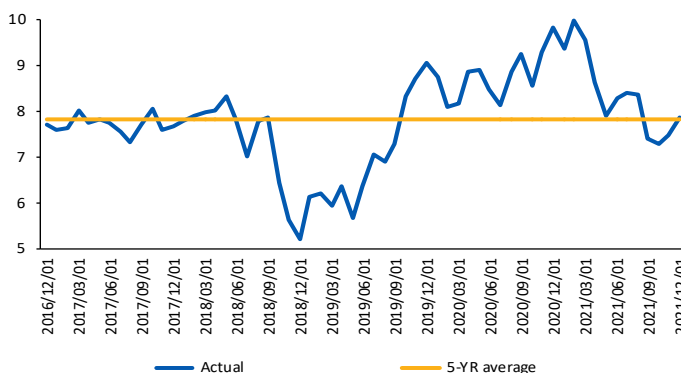
Source: Chronux Research, Bloomberg

Smurfit Kappa EV/EBITDA (x)



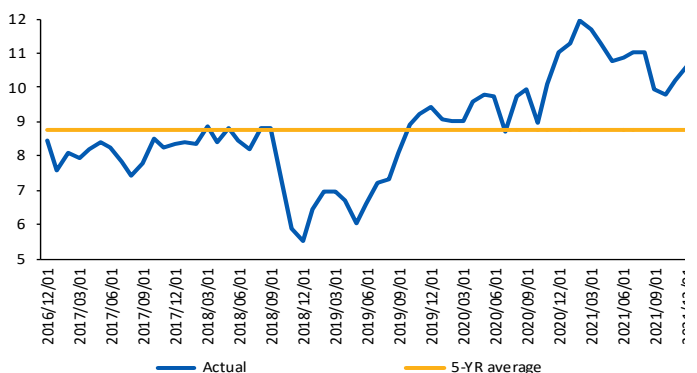
Source: Chronux Research, Bloomberg

Stora Enso EV/EBITDA (x)



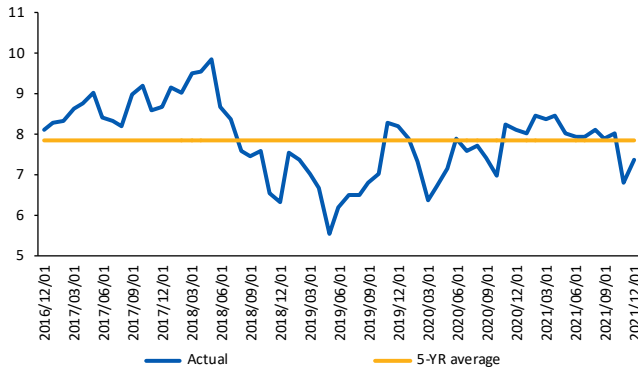
Source: Chronux Research, Bloomberg

UPM EV/EBITDA (x)



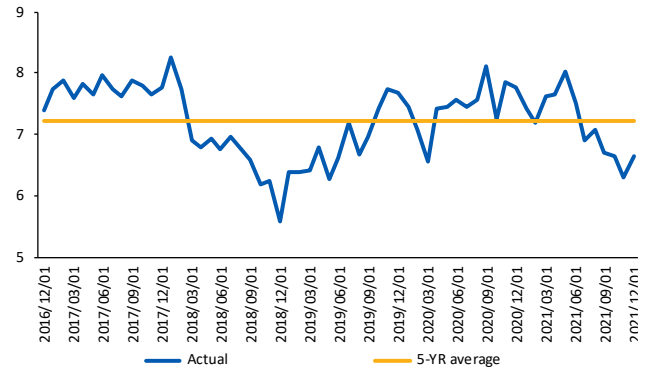
Source: Chronux Research, Bloomberg

Navigator EV/EBITDA (x)



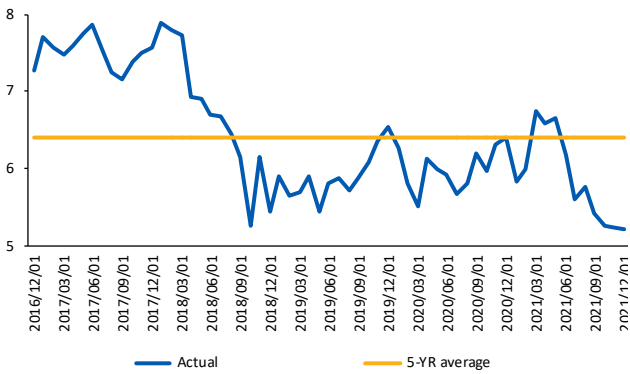
Source: Chronux Research, Bloomberg

International Paper EV/EBITDA (x)



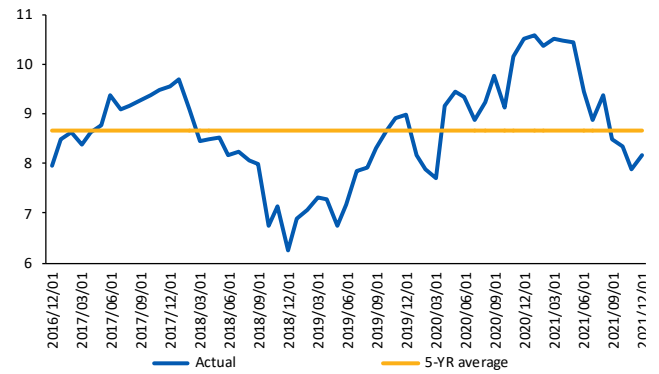
Source: Chronux Research, Bloomberg

WestRock EV/EBITDA (x)



Source: Chronux Research, Bloomberg

Packaging Corp of America EV/EBITDA (x)



Source: Chronux Research, Bloomberg

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