



# Forestry & Paper

## Industry Insights

**Key message:** Further gains for pulp prices. CWF prices up 3%. Paper Packaging grades stable, with the exception of OCC, which was up 2%.

- Pulp prices in the green, with China softwood pulp leading gains:** Prices for pulp imports look set to creep up in China across the board, driven by supply-side disruptions and shortages with customers. Suzano has announced a USD 30/t price increase for BEK pulp for all global sales effective 1 March. PPC reported World-20 market pulp stats for December 2021. Global pulp producer stocks declined by 2 days m/m to 42 days-of-supply (BSK: -1 days to 43 and BHK: -3 days to 40), while shipments were down 2.3% y/y & +11.4% m/m to 4.255mt (SW: +11.7% m/m & flat y/y to 2.066mt; HW: +11.4% m/m & -4.1% y/y to 2.507mt). The shipment-to-capacity ratio improved to 91% (Dec 2020: 99%). LD Celulose's (Lenzing JV with Duratex) new DWP mill is 95% ready; and start-up is expected in less than 60 days. The project is on budget despite the pandemic and higher costs due to inflation. LD hopes to reach full capacity in H2 22E. NOREXECO pulp futures for 23E imply a 11-15% decline in Europe, while prices in China are expected to decline by 7-8%.
- Graphic Paper in the green, with CWF leading gains (+3%):** After factoring in a 30% discount to list pulp prices, the CWF/HW spread improves to EUR 203/t (UWF margin EUR 313). Sappi Europe to increase prices for its graphic paper and board products by 8% from 1 April. In the US, AF&PA released the January 2022 Printing & Writing stats recently. Key read-through for Sappi was encouraging with CFS purchases up 29%, while imports increased by 58% y/y and exports declined by 8% y/y. Inventories were flat m/m.
- European containerboard prices remain steady:** In the US, 2021 kraftliner exports ended the year down 16.4% y/y to 3.49mt, the lowest annual total since 2013. US kraft linerboard exports averaged 291kt per month. Mexico was a key export market for the US, while exports to Italy were down 39%.

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### Analyst

Sean Ungerer CA (SA), CFA  
+27 82 319 3373

[sean.ungerer@chronux.co.za](mailto:sean.ungerer@chronux.co.za)

### Forestry & Paper Key w/w price changes

Details	w/w % chg.	YTD % chg.	y/y % chg.
<b>Pulp (USD/t)</b>			
NBSK Europe	0%	3%	36%
BHKP Europe	0%	0%	51%
NBSK Europe (EUR)	1%	3%	45%
BHKP Europe (EUR)	1%	0%	61%
US NBSK (gross)	1%	0%	22%
China BHKP net	0%	15%	8%
China NBSK net	3%	13%	5%
<b>Paper (EUR/t)</b>			
LWC	0%	21%	50%
Ctd WF	3%	19%	48%
A4 B-copy	0%	6%	26%
Newsprint	0%	42%	67%
<b>Packaging (EUR/t)</b>			
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	2%	2%	51%
PIX ONP/OMG 1.11 dd	1%	4%	64%
<b>Spreads (EUR/t)</b>			
SW/HW Europe (USD)	-2%	27%	-54%
SW/HW China (USD)	14%	10%	-4%
NBSK China/Europe (USD)	-36%	-51%	-62%
BHKP China/Europe (USD)	81%	-245%	-137%
A4 B-copy/BHKP (30% discount to list price)	-2%	-702%	46%
CWF/BHKP (30% discount to list price)	10%	-181%	16%
Kraftliner/testliner 2	0%	10%	-68%
White-top Kraftliner/kraftliner	1%	-6%	-66%
Testliner 2/OCC	-1%	1%	54%

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%
<b>SW/HW spread</b>	<b>-13%</b>	<b>24%</b>	<b>24%</b>
China NBSK net	1%	1%	-8%
China BHKP net	1%	1%	-7%
<b>SW/HW spread</b>	<b>3%</b>	<b>-11%</b>	<b>-13%</b>

Source: Chronux Research, FOEX

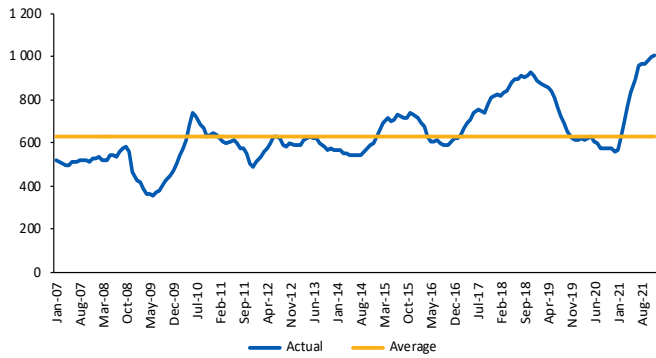
### NOREXECO futures price (USD/t)

	Q2 22E (NEW)	% chg.	Q2 22E (NEW)	% chg.	CY 23E (NEW)	% chg.
NBSK Europe	1 273	0.0%	1 220	0.0%	1 160	0.0%
BHKP Europe	1 140	0.0%	1 030	0.0%	970	0.0%
<b>SW/HW spread</b>	<b>133</b>	<b>0.0%</b>	<b>190</b>	<b>0.0%</b>	<b>190</b>	<b>0.0%</b>
China NBSK net	870	4.4%	812	0.0%	789	0.0%
China BHKP net	658	0.0%	630	0.0%	611	0.0%
<b>SW/HW spread</b>	<b>212</b>	<b>21.1%</b>	<b>182</b>	<b>0.0%</b>	<b>178</b>	<b>0.0%</b>

Source: FOEX, Chronux Research

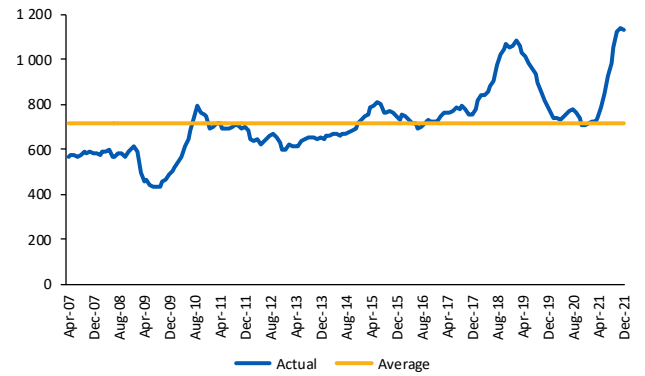
# Prices

**Europe hardwood pulp price (EUR/t)**



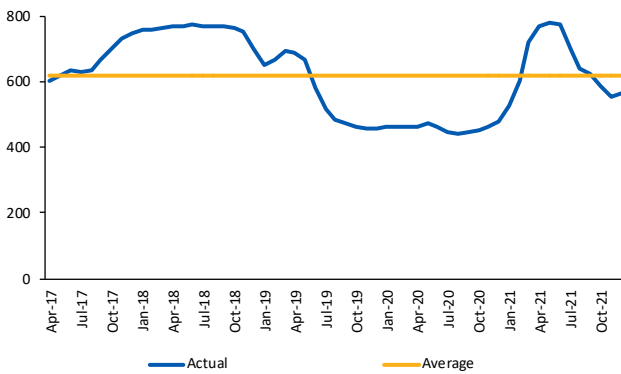
Source: Chronux Research, FOEX

**Europe softwood pulp price (EUR/t)**



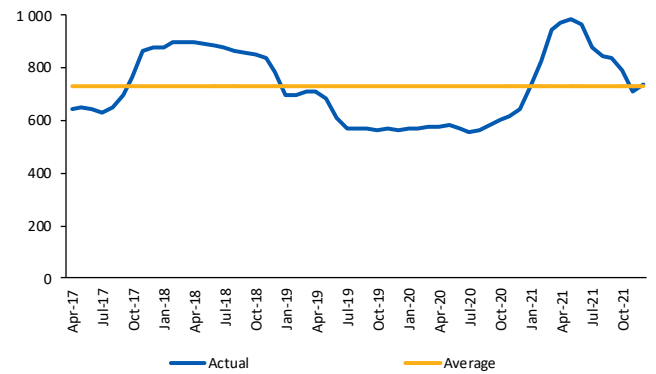
Source: Chronux Research, FOEX

**China hardwood pulp price (USD/t)**



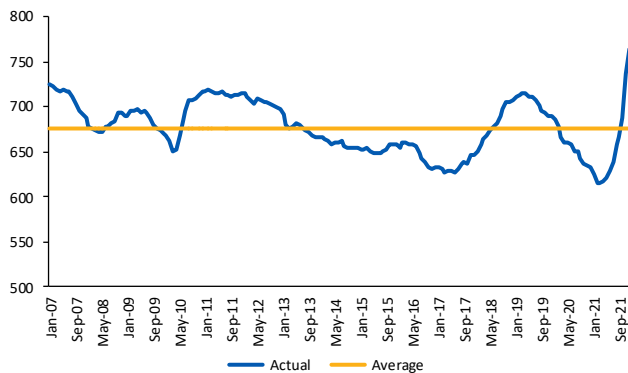
Source: Chronux Research, FOEX

**China softwood pulp price (USD/t)**



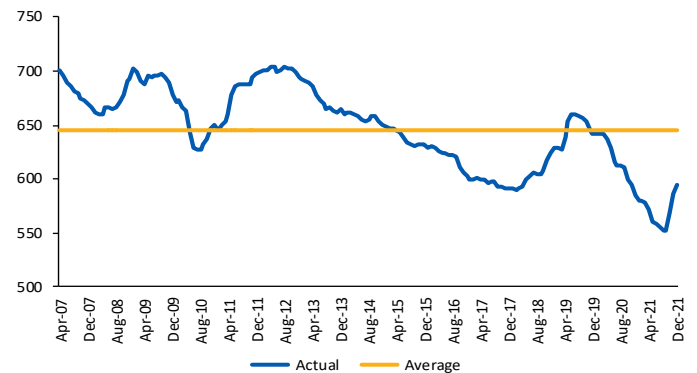
Source: Chronux Research, FOEX

**Europe CWF price (EUR/t)**



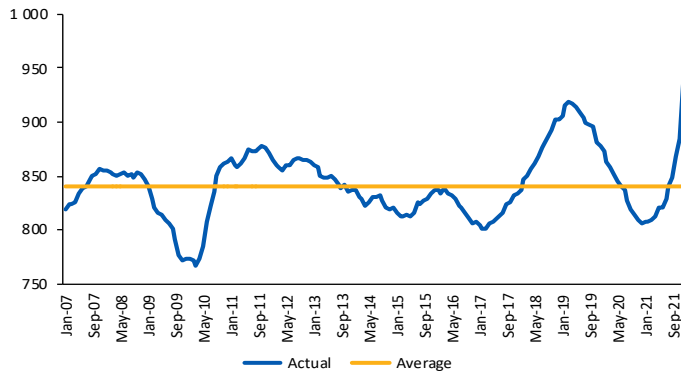
Source: Chronux Research, FOEX

**Europe CM price (EUR/t)**



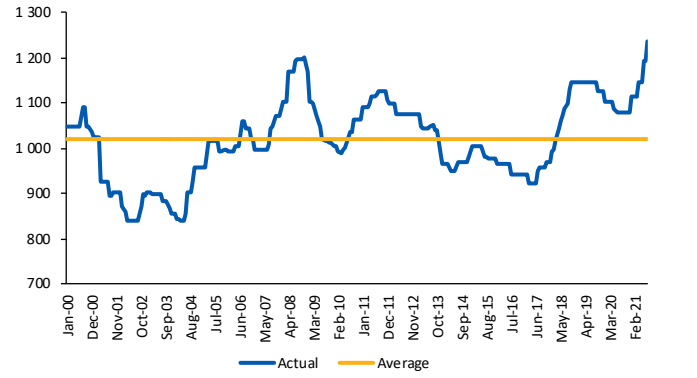
Source: Chronux Research, FOEX

**Europe UWF price (EUR/t)**



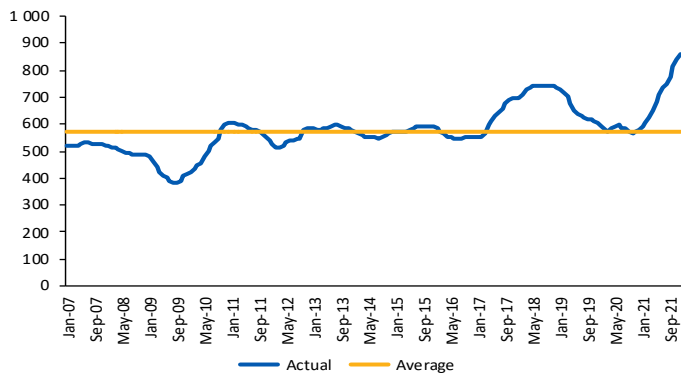
Source: Chronux Research, FOEX

**US CFS price (USD/t)**



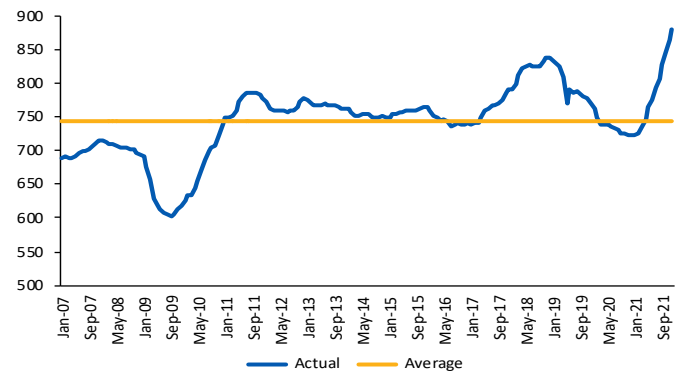
Source: Chronux Research, FOEX

**Europe kraftliner price (EUR/t)**



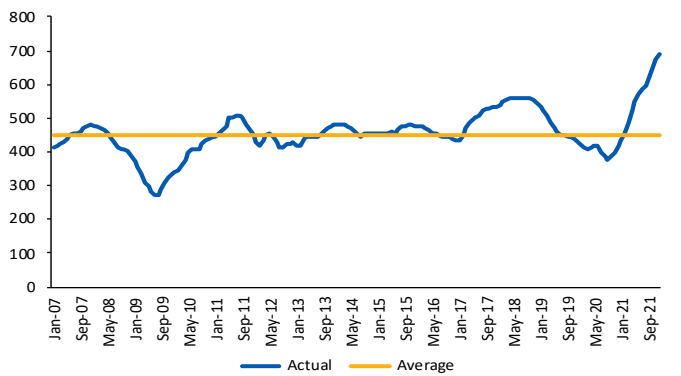
Source: Chronux Research, FOEX

**Europe white-top kraftliner price (EUR/t)**



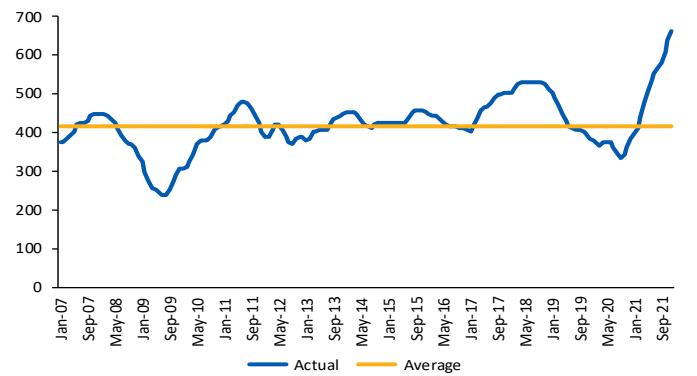
Source: Chronux Research, FOEX

**Europe testliner price (EUR/t)**



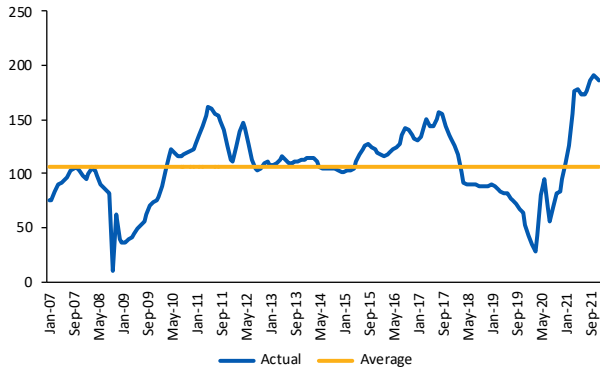
Source: Chronux Research, FOEX

**Europe RB-fluting brown price (EUR/t)**



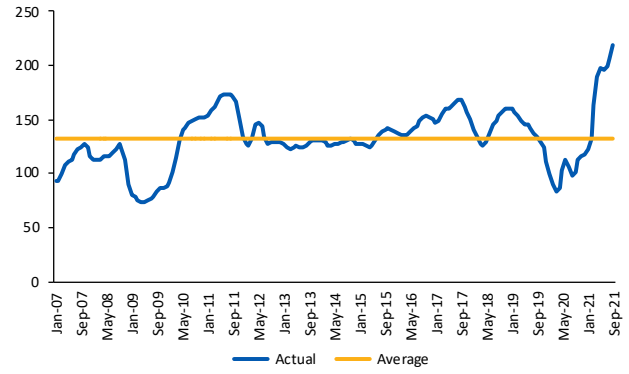
Source: Chronux Research, FOEX

**Europe OCC price (EUR/t)**



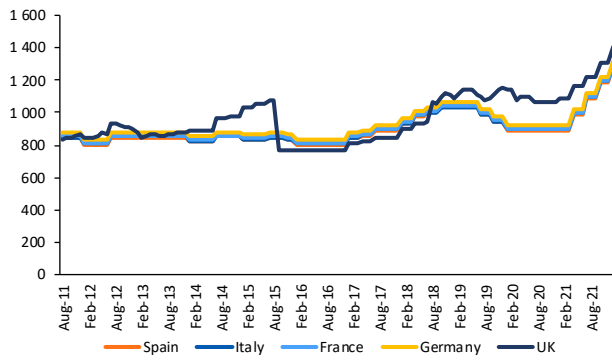
Source: Chronux Research, FOEX

**Europe ONP/OMG price (EUR/t)**



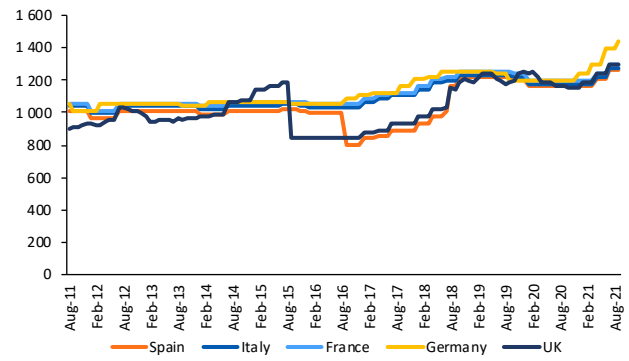
Source: Chronux Research, FOEX

**Europe Unbleached Sack kraft price (EUR/t)**



Source: Chronux Research, FOEX

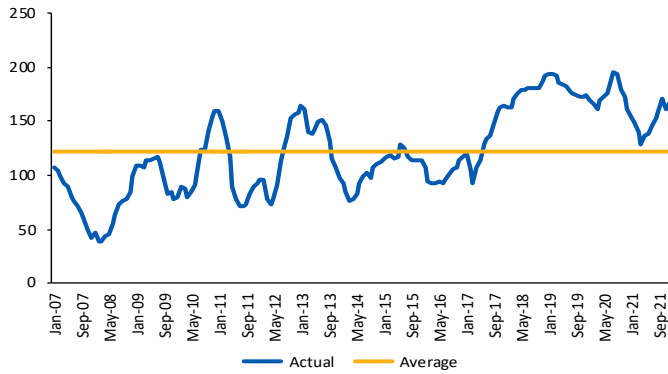
**Europe Bleached Sack kraft price (EUR/t)**



Source: Chronux Research, FOEX

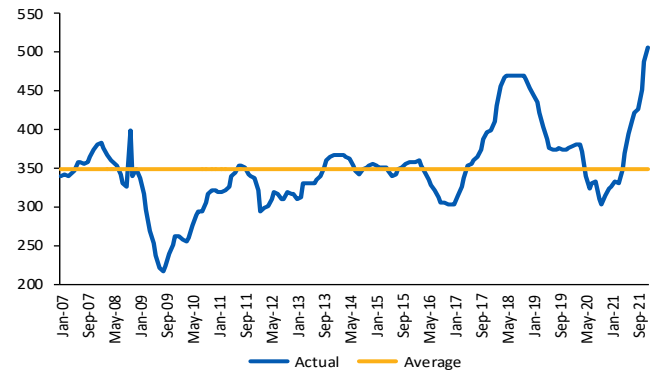
# Spreads

**Europe kraftliner/testliner spread (EUR/t)**



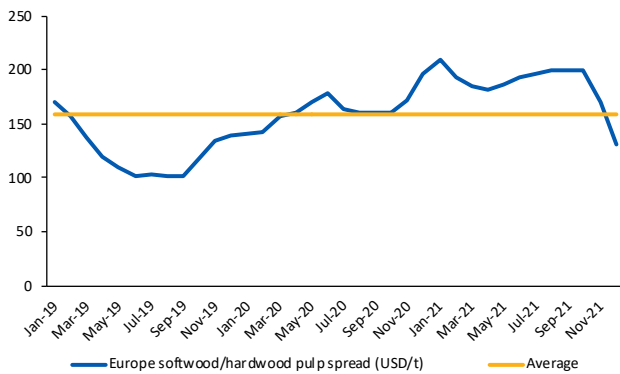
Source: Chronux Research, FOEX

**Europe testliner/OCC spread (EUR/t)**



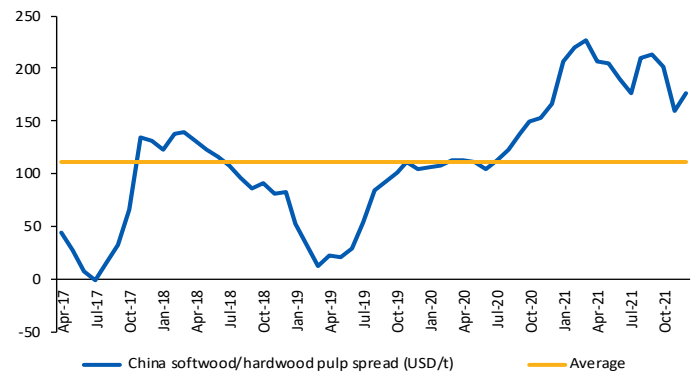
Source: Chronux Research, FOEX

**Europe softwood/hardwood pulp spread (USD/t)**



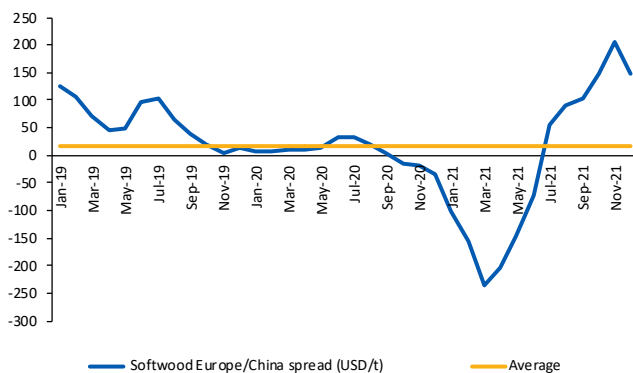
Source: Chronux Research, FOEX

**China softwood/hardwood pulp spread (USD/t)**



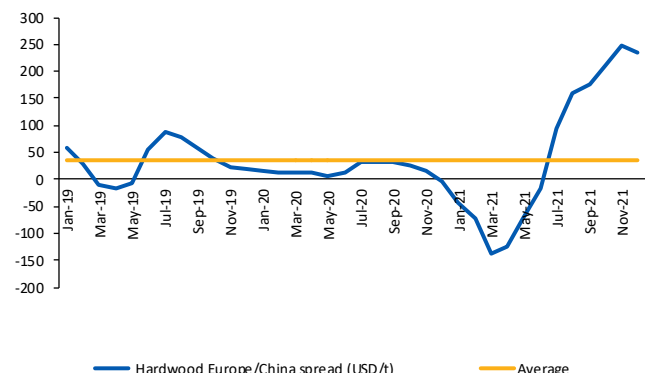
Source: Chronux Research, FOEX

**Softwood Europe/China spread (USD/t)**



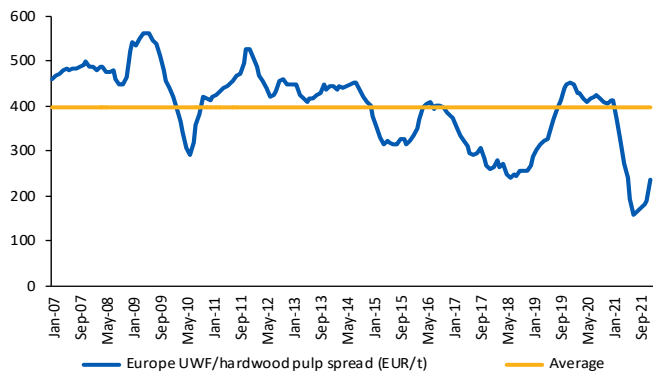
Source: Chronux Research, FOEX

**Hardwood Europe/China spread (USD/t)**



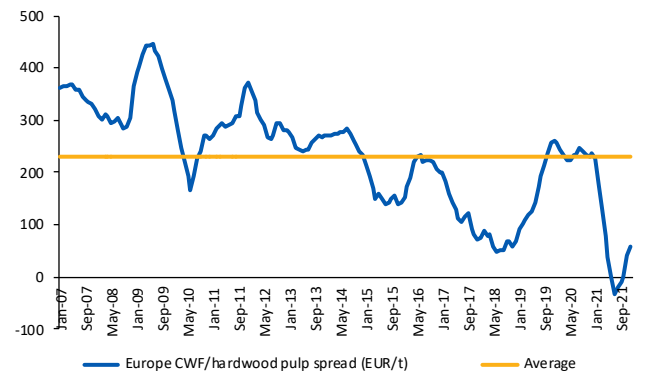
Source: Chronux Research, FOEX

**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	
<b>Graphic Papers</b>	y/y % change											q/q % change										
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%	
<b>Newsprint</b>	#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%	-7.1%	14.7%	19.8%	-13.8%	-5.7%	8.8%	-1.5%	8.7%	4.2%	-9.0%	6.4%	
<b>SC-Magazine</b>	#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%	
<b>Coated Mechanical Reels</b>	#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%	15.6%	-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%	
<b>Uncoated Mechanical (Improved &amp; others)</b>	#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%	
<b>Coated Woodfree</b>	#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%	
<b>Uncoated Woodfree</b>	#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%	7.9%	-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%	56.3%	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	Jan-22
Total printing-writing paper shipments	-25%	-29%	-20%	-3%	11%	10%	5%	14%	-4%	1%	1%	0%	3%
US purchases of total printing-writing papers	-22%	-24%	-18%	-6%	6%	16%	9%	12%	-1%	6%	9%	8%	9%
Total printing-writing paper levels (m/m)	3%	-1%	-5%	-2%	0%	-4%	0%	-3%	-2%	-1%	-2%	1%	1%
<b>UFS</b>													
Shipments	-20%	-19%	-14%	13%	22%	16%	7%	12%	-8%	4%	4%	2%	-3%
Inventory level m/m	3%	0%	-6%	-3%	2%	-3%	0%	-3%	-1%	-1%	-4%	1%	2%
Imports	41%	39%	5%	-21%	10%	-5%	4%	13%	31%	15%	17%	16%	-8%
Exports	-40%	-32%	-39%	14%	25%	33%	18%	17%	19%	-9%	4%	-31%	-13%
<b>CFS</b>													
US purchases	-32%	-32%	-29%	-17%	-16%	-4%	3%	20%	15%	-6%	15%	3%	29%
Inventory level m/m	2%	-2%	-6%	-1%	-1%	-6%	-2%	-3%	-4%	0%	2%	4%	0%
Imports	-21%	-26%	-23%	-21%	-14%	-6%	32%	46%	50%	56%	63%	62%	58%
Exports	-6%	-3%	-2%	14%	32%	58%	53%	6%	-3%	-4%	-13%	-7%	-8%
<b>CM</b>													
Shipments	-33%	-38%	-40%	-35%	-14%	41%	16%	-5%	-9%	0%	-27%	8%	9%
Inventory level m/m	0%	-3%	-2%	-3%	1%	-3%	-3%	-3%	-5%	-9%	-1%	-2%	-6%
Imports	-34%	-22%	-2%	-9%	-17%	29%	60%	27%	1%	4%	12%	9%	24%
Exports	12%	24%	-9%	-29%	5%	41%	31%	15%	27%	-9%	26%	-1%	-20%
<b>UM</b>													
US purchases	-24%	-31%	-15%	-21%	16%	-9%	28%	14%	-1%	34%	21%	5%	8%
Inventory level m/m	14%	-6%	-8%	12%	-15%	-5%	-4%	-6%	16%	2%	2%	-4%	6%
Imports	-19%	-22%	-20%	-1%	10%	26%	61%	33%	14%	13%	5%	3%	21%
Exports	-8%	24%	-28%	-47%	-17%	52%	180%	33%	15%	96%	49%	34%	18%

Source: AF&PA, Chronux Research

## US 2021 containerboard stats (%)

Containerboard (y/y % chg.)	Q1 21A	Q2 21A	Q3 21A
<b>Production</b>			
Monthly total	9%	9%	9%
YTD	2%	5%	7%
<b>Exports</b>			
Monthly total	-15%	-15%	10%
YTD	-25%	-25%	-15%
<b>Operating rates</b>			
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
<b>Mill inventories (short tons)</b>			
Monthly total	(77 000)	(74 000)	35 000
YTD	(56 000)	(76 000)	19 000

Source: AF&amp;PA, Chronux Research

## Stocks of Wood Pulp in European Ports (y/y &amp; 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



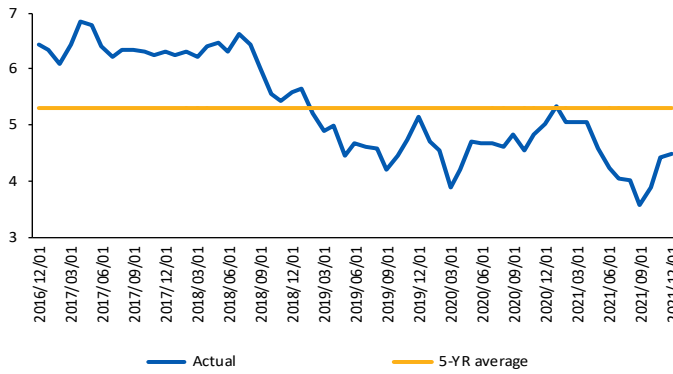
**\*UTIPULP STATS – EUROPEAN PULP CONSUMPTION, INVENTORY & INVENTORY DAYS**

	Nov-21	y/y % chg. Nov-21	m/m % chg. Nov-21
<b>Consumption of chemical market pulp in UTIPULP countries (t)</b>			
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%
<b>Total</b>	<b>986 909</b>	<b>2%</b>	<b>-6%</b>
<b>Inventory of chemical market pulp in UTIPULP countries (t)</b>		<b>Nov-21 #</b>	<b>Nov-21</b>
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%
<b>Total</b>	<b>643 338</b>	<b>-15%</b>	<b>1%</b>
<b>Inventories in days of chemical market pulp in UTIPULP countries</b>		<b>Nov-21 #</b>	<b>Nov-21</b>
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%
<b>Total</b>	<b>20</b>	<b>-20%</b>	<b>0%</b>

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.

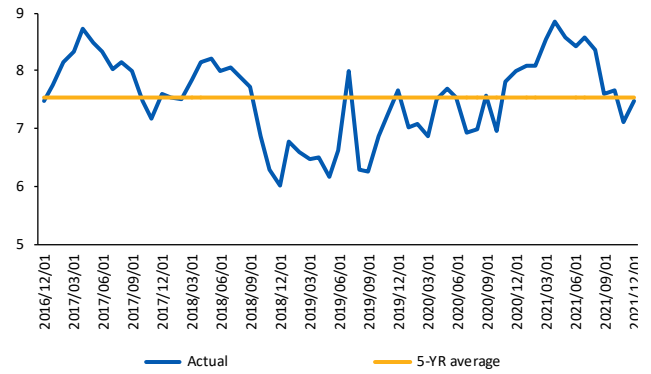
# Peer rolled EV/EBITDA (x)

**Sappi EV/EBITDA (x)**



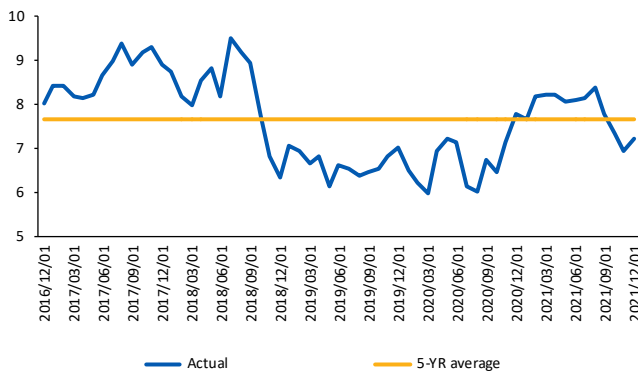
Source: Chronux Research, Bloomberg

**Mondi EV/EBITDA (x)**



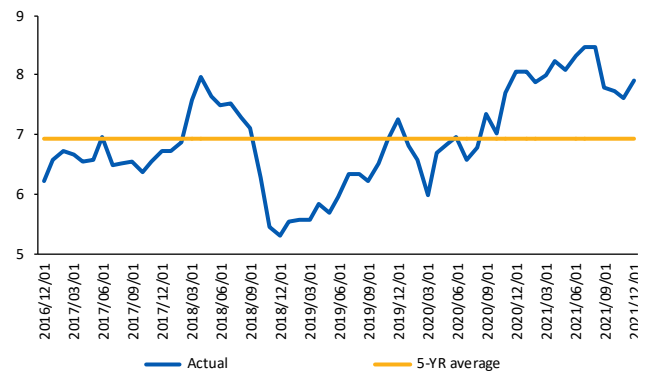
Source: Chronux Research, Bloomberg

**DS Smith EV/EBITDA (x)**



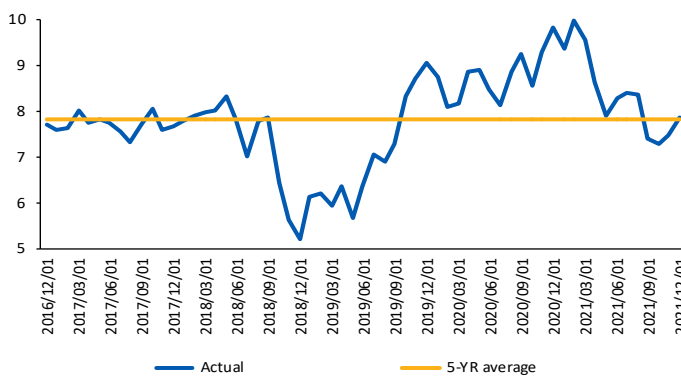
Source: Chronux Research, Bloomberg

**Smurfit Kappa EV/EBITDA (x)**



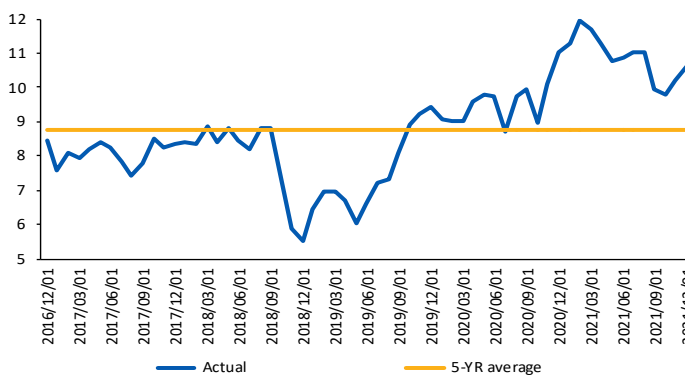
Source: Chronux Research, Bloomberg

**Stora Enso EV/EBITDA (x)**



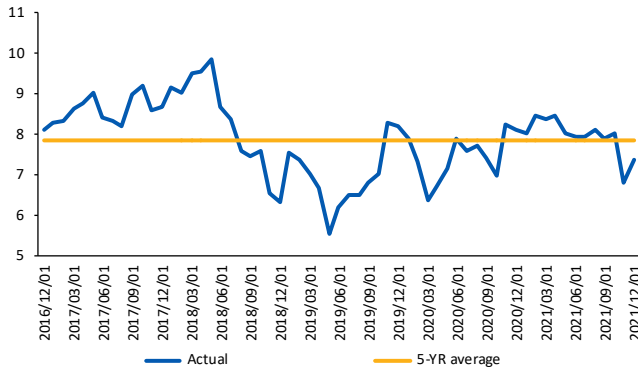
Source: Chronux Research, Bloomberg

**UPM EV/EBITDA (x)**



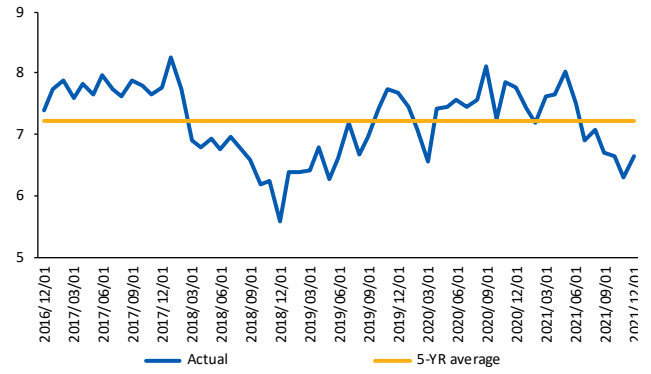
Source: Chronux Research, Bloomberg

**Navigator EV/EBITDA (x)**



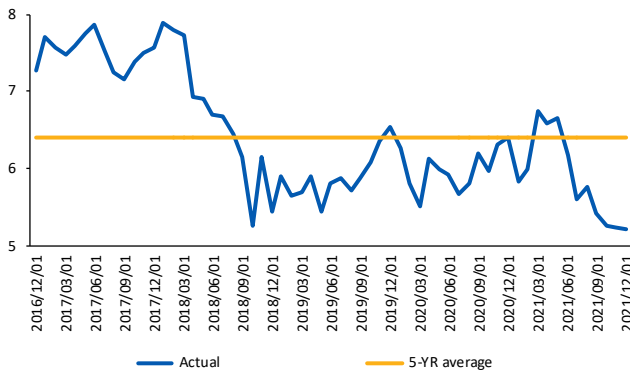
Source: Chronux Research, Bloomberg

**International Paper EV/EBITDA (x)**



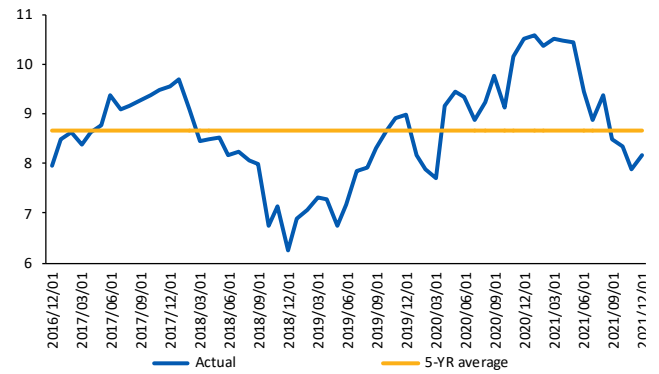
Source: Chronux Research, Bloomberg

**WestRock EV/EBITDA (x)**



Source: Chronux Research, Bloomberg

**Packaging Corp of America EV/EBITDA (x)**



Source: Chronux Research, Bloomberg

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