



Applied Value Pulp & Paper Report

Quarterly Analysis

Q2, 2020

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Applied Value Pulp & Paper Report

Executive Summary & Introduction

Financial Benchmarking

Market Trends

COVID-19 Impacts on Paper & Board Segment

Applied Value Presentation



Applied Value's quarterly Pulp & Paper Report is focused on financial benchmarking and market trends affecting the industry

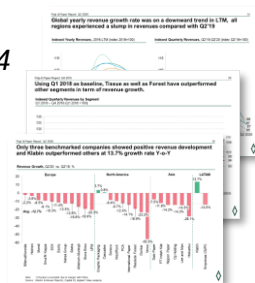
In this Pulp & Paper Report, Applied Value provides essential financial benchmarking focused on the latest quarter and 12-month period while also offering a brief update on the latest market trends.

The report provides a clear and useful analysis of the relative performance of a selection of global Pulp & Paper companies. It also provides an overview of the industry and relevant market trends that occurred during the quarter.

Growth

Industry growth latest 4 quarters and LTM

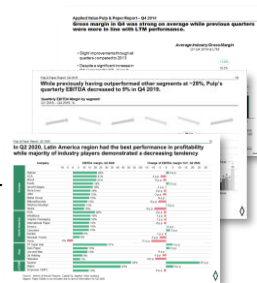
Growth in the latest quarter per company segment, and region



EBITDA Margins

Average Industry EBITDA margin latest 4 quarters and LTM

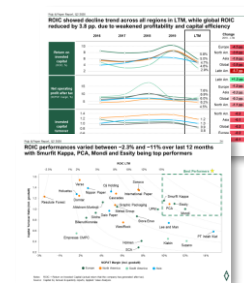
EBITDA margin for the latest quarter per company, segment and region



ROIC

ROIC per region for the latest two 12-month periods

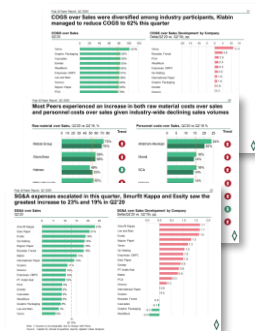
ROIC development per company and region for LTM



Operational Costs Breakdown

Operational Costs Breakdown latest quarter per company and region

Operational Costs development YoY per company and region



Market Trends

Pulp & Papers market price movements

Commodity prices and currency movements



Special Section

COVID-19 impact on graphic paper and containerboard in EU and US

Company movements and conversion plans



The report is based on the financial performance of 29 leading Pulp & Paper companies from Europe, North America, Latin America & Asia

Companies included in Financial Benchmarking in the Q2 2020 report

Market	Company	Revenue LTM (BEUR)	Country	Board	Paper	Tissue	Wood Products	Pulp	Other
Europe	Essity	12.3				✓			✓
	UPM	9.3			✓		✓	✓	✓
	Stora Enso	9.1		✓	✓		✓	✓	✓
	Smurfit Kappa	8.6		✓					
	Mondi	6.9		✓	✓				✓
	Metsä Group	5.1		✓	✓	✓	✓	✓	✓
	Ahlström-Munksjö	2.8			✓			✓	✓
	BillerudKorsnäs	2.3		✓	✓			✓	✓
	Södra	2.1			✓		✓		✓
	SCA	2.0		✓	✓	✓	✓	✓	✓
	Holmen	1.6		✓	✓		✓		✓
North America	International Paper	18.9		✓	✓		✓	✓	✓
	WestRock	15.8		✓	✓				✓
	Packaging Corp. of America	6.0		✓	✓				✓
	Graphic Packaging	5.6		✓	✓				✓
	Sonoco	4.6		✓	✓				✓
	Domtar	4.3			✓	✓		✓	✓
	Cascades	3.3		✓	✓	✓			✓
	Resolute Forest	2.4			✓	✓	✓	✓	✓
	Verso	1.7			✓			✓	✓
LAT AM	Suzano	4.8			✓			✓	✓
	Empresas CMPC	4.8			✓		✓	✓	✓
	Klabin	1.7		✓	✓		✓		✓
Asia	Oji Holding	12.0		✓	✓		✓		✓
	Nippon Paper	8.3		✓	✓				✓
	Daio Paper	4.4		✓	✓				✓
	Lee and Man	2.9		✓		✓		✓	✓
	PT Indah Kiat	2.8		✓	✓				✓
	Hokuetsu	2.0		✓	✓			✓	✓

Source: Capital IQ, Quarterly Reports



Lower selling prices pressured company performances – both industry revenues and ROIC declined during the quarter in a sluggish market

Financial Benchmarking: Highlights in Q2 2020

Key takeaways

Revenue Growth	› Industry-wide revenues saw a rapid decline of 13 pp. on YoY basis pressured from lower pulp and paper prices › Revenue decreased across all regions in Q2'20 with Europe, North America, Asia and Latin America reported a sharp revenue decline by 13%, 12%, 13% and 15% compared to the previous year › Top performers of this quarter were Klabin, Graphic Packaging and Cascades with reported revenue growth of 13.7%, 3.7% and 0.8% respectively
Profitability & Costs	› Quarterly EBITDA margins for most segments are relatively stable compared to last quarter › Pulp segment had the most rapid growth due to improved fixed cost management and operating expenses › Tissue segment experienced a decline as the panic buying of hygiene products waned in Q2 › Negative EBITDA margin trend in all regions but Latin America
Return On Invested Capital (ROIC)	› Global ROIC average dropped by 3.8 pp. in LTM; Latin America had the weakest performance and ended this quarter with 2.9 pp. decline › Despite a profitability decline of 1.2 pp., European companies on average surpassed other regions in Q2'20 with highest regional ROIC of 5.8% in LTM › Smurfit Kappa, PCA, Mondi and Essity were top performers LTM with ROICs >10%

Top performers



Klabin



HOLMEN



Klabin



Smurfit Kappa

essity



Q2 2020 was characterized by flattened pulp and paper prices due to reduced downstream demand of newsprints and graphic papers

Market Trends: Highlights in Q2 2020

Key takeaways

Industry News	› Pandemic lockdown led to the closure of schools and offices which resulted in a falling demand of copy and office printing paper; some companies started mill conversion plans to cope with the uncertain market environment › Boxes demand surged in March due to pandemic outbreak but eased in April and May; major containerboard mills in the US chose to take summer downtime for maintenance in periods of weakened demand of boxes due to closure of non-essential businesses
Pulp Prices	› Pulp prices were weak during Q2'20. Prices in Northern Europe, US East, and Asia are down by approx. 7%, 6% and 9% in one year › Various pulp mills are curtailing production to implement the delayed annual maintenance, along with weakened downstream demand, current market prices are expected to remain at low levels during the next quarter
Graphic Paper & Packaging	› All graphic paper prices crashed in Q2'20, especially for newsprint, which witnessed a significant drop of 15 pp. on a YoY basis › Packaging paper prices were relatively stable during Q2 and export linerboard prices slightly picked up during the quarter
Commodities & Currencies	› Oil price boomed by ~42% during the quarter and climbed up to ~41 USD/barrel in Q2'20 › Natural gas prices flattened in Q2'20 but still experienced -47% price fall in Europe and -39% in the US on a YoY basis › US dollar ceased its appreciation by the end of this quarter, CNY and BRL were still down by -1.5 pp. and -25.8 pp. while EUR, GBP and SEK started to appreciate against USD in this quarter and up by 3.5pp., 2.6 pp., and 5.3 pp. respectively

Note: All Spot Crude Oil prices are per 30 Jun 2020

Source: RISI, Interim & Annual Results.



The coronavirus unleashed behavior shifts and supply disruptions in forest products, especially in packaging and graphic paper sectors

Impact of COVID-19 on various paper product sectors

	Packaging	Graphic Paper	Tissue	Pulp & RCP
Hygiene demand			●	●
Rise of remote work & school	●	●	●	●
Rise of e-Commerce	●			●
Political influence on global trade	●			●

● Direct effect ● Indirect effect



Packaging

- › Shopping habits have changed since the coronavirus outbreak, which resulted in online shopping booming and increased containerboard demand in March
- › US Government quarantine rules and closure of non-essential businesses heavily affected the raw material (OCC) collection of containerboard

Graphic paper mills closed indefinitely April-July 2020

Category	Company name	Mill location	Start date	Capacity (kt)
Newsprint	Kruger	Brompton, QC	Apr. 3	/
	Ponderay	Usk, WA	Jun. 24	244
	Resolute forest product	Baie Comeau, QC	Apr. 29	322
Graphic paper (Newsprint excluded)	Verso	Duluth, MN	Jun. 30	270
		Wisconsin Rapids, WI	Jul. 30	540
	Neenah	Neenah, WI	May. 15	20



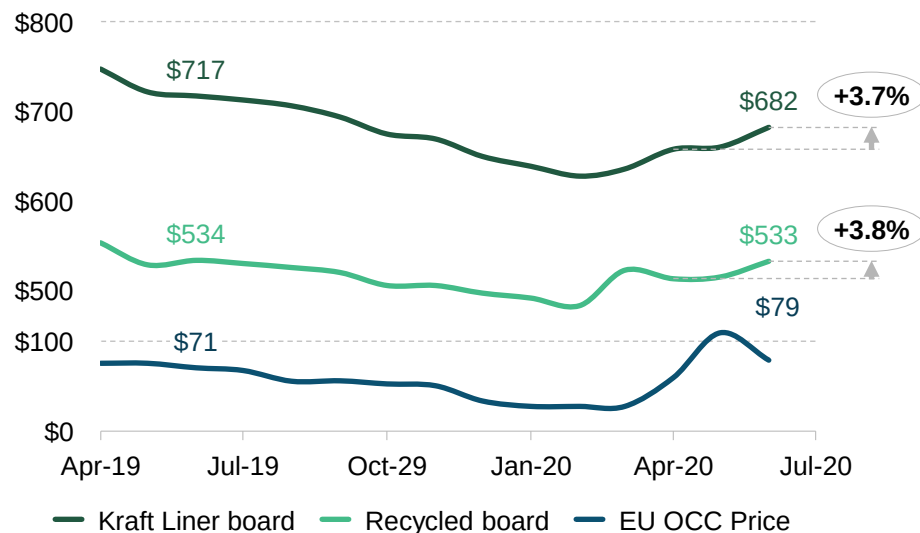
Graphic paper

- › Pandemic business shutdown led to the rise of remote work and school; lower demand for copy and office printing paper resulted in soft graphic paper demand
- › From April to July, six graphic paper mills idled operation indefinitely; some companies planned to convert machines to produce other products



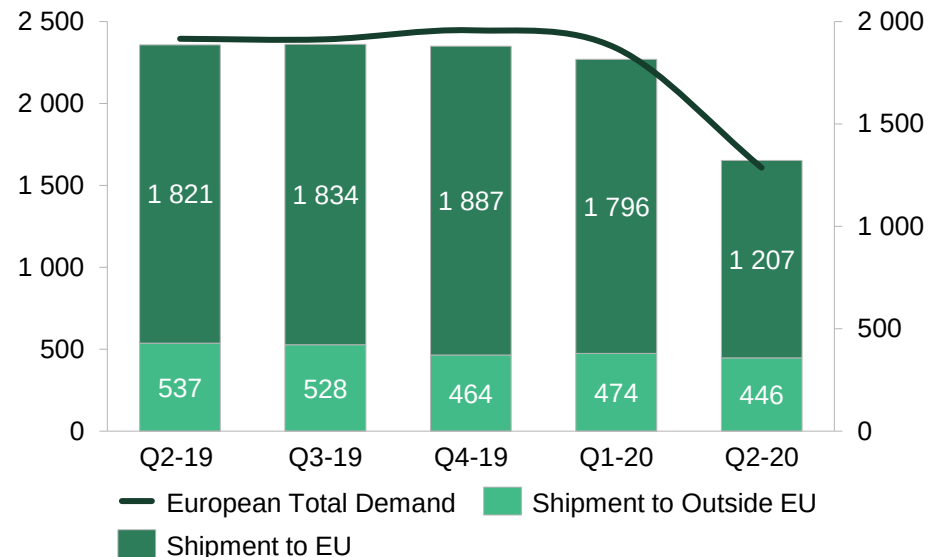
EU boxes' high reliance on raw materials caused prices to follow OCC prices, and graphic paper demand witnessed a sharp decrease

EU Containerboard price USD/tonne



- › High reliance on recycled fiber caused EU paper prices to follow OCC price trend since the beginning of 2020
- › **Demand:** Backed by packaging demand, market conditions were favorable for containerboard, thus prices of kraft liner board and recycled board increased by 3.8% and 3.7%, respectively
- › **Supply:** Small waste management companies stopped collecting raw materials, large retailers became the only source which caused the price to surge

EU demand and shipment statistics (Monthly average)



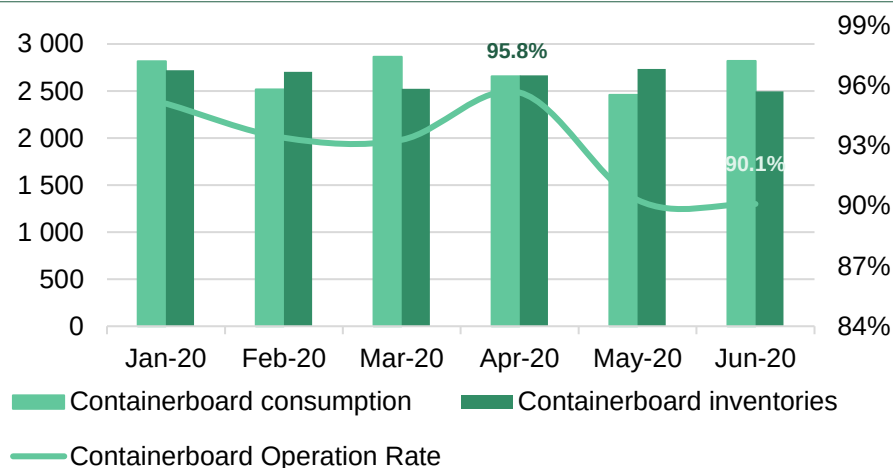
- › Most graphic paper mills suffered from low orders in the Q2 2020 partially because of high inventory levels, but the reopening of businesses may help reducing stock levels and to bring more orders to mills
- › Many EU graphic paper mills cut the output by idling operations or taking downtime to cope with weakened demand, hence the total EU Q2 monthly average shipment of graphic paper fell by 30% YoY



US containerboard market faced mill downtime while graphic paper mills were idled due to demand slump in Q2'20

US Domestic Markets

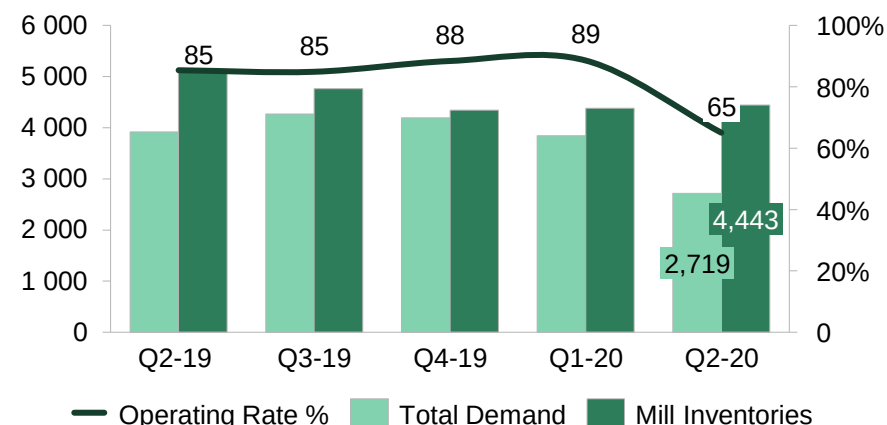
US Containerboard Operating Rate (%)



- › March box consumption had been the strongest in 2020, which was the result from a panic-buying surge for consumer products caused by the coronavirus
- › Lockdown of non-essential businesses constrained the demand for boxes in April and May; for both machine maintenance and balancing high box inventory, mills took downtime in May and June plummeting the operating rate by 5.7% during Q2
- › In June, the reopening of US “non-essential” businesses raised the demand of containerboard; consumption increased by 14% and inventory dropped by 8.6% in one month

US Graphic Paper

US Graphic Paper Statistics (k Tons, quarterly total data)



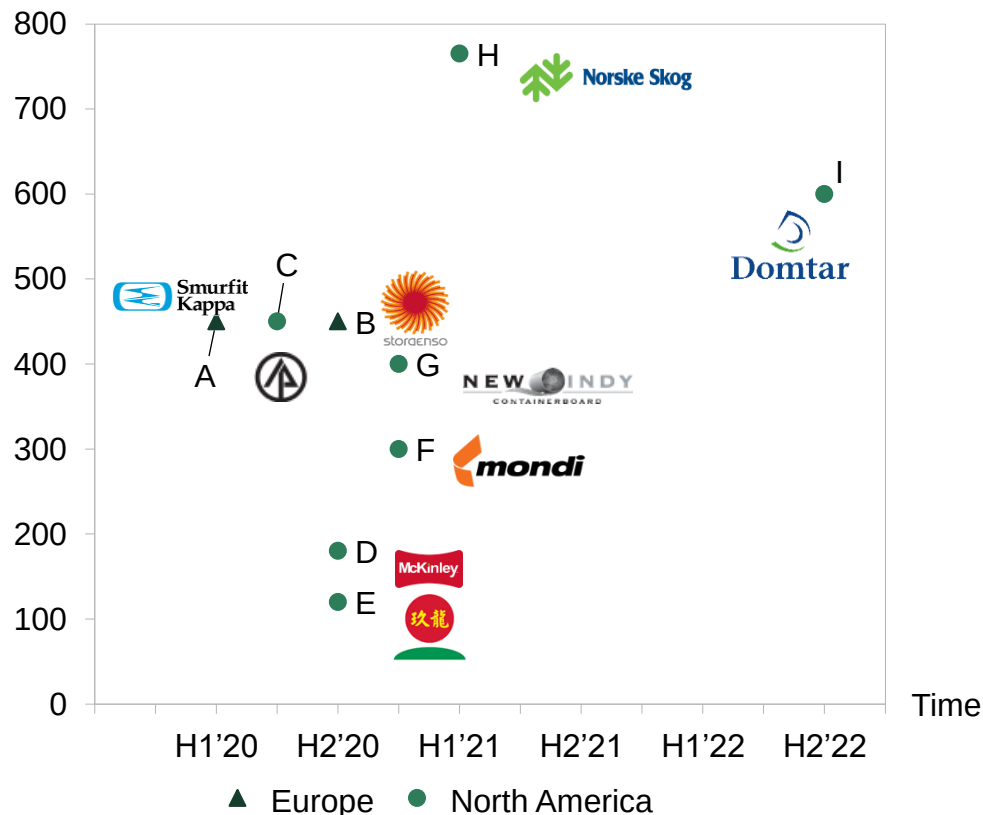
- › Due to COVID-19, US closed all non-essential businesses at the end of March; flight and public transports restriction led to weak demand for advertising printing and newsprint publication, total demand for graphic paper declined
- › With falling demand, some producers temporarily or indefinitely shut down paper mills and equipment; the operating rate at North America newsprint mill fell
- › Although free newspaper started to print and some non-essential businesses reopened in May, new orders have been at low levels with high inventories



COVID-19 accelerated the transformation of paper mills into containerboard – the trend is expected to continue in the next three years

Containerboard conversion & capacity expansion projects, 2020 H1 – 2022 H2

Annual Capacity,
kt



The containerboard market will be flooded with an additional 3.7 million tonnes of capacity. Due to shrinking graphic paper demand, companies initiated strategic plans to rebalance supply and demand

- A. Smurfit Kappa** invested \$151million for recovery boiler upgrade to improve board efficiency
- B. Stora Enso's** paper machine is planned for a conversion to produce packaging board
- C. International paper** has planned conversion of UFS paper machine to bleached-WT/CTB
- D. McKinley** owns 180,000 tonnes/yr capacity of RCB paper machine and being scheduled for conversion to produce board
- E. Nine Dragon** has scheduled conversion of coated P/W to white top
- F. Mondi's** construction of kraft-top white linerboard machine was progressing
- G. New Indy** will transform ex-Resolute LWC machine to an "ultra lightweight" KL machine
- H. Two newsprint paper machines of Norske Skog** are transformed into recycled containerboard production
- I. Domtar** plans to turn virgin UFS Kingsport mill to 100% recycled board



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Return On Invested Capital (ROIC)	› Global ROIC average dropped by 3.8 pp. in LTM; Latin America had the weakest performance and ended this quarter with 2.9 pp. decline › Despite a profitability decline of 1.2 pp., European companies on average surpassed other regions in Q2'20 with highest regional ROIC of 5.8% in LTM › Smurfit Kappa, PCA, Mondi and Essity were top performers LTM with ROICs >10%

Top performers



Klabin



HOLMEN



Klabin



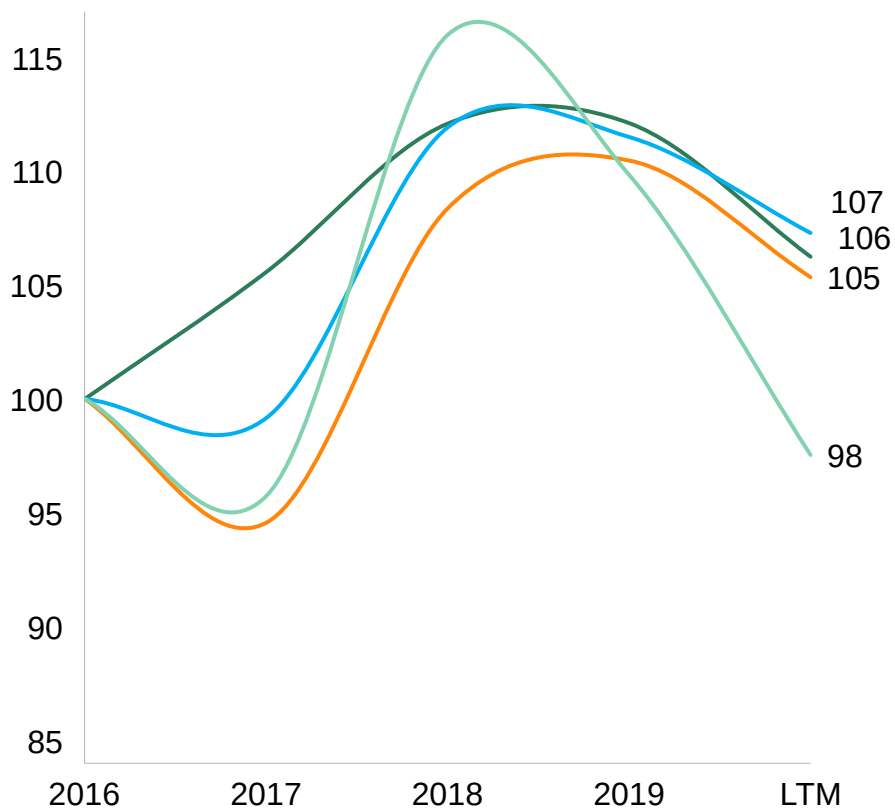
Smurfit Kappa

essity

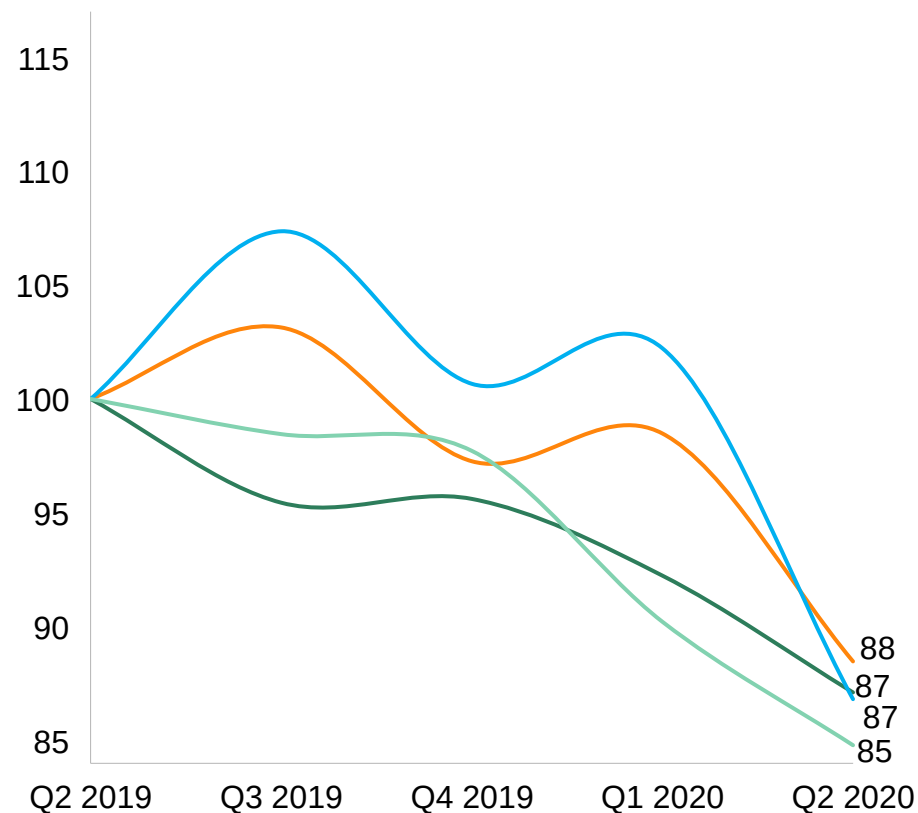


Global yearly revenue growth rate was on a downward trend in LTM, all regions experienced a slump in revenues compared with Q2'19

Indexed Yearly Revenues, 2016-LTM (index 2016=100)



Indexed Quarterly Revenues, Q2'19-Q2'20 (index Q2'19=100)



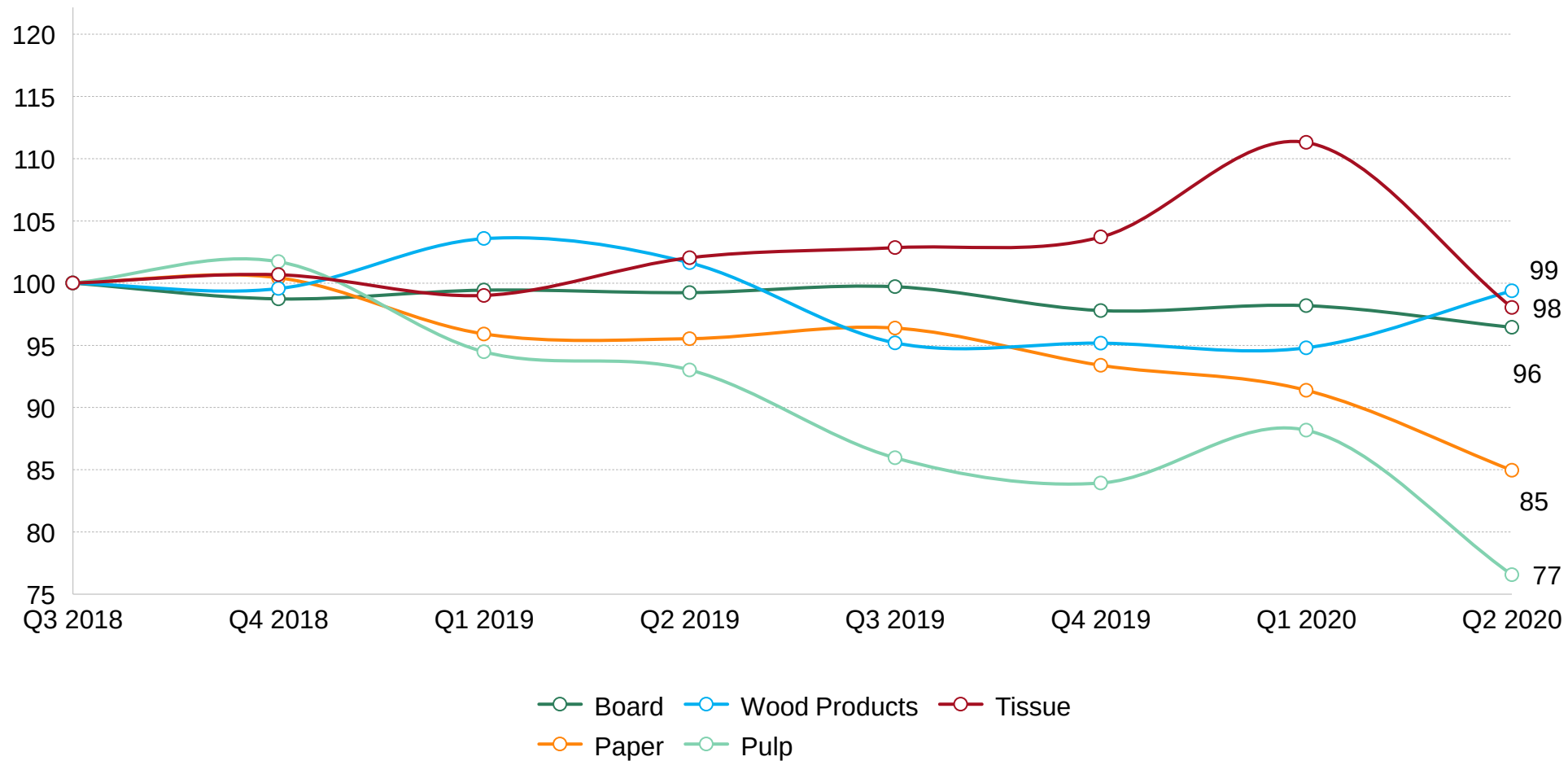
— Europe — North America — Asia — Latin America

Note: Suzano has been excluded due to the merger with Fibria
 Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.



Revenues in the wood product segment slightly recovered compared to the last quarter while all other segment revenues decreased in Q2 2020

Indexed Quarterly Revenues by Segment, Q3'18 – Q2'20 (Q3'18 =100)

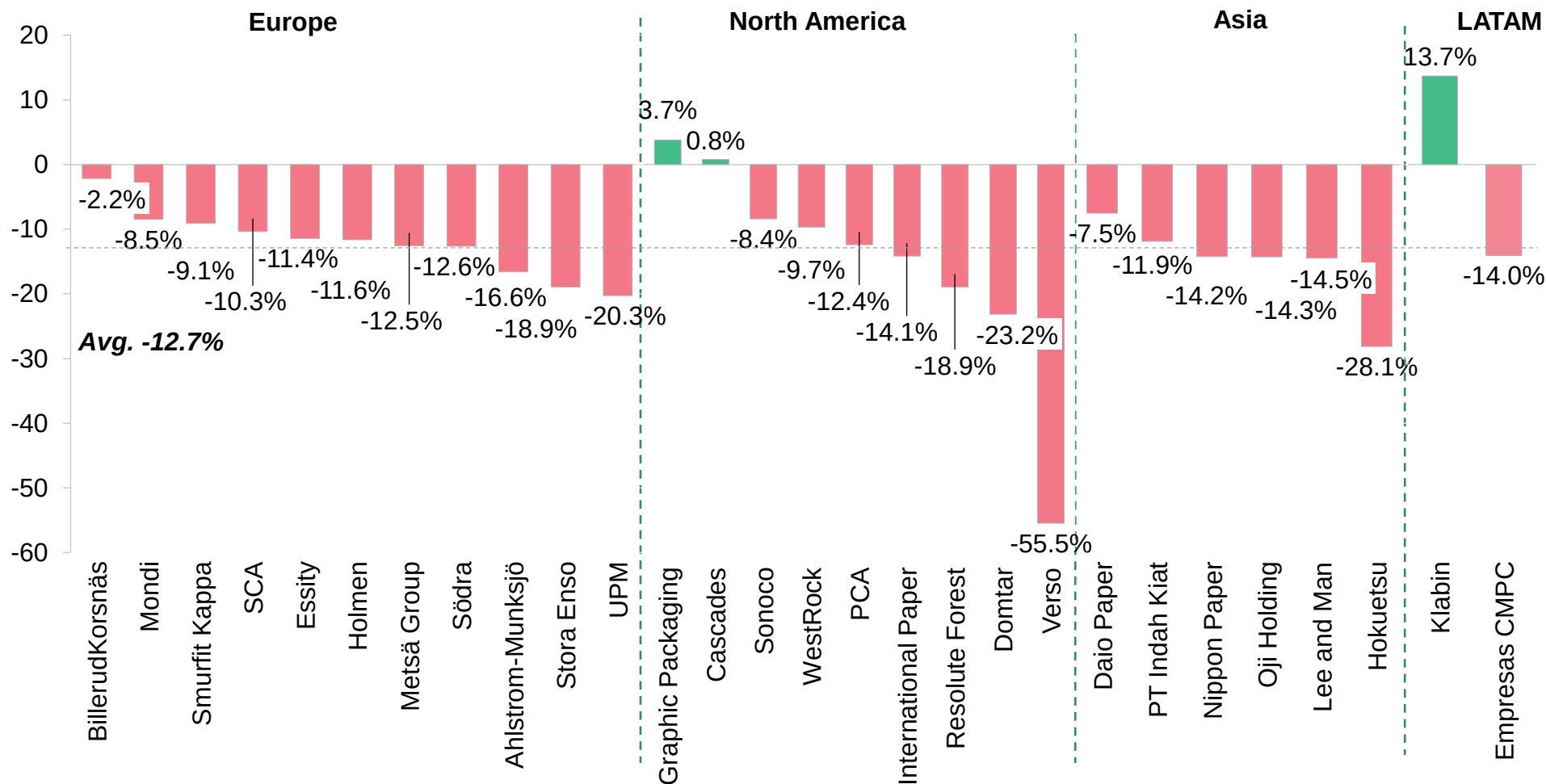


Note: The included companies differ from previous quarter
Source: Capital IQ, Applied Value Analysis.



Only three of the benchmarked companies showed positive revenue development – Klabin outperformed at 13.7% growth rate YoY

Revenue Growth, Q2'20 vs. Q2'19, %



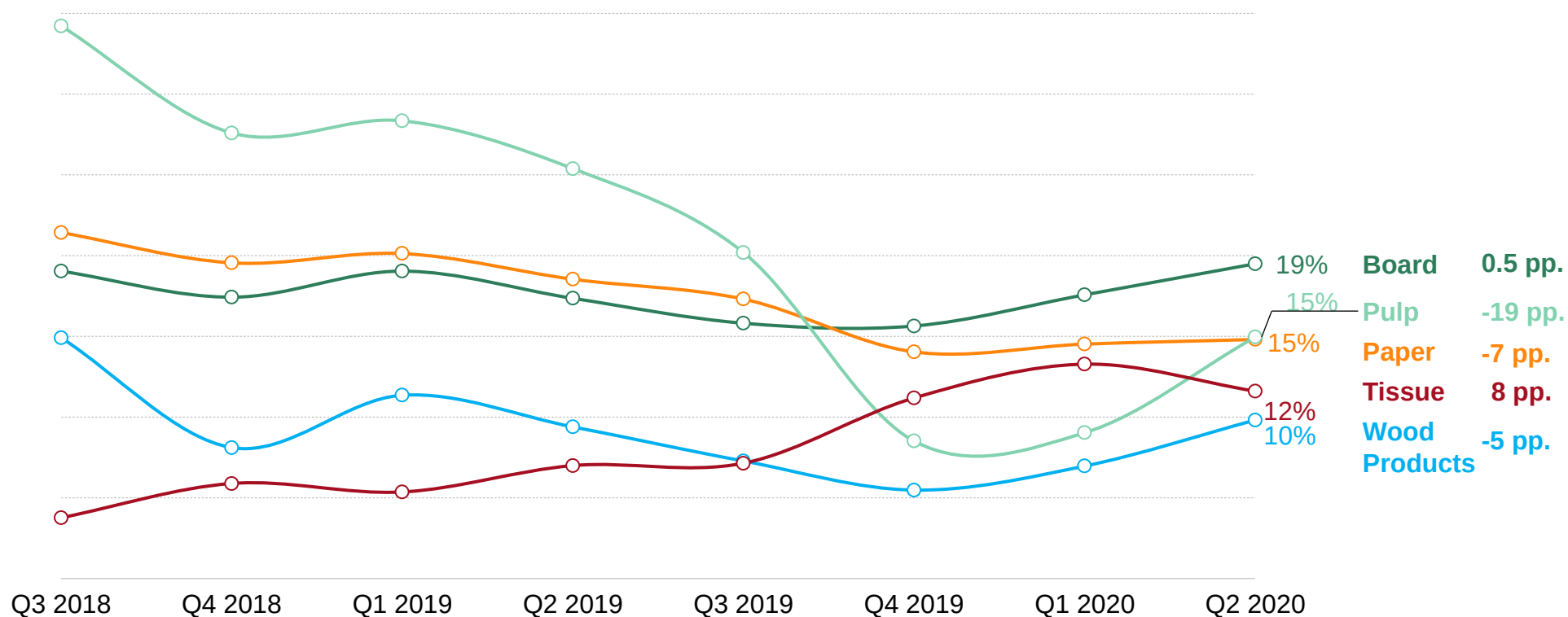
Note: 1) Suzano is excluded due to merger with Fibria.

Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.



The pulp segment showed an EBITDA margin recovery by 6 pp. to 15% in Q2 2020 with board continuing to be the most profitable segment

Quarterly EBITDA Margin by segment, Q3'18 – Q2'20, %



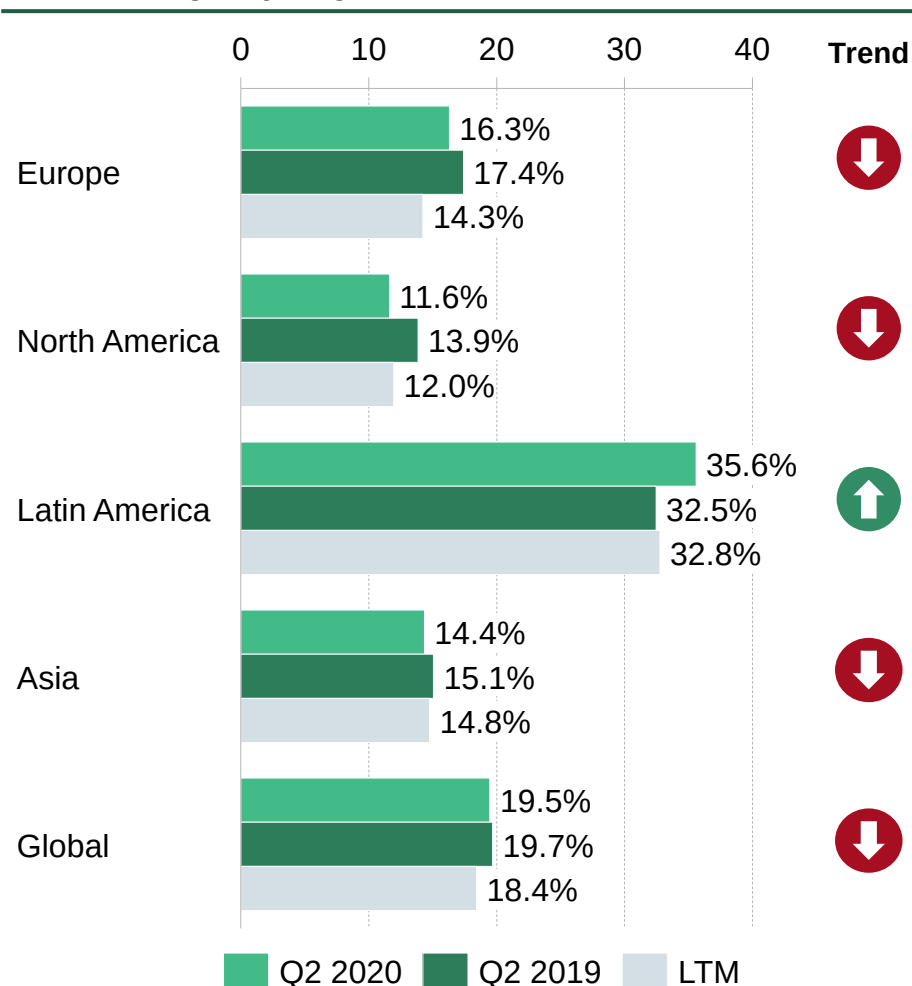
Note: The included companies differ from previous quarter.

Source: Capital IQ, Applied Value Analysis.



EBITDA margins decreased in all regions except for Latin America, which showed an increase of 9.9 pp. reaching 36.3% in Q2 2020

EBITDA Margin by Region, YoY

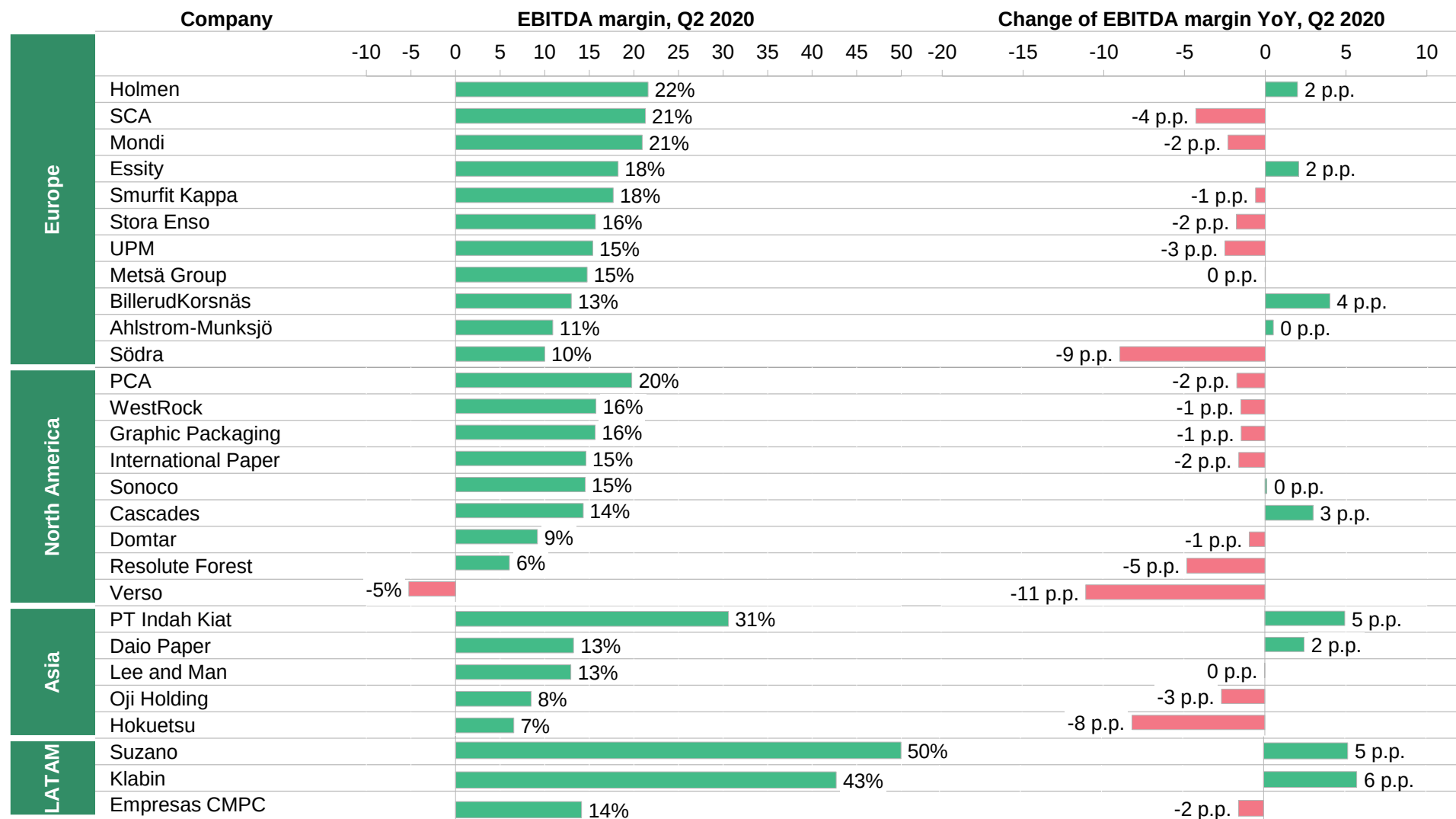


Industry News

- › **Metsä Tissue** plans to invest about **€230m** in its **Mariestad Mill Expansion**; a 70kt annual tissue paper capacity increase is expected after the expansion
- › **Norske Skog** plans to invest about **€350m** to convert two **newsprint paper machines into renewable containerboard production** with 765kt annual containerboard capacity
- › **UPM permanently shut down its newsprint mill in Chapelle, France**; its total newsprint paper capacity will be reduced by **240kt** and UPM is looking for a potential buyer
- › **Södra** proposed an investment to enhance its **Värö Mill's Pulp Capacity**, the project begun in April 2020 which will raise its pulp capacity by **150kt** per year
- › H&PC Brazil Participações **completed 100% acquisition of Santher** on June 29, 2020 at **\$676.4m**; H&PC expanded its hygiene and personal care business in South American and African market with this acquisition
- › **Nine Dragons** invested **\$650m** to build **pulp and board complex** in Hubei China; the move was partially due to China's import ban of recovered paper and board



In Q2 2020, Latin America had the best performance in profitability while most industry players demonstrated decreasing profitability

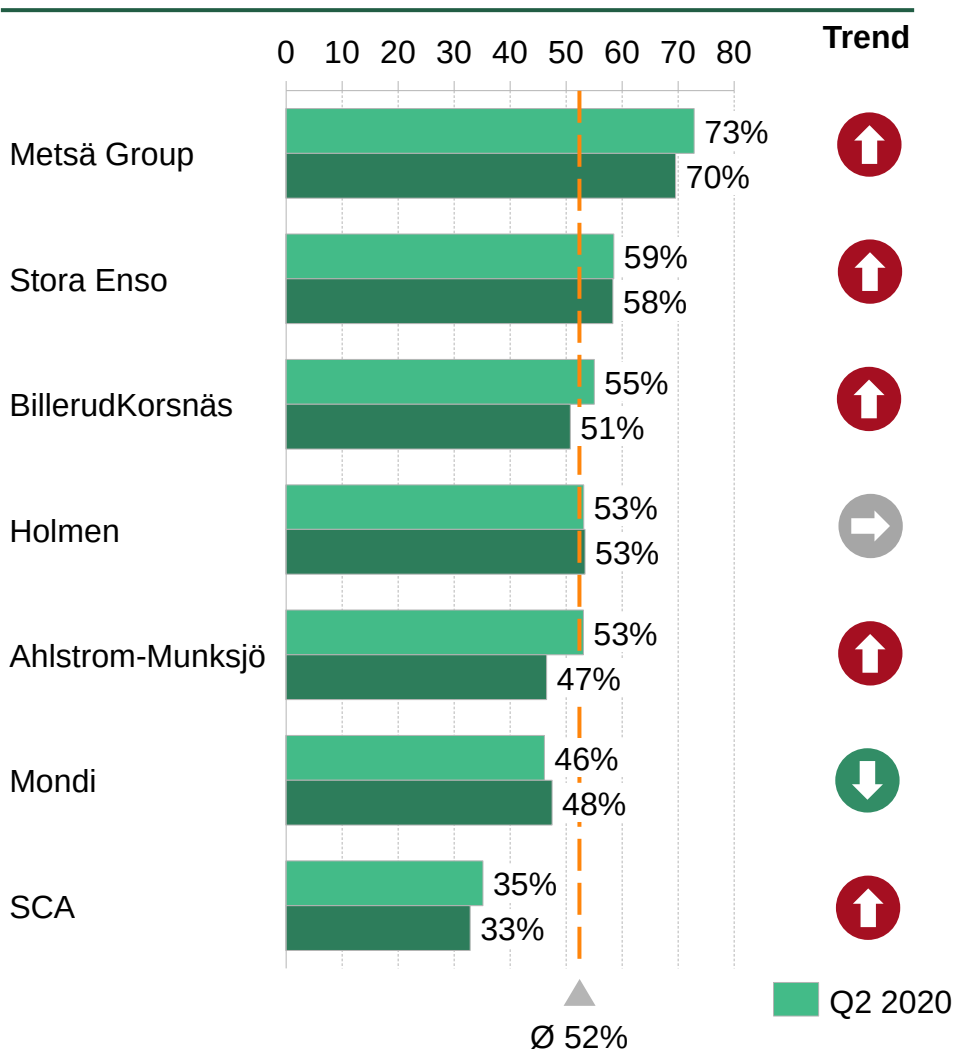


Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.
Nippon Paper Ebitda is not included due to lack of information for Q2 2020

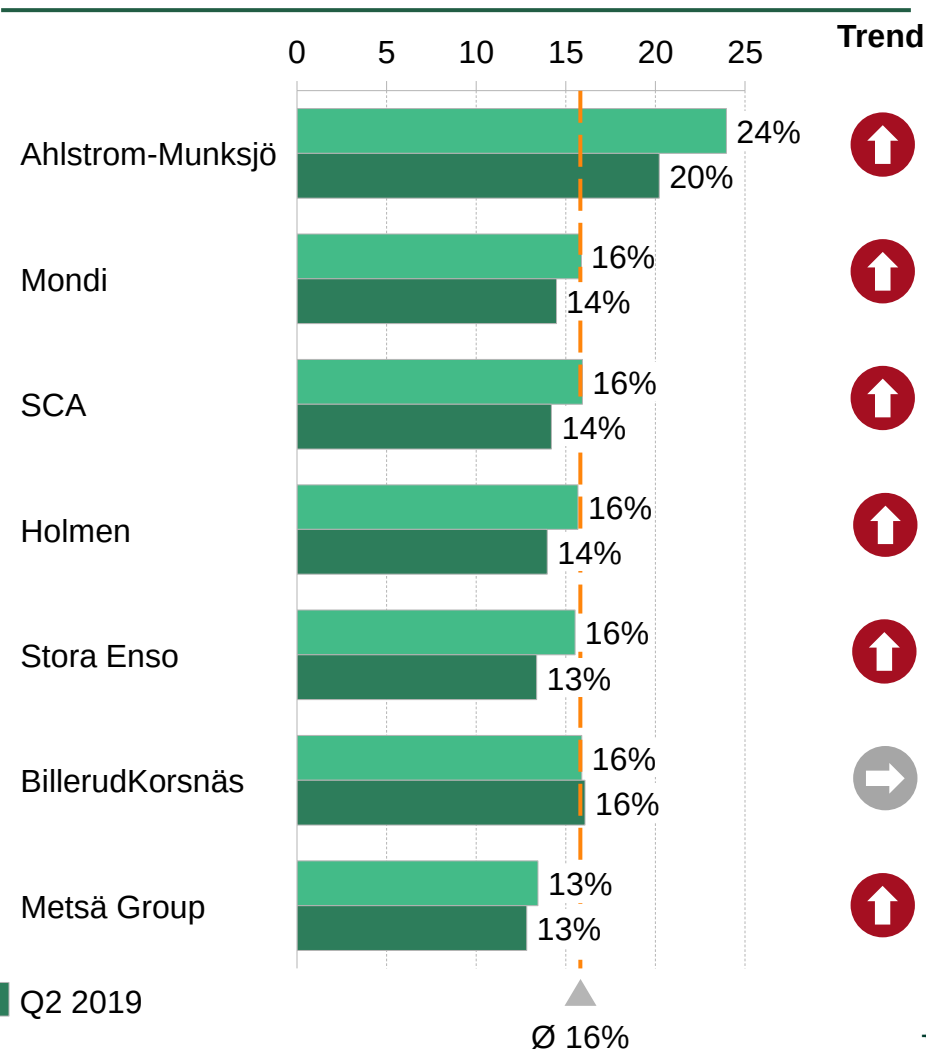


Most companies experienced an increase in personnel costs over sales given industry-wide declining sales volumes

Raw material over Sales, Q2'20 vs Q2'19, %



Personnel costs over Sales, Q2'20 vs Q2'19 %

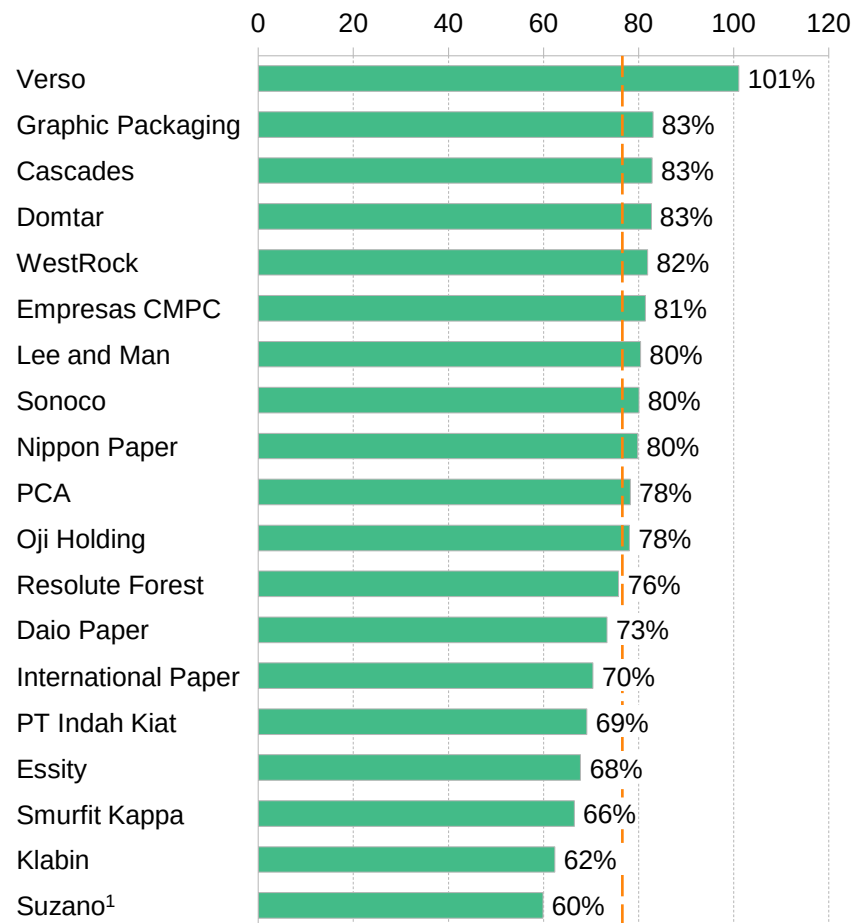


Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.



COGS over Sales were diversified among industry participants, and Klabin managed to reduce COGS to 62% this quarter

COGS over Sales
Q2'20

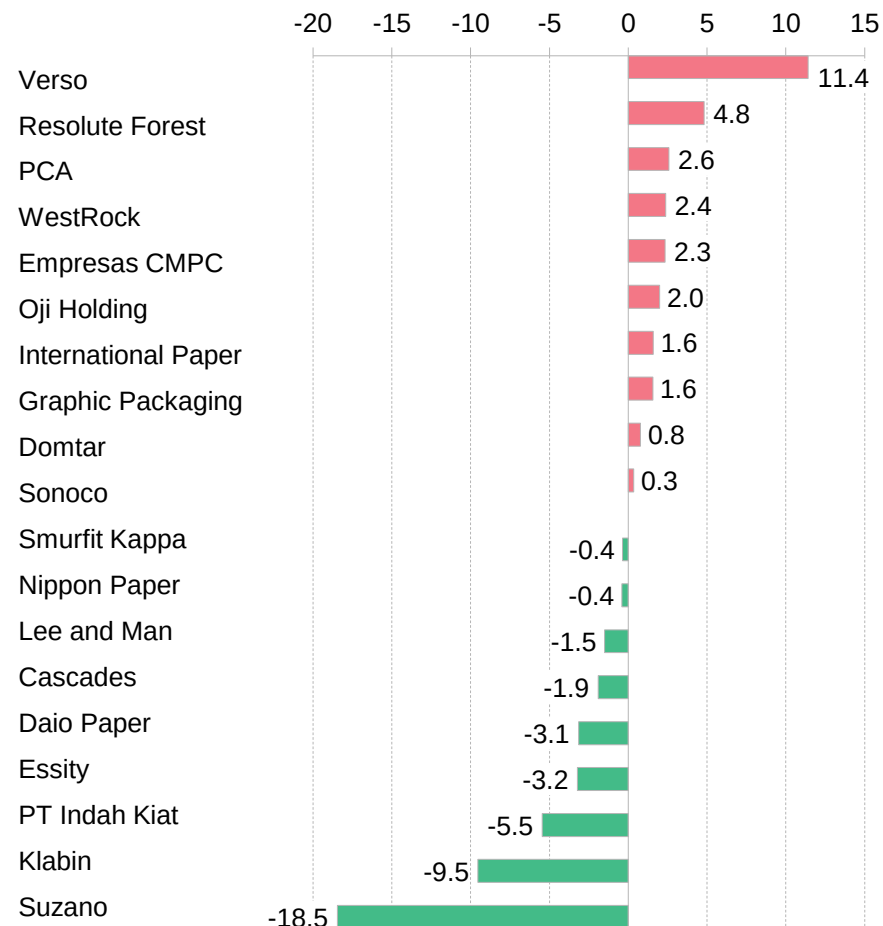


Ø 77%

Note: 1) Suzano is incomparable due to merger with Fibria.

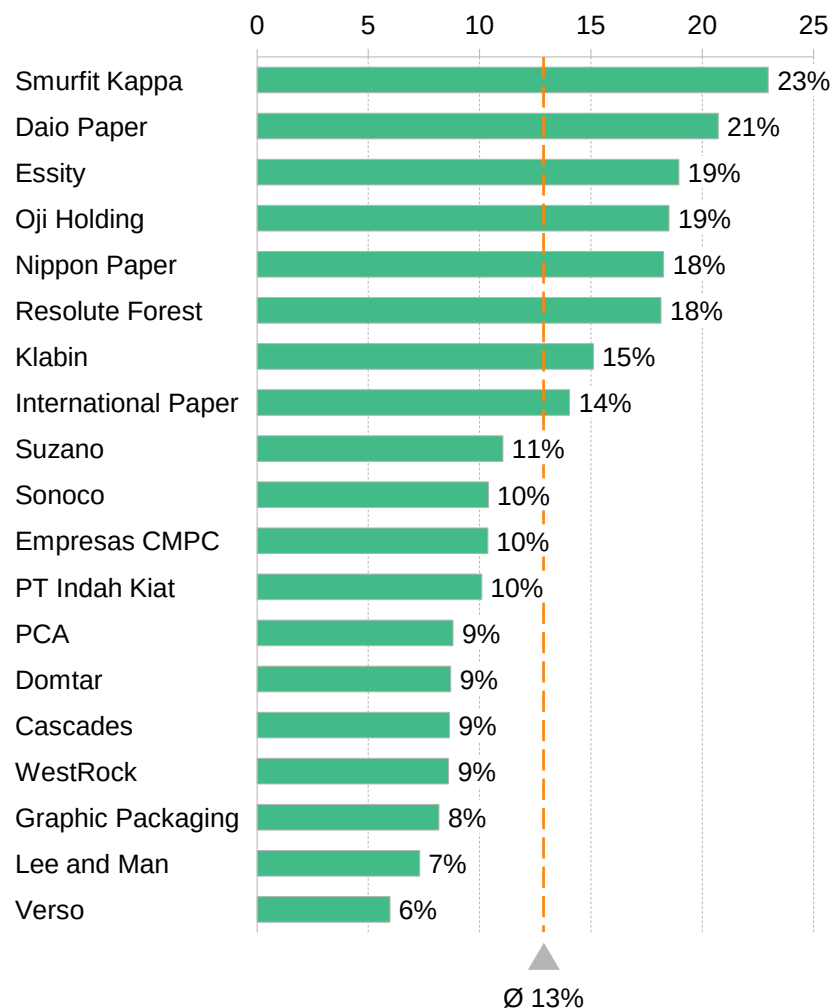
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

COGS over Sales Development
Delta (Q2'20 vs. Q2'19), pp.

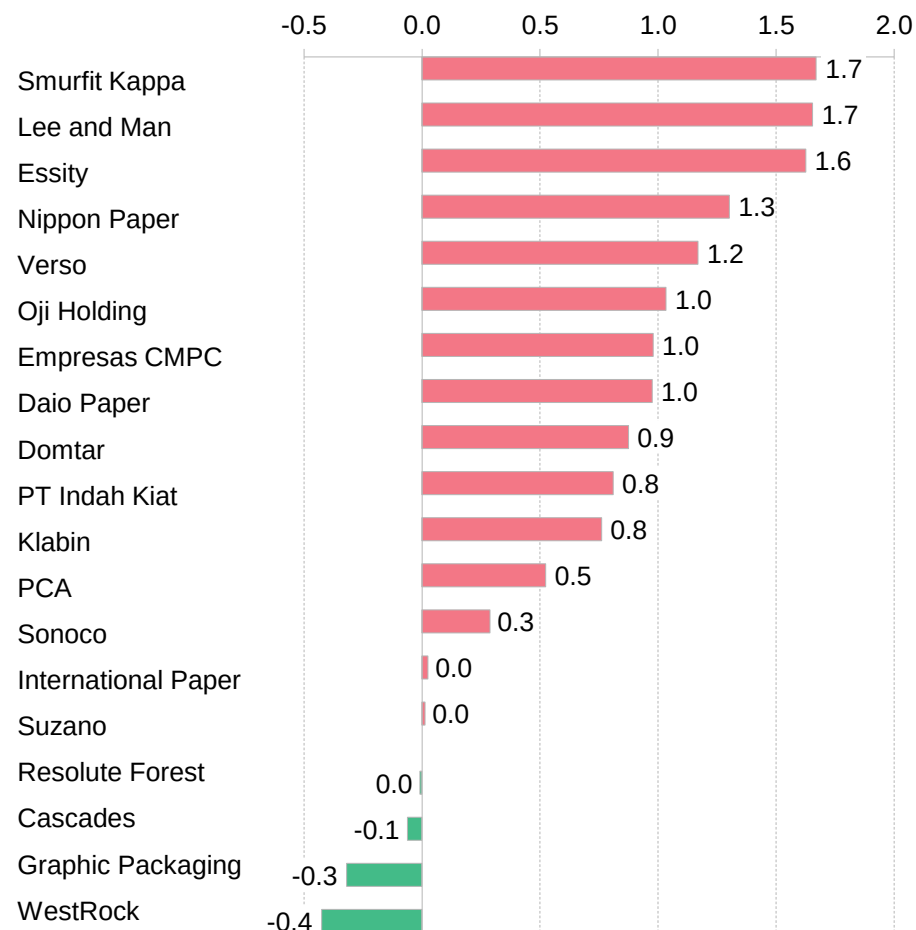


SG&A over sales ratio escalated in this quarter with Smurfit Kappa and Essity seeing some of the greatest increases to 23% and 19% in Q2

SG&A over Sales
Q2'20



SG&A over Sales Development by Company
Delta (Q2'20 vs. Q2'19), pp.

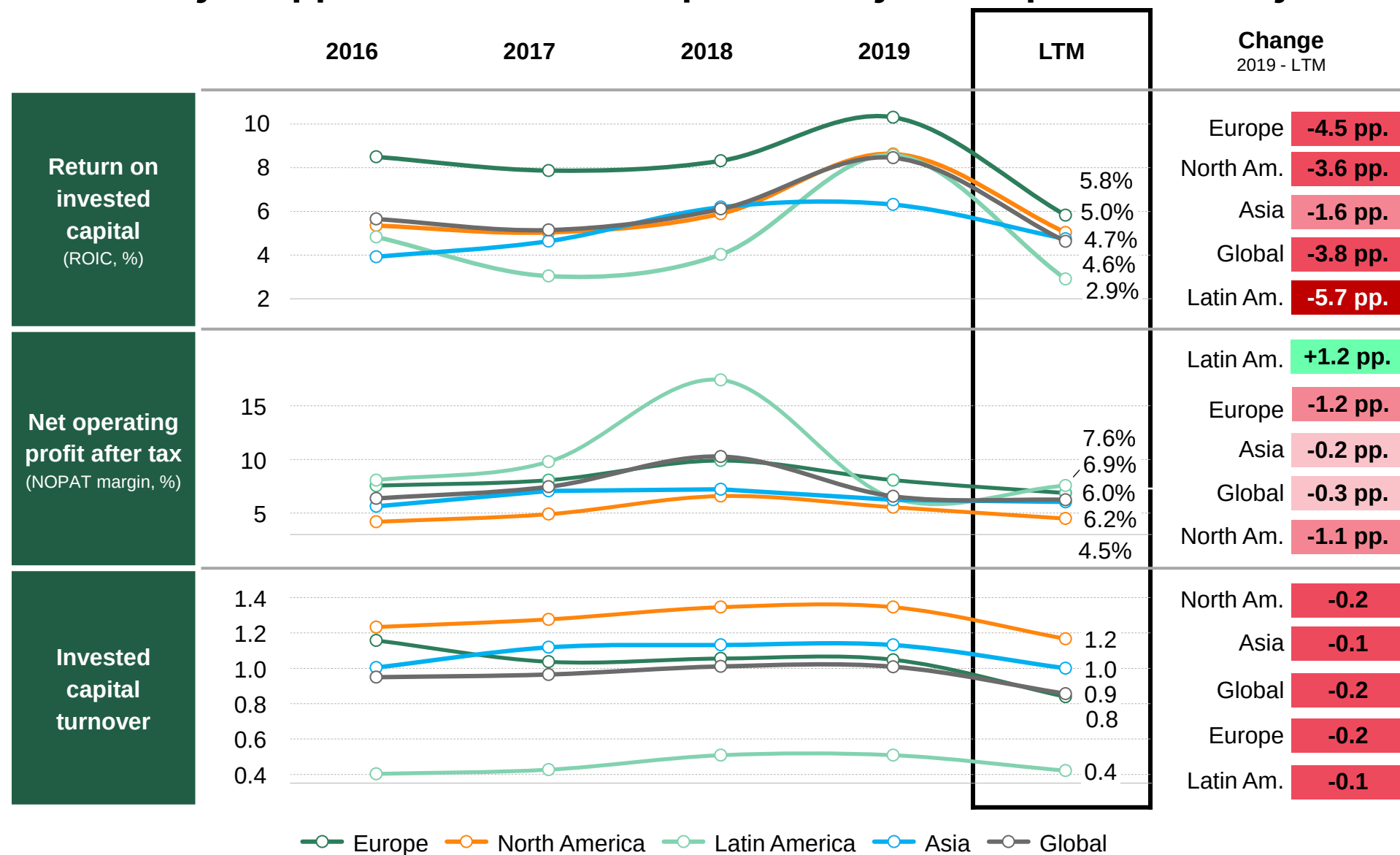


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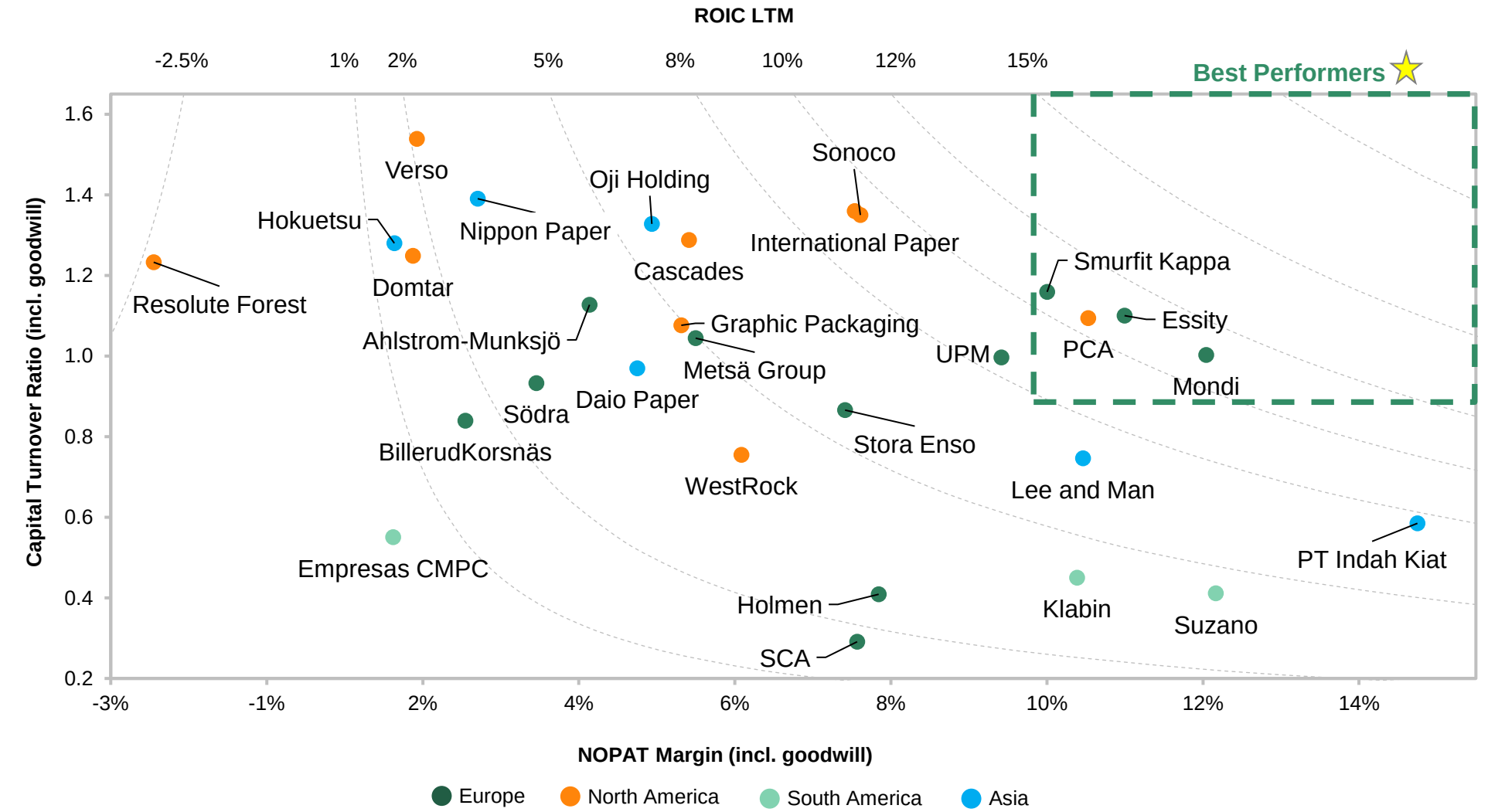
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.



ROIC showed a declining trend across all regions in LTM while global ROIC reduced by 3.8 pp. due to weakened profitability and capital efficiency



ROIC performances varied between ~2.3% and ~11% over the last 12 months with Smurfit Kappa, PCA, Mondi, and Essity as top performers



Notes: ROIC = Return on Invested Capital (actual return that the company has generated after tax).
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.



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Commodities & Currencies	› Oil price boomed by ~42% during the quarter and climbed up to ~41 USD/barrel in Q2'20 › Natural gas prices flattened in Q2'20 but still experienced -47% price fall in Europe and -39% in the US on a YoY basis › US dollar ceased its appreciation by the end of this quarter, CNY and BRL were still down by -1.5 pp. and -25.8 pp. while EUR, GBP and SEK started to appreciate against USD in this quarter and up by 3.5pp., 2.6 pp., and 5.3 pp. respectively

Note: WTI Spot Crude Oil prices are per 30 Jun 2020

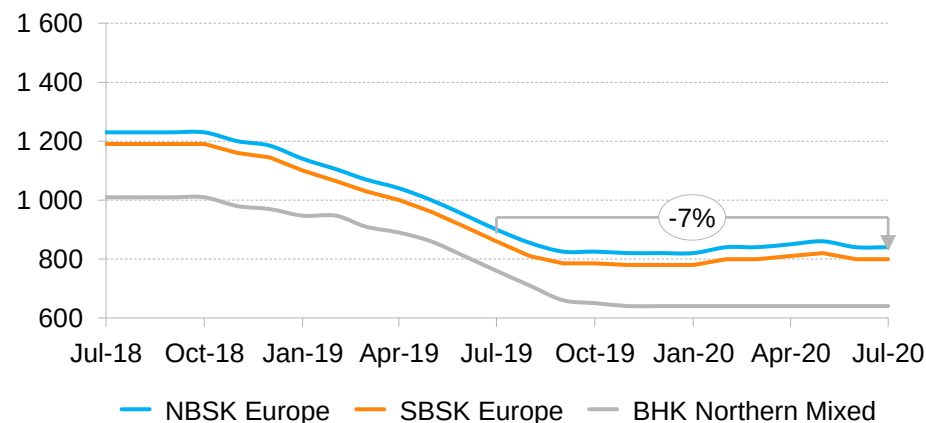
Source: RISI, Interim & Annual Results.



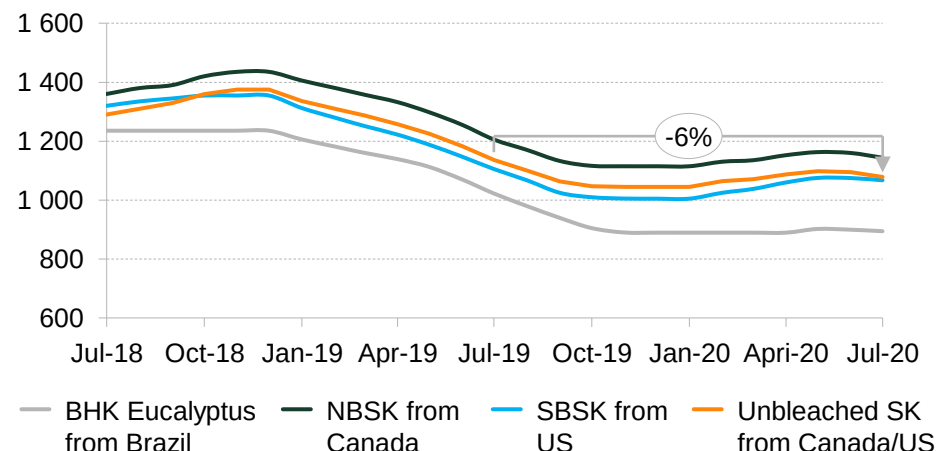
Global pulp prices decreased by 4-9% on YoY basis and continued the downward trend towards the end of Q2 2020

Global Pulp Price Development, Last 24 Months

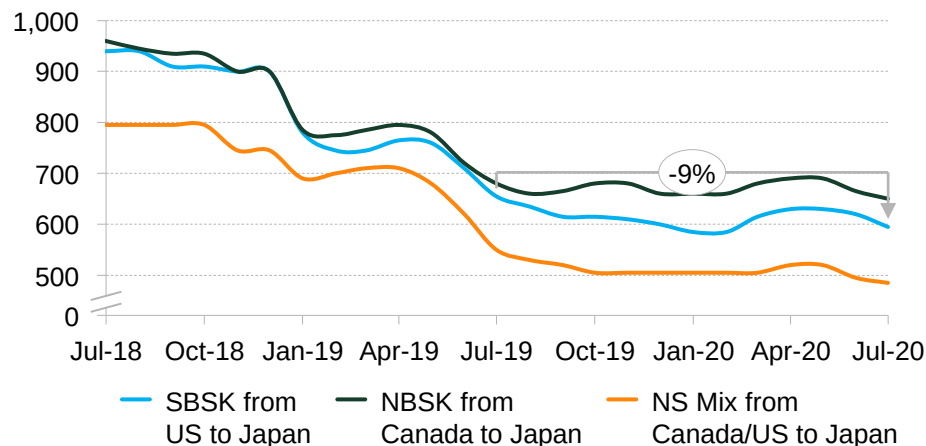
Northern Europe, USD/Tonne



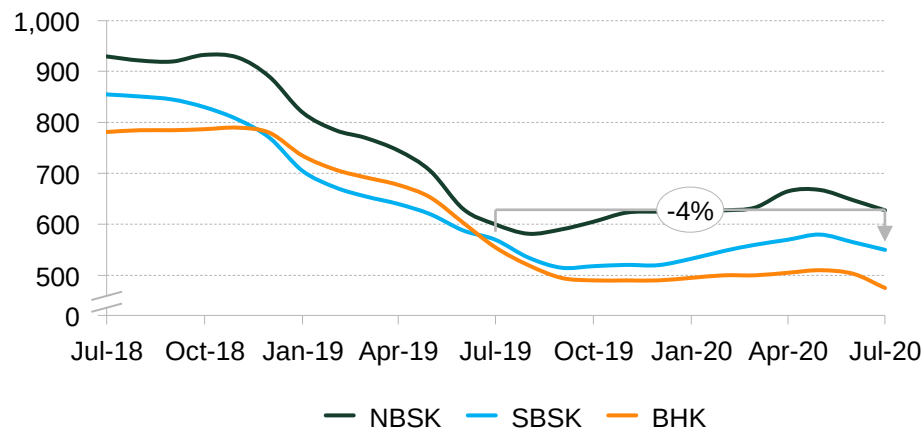
US East, USD/Tonne



Asia, USD/Tonne



US East spot prices, USD/Tonne



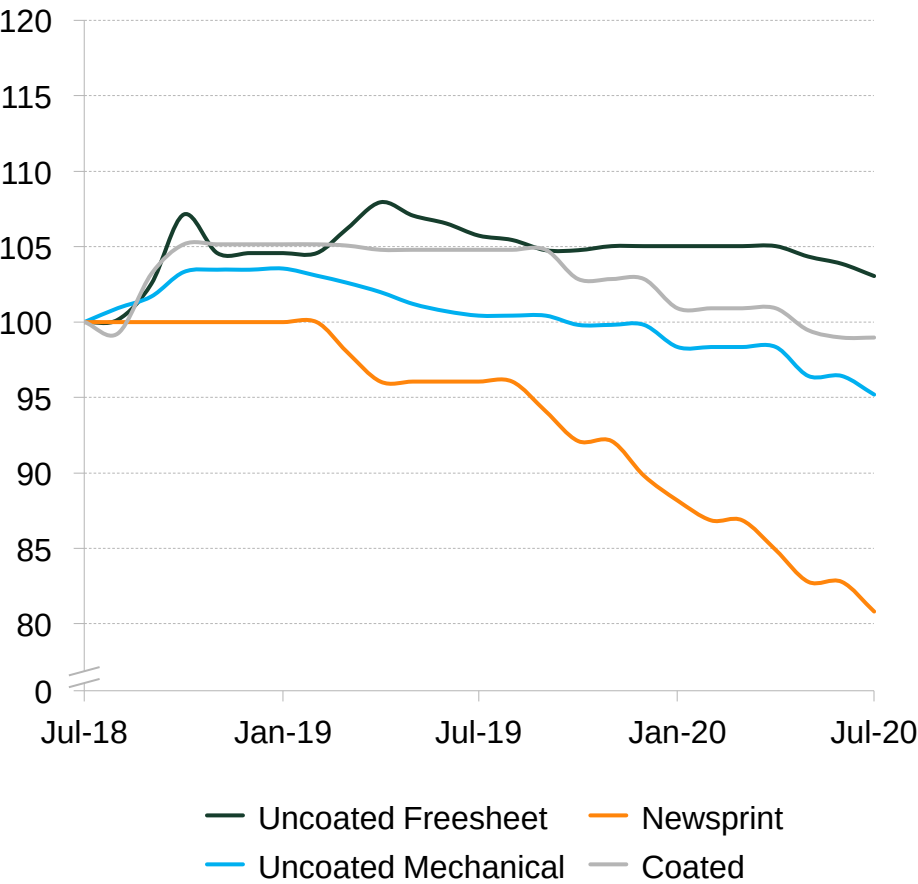
Note: Midpoint price levels.
Source: RISI PPI Pulp & Paper Week.



All graphic paper prices decreased in Q2 and newsprint prices reached historical lows while packaging paper prices stabilized

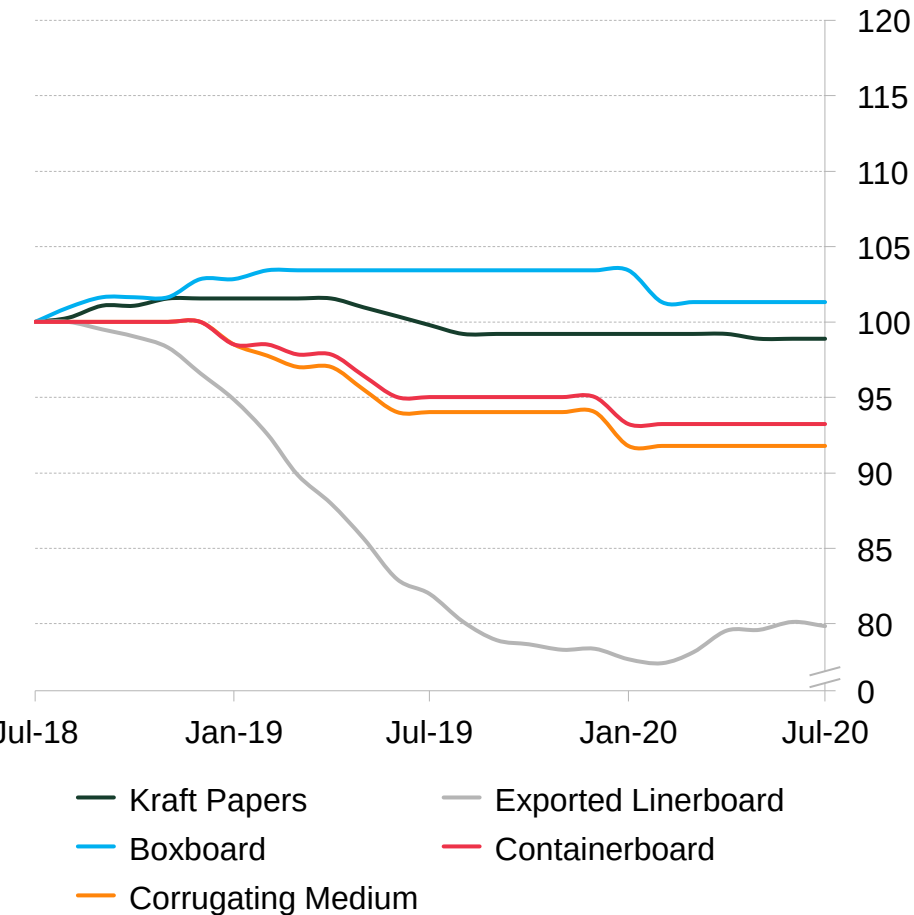
Graphic paper prices

Avg. indexed price per product segment, USD/ton



Packaging paper prices

Avg. indexed price per product segment, USD/ton



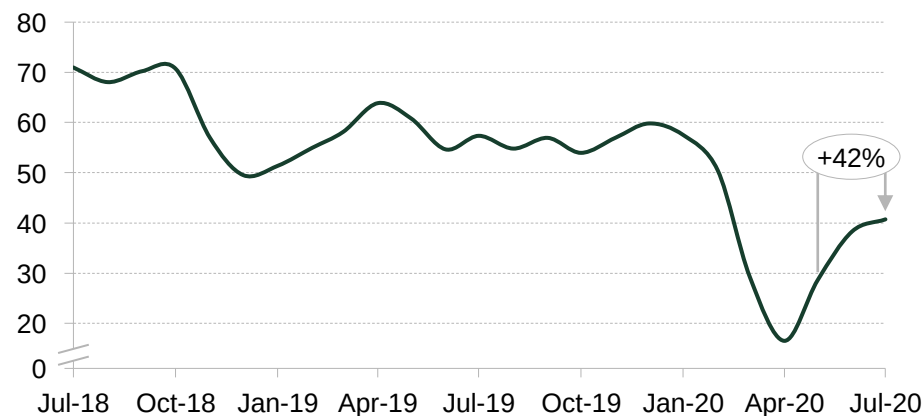
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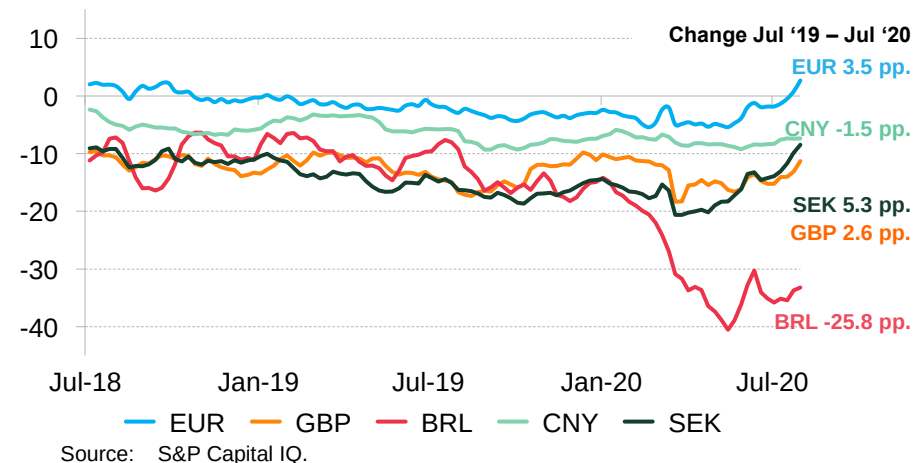
Crude oil prices rapidly increased by 42% in the last 3 months while most currencies appreciated against USD in Q2 2020

Commodity & Currency Price Development, Last 24 months

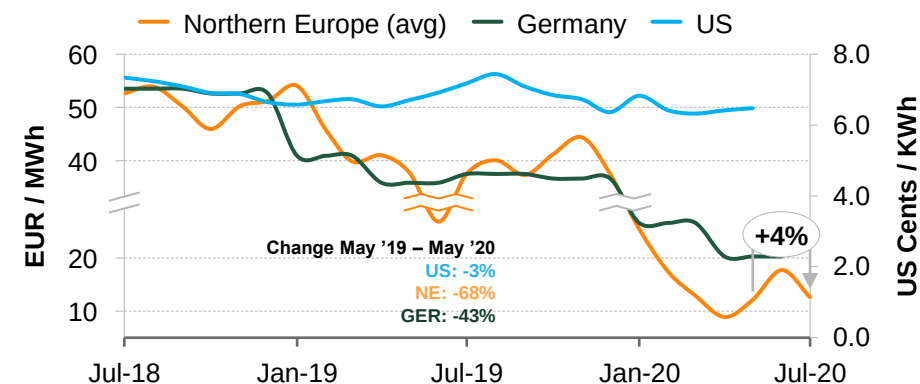
WTI Spot Crude Oil, USD/Barrel



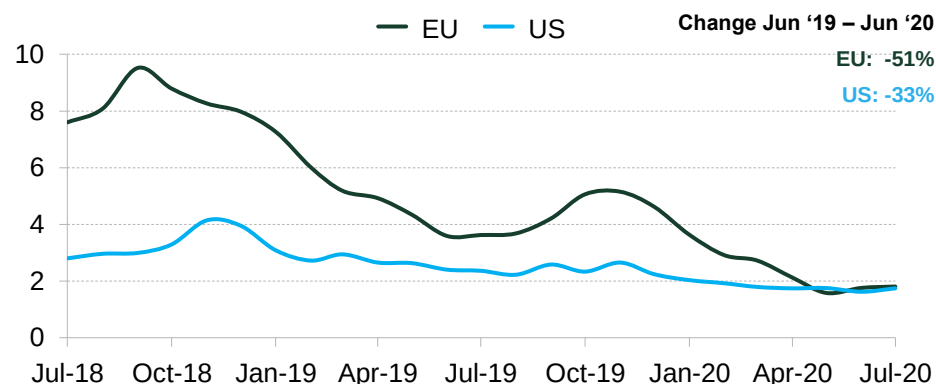
Currency appreciation against USD, %



Electricity



Natural Gas, USD/mmbtu



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Applied Value Presentation



The coronavirus unleashed behavior shifts and supply disruptions in forest products, especially in packaging and graphic paper sectors

Impact of COVID-19 on various paper product sectors

	Packaging	Graphic Paper	Tissue	Pulp & RCP
Hygiene demand			●	●
Rise of remote work & school	●	●	●	●
Rise of e-Commerce	●			●
Political influence on global trade	●			●

● Direct effect ● Indirect effect



Packaging

- › Shopping habits have changed since the coronavirus outbreak, which resulted in online shopping booming and increased containerboard demand in March
- › US Government quarantine rules and closure of non-essential businesses heavily affected the raw material (OCC) collection of containerboard

Graphic paper mills closed indefinitely April-July 2020

Category	Company name	Mill location	Start date	Capacity (kt)
Newsprint	Kruger	Brompton, QC	Apr. 3	/
	Ponderay	Usk, WA	Jun. 24	244
	Resolute forest product	Baie Comeau, QC	Apr. 29	322
Graphic paper (Newsprint excluded)		Duluth, MN	Jun. 30	270
	Verso	Wisconsin Rapids, WI	Jul. 30	540
	Neenah	Neenah, WI	May. 15	20



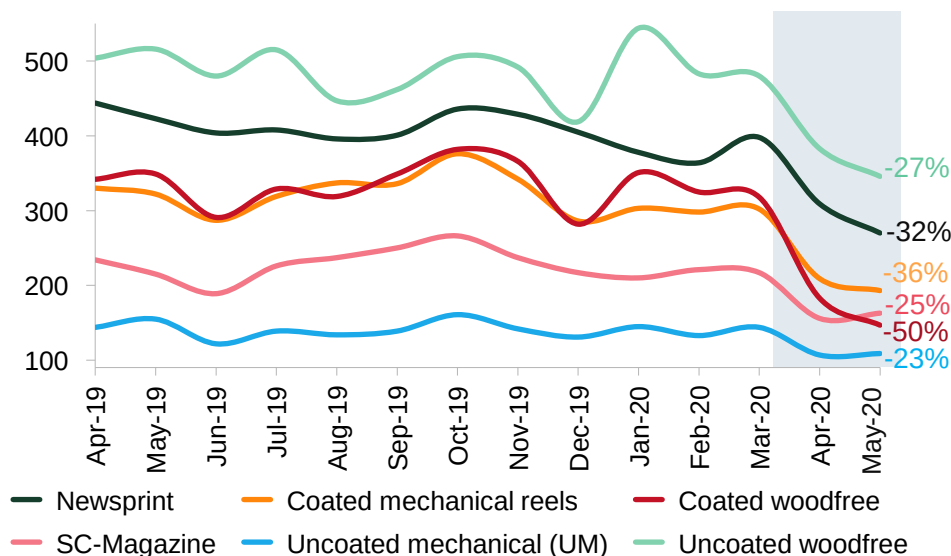
Graphic paper

- › Pandemic business shutdown led to the rise of remote work and school; lower demand for copy and office printing paper resulted in soft graphic paper demand
- › From April to July, six graphic paper mills idled operation indefinitely; some companies planned to convert machines to produce other products



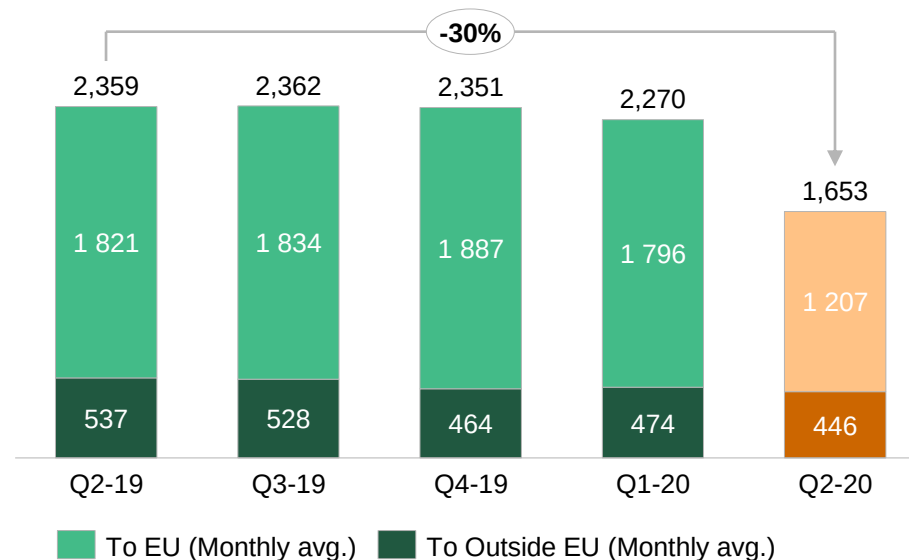
EU graphic paper demand witnessed a sharp decrease in Q2'20, and EU graphic paper mills paused manufacturing due to weakened demand

EU total demand of graphic paper & Quarterly Change % YoY



- › With lockdowns eased in May, free newspaper started to print. Despite this, **Newspaper** demand was still soft as most printings were made from inventories accumulated before the pandemic
- › Both **SC** and **UM** fell in Q2 due to COVID-related low demand for advertising materials; but both showed a recovery by the end of May as output of advertising leaflets and catalogs increased
- › Due to lockdown, **CWF** demand dived in Q2'20 at 50% YoY; the situation did not recover with lifted lockdown, and firms were under price and competition pressure

Total EU shipment of Graphic paper (kt)

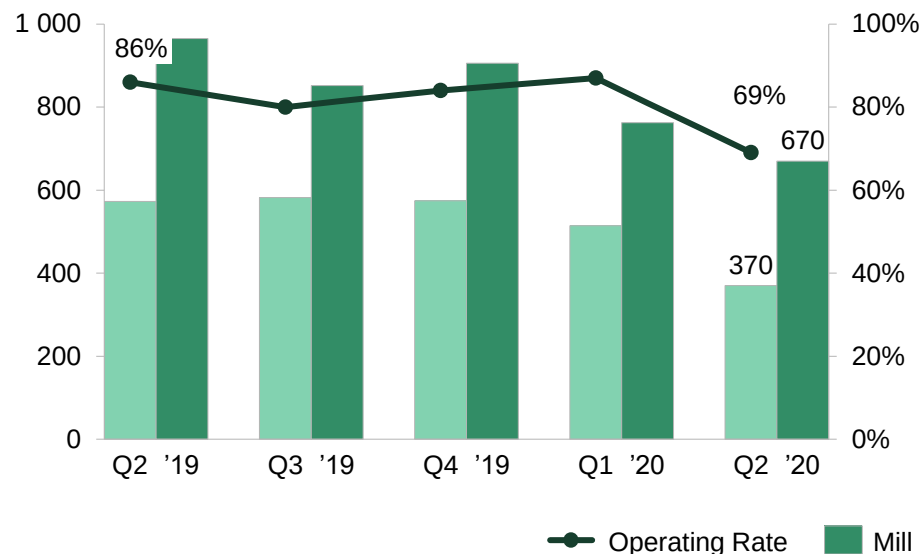


- › Most graphic paper mills suffered from low orders in Q2 2020 due partially to high inventory levels, but the reopening of business may help reduce stock levels and bring more orders to mills
- › Many EU graphic paper mills cut outputs by idling operations or taking downtime to cope with weakened demand, causing the total EU Q2 monthly average shipment of graphic paper to fall by 30% YoY

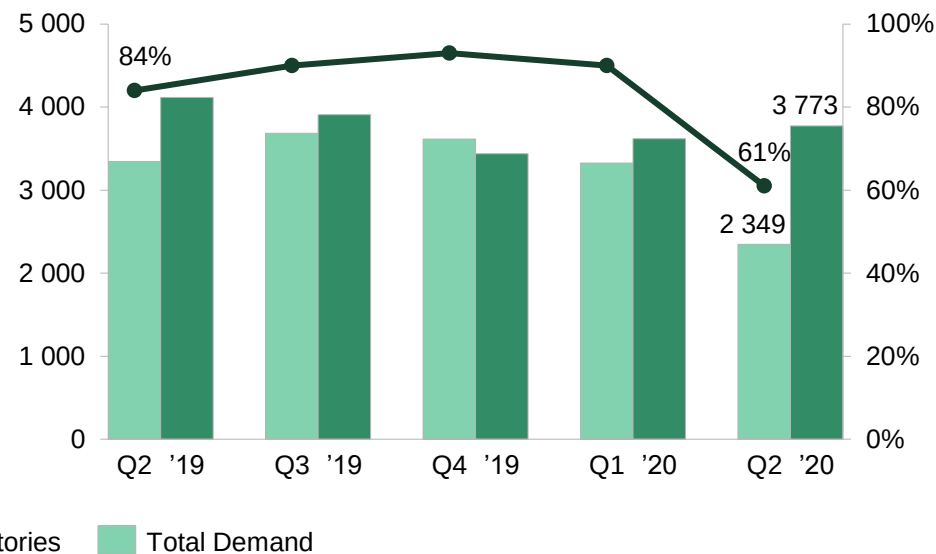


NA graphic paper demand dropped by 31% YoY in Q2 2020, and various paper mills idled operations to balance supply and demand

NA newsprints statistics Q2 19-Q2 20 (kt)



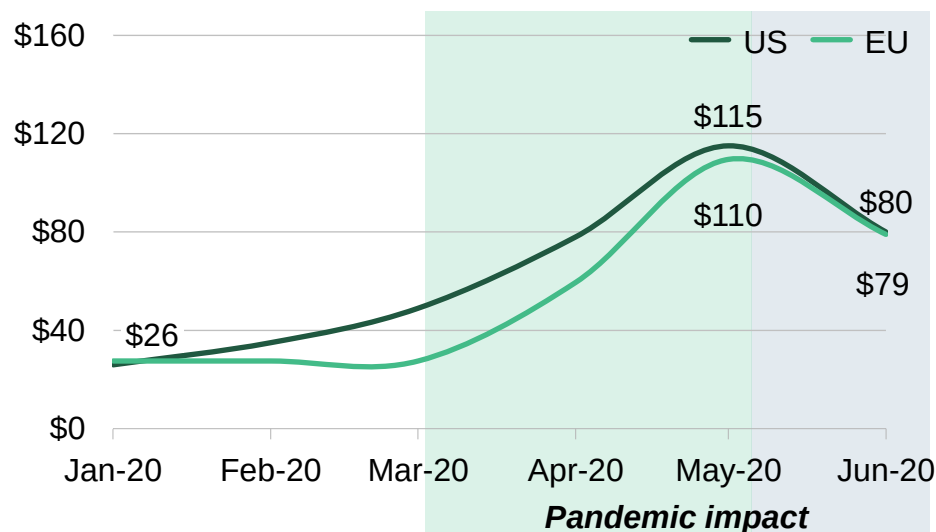
NA printing and writing paper statistics Q2 19-Q2 20 (kt)



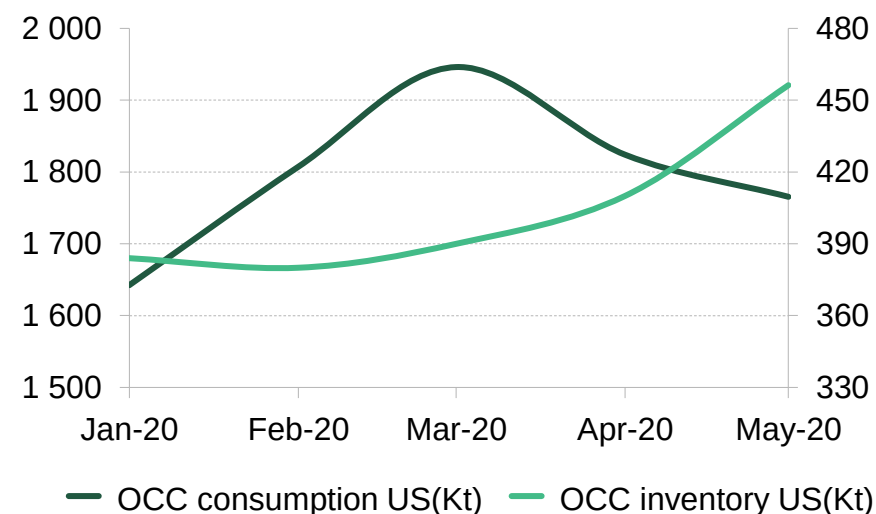
- Due to COVID-19, US closed all non-essential business at the end of March; flight and public transports restrictions led to weak demand of advertising printing and newsprint publication, the total demand of newsprint and P&W declined by 35% and 30% YoY in Q2 2020 respectively
- With falling demand, some producers had temporarily or indefinitely shut down paper mills and equipment; the operating rate at North America newsprint mill fell by 17% YoY in Q2 2020, and P&W paper mills had a steeper decline of 23%
- Although free newspaper started to print and some non-essential businesses reopened in May, new orders have been at low levels with high inventories; P&W demand is expected to maintain status quo in next Q as schools and offices will remain closed

COVID-19 pandemic caused OCC prices to increase in early 2020, reaching a peak in April and May but followed by a sharp decrease in June

OCC price USD/tonne



US OCC consumption & inventory in H1 2020 (kt)



March - May

- › **Supply slump:** Generation of recovered fiber has been slow since March; closure of offices, restaurants, automotive plants and other businesses add to difficulties of OCC collection, reducing OCC supply as a result
- › **Demand grow:** Box demand increased in March due to panic-buying surge for food, water, and consumer products; mills have started the buying of OCC since March to hedge the shortage of raw material brought by business closure

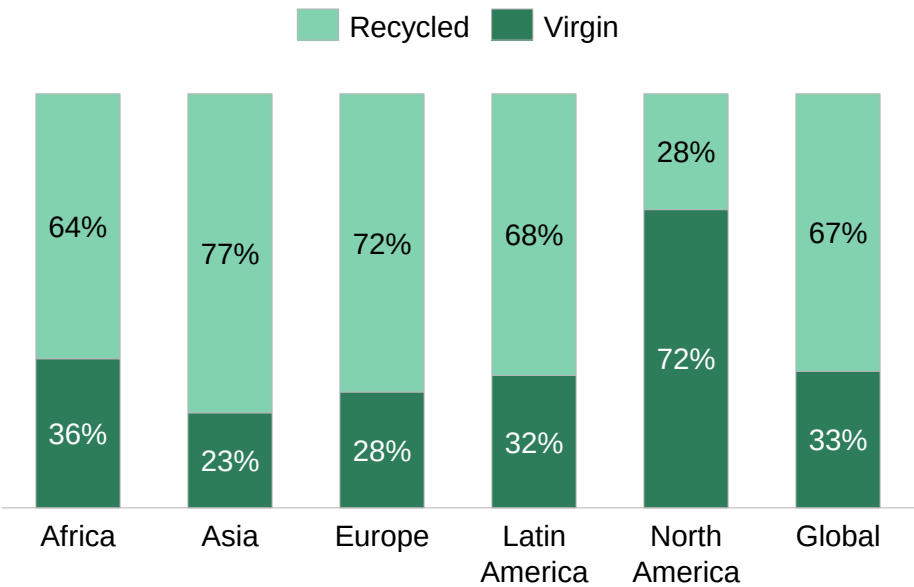
May - June

- › **After a four-month rise, US and EU OCC prices fell to \$80/tonne and \$79/tonne respectively in June**
- › **Weak demand:** In May and June, large containerboard mills' downtime reduced consumption of OCC, together with accumulated high stock, contributed to the price decline of OCC prices
- › **Lower export:** Overseas mills either shutdown or postpone their procurement and production activities, which in return softens OCC exports



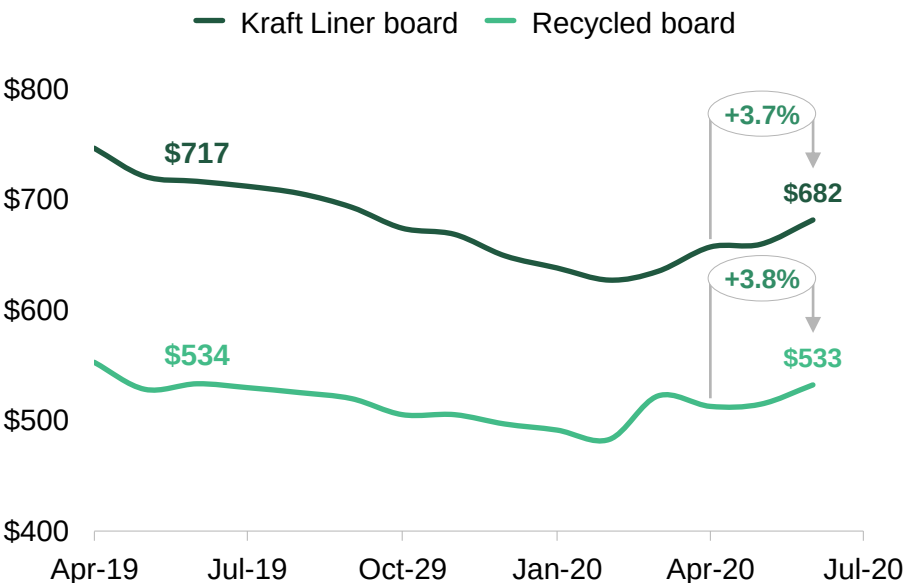
EU containerboard prices were pressured by OCC prices due to high reliance on recycled raw material inputs

Virgin vs. recycled fiber usage by region, 2019



- › Containerboard fiber was mainly from recycled sources in most regions; especially for Europe, recycled fibers contribute to 72% of containerboard and virgin fibers accounting for the rest 28%
- › High reliance on recycled raw material caused European paper prices to follow OCC price trend since the beginning of 2020

EU Containerboard price USD/tonne



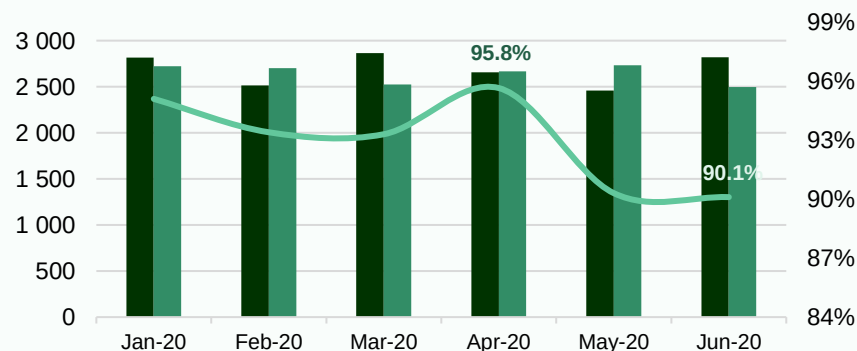
- › **Demand:** Backed by packaging demand, market conditions were favorable enough for containerboard, thus prices of kraft liner board and recycled board increased by 3.8% and 3.7%, respectively
- › **Supply:** Supply of raw materials has been disrupted for a while as small waste management companies stopped collecting raw materials, large retailers became the only source which caused the price to surge



US containerboard market faced mills downtime while exports weakened because of the continued pandemic

US Domestic Markets

US Containerboard Operating Rate (%)



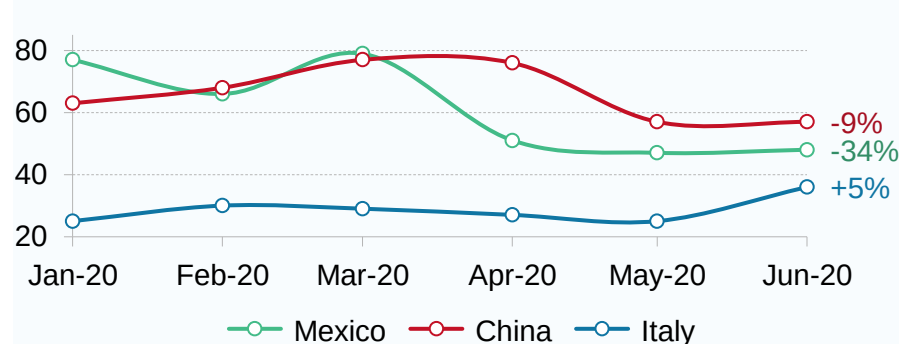
■ Containerboard consumption ■ Containerboard inventories

— Containerboard Operation Rate

- › March box consumption had been the strongest in 2020, which resulted from a panic-buying surge for consumer products brought by the coronavirus
- › Lockdown of non-essential businesses constrained the demand of boxes in April and May; for both machine maintenance and balancing high box inventory, mills took downtime in May and June and thus operating rate plummeted by 5.7% during Q2
- › In June, the reopening of US “non-essential” business raised the demand of containerboard; the consumption increased by 14% and mills inventory dropped by 8.6% in one month

US Exports

US Kraft Linerboard Exports (k Tons, one-month change)



○ Mexico ○ China ○ Italy

China:

- › After the phase-one trade agreement, planned import tariff was reduced on kraft linerboard, China largely increased its buying of US kraft linerboard in Q1
- › Due to first quarter well supply and weak export demand for end products brought by slowdown economy, China import demand fell by 26% from April to May

Mexico:

- › Boxes demand were weak in Q2 compared with Q1 because of low-demand season for fruit exports and the industry-wide shutdown

Italy:

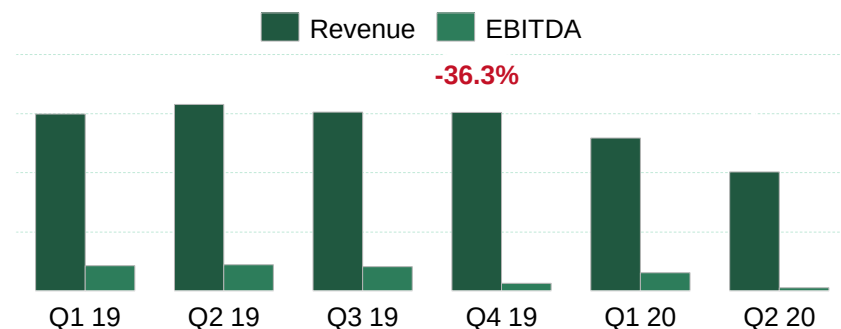
- › Italy import of KLB saw a decline at the beginning of Q2 and slightly increase in June due to recovery of economy



Due to weak global demand of Graphic paper and Newsprint, Norske Skog initiated an investment on mill conversion to re-balance capacity



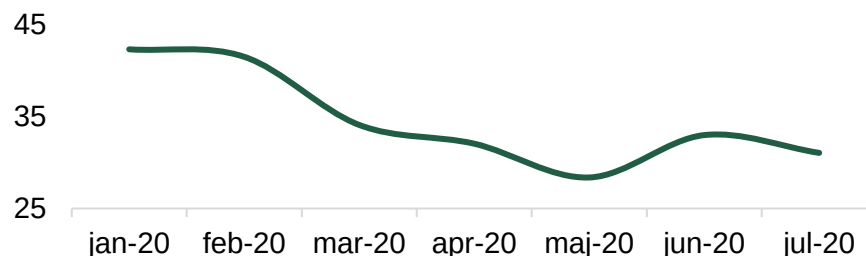
Norske Skog Revenue and EBITDA Development (Billion Euro)



Norske Skog is a global-leading producer of newsprint and magazine paper in Europe and Australasia

Its publication paper business experienced a severe demand reduction in EU and Australian market during pandemic; its revenue declined by 36.3% YoY in Q2 2020

Norske Skog Average Monthly Stock Price (Euro)



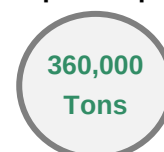
On 17th June 2020, Norske Skog's stock price grew by 16.7% after it announced that it will enter the European packaging markets via this conversion project

Norske Skog Conversion Project

In June 2020, Norske Skog proposed to invest about €350 million in the conversion project to convert two newsprint paper machines into recycled containerboard production

After Conversion	Golbey	Bruck
Location:	France	Austria
Investment Amount:	€ 250m	€ 90m
Recycled Containerboard Capacity:	555 k ton	210 k ton
Newsprint Capacity:	330 k ton	/
Light-weight Coated Capacity:	/	265 k ton
Estimated Complete Date:	2023	2023

Newsprint capacity



Containerboard Capacity



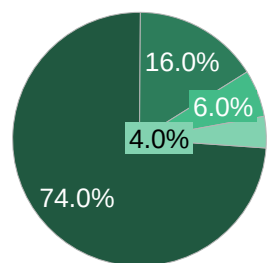
- › This transformation may generate approximately 70-80 million additional EBITDA annually when operating at full capacity
- › This investment is expected to enhance the entire ecosystem of Golbey and Bruck mills as production will be based on recycled fiber. Total mill electricity consumption will also decline



Verso closed paper mills while UPM planned to sell its newsprint mill in Chapelle due to shrinking demand for advertising print and newsprint



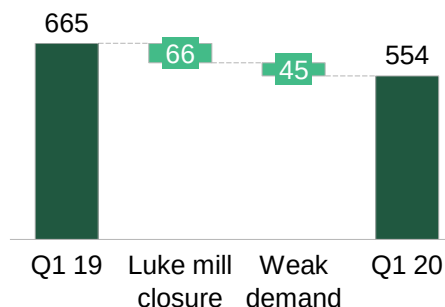
Sale breakdown by segments Q2 20



Graphic
Specialty
Pulp
Packaging

› Verso closed 2 paper mills in the USA indefinitely by end of June and July 2020 respectively

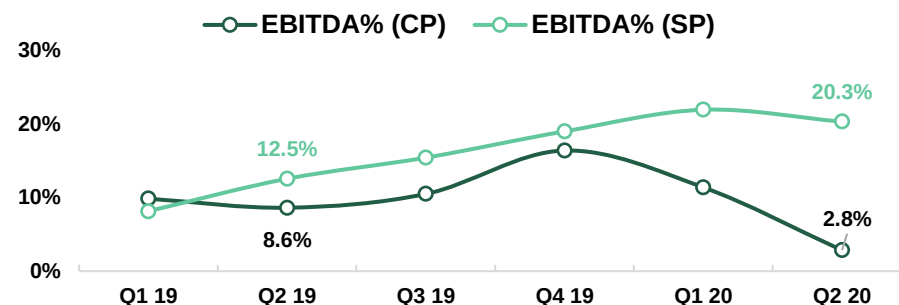
› Verso's total sale volume fell by 111kt YoY in Q2, 45kt was related to weak demand in graphic paper and decline sale of its Androscoggin and Stevens Point mills



Mill	Capacity (kt/yr)	Grade	Status
Duluth, MN	270	Supercalendered, Packaging	Indefinite closure
Wisconsin Rapids, WI	540	Coated, packaging	Indefinite closure
Quinnesec, MI	439	Coated Freesheet	Temporary close
Total paper capacity	1249		



EBITDA% - Communication (CP) & Specialty paper (SP)



- › EBITDA% of communication paper saw a 5.8% decrease in Q2 2020 compared to Q2 2019 because of the 29% lower delivery volume as well as softened pulp and paper sales price
- › SP's EBITDA% rose during Q1 lockdown due to strong demand of labelling material driven by e-commerce and consumer goods; whereas it showed a downward trend in Q2 as fine paper demand was weak in Asia-Pacific region

Cease of UPM Chapelle mill



Restructuring charges:
€78 million



Total annual saving:
€30 million

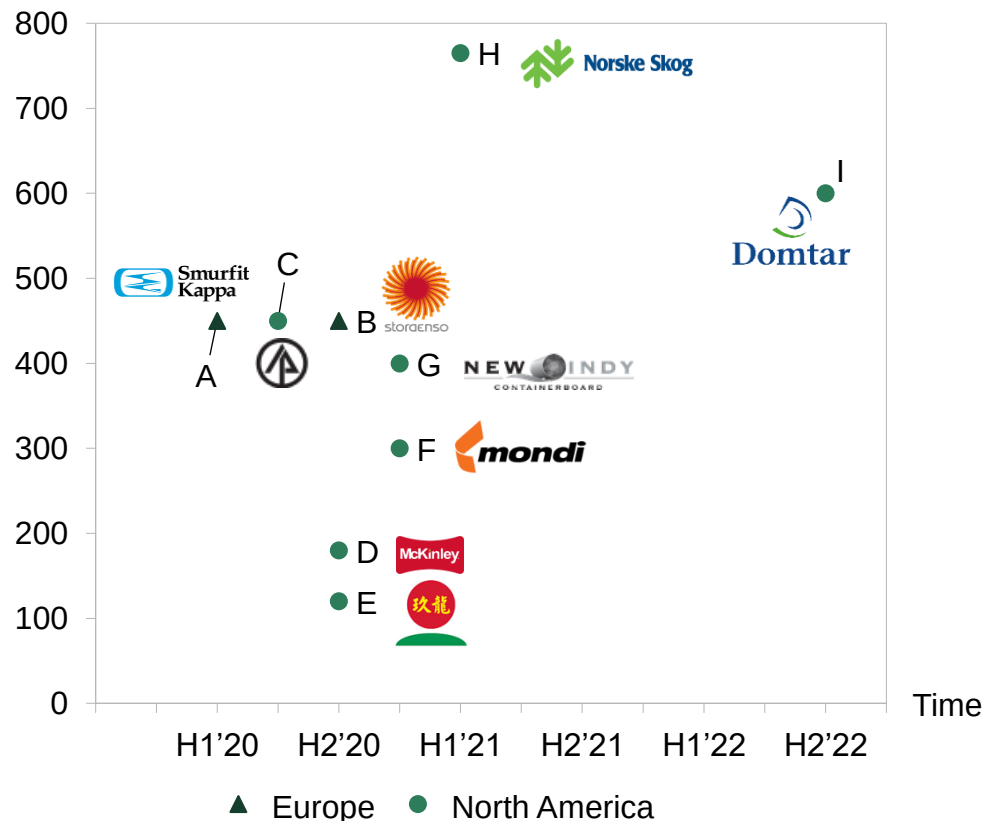
- › On 16th July 2020, UPM announced its Chapelle newsprint mill will close permanently
- › Via the closure of mill, UPM's total newsprint paper capacity will be decreased by 240kt



COVID-19 accelerated the transformation of paper mills into containerboard - the trend is expected to continue in the next three years

Containerboard conversion & capacity expansion projects, 2020 H1 – 2022 H2

Annual Capacity,
kt



Containerboard market will be flooded with additional 3.7 million tonnes of capacity; due to shrinking graphic paper demand, companies initiated strategic plans to rebalance supply and demand

- A. Smurfit Kappa** invested \$151million for recovery boiler upgrade to improve board efficiency
- B. Stora Enso's** paper machine is planned for a conversion to produce packaging board
- C. International paper** has planned conversion of UFS paper machine to bleached-WT/CTB
- D. McKinley** owns 180 kt/yr capacity of RCB paper machine and being scheduled for conversion to make board
- E. Nine Dragon** has scheduled conversion of coated P/W to white top
- F. Mondi's** construction of kraft-top white linerboard machine was progressing
- G. New Indy** will transform ex-Resolute LWC machine to an "ultra lightweight" KL machine
- H. Two newsprint paper machines of Norske Skog** are transformed into recycled containerboard production
- I. Domtar** plans to turn virgin UFS Kingsport mill to 100% recycled board



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Applied Value is a management consulting and investment firm founded on the principles of lean growth and entrepreneurship

1997

Background as an internal change agent in the **Kinnevik Group**...



K I N N E V I K

...today, a hands-on consultancy supporting clients **across industries**

2020

Industries of Expertise

- Telecom & Media 
- Chemicals & Process 
- Industrials & Engineering 
- Consumer Goods 
- Automotive 

Applied Value Group


Investments


Management Consulting


Social Responsibility

Selected portfolio companies




APPLIED VALUE




ROI driven


Fact-based


Practical over theoretical


Hands-On


Global perspectives



Applied Value challenges and supports repeat global clients across industries from three offices – currently expanding in the Nordics and US

Selected Clients



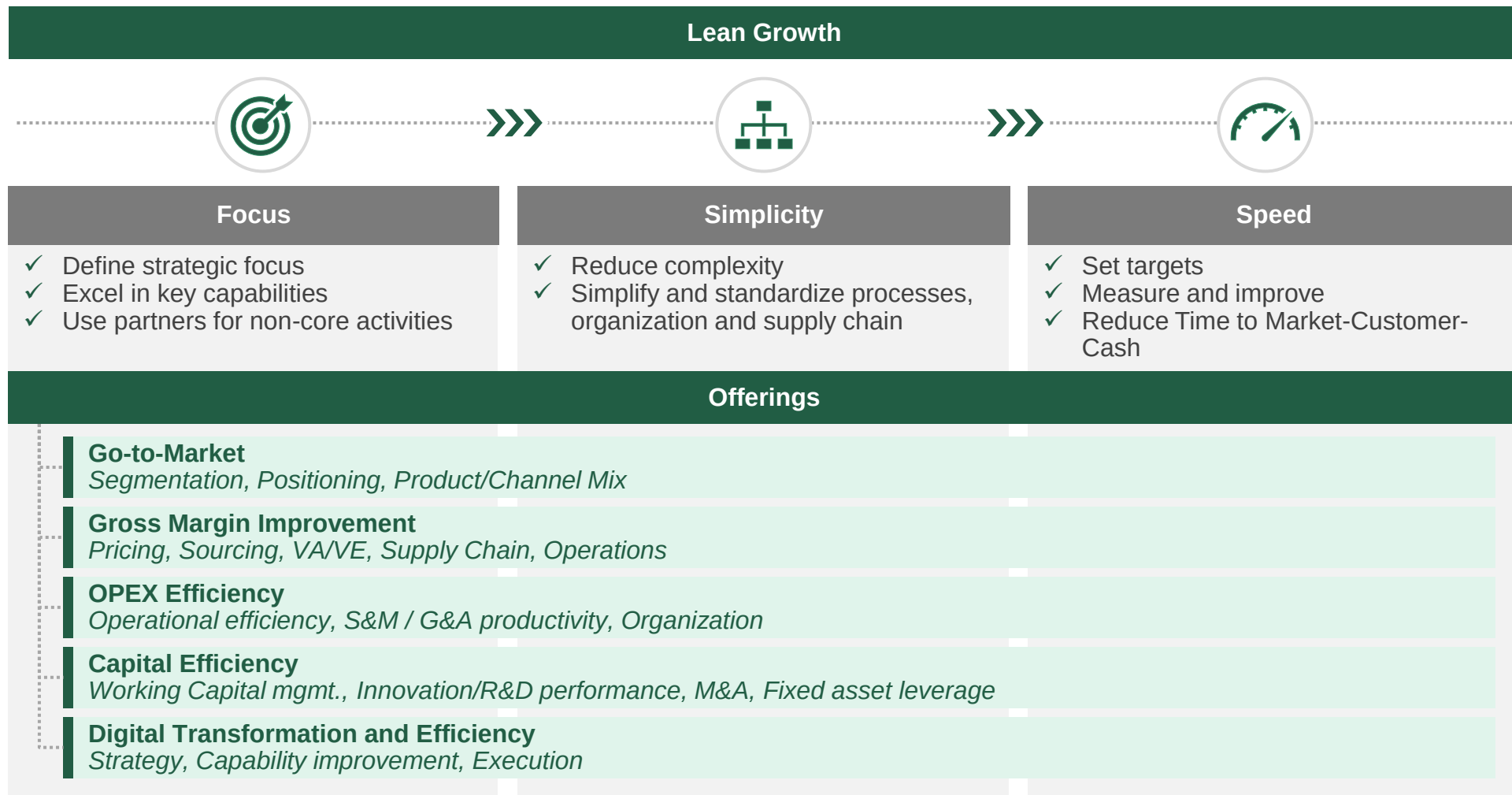
Applied Value Offices and Footprint



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Our Lean Growth framework is based on Focus, Simplicity, Speed – guiding principles to raise client performance



Pulp & Paper is one of our three main client industries

Industry	Examples of Applied Value Engagements		Client results
Pulp & Paper	› Turnkey engagement to improve margins and capital turnover over a five-year period › Engagements included: staff optimization, product mixture optimization, capital rationalization, sourcing, and other key areas		› EBIT improved from 4% to 20% over a 4-year period › Capital Turnover Ratio was improved from 0.55 to 0.9
Telecom	› More than 200 engagements carried out in close collaboration with clients for over 10+ years › Acted as key advisor in major turnaround › Prime focus on organizational and sourcing efficiency in an industry with continuous cost pressure		› Operating expenses cut by more than 60% during turnaround › Clients have consistently outperformed industry
Automotive	› Consecutive work for 10+ years within Sourcing across multiple commodities, including more than 200 fact-based negotiations supported for 50+ commodities › Hands on strategy and implementation support of steel purchasing for 8+ years		› Continuous return of 8-12 times fee to client › Clients have consistently managed to buy steel below market prices



Our Pulp & Paper practice has been serving world leading organizations since our founding

Overview of Applied Value's Pulp & Paper Experience

Applied Value has continuously advised global market leaders in the Pulp & Paper industry:

- › Key advisor to top executives during several successful turnarounds using our lean growth framework
- › Improving business performance of Pulp & Paper and Chemicals companies, as well as equipment & services providers

We have conducted 50+ engagements improving Cost & Capital efficiency and Revenue Growth for our Pulp & Paper clients:

- › EBIT improvement program from 4% to 20% over a 4-year period for an Integrated Pulp & Paper Company
- › Sourcing Improvement Program covering Services / Chemicals / Logistics / MRO for a Global Packaging Company
- › External Distribution System Optimization for European Manufacturer of Liquid Paperboard and Sack Paper
- › Product Strategy for an Integrated Pulp & Paper Company
- › Operations Improvement Program to improve Unit Output and Labor Efficiency for an Integrated Pulp & Paper Company
- › SG&A efficiency for an Integrated Pulp & Paper Company

We are known for **creating immediate impact** and **driving change** for our clients



Applied Value has strong expertise in several areas relevant for driving improvements in the Pulp & Paper industry

Applied Value's Pulp & Paper Expertise

Applied Value Expertise	Improvement levers	Typical results
Commercial Excellence	› Product and customer focus › Pricing › Sales process and organization › People, culture, and incentives	› 20-30% reduction of SG&A costs › Improved customer and product profitability › Top line growth
Process Speed	› Complexity reduction › Change of policies › Elimination of low-value add activities › Streamline Ways-of-Working	› “Order-to-Cash” lead time reductions of 20-40%
Mill Efficiency	› Operational benchmarking › Maintenance efficiency › Operator and production overhead efficiency › OEE improvements	› 5-30% cost reduction, depending on category
Sourcing Excellence	› Commercial strategy › Value Analysis / Value Engineering › Consumption strategy	› 4-12% reduction of COGS in long-term Sourcing Programs › 15-25% reduction of spend in selected categories (mainly indirect material)





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APPLIED VALUE GROUP