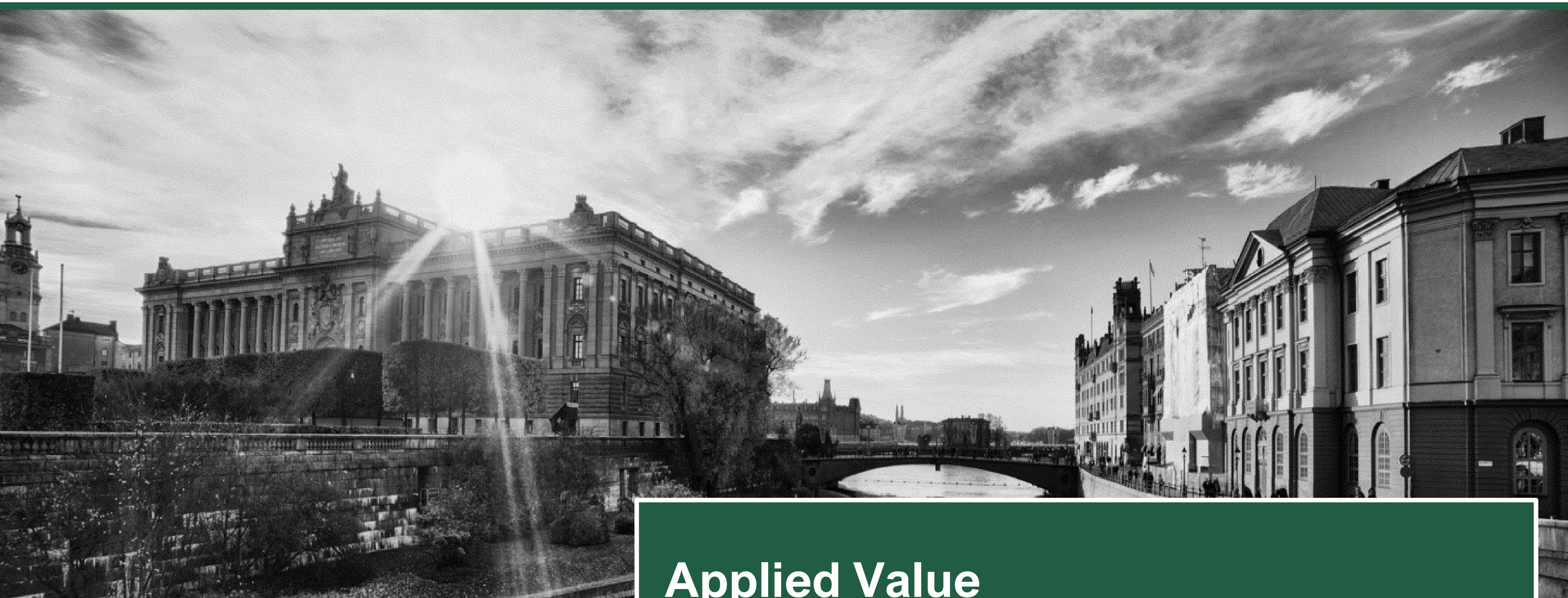

Applied Value
Pulp & Paper Report

Quarterly Analysis Q1, 2020

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Applied Value Pulp & Paper Report

Executive Summary & Introduction

Financial Benchmarking

Market Trends

Applied Value Presentation

COVID-19 has led to a revenue contraction across all markets during the recent quarter - average industry ROIC declined by 3.7 pp. in LTM

Financial Benchmarking: Highlights in Q1 2020

Key takeaways

Revenue Growth

- During Q1 2020, the industry experienced an average revenue contraction of 1.8% compared to the previous quarter, mainly driven by the downward trend in pulp and paper prices
- All markets had a negative revenue development in Q1'20, of which Europe, North America, Asia and Latin America decreased revenue by 9%, 2%, 2% and 10% on a Y-o-Y basis, respectively
- Essity, Cascades and Graphic Packaging were top performers in the industry in Q1'20 with revenue growth of +10%, +6.7% and +6.2% Y-o-Y, respectively

Profitability & Costs

- Quarterly EBITDA margins of tissue and paper grew by 2 pp. due to increased tissue prices affected by the strong demand of hygiene products; other segments are pressured from weakened demand in periods of volatility
- Most monitored European companies reduced raw material costs over sales in Q1'20, of which SCA reported the lowest ratio of 32.5%
- Company performance on COGS over sales varies with an industry average of 78%, a slight increase from the last quarter; Essity managed to reduce COGS by 5.5 pp., being the top player
- An industry-wide increase in SG&A costs over sales has been observed in this quarter

Return On Invested Capital (ROIC)

- ROIC among all regions decreased in LTM as peers failed to improve capital efficiency despite NOPAT being stable; industry average ROIC stood at 4.9% by the end of the quarter
- Asia exceeded other regions with the highest regional ROIC with its positive profitability development in Q1' 20, its ROIC still declined by 1.8 pp. to 6.2% in LTM
- Shandong Sunpaper, PCA and Essity were top performers in Q1'20 with ROIC standing at 13.6%, 11.5% and 11.0% respectively

Top performers

essity

Cascades

SCA

suzano

SHAN YING 山鷹

太陽紙業 SUN PAPER

PCA PACKAGING CORPORATION OF AMERICA

Source: RISI, Interim & Annual Results.

Q1 2020 was characterized by decreased market demand impacted by the global outbreak of the corona virus with pulp prices stabilizing at low levels

Market Trends: Highlights in Q1 2020

Key takeaways

Industry News	› The corona virus pandemic has caused a big hit to the global economy which is yet to show signs of recovery › Demand from packaging and prints weakened due to the nationwide lockdowns which has exerted downward pressure to paper prices; however, stockpiling of hygiene products has led to a 6.6% growth in the wholesale price index of tissue paper › Even though major industry players did not experience long-term shutdowns, distribution costs increased because of disruptions in supply chains and logistics for over a month › Finland's forest industry was affected by the industry-wide strike in January which was resolved when paper union Paperiliitto and Finnish Forest industries Federation agreed on new contracts that ended weeks of work stoppage
Pulp Prices	› Pulp prices stayed at low levels in Q1'20 and slightly picked up at the end of the quarter. Prices in Northern Europe, US East, and Asia are down by approx. 19%. 13% and 18% in 12 months, respectively › Even though pulp prices remained stable at low levels because of uncertain future demand, future pulp prices may go up due to the increased demand in the tissue sector
Graphic Paper & Packaging	› Most graphic paper prices flattened in Q1'20, but Newsprint prices continued to fall by 4% in Q1'20 › Kraft paper prices remained steady during Q1 but most packaging paper prices started descending at the beginning of the quarter
Commodities & Currencies	› Oil prices slumped by ~67% during Q1'20 and ended the quarter at ~16.5 USD/barrel › Natural gas prices continued the downward trend with a 47% price fall in Europe and 39% in the United States › The US dollar kept appreciating against other currencies in Q1 '20 with EUR, GBP, CNY and SEK being down by 3.0 pp., 3.8 pp., 4.8 pp. and 4.9 pp.; BRL compared to the USD plunged by 23.9 pp. in this quarter due to political and COVID-19 uncertainties

Note: WTI Spot Crude Oil prices are per 31 Dec 2019.
Source: RISI, Interim & Annual Results.

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

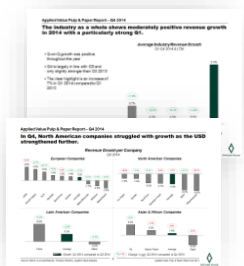
In this Pulp & Paper Report, Applied Value provides essential financial benchmarking focused on the latest quarter and 12-month period, while also offering a brief update on the latest market trends.

The report provides a clear, understandable and useful analysis of the relative performance of a selection of global Pulp & Paper companies. Moreover, it 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 and region



EBITDA Margins

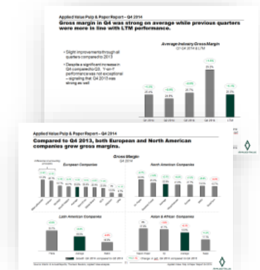
Average Industry EBITDA margin latest 4 quarters and LTM

EBITDA margin for the latest quarter per company and region

ROIC

ROIC per region for the latest two 12-month periods

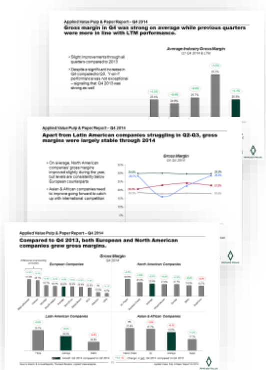
ROIC development per company and region for LTM



Operational Costs Breakdown

Operational Costs Breakdown latest quarter per company and region

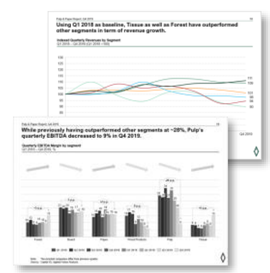
Operational Costs development YoY per company and region



Segment Analysis

Indexed revenue growth by Segment

Segment EBITDA development over the last 2 years



Market Trends

Pulp & Papers market price movements

Commodity prices and currency movements

Note: Included companies might differ from previous quarters

The report is based on the financial performance of 26 leading Pulp & Paper companies across Europe, North America, Latin America & Asia

Companies included in Financial Benchmarking in the Q1 2020 report

Market	Company	Revenue LTM (BEUR)	Country	Board	Paper	Tissue	Wood Products	Pulp	Other
Europe	Essity	12.1				✓			✓
	UPM	9.8			✓		✓	✓	✓
	Stora Enso	9.6		✓	✓		✓	✓	✓
	Metsä Group	5.3		✓	✓	✓	✓	✓	✓
	Ahlström-Munksjö	2.9			✓				✓
	BillerudKorsnäs	2.2		✓	✓			✓	✓
	Södra	2.1					✓	✓	✓
	SCA	1.9		✓	✓		✓	✓	✓
	Holmen	1.6		✓	✓		✓		✓
North America	International Paper	20.1		✓	✓			✓	✓
	WestRock	16.6		✓	✓			✓	✓
	Packaging Corp. of America	6.3		✓	✓				✓
	Graphic Packaging	5.7		✓					✓
	Sonoco	4.8		✓	✓	✓	✓	✓	✓
	Domtar	4.7			✓	✓		✓	✓
	Cascades	3.3		✓	✓	✓			✓
	Resolute Forest	2.6			✓	✓	✓	✓	✓
	Verso	2.1			✓			✓	✓
LAT AM	Empresas CMPC	5.1			✓	✓		✓	✓
	Suzano	4.8			✓	✓		✓	✓
	Klabin	1.8		✓	✓			✓	✓
Asia	Nippon Paper	8.8		✓	✓	✓	✓	✓	✓
	Daio Paper	4.6		✓	✓	✓			✓
	Shandong Sunpaper	2.9		✓	✓				✓
	Shanying	2.8		✓	✓			✓	✓
	Hokuetsu	2.2		✓	✓			✓	✓

Source: Capital IQ, Quarterly Reports

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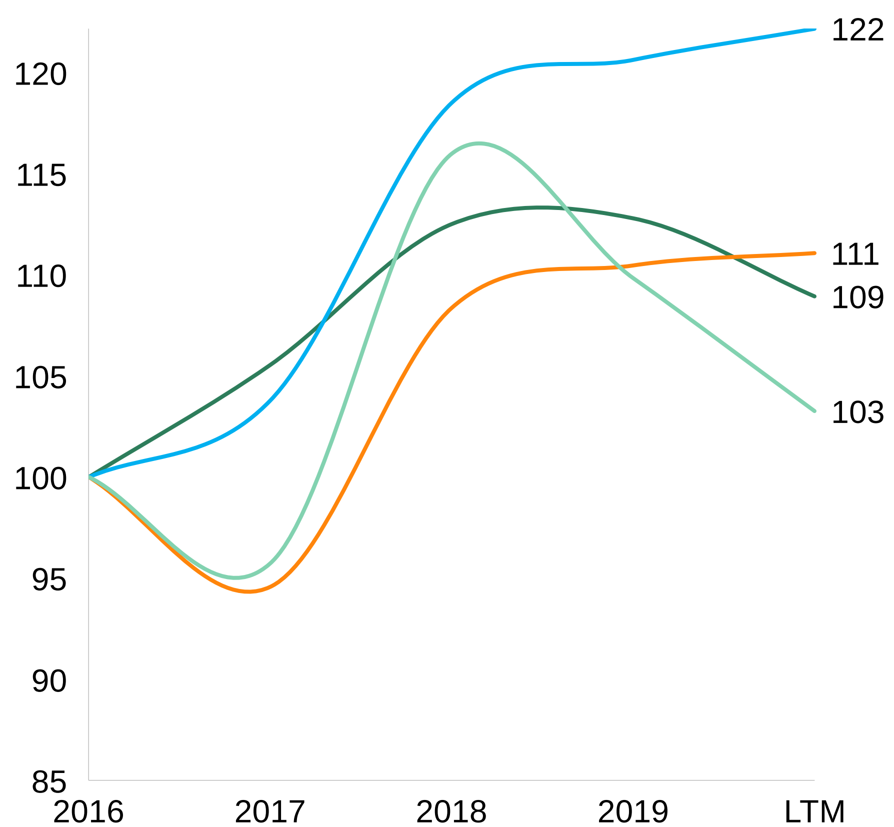
PCA PACKAGING CORPORATION OF AMERICA

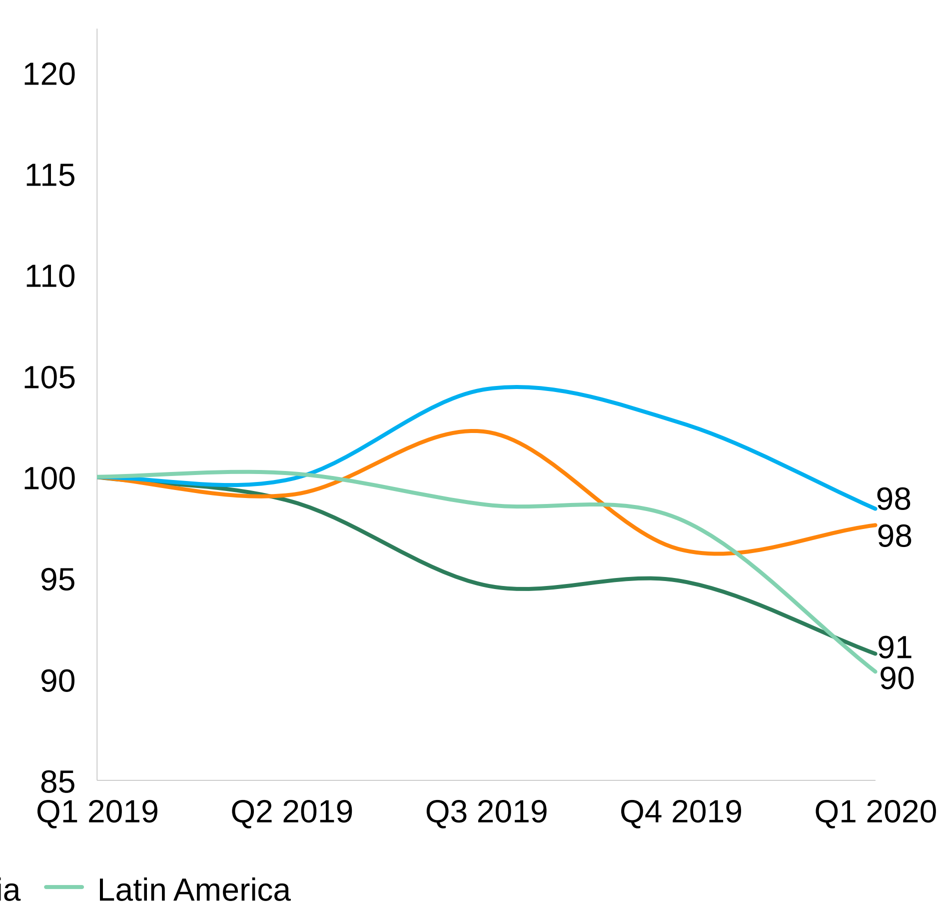
Source: RISI, Interim & Annual Results.

Yearly revenues were up from index but were brought down in LTM, no region displayed increased revenues in Q1'20 compared to Q1'19

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



Indexed Quarterly Revenues, Q1'19-Q1'20 (index Q1'19=100)

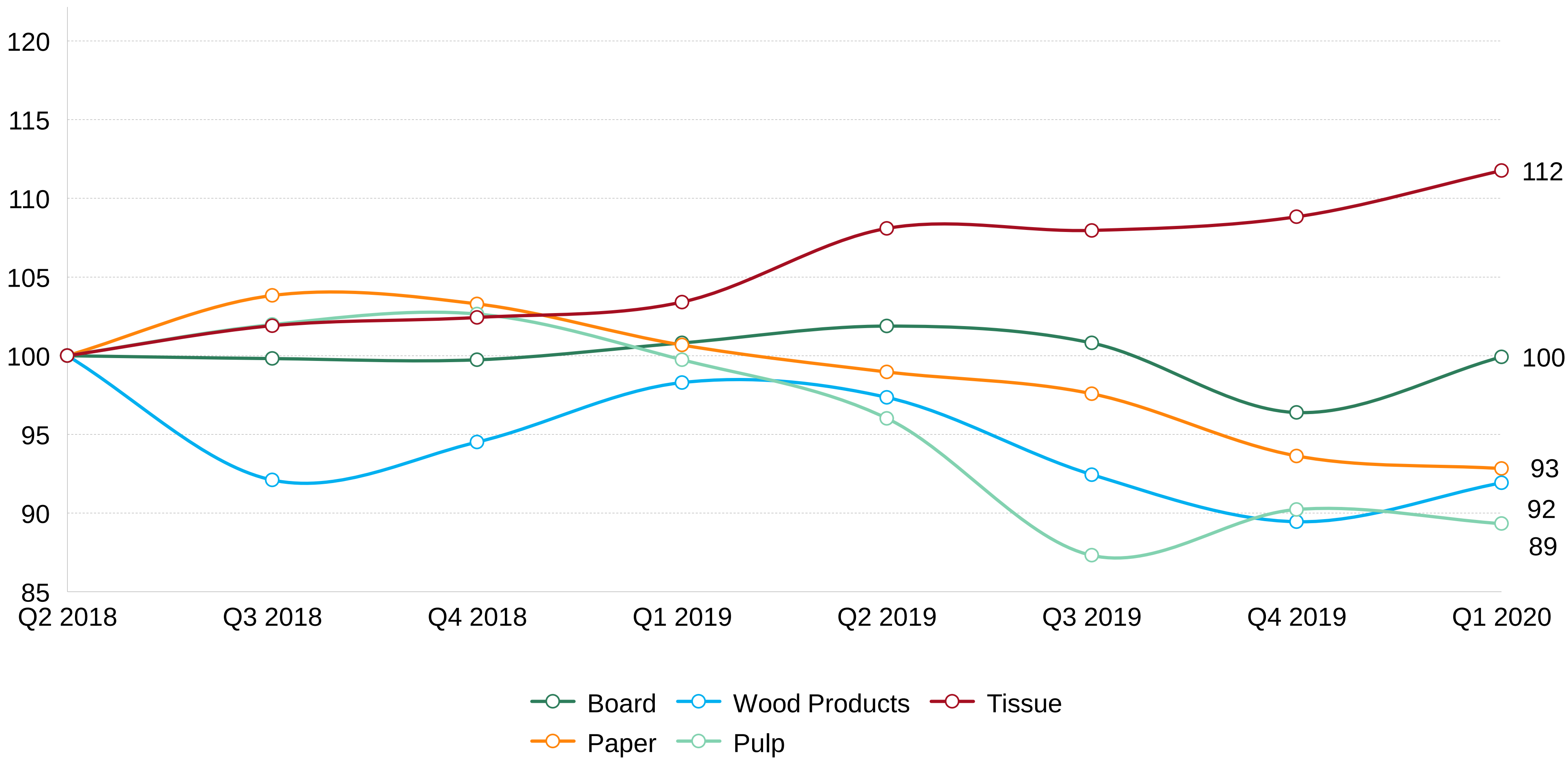


Note: Suzano has been excluded due to the merger with Fibria

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

The tissue paper segment experienced the most rapid growth in revenues in Q1'20, revenues in pulp and paper declined the most

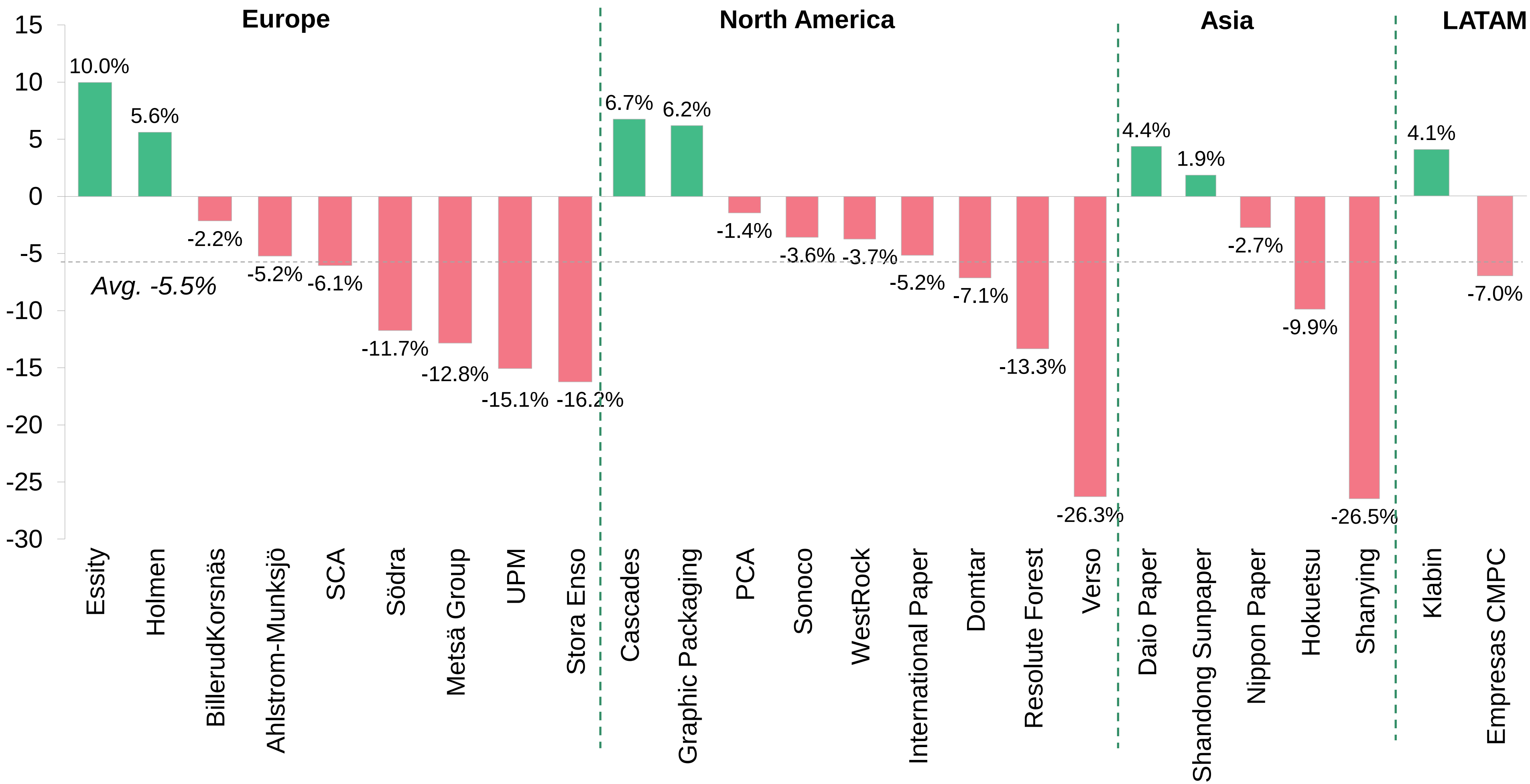
Indexed Quarterly Revenues by Segment, Q2'18 – Q1'20 (Q2'18 =100)



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

Few of the benchmarked companies showed positive revenue development, Essity surpassed others at a 10% growth Y-o-Y

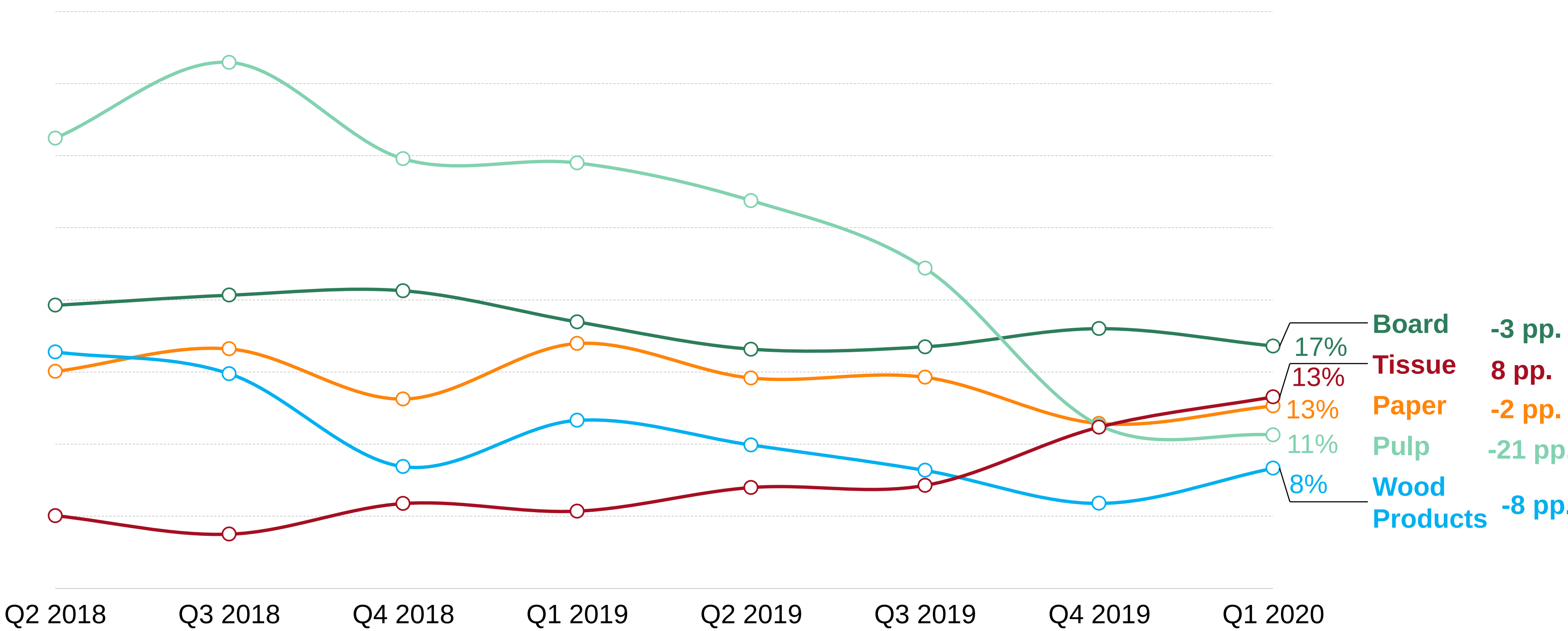
Revenue Growth, Q1’20 vs. Q1’19, %



Note: 1) Suzano is excluded due to merger with Fibria.
Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

EBITDA Margin for the tissue segment was up 8 pp. to 13.3% while the other segments had negative development

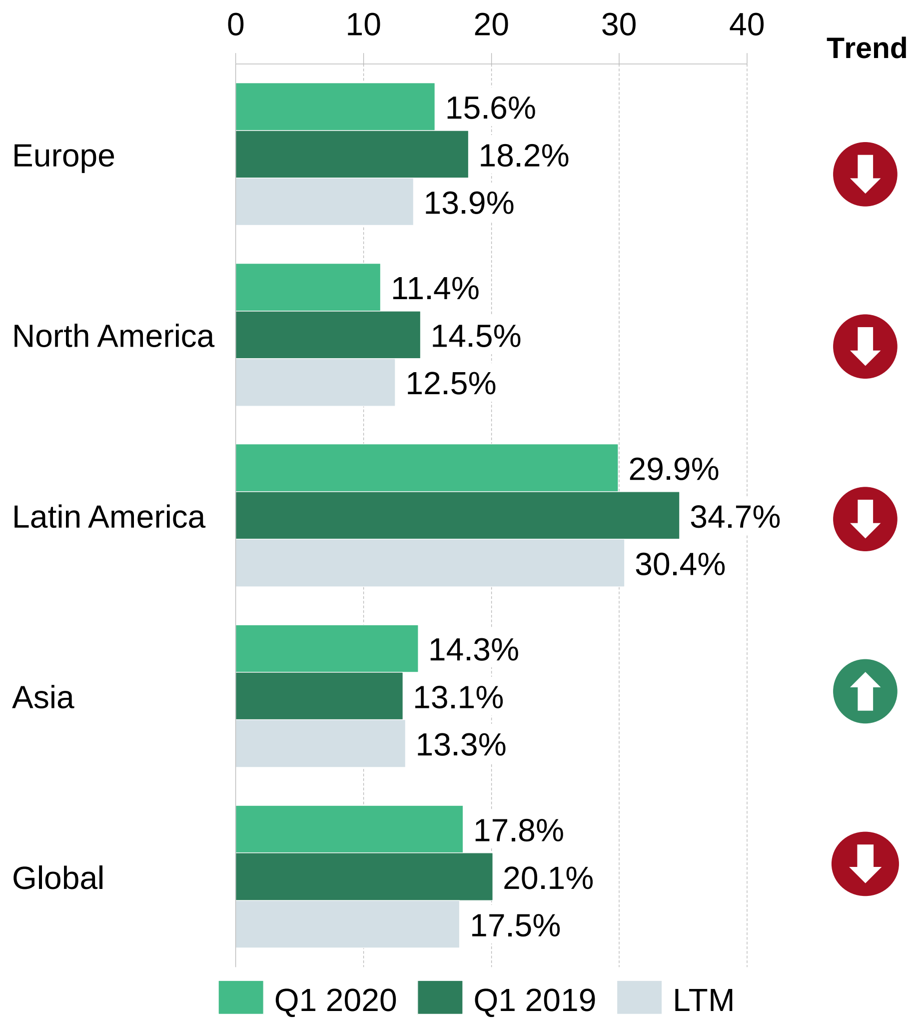
Quarterly EBITDA Margin by Segment, Q2'18 – Q1'20, %



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

The average industry EBITDA margin decreased across most regions, however, Asia improved margins and surpassed North America by 2.9 pp.

EBITDA Margin by Region, Y-o-Y

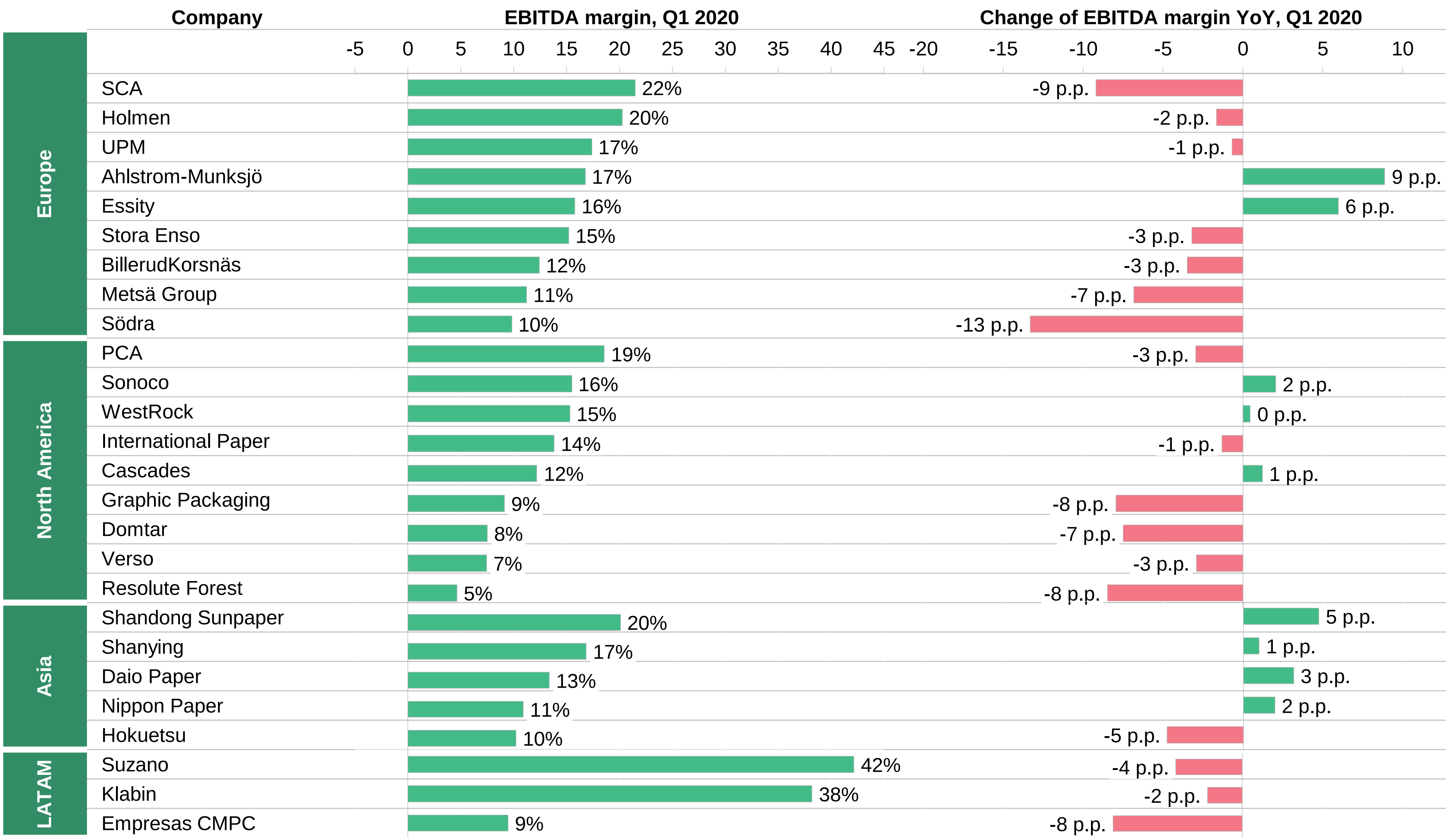


Source: Capital IQ, RISI, Annual & quarterly reports, Applied Value Analysis.

Industry News

- Verso Corporation announced to **broaden its manufacturing expertise** to produce OptiLabel Face Stock Papers at its Michigan paper mill
- **UPM is to invest €550 million in a next generation biochemicals refinery** in Germany; the biorefinery, which converts solid wood into biochemicals, is expected to have an annual capacity of 220,000 tonnes
- Orora completed **the sale of $1.7 billion paperboard and fiber packaging business** in Australia/New Zealand to Nippon Paper to streamlining product portfolio
- Essity acquired 75% of the medical solutions company ABIGO Medical AB to **strengthen its position in the hygiene and health business market**
- **Graphic Packaging** completed the acquisition of the Consumer Packaging Group Business from Greif; the **$82 million acquisition will include seven converting facilities** across the U.S.
- **Ahlstrom-Munksjö divested its fine art paper business for €43.6 million** to Italian based F.I.L.A. Group, a leading global player in the art materials field

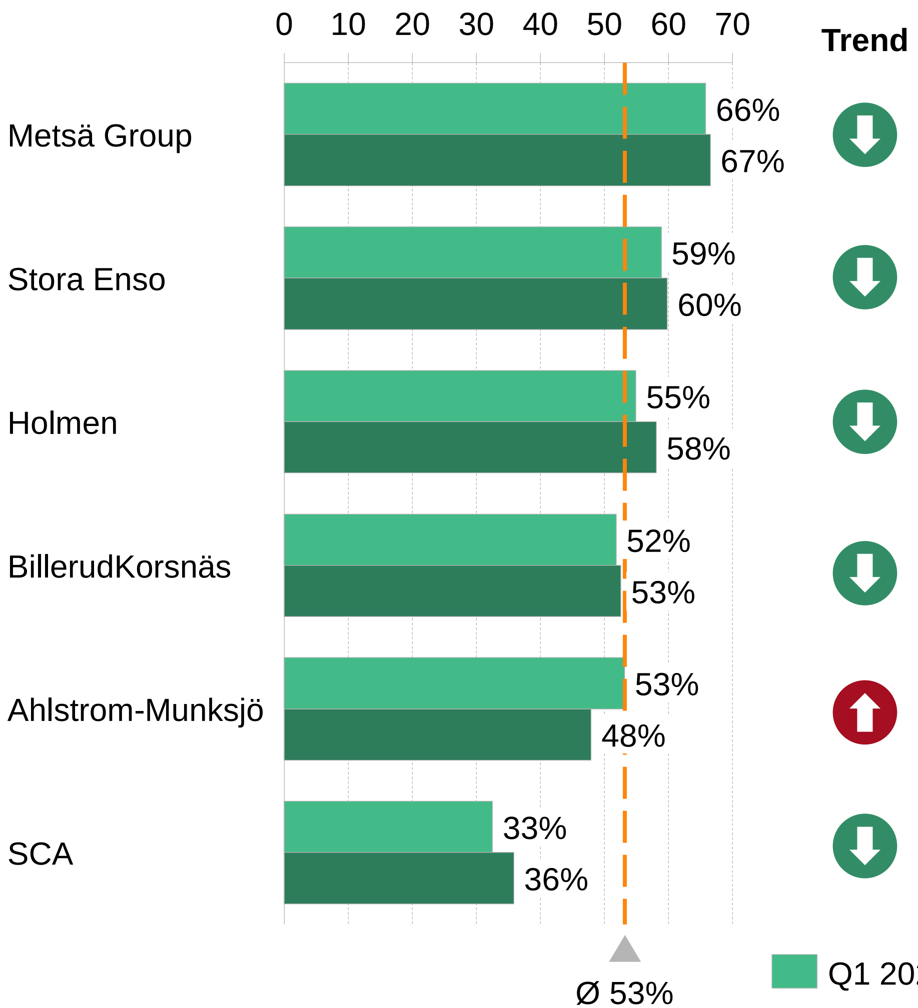
Most regions had a downward trend in profitability while most Asian companies maintained a good performance



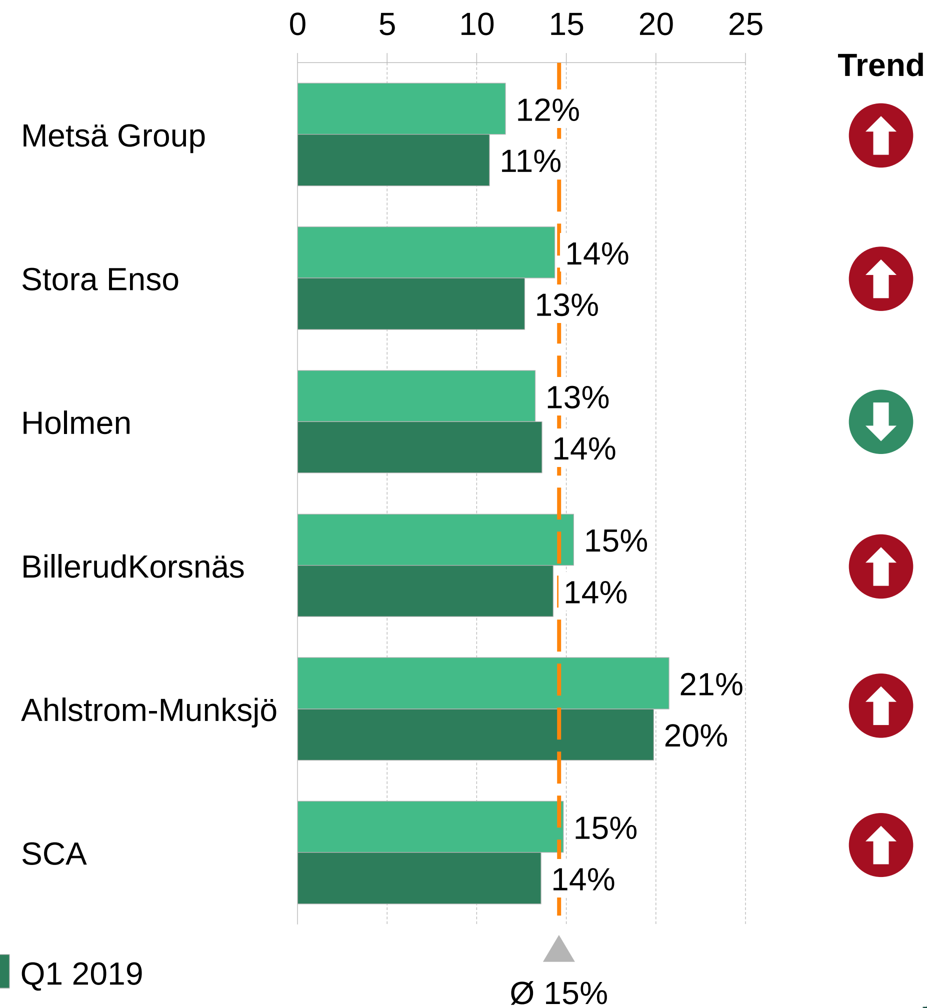
Source: Interim & Annual Reports, Capital IQ, Applied Value analysis.

Most peers have improved raw material costs over sales but personnel costs over sales have increased by 0.9 pp. on average Y-o-Y

Raw Material over Sales, Q1'20 vs Q1'19, %



Personnel Costs over Sales, Q1'20 vs Q1'19, %

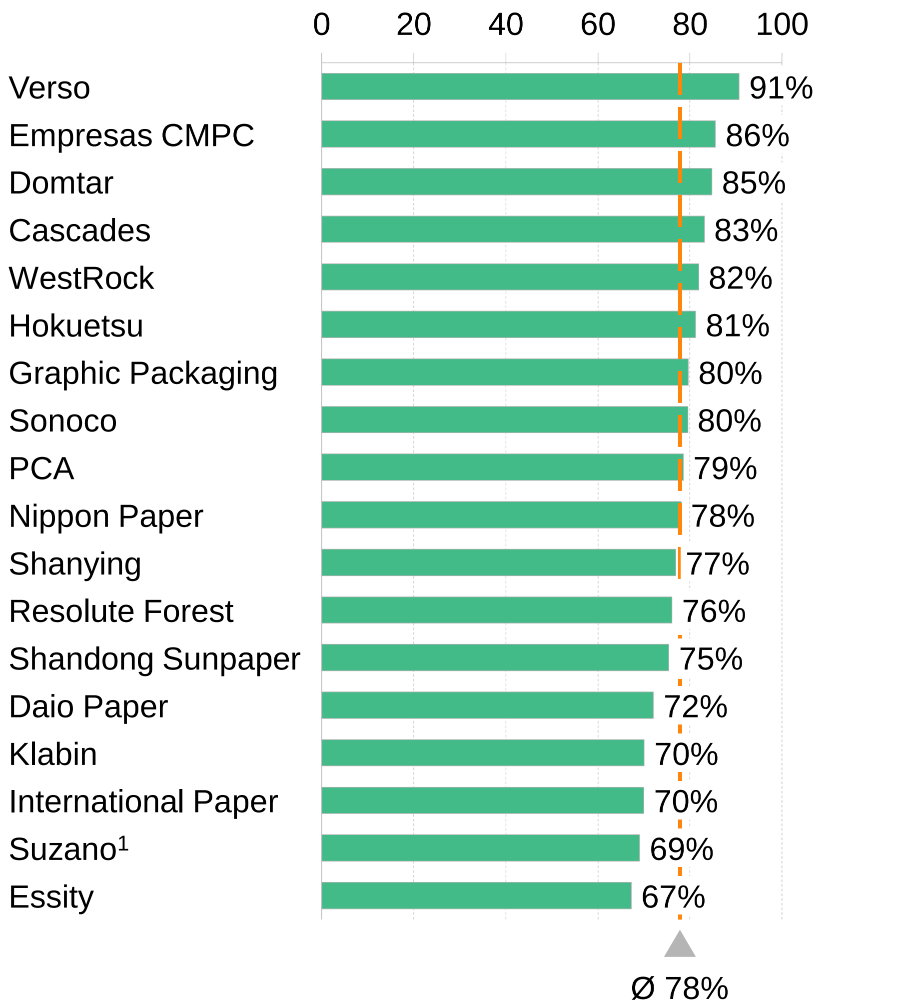


Q1 2020 Q1 2019

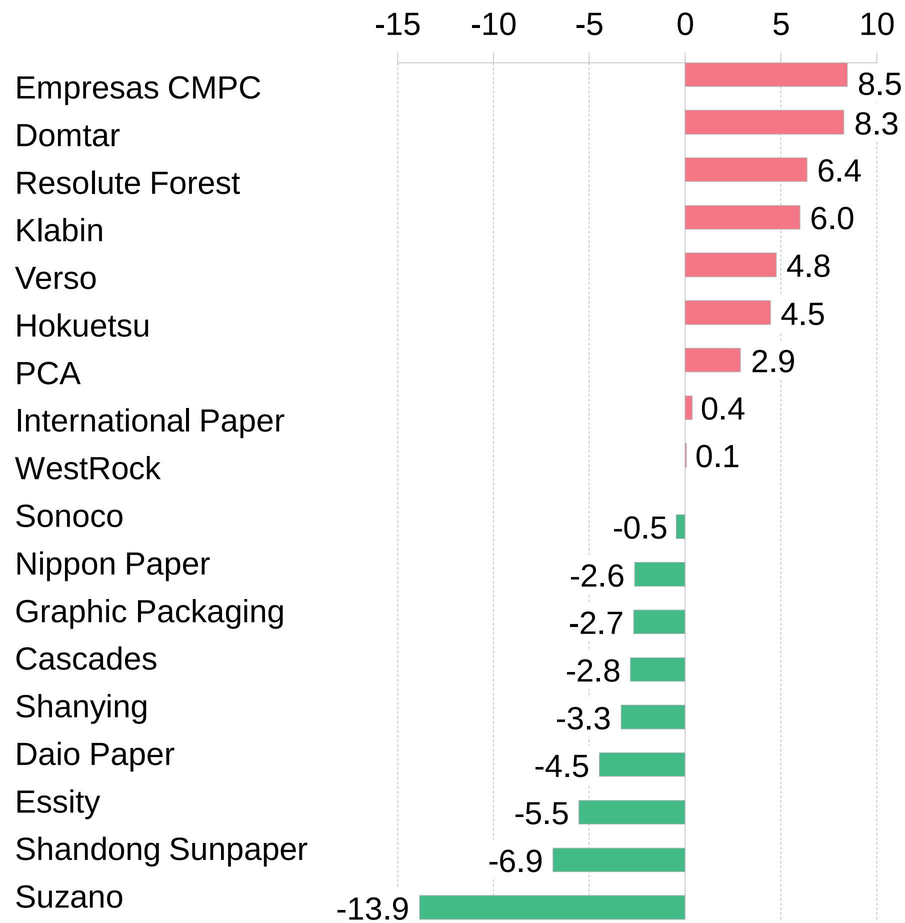
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

COGS over sales varies among industry players, Essity outperformed its peers by reducing COGS by 5.5 pp. to 67% in Q1’20

COGS over Sales
Q1’20



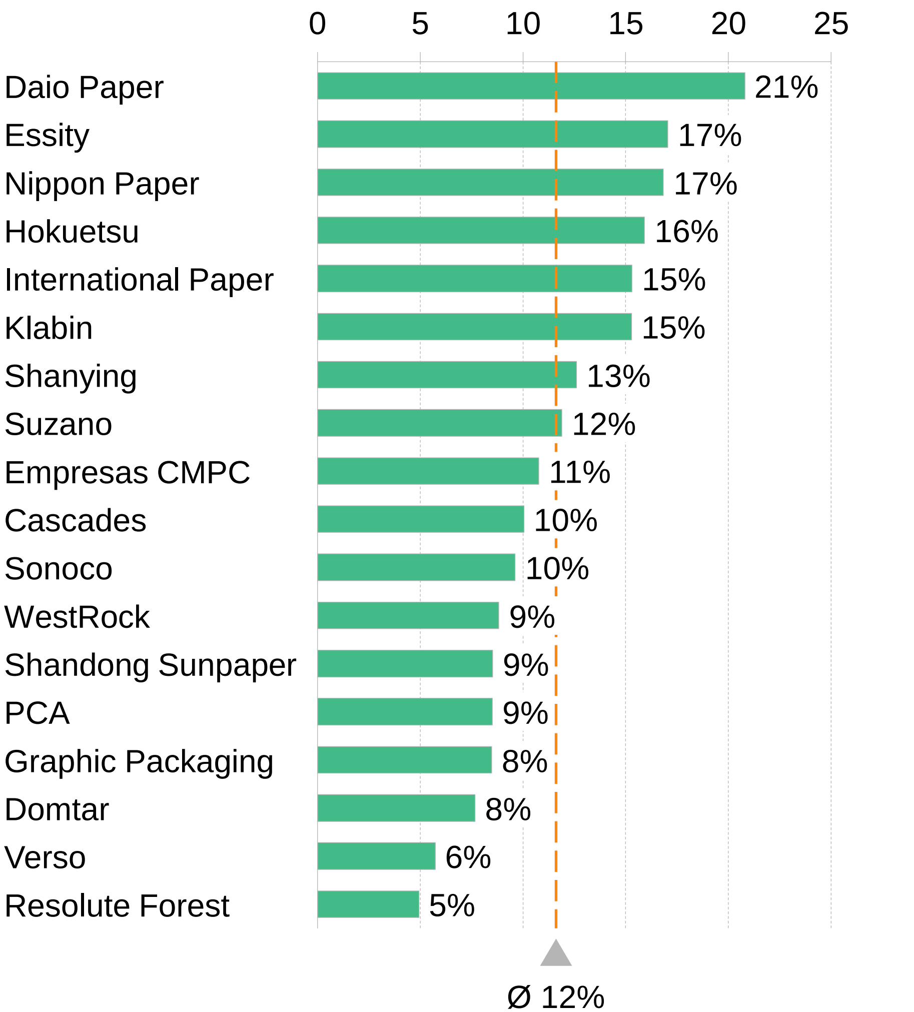
COGS over Sales Development by Company
Delta(Q1’20 vs. Q1’19), pp.



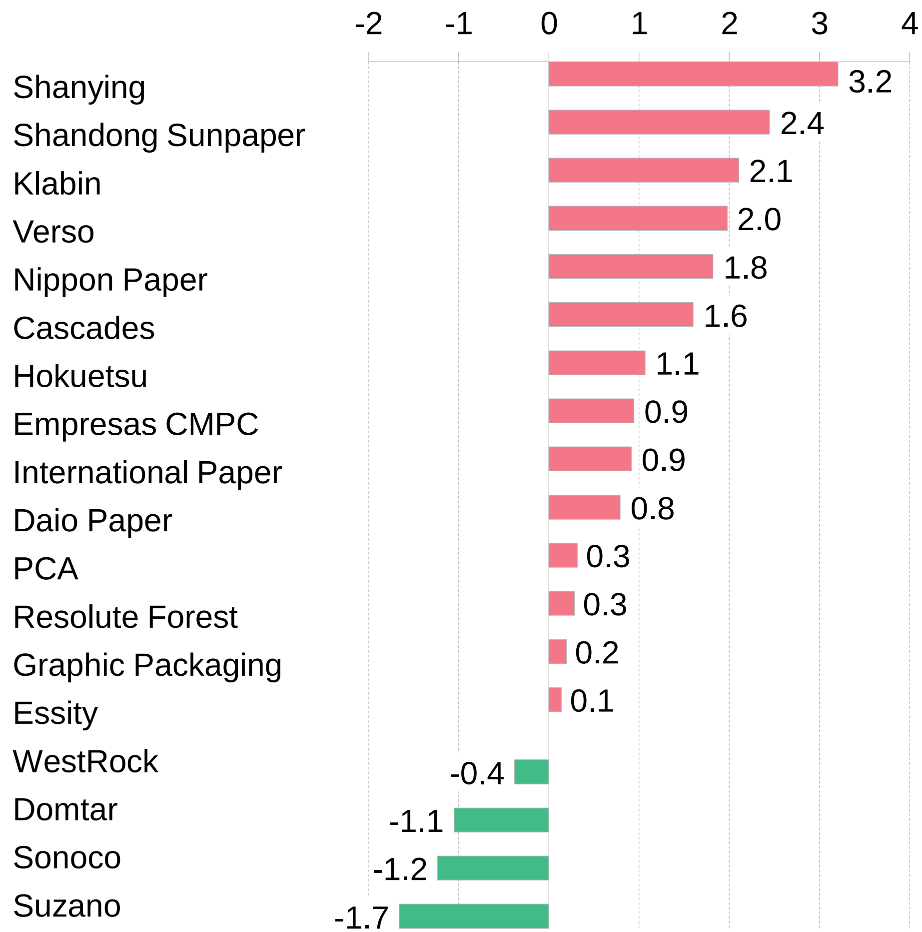
Note: Suzano is incomparable due to merger with Fibria.
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

Most companies have increased costs of SG&A over sales, Shanying and Shandong Sunpaper experienced the most significant increase

SG&A over Sales
Q1'20

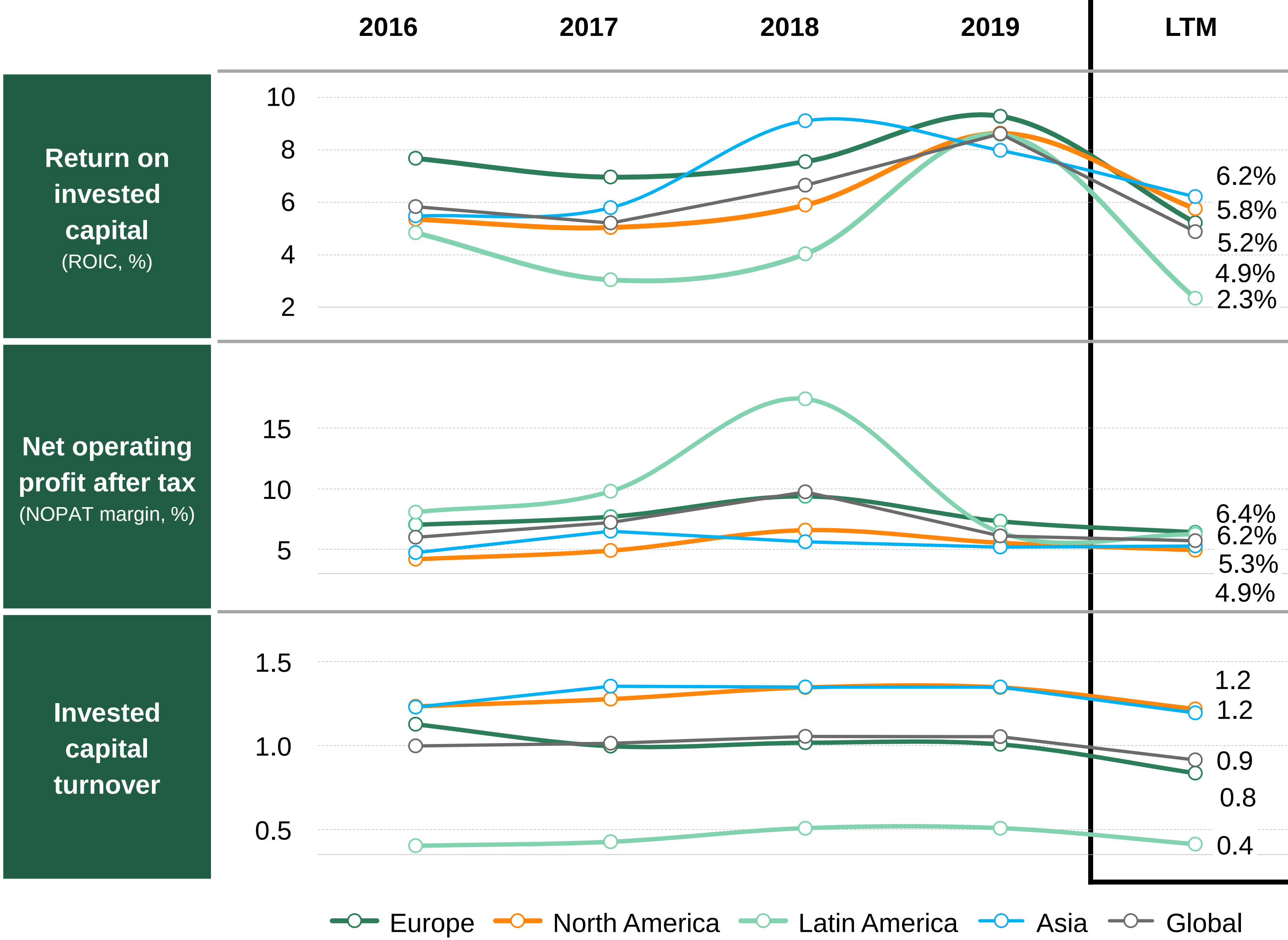


SG&A over Sales Development by Company
Delta(Q1'20 vs. Q1'19), pp.



Note: Suzano is incomparable due to merger with Fibria.
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

ROIC declined across all regions in LTM due to decreased capital efficiency, Latin America had the weakest performance with a 6.2 pp. drop in ROIC



Change
2019 - LTM

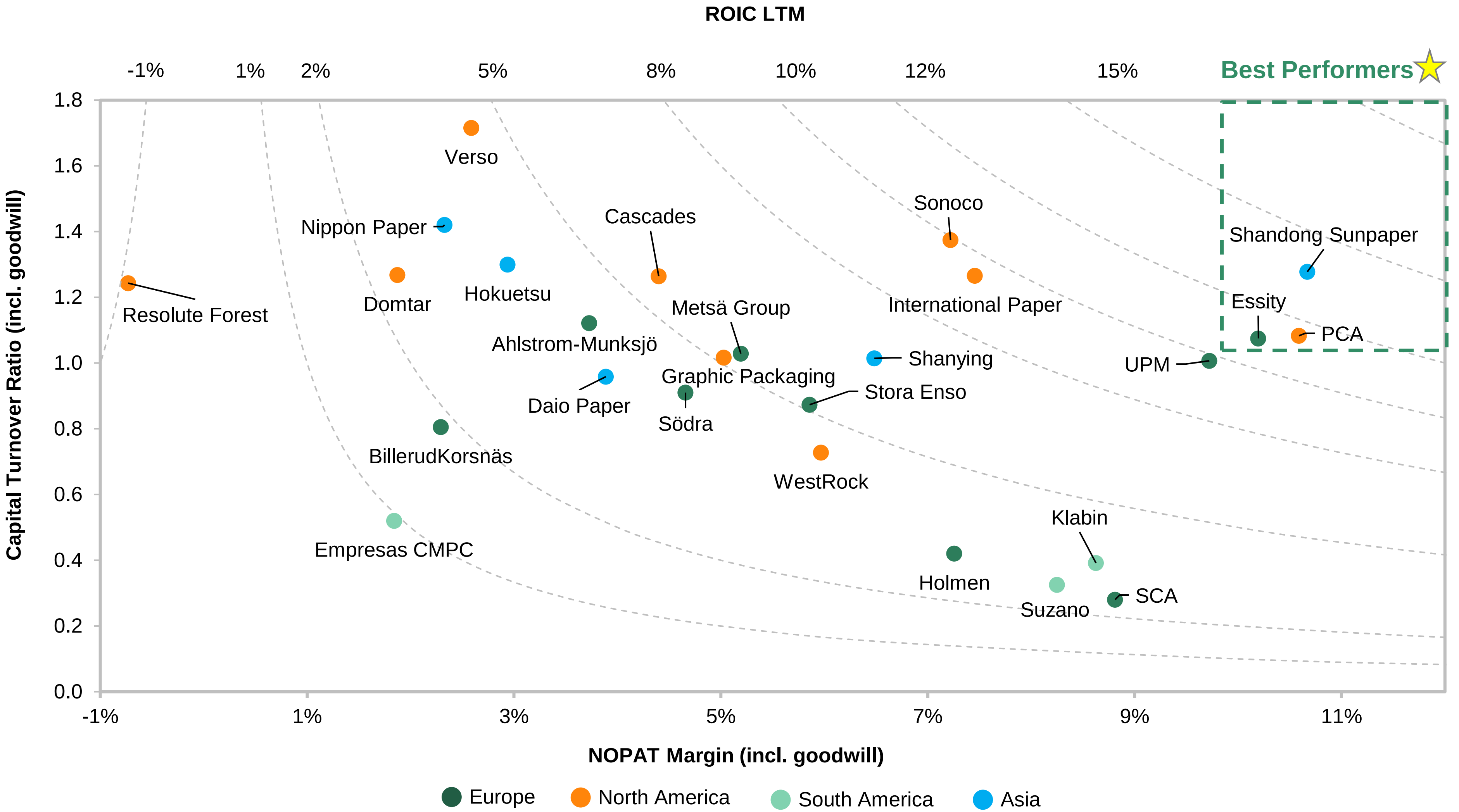
	Change
Asia	-1.8 pp.
North Am.	-2.9 pp.
Europe	-4.1 pp.
Global	-3.7 pp.
Latin Am.	-6.2 pp.

	Change
Europe	-0.9 pp.
Latin Am.	-0.2 pp.
Asia	+0.1 pp.
Global	-0.4 pp.
North Am.	-0.6 pp.

	Change
North Am.	-0.1
Asia	-0.2
Global	-0.1
Europe	-0.2
Latin Am.	-0.1

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

Over the last 12 months, ROIC performances varied between -1% and ~15% with Shandong Sunpaper, PCA and Essity as best 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.

Applied Value Pulp & Paper Report

Q1 2020 was characterized by decreased market demand impacted by the global outbreak of the corona virus with pulp prices stabilizing at low levels

Market Trends: Highlights in Q1 2020

Key takeaways

Industry News	› The corona virus pandemic has caused a big hit to the global economy which is yet to show signs of recovery › Demand from packaging and prints weakened due to the nationwide lockdowns which has exerted downward pressure to paper prices; however, stockpiling of hygiene products has led to a 6.6% growth in the wholesale price index of tissue paper › Even though major industry players did not experience long-term shutdowns, distribution costs increased because of disruptions in supply chains and logistics for over a month › Finland's forest industry was affected by the industry-wide strike in January which was resolved when paper union Paperiliitto and Finnish Forest industries Federation agreed on new contracts that ended weeks of work stoppage
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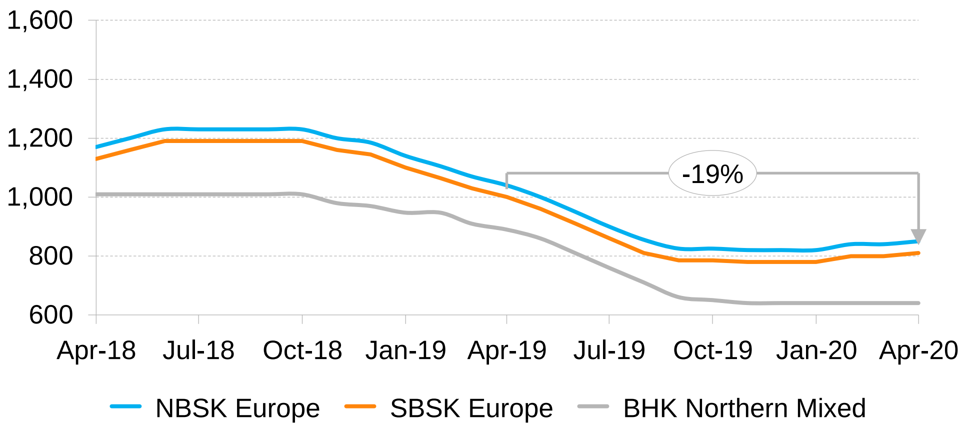
Commodities & Currencies	› Oil prices slumped by ~67% during Q1'20 and ended the quarter at ~16.5 USD/barrel › Natural gas prices continued the downward trend with a 47% price fall in Europe and 39% in the United States › The US dollar kept appreciating against other currencies in Q1 '20 with EUR, GBP, CNY and SEK being down by 3.0 pp., 3.8 pp., 4.8 pp. and 4.9 pp.; BRL compared to USD plunged by 23.9 pp. in this quarter due to political and COVID-19 uncertainties

Note: WTI Spot Crude Oil prices are per 31 Dec 2019.
Source: RISI, Interim & Annual Results.

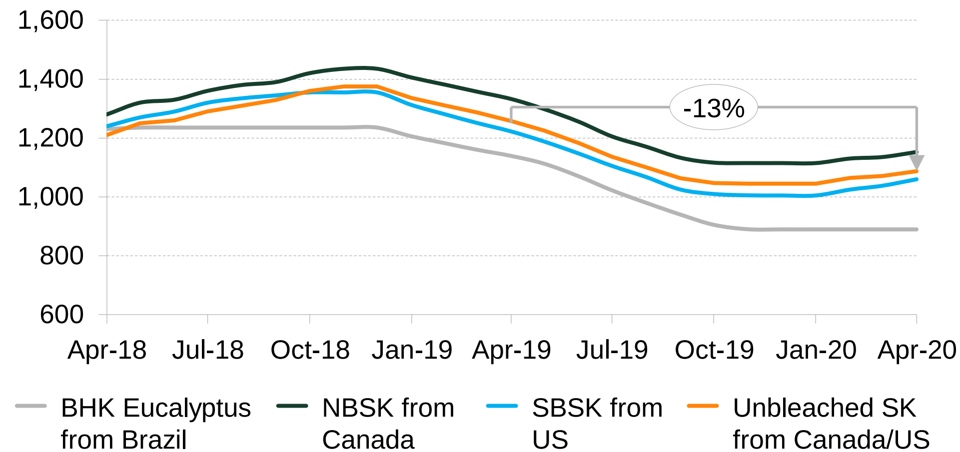
Global pulp prices decreased by 11-19% on a Y-o-Y basis, but started to pick up across all regions in the first quarter 2020

Global Pulp Price Development, Last 24 Months

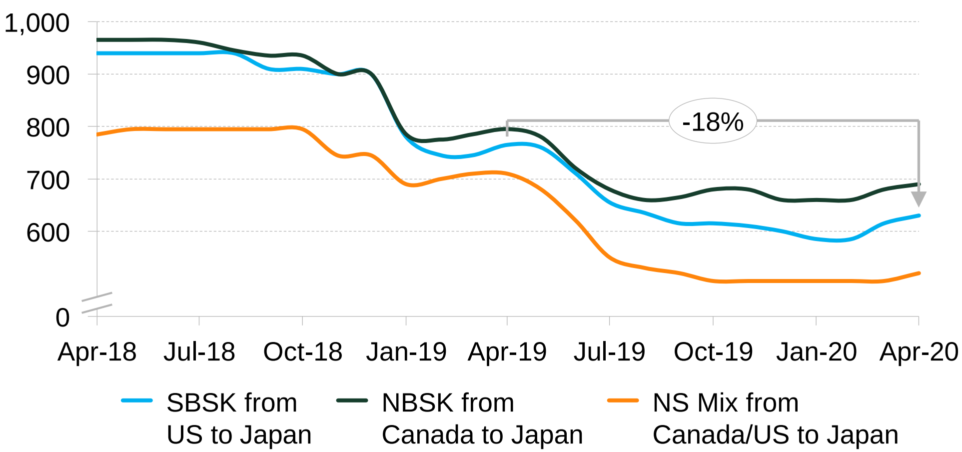
Northern Europe, USD/Tonne



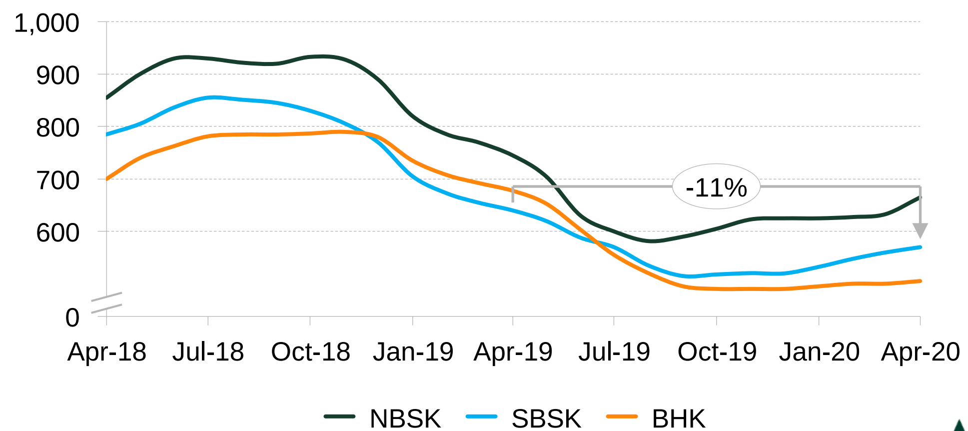
US East, USD/Tonne



Asia, USD/Tonne



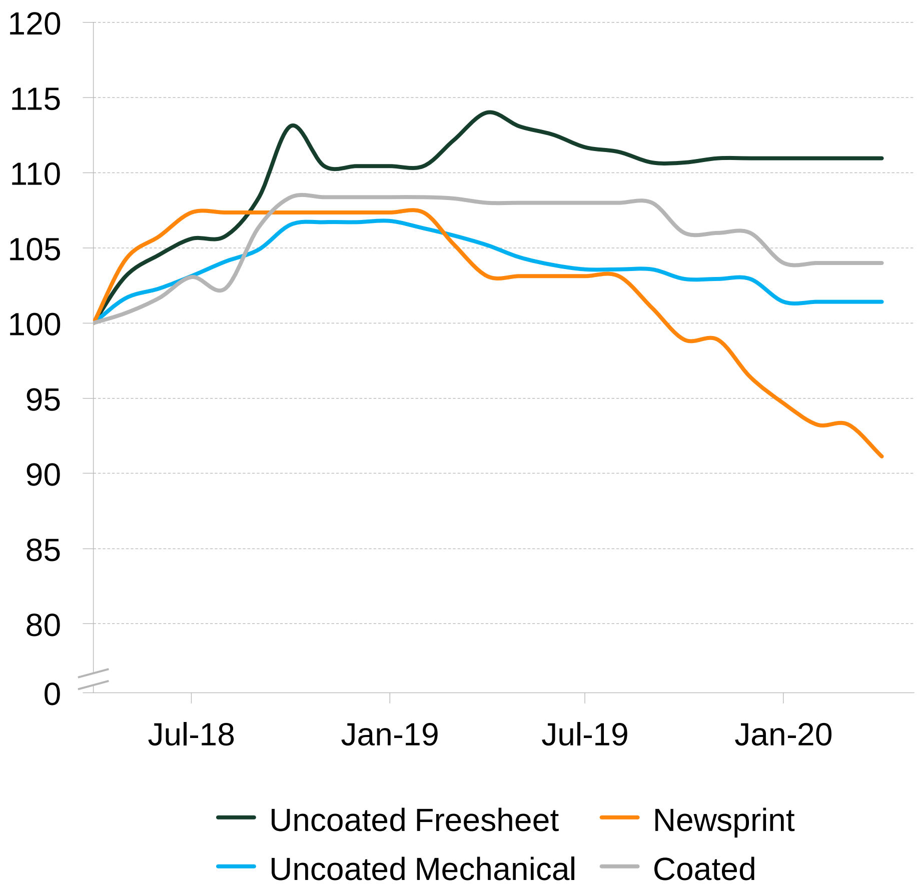
US East spot prices, USD/Tonne



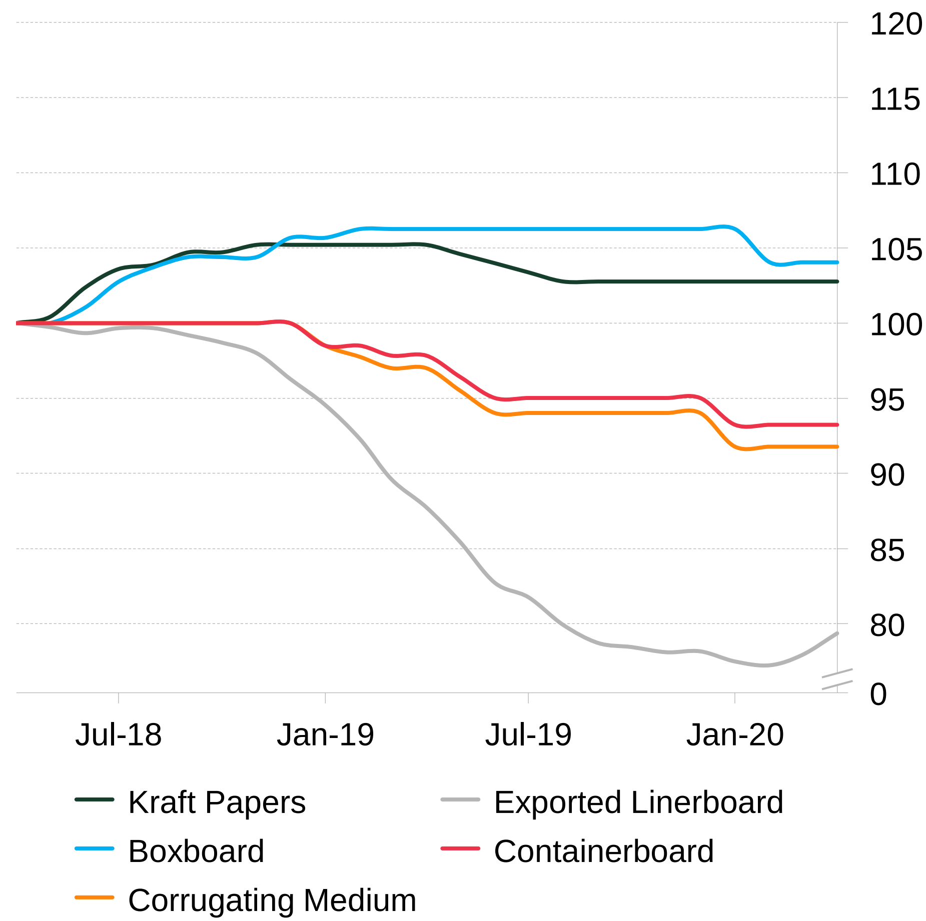
Note: Midpoint price levels.
Source: RISI PPI Pulp & Paper Week.

Most graphic paper prices flattened during the quarter while newsprint and packaging paper prices are continuing downwards

Graphic paper prices
Avg. indexed price per product segment, USD/ton



Packaging paper prices
Avg. indexed price per product segment, USD/ton

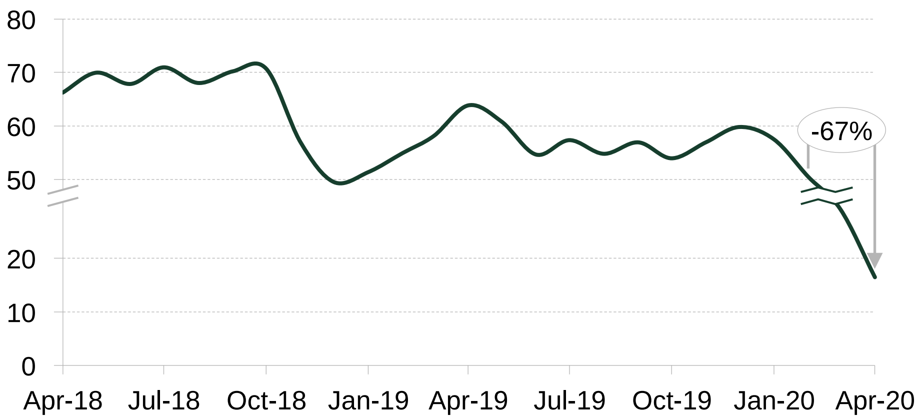


Note: Midpoint price levels.
Source: RISI PPI Pulp & Paper Week.

The price of crude oil crashed in March by 67% reaching historical low, all monitored currencies depreciated against the USD in Q1 2020

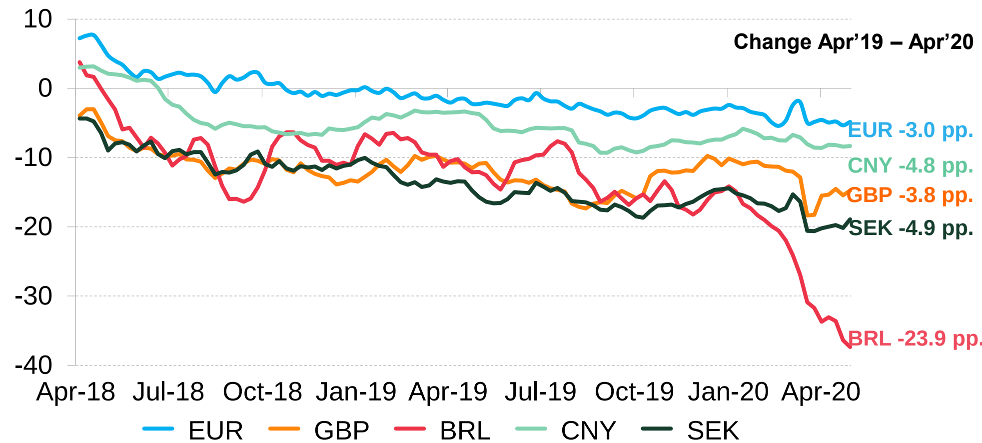
Commodity & Currency Price Development, Last 24 months

WTI Spot Crude Oil, USD/Barrel



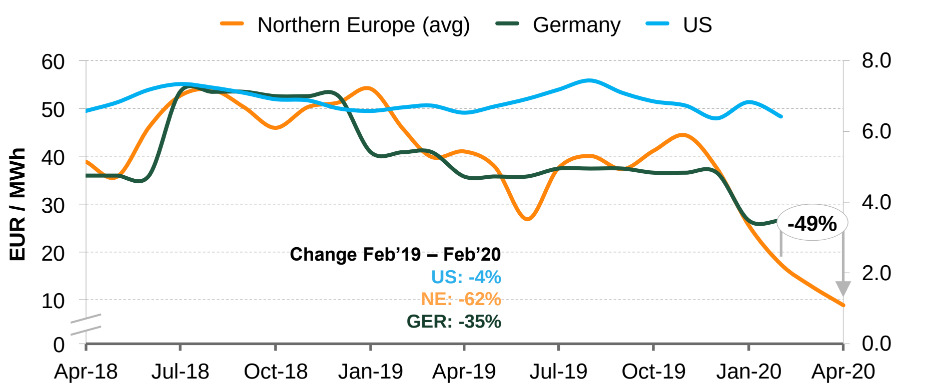
Source: US Energy Information Administration.

Currency appreciation against USD, %



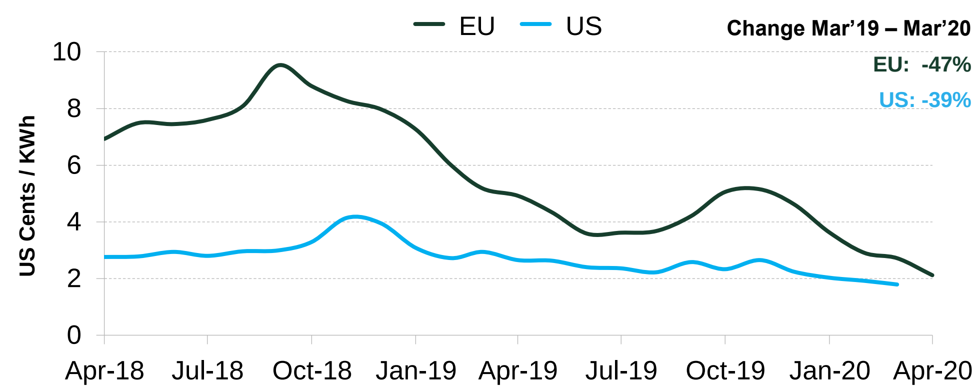
Source: S&P Capital IQ.

Electricity



Source: US Energy Information Administration (Industry retail price), Nordpool, EEX (EGIX Germany).

Natural Gas, USD/mmbtu



Source: NYMEX (Natural Gas spot price at the Henry Hub terminal in Louisiana), World Bank (EU average import border price).

Applied Value Pulp & Paper Report

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**…

KINNEVIK

…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: HUMAN CARE, COSMOSID, rivermeadow, Bake My Day, SODERFORS STEEL, Division 5 Inc Steel Fabrication	APPLIED VALUE	HAND IN HAND, Straight Ahead Ministries – Offering Kids a Way Out, Exodus

ROI driven · *Fact-based* · *Practical over theoretical* · *Hands-On* · *Global perspectives*

Applied Value challenges and supports repeat global clients across industries from three offices

Selected clients

GM, Ahlstrom Munksjö, Ericsson, SCA, Facebook, Epiroc, Whirlpool, BillerudKorsnäs, Verso, Sony, BMW, Fresenius Medical Care, Telenor, B/S/H/, Daimler, Vestas, FCA Fiat Chrysler Automobiles, WestRock

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

Lean Growth

Focus	Simplicity	Speed
✓ Define strategic focus ✓ Excel in key capabilities ✓ Use partners for non-core activities	✓ Reduce complexity ✓ Simplify and standardize processes, organization and supply chain	✓ Set targets ✓ Measure and improve ✓ Reduce Time to Market-Customer-Cash

Offerings

Go-to-Market
Segmentation, Positioning, Product/Channel Mix

Gross Margin Improvement
Pricing, Sourcing, VA/VE, Supply Chain, Operations

OPEX Efficiency
Operational efficiency, S&M / G&A productivity, Organization

Capital Efficiency
Working Capital mgmt., Innovation/R&D performance, M&A, Fixed asset leverage

Digital Transformation and Efficiency
Strategy, Capability improvement, Execution

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 <u>50+ engagements</u> 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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