Applied Value
Pulp & Paper Report

Quarterly Analysis

Q2, 2021

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Applied Value Pulp & Paper Report

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

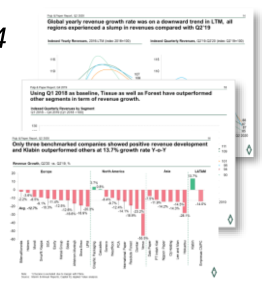
In this Pulp & Paper Report, Applied Value provides essential financial benchmarking focused on the latest quarter and 12-month period while also offering a brief update on the latest market trends.

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

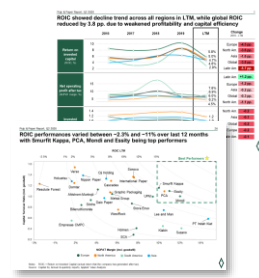
Average Industry EBITDA margin latest 4 quarters and LTM

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

ROIC

ROIC per region for the latest two 12-month periods

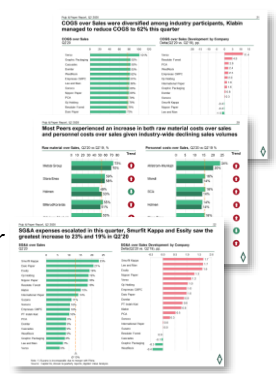
ROIC development per company and region for LTM



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

Note: Included companies might differ from previous quarters

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

Companies included in Financial Benchmarking in the Q2 2021 report

Market	Company	Revenue LTM (BEUR)	Country	Board	Paper	Tissue	Wood Products	Pulp	Other
Europe	Essity	11.4	Sweden			✓			✓
Europe	Stora Enso	9.1	Finland	✓	✓		✓	✓	✓
Europe	Smurfit Kappa	9.0	Ireland	✓					
Europe	UPM	8.8	Finland		✓		✓	✓	✓
Europe	Mondi	6.8	United Kingdom	✓	✓				✓
Europe	Metsä Group	5.5	Finland	✓	✓	✓	✓	✓	✓
Europe	BillerudKorsnäs	2.4	Sweden	✓	✓			✓	✓
Europe	Södra	2.2	Sweden				✓		✓
Europe	SCA	1.9	Sweden	✓	✓	✓	✓	✓	✓
North America	International Paper	18.0	USA	✓	✓		✓	✓	✓
North America	WestRock	15.3	USA	✓	✓				✓
North America	Packaging Corp. of America	6.0	USA	✓	✓				✓
North America	Graphic Packaging	5.7	USA	✓	✓				✓
North America	Sonoco	4.6	USA	✓	✓				✓
North America	Cascades	3.4	Canada	✓	✓	✓			✓
North America	Domtar	3.2	USA		✓	✓	✓	✓	✓
North America	Resolute Forest	3.0	Canada		✓	✓	✓	✓	✓
North America	Verso	1.0	USA		✓			✓	✓
LAT AM	Suzano	5.8	Brazil		✓			✓	✓
LAT AM	Empresas CMPC	4.8	Chile	✓	✓		✓	✓	✓
LAT AM	Klabin	2.3	Brazil	✓	✓		✓	✓	✓
Asia	Oji Holding	10.5	Japan	✓	✓		✓		✓
Asia	Nippon Paper	7.9	Japan	✓	✓		✓		✓
Asia	Daio Paper	4.5	Japan	✓	✓				✓
Asia	Lee and Man	3.3	China	✓		✓		✓	✓
Asia	Hokuetsu	1.8	Japan		✓			✓	✓

Source: Capital IQ, Quarterly Reports

Rising pulp and paper prices positively impacted industry revenues and profitability, resulting in Y-o-Y improvements for most peers

Financial Benchmarking: Highlights in Q2 2021

Key takeaways

Revenue Growth

- Industry wide revenue experienced an average growth of 13% in LTM compared to 2020 with continued vastly increasing pulp & wood material prices
- Only Asia experienced a negative revenue development, most regions displayed an upward trend compared to previous quarter; Europe, North America and Latin America reported rapid revenue growth of 15%, 11% and 27% growth respectively
- Top performers in this quarter were Resolute Forest, Klabin and Lee and Man with reported revenue growth of +86.3%, 37.9% and +37.1%

Profitability & Costs

- Quarterly EBITDA margins for most segments displayed an upward trend compared to previous quarter; wood products and pulp had the most rapid growth by vastly increasing product prices
- Both Resolute Forest and SCA showed great Y-o-Y development on profitability with growth of 32 pp., and 26 pp., respectively; this profitability improvement was brought by higher pulp & wood product prices
- Most European companies successfully reduced raw material and personnel costs over sales
- Company performance on COGS over sales varies with an industry average of 72%, a slight decline from the last quarter; Verso managed to reduce its COGS the most by 18.4 pp.

Return On Invested Capital (ROIC)

- Global industry average ROIC slightly increased by 0.8 pp. to 6.1% in LTM
- Latin America continued the positive development in ROIC with 2.8 pp. growth; despite a capital efficiency decline of 0.1 pp., European companies on average surpassed other regions in Q2’21 with highest regional ROIC of 7% in LTM
- Resolute, PCA, Lee and Man and Smurfit Kappa were top performers in LTM with ROICs >10%

Top performers

Source: RISI, S&P Capital IQ, Interim & Annual Reports.

Q2 2021 was characterized by long raw material lead time and continued strong pulp demand

Market Trends: Highlights in Q2 2021

Key takeaways

Industry News	› Several players announced pulp capacity expansion plans in H1 to meet the increasing demand for pulp & wood products. As of today, 43 proposed market pulp proposed market pulp capacity expansion projects are planned to start up through 2025, representing a total of 22.7 million tonnes of possible new capacity › Worldwide containerboard prices keep to climb due to long lead time related tightness in supply, containerboard inventory was extremely low due to effect of a winter storm that negatively affected the business in Q2 and a planned maintenance outage that took place within the quarter. The demand may be unlikely to fulfilled until early fall › Electricity prices in Europe are already high because demand has returned to pre-pandemic levels and electricity generation has become more expensive as the demand for electricity increases
Pulp Prices	› Pulp prices maintained at high level in Q2 2021; prices in Northern Europe, US East, and Asia are up at approx. 63%, 45% and 69% in 12 months, respectively › Amid with strong pulp demand, and as a result of cruel international logistic situation, near record-long raw-material lead times and continued shortages, global paper industry impacted by high pulp price over Q2. However, the pulp availability was improving over the quarter, the situation may be eased as the market step into autumn
Graphic Paper & Packaging	› All kinds of graphic prices experienced a continued upward trend in Q2 2021, only newsprint prices has not fully recovered to pre-pandemic level with ~6% decline compared to Q2 2020 › Packaging paper prices were directly impacted from remained strong demand on corrugated packaging and containerboard
Commodities & Currencies	› Oil prices increased by ~16% during the quarter and ended at ~71 USD/barrel in Q2'21 › Natural gas prices experienced rapid growth with 487% Europe and 101% United States due to low inventory levels › Most currencies continued to appreciate against USD in this quarter: EUR, GBP, CNY and SEK were up by 6.1pp., 10.1 pp., 8.9 pp., and 8.6 pp. respectively; only BRL still depreciated against the USD, but it went down by 4.1 pp. in this quarter

Source: RISI, Interim & Annual Reports.

Applied Value Pulp & Paper Report

Rising pulp and paper prices positively impacted industry revenues and profitability, resulting in Y-o-Y improvements for most peers

Financial Benchmarking: Highlights in Q2 2021

Key takeaways

Revenue Growth	› Industry wide revenue experienced an average growth of 13% in LTM compared to 2020 with continued increasing pulp and wood material prices › Only Asia experienced a negative revenue development, most regions displayed an upward trend compared to previous quarter; Europe, North America and Latin America reported rapid revenue growth of 15%, 11% and 27% growth respectively › Top performers in this quarter were Resolute Forest, Klabin and Lee and Man with reported revenue growth of +86.3%, 37.9% and +37.1%
Profitability & Costs	› Quarterly EBITDA margins for most segments displayed an upward trend compared to previous quarter; wood products and pulp had the most rapid growth by vastly increasing product prices › Both Resolute Forest and SCA showed great Y-o-Y development on profitability with growth of 32 pp., and 26 pp., respectively; this profitability improvement was brought by higher pulp & wood product prices › Most European companies successfully reduced raw material and personnel costs over sales › Company performance on COGS over sales varies with an industry average of 72%, a slight decline from the last quarter; Verso managed to reduce its COGS the most by 18.4 pp.
Return On Invested Capital (ROIC)	› Global industry average ROIC slightly increased by 0.8 pp. to 6.1% in LTM › Latin America continued the positive development in ROIC with 2.8 pp. growth; despite a capital efficiency decline of 0.1 pp., European companies on average surpassed other regions in Q2'21 with highest regional ROIC of 7% in LTM › Resolute, PCA, Lee and Man and Smurfit Kappa were top performers in LTM with ROICs >10%

Top performers

resolute Forest Products, Lee and Man, Klabin, SÖDRA

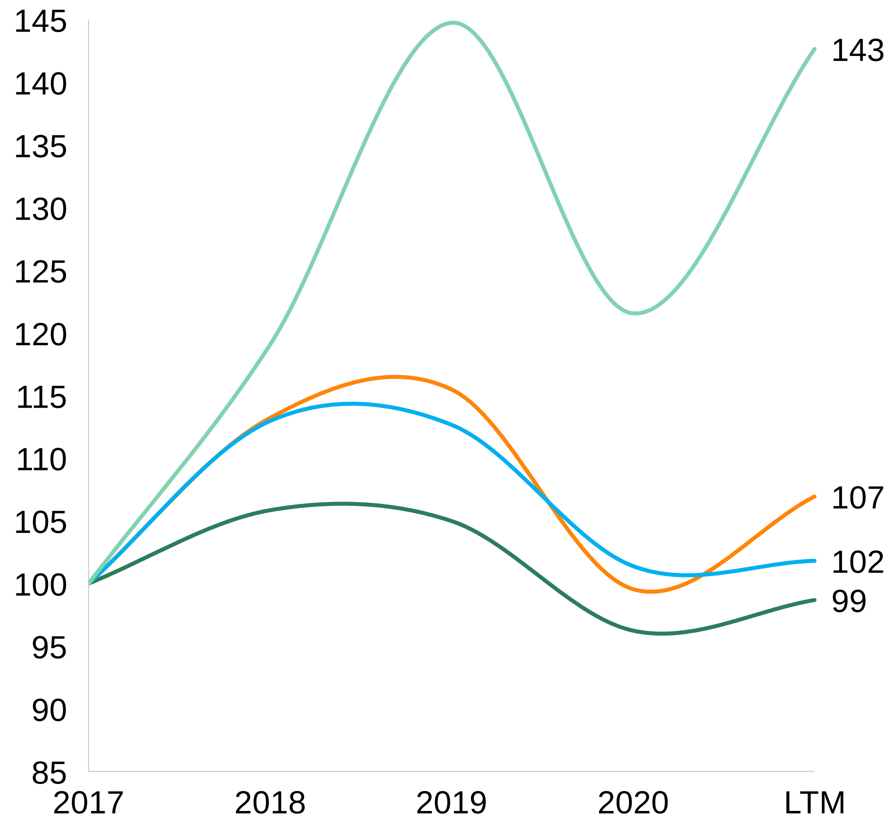
SCA, resolute Forest Products, VERSO

PCA PACKAGING CORPORATION OF AMERICA, Smurfit Kappa, resolute Forest Products

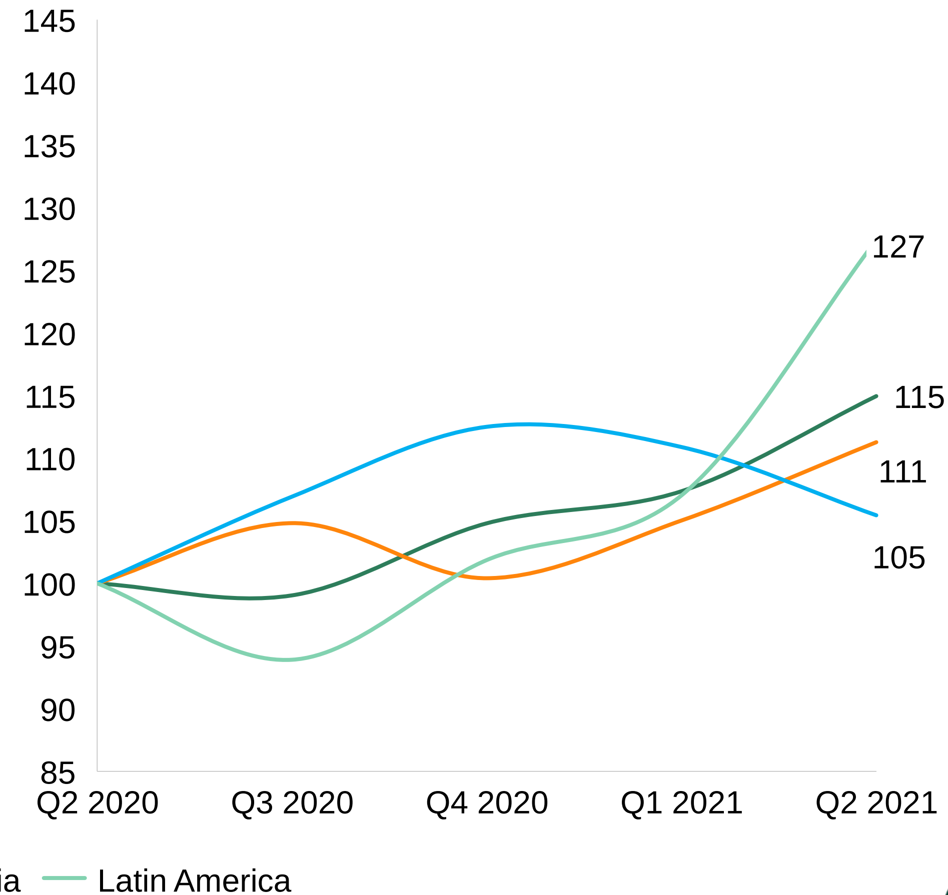
Source: RISI, S&P Capital IQ, Interim & Annual Reports.

Yearly revenues were up from index in LTM, most regions displayed increased revenues in Q2'21 compared to Q2'20

Indexed Yearly Revenues, 2017-LTM (index 2017=100)



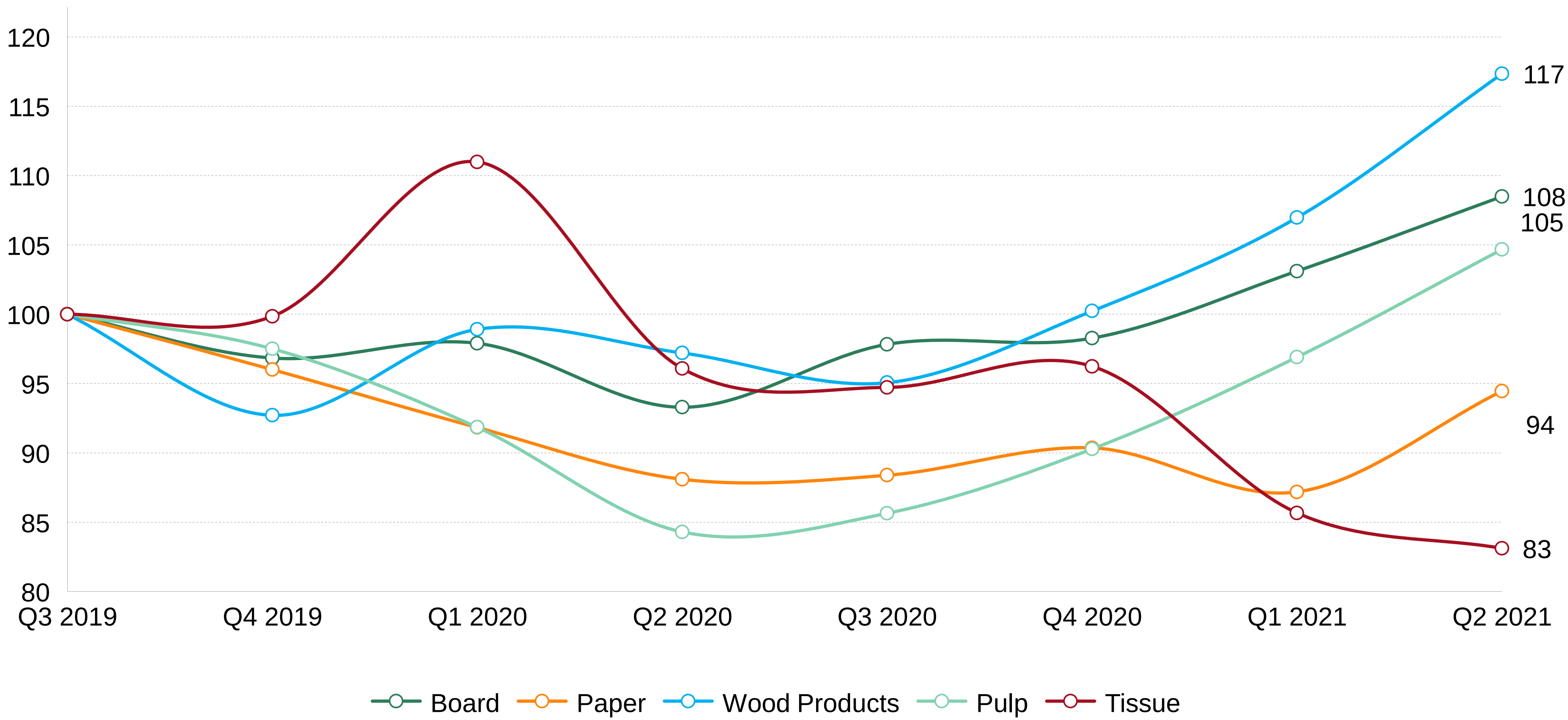
Indexed Quarterly Revenues, Q2'20-Q2'21 (index Q2'20=100)



Source: S&P Capital IQ, Interim & Annual Reports, Applied Value Analysis.

Most segments saw vast increase in revenue in this quarter except tissue continued its decline

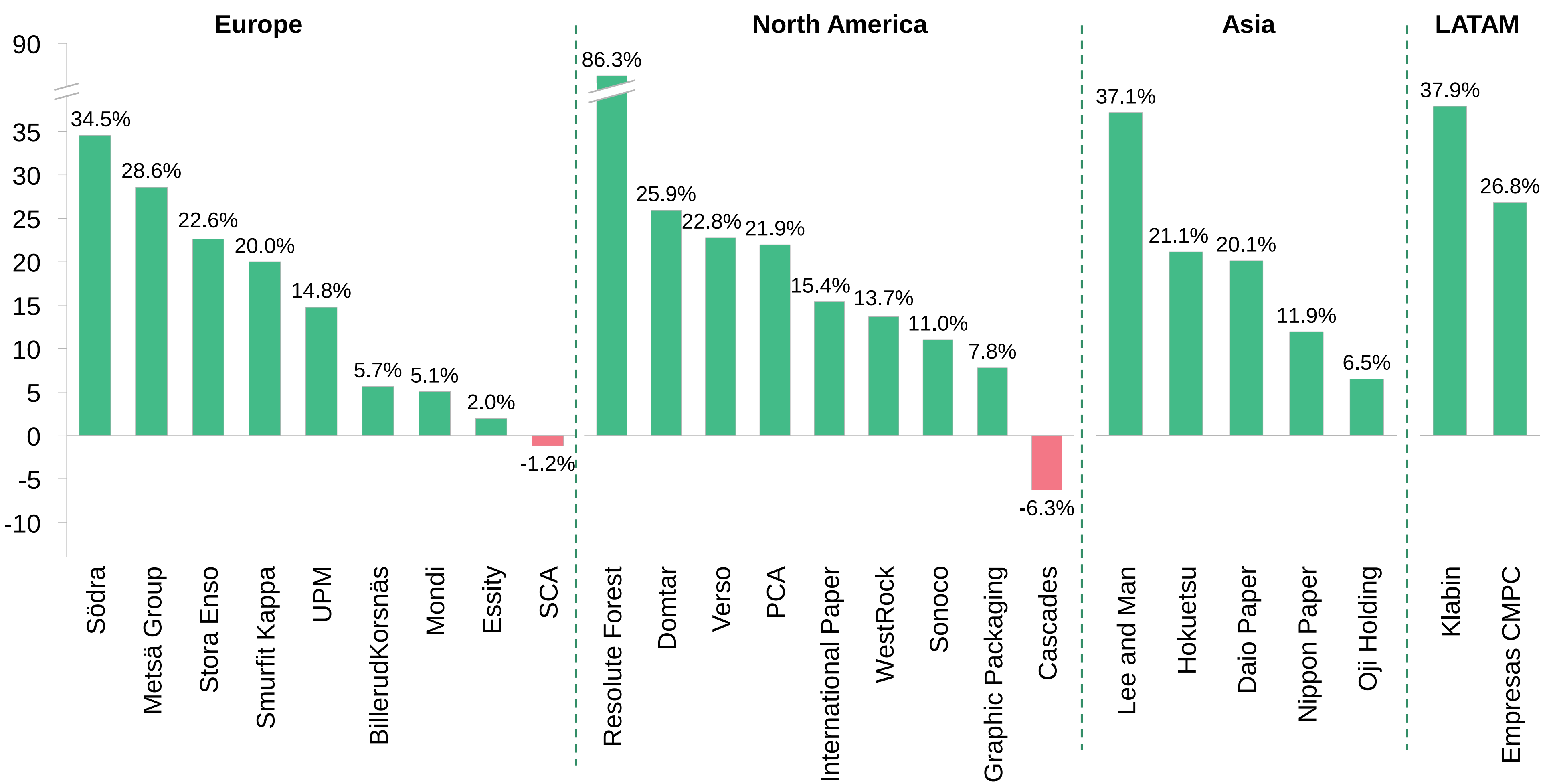
Indexed Quarterly Revenues by Segment, Q3'19 – Q2'21 (Q3'19 =100)



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

Most industry players had positive revenue development, Resolute Forest surpassed others with 86.3% growth by strong wood product demand

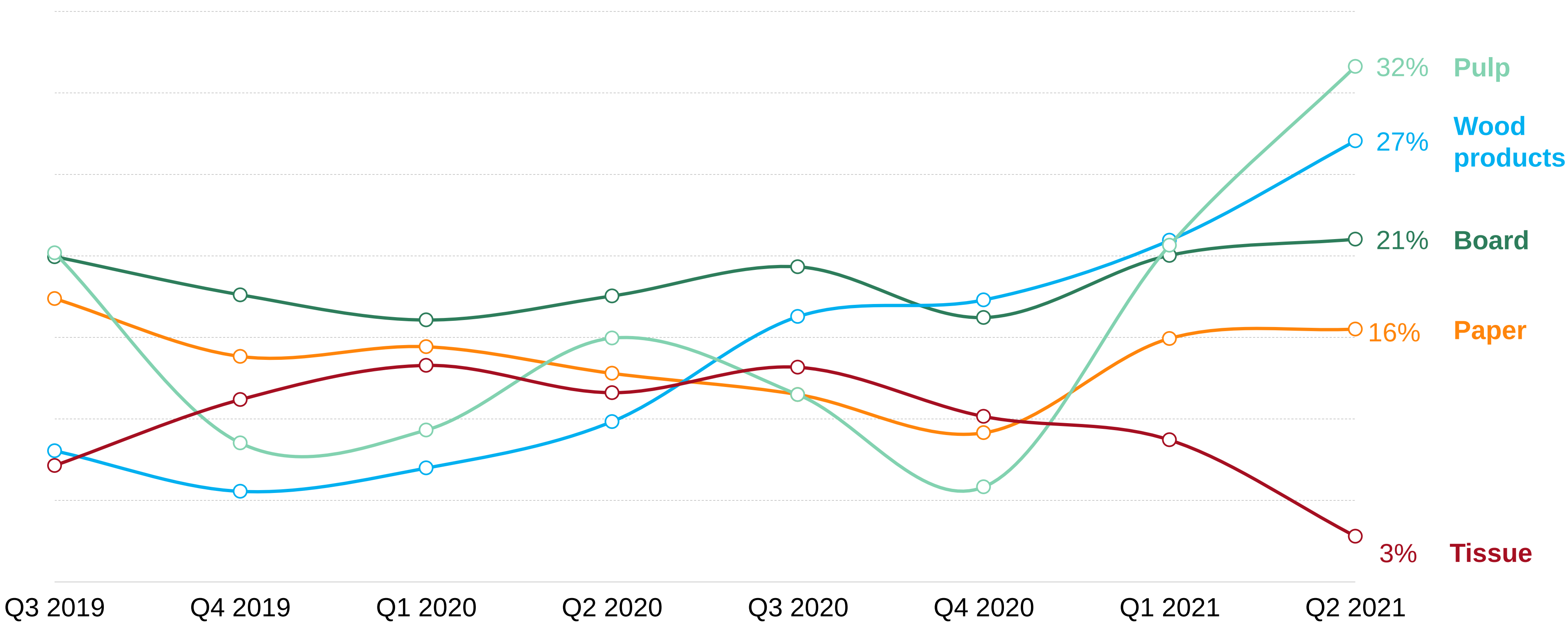
Revenue Growth, Q2'21 vs. Q2'20, %



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

Wood product and pulp segment EBITDA experienced the greatest increase this quarter due to highest growth on wood product and pulp prices

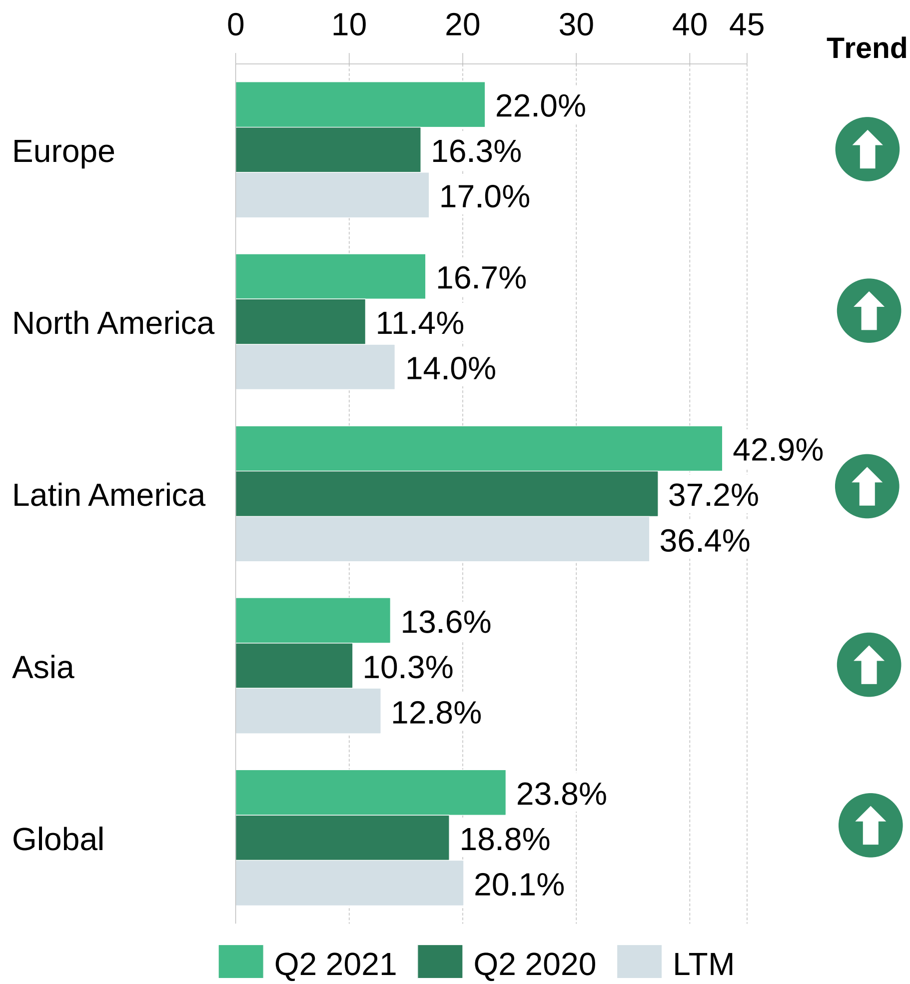
Quarterly EBITDA Margin by segment, Q3'19 – Q2'21, %



Source: S&P Capital IQ, Applied Value Analysis.

EBITDA margins of all regions experienced growth in this quarter, while Europe saw the most increase by 5.7 pp. to 22% on average in Q2 2021

EBITDA margin by region, Y-o-Y

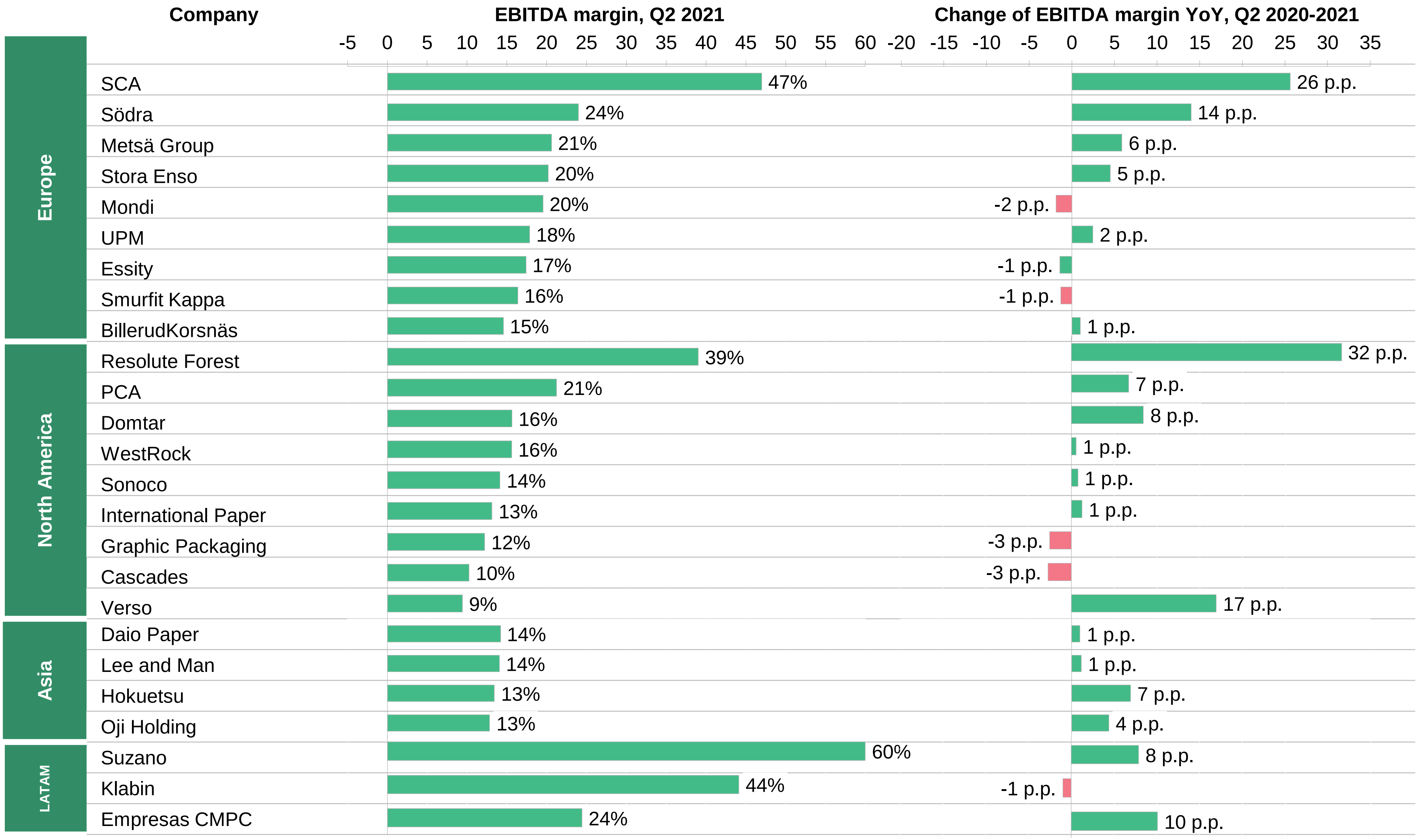


Industry News

- On May 11, **Paper Excellence** claimed it will acquire **Domtar's** all issued and outstanding shares for **$55.5** per share about **$3.0 B** in cash; and Domtar will keep to operate as an individual entity after transaction
- **Graphic Packaging** will acquire **AR Packaging,** the Europe's second largest fiber-based packaging producer for **$1.45 B;** AR's 25 converting facilities will provide **significant scale** and **cost efficiency benefits**
- In August, **Smurfit Kappa** agreed to acquire **Verzuolo paper mill a containerboard business** from **Burgo Group for €360 M** which aims to serve southern European region better
- **Norske Skog** will convert its **Bruck mill** from newspaper to recycled containerboard, the conversion will introduce **210K** tones capacity to meet growing renewable packaging demand
- In July, **Valmet** will merge with **Neles** to create a new company, the merge is expected to generate annual run-rate synergies of about **€25 million** in next 5 years

Source: S&P Capital IQ, RISI, Interim & Annual Reports, Applied Value Analysis.

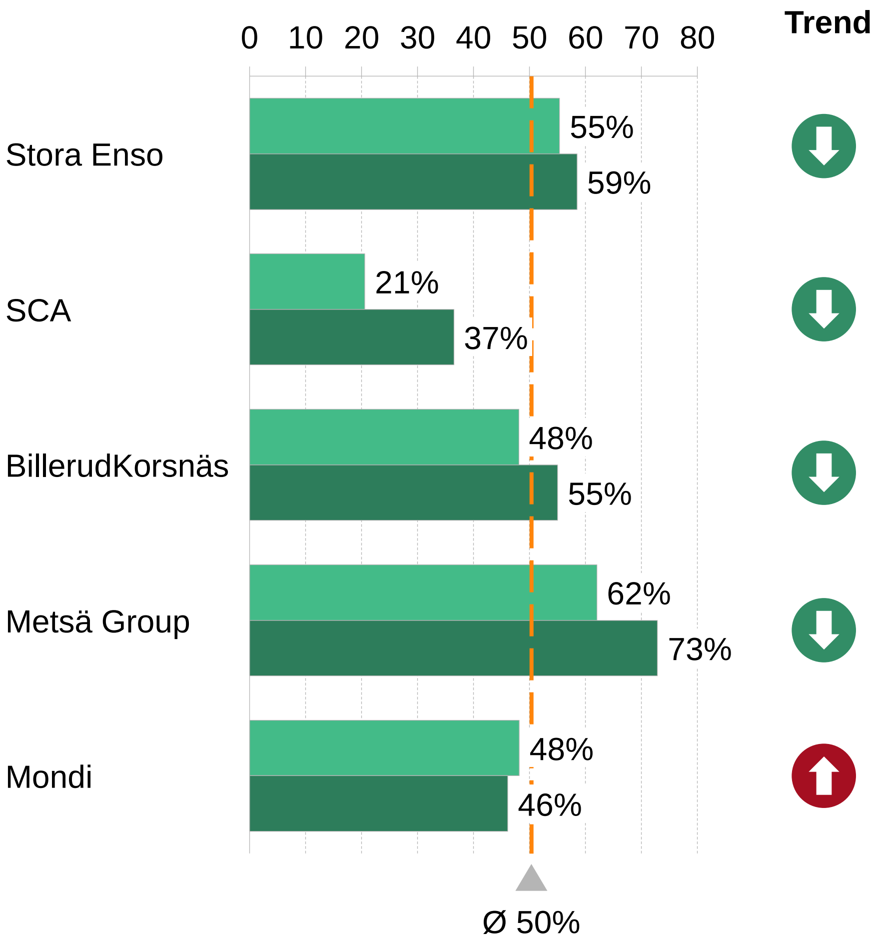
Most industry players demonstrated positive profitability results as Resolute Forest, SCA and Verso displayed a strong recovery



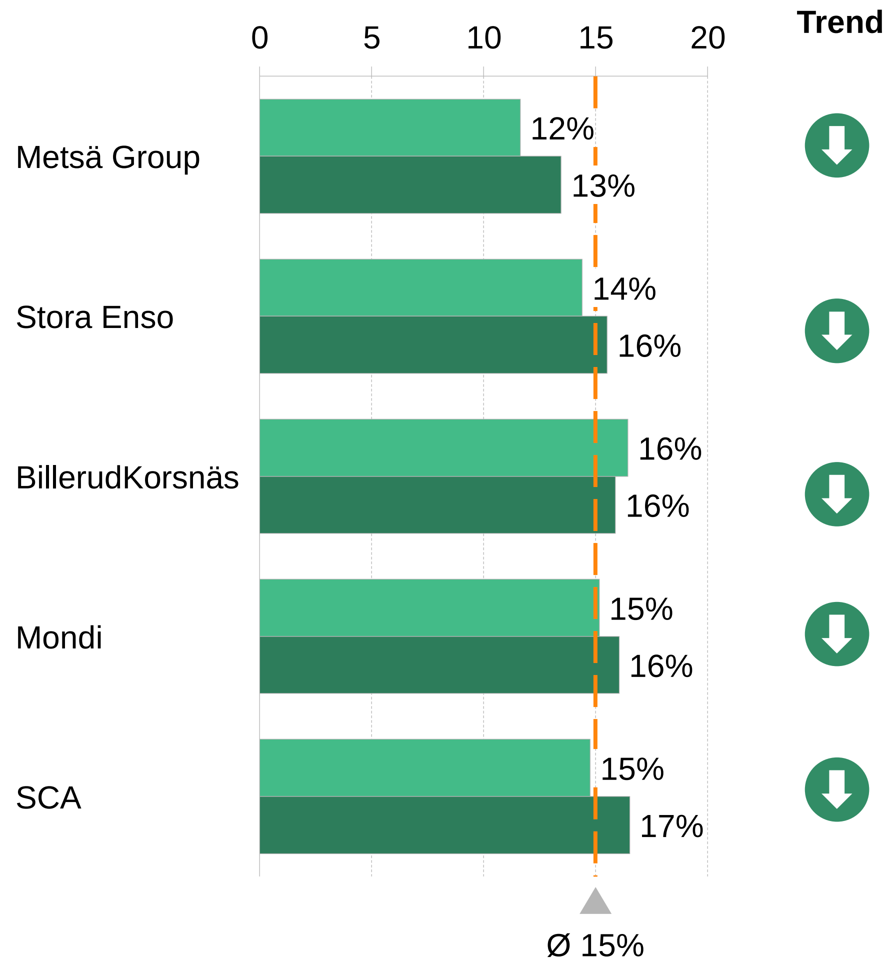
Source: Interim & Annual Reports, S&P Capital IQ, Applied Value analysis.

Most peers managed to control raw material over sales and personnel costs over sales, but Mondi saw slight increases in raw costs over sales

Raw material over Sales
Q2'21 vs Q2'20, %



Personnel costs over Sales
Q2'21 vs Q2'20 %

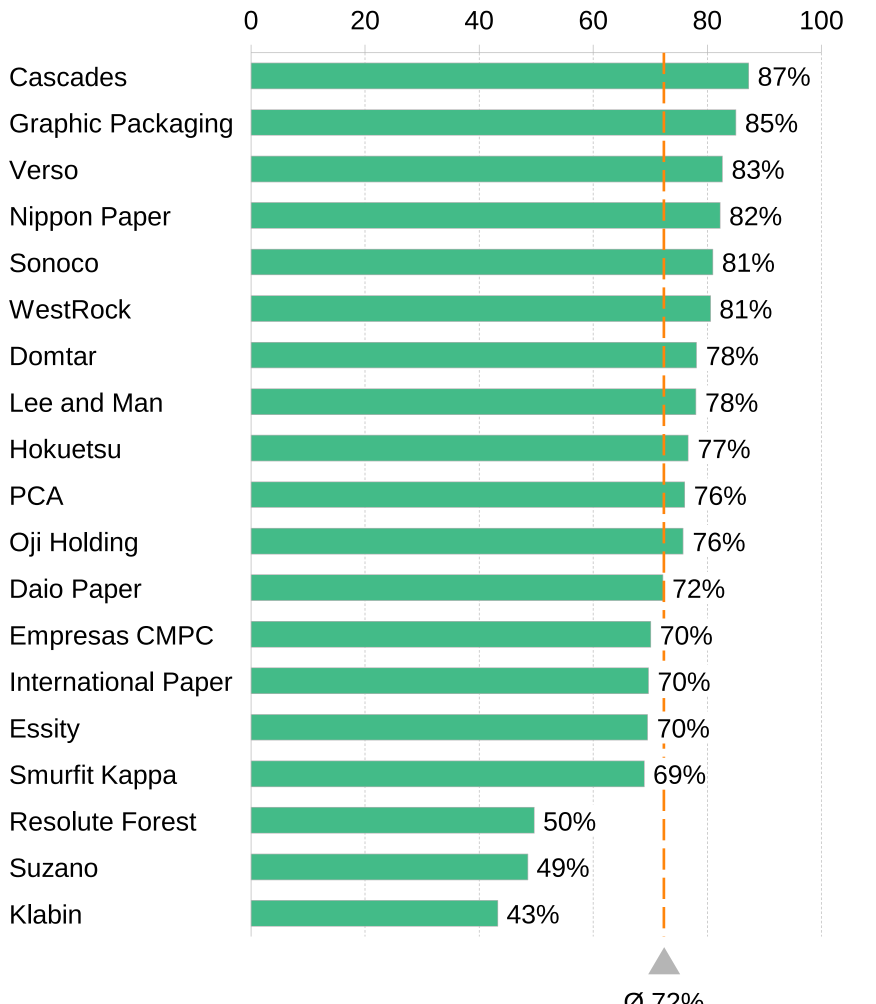


Q2 2021 Q2 2020

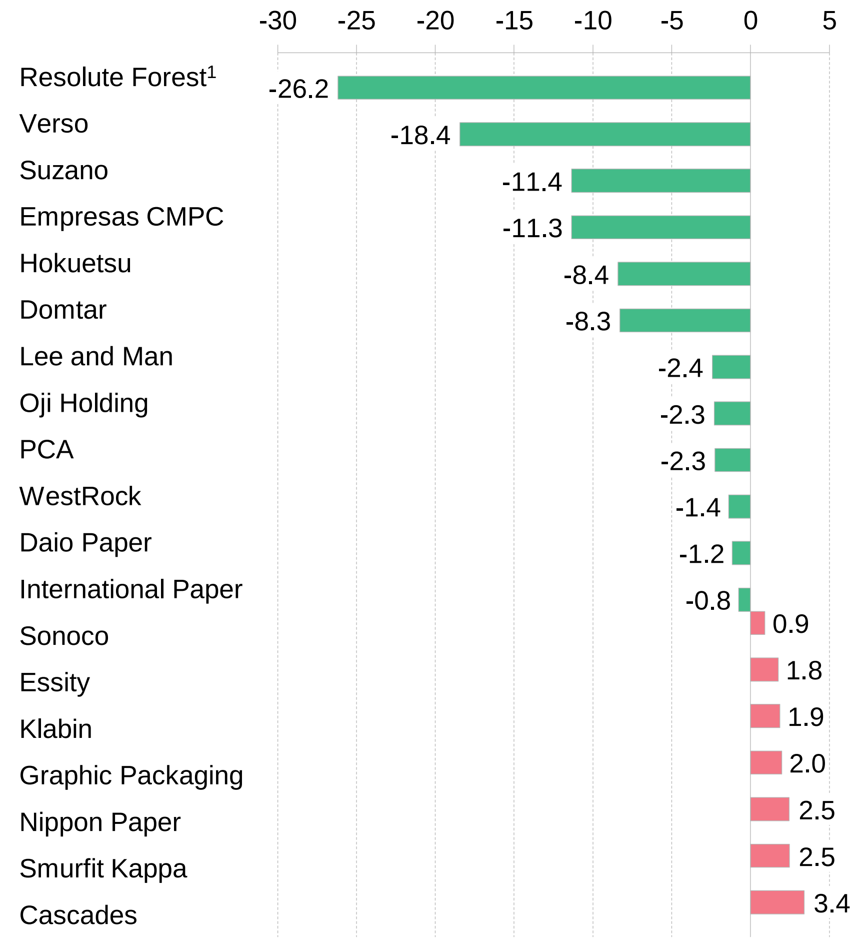
Note: Mondi data was calculated based on H1 data
Source: S&P Capital IQ, Interim & Annual Reports, Applied Value Analysis.

COGS over Sales were diversified among industry participants, and Verso saw the most decrease in COGS of 18.4 pp.

COGS over Sales
Q2'21



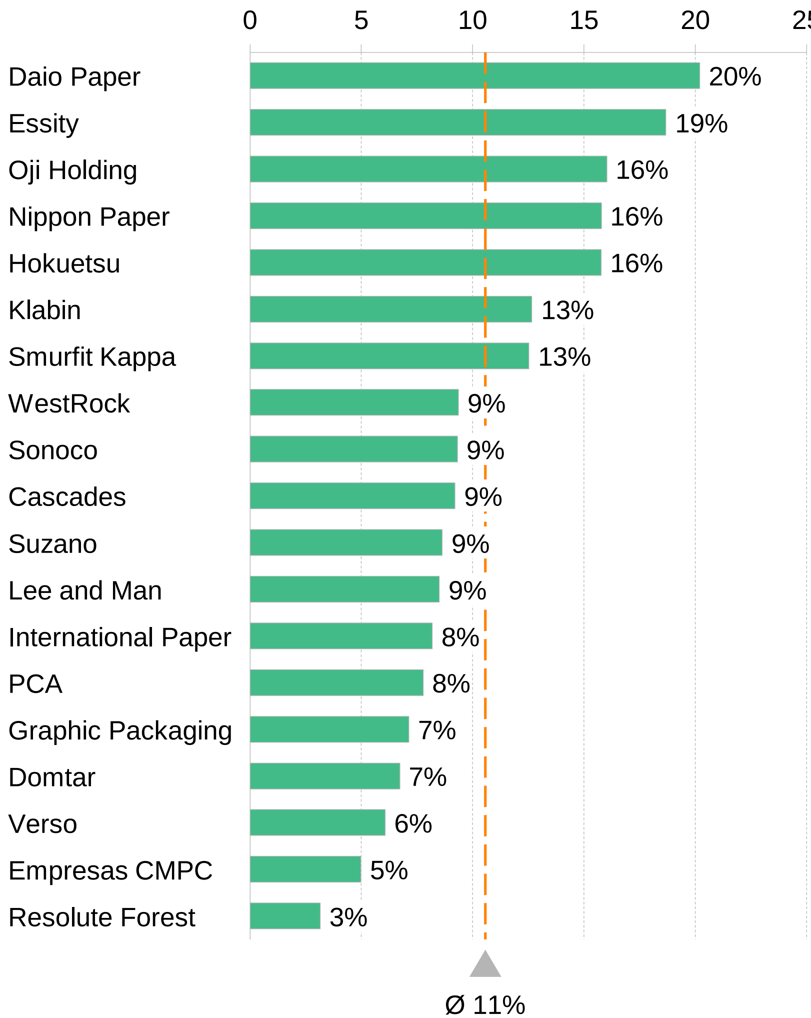
COGS over Sales Development by Company
Delta (Q2'21 vs. Q2'20), pp.



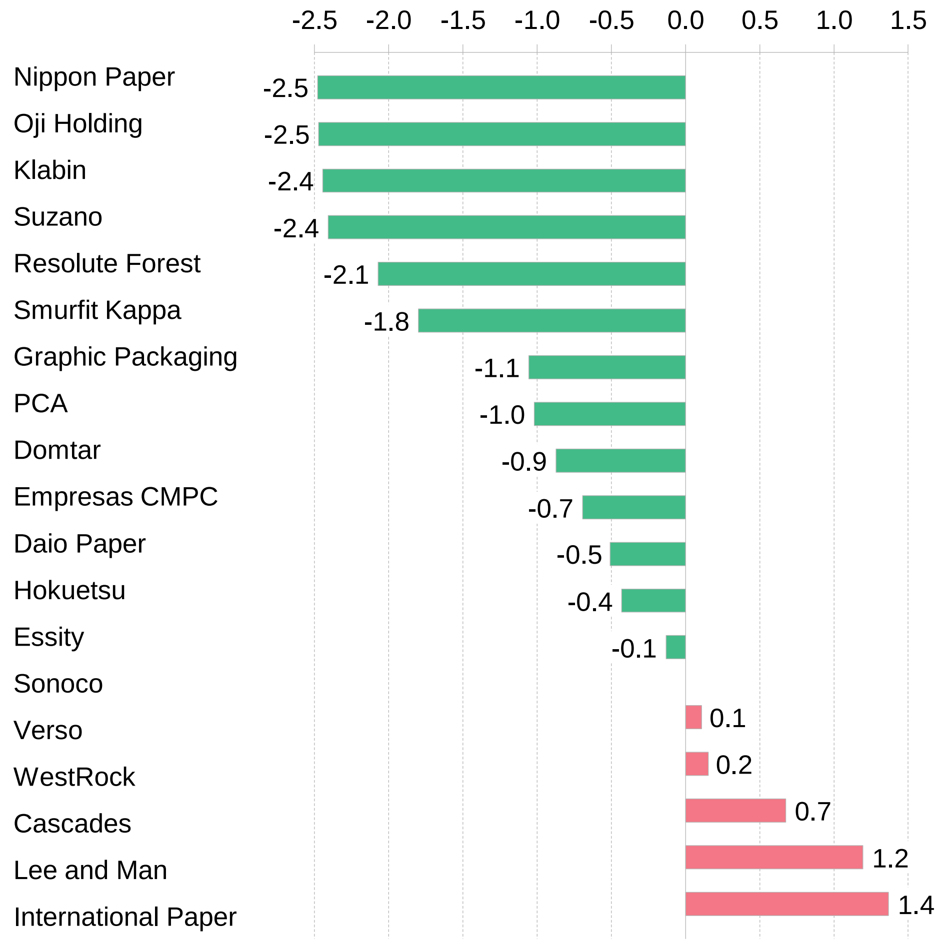
Note: 1) Resolute forest's large decrease in COGS over sales due to high sales volume
Source: S&P Capital IQ, Interim & Annual Reports, Applied Value Analysis.

Most companies saw a decrease in SG&A over Sales, but International paper had the largest increase due to printing paper business spin off

SG&A over Sales
Q2'21

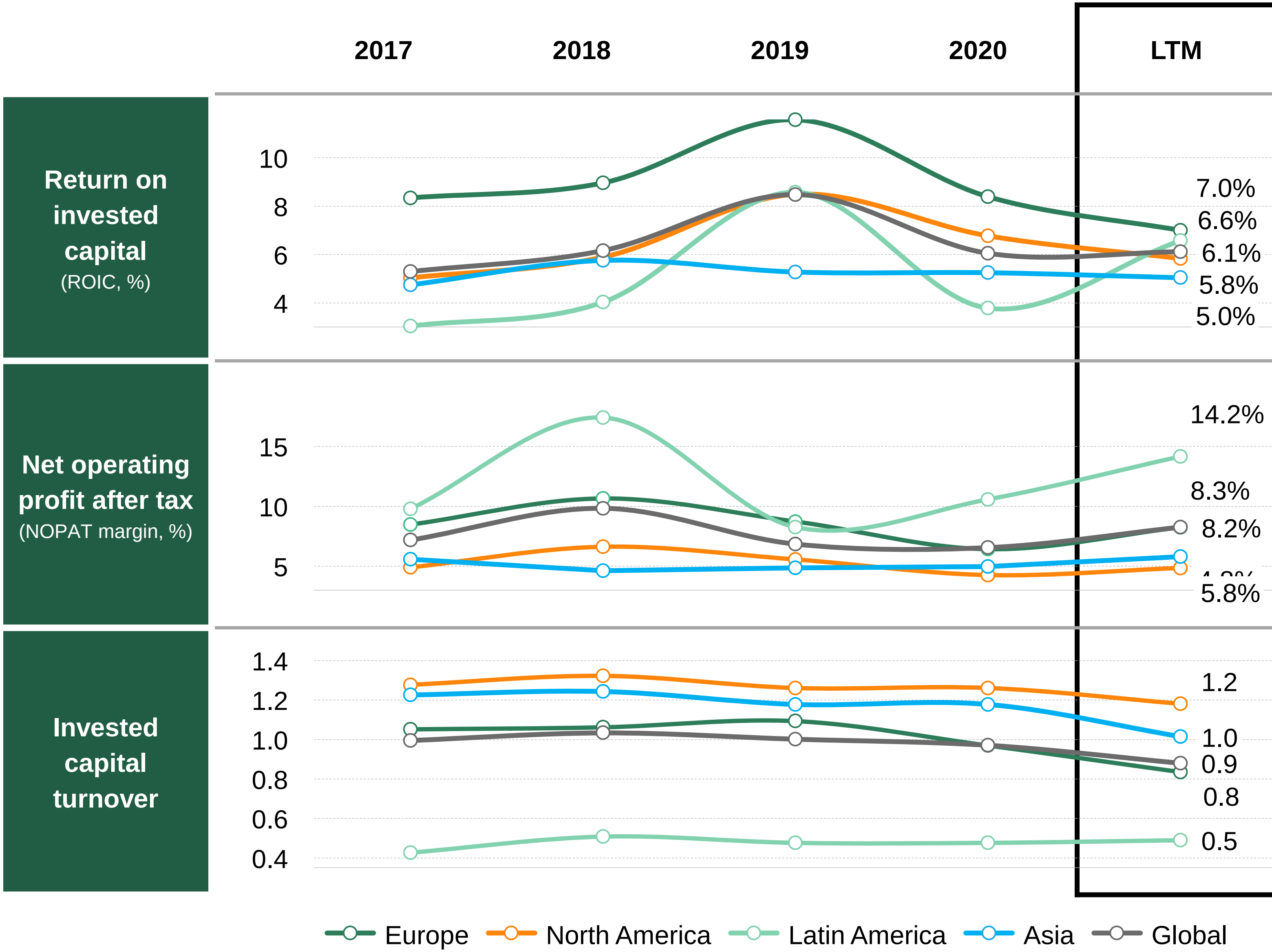


SG&A over Sales Development by Company
Delta (Q2'21 vs. Q2'20), pp.



Source: S&P Capital IQ, Interim & Annual Reports, Applied Value Analysis.

Most regions ROIC declined in LTM except Latin America while global ROIC slightly increased by 0.1 pp. due to ascent profitability

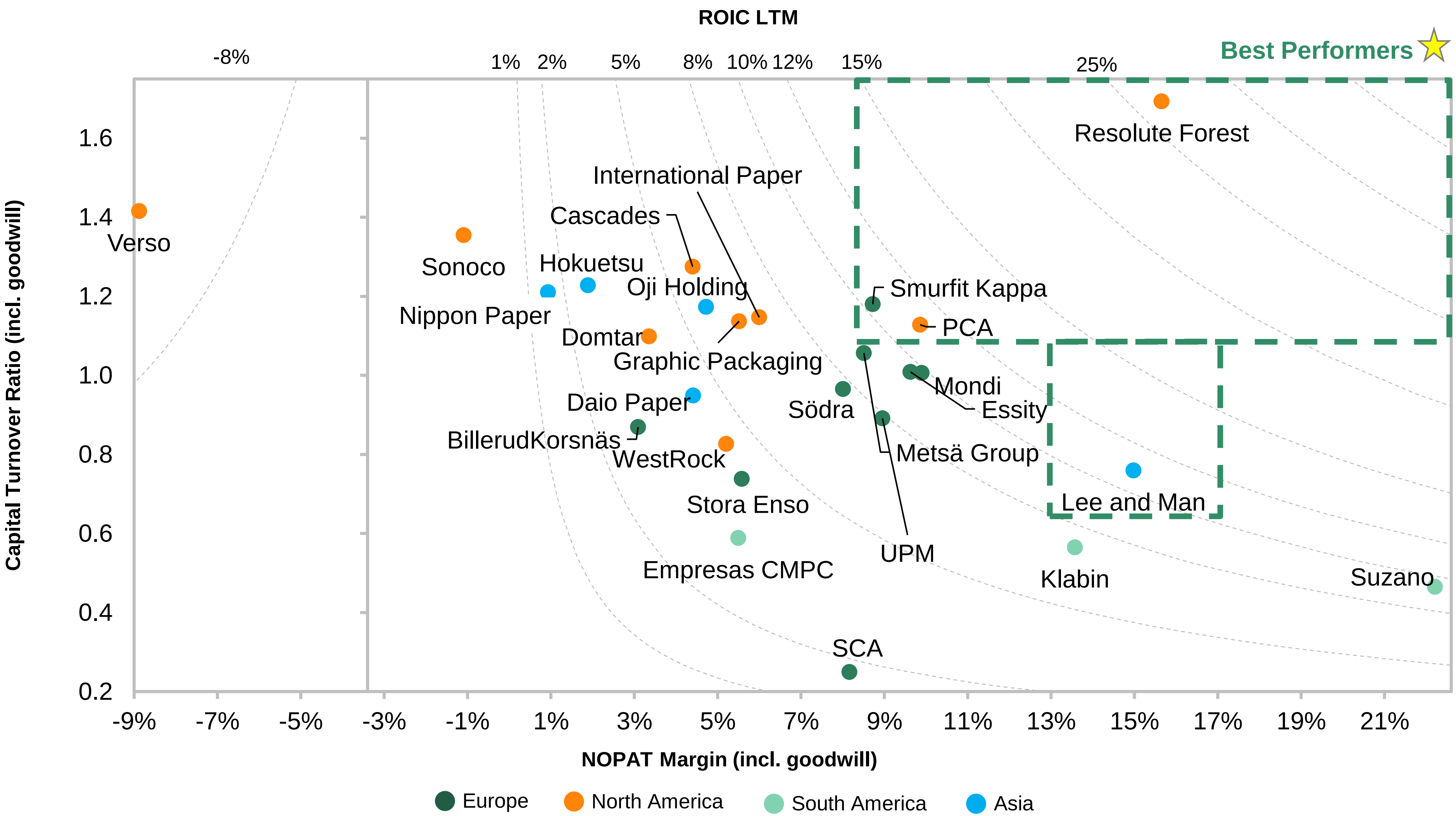


Change
2020 - LTM

Europe	**-1.4 pp.**
North Am.	**-0.9 pp.**
Asia	**-0.2 pp.**
Global	**+0.1 pp.**
Latin Am.	**+2.8 pp.**
Latin Am.	**+3.6 pp.**
Europe	**+1.8 pp.**
Asia	**+0.8 pp.**
Global	**+1.7 pp.**
North Am.	**+0.6 pp.**
North Am.	**-0.1**
Asia	**-0.2**
Global	**-0.1**
Europe	**-0.1**
Latin Am.	**+/- 0.0**

Source: S&P Capital IQ, Interim & Annual Reports, Applied Value Analysis.

ROIC performances varied between -12% and 26% over the last 12 months with Resolute, PCA, Lee and Man and Smurfit Kappa as top performers



Notes: ROIC = Return on Invested Capital (actual return that the company has generated after tax).

Source: S&P Capital IQ, Interim & Annual Reports, Applied Value Analysis.

Applied Value Pulp & Paper Report

Q2 2021 was characterized by long raw material lead time and continued strong pulp demand

Market Trends: Highlights in Q2 2021

Key takeaways

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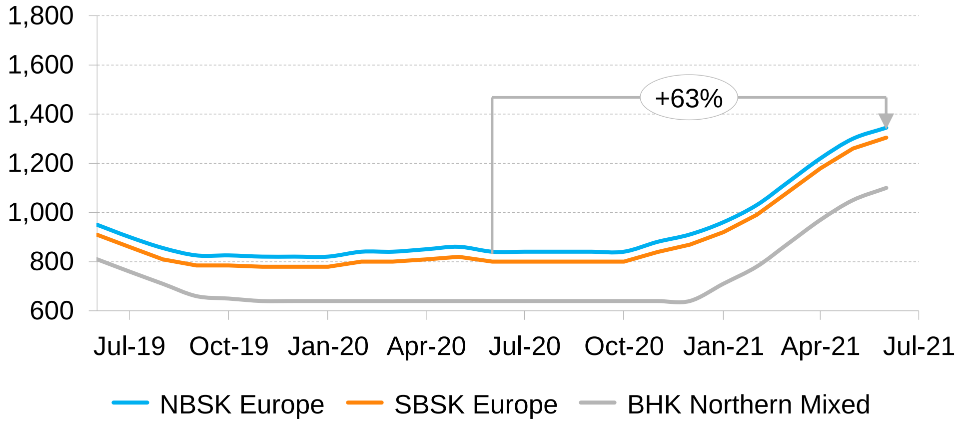
Graphic Paper & Packaging	› All kinds of graphic prices experienced a continued upward trend in Q2 2021, only newsprint prices has not fully recovered to pre-pandemic level with ~6% decline compared to Q2 2020 › Packaging paper prices were directly impacted from remained strong demand on corrugated packaging and containerboard
Commodities & Currencies	› Oil prices increased by ~16% during the quarter and ended at ~71 USD/barrel in Q2'21 › Natural gas prices experienced rapid growth with 487% Europe and 101% United States due to low inventory levels › Most currencies continued to appreciate against USD in this quarter: EUR, GBP, CNY and SEK were up by 6.1pp., 10.1 pp., 8.9 pp., and 8.6 pp. respectively; only BRL still depreciated against the USD, but it went down by 4.1 pp. in this quarter

Source: RISI, Interim & Annual Reports.

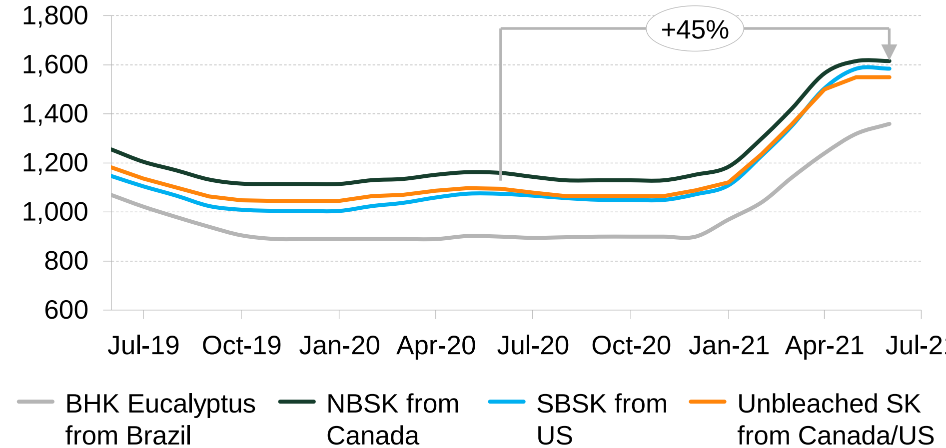
Global pulp prices increased by 45-69% Y-O-Y and most regions' prices maintained at high price level in Q2 2021

Global Pulp Price Development, Last 24 Months

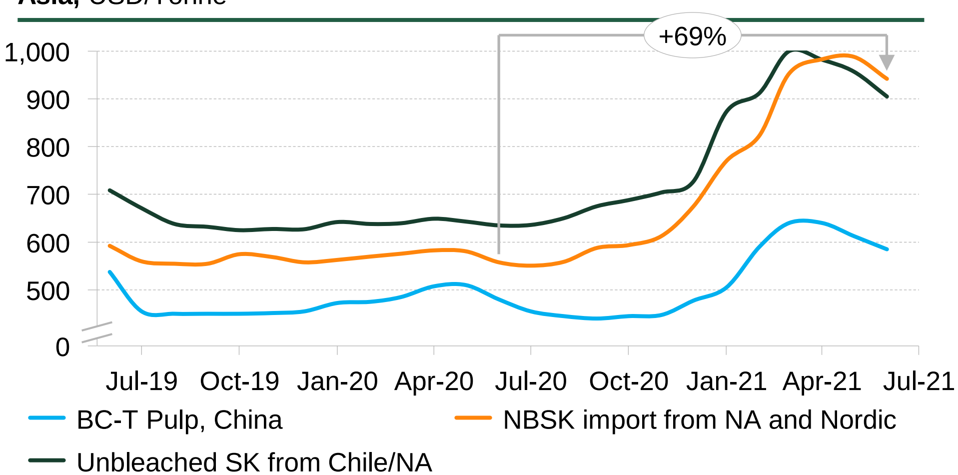
Northern Europe, USD/Tonne



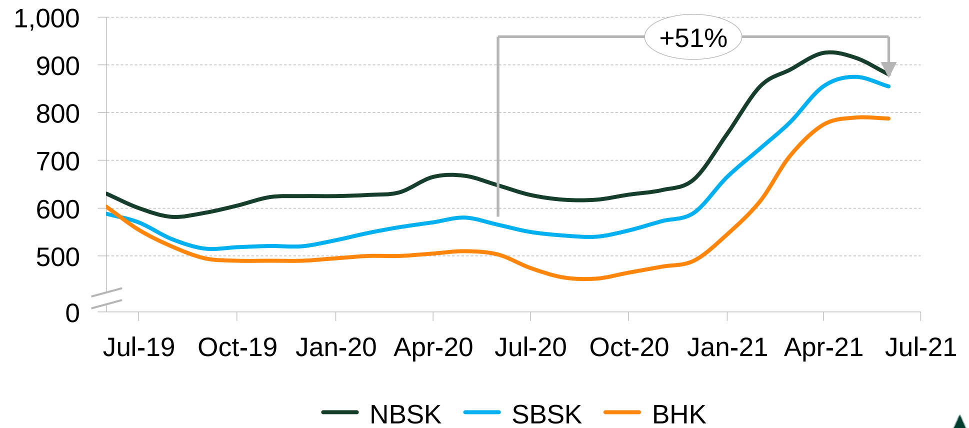
US East, USD/Tonne



Asia, USD/Tonne



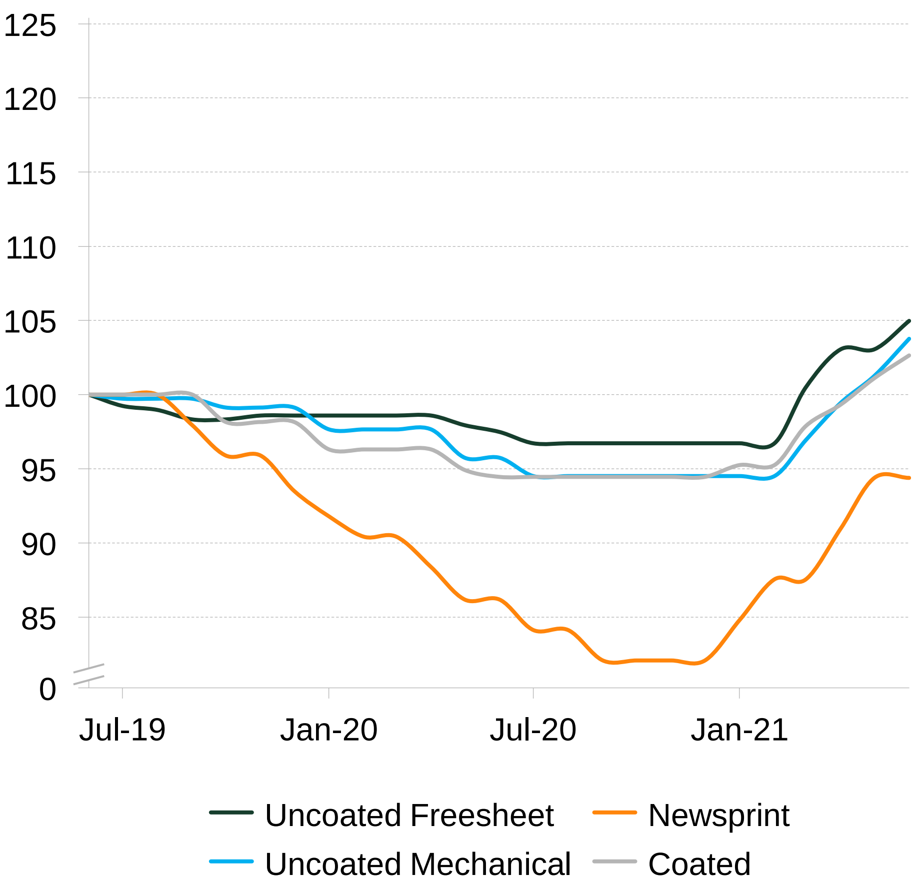
US East spot prices, USD/Tonne



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

Packaging paper prices and graphic paper prices continued the upward trend in this quarter while exported linerboard price soared

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



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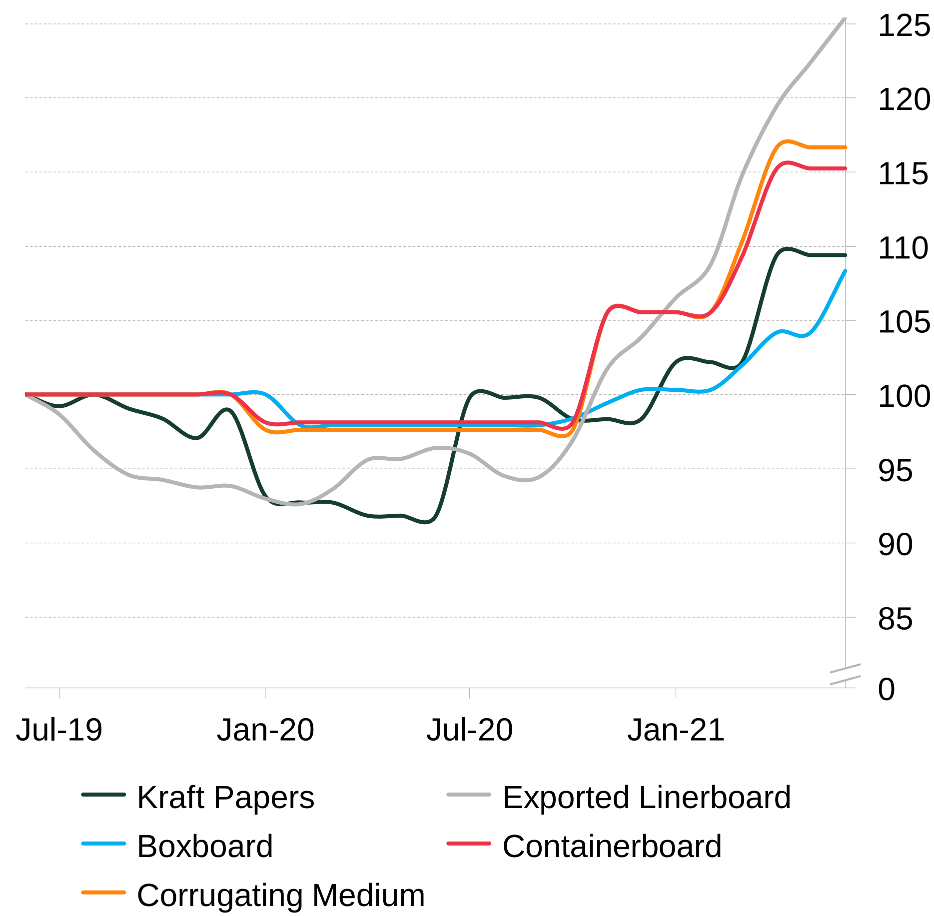
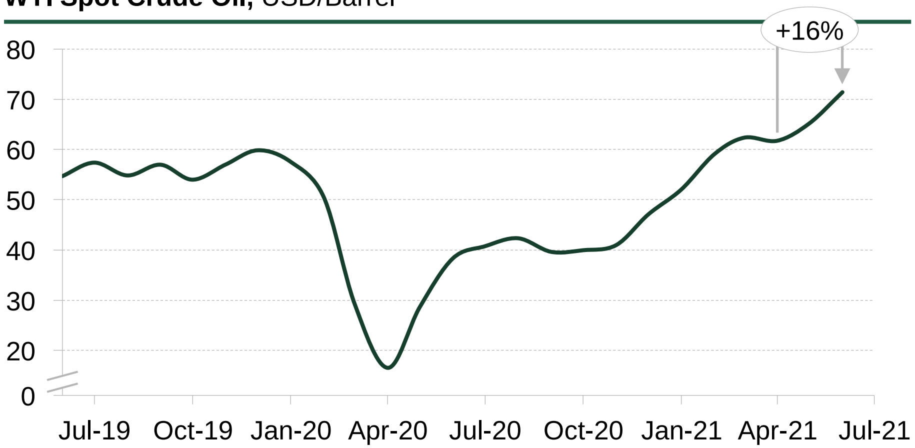


Note: Midpoint price levels.
Source: RISI PPI Pulp & Paper Week.

Crude oil prices increased by 16% while most currencies appreciated against USD in Q2 2021

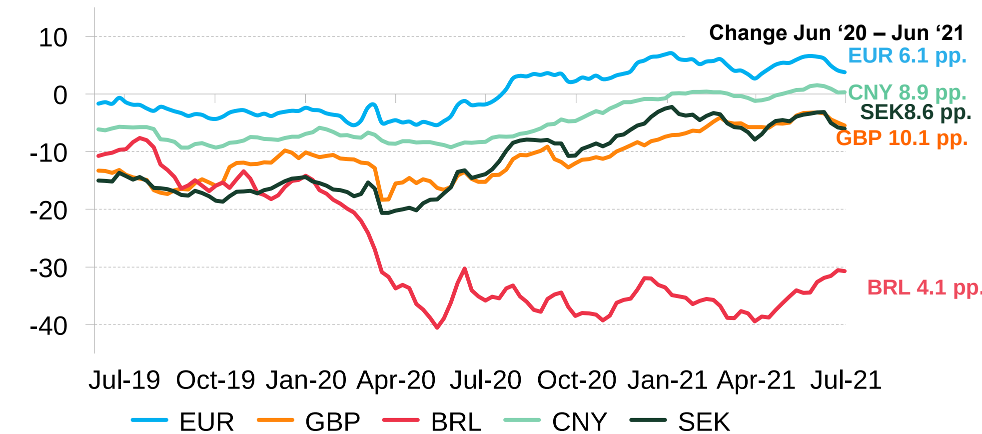
Commodity & Currency Price Development, Last 24 months

WTI Spot Crude Oil, USD/Barrel



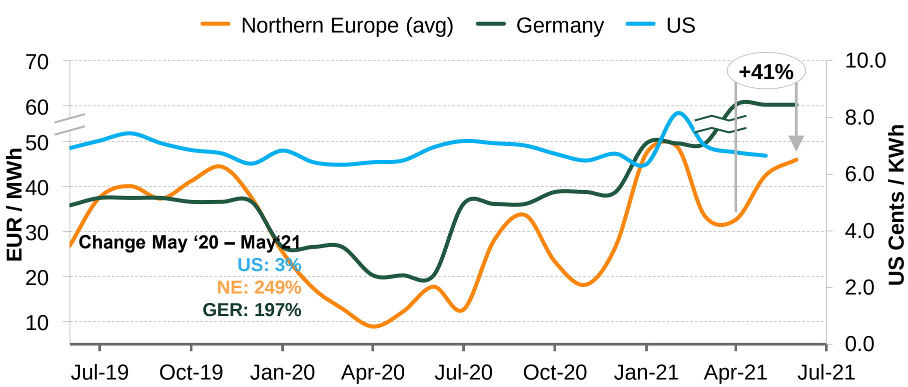
Source: US Energy Information Administration.

Currency appreciation against USD, %



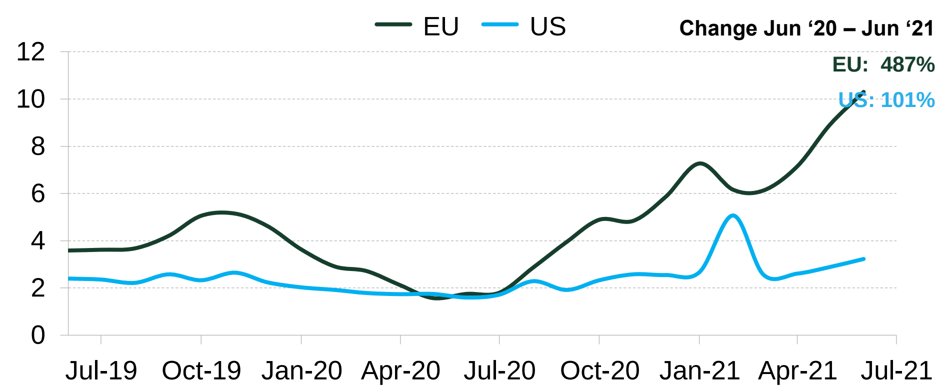
Source: S&P Capital IQ.

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 & investment firm founded on the principles of lean growth and entrepreneurship

1997 Background as an internal consultancy and change agent within the Swedish ***Stenbeck Group…***

KINNEVIK

2021 …today, a hands-on consultancy supporting clients **across industries**

Industries of Expertise

- Chemicals and Process
- Industrial & Engineering
- Telecom and Media
- Consumer Goods
- Automotive

Applied Value Group

Investments

Selected portfolio companies

HUMAN CARE, COSMOSID, Division 5 Inc Steel Fabrication, rivermeadow, Bake My Day, Kaunis Iron, PNP Stålhallar, Sourcing Value, Söderfors Steel

Management Consulting

APPLIED VALUE

Social Impact

CIO, Hand in Hand, Straight Ahead Ministries, World Vision, Exodus, Opportunity International, Wenham House, KRIS, Code for Life

ROI driven

Fact-based

Practical over theoretical

Hands-On

Global perspectives

Applied Value challenges and supports global clients across industries from six offices

Selected clients

GM, PEPSICO, ERICSSON, SCA, Facebook, Epiroc, Whirlpool, BILLERUDKORSNÄS, VERSO, SONY, BMW, AHLSTROM MUNKSJÖ, telenor, B/S/H/, UPS, Vestas, FCA FIAT CHRYSLER AUTOMOBILES, WestRock

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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 Market-Customer-Cash Time

Example Offerings

- **Strategy & Organization -** Go-to-Market Strategy, G&A Productivity, Capital Management, Digitalization & IT
- **Commercial Excellence & Pricing -** True Profitability, Portfolio Optimization, Sales Efficiency, Pricing Model, Governance
- **Sourcing & Procurement -** Sourcing Strategy, Negotiations, Risk Management, SRM, Competence Development
- **Supply Chain & Operations -** Supply Chain Strategy, Inventory Management, Operational Excellence
- **Product & Innovation -** Portfolio Profitability, VA/VE, R&D Strategy & Efficiency, Product Lifecycle Management
- **Mergers & Acquisitions -** Commercial Due Diligence, Operational Due Diligence, Post-Merger Integration

Applied Value has extensive experience in the Pulp & Paper industry and has helped several businesses achieve tangible results

Example of client engagements

Area	Results
Turnaround	• EBIT improved from **4% to 20%** over a 4-year period for an Integrated Pulp & Paper company • Capital Turnover Ratio was improved from 0.55 to 0.9
Commercial Excellence	• **Market disruptive value prop**, charging for service and complexity, developed and implemented • Potential of **350 SEK/ton** identified (excluding organizational streamlining enabled by the concept)
Sales Efficiency & Effectiveness	• Potential **SG&A reduction of 15%** identified for a global Pulp & Paper company • Service level differentiation and customer categorization were enablers
True Profitability	• True profitability findings enabled **EBIT improvement of 5 ppt** for a leading Paper division • Actions included portfolio rationalization, new pricing model and customer segmentation
Pricing Excellence	• A **fact-based pricing tool** was developed for a leading Packaging company • True costs and customer value were considered in the market disruptive pricing concept
Production Efficiency	• **Sheeting capacity increased by 15%** over a 3-month period • Key actions were related to engagement and discipline, planning and material flows
Supply Chain Optimization	• Variable cost reduction of **500 SEK / ton** achieved by supply chain optimization • Addressing sub-optimizations and optimizing the production cycle were key initiatives
Working Capital Efficiency	• Potential **gross margin improvement of ~5%** for a Global Wood Supply company • Inventory reduction potential of 40% identified and concrete action plan handed over

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 **driving change** and **creating immediate impact** for our clients

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APPLIED VALUE GROUP