Applied Value
Pulp & Paper Report

Quarterly Analysis Q3, 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 impacting the industry

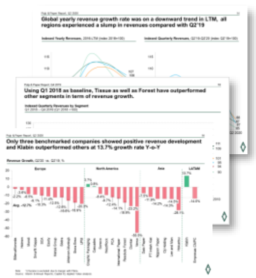
In this Pulp & Paper Report, Applied Value provides essential financial benchmarking focused on the latest quarter and 12-month period while also offering a brief update on the latest market trends.

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

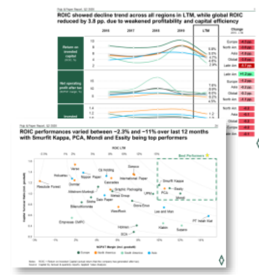
Average Industry EBITDA margin latest 4 quarters and LTM

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

ROIC

ROIC per region for the latest two 12-month periods

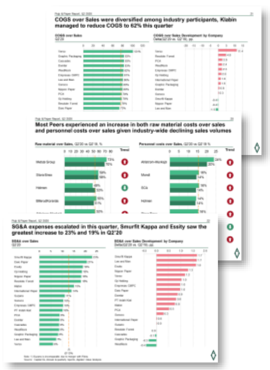
ROIC development per company and region for LTM



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 Q3 2021 report

Market	Company	Revenue LTM (BEUR)	Country	Board	Paper	Tissue	Wood Products	Pulp	Other
Europe	Essity	11.7				✓			✓
	Stora Enso	9.6		✓	✓		✓	✓	✓
	UPM	9.3			✓		✓	✓	✓
	Metsä Group	5.8		✓	✓	✓	✓	✓	✓
	BillerudKorsnäs	2.5		✓	✓			✓	✓
	Södra	2.4					✓		✓
	SCA	2.0		✓	✓	✓	✓	✓	✓
	Holmen	1.9		✓	✓		✓		✓
North America	International Paper	18.9		✓	✓		✓		✓
	WestRock	16.2		✓	✓				✓
	Packaging Corp. of America	6.4		✓	✓				✓
	Graphic Packaging	5.9		✓	✓				✓
	Sonoco	4.8		✓	✓				✓
	Cascades	3.4		✓	✓	✓			✓
	Resolute Forest	3.1			✓	✓	✓	✓	✓
	Verso	1.1			✓			✓	✓
LAT AM	Suzano	6.0			✓			✓	✓
	Empresas CMPC	5.2		✓	✓		✓	✓	✓
	Klabin	2.4		✓	✓		✓	✓	✓
Asia	Oji Holding	10.9		✓	✓		✓		✓
	Nippon Paper	8.1		✓	✓		✓		✓
	Daio Paper	4.6		✓	✓				✓
	Shanying	4.3		✓	✓	✓	✓	✓	✓
	PT Indah Kiat	4.0		✓	✓				✓
	Shandong Sunpaper	2.8		✓	✓			✓	✓
	Hokuetsu	1.9			✓			✓	✓

Source: Capital IQ, Quarterly Reports

Positive Y-o-Y revenue and profitability improvements in Q3 2021, driven by rising pulp and paper prices

Financial Benchmarking: Highlights in Q3 2021

Key takeaways

Revenue Growth

- Yearly industry revenue experienced an average growth of 14% in LTM compared to FY20 across the industry due to continued high level pulp prices and strong market demand
- All regions showed an upward trend in Q-o-Q and Y-o-Y performance with revenue in Latin America growing with the most momentum; Europe, North America, Latin America and Asia reported moderate Q-o-Q revenue growth of 2%, 4%, 6%, and 4% respectively
- Shandong Sunpaper, Suzano, Södra, and Klabin were top industry performers in this quarter with reported Y-o-Y revenue growth of +51.7%, +44.1%, +42.1%, and +40.2%

Top performers: SÖDRA, suzano, 太陽紙業 SUN PAPER, Klabin

Profitability & Costs

- All segments demonstrated an upward trend in terms of quarterly EBITDA margins compared to the previous quarter; while paper and pulp showed the most rapid growth, profitability of tissue in Q3 2021 was inferior to pre-pandemic performance
- Most benchmarked companies showed positive profitability development compared to the prior year with SCA, Södra and Resolute Forest as top performers with Y-o-Y profitability growth of 55 pp., 28 pp., and 26 pp. respectively
- Raw material and personnel cost over sales were successfully controlled by most European firms; SCA was best-in-class and reduced its personnel cost by 15 pp. compared to the prior year
- Company performances on COGS over sales varied with an industry average of 74%; Verso managed to reduce its COGS by 20.2 pp. driven primarily by a reduced operation scale

Top performers: SCA, SÖDRA, resolute Forest Products, VERSO

Return On Invested Capital (ROIC)

- Driven by increasing profitability, the global ROIC average grew by 1.7 pp. to 7.7% in LTM
- Companies in Europe and North America displayed rise of 1.2 pp. and 0.8 pp. respectively in regional ROIC on average in Q3 2021; Latin America displayed stronger growth momentum in ROIC with 4.2 pp. growth to 8% in LTM
- Resolute, Shandong Sunpaper, Södra and PCA were top industry performers in LTM with ROICs >12%

Top performers: resolute Forest Products, 太陽紙業 SUN PAPER, SÖDRA, PCA

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

Pulp prices stabilized at high levels in Q3 2021 with signs of downward movement observed

Market Trends: Highlights in Q3 2021

Key takeaways

Industry News	› The European Commission (EC) carried out antitrust inspections at several pulp producers in Europe in early November on concerns that they may be taking part in a cartel. Five producers – Finland's UPM, Stora Enso and Metsä Fibre, Sweden's Södra and the German operations of Canada's Mercer International confirmed that they had been visited by EC inspectors. Other pulp producers such as Holmen, SCA and Norske Skog were reportedly not targeted; Against the continuously rising pulp prices, the sudden antitrust inspection may play a role in calling off the upward trend of pulp and paper prices › Prices on the European containerboard market have been rising ceaselessly in LTM driven by a steady economic recovery after the lockdowns and the boom in online shopping combined with the wave of movement away from plastics. Maintenance downtime in winter and low stock on the supply side as well as expensive input costs also contributes to the price surge › Electricity and natural gas in Europe continued to soar in Q3 2021 due to shortage of energy supply; Electricity prices displayed rise of 143% and 169% in North Europe and Germany respectively compared to that of Sep. 2020
Pulp Prices	› Pulp prices stagnated in Q3 2021, yet a falling trend started to appear; prices in Northern Europe, US East, and Asia saw growth rates of approx. 63%, 41% and 40% in 12 months respectively › Global paper industry continued to be impacted by high pulp prices and strong market demand over Q3 2021. Despite pulp availability improved, the dynamics of global COVID-19 prevention added uncertainties to the situation
Graphic Paper & Packaging	› Prices of packaging paper and graphic paper continued the upward trends this quarter; prices of uncoated freesheet displayed a flattened trend in Q3 2021 › Prices of packaging paper prices kept growing with exported linerboard and boxboard prices increased greatly over the past quarter
Commodities & Currencies	› Oil prices stabilized at high level during the quarter and ended at ~72 USD/barrel in Q3'21 › Natural gas prices experienced rapid growth with 478% in Europe and 166% in United States in LTM › Most currencies continued to appreciate against USD in this quarter; Compared to the prior year, GBP, CNY, BRL and SEK were up by 5.7pp., 5.0 pp., 1.7 pp., and 2.5 pp. respectively; only the EUR depreciated against the USD by 0.3 pp. in LTM

Source: RISI, Interim & Annual Reports.

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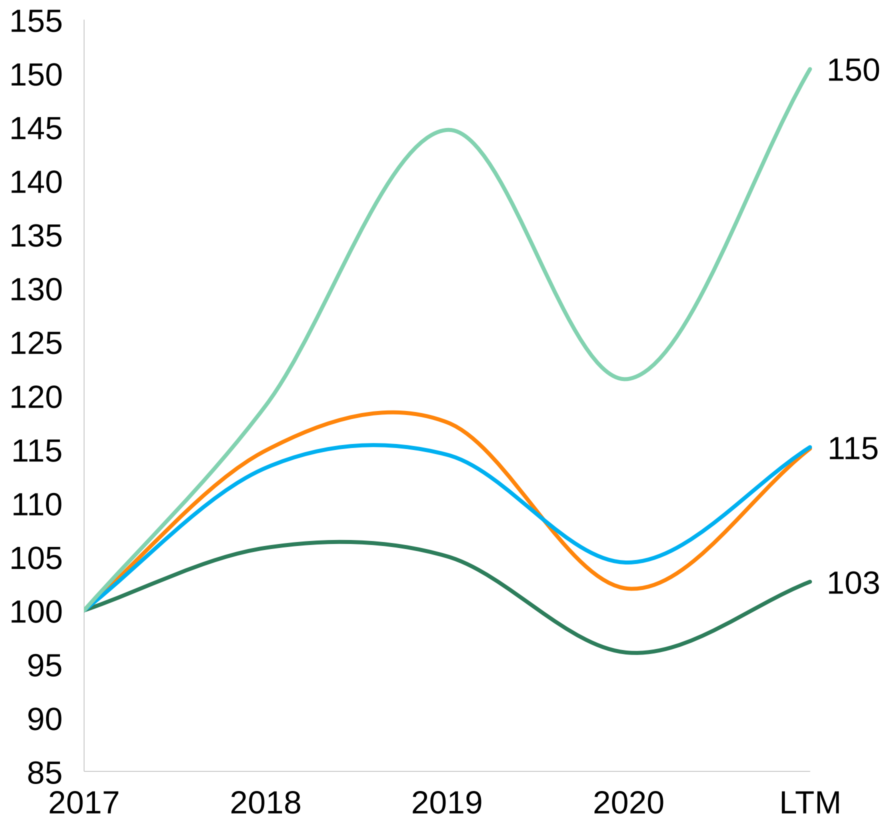
Top performers

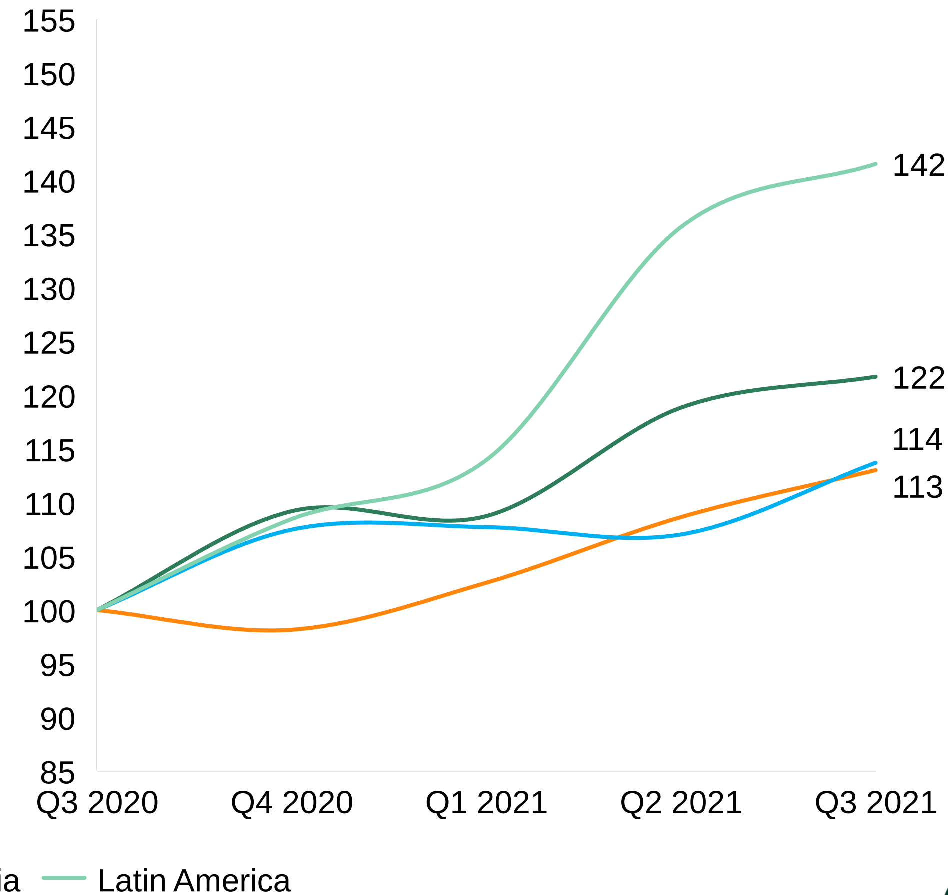
Source: RISI, S&P Capital IQ, Interim & Annual Reports.

All regions experienced rises in yearly revenue in both LTM and quarterly revenues on a Q-to-Q basis in Q3’21

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



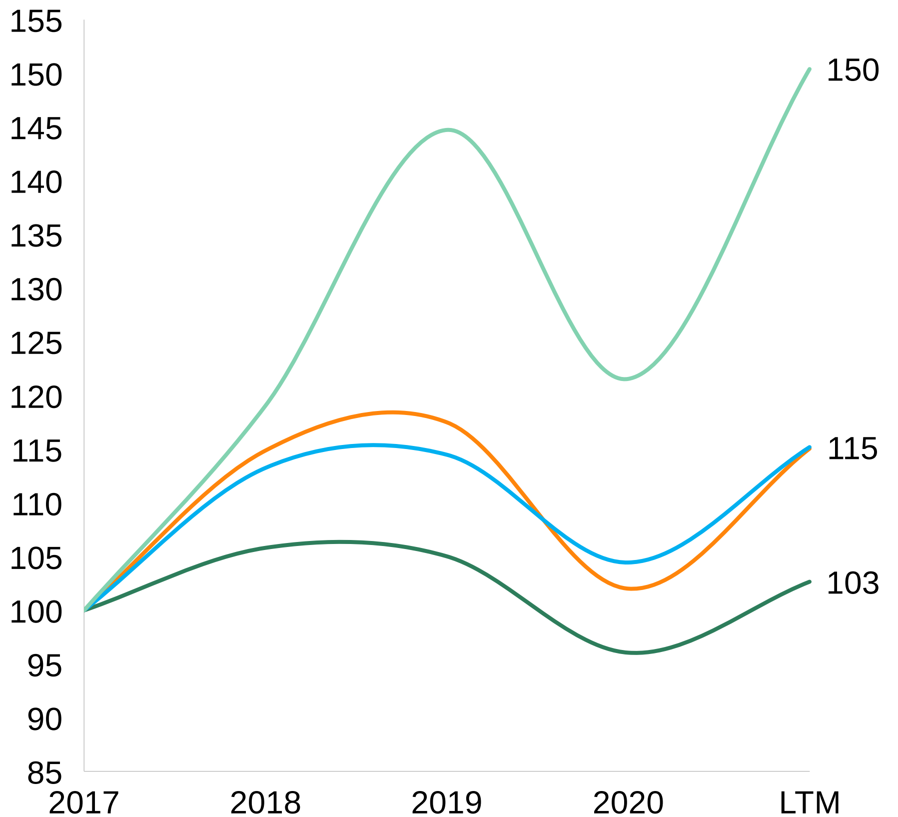
Indexed Quarterly Revenues, Q3’20-Q3’21 (index Q3’20=100)



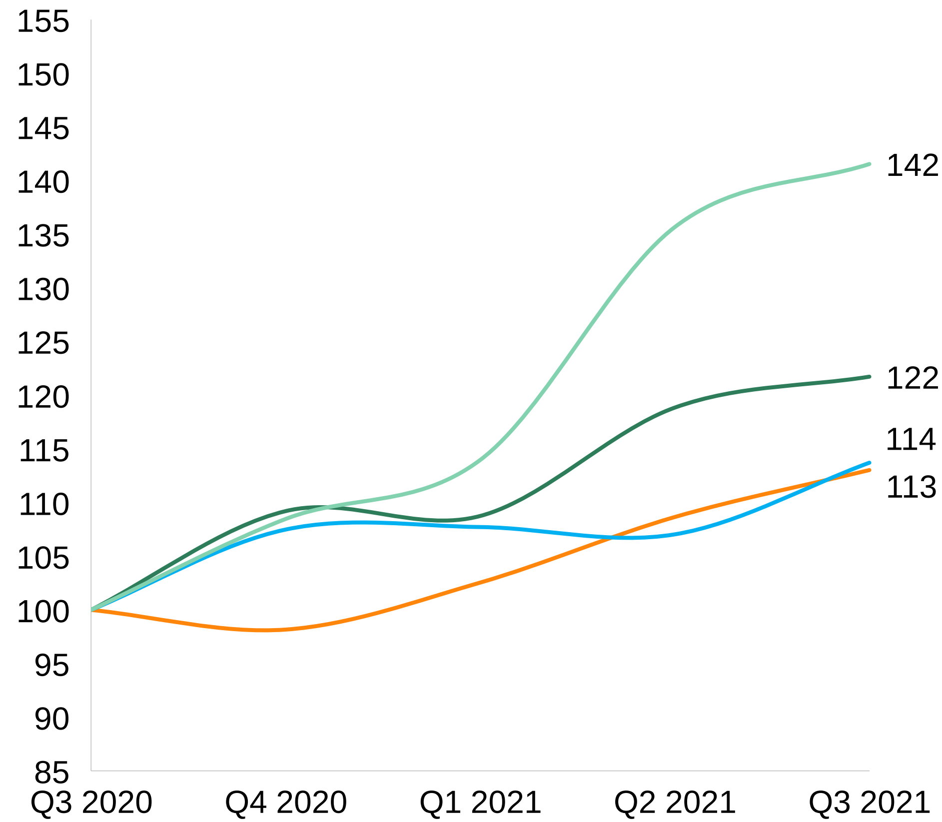
Source: S&P Capital IQ, Interim & Annual Reports, Applied Value Analysis.

All regions saw rises in revenue both in LTM and on a Q-to-Q basis

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



Indexed Quarterly Revenues, Q3'20-Q3'21 (index Q3'20=100)

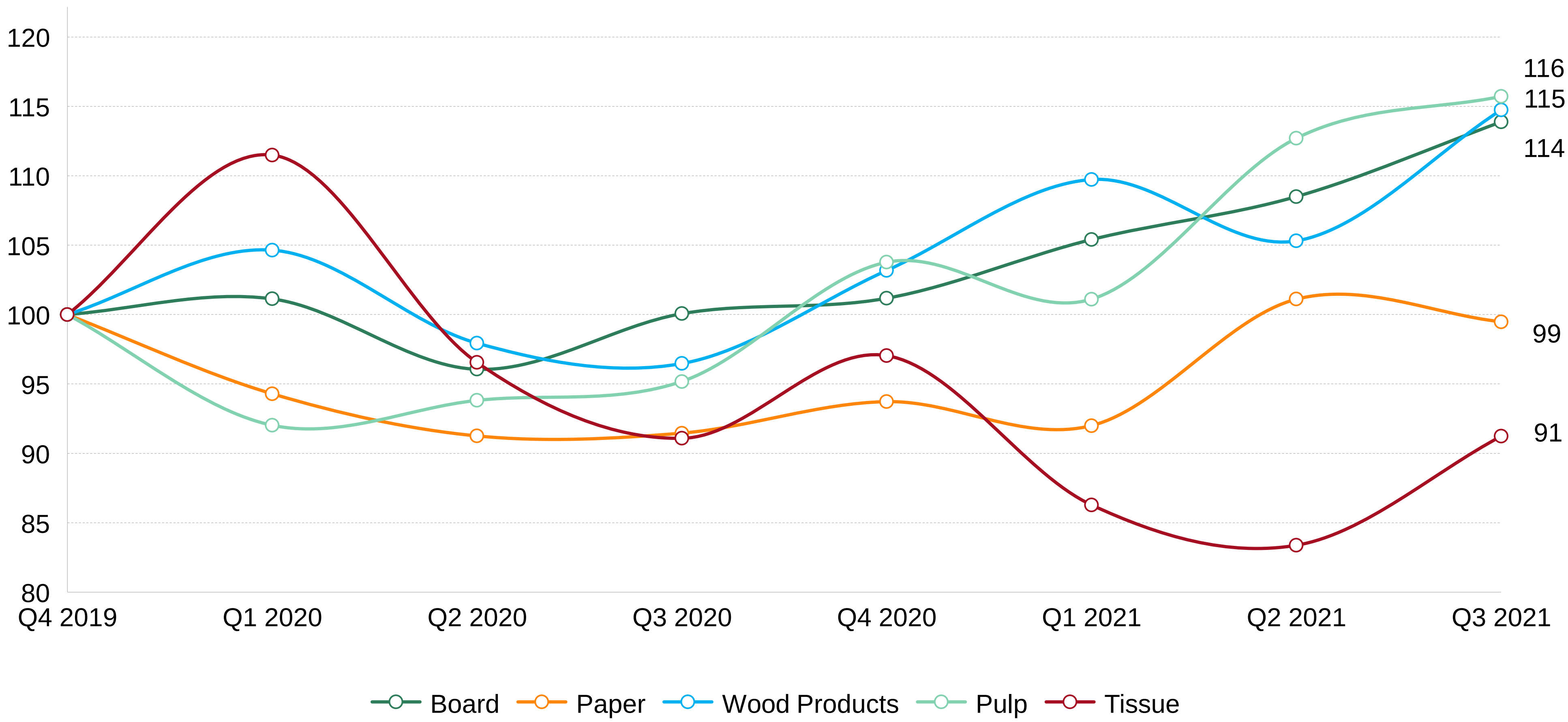


Europe, North America, Asia, Latin America

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

Most segments, especially tissue, increased revenues in Q3 2021 with paper revenue experiencing a moderate decline

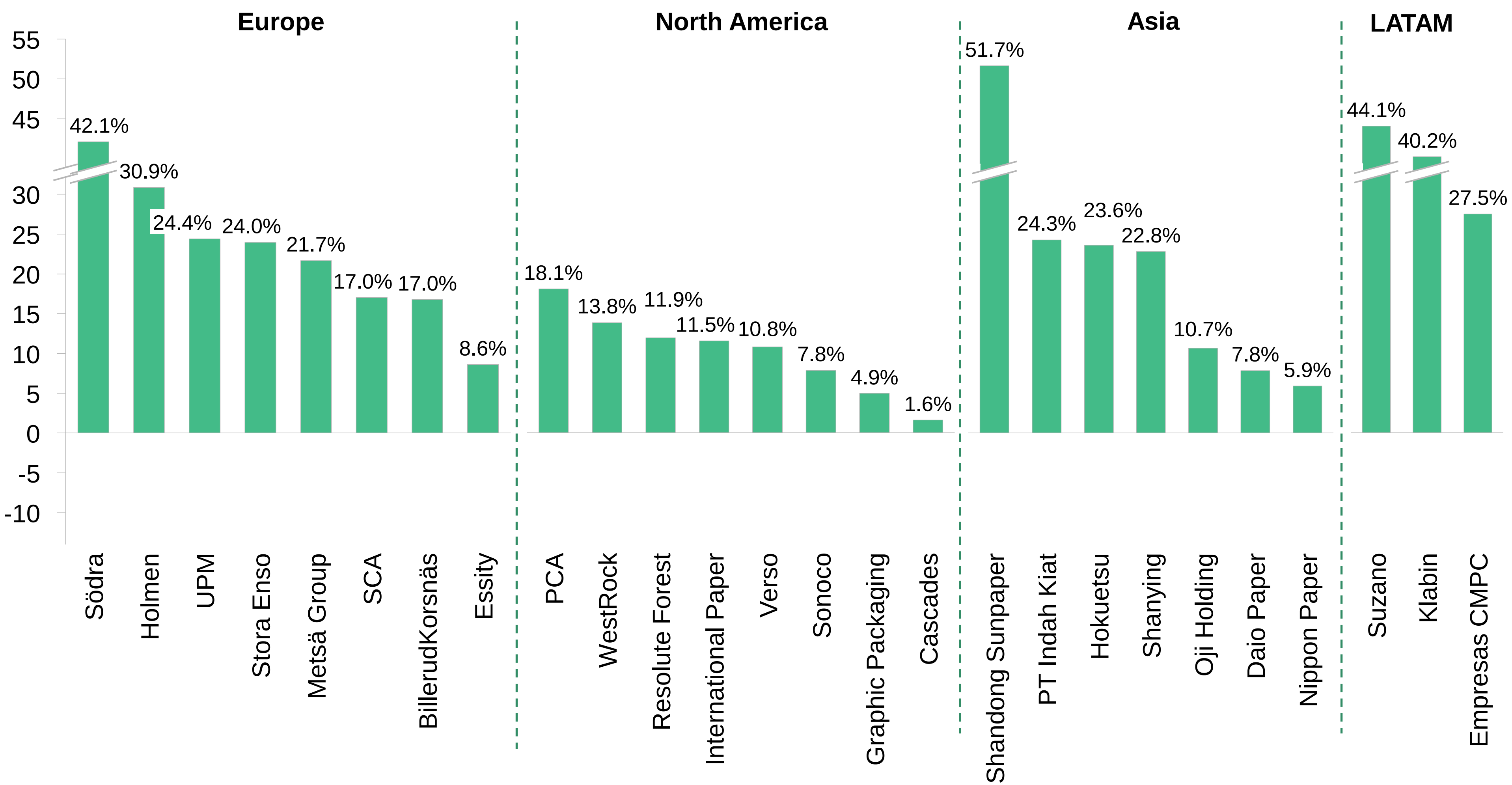
Indexed Quarterly Revenues by Segment, Q4’19 – Q3’21 (Q4’19 =100)



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

All benchmarked companies presented strong revenue growth, with Shandong Sunpaper outperforming others with a 51.7% Y-o-Y growth

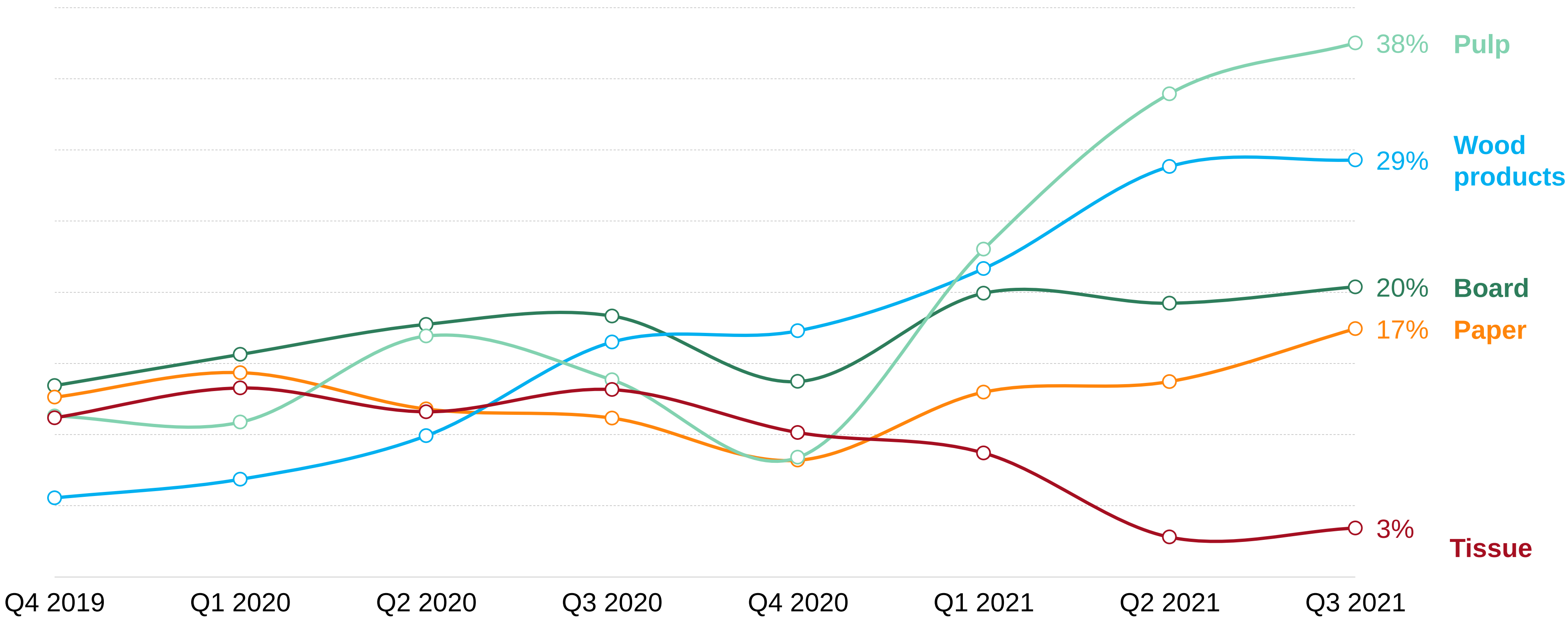
Revenue Growth, Q3'21 vs. Q3'20, %



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

Quarterly EBITDA experienced increases for all product segments in Q3 2021 due to continued growth in market demands

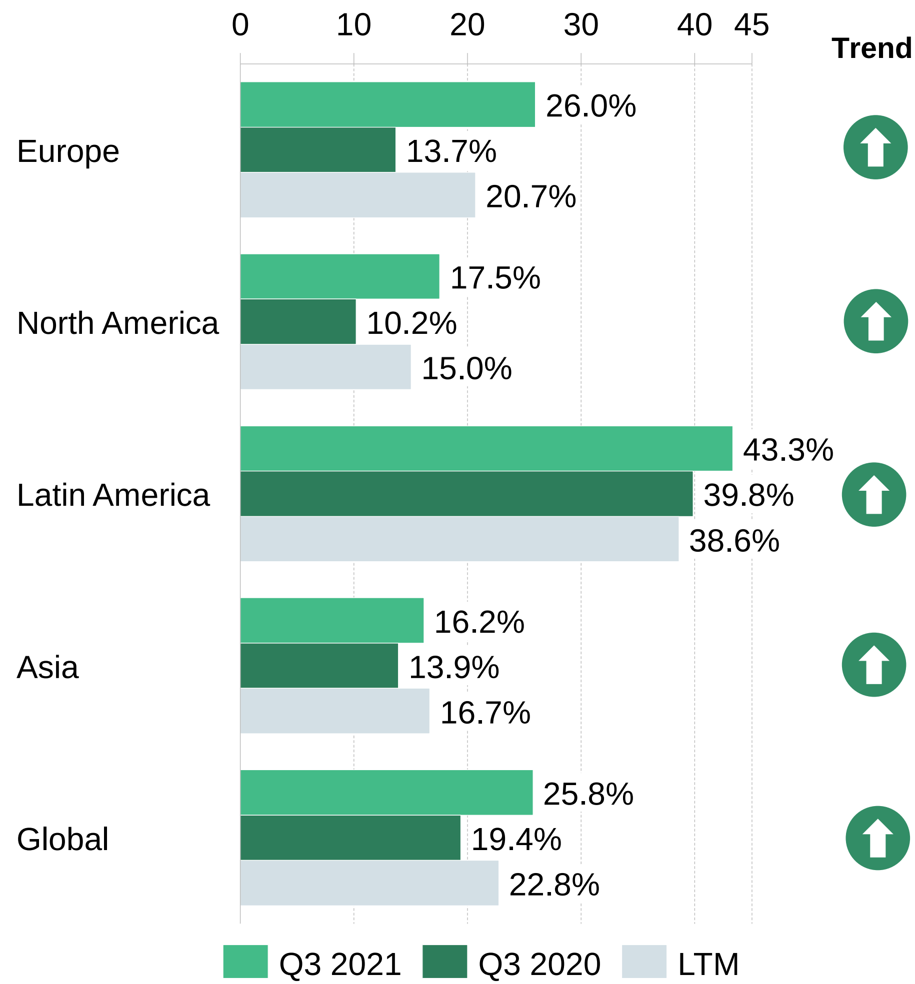
Quarterly EBITDA Margin by segment, Q4'19 – Q3'21, %



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

EBITDA margins of all regions continued growth in this quarter, while Europe achieved the greatest development in profitability by 12.3 pp.

EBITDA margin by region, Y-o-Y

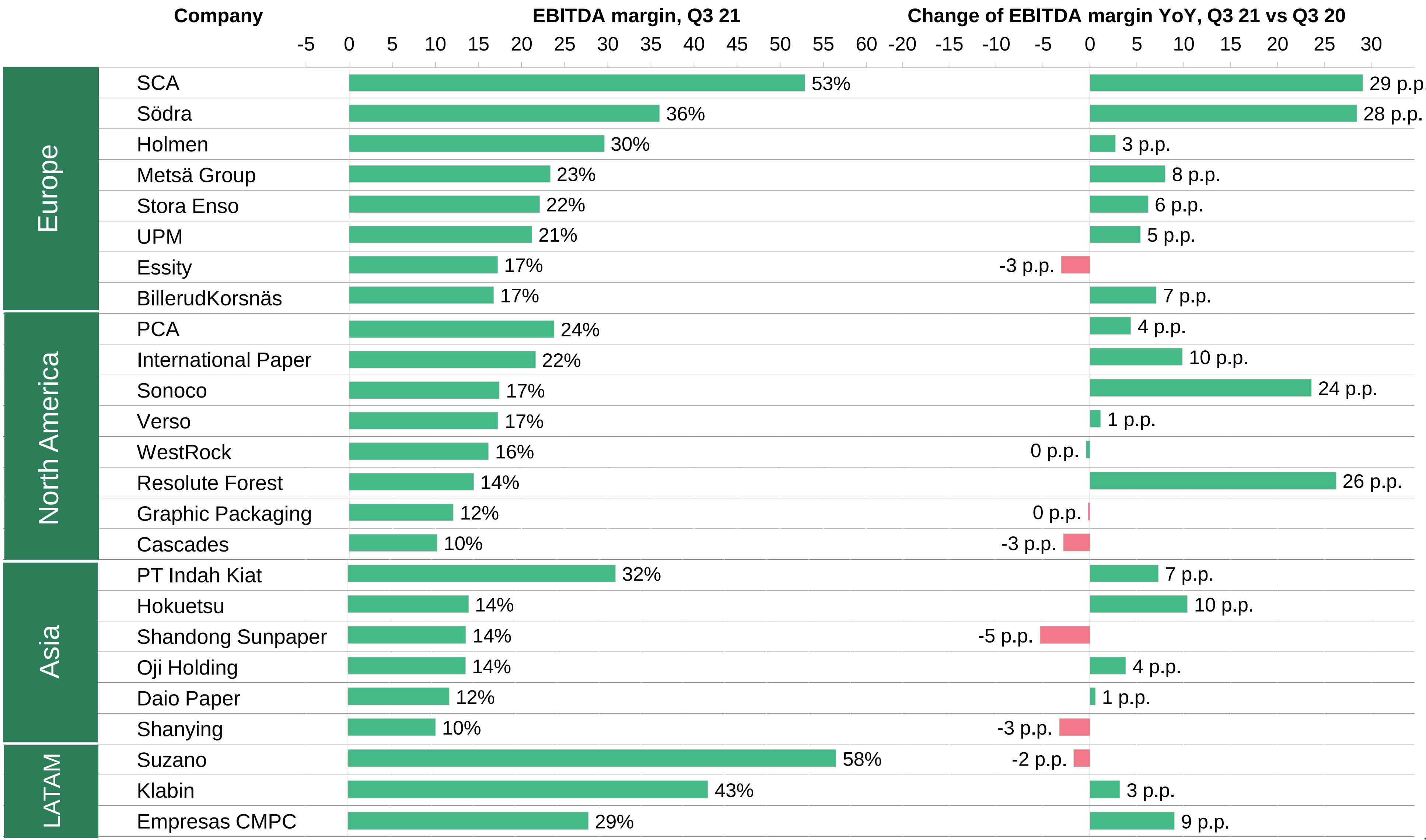


Source: S&P Capital IQ, RISI, Interim & Annual Reports, Applied Value Analysis.

Industry News

- The merger agreement between **Paper Excellence** and **Domtar** receives Canadian Competition Bureau's Approval. The deal is estimated at about **3 BUSD** with **$55.50** per share; and requires the sell of the Kamloops pulp mill to a third party
- **Stora Enso** will invest in board capacity expansion at the pulp and board mill in **Skoghall, Sweden**. The upgrade will reportedly increase the mill's capacity above **900,000 tpy**
- In August, **GreenFirst Forest Products Inc.** completed the purchase of a portfolio of forest and paper product assets from **Rayonier Advanced Materials Inc.** at a purchase price of approximately **$235 MUSD.**
- In September**, Verso** announced a confidentiality agreement with private equity firm **Atlas Holdings LLC** to negotiate a **$20** per share takeover bid made in July. Yet the prepared statement indicated that the deal might be not imminent
- On December 1, **IAC company Dotdash** announced the completion of its acquisition of **Meredith Holdings Corp** at a purchase price of **$42.18** per share.

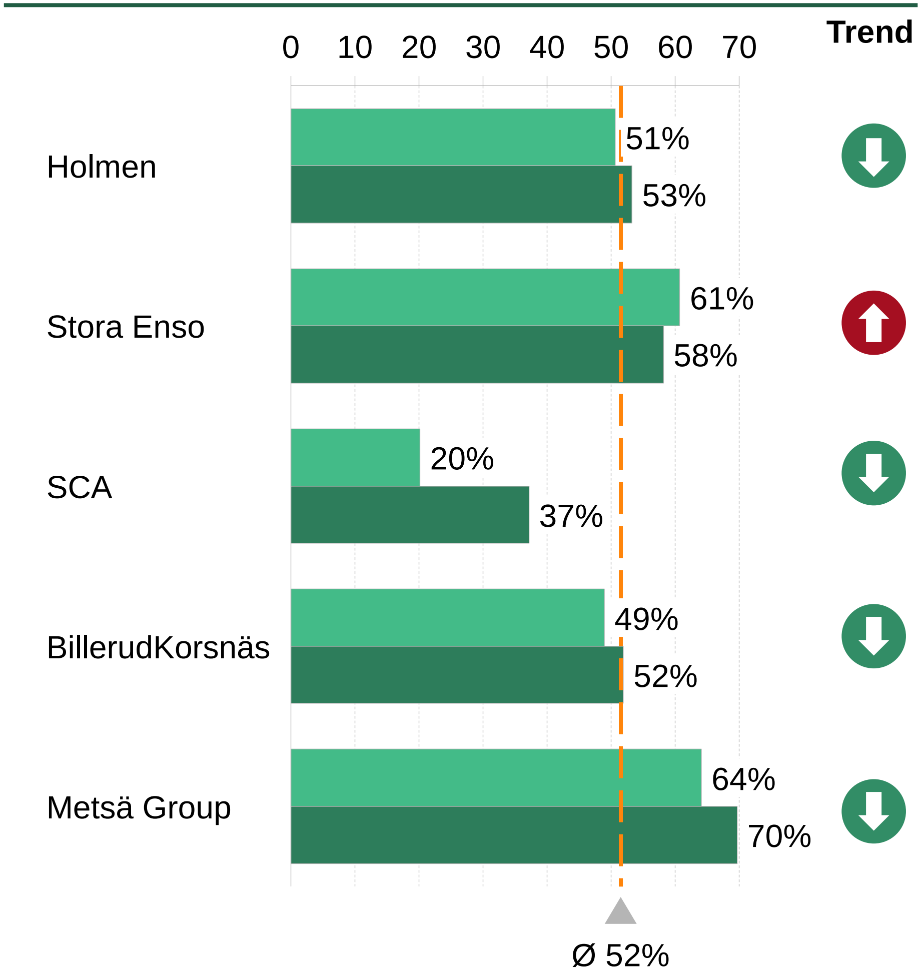
Most industry peers demonstrated upward profitability trends with SCA, Södra and Resolute Forest being the top performers among peers



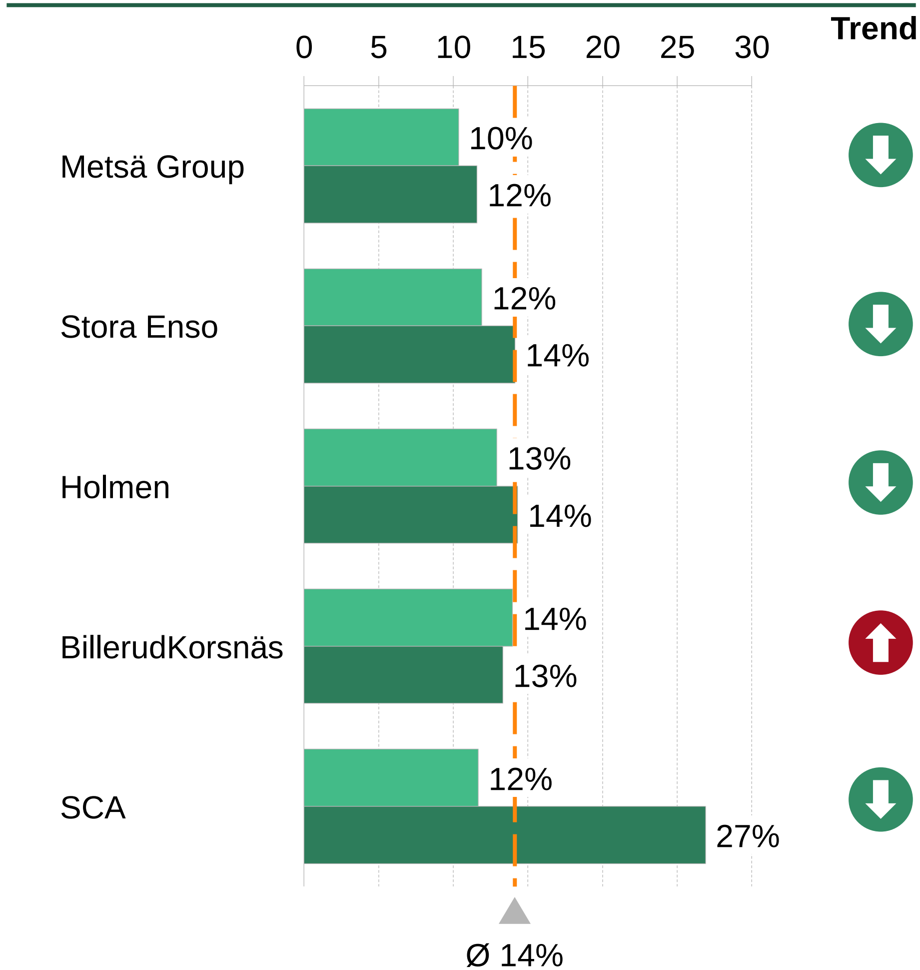
Source: Interim & Annual Reports, S&P Capital IQ, Applied Value analysis.

Most European industry players managed to control raw material and personnel costs over sales

Raw material over Sales
Q3'21 vs Q3'20, %



Personnel costs over Sales
Q3'21 vs Q3'20 %

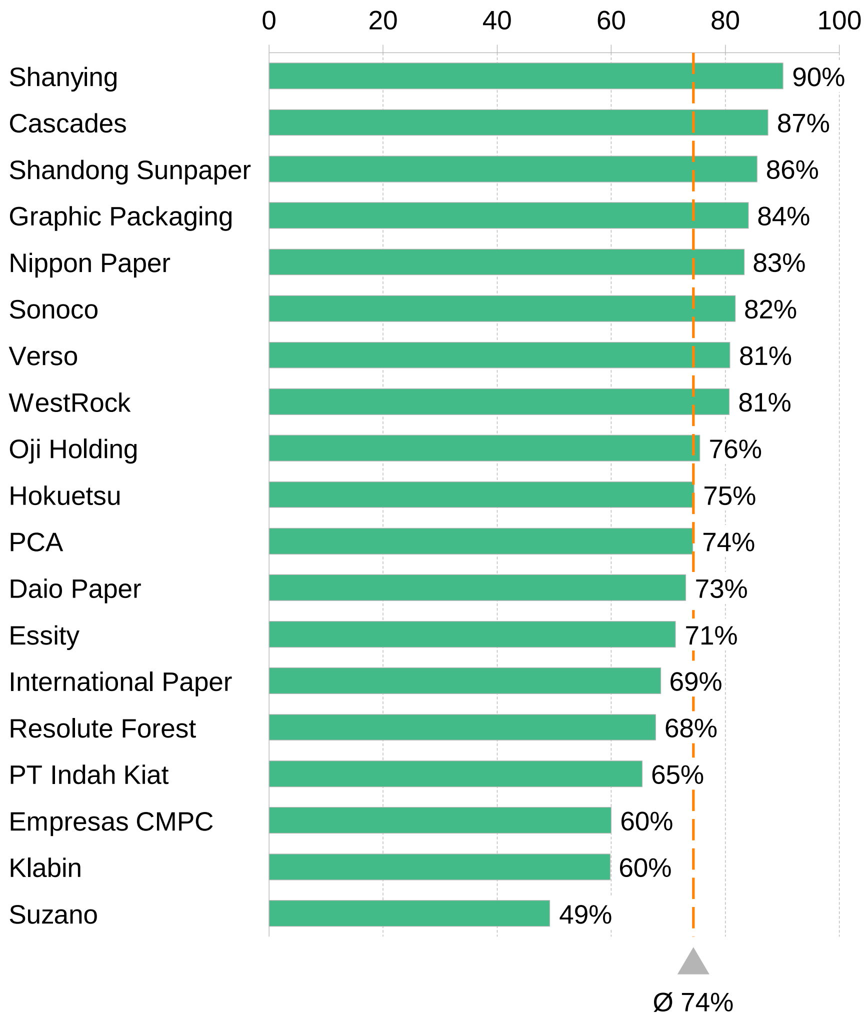


Q3 2021 Q3 2020

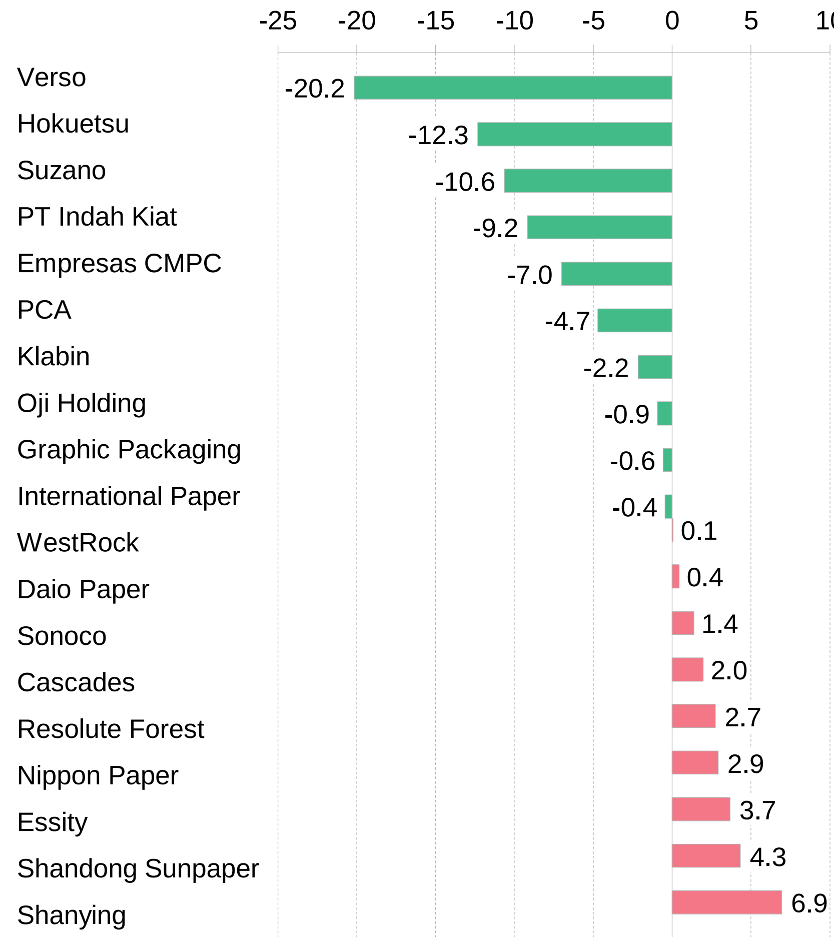
Source: S&P Capital IQ, Interim & Annual Reports, Applied Value Analysis.

Performances of COGS over Sales varied among industry players, and Verso saw the largest decrease in COGS of 20.2 pp. to 81%

COGS over Sales
Q3'21



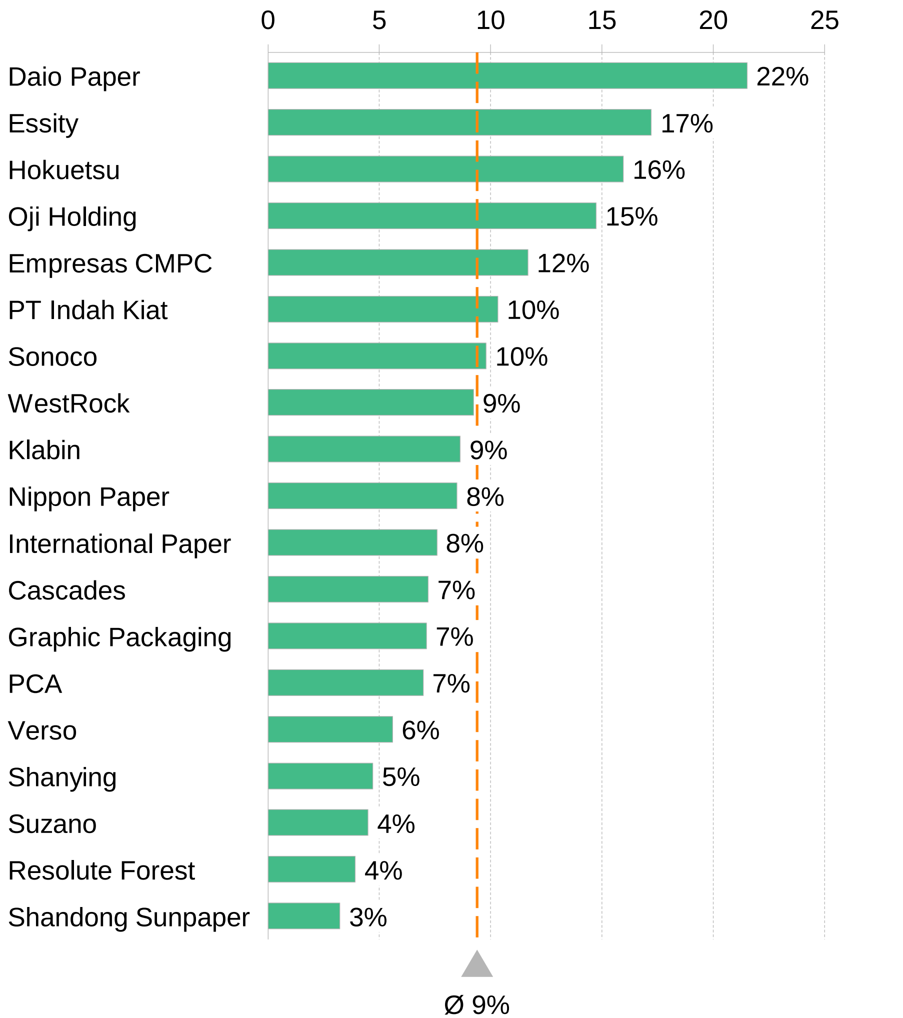
COGS over Sales Development by Company
Delta (Q3'21 vs. Q3'20), pp.



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

All benchmarked companies saw a decrease in SG&A over Sales except for International Paper who spun off its printing paper business

SG&A over Sales
Q3'21



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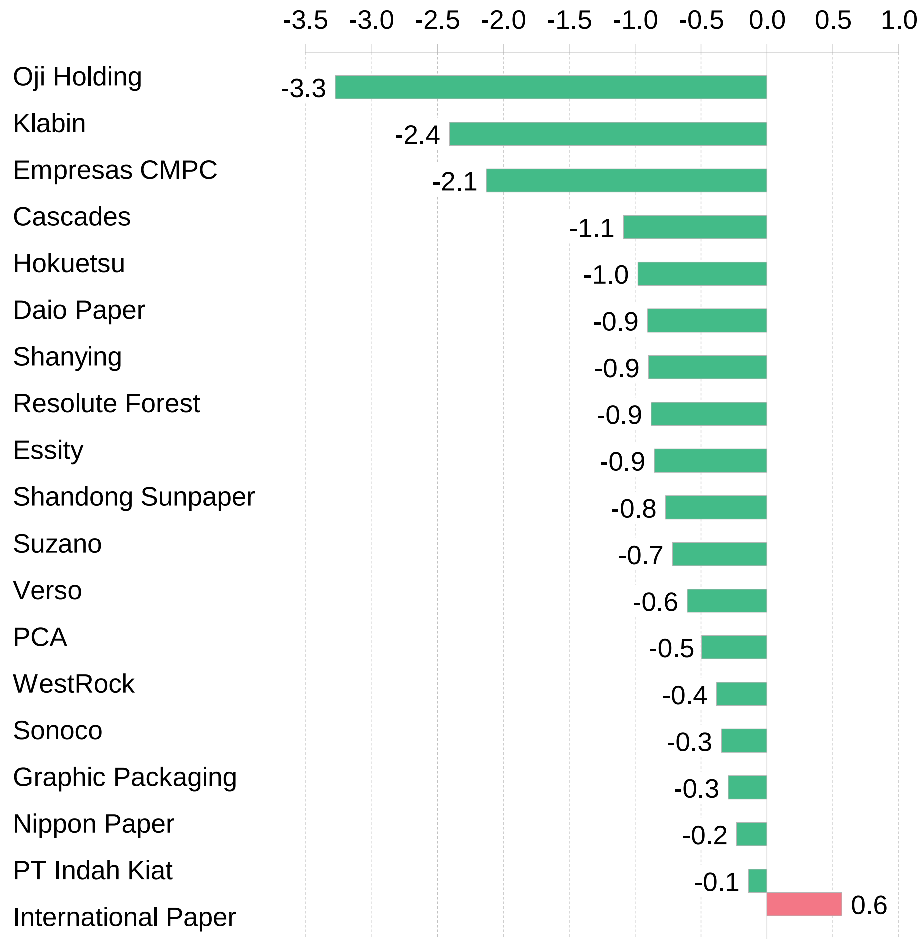
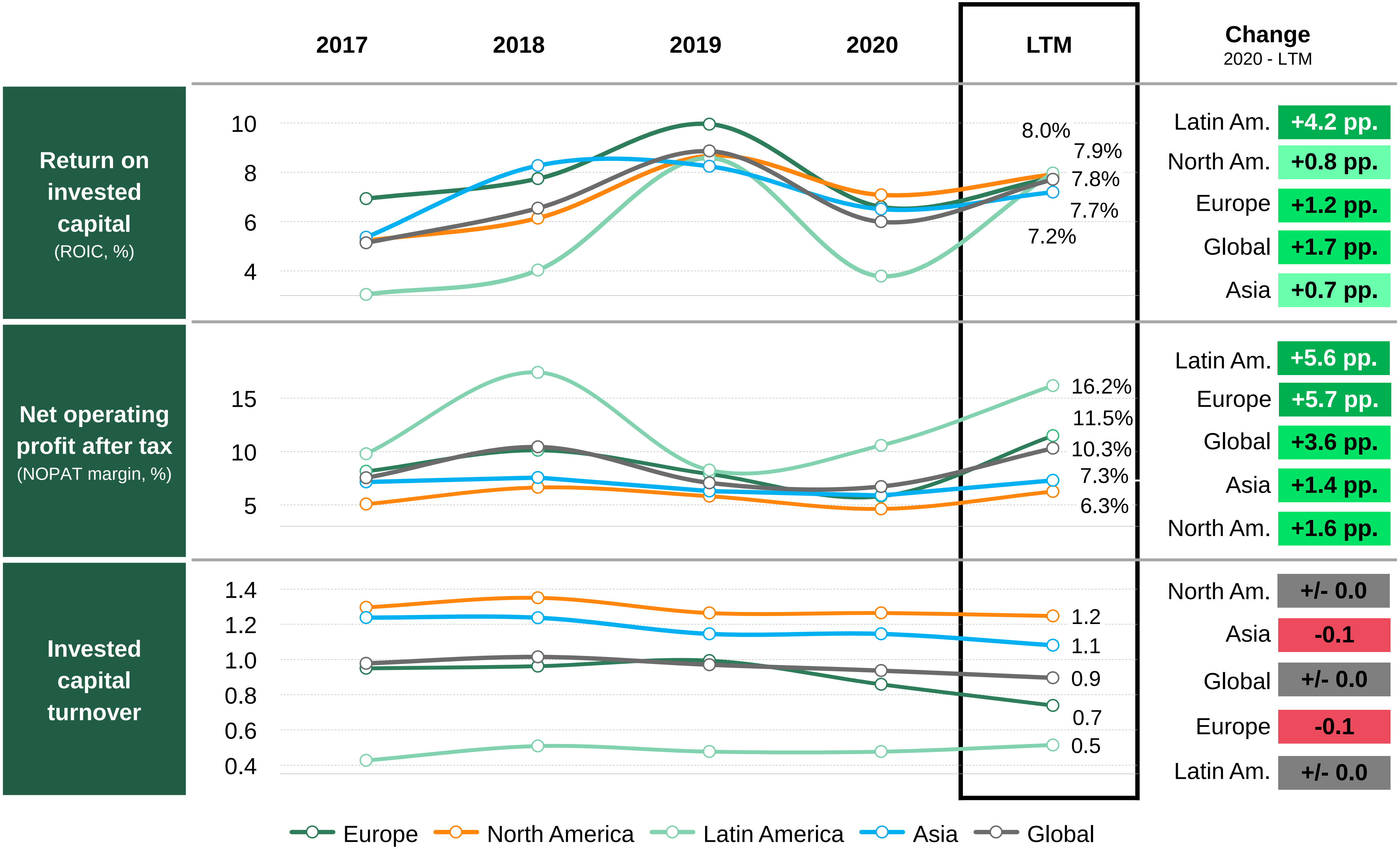


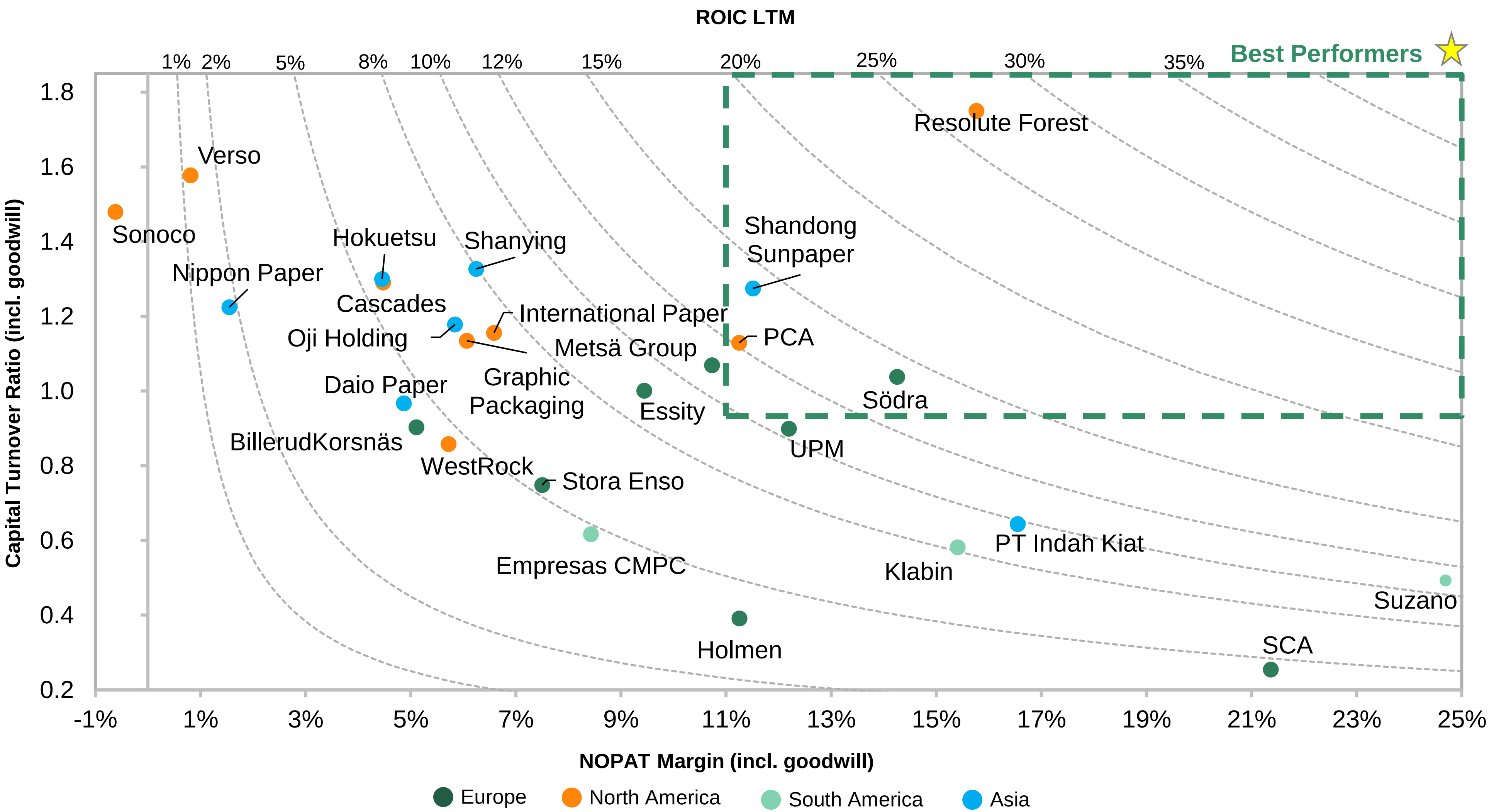
Source: S&P Capital IQ, Interim & Annual Reports, Applied Value Analysis.

All regions' ROIC increased in LTM with Latin America demonstrating a strong upturn by 4.2 pp. to 8.0%



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

ROIC performances varied between -0.9% and 30% over the last 12 months with Resolute, Södra, Shandong Sunpaper and PCA 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.

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Market Trends: Highlights in Q3 2021

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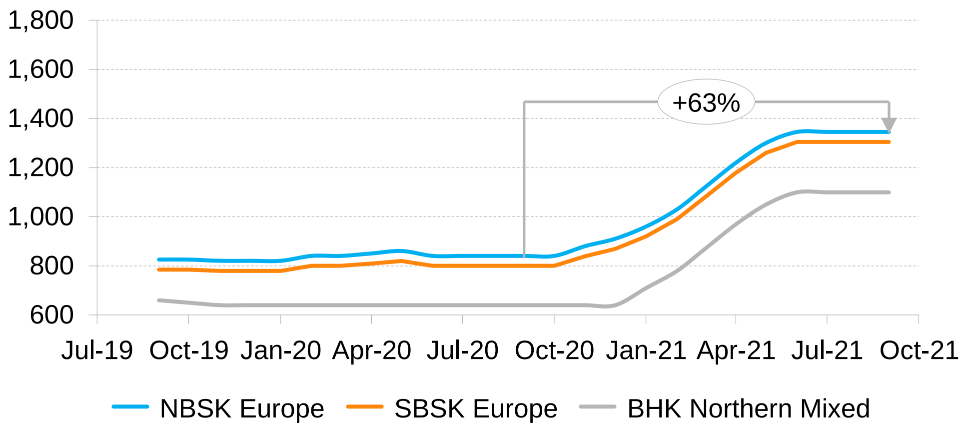
Source: RISI, Interim & Annual Reports.

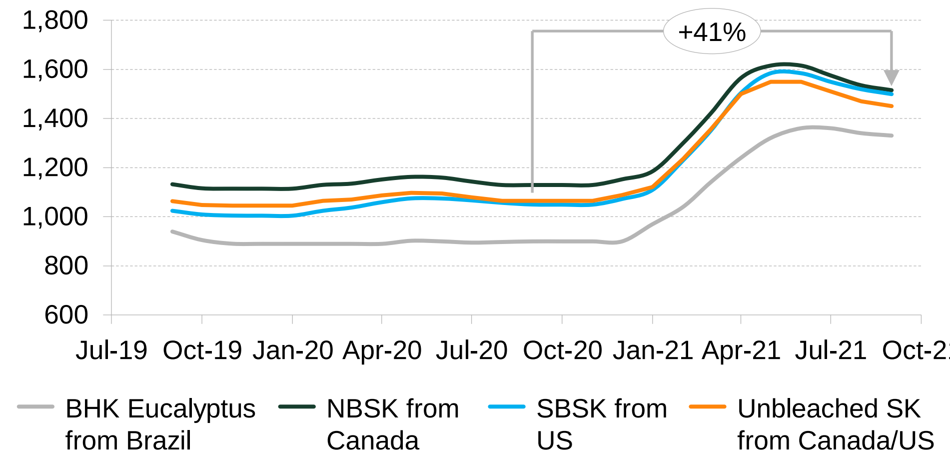
Global pulp prices increased by 40-63% compared to the prior year however most prices stagnated in Q3

Global Pulp Price Development, Last 24 Months

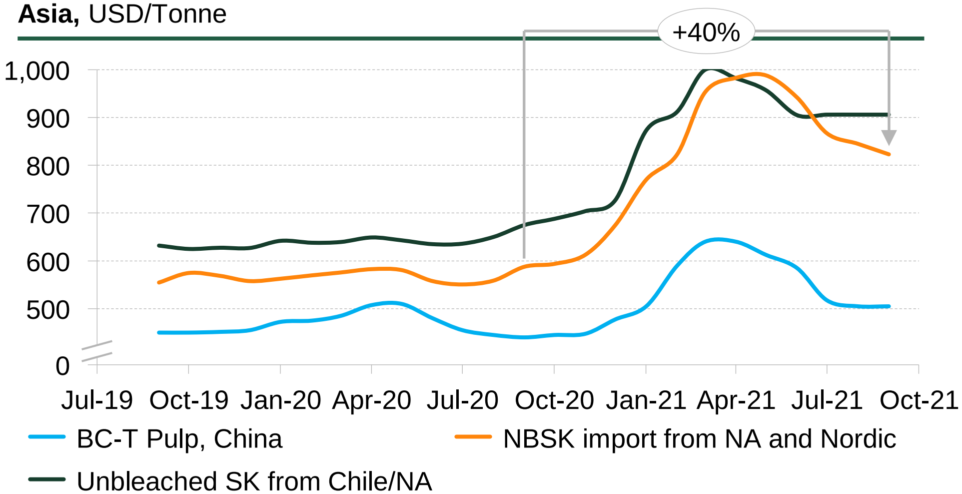
Northern Europe, USD/Tonne



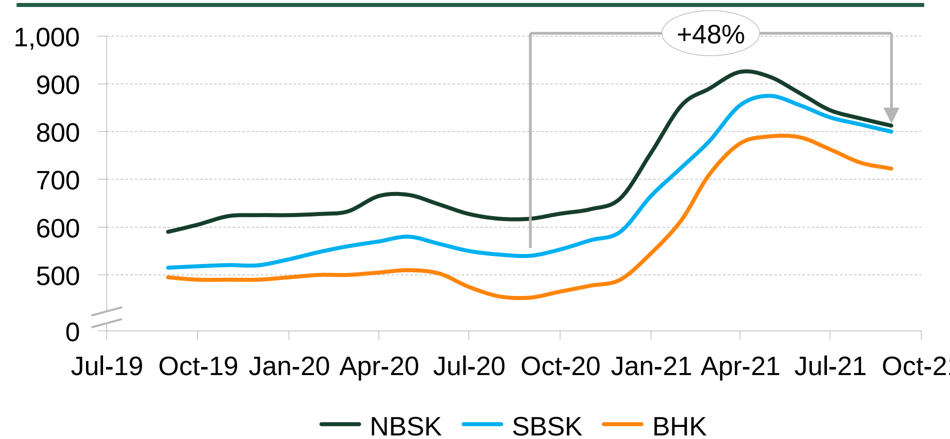
US East, USD/Tonne



Asia, USD/Tonne



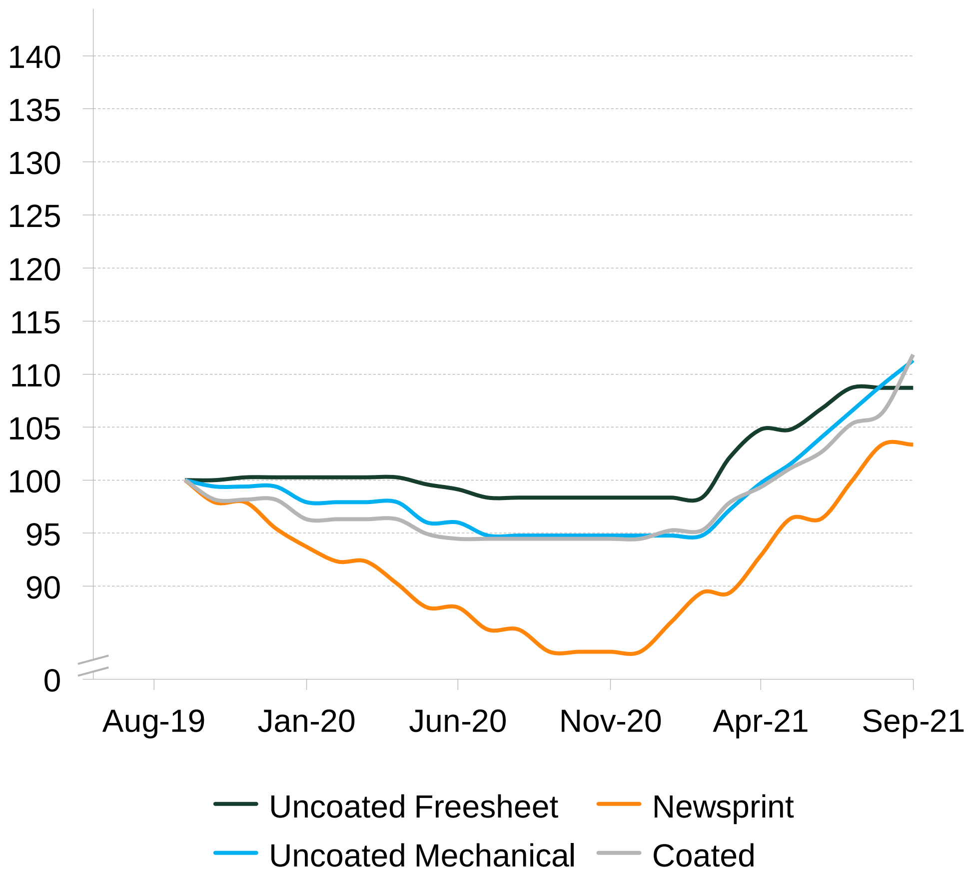
US East spot prices, USD/Tonne



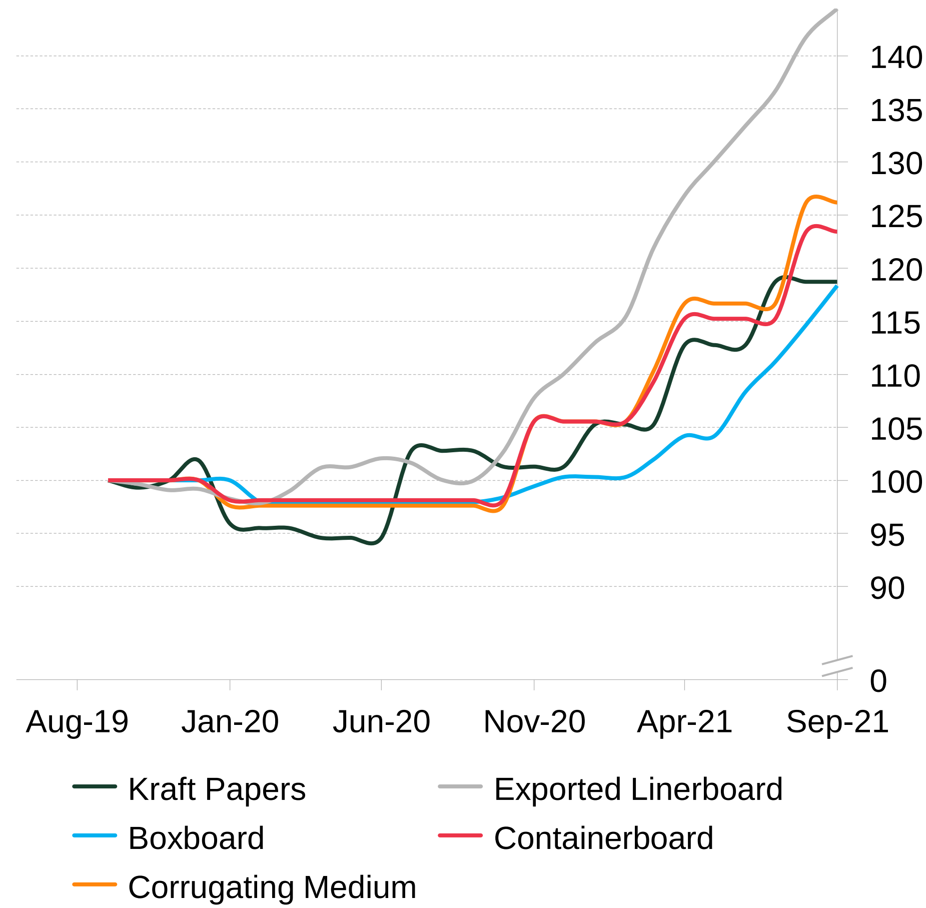
Note: Midpoint price levels.
Source: RISI PPI Pulp & Paper Week.

Prices of packaging paper and graphic paper continued the upward trends this quarter while exported linerboard and boxboard price rocketed

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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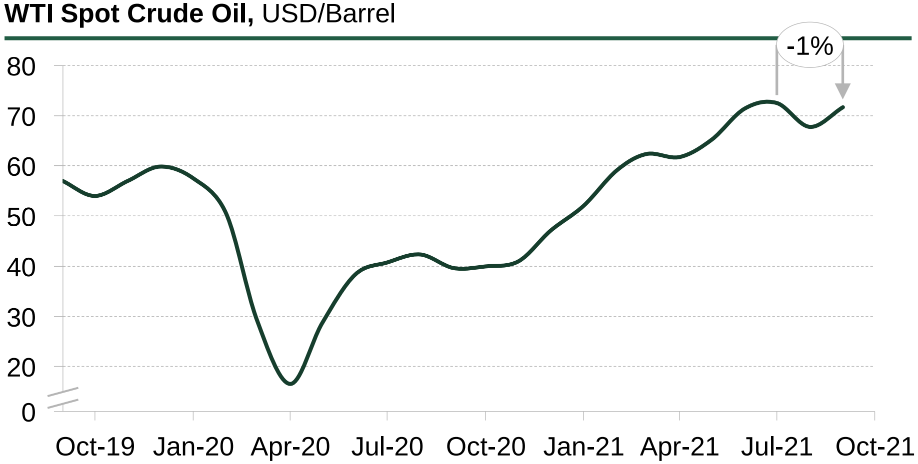
Source: RISI PPI Pulp & Paper Week.

Crude oil prices remained bullish while Electricity and Natural Gas in Europe continued to soar in Q3 2021

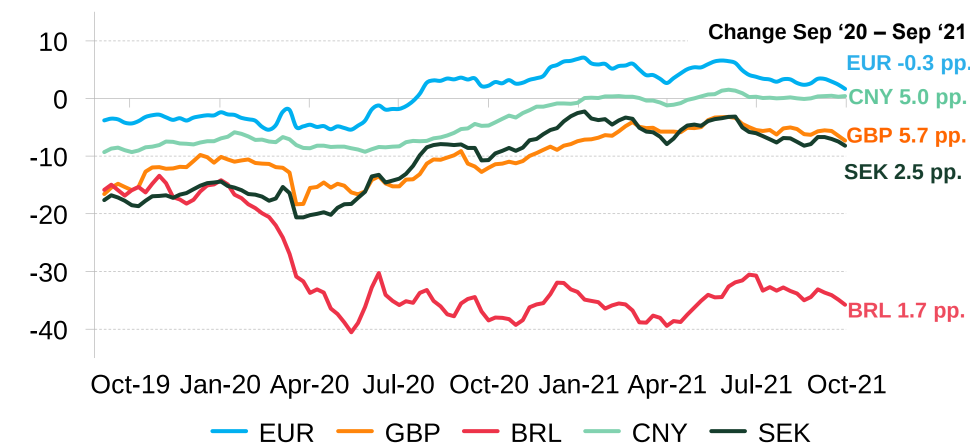
Commodity & Currency Price Development, Last 24 months

WTI Spot Crude Oil, USD/Barrel



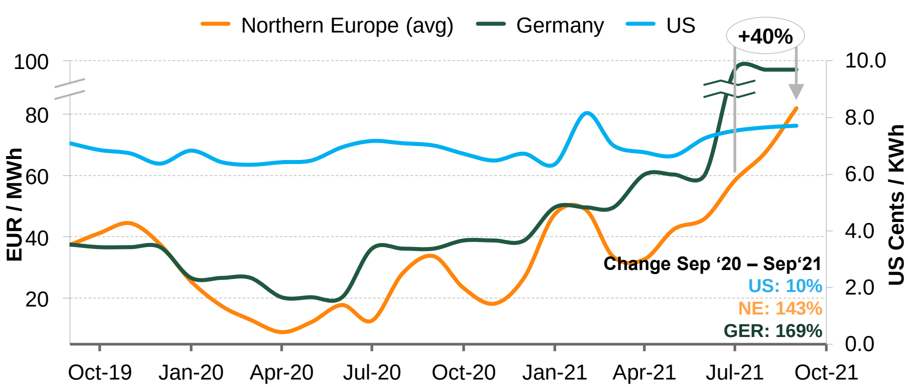
Source: US Energy Information Administration.

Currency appreciation against USD, %



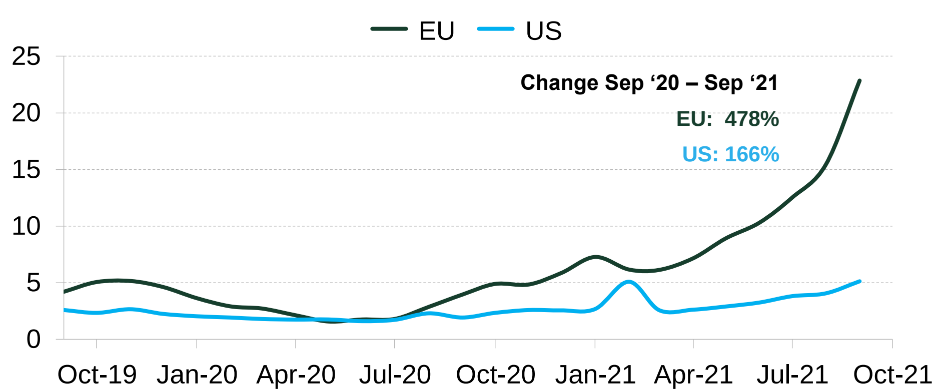
Source: S&P Capital IQ.

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

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

2021

Industries of Expertise

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

Applied Value Group

Investments

Management Consulting

Social Impact

Selected portfolio companies

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

APPLIED VALUE

C10, HAND IN HAND, Straight Ahead Ministries, World Vision, Exodus, Opportunity International, The 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 seven offices

Selected clients

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

Applied Value Offices and Footprint

New York	San Francisco	Stockholm	Helsinki	Shanghai
Empire State Building 350 Fifth Ave New York, 10118 USA	Pier 35, 1454 The Embarcadero San Francisco, CA 94133 USA	Kungsgatan 2 PO Box 5047 111 43 Stockholm Sweden	Old Church Park Lönnrotinkatu 5 00120, Helsinki Finland	Tower A, NA Plaza No. 518 Kunming Road, Shanghai, 200041 P.R. China
+1 646 336 4971	+46 7 042 692 77	+46 8 562 787 00	+358 40 84 110 60	+86 21 5213 6390

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

Lean Growth

Focus
- ✓ Define strategic focus
- ✓ Excel in key capabilities
- ✓ Use partners for non-core activities

Simplicity
- ✓ Reduce complexity
- ✓ Simplify and standardize processes, organization and supply chain

Speed
- ✓ 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