



Applied Value Building Products Report

Industry Report

H2 2022

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Executive Summary & Introduction

Financial Benchmarking

Industry Trends

Applied Value Presentation



Introduction

Applied Value's building products practice

Building products is a core practice area for Applied Value. We have supported a wide range of clients across the building products and construction value chain, and we own and operate two building products companies.

We generate client value and provide tangible results by applying an unbiased perspective, having a hands-on approach, and recognizing the importance of delivering value fast.

About this report

This report tracks the financial performance of major players in the US building materials and products industry and covers sub-sectors across the full building products sphere, from raw materials companies to manufacturers of doors and pipes.

We hope you find this report insightful and we welcome feedback and opportunities for further discussion.

Disclaimer

This report is based on the benchmarked companies' H2 2022 earnings reports, performance beyond H2 2022 is not considered. However, the "Industry Trends" section does speculate on current trends into 2023 based on AV analysis.



This report analyzes the financial performance of 36 building materials and products companies operating in the US, and covers 560 BUSD in revenue

Building materials companies

Segment	Company	Revenue (LTM BUSD)	Country
 Cement, aggregates and ready-mix concrete	CRH	32.7	
	Holcim	31.6	
	Heidelberg Cement	22.6	
	CEMEX	15.6	
	Taiheiyo Cement	5.9	
	Vulcan	7.3	
	Martin Marietta	5.7	
 Glass	Saint Gobain	54.7	
	AGC	15.4	
	Owens Corning	9.8	
 Lumber and wood	Weyerhaeuser	10.2	
	UFP	9.6	
	West Fraser	9.7	
	Canfor	5.5	
	Interfor	3.4	
 Steel	Arcelor Mittal	79.8	
	Nucor	41.5	
 Bricks and masonry	Wienerberger	5.3	
	Brickworks	0.8	

 121.5 BUSD  79.9 BUSD  38.4 BUSD  121.4 BUSD  6.1 BUSD

The report covers 367 BUSD of building materials revenue

Source: Capital IQ

Building products companies

Segment	Company	Revenue (LTM BUSD)	Country
 Building envelope, roofing, siding flooring and insulation	Builders FirstSource	22.7	
	Beacon	8.4	
	Kingspan	8.9	
	Carlisle Companies	6.6	
	LIXIL	11.2	
 Doors and windows	ASSA ABLOY	11.6	
	Sanwa	4.2	
	JELD-WEN	5.1	
	Masonite	2.9	
 Piping	Advanced Drainage Systems	3.1	
 Kitchen and bath	Masco	8.7	
	Fortune Brands	4.7	
	Geberit	3.7	
 HVAC-R, fire and security	Daikin	28.8	
	Johnson Controls	25.5	
	Carrier	20.4	
	Trane	16.0	

 46.7 BUSD  35.1 BUSD  3.1 BUSD  17.1 BUSD  90.7 BUSD

The report covers 193 BUSD of building products revenue



The benchmarked companies operate across a wide array of building materials and products sub-sectors

Building materials companies

Company	Description
 CRH	Cement, aggregates, concrete and asphalt manufacturer
 Holcim	Manufacturer of cement, aggregates and ready-mix
 Heidelberg Cement	Producer of cement, aggregates and asphalt
 CEMEX	Produces cement, aggregates, ready-mix and clinker
 Taiheiyo Cement	Global provider of cement
 Vulcan	Producer of construction aggregates
 Martin Marietta	Supplier of cement, aggregates and concrete
 Saint Gobain	Manufacturer of glass and other construction materials
 AGC	Global glass manufacturer
 Owens Corning	The largest manufacturer of fiberglass composites
 Weyerhaeuser	Manufacturer of wood products
 UFP	Manufacturer of wood and wood-alternative products
 West Fraser	Producer of lumber, plywood and other wood products
 Canfor	Producer of sustainable wood-building solutions
 Interfor	Provider of wood products
 Arcelor Mittal	Operates steel manufacturing and mining facilities
 Nucor	Manufactures steel and steel products
 Wienerberger	The world's largest brick producer
 Brickworks	Brick producer operating in Australia and USA

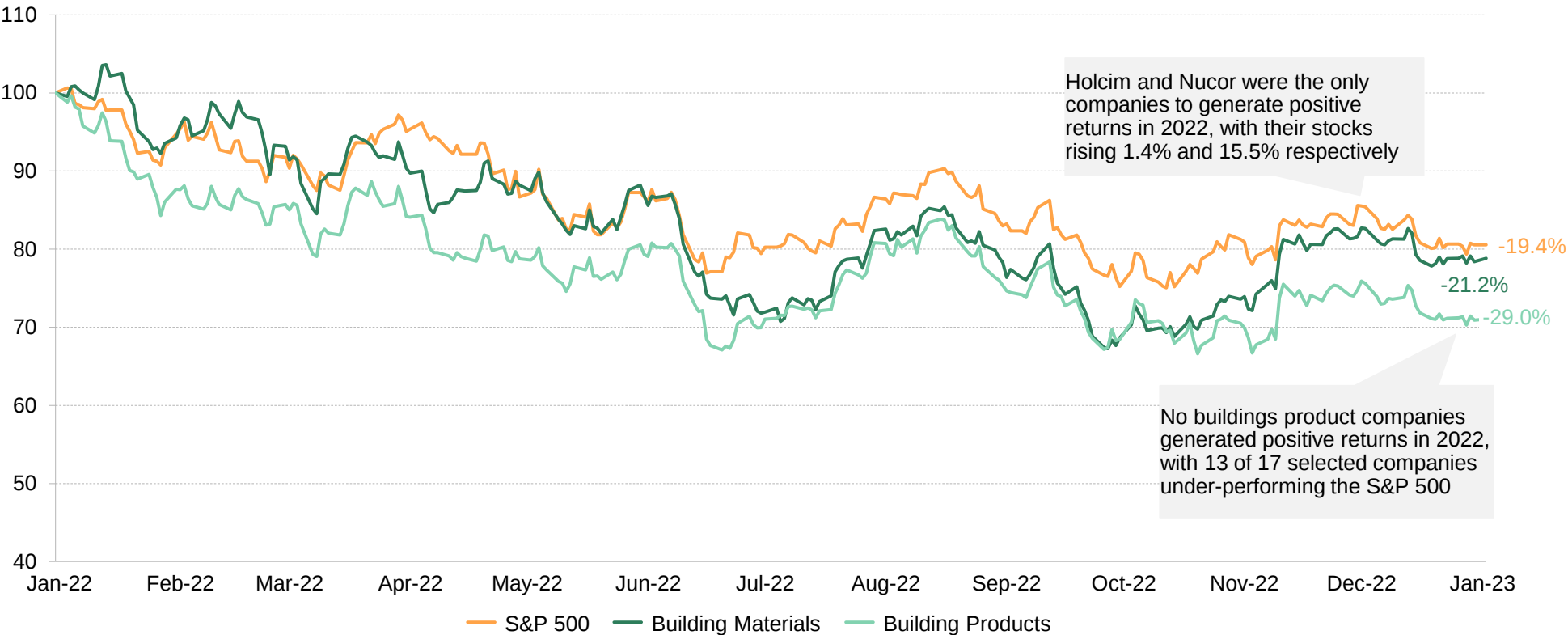
Building products companies

Company	Description
 Builders FirstSource	Manufacturer & supplier of various building products
 Beacon	Supplier of roofing and other building products
 Kingspan	Flooring, panels and insulation manufacturer
 Carlisle Companies	Provides roofing, siding, insulation and more products
 LIXIL	Window, door, external and interior products producer
 ASSA ABLOY	Door and security solutions provider
 Sanwa	Manufacturer of doors, windows and shutters
 JELD-WEN	Producer of windows and doors
 Masonite	Designs and manufactures interior and exterior doors
 Advanced Drainage Systems	Manufacturer of water and drainage pipes
 Masco	Kitchen and bath products conglomerate
 Fortune Brands	Portfolio of various kitchen and bath companies
 Geberit	Manufacturer of various bath products
 Daikin	Provider of air-conditioning solutions
 Johnson Controls	Producer of HVAC, security and fire equipment
 Carrier	HVAC-R solutions provider
 Trane	Manufacturer of HVAC-R systems



Both building products & materials have underperformed the S&P500 LTM, with only 2 companies' stocks seeing indexed performance end above 100

Indexed share price performance
1 Jan 2022=100



Source: Capital IQ

Notes:

1. Building products index includes all building products companies included in report
2. Building materials index includes all building materials companies included in report



Executive summary

Key takeaways

Lumber and Steel decline

- › After a strong year in 2021, lumber and steel companies generally experienced a steep decline in profitability and in a return on invested capital (ROIC) in 2022, however both remain above historical pre-pandemic levels

Raw materials prices fall

- › High raw material prices in 2021 for lumber and steel carried over into the first few months of 2022, however prices began to sharply decline and negatively impacted several building material companies
- › Cement and glass raw materials prices continued to rise in 2022, helping to boost revenue and margins of both sub-sectors

Weakening demand

- › Strong construction and building demand in 2021 carried into the first half of 2022, however inflation and rising interest rates resulted in economic uncertainty and a decline in the demand for construction projects
- › After experiencing rampant demand in 2021, the housing market is experiencing softening demand as mortgage and interest rates continue to rise

Mixed profitability performance

- › Building materials companies saw EBITDA margins decrease by an average of 27% in 2022, while building products companies experienced an average EBITDA growth of 5%

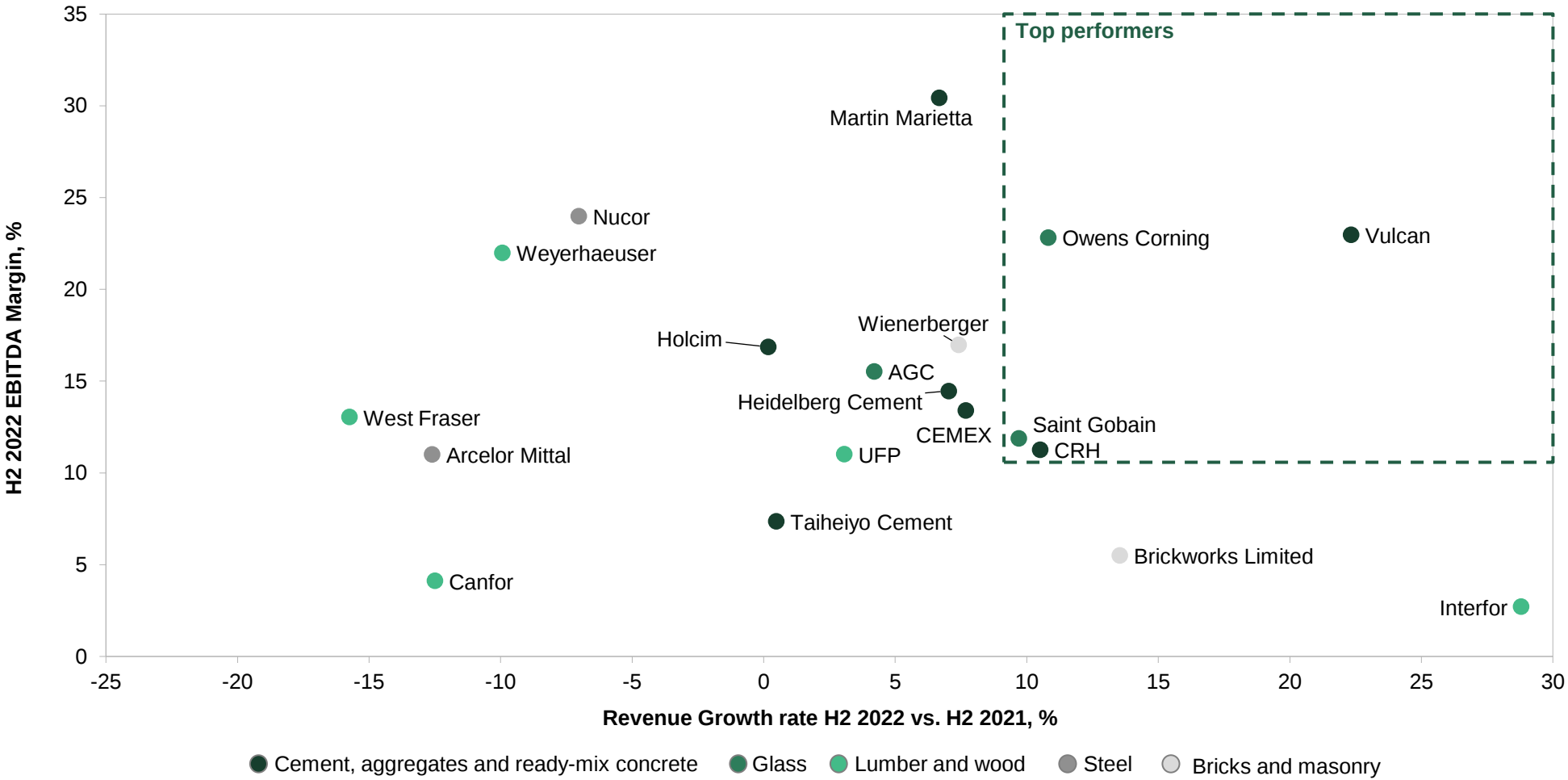
Inflationary Pressures

- › Rising interest, inflation, geopolitical conflicts, and lingering supply chain restraints have greatly impacted underlying raw material price movement in 2022, however building product companies have largely been resilient as they pass pricing onto the consumer



Cement, glass & brick companies, on average, outperformed other building materials sub-sectors YoY, while lumber companies struggled in H2 2022.

Building materials revenue growth rate and EBITDA margin

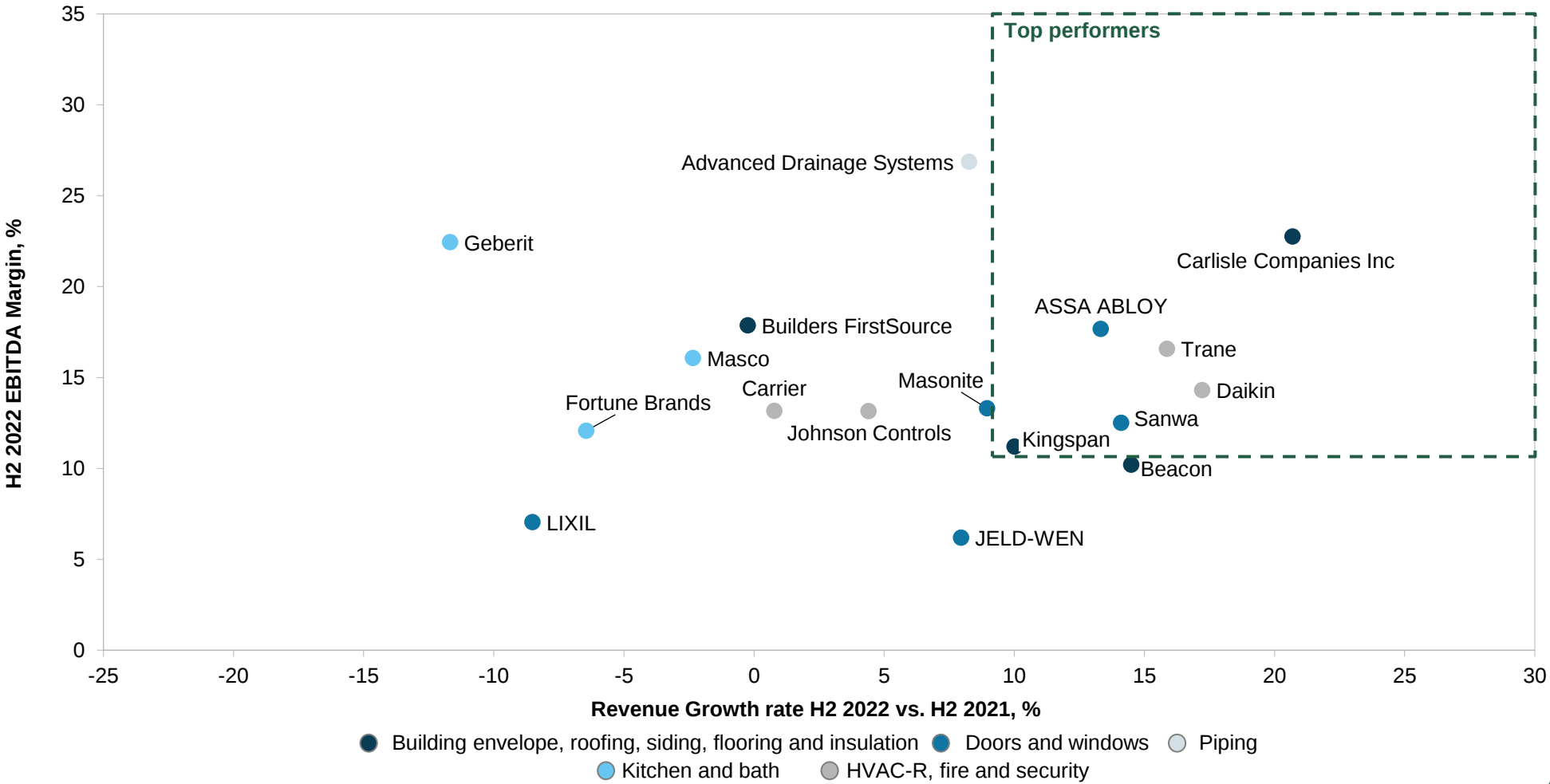


Source: Capital IQ, Applied Value analysis



All building products sub-sectors had profit margins within range of each other, though kitchen & bath companies experienced worse revenues YoY.

Building products revenue growth rate and EBITDA margin



Source: Capital IQ, Applied Value analysis



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Key takeaways

Key financial takeaways from the building materials and building products sectors

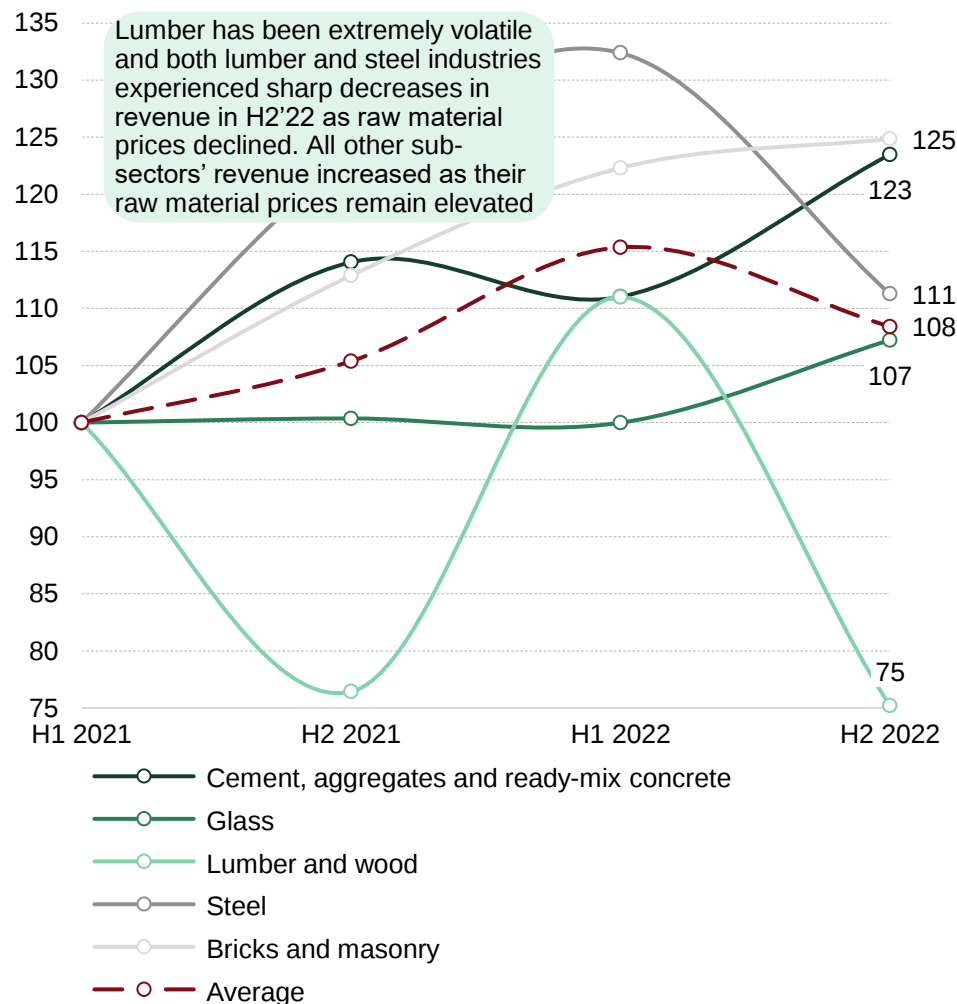
Revenue Growth	› Revenue growth was mixed across industry sectors and sub-sectors. As a whole, the building materials and building products sectors saw average revenue growth rates of 3.9% and 6.3% respectively › For the building materials sector, glass, cement, and the brick & masonry sub-sectors all saw strong revenue growth from H2 2021 to H2 2022, while the lumber and steel sub-sectors had poor revenue development in H2 2022. › For the building products sector, revenue development was strong YoY, except for the kitchen & bath sub-sector which experienced a ~5% decline in revenues.
Profitability & Costs	› Rising costs impacted all building materials companies, worsening profitability and EBITDA margins. The sub-sectors most severely impacted were lumber and steel, where EBITDA deterioration was exacerbated by falling raw materials prices. › Costs in the building products sector have been relatively stable, resulting in flat EBITDA margins YoY, except for the kitchen & bath sub-sector which saw rising SG&A costs. › The buildings product sector was able to overcome inflationary headwinds in 2022, helped in part by decreasing raw material costs and consumer price increases
Return on Invested Capital	› Building materials ROIC has been highly volatile since 2020. The steel and lumber sub-sectors ROIC YoY have decreased by 25 and 30% respectively but are still higher than 2020 levels. › Building products ROIC, unlike building materials, has shown stable ROIC levels over the last 5 years. All sub-sectors had positive ROIC development YoY. › Building products companies have achieved on average higher ROIC than building materials companies LTM at 16.0 % vs. 13.5%.



Inflation fears and the macro environment caused upstream building materials companies to experience heightened revenue volatility since 2021.

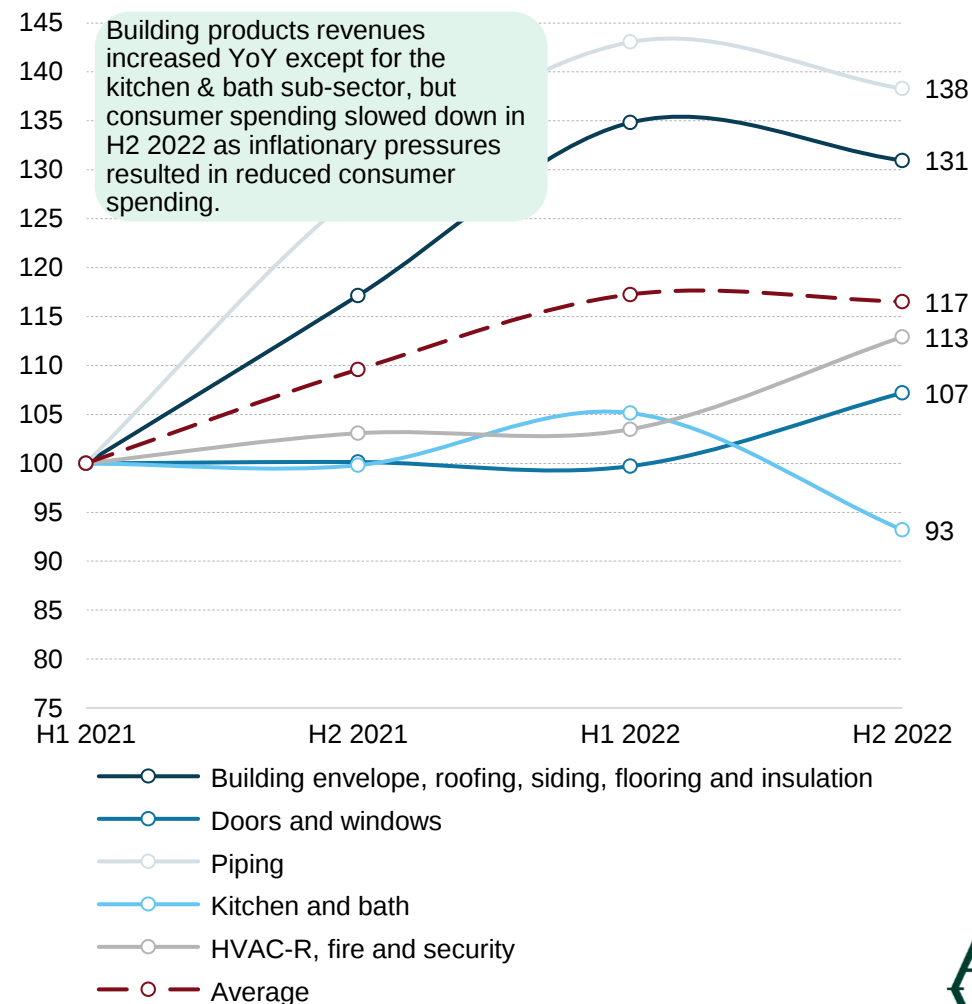
Building materials semi-annual revenue development

Index H1 2021 = 100



Building products semi-annual revenue development

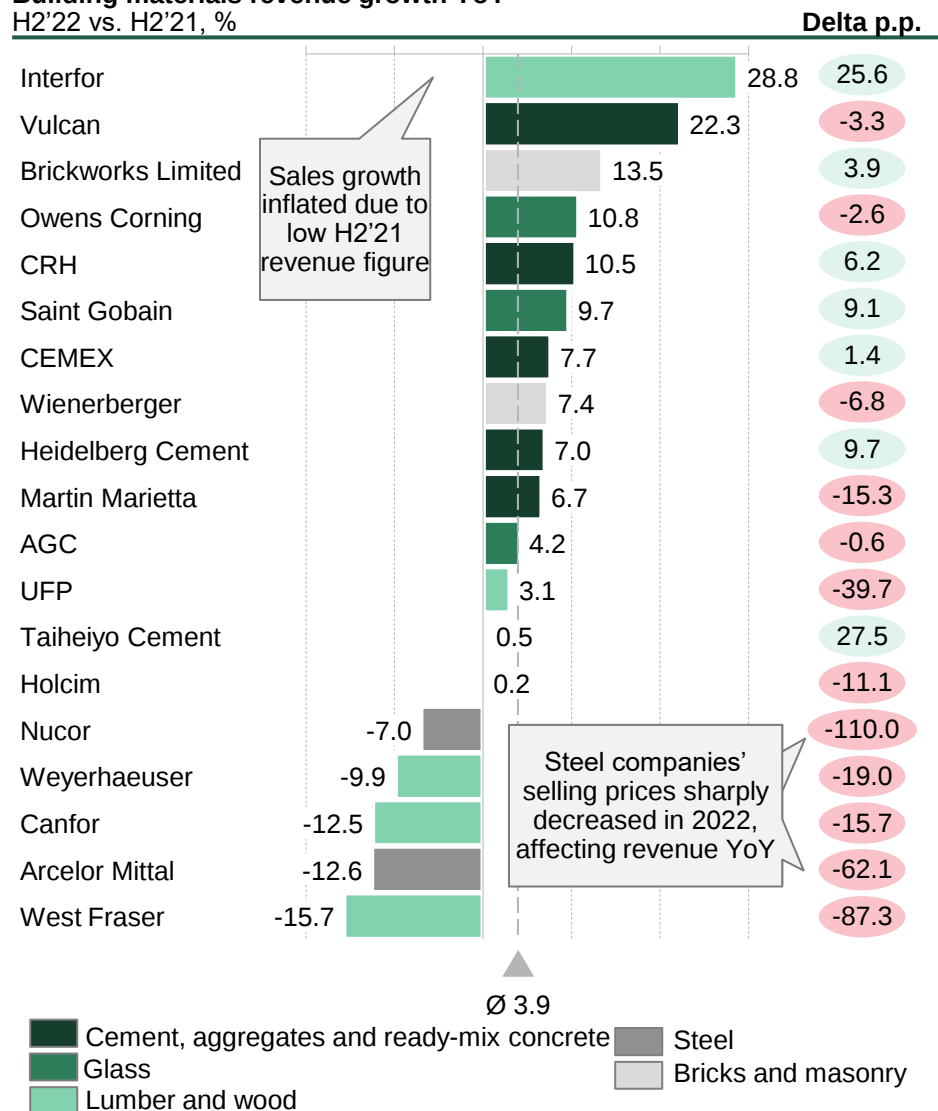
Index H1 2021 = 100



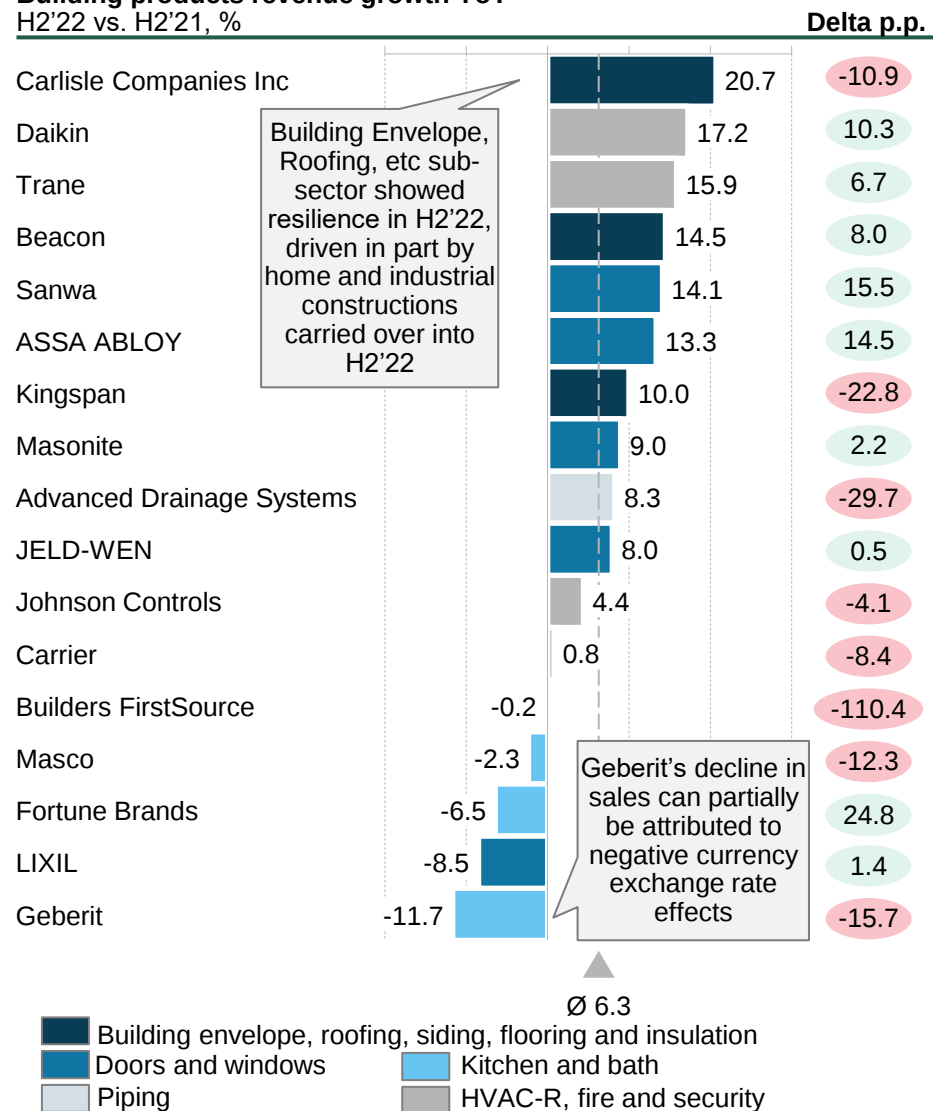
The lumber, steel, and kitchen & bath sub-sectors were the worst performers YoY in H2.

Change in growth rate
YoY H2'22/H2'21 vs.
H2'21/H2'20

Building materials revenue growth YoY H2'22 vs. H2'21, %

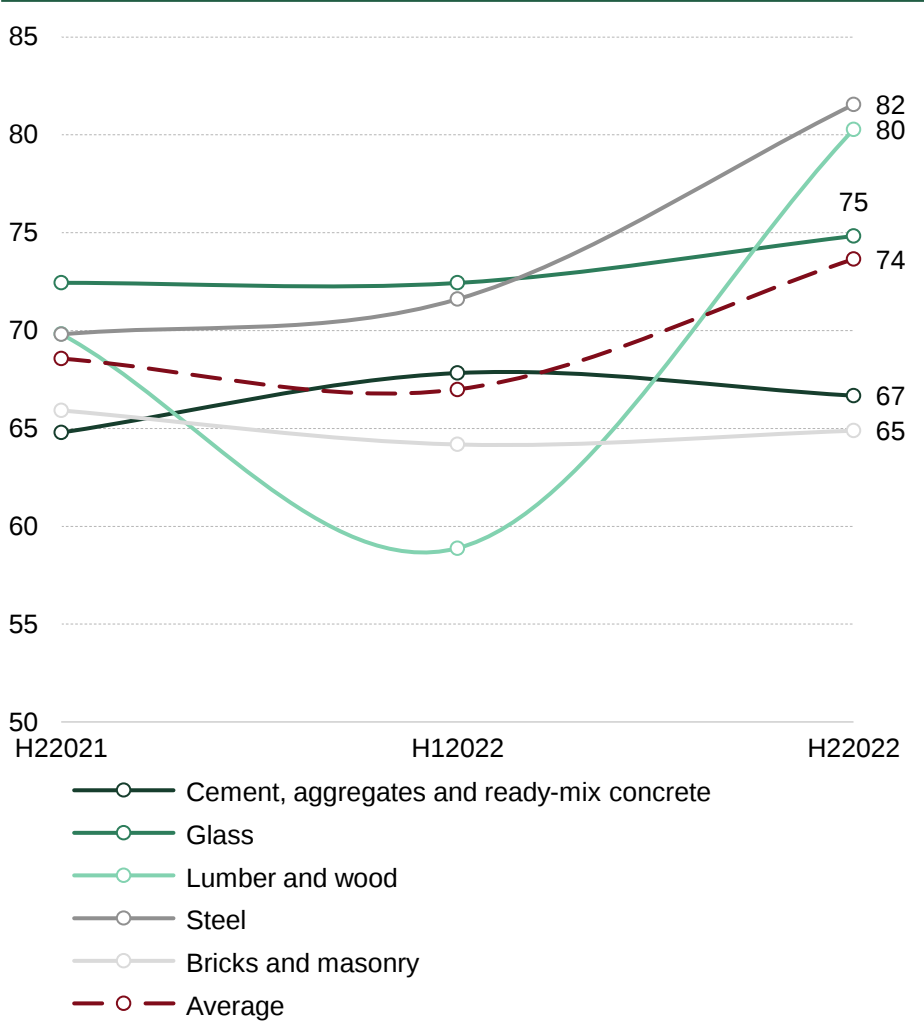


Building products revenue growth YoY H2'22 vs. H2'21, %

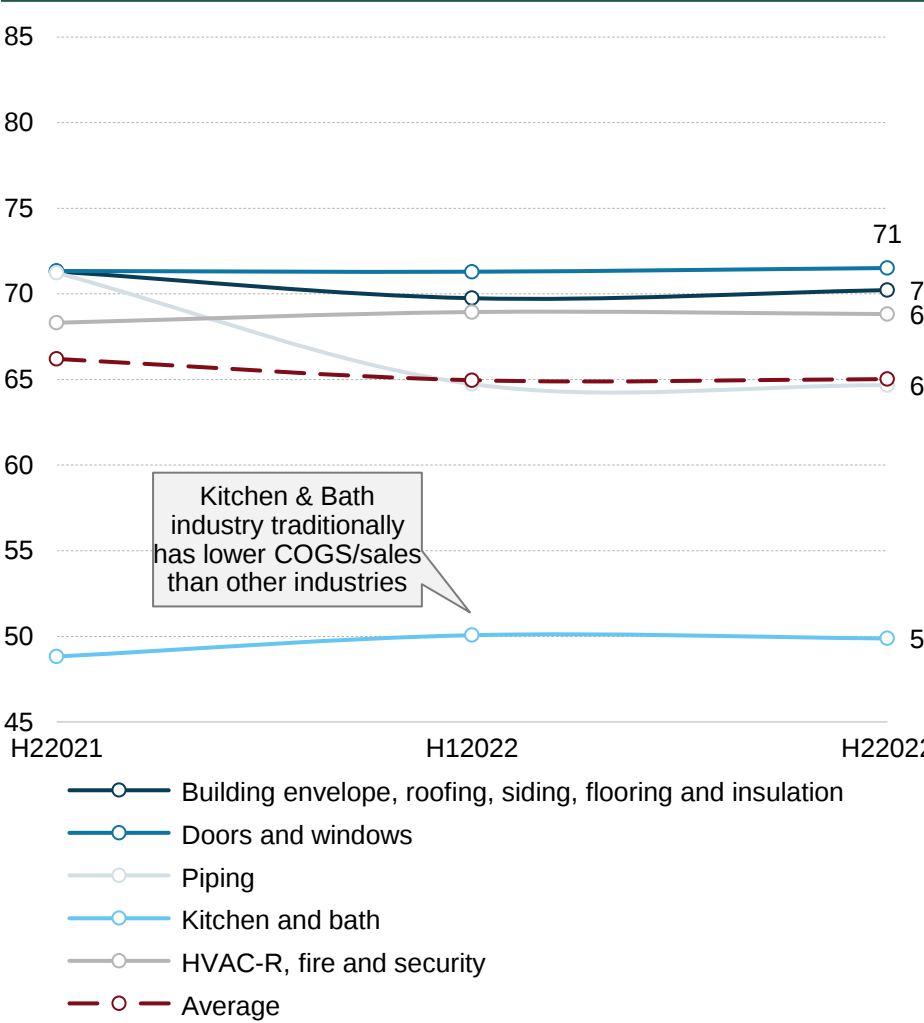


COGS/sales have remained rather stable YoY outside of steel and lumber sub-sectors, which have both increased in the second half of 2022.

Building materials semi-annual COGS/sales development
%



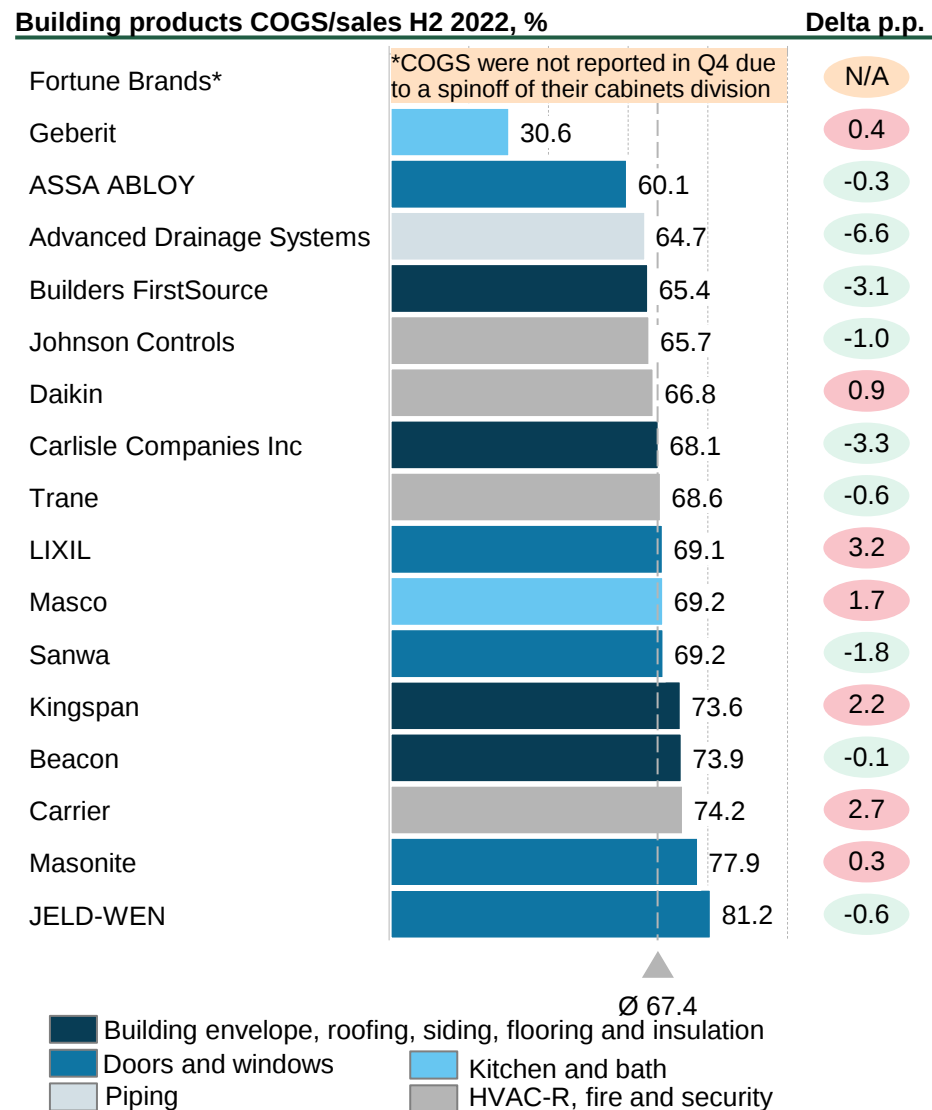
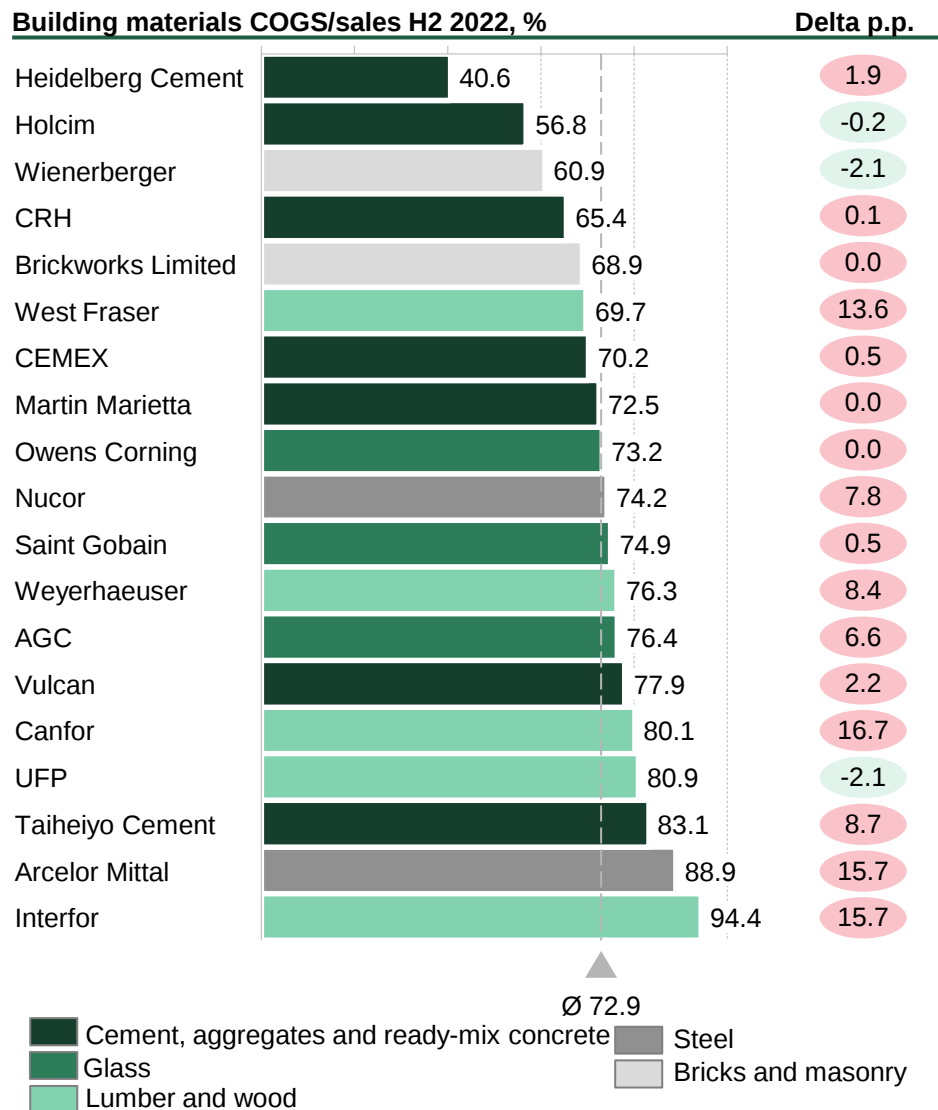
Building products semi-annual COGS/sales development
%



Source: Capital IQ, Applied Value analysis

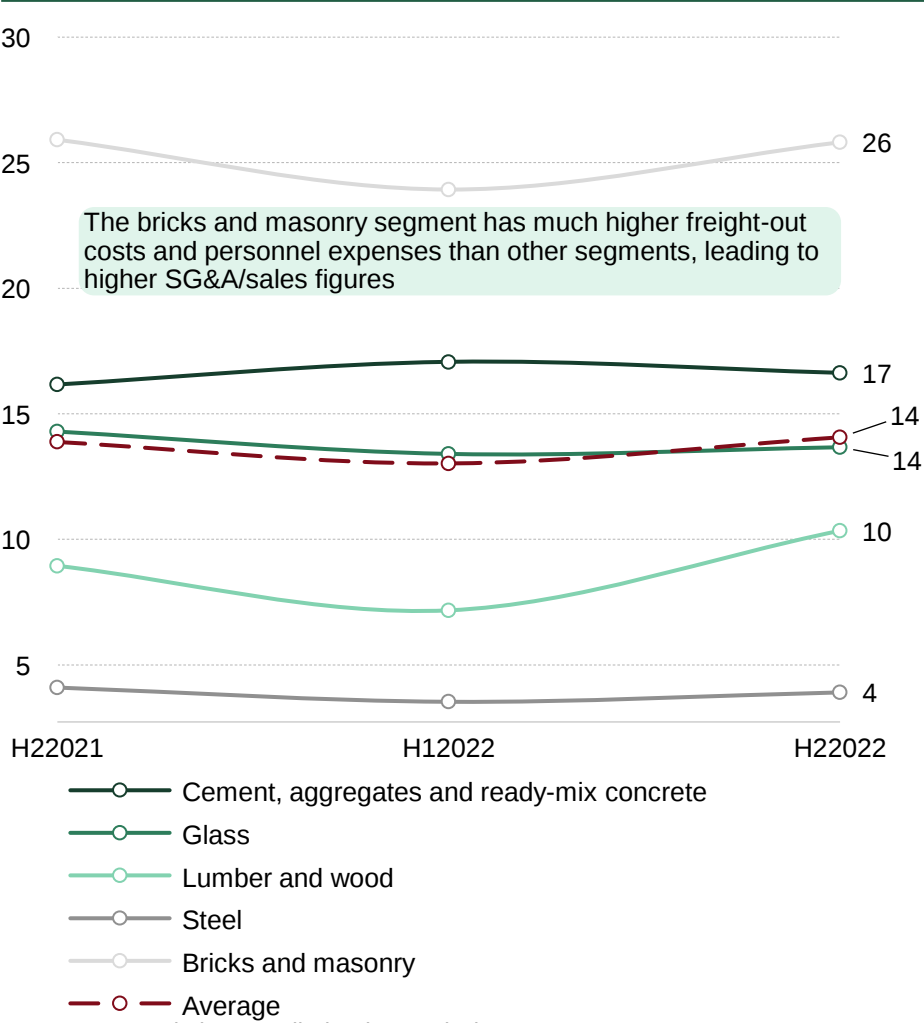


The benchmarked companies have seen overall negative development in COGS/sales; steel & lumber companies have the highest COGS/sales ratios

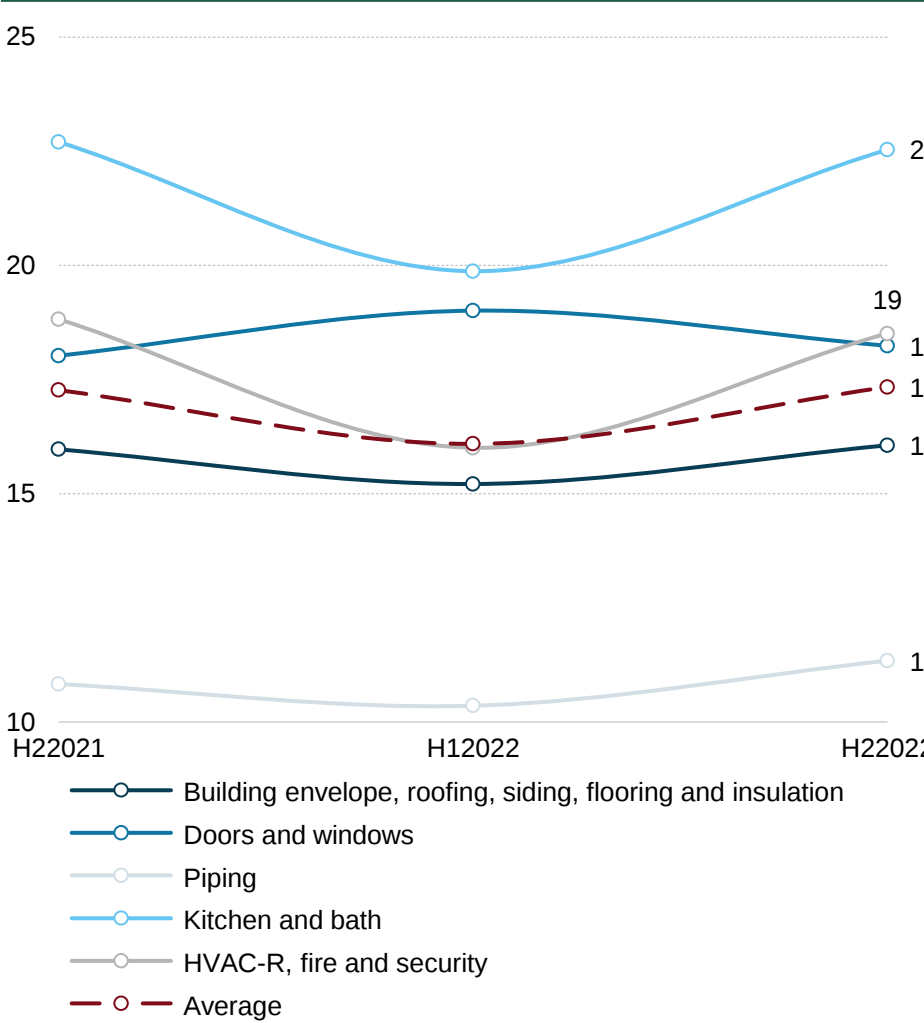


Despite ongoing inflation and a labor talent shortage in America, companies' SG&A / Sales metrics were relatively stable over the documented period

Building materials semi-annual SG&A/sales development
%



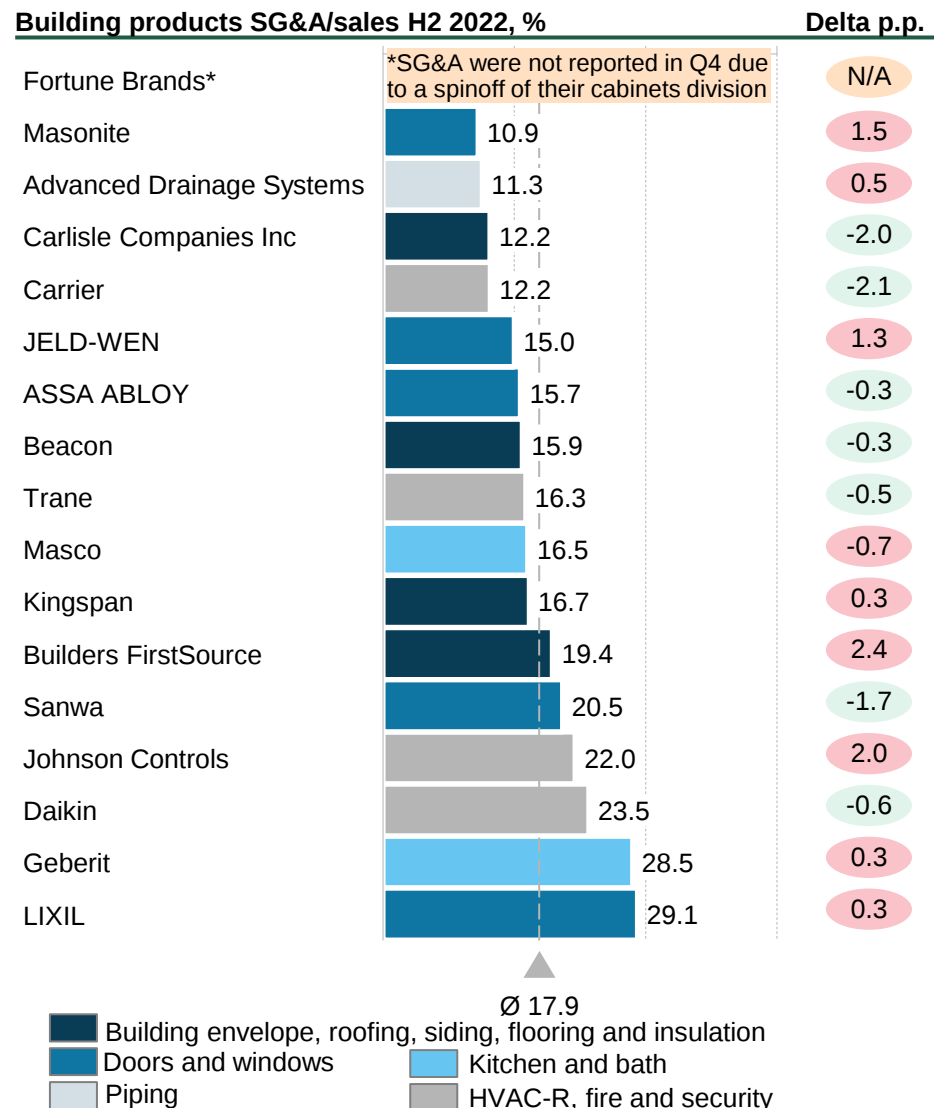
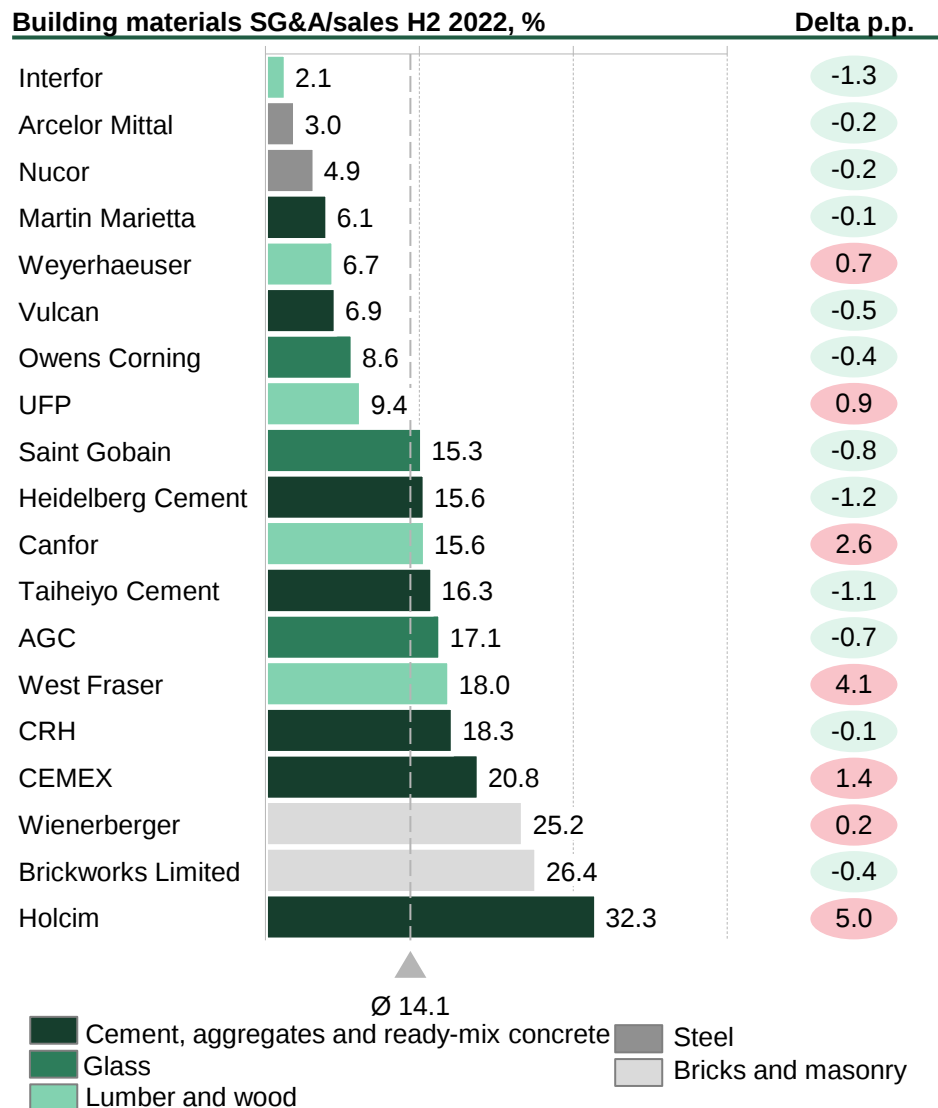
Building products semi-annual SG&A/sales development
%



Source: Capital IQ, Applied Value analysis

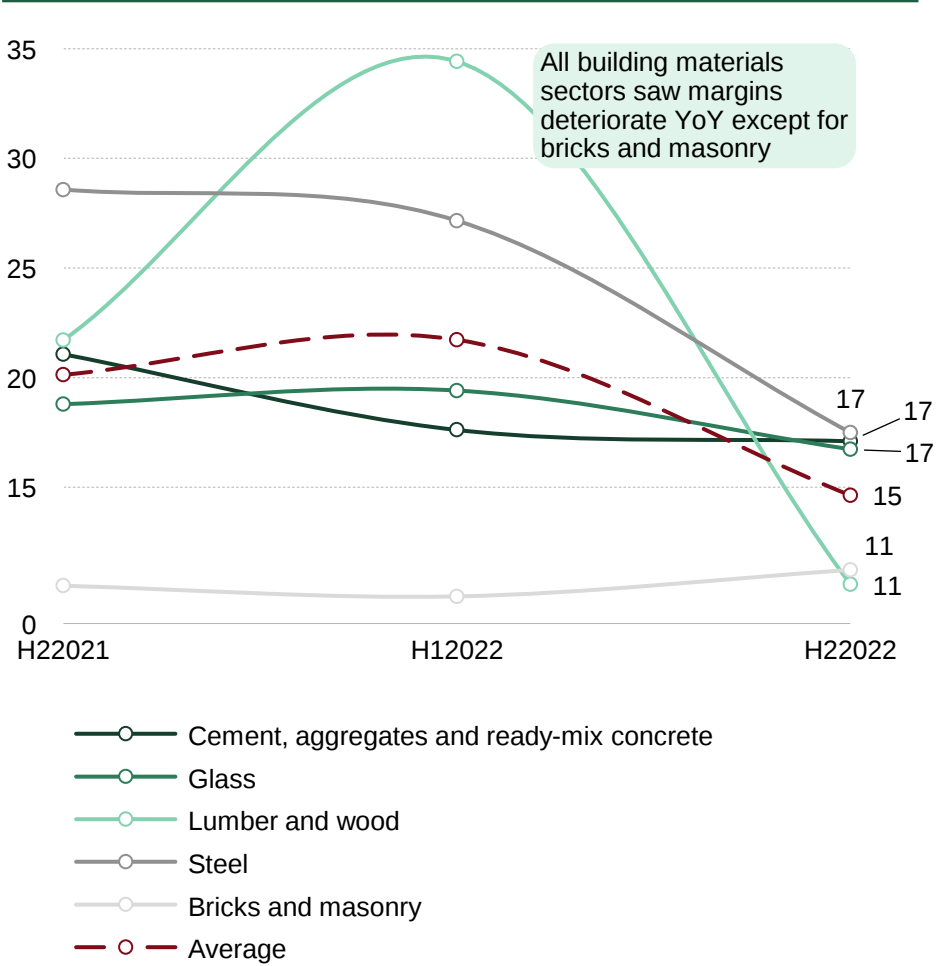


Apart from the bricks & masonry and kitchen & bath segments, SG&A as a percent of sales trends greatly vary within sub-sectors

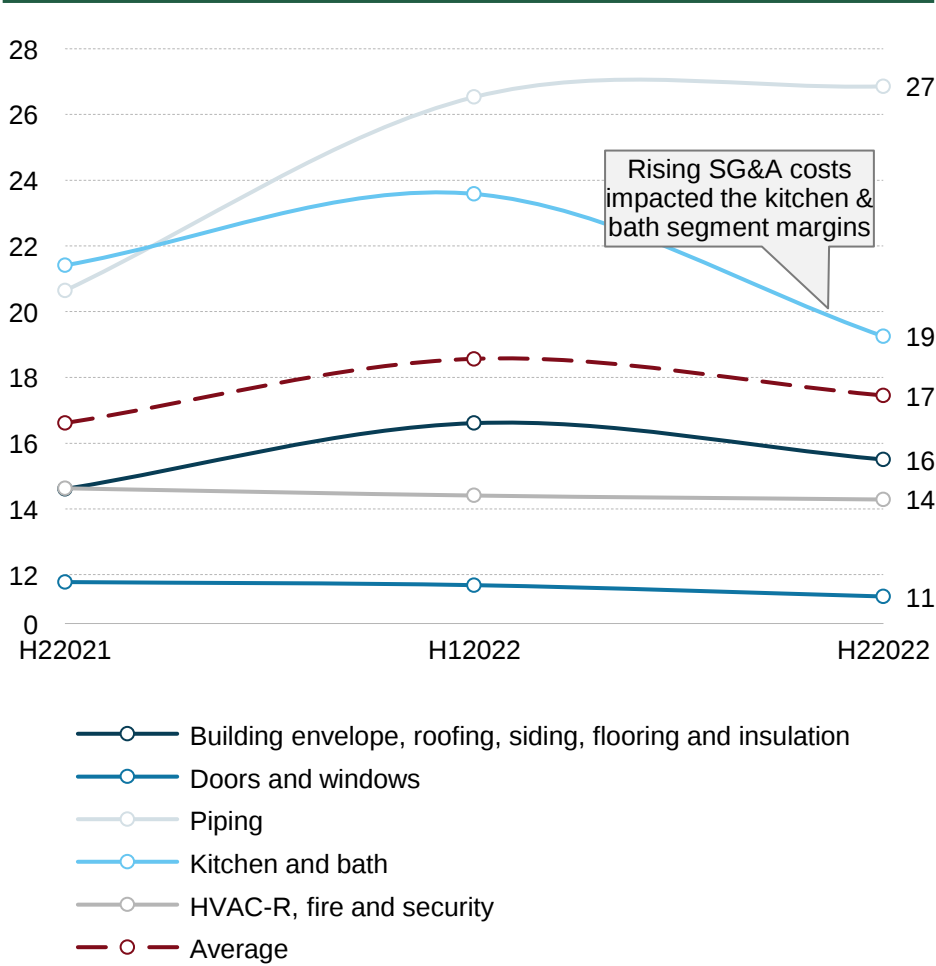


Lumber and steel companies have seen the highest margin erosion in large part to a decline in raw material prices

Building materials EBITDA margin semi-annual development %



Building products EBITDA margin semi-annual development %

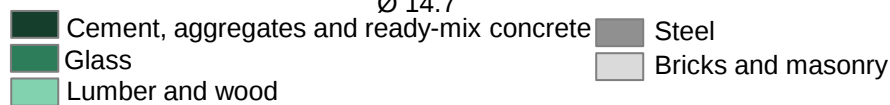
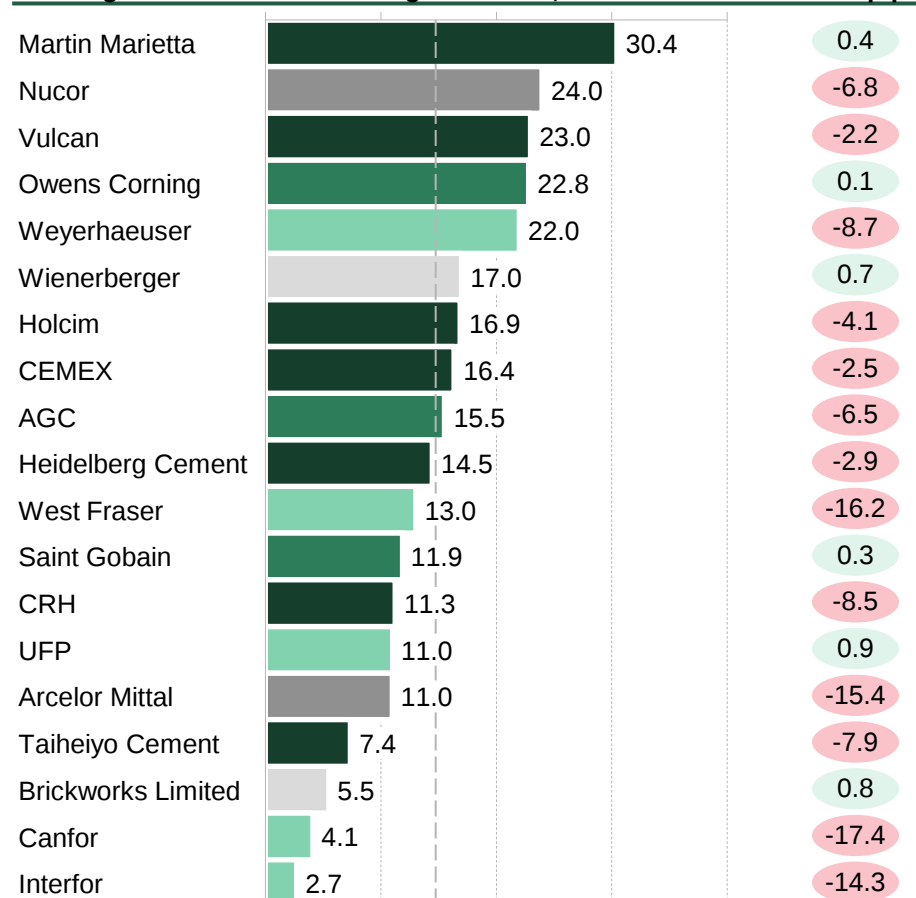


Source: Capital IQ, Applied Value analysis

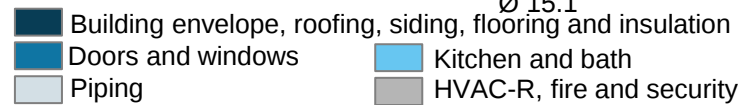
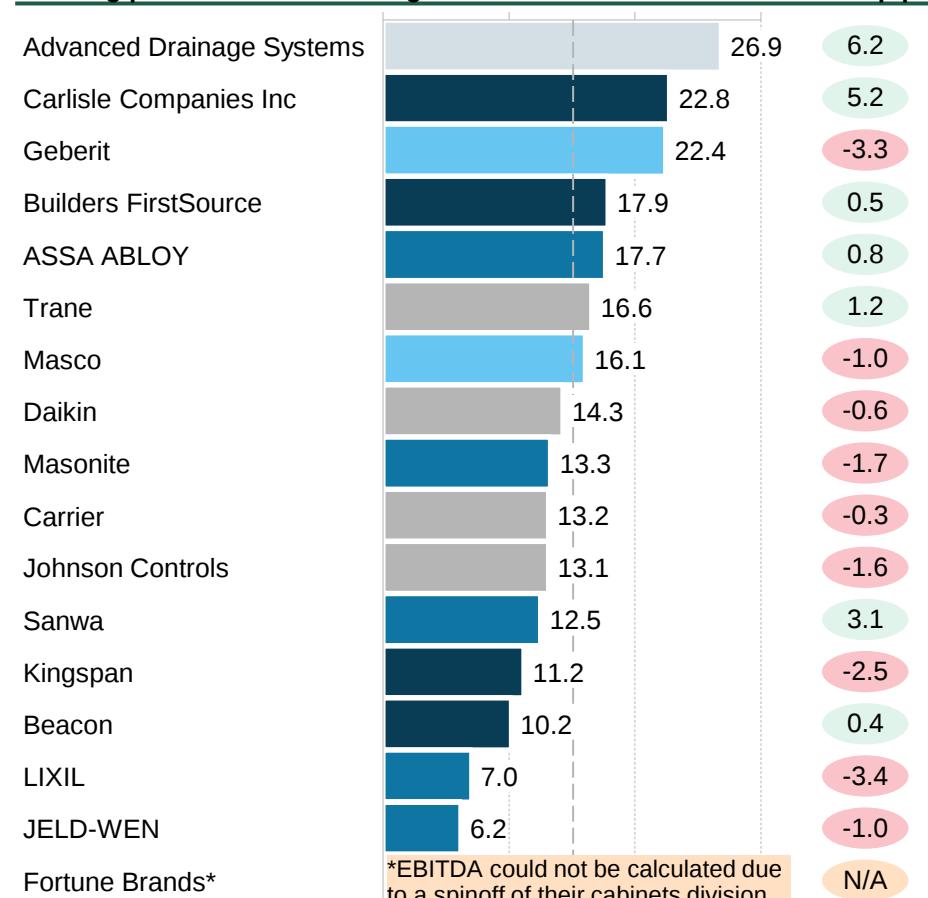


Unfavorable raw material pricing developments and rising SG&A expenses eroded much of the EBITDA margin growth of 2021

Building materials EBITDA margin H2 2022, %



Building products EBITDA margin H2 2022

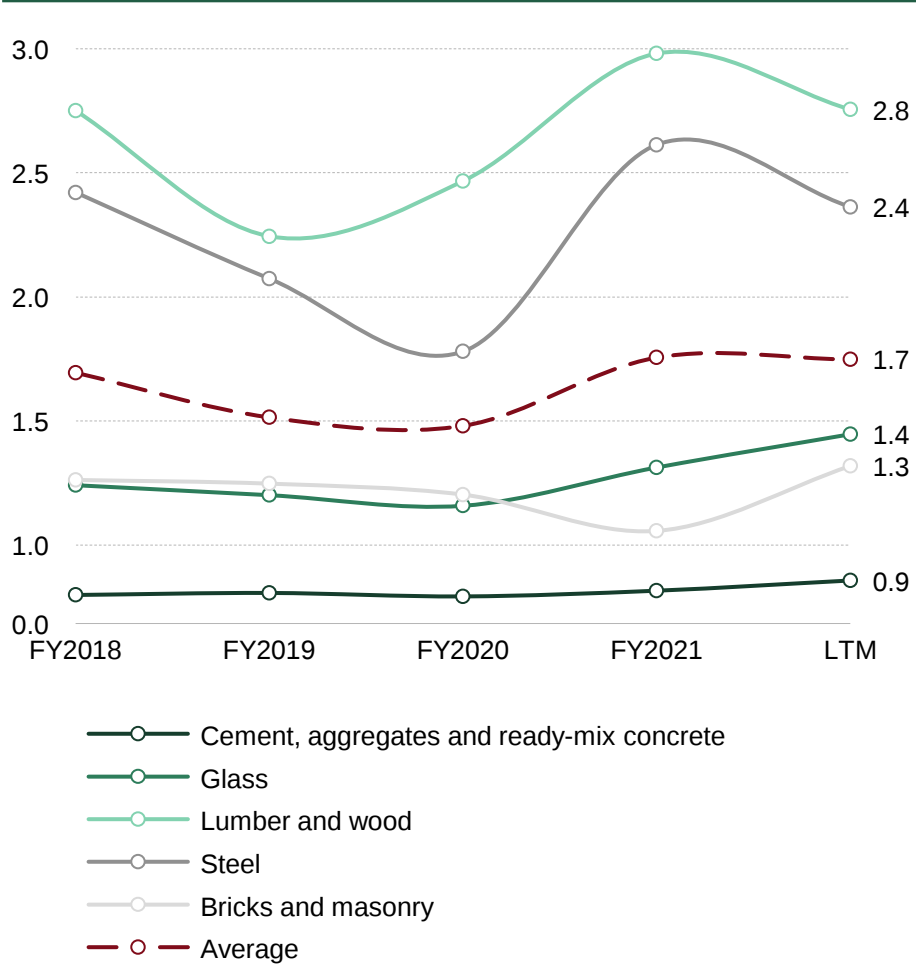


Source: Capital IQ, Applied Value analysis

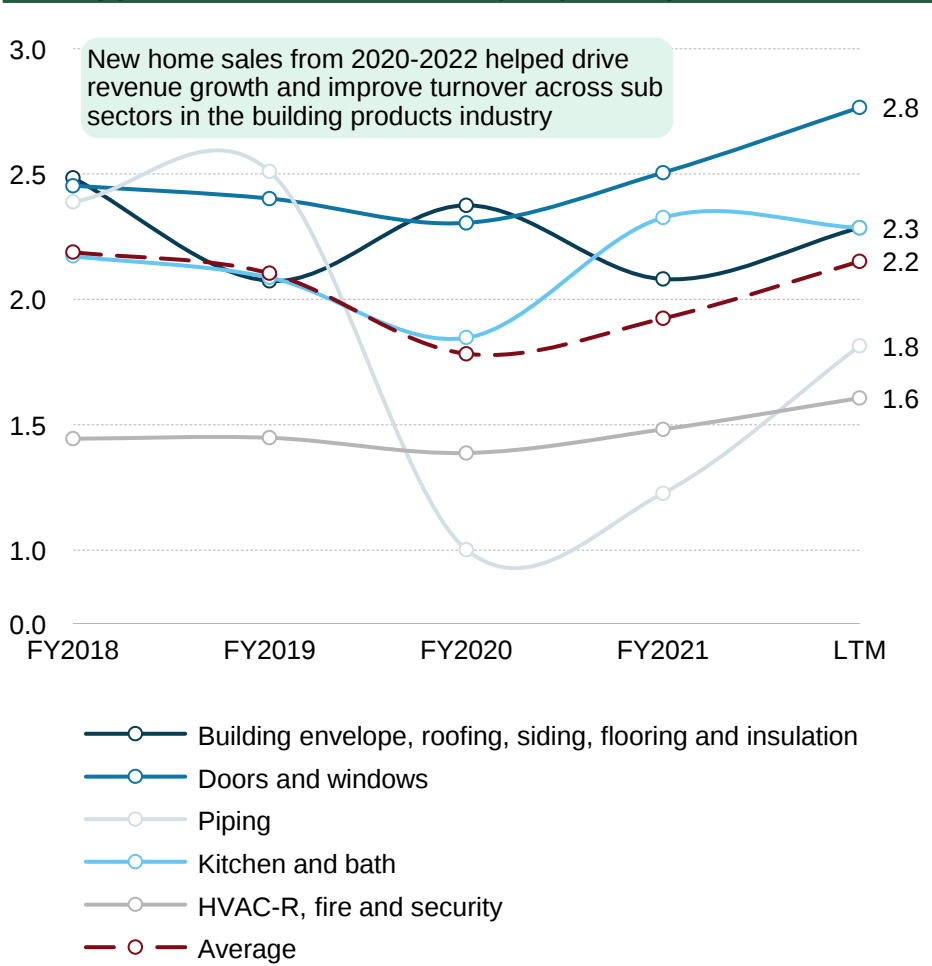


Lumber and steel companies saw volatile FAT due to the fluctuating price of the underlying raw materials caused by supply chain issues and demand

Building materials fixed asset turnover yearly development



Building products fixed asset turnover yearly development

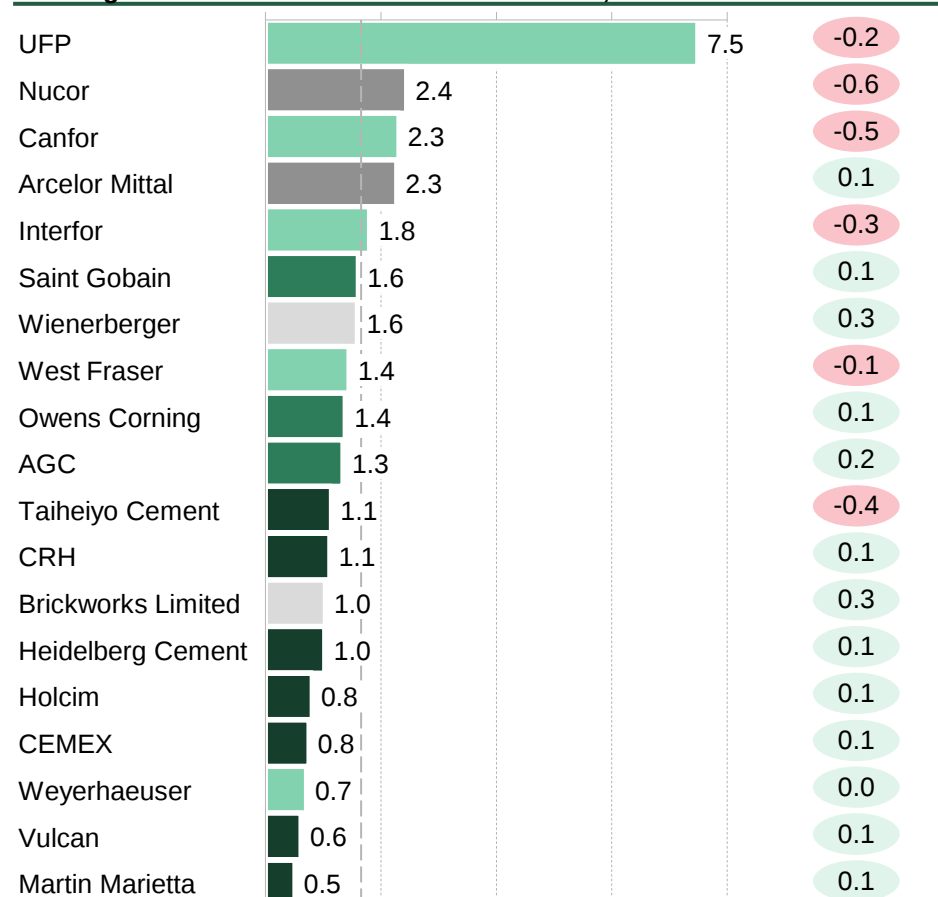


Source: Capital IQ, Applied Value analysis

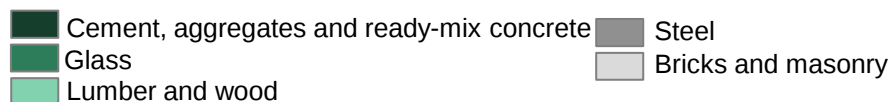


Building products companies typically have higher FAT ratios than building materials companies as the sector is less capital intensive

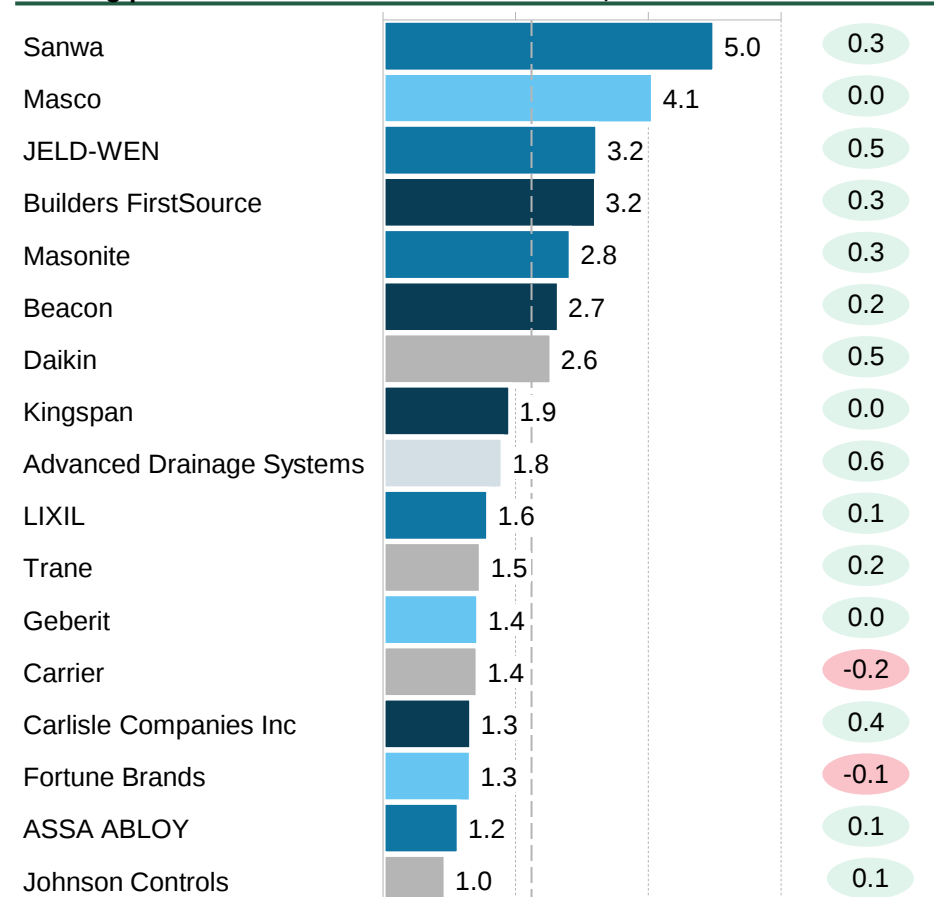
Building materials fixed asset turnover FY2022, x



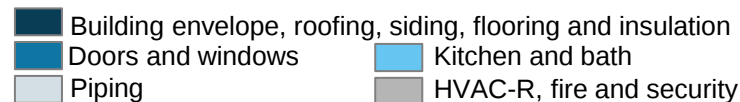
Ø 1.7



Building products fixed asset turnover FY2022, x



Ø 2.2

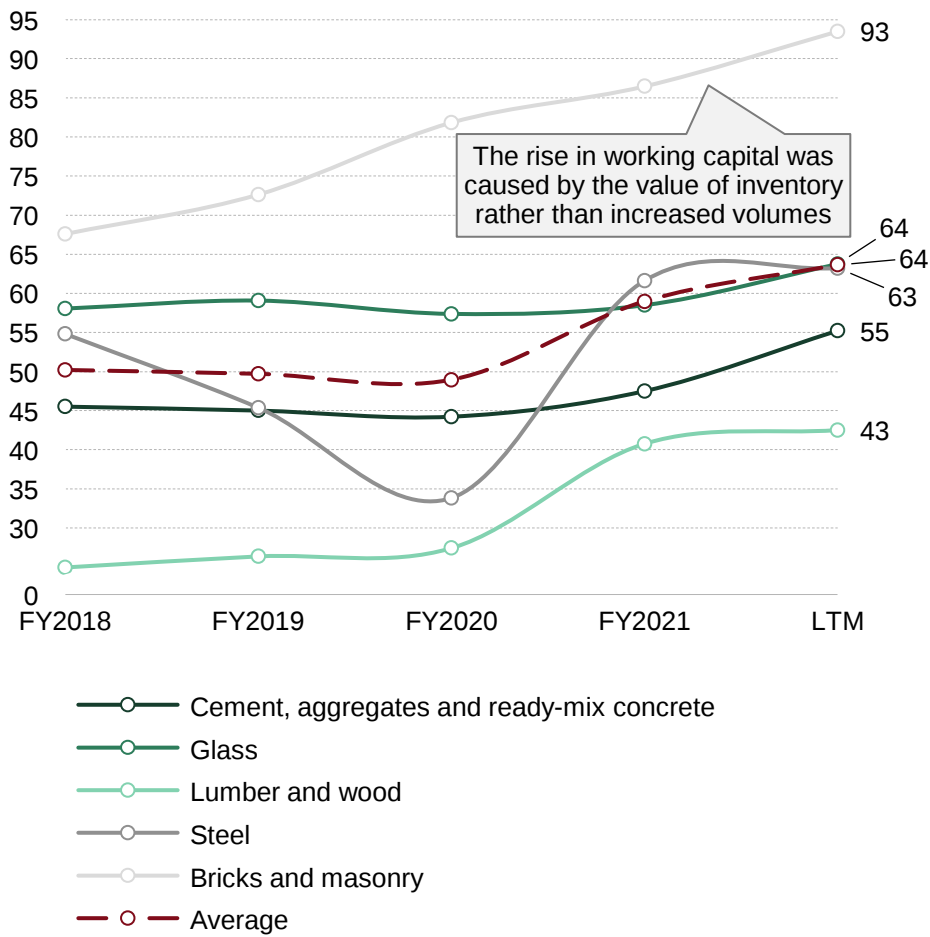


Source: Capital IQ, Applied Value analysis

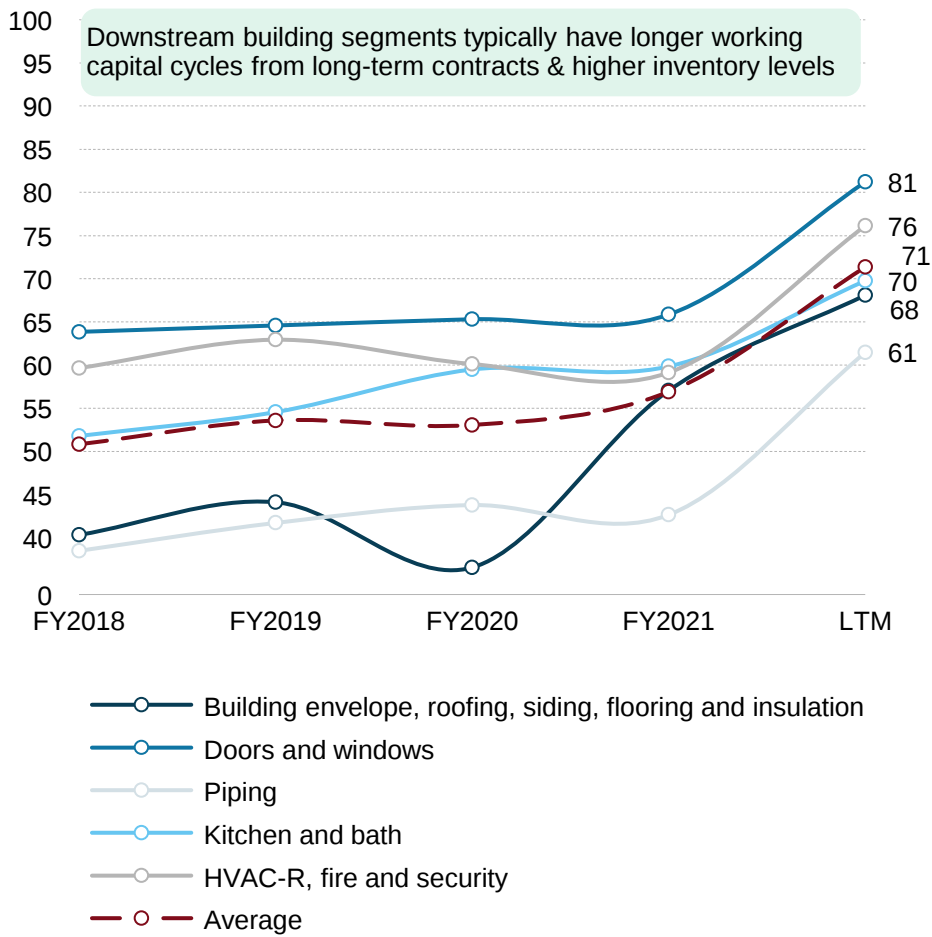


Both rising inventory values and slower demand resulted in rising inventory levels and driving working capital cycle development

Building materials working capital cycle yearly development
Days



Building products working capital cycle yearly development
Days

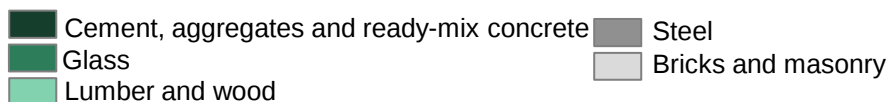
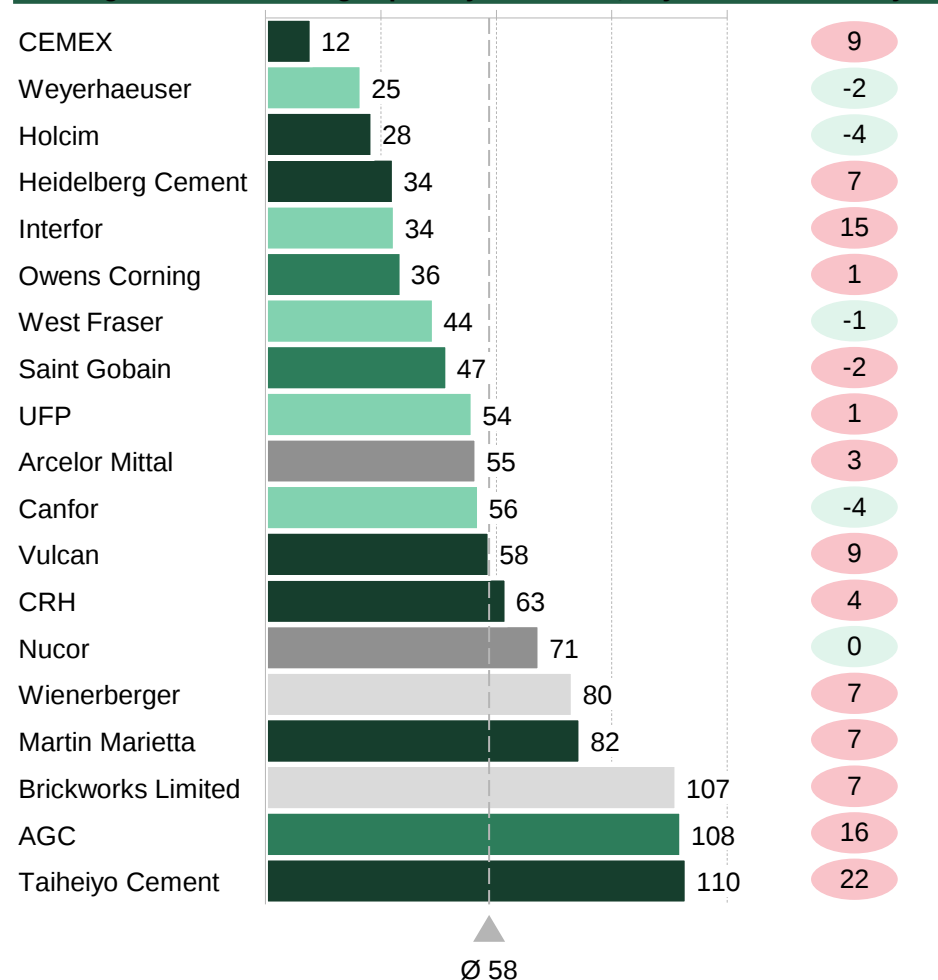


Source: Capital IQ, Applied Value analysis

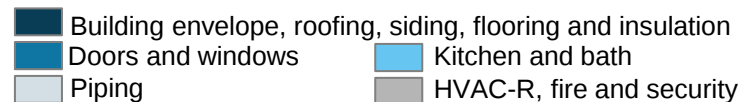
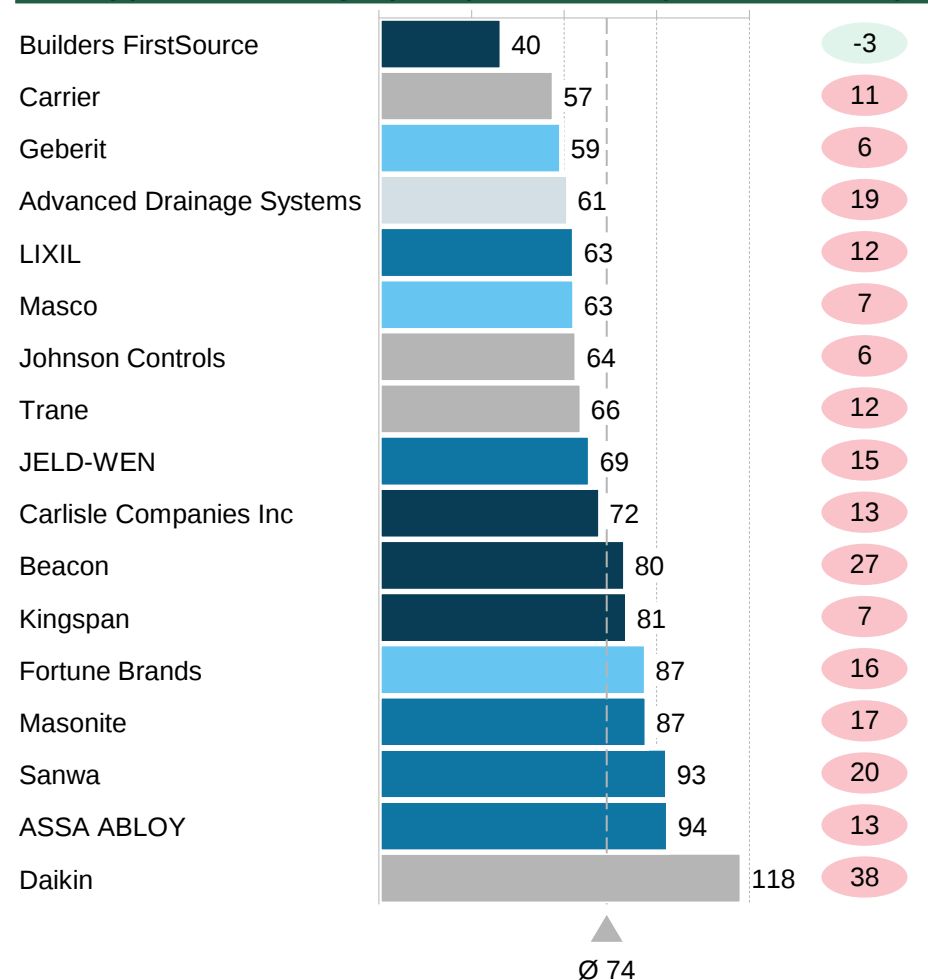


The benchmarked companies have seen significant increases in working capital cycle, most notably in the building products segment

Building materials working capital cycle FY2022, days



Building products working capital cycle FY2022, days

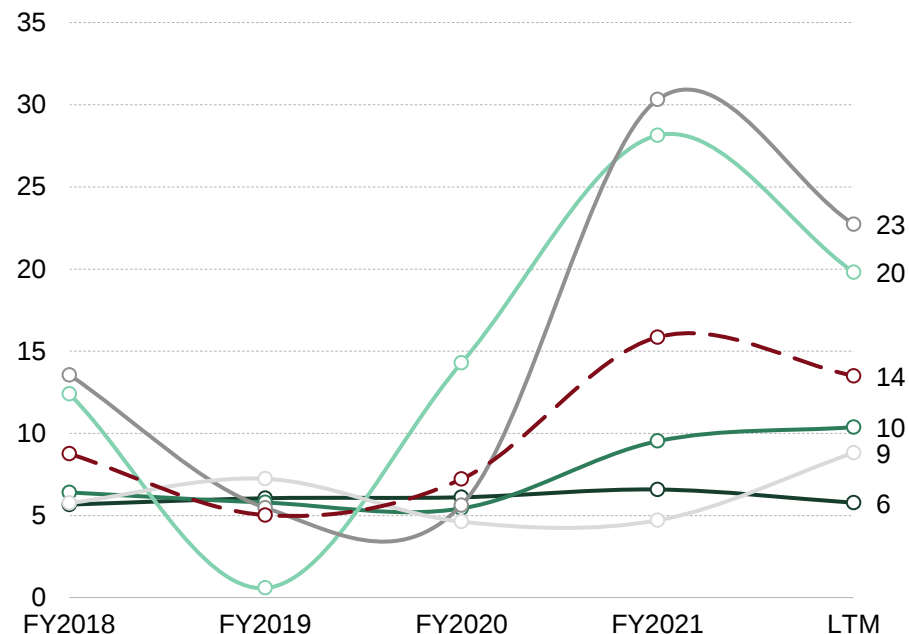


Source: Capital IQ, Applied Value analysis



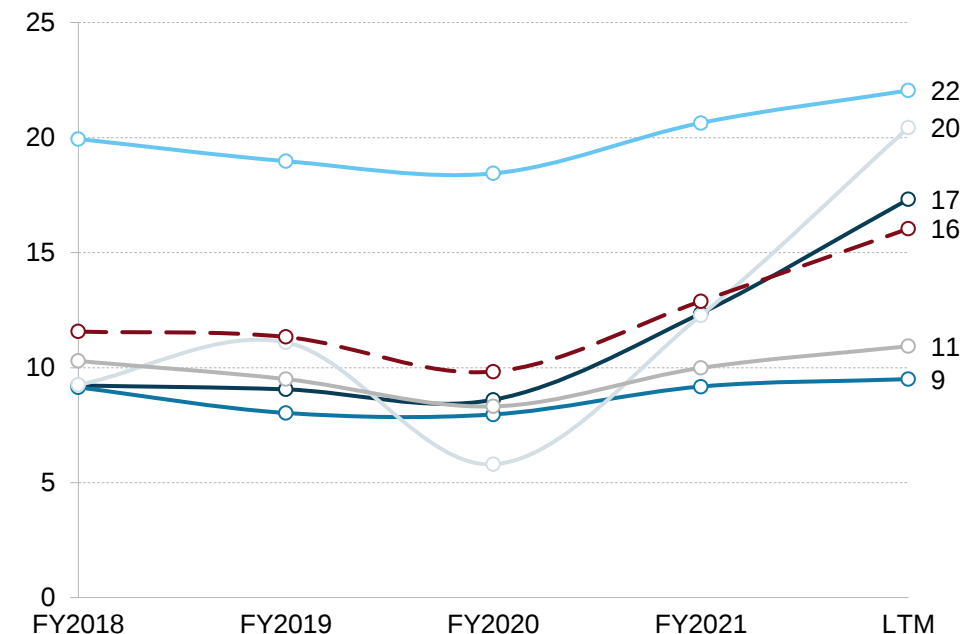
Kitchen and bath have outperformed other sub-sectors on ROIC L5Y, while steel and lumber sectors have seen margins and capital turnover decrease

Building materials ROIC
%



- Cement, aggregates and ready-mix concrete
- Glass
- Lumber and wood
- Steel
- Bricks and masonry
- Average

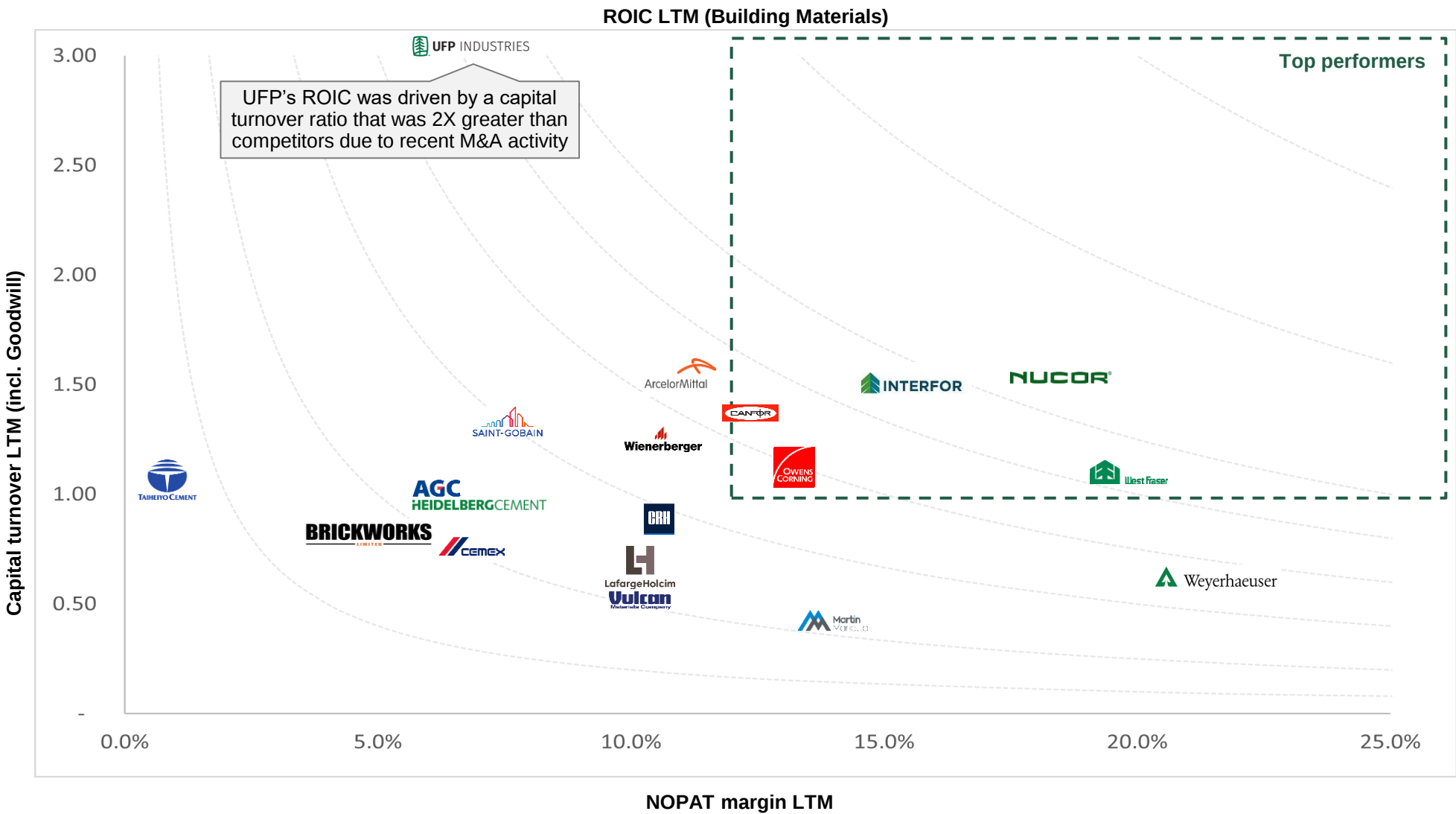
Building products ROIC
%



- Building envelope, roofing, siding, flooring and insulation
- Doors and windows
- Piping
- Kitchen and bath
- HVAC-R, fire and security
- Average



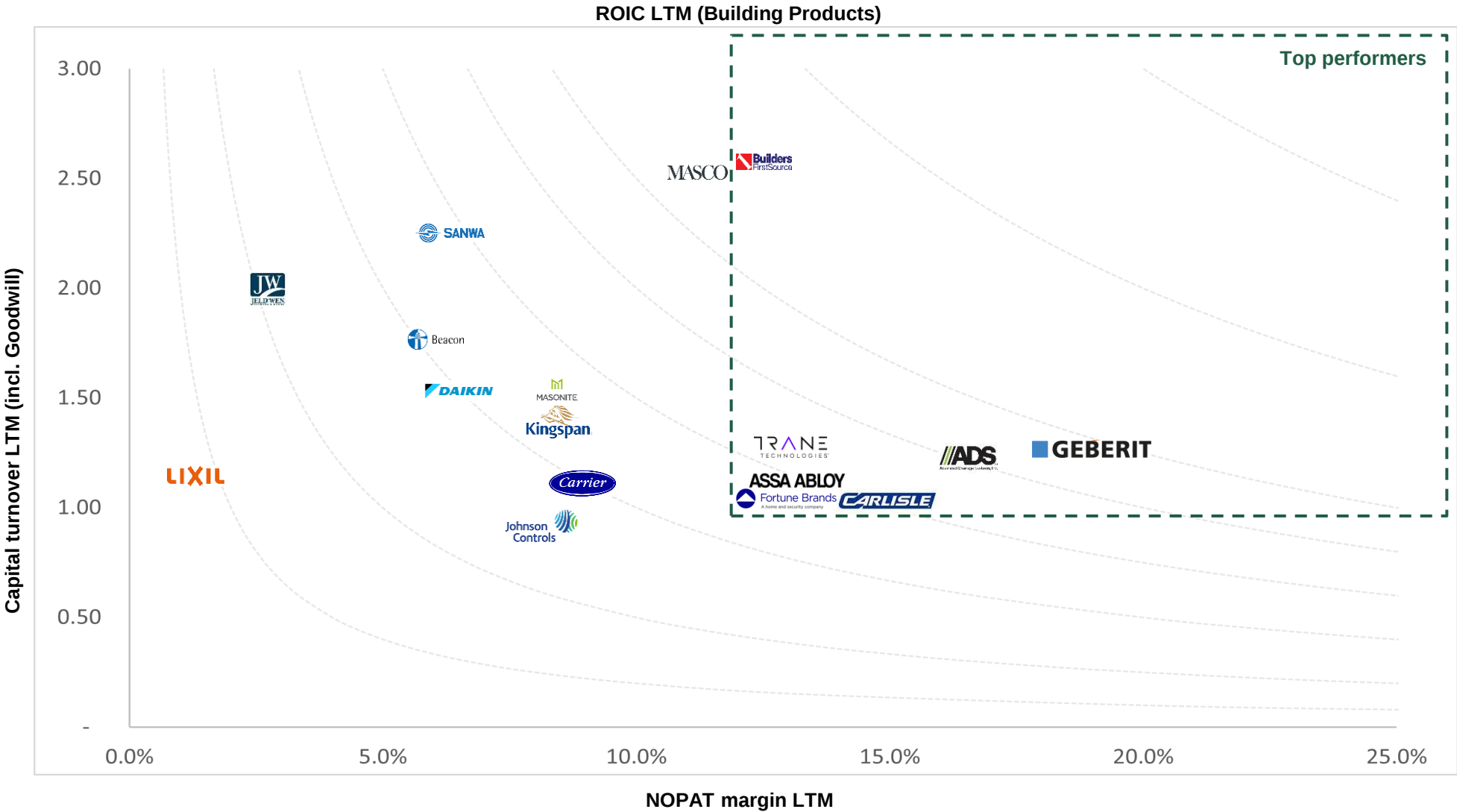
Despite a YoY decrease in ROIC, steel and lumber companies still lead the building materials sector through historically high profit margins



Source: Capital IQ, Applied Value analysis



A majority of the benchmarked building products companies generated between 10% and 20% ROIC LTM, with Builders FirstSource leading at 31%



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The construction industry greatly benefitted from record highs in 2021, however economic uncertainty resulted a much weaker H2 2022

Tailwinds

Industrial construction market

- › While the remote work trend is limiting office construction demand, manufacturing facilities and warehousing is still expected to be a robust market moving forward

Renovation boom

- › Total construction starts rose 15% in 2022, but are expected to remain flat in 2023 with the assumption inflation cools off

Supply Chain easing

- › Supply chain disruptions that dramatically increased raw material costs following the pandemic have begun to ease and prices will begin to normalize

Rising construction backlogs

- › A strong pipeline of construction backlogs from 2021 and H1'22 results in a steady supply of projects despite softening demand

Sources: S&P Dow Jones, National Association of Home Builders, Dodge Data

Headwinds

Interest rate environment

- › Rising interest rates and future uncertainty will drive up construction costs and decrease future demand

Raw materials price development

- › Raw material prices have been declining for many of the input costs in the construction industry, including steel, lumber, and energy prices

Housing market

- › Rising interest rates and a reduced economic outlook resulted in a steep decline in the housing market as housing prices continue to fall

Skilled labor shortage

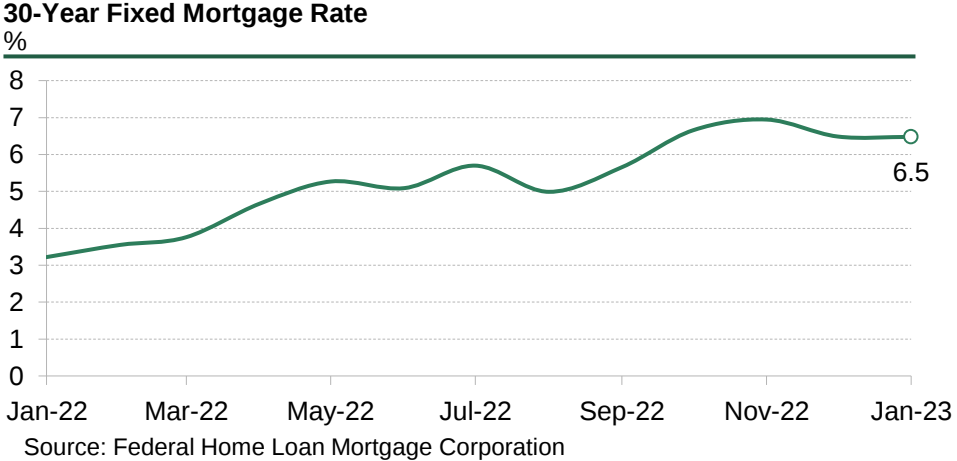
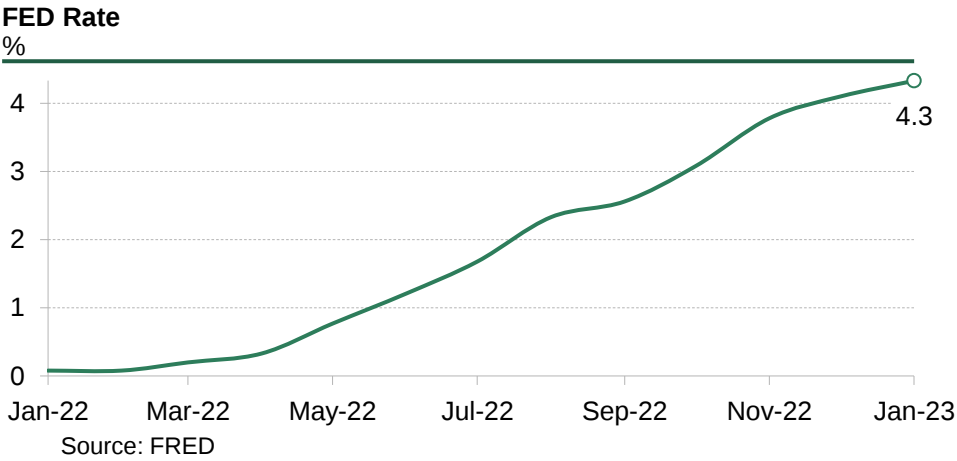
- › Job openings in the construction industry remained at record levels in 2022, negatively impacting production capacity

Sources: Associated Builders and Contractors, US Chamber of Commerce

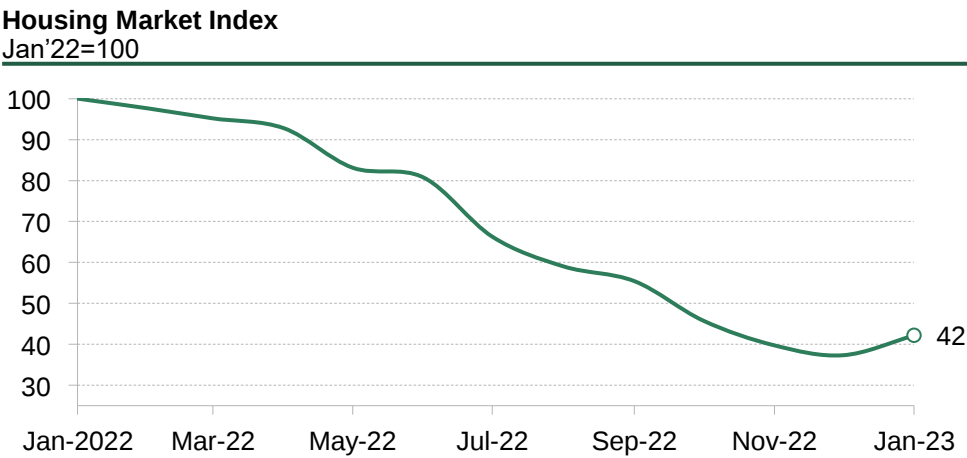


The high interest rate environment is a key driver behind housing demand and home renovation projects decreasing in 2022

Interest Rates The FED had been continuously raising rates throughout 2022 in order to combat inflation. The FED has noted they will taper rate hikes, but is willing to keep rates at an elevated level through 2023 until inflation is under control.



Falling Home Sales Due to rising mortgage rates and lower consumer spending power, home sales and new home development has decreased rapidly from its 2022 boom. Moving forward, demand for homes is expected to remain low.



The National Association of Home Builders' Housing Market Index reflects builders' outlook for current home sales, home sales for the next six months and traffic of prospective buyers



While construction spending and backlogs indicate optimism, inflation & supply chain issues are partially responsible for their upward development

Construction spending

The construction industry has seen a marginal increase in spending during H2 2022, which has a positive effect on building materials and products companies. However, construction spend typically lags input costs by 6 months, also leading to increased spending in the second half of 2022.

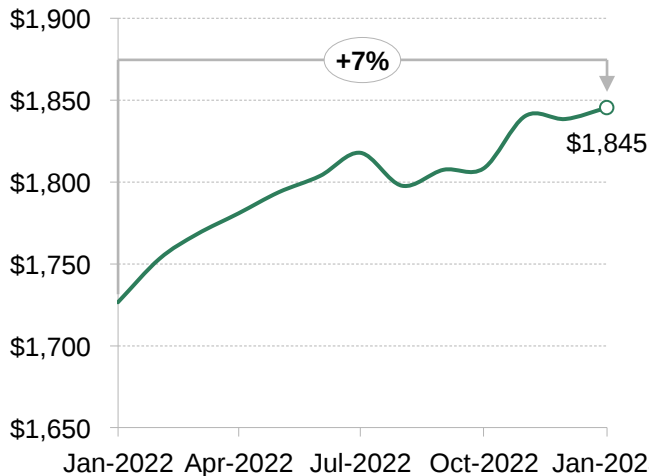
Increasing backlog

Backlogs have increased YoY in 2022, but H2 2022 saw no major change. Increasing backlogs typically have a positive affect on future demand, but we expect this number to fall during 2023.

Falling raw materials prices

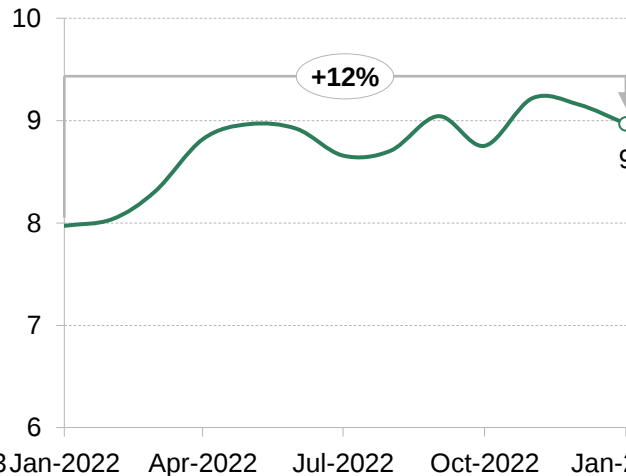
Price continued to steeply rise in the first few months of 2022, however easing supply chains and softening demand have led to a decrease in raw material prices through H2 2022.

Construction industry spending
\$ BUSD



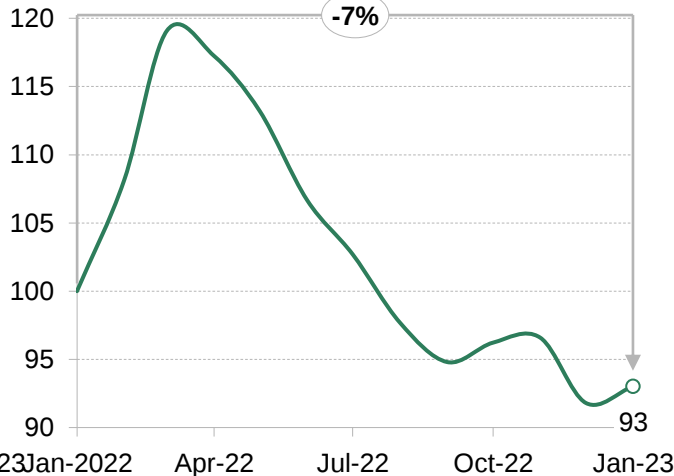
Source: Associated Builders and Contractors

Construction backlog indicator
Months



Source: Associated Builders and Contractors
Notes: Total months of forward-looking work under contract

Materials price index
Jan 22=100

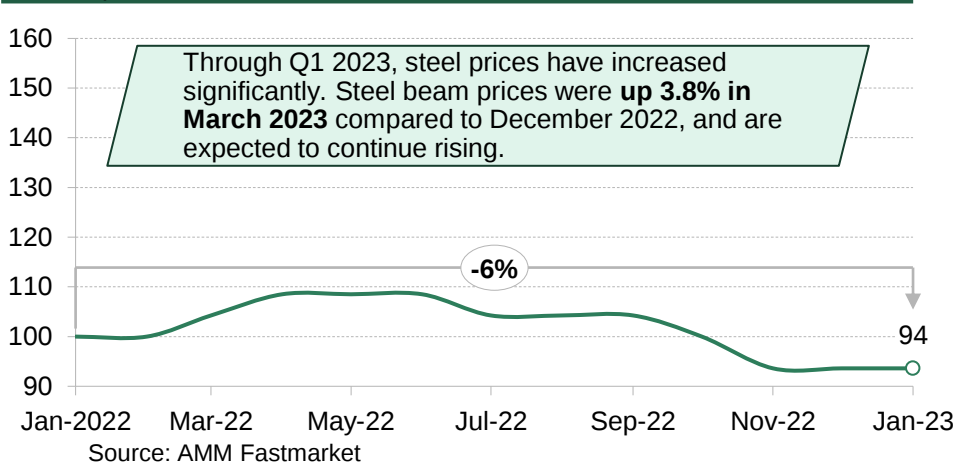


Source: FRED

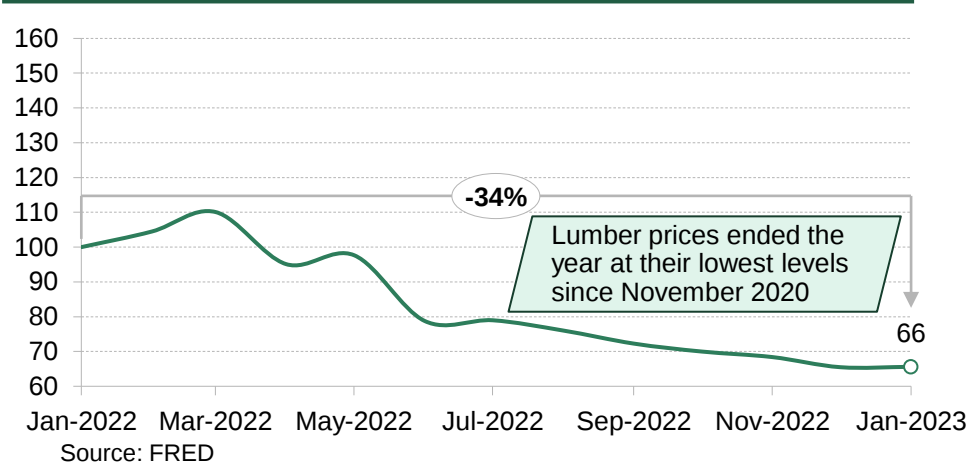


Both steel and lumber saw a decrease in prices in 2022, driven by low demand, while cement and lumber pricing had steadily increased in 2022

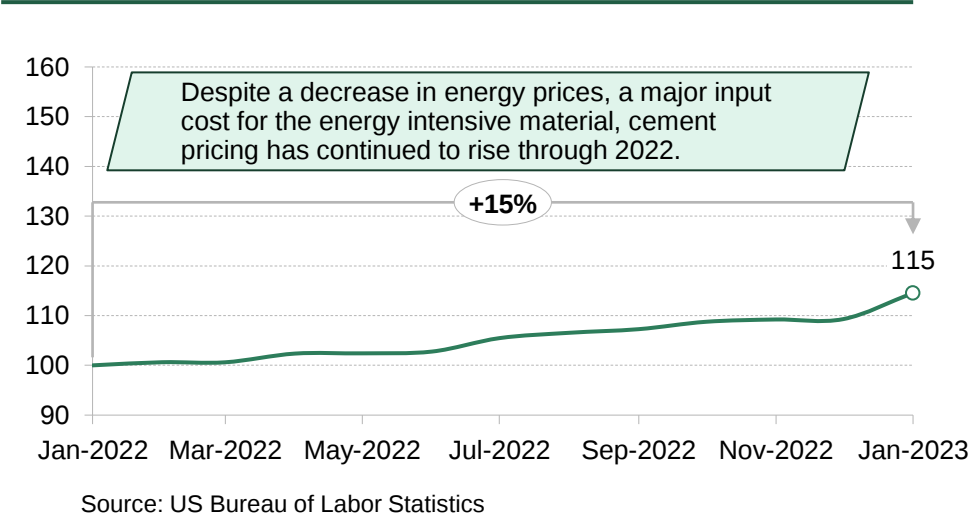
Steel beam price (8x8 inch.)
Indexed price, Jan 22=100



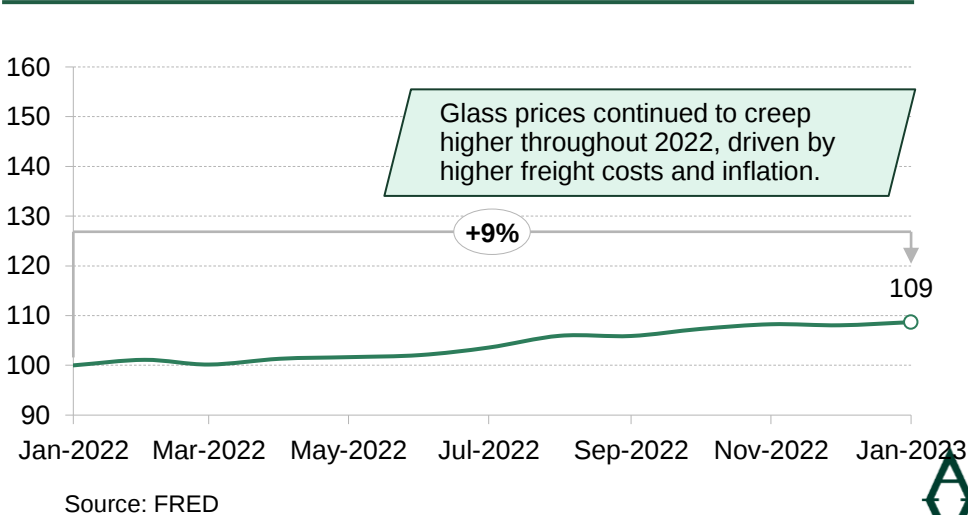
Lumber price development
PPI, Jan 22=100



Cement price development
PPI, Jan 22=100



Flat glass price development
PPI, Jan 22=100



Both M&A and divestitures in the sector have been driven by horizontal integration and PE firms deploying dry powder

Recent Transactions

		Deal Value 2.3 BUSD	Stain-Gobain expands its footprint in concrete and cement admixtures and building materials for infrastructure, residential, and commercial building materials with the acquisition of GCP Applied Technologies for \$2.3BUSD in September 2022.
		Deal Value 1.3 BUSD	Holcim acquired Duro-Last, a leader in commercial roofing systems, for 1.3BUSD to complement and strengthen Holcim’s roofing portfolio.
		Deal Value 3.3 BUSD (in revenue)	Fortune Brands divested its cabinets business, Masterbrand (3.3 BUSD in revenue in 2022), into a separate and distinct company in December 2022 in an effort to focus on its core kitchen and bath business.

M&A Drivers

Industry characteristics	Consolidation	Private equity interest
The industry is fragmented, and growth is modest. This can be explained by the maturity of the industry as well as by commoditization of many building materials and products.	Horizontal integration has been a driver of industry transactions, as organic growth is hard to achieve in the fragmented industry. M&A has also been used to expand the acquirer’s product portfolio. Divestitures have also been used to focus on core competencies.	PE firms’ interest in the industry has seen an upswing in 2022 and have been a key driver of mergers and acquisitions, especially as building products companies seek to modernize and emphasize clean practices.

Sources: Capital IQ, MDM, Applied Value Analysis:



Applied Value Building Products Report

Executive Summary & Introduction

Financial Benchmarking

Industry Trends

Applied Value Presentation



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*...



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

2021

Industries of Expertise

- Sourcing & Procurement
- Supply Chain & Operations
- Commercial Excellence & Pricing
- Product & Innovation
- Strategy & Organization
- M&A

Applied Value Group



Investments



Management Consulting



Social Responsibility

Selected portfolio companies







ROI driven



Fact-based



Practical over theoretical



Hands-On



Global perspectives

Global Footprint

 New York

 Miami

 Stockholm

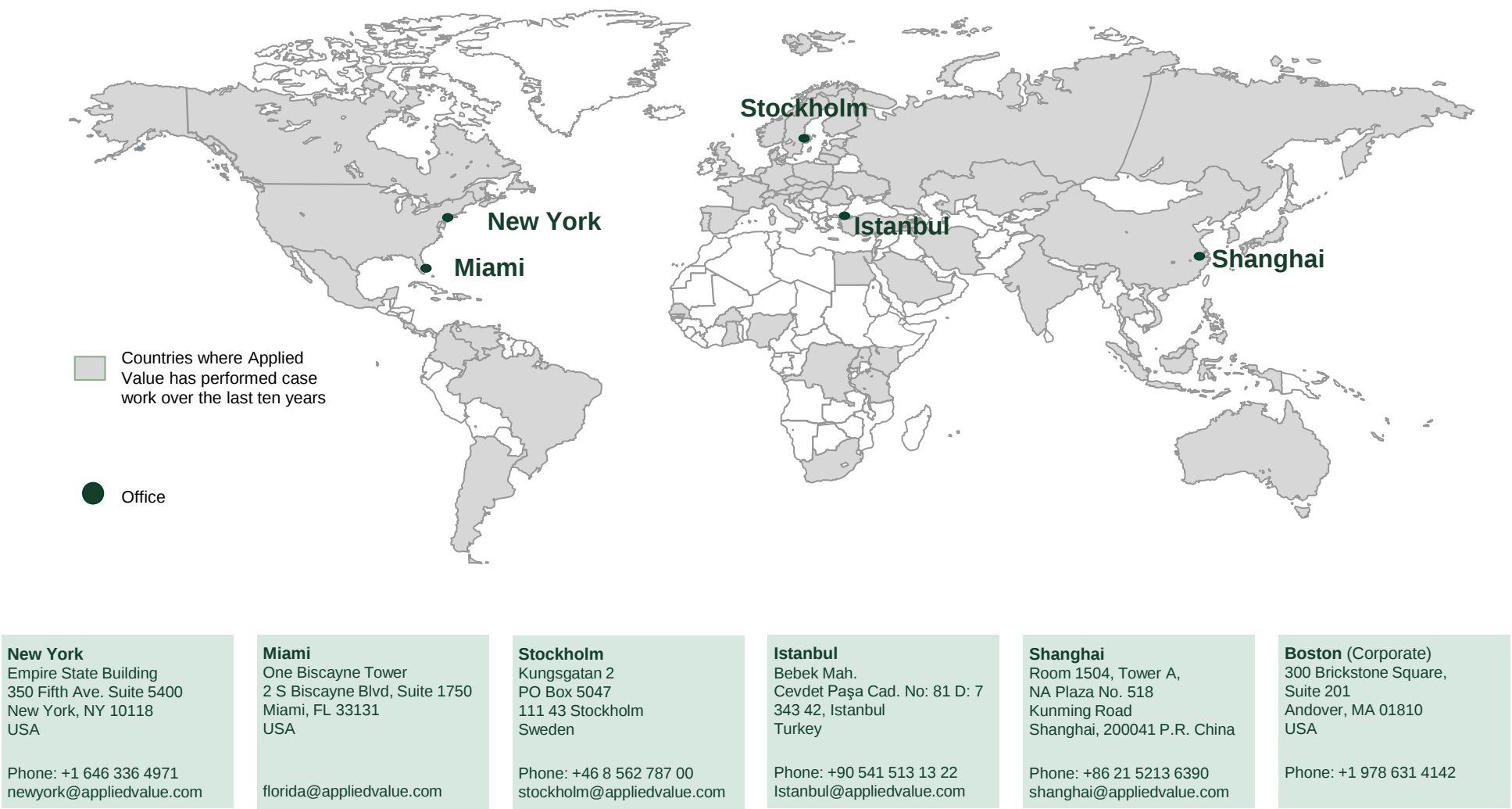
 Istanbul

 Shanghai

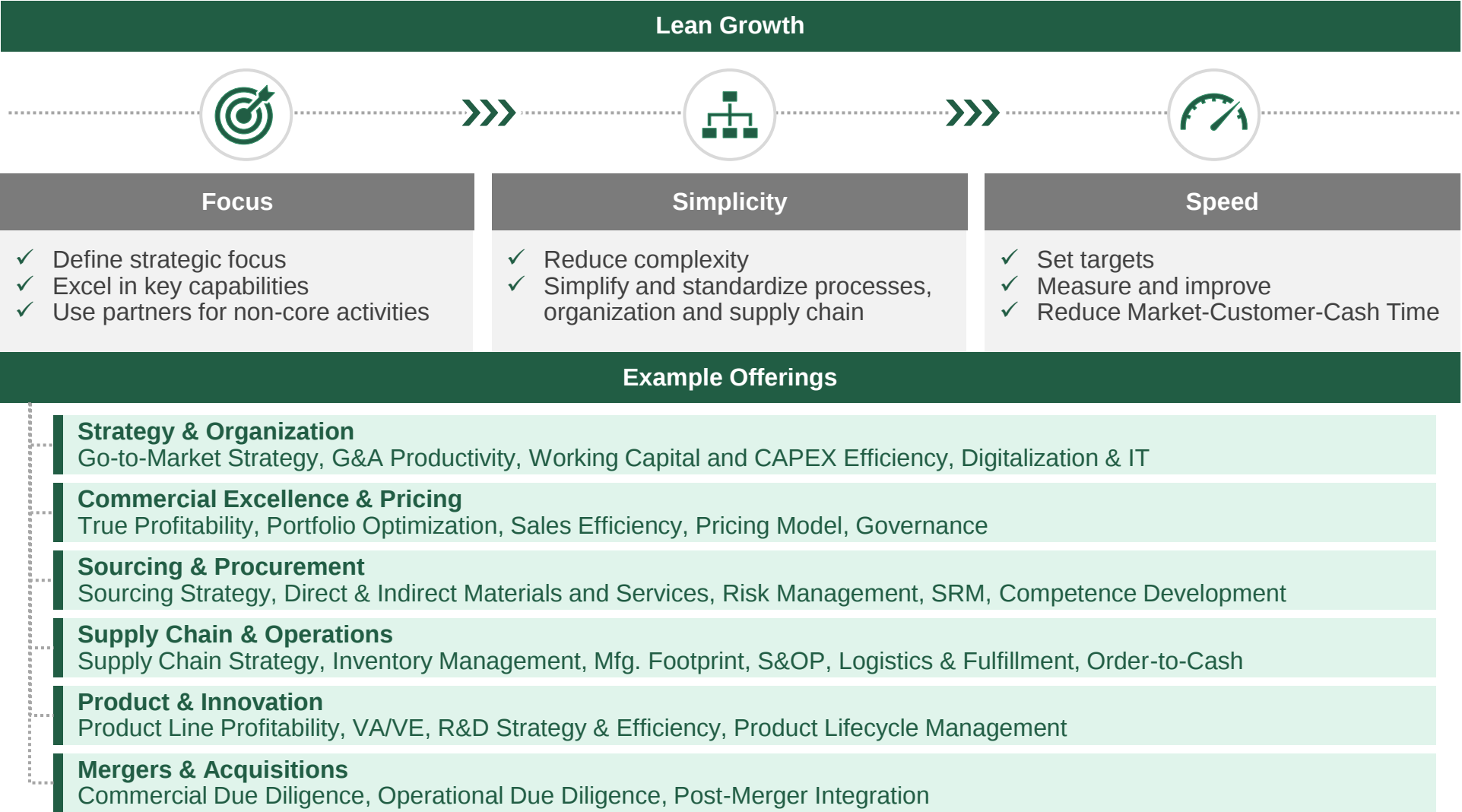


Applied Value challenges and supports repeat global clients across industries from five offices

Applied Value Offices and Footprint



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



Applied Value has strong expertise in several areas relevant for driving improvements in the building materials and products industry

Applied Value Expertise	Improvement levers	Typical results
Commercial Excellence	› True Profitability & Product Portfolio Productivity › Pricing Strategy, Tools, and Governance › Salesforce Incentives and Training	› Portfolio rationalization by 20-60% › Price improvements of 5-10%
Sourcing & Supply Chain	› Direct & Indirect Commodity Strategy › Value Analysis / Value Engineering › Competence Development Programs	› 4-12% reduction of COGS in long-term Sourcing Programs › 5-25% reduction of spend in selected categories (mainly indirect material)
Manufacturing & Operations	› Manufacturing Footprint Strategy › Make v. Buy Decisions › Plant Overhead Reductions	› Reduction of 15-25% in mfg. network burden costs › Reductions of 20-30% in plant indirect
Order to Delivery	› Current State Process Mapping › Elimination of low-value add activities › Streamline Ways-of-Working	› “Order-to-Cash” lead time reductions of 15-45%
SG&A Efficiency	› Organizational Design › Headcount Drivers and Org. Dimensioning › Process Automation and Outsourcing	› 20-30% reduction of SG&A costs





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