Trinity Student Managed Fund
Sector Reports

Basic Materials

September 2024

TRINITY SMF
STUDENT MANAGED FUND

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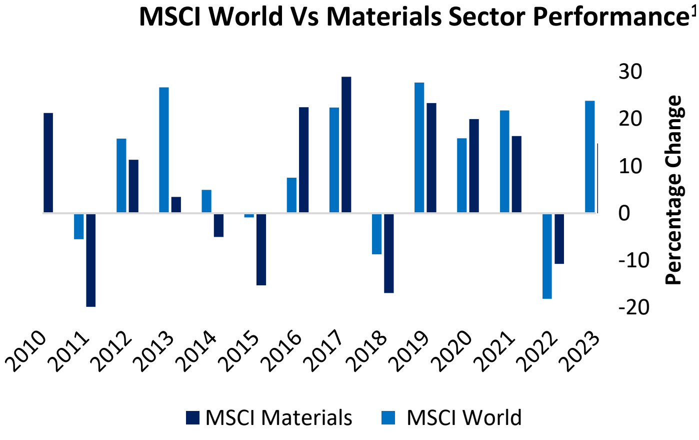
Sector Overview

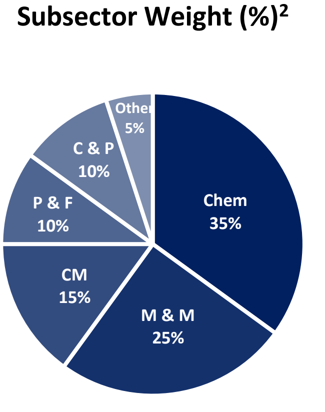
All physical products begin as basic materials. The Basic Materials sector consists of companies dedicated to discovering, extracting, and processing raw materials such as metals, minerals, and chemicals. These companies typically operate at the beginning of the supply chain, sourcing natural resources that form the foundation of various goods.

This sector is wide-ranging, with a market capitalisation of over $2 trillion. Demand within this sector is cyclical, meaning its performance is heavily linked to economic conditions, flourishing in prosperous times and contracting during economic downturns. It is also influenced by the demand for different raw materials.

Investing in this sector requires a keen eye on the future prices of commodities, which are governed by supply and demand dynamics. Beyond commodity prices, investors must also consider external factors such as inflation, interest rates, fiscal policies, and exchange rates, all of which can alter the prospects of companies in this sector. Furthermore, sustainability and governance play crucial roles, as adherence to regulations and standards is essential for maintaining value.

The materials sector's diversity means each subsector experiences different trends and catalysts. Nevertheless, a prevailing trend across the sector is the movement towards sustainability, with an emphasis on producing environmentally-friendly materials and embracing sustainable development and circular economy principles.





Subsectors

Metals and Mining

This industry encompasses the discovery, extraction, processing, and selling of metals and minerals globally. It includes several key subgroups:

Precious Metals: High-value metals that are rare and have unique applications, such as gold and platinum.

Industrial Metals: Metals essential for construction, manufacturing, and development, like copper and nickel.

Key Trends: Economic downturns leading to lower prices. Precious Metals tend to perform well in down markets, and future demand could be expansive due to semiconductor and battery growth.

Key Players: Rio Tinto, BHP Group, Glencore, Southern Copper.

Containers and Packaging

This industry involves manufacturing and distributing packaging and plastic solutions for various applications. It plays a crucial role in preserving and enhancing the functionality of goods for consumers and businesses.

Key Subgroups: Paper Manufacturing, Plastic Manufacturing.

Key Trends: The push for sustainable material usage, coupled with increasingly stringent environmental regulations, is driving a shift towards eco-friendly packaging solutions. Companies are adopting recyclable, biodegradable, and reusable materials to meet regulatory demands and consumer expectations

Key Players: Smurfit WestRock, International Paper Co.

Construction Materials

This industry focuses on producing and supplying raw materials used by construction companies to build infrastructure, housing and commercial properties.

Key Subgroups: Aggregate, Cement, Glass, Sand.

Key Trends: Weakened demand in commercial real estate, combined with decreased Chinese demand due to a housing market decline, and the trend of U.S. reshoring, nearshoring, and onshoring, are collectively impacting global economic dynamics.

Key-Players: CRH, Holcim AG, Martin Marietta Materials.

Paper & Forestry Products

The paper and forestry products industry involves the cultivation and harvesting of trees for the production of paper, pulp, packaging, and wood products.

Key-Trends: The Paper and Forestry Products industry is experiencing a significant shift towards sustainability and eco-friendly practices, driven by consumer demand and regulatory pressures - alongside growing demand for packaging materials. Additionally, the industry is adapting to challenges like rising raw material and energy costs, supply chain disruptions, and the declining demand for traditional print media.

Key-Players: Suzano, Stora Enso, UPM-Kymmene, Smurfit WestRock, International Paper Co.

Chemicals

The chemicals subsector involves the production and distribution of raw chemical substances used as essential inputs across various industries

Specialty Chemicals: High-value chemicals tailored for specific applications, including adhesives, sealants, lubricants, and performance chemicals used in diverse industries.

Agricultural Chemicals: Production of fertilizers, pesticides, and herbicides that enhance crop yields and protect plants from pests and diseases.

Industrial Gases: The production and distribution of gases like oxygen, nitrogen, hydrogen, and carbon dioxide, which are critical for processes such as steelmaking, food preservation and cryogenics, refining and chemical synthesis, and carbonation of beverages and enhanced oil recovery (carbon dioxide).

Industrial Chemicals: This refers to basic, large-volume chemical products such as acids, alkalis, and salts that are fundamental to numerous industrial processes, serving as raw materials for manufacturing and construction.

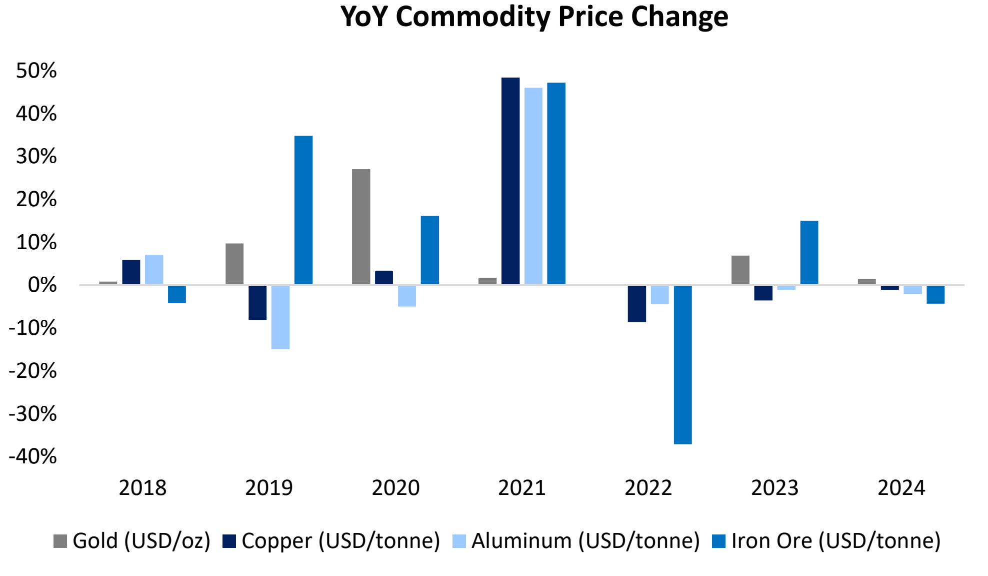
Key Trends: An increased focus on stainability, often manifesting in renewable feedstocks and the implementation of green chemical initiatives. A large focus on emerging markets as companies aim to serve increasing demand from growing industrial economies.

Key Players: Linde, L'Air Liquide, The Sherwin Williams Co, BASF, Dow Chemical, DuPont.

KPI's

Commodity Prices

Commodity pricing refers to the market value of goods like metals, chemicals, minerals, and agricultural products that are traded on exchanges. These prices fluctuate based on supply and demand dynamics, geopolitical events, currency fluctuations, and macroeconomic conditions. For companies in the basic materials sector, commodity prices are a crucial indicator because they directly influence revenue and profitability. Commodity manufacturers are fundamentally price takers as there is no real way to differentiate their product, meaning the market price of the good is key to the business ability to generate profit.

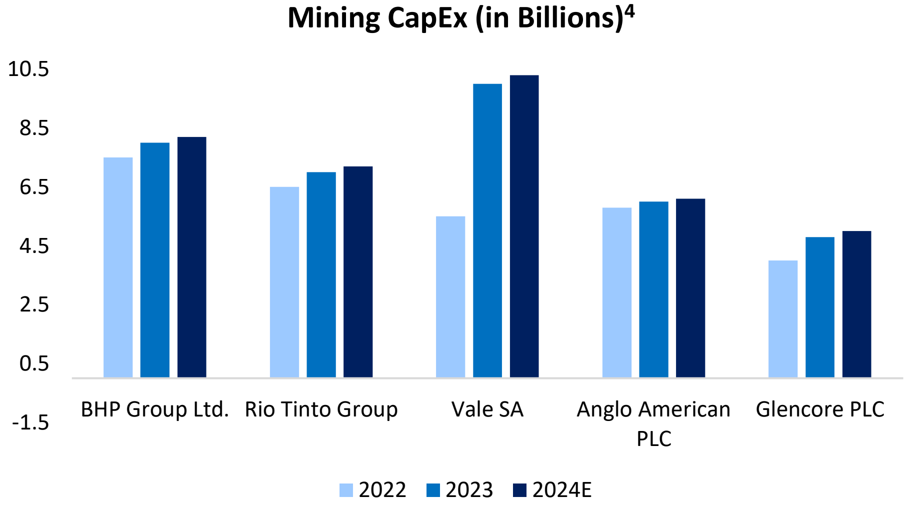


Production Volume

Production volume refers to the total quantity of raw materials or products that a company produces within a given period. This metric reflects a company's operational efficiency, capacity utilisation, and overall business health. In the basic materials sector, production volume can be influenced by several factors, including the availability of raw materials, technological advancements, labour force efficiency, and market demand. Understanding a company's production volume helps investors assess the company's ability to scale operations and respond to market conditions. For instance, if demand for a specific material like copper increases due to a growth in electronics manufacturing, a company with the ability to ramp up production quickly can capitalise on the opportunity. Conversely, maintaining a high production volume during periods of low demand might lead to excess inventory or potentially drive commodity pricing down.

Capital Expenditure

Capital Expenditure (CapEx) refers to the funds that a company invests in acquiring, upgrading, or maintaining physical assets such as machinery, infrastructure, technology, and equipment. These investments allow for the expansion of production capacity and the improvement of operational efficiency. CapEx is often directed toward projects such as building new production facilities, upgrading existing plants, investing in more efficient or environmentally-friendly technology, and exploring or developing new mining sites. Understanding the future CapEx of a business allows investors to understand the business's management goals and plans for the future. Understanding the CapEx trends across the sector is also key as it allows for a fuller picture of where the industries are heading and what companies are prioritising.



Consumer Demand

Consumer demand refers to the desire and willingness of consumers to purchase goods and services, which directly influences the market for products in the basic materials sector. Shifts in consumer demand can have a significant impact on the production and pricing of these materials. When consumer demand for finished goods increases, such as cars, electronics, or housing, the demand for basic materials like steel, aluminium, and lumber rise as well. This can lead to higher prices for these raw materials and increased production to meet the demand. Conversely, when consumer demand wanes due to economic downturns, inflation, or changes in consumer preferences, the demand for raw materials can decrease, leading to lower prices and reduced production.

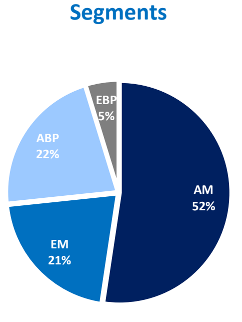
Current Holdings

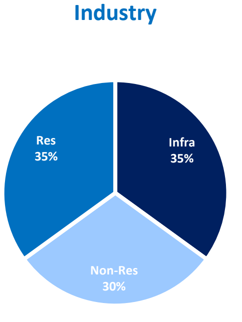
CRH (NYSE: CRH)

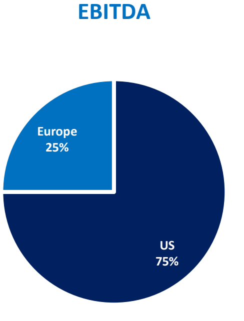
By issuing a hold recommendation for CRH, the Basic Materials team is taking a stance against the belief that the U.S. will experience a hard-landing in H2 2024.

Company Overview

CRH is a vertically integrated buildings materials producer which operates across the U.S. (75% of EBITDA) and Europe (25% of EBITDA). CRH produces aggregate and cement upstream which is used in the downstream production of asphalt and ready-mix concrete. These materials are then integrated into CRH's downstream construction products. These materials are divided across Infrastructure projects (35% of revenue), Non-Residential projects (30% of revenue) and Residential Projects (35% of revenue). CRH operates across 4 segments. American Materials (55% of EBITDA), European Materials (22% of EBITDA), American Building Products (23% of EBITDA) and European Building Products (5% of EBITDA).[5]







Business Model

CRH's business model is an attractive one that has enabled them to maintain efficiencies over competitors. CRH's free cash flow conversion of 52.3% indicates that the firm is more effective at converting EBITDA into cash then competitors. CRH also generates higher returns on the capital it has invested with an industry leading ROIC of 12.8%. CRH's vertically integrated operating-model has enabled it to generate these synergies and efficiencies. This has come at the expense of the higher margins awarded to pure-play competitors who have foregone the vertically integrated operating model. Management claim that vertical integration should win in the long run, as their model exposes them to higher-value projects, enabling greater pricing power.[6] This should translate down from the top to bottom line, generating EPS growth. This value-add vertically integrated operating model has allowed CRH to grow their top and bottom lines organically and inorganically.

Top-line growth is key for CRH as their business model does not enable them to compete on finite margin growth. Fortunately the aggregate and material business is one with a significant amount of local pricing power. This translates into top-line growth. Transporting aggregates and other materials is expensive, beyond 30 miles transport becomes unprofitable on a unit cost basis. This means that producers hold quasi-monopoly power in the localities they operate within, as it is unprofitable for competitors to transport materials from further distances. This has enabled excellent pricing power within the industry. Producers increase prices as a collective annually in January/July or in both.[7] As proof of this pricing power aggregate prices have only fallen in two years since the GFC.[8] CRH increased prices by double digits across all materials in 2023, citing their integrated strategy as one which affords them greater pricing power due to their value-add pricing approach.[9] Import substitution is not an issue for U.S. producers, again due to high transportation costs and geography. This pricing power serves as an economic moat for the majors.

For producers, top-line can grow organically through price increases or by increasing volumes. Top-line can also be grown inorganically through M&A. CRH are an excellent allocator of capital. Over the past decade CRH have sold $13 billion in business and acquired $24 billion of business.[10] This allocation has reshaped the profile of CRH. The recent divestiture of their European lime business for 8x EBITDA paired with the Texas cement acquisition from MLM for 12x EBITDA are both examples of this capital reallocation. CRH continue to align themselves with the higher growth, less cyclical and higher margin U.S. market, while decreasing European exposure. The majority of acquisitions (16 in 2023) were bolt-ons. These are small operators which CRH and others acquire to improve their local monopoly power, allowing them to hold even more pricing power which in turns helps the top-line.

	Efficiency								
	FCF Conversion			ROIC			ROA		
Company	**21'**	**22'**	**23'**	**21'**	**22'**	**23'**	**21'**	**22'**	**23'**
CRH	**49.9%**	**42.1%**	**52.3%**	**10.0%**	**12.0%**	**12.8%**	**4.6%**	**5.3%**	**6.0%**
US Aggregate Pure Play									
VMC	41.4%	33.4%	33.2%	8.6%	7.6%	10.2%	4.4%	4.6%	6.0%
MLM	48.1%	32.0%	41.5%	9.3%	7.2%	11.4%	5.2%	4.6%	6.6%
Mean	44.8%	32.7%	37.4%	9.0%	7.4%	10.8%	4.8%	4.6%	6.3%
Median	44.8%	32.7%	37.4%	9.0%	7.4%	10.8%	4.8%	4.6%	6.3%
US Conglomerates									
SUM	50.9%	30.9%	3.7%	6.4%	6.8%	6.3%	3.7%	3.9%	4.4%
EXP	120.0%	73.7%	59.6%	13.0%	18.2%	22.2%	7.7%	10.9%	13.7%
KNF	2.4%	6.5%	48.7%		7.0%	10.3%		5.4%	7.9%
Mean	57.8%	37.0%	37.3%	9.7%	10.7%	12.9%	5.7%	6.7%	8.7%
Median	50.9%	30.9%	48.7%	9.7%	7.0%	10.3%	5.7%	5.4%	7.9%
Global Conglomerates									
CX	37.2%	23.8%	38.5%	6.5%	5.0%	0.7%	4.0%	3.7%	4.9%
HOLN	63.6%	56.4%	67.2%	9.9%	10.8%	11.5%	4.2%	3.7%	4.9%
XTRA:HEI	29.1%	36.0%	52.2%	5.4%	5.3%	6.6%	4.1%	3.9%	5.0%
Mean	43.3%	38.7%	52.6%	7.3%	7.0%	6.2%	4.1%	3.8%	4.9%
Median	37.2%	36.0%	52.2%	6.5%	5.3%	6.6%	4.1%	3.7%	4.9%
Global Pure Play									
BIT:BZU	50.5%	13.3%	43.2%	13.2%	10.6%	19.1%	5.0%	6.4%	8.1%
EU Pure Play									
BREE	57.7%	27.1%	36.3%	7.8%	10.6%	9.8%	4.8%	5.5%	5.2%
SRC	45.0%	55.0%	44.7%	0.7%	4.6%	3.4%	0.5%	3.6%	2.6%
Mean	51.4%	41.1%	40.5%	4.2%	7.6%	6.6%	2.7%	4.6%	3.9%
Median	51.4%	41.1%	40.5%	4.2%	7.6%	6.6%	2.7%	4.6%	3.9%
Overall									
Total Mean	**48.5%**	**35.1%**	**43.2%**	**8.2%**	**8.2%**	**9.9%**	**4.6%**	**5.0%**	**6.4%**
Total Median	**45.0%**	**32.7%**	**43.2%**	**8.8%**	**7.2%**	**10.3%**	**4.6%**	**4.6%**	**6.0%**

Macro Thesis

By maintaining our position in CRH, the fund is adopting a bullish stance on the future of the U.S. economy. We believe that the market's fears surrounding a failed soft landing and recession are overblown. We continue to pound the table on increasing U.S. exposure. An interest rate cut in September and again later in the year, should serve as the catalyst needed for a broadening out of earnings across the cyclical sectors. CRH is well positioned to benefit from this expansion.

CRH have been discipled allocators of capital throughout the cycle, conducting acquisitions in the range of 6-7x EBITDA. The 12x Texas acquisition illustrates the current U.S. macroeconomic tailwinds in place. The U.S. is in the middle of a construction super cycle with U.S. material consumption nearing the highs reached pre-GFC. Unprecedented state and federal spending through the IRA, the CHIPS Act and the IIJA have aided this. This has led to higher multiples being charged for acquisitions that would have been cheaper at the beginning of the cycle. The current pricing of aggregates also serves as an indicator of sector tailwinds. VMC – a pure play aggregate producer – has stated that the current market is the most positive in terms of pricing they have ever seen.[11] The same point is made by MLM, management state that aggregates have been fundamentally mispriced over a number of years and that the current cycle has illustrated the markets new sentiment towards these materials.[12]

CRH's new capital allocation plan illustrates management's confidence in the cycle. Over the past 5 years CRH have reinvested $20 billion into the business, 60% towards growth CapEx and M&A and 40% cash returns through share buybacks and dividend increases. CRH plan to ramp up this program over the next 5 years by reinvesting $30 billion with 70% exposure to growth CapEx and M&A. By mutually targeting both organic and inorganic growth strategies, CRH are aiming to capitalise on current macroeconomic tailwinds.[13]

These tailwinds paired with interest rate cuts and a soft landing should serve as the necessary catalysts for share-price appreciation.

Authenticity

The fund originally took a position in CRH following its listing on the NYSE with the belief that CRH's multiple would appreciate from the lower multiples of 5-7x EBITDA applied to European comps to the higher U.S. multiples of around 18x. The reason for the valuation difference between Europe and the U.S. is due to regulation, location in the macroeconomic cycle, growth and margins.

The U.S. approach to climate regulation is far more pro-business than in Europe. SUM's (a CRH comparable operating in the U.S.) management have spoken about the willingness of U.S. regulators to work with and help materials companies reach their emissions targets.[14] Europe on the other hand, opts for a more stringent approach. This difference is seen in investor sentiments across both regions. U.S. investors are more willing to invest in capital intensive companies that produce environmentally harmful materials, compared to their European counterparts. This difference between both regions has played a part in their valuation differences.

Industrial/Commercial/Residential construction growth has been anaemic in Europe over the past decade in comparison to the U.S. The recent introduction of the IIJA, the CHIPS Act and the IRA are all functioning as tailwinds for growth in the U.S. construction sector. These tailwinds are forecasted to continue until 2026. BZU - another comparable company operating in Europe and the U.S. – referenced how top-line growth through price increases is easier to pass on to customers in the U.S. when the industry is approaching maximum capacity.[15] These positive demand/supply dynamics are not as strong in the European market, giving rise to lower valuation multiples.

Revenue, EBITDA and EPS growth are far stronger amongst U.S. exposed operators compared to their European and globally exposed counterparts. The same story is true in terms of EBITDA margins – the preferred margin measure in this industry.[16]

CRH's business model, its increased presence in the U.S. market and its exposure to the macro catalysts in play, all make it an attractive hold.

	Growth Rates									Margins				
	Revenue			EBITDA			EPS			EBITDA				
Company	**21'**	**22'**	**23'**	**21'**	**22'**	**23'**	**21'**	**22'**	**23'**	**19'**	**20'**	**21'**	**22'**	**23'**
CRH	**12.8%**	**12.0%**	**6.8%**	**13.4%**	**11.2%**	**13.3%**	**153.3%**	**14.4%**	**22.0%**	**15.9%**	**16.6%**	**16.6%**	**16.5%**	**17.5%**
US Aggregate Pure Play														
VMC	14.3%	31.8%	6.4%	5.2%	18.6%	24.5%	14.5%	-11.9%	6.4%	24.9%	26.5%	24.4%	21.9%	25.7%
MLM	22.2%	13.8%	10.0%	11.2%	7.3%	32.8%	-2.5%	22.2%	41.0%	28.3%	30.1%	27.4%	25.9%	31.2%
Mean	18.3%	22.8%	8.2%	8.2%	13.0%	28.7%	6.0%	5.2%	23.7%	26.6%	28.3%	25.9%	23.9%	28.5%
Median	18.3%	22.8%	8.2%	8.2%	13.0%	28.7%	6.0%	5.2%	23.7%	26.6%	28.3%	25.9%	23.9%	28.5%
US Conglomerates														
SUM	3.3%	0.1%	8.6%	9.0%	-2.3%	17.1%	6.8%	79.4%	5.8%	19.2%	21.1%	19.1%	20.2%	19.7%
EXP	14.9%	15.2%	7.5%	24.4%	21.0%	9.8%	20.3%	31.4%	14.6%	27.9%	29.4%	31.8%	33.4%	34.1%
KNF	2.3%	13.7%	11.7%	-3.8%	6.8%	39.8%	-11.9%	-10.5%	57.6%		13.9%	13.1%	12.3%	15.3%
Mean	6.8%	9.7%	9.3%	9.9%	8.5%	22.2%	5.1%	33.4%	26.0%	23.6%	21.5%	21.3%	22.0%	23.0%
Median	3.3%	13.7%	8.6%	9.0%	6.8%	17.1%	6.8%	31.4%	14.6%	23.6%	21.1%	19.1%	20.2%	19.7%
Global Conglomerates														
CX	13.5%	8.3%	11.6%	34.6%	-17.7%	30.0%	NM	-32.1%	-65.6%	15.7%	16.8%	20.0%	15.3%	17.8%
HOLN	16.0%	8.8%	-7.5%	14.4%	-3.3%	10.5%	35.8%	46.8%	-2.0%	19.9%	20.9%	20.6%	18.3%	21.8%
XTRA:HEI	6.4%	12.7%	0.4%	0.9%	-0.5%	18.9%	16.2%	14.5%	NM	15.3%	17.6%	16.7%	14.7%	17.4%
Mean	12.0%	9.9%	1.5%	16.6%	-7.2%	19.8%	26.0%	9.7%	-33.8%	17.0%	18.4%	19.1%	16.1%	19.0%
Median	13.5%	8.8%	0.4%	14.4%	-3.3%	18.9%	26.0%	14.5%	-33.8%	15.7%	17.6%	20.0%	15.3%	17.8%
Global Pure Play														
BIT:BZU	6.9%	16.0%	8.1%	1.6%	28.8%	24.0%	3.6%	-12.7%	112.1%	21.3%	23.0%	21.9%	24.3%	27.9%
EU Pure Play														
BREE	32.7%	13.3%	6.5%	48.2%	11.3%	3.6%	132.2%	43.7%	-6.6%	18.2%	14.8%	16.5%	16.2%	15.7%
SRC	118.9%	97.8%	7.9%	54.5%	107.0%	80.3%	NM	41.1%	NM	13.7%	15.3%	8.4%	15.1%	12.8%
Mean	75.8%	55.6%	7.2%	51.4%	59.2%	42.0%	132.2%	42.4%	-6.6%	16.0%	15.1%	12.5%	15.7%	14.3%
Median	75.8%	55.6%	7.2%	51.4%	59.2%	42.0%	132.2%	42.4%	-6.6%	16.0%	15.1%	12.5%	15.7%	14.3%

Valuation

CRH is currently priced at 9.6x EBITDA. Has our original investment thesis played out or is there still room for valuation expansion? CRH will not reach the 18x EBITDA multiples prescribed to VMC and MLM – the two largest U.S. aggregate pure plays. VMC and MLM both derive circa 80% of their revenue from aggregate alone.[17] CRH on the other hand derives around 16%. The market loves aggregate producers and it is easy to see why. Both VMC and MLM have industry leading margins compared to their diversified competitors with EBITDA margins sitting between 25-30%. CRH on the other hand maintains a 17.5% margin, in line with the margins of global majors like Holcim, Heidelberg and Cemex. VMC and MLM's margins are so high because producing aggregate is far cheaper than other materials and aggregate production is not as vulnerable to weather conditions as other materials, meaning that fixed costs can be controlled to a greater extent. The attractiveness of the pure-play aggregate industry has enabled VMC and MLM to command high valuations.

SUM, EXP and KNF are better comparables to CRH. These comparable are not aggregate pure-plays as they only deriving between 15% and 40% of revenue from aggregates, with the remainder – like CRH – coming from cement, asphalt and ready-mix concrete. KNF – like CRH – operates a significant construction segment. These comparable companies trade between 11-12x EBITDA. The Basic Materials team believe that CRH can and should trade at the lower end of this range at 11x EBITDA. The market should apply a European discount to CRH limiting it from reaching the 12x multiple prescribed to EXP or the 14x multiple prescribed to SUM. By applying an 11x multiple to CRH we arrive at an implied share price of $94.75. An implied upside of 25% from where it trades as of 6th August.

EBITDA	Metric	Multiple	Ent Value	Net Debt	Eq Value	Shares	Share Price
LTM	6870	11x	75570	-10884	64686	682.7	$94.75

	Valuation			
	EV/EBITDA		P/E	
Company	**LTM**	**NTM**	**LTM**	**NTM**
CRH	9.5x	9.2x	18.6x	15.3x
US Aggregate Pure Play				
VMC	17.9x	17.0x	37.5x	30.5x
MLM	18.0x	17.2x	26.7x	27.6x
Mean	18.0x	17.1x	32.1x	29.0x
Median	18.0x	17.1x	32.1x	29.0x
US Conglomerates				
SUM	14.5x	9.2x	18.2x	20.8x
EXP	11.9x	11.1x	18.2x	16.3x
KNF	9.7x	10.9x	24.5x	22.3x
Mean	12.0x	10.4x	20.3x	19.8x
Median	11.9x	10.9x	18.2x	20.8x
Global Conglomerates				
CX	5.8x	5.5x	83.7x	10.0x
HOLN	8.1x	7.8x	14.8x	13.4x
XTRA:HEI	5.8x	5.4x	8.8x	8.5x
Mean	6.5x	6.2x	35.8x	10.6x
Median	5.8x	5.5x	14.8x	10.0x
Global Pure Play				
BIT:BZU	4.3x	4.9x	6.6x	7.3x
EU Pure Play				
BREE	6.0x	5.4x	12.1x	11.4x
SRC	11.5x	4.3x	34.4x	9.2x
Mean	8.7x	4.8x	23.3x	10.3x
Median	8.7x	4.8x	23.3x	10.3x
Overall				
Total Mean	**10.9x**	**9.8x**	**25.8x**	**17.4x**
Total Median	**11.5x**	**9.2x**	**20.3x**	**16.3x**

A similar upside is reached when valuing CRH via a ten year DCF.

In terms of revenue growth, we forecasted growth at 4.36% for the current year – in line with street expectations – before reducing growth conservatively to 4% annually. Revenue is then compounded at a terminal growth rate of 2.5% - the long run growth rate of the U.S. economy. This 4% growth rate will be driven by tailwinds in the U.S. at the state and federal level as spending on infrastructure continues to comes online regardless of who holds the oval office. CRH is also better exposed to the highly technical onshoring of data centres when compared to competitors due to their vertically integrated operating model. VMC and MLM have both mentioned how they lack exposure to these highly technical construction projects due to their pure-play operating models.[18] CRH's M&A and growth CapEx plans over the next 5 years leave plenty of room for upside on this 4% figure.

We forecasted operating margins to grow from their current 12.75% to 17%. CRH's management team have placed an emphasis on margin growth for 10 years running, it is unlikely that management's ambitions will change any time soon. A 17% operating margin makes sense as CRH further aligns itself with the U.S., a geography which commands higher margins than Europe.

The reinvestment figure is derived from CRH's capital turnover ratio as well as their ROIC. Capital turnover (sales/capital) provides a measure of how much a company has to reinvest each year in order to meet their revenue targets. The industry average sits at a low 0.9x due to the capital intensive nature of these businesses. CRH maintained a 1.23x ratio which we have forecasted to fall to 1.19x and eventually 1.17x as the company matures. ROIC is forecasted to reach 16% by year 10, in line with consensus estimates as CRH's vertically integrated model continues to improve efficiencies. The free cash flows generated are then discounted at a WACC of 9.87%.

This DCF generated an 18% upside, pricing CRH at $89.90. Taking a weighted average of both the intrinsic and comparable valuations CRH is priced at $92.35, implying a 21% upside.

Conclusion

We should maintain conviction in our original investment thesis as CRH's re-rating is still in play. If our bullish outlook on the future of the U.S. economy – ignoring the current bearish sentiment in place – is correct and a soft landing is reached, CRH will be primed to see share price appreciation as funds return to the cyclical sectors.

CRH

Discounted Cash Flow

($ in millions, fiscal year ending December 31)

	Historical Period			CAGR		Projection Period										CAGR	
	2020	2021	2022	(20' - 22')	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	(24' - 33')	Terminal Year
Revenue	25,888.0	29,206.0	32,723.0	*8.12%*	34,949.0	36,472.78	37,931.69	39,448.95	41,026.91	42,667.99	44,374.71	46,149.70	47,995.69	49,915.51	51,912.13	*4.04%*	53,988.62
% growth	*-7.98%*	*12.82%*	*12.04%*		*6.80%*	*4.36%*	*4.00%*	*4.00%*	*4.00%*	*4.00%*	*4.00%*	*4.00%*	*4.00%*	*4.00%*	*4.00%*		*2.50%*
EBIT	2,694.0	3,311.0	3,828.0	*12.42%*	4,490.0	5,015.01	5,626.53	6,065.28	6,530.12	7,022.44	7,543.70	7,845.45	8,159.27	8,485.64	8,825.06	*6.99%*	9,178.07
% margin	*10.41%*	*11.34%*	*11.70%*		*12.85%*	*13.75%*	*14.83%*	*15.38%*	*15.92%*	*16.46%*	*17.00%*	*17.00%*	*17.00%*	*17.00%*	*17.00%*		*17.00%*
EBIT(1-t)	2,128.3	2,615.7	3,024.1	*12.42%*	3,547.1	3,961.9	4,445.0	4,791.6	5,158.8	5,547.7	5,959.5	6,197.9	6,445.8	6,703.7	6,971.8	*6.99%*	7,250.7
Less: Reinvestment	653.00	187.00	1,426.00		1,809.00	1280.48	1225.98	1275.01	1326.02	1402.63	1458.73	1517.08	1577.77	1640.88	1706.51		1774.77
Unlevered Free Cash Flow						2,681.37	3,218.99	3,516.55	3,832.78	4,145.10	4,500.79	4,680.82	4,868.05	5,062.78	5,265.29		5,475.90
WACC	9.87%					9.87%	9.87%	9.87%	9.87%	9.87%	9.67%	9.47%	9.27%	9.07%	8.87%	8.87%	
Discount Period						1	2	3	4	5	6	7	8	9	10		
Discount Factor						0.9102	0.8284	0.7540	0.6863	0.6246	0.5695	0.5203	0.4761	0.4365	0.4010		
Present Value of Free Cash Flow						2,440.49	2,666.62	2,651.43	2,630.25	2,589.04	2,563.33	2,435.24	2,317.79	2,210.05	2,111.19		

Enterprise Value	
Cumulative Present Value of Free Cash Flow	**24,615.44**
Terminal Value	
Terminal Cash Flow	5,475.90
Terminal Cost of Capital	8.87%
Terminal Value	##########
Discount Factor	0.401
Present Value of Terminal Value	**45,089.01**
% of Enterprise Value	65%
Enterprise Value	**69,704.45**

Implied Equity Value and Share Price	
Enterprise Value	69,704.45
Less: Total Debt	##########
Less: Preferred Stock	(831.56)
Less: Noncontrolling Interest	(767.00)
Plus: Cash and Cash Equivalent	6,341.00
Implied Equity Value	61,307.89
Number of Shares	682.70
Implied Share Price	**$ 89.80**
Current Share Price	$ 76.00
Upside	**18.16%**

WACC			
Capital Structure		**Cost of Equity**	
Debt/Capital	**18.34%**	Risk-free Rate	4.37%
Equity/Capital	**81.66%**	Market Risk Premium	5.28%
		Beta	1.37
Cost of Debt		**Cost of Equity**	**11.66%**
Book Value of Debt	13,139.00		
Interest Expense on Debt	433.00	**WACC**	**9.87%**
Average Maturity	3		
Credit Rating	BBB+		
Cost of Debt	5.84%		
Tax-Rate	21%		
After-tax Cost of Debt	**4.61%**		

Eagle Materials (NYSE: EXP)

The Basic Materials team took a position in EXP at the end of August as we believe that EXP is supported by constructive long-term supply and demand dynamics. We place a target price of $288.65 on the stock, indicating a 12.5% upside from time of writing.

Company Overview

EXP is a cement and gypsum wallboard producer (90% of EBTIDA), operating in the Midwest of the United States.

Macro Outlook

The primary thesis for this investment is a macroeconomic one. We believe that the market has overshot on the downside due to concern surrounding a U.S. recession. This provides an attractive entry-point into a stock with constructive long-term supply and demand dynamics.

Cement

(1) Since 2010 – the year the U.S. EPA instituted NESHAP – the supply of domestic cement has effectively been capped at 100 million tons per annum.[19] Over the past three to four years, demand for cement has exceeded this cap on domestic supply, meaning that excess cement has had to be imported from abroad at higher marginal costs to consumers.[20] (2) EXP's cement production is predominantly exposed to public infrastructure projects. Current state and federal spending is acting as a macro tailwind for this industry which is expected to continue until at least the end of 2025. With (1) supply capped at a fixed rate and (2) demand increasing, EXP have been able to extract higher prices from consumers with effectively a 100% incremental margin at no incremental fixed investment. Consensus estimates have re-rated EXP's revenue run-rate growth down to circa 4% into the future.[21] This is mostly due to the EXP's inability to increase sales volume as they are already run-rating at max capacity. We believe that EXP's ability to raise prices as demand continues to exceed fixed supply in the long-run will offset the streets somewhat dour sentiment. EXP's exposure to imported supply is laid out in the 'Authenticity' section

Gypsum

EXP's wallboard segment is also exposed to favourable long-term supply and demand dynamics. EXP's wallboard sales have historically moved in conjunction with U.S. single-family housing starts. (Single-family construction is 2-3x more exposed to gypsum wallboard than multi-family construction).[22] Again, we believe that the street is overly negative on the future of single-family housing within the U.S. As August progresses into September and positivity about potential (and actual) FED interest rate cuts bed in – EXP's stock should rally as the market begins to recognise that falling rates will encourage home construction and improve the financial position of the U.S. consumer.

Ultimately, this macro thesis is based on taking a stance against an overly pessimistic street outlook. Both cement and wallboard have positive long-term supply and demand dynamics which will be rewarded by the market once fears of a U.S. hard-landing recede.

Authenticity

EXP's economic moat comes from its location in the U.S. Midwest. Cement has a low-value-to-weight ratio, meaning that it is unprofitable for producers to ship it long distances. As a result, imported cement does not effect EXP's Midwest markets which are located far from the coast. Only markets on the banks of the Mississippi or near the sea are able to benefit from these imports.[23] Because of this, the price of cement in EXP's markets can continue to rise without fear of being undercut by cheaper imports from abroad. This will grow EXP's top-line faster than street estimates. EXP's wallboard segment – located in the Midwest and Sunbelt regions – is also protected by the same geographic moat. U.S. single-family home start statistics have been poor in 2024 so far, with seasonally adjusted starts down 14% MoM and down 15% YoY. But when you dig into regional figures EXP's regions have performed much better. Seasonably adjusted single-family housing starts in the Midwest have increased 17% MoM and 8% YoY.[24] The market has not recognised this trend and have been overly negative on the future of single-family housing.

As the two macro tailwinds above play out and as the market begins to recognise the two benefits arising from EXP's location, the companies stock price should climb higher.

Company Specific

EXP's operational statistics blow its competitors out of the water. It maintains the highest EBITDA margins in the U.S. construction material industry, beating out the much loved MLM and VMC, who both trade at much higher multiples. We encourage the reader to take a look at EXP's investor presentation on their website to see the astounding efficiencies management have unlocked over the past 10 years in comparison to some of the strongest comparables in the U.S.

	Margins					Efficiency								
	EBITDA					FCF Conversion			ROIC			ROA		
	19'	20'	21'	22'	23'	21'	22'	23'	21'	22'	23'	21'	22'	23'
US Aggregate Pure Play														
VMC	24.9%	26.5%	24.4%	21.9%	25.7%	41.4%	33.4%	33.2%	8.6%	7.6%	10.2%	4.4%	4.6%	6.0%
MLM	28.3%	30.1%	27.4%	25.9%	31.2%	48.1%	32.0%	41.5%	9.3%	7.2%	11.4%	5.2%	4.6%	6.6%
Mean	26.6%	28.3%	25.9%	23.9%	28.5%	44.8%	32.7%	37.4%	9.0%	7.4%	10.8%	4.8%	4.6%	6.3%
Median	26.6%	28.3%	25.9%	23.9%	28.5%	44.8%	32.7%	37.4%	9.0%	7.4%	10.8%	4.8%	4.6%	6.3%
US Conglomerates														
SUM	19.2%	21.1%	19.1%	20.2%	19.7%	50.9%	30.9%	3.7%	6.4%	6.8%	6.3%	3.7%	3.9%	4.4%
EXP	27.9%	29.4%	31.8%	33.4%	34.1%	120.0%	73.7%	59.6%	13.0%	18.2%	22.2%	7.7%	10.9%	13.7%
KNF		13.9%	13.1%	12.3%	15.3%	2.4%	6.5%	48.7%		7.0%	10.3%		5.4%	7.9%
Mean	23.6%	21.5%	21.3%	22.0%	23.0%	57.8%	37.0%	37.3%	9.7%	10.7%	12.9%	5.7%	6.7%	8.7%
Median	23.6%	21.1%	19.1%	20.2%	19.7%	50.9%	30.9%	48.7%	9.7%	7.0%	10.3%	5.7%	5.4%	7.9%

Despite EXP's industry leading margins, ROIC, cash flow yield, cash flow conversion, ROA and ROE the company trades at a steep discount to VMC and MLM and even at a discount to SUM, its closest comparable. EXP should at least trade a turn of EBITDA higher. This would lead to the target price and upside percentage laid out above. There is certainly room for EXP to trade higher than this estimate considering its superior operational metrics.

EBITDA	Metric	Multiple	Ent Value	Net Debt	Eq Value	Shares	Share Price
LTM	755.4	13.9x	10778.06	-1079.5	9698.56	33.6	$288.65

	Valuation			
	EV/EBITDA		P/E	
	LTM	NTM	LTM	NTM
US Aggregate Pure Play				
VMC	17.9x	17.0x	37.5x	30.5x
MLM	18.0x	17.2x	26.7x	27.6x
Mean	18.0x	17.1x	32.1x	29.0x
Median	18.0x	17.1x	32.1x	29.0x
US Conglomerates				
SUM	14.5x	9.2x	18.2x	20.8x
EXP	11.9x	11.1x	18.2x	16.3x
KNF	9.7x	10.9x	24.5x	22.3x
Mean	12.0x	10.4x	20.3x	19.8x
Median	11.9x	10.9x	18.2x	20.8x

Investing Themes

Mandate

Given the cyclicality of the Basic Materials sector, a focus on investing in stable businesses with a strong balance sheet, predictable earnings, reliable cash flows and a proven ability to manage fluctuating commodity prices, will be essential for generating returns in the face of cyclical headwinds.

Our investments in CRH and Eagle Materials illustrates a keen focus from the team on each of these key mandates.

Key Themes for the Year

US Exposure

The Basic Materials team are taking a stance against the idea that the U.S. will enter a severe recession at the tail-end of 2024. Potential interest rate cuts over the remainder of the year should serve as catalysts for a broadening out of earnings within small caps/cyclicals. The Basic Materials sector is primed to take advantage of this as state and federal spending continues to come online.

Our current investment in CRH and Eagle Materials exposes us to this positive U.S. fiscal tailwind. As a team we have already begun coverage of two other construction material companies, both of which have held strong pricing power while also maintaining rock solid balance sheets, with plenty of dry powder on hand. Investments into the construction materials sector also acts as a hedge in case we are wrong. These companies can remain resilient in the face of cyclical headwinds such as a recession.

Shifts in Emerging Markets

We are constantly looking to expose growth opportunities in Europe and the U.S. by monitoring the shifting commodity dynamics in China and emerging markets.

Our case-study on the Lithium market and Arcadium Lithium illustrates our commitment to this goal.

Sustainability

The team will continue to search for opportunities to generate returns by investing in sustainable businesses, through closely monitoring the potential growth arising in certain subsectors due to falling interest rates and increasing consumer confidence.

Again, the team's coverage of the Lithium market - which is directly exposed to the EV industry – demonstrates our commitment to this theme. We have also begun coverage of Suzano, a high-quality, environmentally-friendly, Brazilian pulp and paper producer.

Hedging Risk

The global economy is currently balanced on a knife edge with the threat of stalling economic activity in Western Markets prompting Central Banks to begin an interest rate cutting cycle. The team is currently paying close attention to the gold market where we are monitoring two companies, both of which act as levered plays on rising gold prices. By increasing our focus on gold the team is ensuring that it is able to hedge against recession risk as gold has historically held a 0.4 correlation with S&P 500 performance.[25]

Risks

Cyclicality

The Basic Materials sector is susceptible to cyclicality in the macroeconomic environment. When economic growth is positive, materials companies do well, as companies and governments need materials to expand existing infrastructure and produce more goods. It is intuitive that when economies and nations are growing, they will need materials to fuel this demand, and when growth slows demand can suffer. With high interest rates and a challenging macroeconomic environment, commodity prices and demand remain challenged. However, there is strong demand in specific parts of the sector, notably future EV growth and a large U.S. interest in onshoring. Governments often spend irrespective of the macro environment, and the U.S. has committed to strong infrastructure spending under the Biden administration. This fiscal spend has functioned as a tailwind for construction material companies.

Conflict and Geopolitical Risk

Due to the nature of industrial material development and manufacturing, basic material companies often find themselves involved in complex, multinational supply chains. An example would be lithium which is often mined in Australia or Chile, shipped to China to be refined and then shipped again to a factory in Japan or the U.S. to be used in an EV battery. Geopolitical risk is inherent in such a supply chain, through the form of tariffs, changes in trade laws and the risk of conflict. A Trump victory in the U.S. Election could serve as a major headwind for the sector as protectionist policies come into play.

Environment & Regulation

Amid a push for more sustainable business practices, firms find themselves in a more challenging regulatory environment. Firms are under pressure to change a variety of business practices, includes reducing carbon emissions, minimising waste, and ensuring the safe disposal of hazardous materials. Non-compliance with environmental standards can result in hefty fines, legal liabilities, and reputational damage. Moreover, climate change poses a direct risk to operations, with extreme weather events potentially disrupting supply chains and production facilities. Adding to this complexity is the wide variance in regulation across different parts of the supply chain. The European Union has stringent regulations under the EU Emissions Trading System (ETS), which sets a cap on the total amount of certain greenhouse gases that can be emitted. The EU's Carbon Border Adjustment Mechanism (CBAM) will come into effect from 2026, operating in conjunction with ETS credits. Companies operating in the EU must purchase allowances for their emissions, incentivising them to reduce their carbon footprint. For operators exposed to these regulations, CapEx spend has been diverted from growth towards managing emissions. In contrast, countries like China are in the earlier stages of implementing comprehensive environmental regulations, though recent policies are rapidly tightening.

Outlook for the Year

Demand Drivers and Market Opportunities

Capitalising on the growing demand for materials driven by the transition to electric vehicles (EVs) and renewable energy is likely to remain a key focus for investors and companies. Mining companies will focus on expanding their capacity to produce lithium, cobalt, and nickel, which are vital for battery technologies. Government investments in infrastructure, particularly in the U.S. and Europe, will support demand for construction materials. Continued support from initiatives like the U.S. Infrastructure Investment and Jobs Act and the European Green Deal will drive demand for eco-friendly materials and technologies. Identifying those positioned to take advantage of these trends is a key challenge we will be working on.

Geopolitical Risks and Supply Chain Disruptions

The challenge of large complex supply chains and regional and global conflict is key to understanding the sector. The ongoing conflict in Ukraine has disrupted the supply of key materials like palladium and neon, which are critical for various industrial applications. Additionally, trade tensions between major economies, such as the U.S. and China, could lead to supply chain disruptions and increased costs for raw materials. Companies are increasingly focused on diversifying their supply chains to mitigate these risks. The trend towards onshoring and developing more resilient supply chains is expected to continue through 2024, as firms seek to reduce their dependency on single-source suppliers and manage geopolitical uncertainties more effectively. Companies that do not do business in China or offer an alternative, like manufacturing in Mexico for example, are becoming more desirable to western governments.

Economic Sensitivity and Market Dynamics

As the global economy continues to navigate the challenges posed by high interest rates and inflation, the demand for materials like steel, copper, and aluminium is expected to remain volatile. In 2024, the sector is anticipated to experience a mixed performance, driven by varying rates of economic growth across different regions. In developed markets, infrastructure projects and industrial activities are likely to drive moderate demand. The U.S. Infrastructure Investment and Jobs Act, for example, is set to continue providing support for construction materials. However, in emerging markets, especially in China, slower economic growth could dampen the demand for basic materials despite ongoing urbanisation and industrialisation efforts.

Buy-list

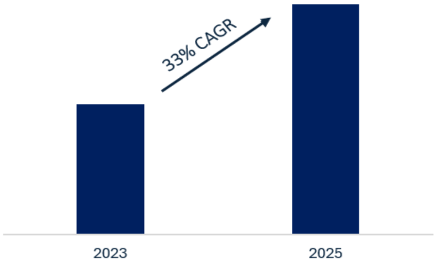
Lithium: Case Study

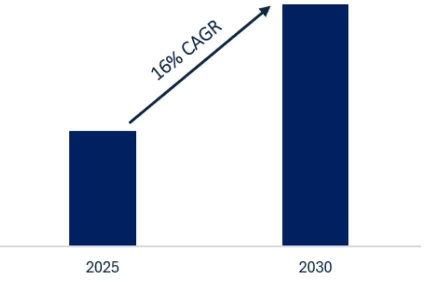
Market Overview

Demand for lithium-ion batteries is the primary driver for growth within the lithium industry. Lithium is either mined as Spodumene crystals and then converted into lithium hydroxide or carbonate, or evaporated from brine reservoirs and converted into carbonate first before then being converted again into lithium hydroxide. Lithium - unlike other commodities - is quite plentiful in the natural world. Most mineral deposits and brines however, are either too small or too low in concentration to make mining lithium economical. As a result, most of the lithium is mined from mineral deposits in Australia and Canada or pumped to the surface from brines and evaporated in man-made reservoirs within the 'Lithium Triangle' - a flat, desert-like region in South America which includes portions of Argentina, Chile and Bolivia. These regions provide the lowest cash costs for operators.

Long-Run Outlook

The demand for lithium should grow in line with the demand for a low-carbon, clean-energy economy, with the growing EV market serving as an attractive tailwind in the long run. Demand for both lithium carbonate and hydroxide are both forecasted to grow at a CAGR of 33% until 2025 and 16% until 2030 , leading to a threefold increase in demand from where we are today.[26] These positive lithium demand trends are visible in 2024. EV sales globally were up 20% YTD as of Q1. To put this in perspective, the total number of EV's sold globally in Q1 was equivalent to the number of EV's sold throughout the entirety of 2020.[27] According to Bloomberg, EV sales are expected to be approximately 41 million units in 2030, rising to approximately 75 million units in 2040, representing a penetration rate of 44% and 75% respectively, of all passenger vehicles sold.[28] Despite the existence of these secular long term growth tailwinds, the lithium market has experienced pricing pressure over the past year. With prices falling from a high of circa $72,000/t in 2022 to around $15,000/t as of Q4 2023.

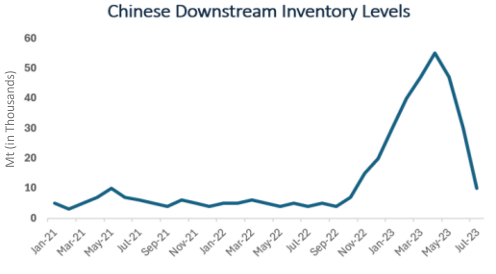




Short-Run Outlook

This rapid decline in pricing was due to unfavourable supply and demand dynamics within the lithium market. High spot prices in 2022 encouraged producers - particularly those operating in China - to flood the market with volume. This led to a situation of oversupply where the amount of lithium available on the market exceeded customer demand. A rising interest rate environment paired with uncertain inflation expectations weighed heavily on EV - and in turn lithium - demand.

Throughout 2022 the market was infused with heavy inventory build-up, specifically downstream of the lithium miners amongst the battery manufacturers. Battery production increased aggressively - particularly in China - in Q4 2022, as OEMs anticipated higher demand and a continuation of government subsidies. Due to high inventory levels coming into Q1, the demand from OEMs in China for upstream lithium was dampened. The full effects of this reduced demand were felt in Q3 and Q4 of last year as fixed contract pricing re-corrected and as the lag between falling consumer demand and reduced EV sales played out. This led to reduced battery sales for OEMs which ultimately led to the price of lithium plummeting from ATHs.



Bull Case

The bull case for lithium is to hold the belief that the market has overshot on the downside, with the same analyst community shifting consensus from “we will have a growing deficit through the end of the decade” to “the surplus has already arrived” in less than 12 months.[29] The reality is that supply always disappoints, bottlenecks always appear, and the EV story is at the S curve of adoption - stabilisation in supply/demand dynamics is inevitable. Despite the current oversupply in the market, it appears that appetite in China is starting to pick up again as prices start to dip into the high end of the cost curve.

Downstream inventories in China also appear to be quite depleted. The convergence of upstream and downstream inventories to a low level is a leading indicator of undersupply in the future. The last time upstream and downstream operators converged on this low inventory path; lithium prices popped to ATHs.

Paul Graves, Arcadium Lithium CEO speaking on the inventory situation: *"There's not a lot of confidence to build in advance because there's so much variability in that OEM to battery to cathode part of the supply chain [. . .] we need more clarity there. When it starts to appear then we'll get to restocking."*[30]

The oversupply in 2023 came largely from Chinese operators pumping volume onto the market. This volume however, unlike the low-cost volume coming from South America, Australia and Canada, was largely the result of high-cost spodumene mining in Africa. This is because of geopolitical tensions that prevent China from extending a major new foothold into any of the major lithium markets. The Chinese operators believed that their high-cost lithium would still be in-the-money while the market sat at ATHs. This is no longer the case, and this high-cost oversupply will not remain on the market. Current market dynamics are very different from when this expensive volume first came online. It is no longer attractive to invest in bringing new volume online at such low prices.

ALTM CEO on China: *"They're operating in an environment way below the cost of production, and it remains to be seen how they [the Chinese operators] can continue to operate in this way."*[31]

The general low pricing in the market is currently at an unsustainable level for operators outside of China as well. At current market prices, reinvestment in bringing new supply online is difficult to justify. This sentiment is echoed by Australian operators as well. The Mt. Cattlin mine has cut output and will be closing within the next year. Neither Greenbushes nor ResMines are expanding capacity at their planned rate, and Core Lithium has also announced a shutdown. These trends indicate that the current oversupply in the market should be resolved over the next year.

ALTM CEO again: *"When there are prolonged periods of lower prices that are lower than the reinvestment rate - it reduces confidence in whether expansion is economically viable [. . .] It is clear that very few lithium expansion projects make economic sense at current market prices [..] The longer prices stay near these levels the worse the impact will be on future supply shortfalls."*[32]

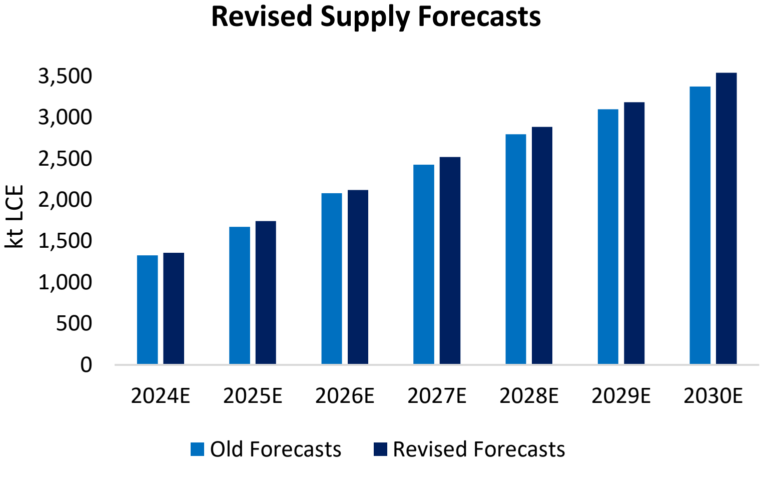
Prices need to move higher to incentivise sufficient supply expansion to meet long term demand prospects.

Another cause for optimism is the fundamental shift that has occurred with lithium pricing this cycle. If 2023 represents the nadir of the lithium cycle, then lithium prices are unlikely to dip to lows like that again. The current market low of $15,000/t is far higher than the last downcycle, where prices bottomed at just over $5,000/t following the GFC. Extrapolating forwards from this, the next cycle low should again be higher than the last as the lithium market experiences positive secular tailwinds. This implies that mid cycle prices should be significantly higher than the current market price before bottoming out in the high teens/low twenties. This is a positive fundamental shift within the market.

Despite the short-term blips we have seen in the lithium market, the long-term trajectory for electrification has not fundamentally changed.

Bear Case

The global demand for lithium has slowed from +44% in '21 and +48% in '22 to about 29% in '23 per JP Morgan estimates, while supply is catching up, with growth rates increasing from +18% in '21 and +34% in '22 to +40% in '23. With demand continuing to moderate amidst a tough interest rate backdrop and supply still strong, the market appears to be shifting from a deficit to a surplus, far sooner than most expected a year ago. The current levels of oversupply will likely continue through 2024 as interest rates remain elevated and inflation stickier than expected.



There are currently just over 30 lithium mines in operation globally with circa 100 others in development. This will feed supply growth at elevated levels above and beyond the current level of demand within the market. Despite news of some factories being shut in China due to environmental regulation and the downward revision on capacity expansion in Australia, the current level of supply coming online over the next year or two is too great to drive lithium prices much higher. Despite downward revisions on CapEx spend, Arcadium Lithium still forecasted a 4x increase in capacity from current levels by 2026.

Current industry cash-costs seem to be between \$9,000/t-\$10,000/t, meaning that a long-term incentive price for lithium only needs to hit around \$13,000/t (a price lithium currently trades above) assuming a 30% CapEx spend, 15% ROIC and accounting for overruns on management OpEx estimates.

Pairing the current oversupply with this bearish estimate of long-term lithium pricing, it seems unlikely that prices will rise meaningfully over the course of 2024/25. Since lithium stocks generally move in line with the price of lithium, this bear case implies further depreciation of lithium stock prices.

Arcadium Lithium (NYSE: ALTM)

ALTM is our preferred way of expressing belief in future rising lithium prices.

Company Overview

ALTM is the result of a merger between Livent Corp (a stock previously covered by the fund in 22'/23') and Allkem. Livent was spun-off from FMC in 2019 and focused exclusively on lithium mining in Argentina via extraction at the Fenix basin, a facility which has been in operation since 1997. Allkem on the other hand was formed from the merger of Orocobe and Galaxy Resources in 2021. The company originally mined lithium through the Mt. Cattlin spodumene mineral reserve mine in Australia and another in Canada. The merger of both companies has turned ALTM into the premier vertically integrated miner and producer operating in the western world.

Macro Outlook

The Macro case for an investment in ALTM is laid out in the bull and bear scenarios above. We believe that an investment in ALTM at current lithium market prices is unattractive. However, as 2024 moves into 2025 and as the supply/demand dynamics laid out above rectify themselves, ALTM could become a very attractive long-term buy with changing supply/demand characteristics serving as the main catalyst for stock price appreciation.

Company Specific

Growth within ALTM will be driven by (1) fixed contracts (2) operational efficiency and (3) volume coming online.

Fixed Contracts

ALTM's fixed price contracts have enabled it to earn above market pricing on its lithium hydroxide. While lithium hydroxide is currently trading at a discount to carbonate on the spot market, ALTM's fixed long-term contracts have enabled it to earn a premium. Average selling price for ALTM's sat at circa $20,000/t, significantly above current spot prices. These long-term contracts will provide a buffer to ALTM throughout 2024 while the lithium market remains in a low part of the cycle.

Operational Efficiency

ALTM are the only miner making use of DLE (Direct Lithium Extraction) at their Fenix plant, making it the lowest cost operation on the planet. DLE leads to better ramp up times compared to traditional evaporation, better efficiencies than traditional methods and recovers a higher percentage of lithium then brine ponds. Unlike traditional methods, which requires brine to be pumped to the surface and left to evaporate in lakes until the lithium carbonate has reached the correct concentration. The DLE process instead circulates the brine through a series of pipes which absorb the lithium carbonate concentrate. ALTM are already in the beginning stages of transferring their new Olaroz, Sal de Vida and Cauchari plants to a DLE system. ALTM's Gross, EBITDA and Net Income margins all sit well above the mean for their comparable set, illustrating the efficiencies this DLE system has brought. As the macro catalyst above plays out in 2025 and beyond, the market will begin to recognise ALTM's operational efficiency over competitors.

Volume

ALTM have plans to increase volume from circa 60,000 tons in 2024 to 170,000 by 2027. The majority of this capacity will come online at ALTM's lost cost operations in Argentina. ALTM have made the decision to cease operations at Mt. Cattlin at the end of this year. The mine has one of the worst cash costs in Australia due to its old age and lack of reserves. By increasing focus on the Argentinian market while expanding their present in the Canadian market, ALTM's product mix should improve, leading to lower unit costs and greater margin efficiencies.

Authenticity

ALTM's leading position in Argentina serves as an economic moat for the company. ALTM operates three brine evaporation facilities within the "Lithium Triangle" - the lowest cost region on Earth for brine extraction. ALTM holds a dominant position within the region, which other competitors have found difficult to breach. No new facilities have opened in Argentina since 2015.

The "Lithium Triangle" hold almost 60% of the world's lithium reserves, yet only Argentina has welcomed foreign investment (a stance that dates to the 1990s), with low royalty rates and mining-friendly policies. Chile and Bolivia have locked out foreigners, giving no incentive for private companies to risk capital in exploration and to invest in project development. Chile has only granted licenses to SQM and ALB for lithium production and no new mines have opened in the last 30 years. In April 2023, Chilean president Gabriel Boric went a step further, announcing plans to nationalise the country's production of lithium.

Argentina charges miners a 3% royalty - in contrast, Chile's progressive royalty runs as high as 40%. Argentina also locks in tax rates in mining contracts for 30 years and allows companies to deduct double the amount spent on exploration from taxes. Rio Tinto, Xijin Mining, Ganfeng, and Tianqi are among the major's pouring money into the country. Ganfeng recently bought a private Argentine producer called Lithea for about $1B.

Milei, the new Argentinian president, poses little threat to the continuation of operations for ALTM within Argentina. Milei’s decision to curtail government spending has left local economies reliant of private investment from firms like ALTM. It would be against Argentinian interests to alter the status quo now.

Conclusion

We feel that the bear case consensus belief will continue to hold true for the remainder of 2024 as supply and demand dynamics remain unsettled. However, the long-term bull case is supported by attractive secular tailwinds with strong fundamentals. The lithium market generally and ALTM specifically will both be monitored closely by the Basic Materials team over the course of the year.

Disclaimer

References

1. DWS Group. "MSCI World Materials UCITS ETF 1C." Accessed August 14, 2024. https://etf.dws.com/en-lu/IE00BM67HS53-msci-world-materials-ucits-etf-1c/.

2. MSCI. (2024). MSCI World Materials Index. MSCI, https://www.msci.com/documents/10199/6ce4617e-9127-480f-8f3b-1fdf4c0c8962

3. MSCI. "MSCI World Materials Index Methodology." Accessed August 14, 2024. https://www.msci.com/documents/10199/09f39a29-9710-49e1-ba7b-b34e12670f85.

4. S&P Global Market Intelligence. "Capex for 30 Biggest-Spending Miners to Rise 6.2% in 2023." Accessed August 14, 2024. https://www.spglobal.com/marketintelligence/en/news-insights/research/capex-for-30-biggest-spending-miners-to-rise-6-2-in-2023.

5. CRH plc (2024) *Annual Report 2023.* Accessed 1 May 2024 https://www.crh.com/media/5126/crh-annual-report-2023-web-version.pdf

6. CRH plc (2024) *Q1 Earnings Call*.

7. Summit Materials Inc (2024) *Q1 Earnings Call.*

8. U.S. Geological Survey (2024) *Aggregates Time Series Data by State, Type, and End Use 1971 – 2022* [data set] Accessed 15 May 2024. https://usgs.gov/media/files/usgs-aggregates-time-series-data-state-type-and-end-use

References cont'd

9. CRH plc (2024) *Annual Report 2023.*

10. CRH plc (2024) *Q2 Earnings Call.*

11. Vulcan Materials (2024) *Q1 Earnings Call.*

12. Martin Marietta Materials (2024) *Q1 Earnings Call.*

13. CRH plc (2024) *Q1 Earnings Call.*

14. Summit Materials (2024) *Q1 Earnings Call.*

15. Buzzi Spa. (2024) *2023FY Earning Call.*

16. S&P Capital IQ (2024) *Capital IQ Databases.*

17. Vulcan Materials (2023) *2023FY Earnings Call*

18. Vulcan Materials (2024) *Q1 Earnings Call.*

19. U.S. Geological Survey (2024) *Mineral Commodities Summaries 2024*. Accessed 23 August 2024. https://pubs.usgs.gov/periodicals/mcs2024/mcs2024-cement.pdf

20. Buzzi Spa. (2024) *2023FY Earnings Call*.

21. Visible Alpha (2024) *Eagle Materials Consensus Estimates*.

22. Eagle Materials (2024) *2025Q1 Earnings Call*.

23. Buzzi Spa. (2024) *2023FY Earnings Call*.

24. U.S. Census Bureau (2024) *New Residential Construction Dataset.* Accessed 23 August 2024. https://www.census.gov/construction/nrc/data.html

25. KKR (2024) Mid-Year Outlook for 2024: *Opportunity Knocks*. KKR Insights. Accessed 1 August 2024. https://www.kkr.com/content/dam/kkr/insights/pdf/2024-mid-year-outlook.pdf

26. Arcadium Lithium (2024) *Q1 Earnings Call.*

27. Arcadium Lithium (2024) *Q1 Earnings Call.*

28. Bloomberg (2023) *Electric Vehicles Outlook 2023.* BloombergNEF. Accessed 1 August 2024.https://assets.bbhub.io/professional/sites/24/2431510_BNEFElectricVehicleOutlook2023_ExecSummary.pdf

29. Arcadium Lithium (2024) *Q1 Earnings Call.*

30. Arcadium Lithium (2024) *Q1 Earnings Call.*

31. Arcadium Lithium (2024) *Q1 Earnings Call.*

32. Arcadium Lithium (2024) *Q1 Earnings Call.*