

# Albemarle Corp.

## Equity research report

Investment  
recommendation

**BUY**

*Current share price: \$106.6 | Target share price: \$118.0*

- We see a 10.65% potential upside in the share prices of Albemarle in the next 12 months
- This is due to becoming an industry leader in one of the highest growth markets in the speciality chemicals company

## Executive Summary

Our financial analysis leads us to recommend a long position in NYSE:ALB, with a 12-month price target of \$117.99. This implies 10.65% upside, excluding dividends. In FY17, Albemarle paid \$1.28 in dividends per share. For FY18 the forecast dividend per share is \$1.31, implying a forward yield of 1.23%. For 23 consecutive years, the company has increased its quarterly dividends.

Albemarle Corporation is a US-based speciality chemicals company with leading positions in lithium, bromine, refining catalysts and applied surface treatments. It employs approximately 5,000 people and serves customers in approximately 100 countries.

Over the past couple of years Albemarle has moved into lithium and lithium materials and has become the industry leader in one of the highest growth markets in the speciality chemicals industry. It is the growth in lithium demand, due to the growth of electric vehicles and lithium-ion batteries that we believe will be the main driving factor behind the growth of this company.

We believe the current market fears over increasing lithium production driving down prices are overblown, presenting an attractive entry price for long-term investors.

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| Performance   | 1m    | 3m   | 12m    |
|---------------|-------|------|--------|
| Albemarle (%) | -0.92 | 2.33 | -17.49 |
| S&P500 (%)    | 1.66  | 3.64 | 17.02  |

## Company Overview

Charlotte, NC-based Albemarle Corporation (ALB) is a premier specialty chemicals company with leading positions in attractive end markets globally. It is a leading producer of highly-engineered specialty chemicals geared to meet customer requirements across a bevy of end markets including petroleum refining, consumer electronics, energy storage, construction and automotive.

Albemarle, in January 2015, completed its acquisition of Rockwood Holdings, Inc for \$5.7 billion. Rockwood became a fully-owned subsidiary of Albemarle following the deal closure.

The company's former Performance Chemicals segment was split in 2016 into two separate segments, Lithium and Advanced Materials and Bromine Specialties. This led to the creation of three reportable segments – Lithium and Advanced Materials, Bromine Specialties and Refining Solutions.

Albemarle, in April 2018, completed the sale of its polyolefin catalysts and components business to W. R. Grace & Co. (GRA). Per the terms of the deal, the curatives and organometallics portions of the Performance Catalysts Solutions (PCS) business remain with Albemarle.

The company realigned its reportable segments following this divestment, effective first-quarter 2018. The PCS business has been merged with the Refining Solutions segment to form a new segment called Catalysts. As such, the company now has three reportable segments – Lithium, Bromine Specialties and Catalysts.

The Lithium unit is a low-cost producer of one of the most diverse portfolios of lithium derivatives in the industry. The company's bromine business includes products used in fire safety solutions and other specialty chemicals applications.

Albemarle recorded sales of roughly \$853.9 million in second-quarter 2018 with Lithium, Bromine Specialties and Catalysts segments accounting 37%, 26%, 33%, respectively. Its other businesses represented the balance 4% of sales.

| Market Data            |            |
|------------------------|------------|
| TKR                    | <b>ALB</b> |
| Price (\$)             | 106.63     |
| 12m High               | 144.99     |
| 12m Low                | 83.10      |
| Shares Outstanding (m) | 110.5m     |
| Mkt Cap(m)             | 11,782.62  |
| EV                     | 12,608.88  |

| Key shareholders               |        |
|--------------------------------|--------|
| <b>Vanguard Group</b>          | 11.55% |
| <b>Franklin Resources</b>      | 8.51%  |
| <b>Blackrock</b>               | 7.23%  |
| <b>Jennison Associates LLC</b> | 7.06%  |
| <b>State Street Corp</b>       | 5.52%  |
| <b>BNY Mellon</b>              | 4.13%  |

| Senior Leadership Team   |  |
|--------------------------|--|
| <b>Luther C. Kissam</b>  | Chairman and CEO                           |
| <b>Silvio Ghyoot</b>     | President (Refining Solutions)             |
| <b>Raphael Crawford</b>  | President (Bromine Specialties)            |
| <b>John Mitchell</b>     | President (Lithium and Advanced Materials) |
| <b>Matthew K. Juneau</b> | Corporate Strategy and Investor Relations  |
| <b>Karen G. Narwold</b>  | Chief Admin Officer                        |
| <b>Ron Zumstein</b>      | Chief Financial Officer                    |

## Industry & Competitor Analysis

Albemarle operates in two main industries. The speciality chemistry segment includes engineering chemicals for consumer electronics, petroleum refining, utilities, packaging, construction, automobile, pharmaceuticals, crop protection, food safety, and custom chemistry.

In 2015 Albemarle became the industry leader in Lithium and Lithium derivatives through acquiring Rockwood Holdings, it holds the strongest vertical position in the industry from raw material extraction to product manufacturing. This was a major move by the business, with a cash and stock transaction valued at \$6.2 billion. Through strategic growth Albemarle has gained a competitive advantage over its competitors in the chemicals industry, which has seen low levels of growth in recent years.

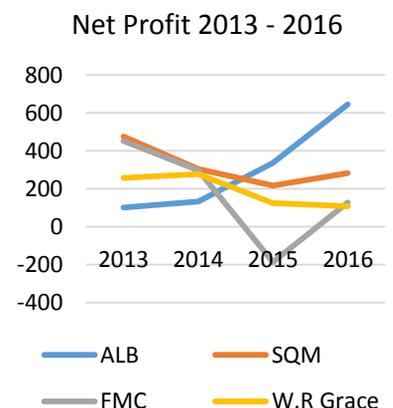
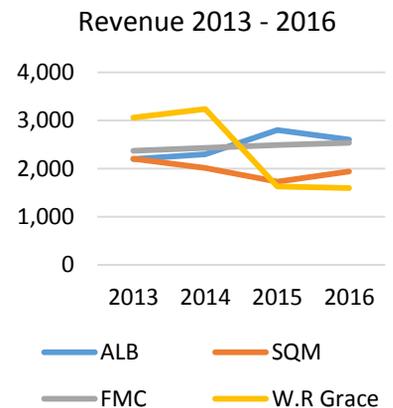
Albemarle's Lithium is used in the production of Lithium ion batteries, transportation vehicles and future energy storage technologies. Some of its major Lithium customers are Panasonic, Samsung, Binova International and Umicore S.A.

Almost 39% of Albemarle's revenue comes from operations in the Lithium sector (\$968 million) with the remaining 61% generated through speciality chemistry (refining solutions 29% and Bromine 32%). In 2016, revenue generated from Lithium grew by 16%.

All of Albemarle's divisions have healthy profit margins. In 2016 Lithium generated a net income of \$261.4 million with a 27% net margin. Refining solutions generated a net income of \$202.9 million with a 27.7% net margin and Bromine produced \$187.4 million of net profit at a 23.6% margin.

Over the past few years, declining Bromine prices have reduced Albemarle's profits. However, this has been offset by an increase in profits in both lithium and refining solutions.

| Competitors                 |                         |           |
|-----------------------------|-------------------------|-----------|
| Sub-division                | Market Cap (\$ million) | P/E Ratio |
| <b>Lithium</b>              |                         |           |
| FMC Corp.                   |                         |           |
| Lithium                     | 12,478                  | 34.89     |
| SQM                         | 15,176                  | 56.1      |
| Sichuan Tianqi              | 4597.8                  | 38.08     |
| <b>Bromine</b>              |                         |           |
| Israel Chemicals Ltd.       | 1,098                   | 19.5      |
| Lanxess Specialty Additives | 1,056                   | 24.98     |
| <b>Refining Solutions</b>   |                         |           |
| W.R Grace                   | 4,620                   | 23.71     |
| BASF                        | 81,110.9                | 21.43     |



## Industry & Competitor Analysis

Due to Albemarle's unrelated business sectors, it is important to consider competitors in the each sector.

### Lithium & Advanced Materials

Albemarle became the world's largest lithium producer in 2015 after the acquisition of Rockwood; it now boasts the highest revenue in the lithium sector, as well as the highest earnings and the highest valued assets. This puts the company at the top of the lithium industry. Albemarle now effectively controls one third of the lithium carbonate market through its own salt brine assets in Chile and a 49% joint venture interest in the Talison mine in Australia.

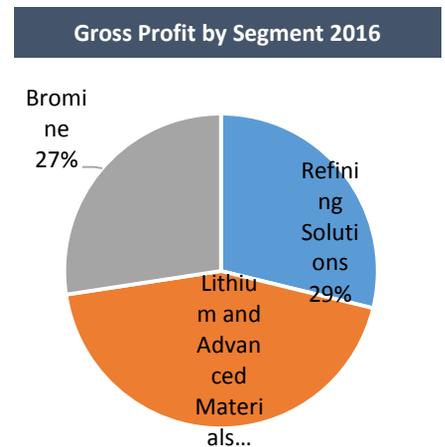
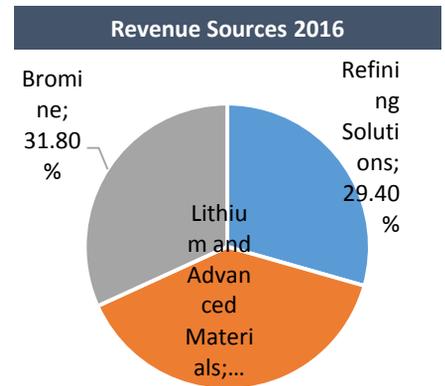
Chinese mining companies have expanded their stake in Lithium, making China the fourth largest lithium producing country.

SichuanTianqi is China's largest lithium mining company. Australia's largest mine, Greenbushes, is majority controlled by China's Tianqi Group, who own a 51% stake in Talison Lithium. Albemarle owns the remaining 49%. China is expected to fuel lithium-ion battery production, which is set to increase by 521% by 2020.

Albemarle is in a strong competitive position to meet this demand. In addition, as the demand for electric vehicles increases, there is expected to be mid double digit annual growth for global lithium demand. The long-term outlook for lithium looks positive with annual global electric vehicle sales forecasted to hit 24.4 million by 2030, an increase of 2340% from today (See appendix figure 3).

Albemarle's market position will remain dominant over the coming years having already negotiated a long-term contract through to 2030 with the Chilean government to extract 200,000 metric tons of lithium. This contract is also looking to be extended. Signing new terms that would allow Albemarle to extract 70,000 tons of lithium annually over 27 years.

In January 2018, competitor SQM resolved their arbitration with the Chilean government and renegotiated their lease on the Salar de Atacama. Under the new agreement, SQM will be allowed to produce up to 2.2 million metric tonnes of lithium through 2030, which is around 7-8x the amount SQM was previously allowed to produce. As a result, forecasts for lithium prices have been downgraded by many analysts and Albemarle and other lithium related companies have seen falls in their share prices.



## Industry & Competitor Analysis

### Bromine

Albemarle is the world’s second largest producer of bromine, a chemical widely used primarily in flame-retardants for electronics. Its biggest competitor is Israel chemicals ltd (ICL), which accounts for 35% of the world’s bromine production. Since 2012, ICL has seen a fall in revenue of 20%, due to falling demand as TV’s, desktops and laptops ceded share to less bromine–intensive tablets and smartphones. Despite a tepid demand outlook, we expect Albemarle to generate healthy profits due to its low cost position in the Dead Sea. Albemarle’s Dead Sea production comes from its 50% stake in Jordan Bromine (a joint venture with ICL). With future demand looking weak, we expect Albemarle to turn to other business segments to increase profits.

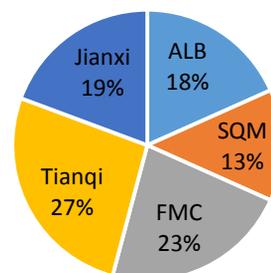
### Refining solutions

In 2016, Albemarle generated \$732.1 million in revenue from refining solutions. The refining solutions business segment can be broken down into two divisions- Heavy Oil Upgrading (FCC catalysts) and Clean Fuel Technologies (HPC catalysts).

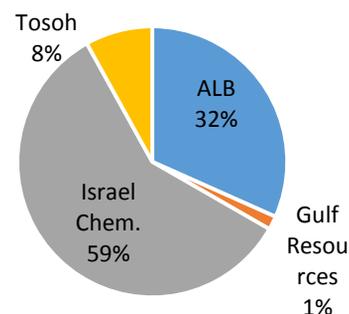
The market for refinery catalysts in the oil-refining sector was \$4,967 million in 2016, giving Albemarle a 15% market share. The market is expected to be worth \$6,490 million by 2023, growing at 3.8% on average between 2017 and 2023. There are 500 FCC units being operated globally, each of which requires a constant supply of FCC catalysts. There are 3,000 HPC units being operated globally, or a capacity of approximately 44 million barrels per day, each of which typically requires replacement HPC catalysts once every one to four years. Furthermore, because of the highly customized nature of the catalysts it is difficult for competitors to provide products that offer greater value than existing catalysts, particularly as they must undergo trial periods to demonstrate superior efficiency. This creates significant barriers to entry for new firms to compete, and due to the constant renewal from customers; it puts the Albemarle in a sound position.

| Long-Term Assets Location 2016 |       |
|--------------------------------|-------|
| Chile                          | 33%   |
| United States                  | 30.5% |
| Australia                      | 10.3% |
| Jordan                         | 8.1%  |
| Netherlands                    | 5.2%  |
| Germany                        | 4.2%  |
| South Korea                    | 2.4%  |
| Brazil                         | 1.7%  |
| Other                          | 4.6%  |

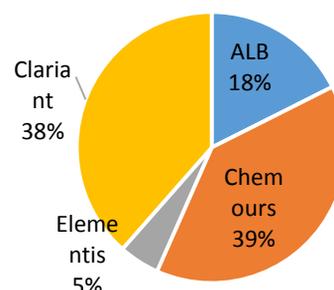
Lithium Market Share



Bromine Market Share



Refining Solutions Market Share



## Market Environment

Chemicals stocks have outperformed global equities by 7% since the start of 2017, driven by the production of titanium dioxide and through mergers and acquisitions. The sector saw over 1500 deals worth an estimated \$210bn in the first half of 2017.

The sector has seen a large number of mergers and acquisitions in an attempt to boost growth in the sector. Large firms are trying to optimize their portfolios through acquiring smaller complementary businesses. They are selling off their assets to focus on higher growth prospects and are stockpiling this cash to create opportunities for peers to participate in divestitures amid the current surge of mergers and acquisitions in the sector.

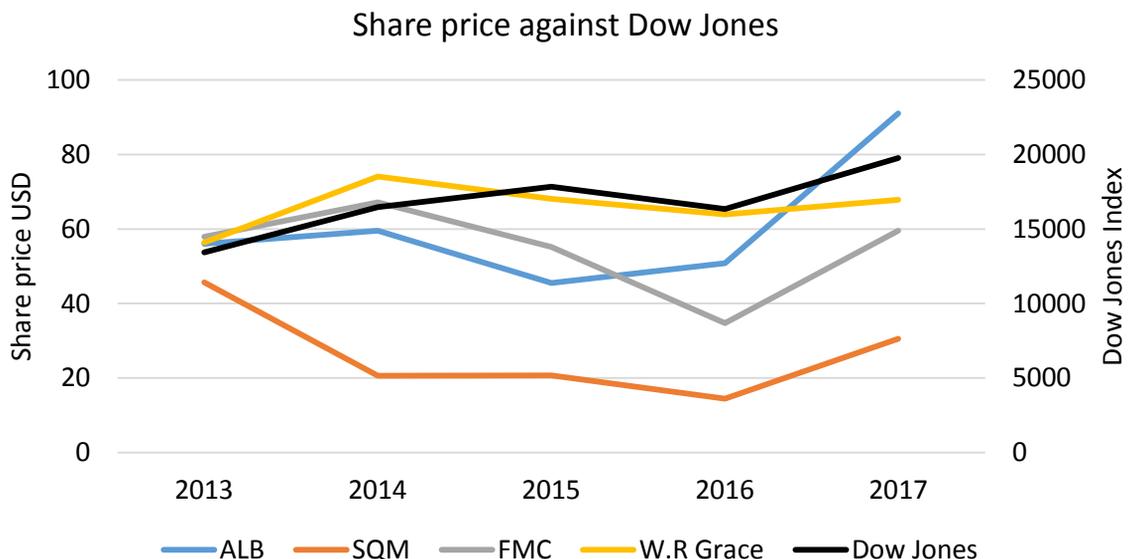
M&A is helping speciality chemicals firms to reduce costs through benefitting from economies of scale in an attempt to increase their earnings.

The graph below maps Albemarle's share price with its competitors, SQM, FMC and W.R Grace from 2013 to 2017. The Dow Jones can also be seen as its index grows over these years. Albemarle's stock performs similar to of its peers, they have struggled to increase their share price between the years 2013 and 2016. This has been to sluggish growth within the market in these years. However since 2016 all these companies have seen significant stock growth largely due to the growing usage and demand of lithium. Albemarle saw the second biggest share price growth between 2016 and 2017 with an increase of 79%, behind SQM of 110%.

We expect growth to remain steady over the coming years with share price growth coming from growing lithium demand.

| Credit Ratings    |             |
|-------------------|-------------|
| Moody's           | <b>BAA2</b> |
| Standard & Poor's | <b>BBB</b>  |

| Recent Events and M&A |  |
|-----------------------|--|
| <b>2015</b>           | Acquired Rockwood Holdings for \$6.2 billion   |
| <b>2014</b>           | Sale of Antioxidant, Ibuprofen and Propofol businesses for \$80.7 million to focus on Bromine and Catalysts. |
| <b>2013</b>           | Completed Bromine production and expansion in Jordan Bromine (A joint venture with Arab Potash)              |
| <b>2011</b>           | Albemarle develop a proprietary technology for lithium extraction from Brine                                 |



## Financial Analysis

### Revenue

Although Albemarle's Revenue has seen an overall increase over the past 7 years; it has failed to do this consistently. In 2012 and 2013, revenue fell for two consecutive periods. The main reason for this reduction was poor performance in the polymers and plastics segments. In 2012, there was an 11% reduction in revenue generated from Polymers. The segment was sold later that year, resulting in a further decrease in revenue in 2013. Revenue from catalysts declined by 4.38% in 2012 and 6.21% in 2013. Good performance in Bromine in 2013 offset the poor performance in the other sectors of the business.

2016 also saw a decline in revenue. However, this was not due to poor performance as all segments saw an increase in revenue compared to the previous year. The fall in revenue was because the sale of the Catalyst segment which generated abnormally high profits in 2015. Lithium is expected to drive Albemarle's revenue growth in the near future. Revenue generated through Bromine has remained sluggish in recent years and is expected to remain slow in the near future.

*(A full breakdown of Albemarle's revenue by segment can be found in the appendix as figure 1)*

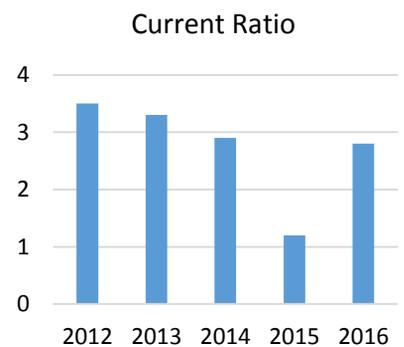
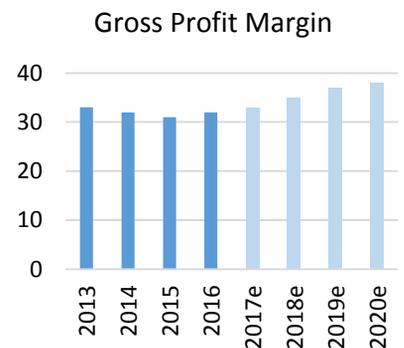
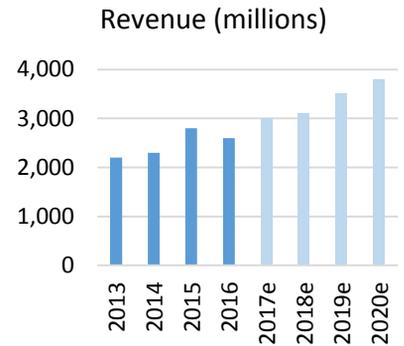
### Gross Profit

Since 2012, Albemarle has maintained a stable and healthy gross profit margin, averaging around 35%. Gross profit is expected to increase in the next few years because of an increase in efficiency in the treatment of Brine. This will help increase Albemarle's profits in the future as it expands its lithium production.

### Current Ratio

The current ratio has remained strong in recent years with Albemarle consistently able to meet any short and long-term obligations.

### Financial Information



## Financial Analysis

### Debt to Equity

In the past, Albemarle has not required much financial leverage. The acquisition of Rockwood Holdings temporarily increased Albemarle's debt to equity ratio. However, since the acquisition healthy profits generated through Lithium have helped this return to a normal level, in line with competitor SQM. Albemarle is a capital intensive company with high CAPEX costs. Necessary upgrades and expansions require more financial leverage than other industries.

In 2016 the net debt/adjusted EBITDA was 0.29.

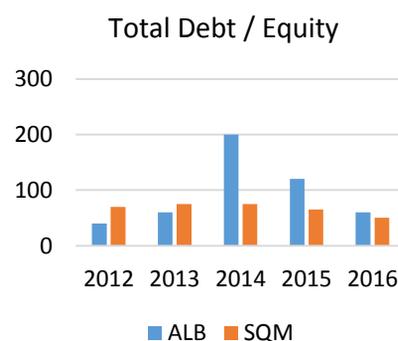
To further pay for company debts (\$3.8bn in 2015), Albemarle divested noncore businesses, including Chemical Surface treatment for \$3.1 billion, metal sulphides for \$137 million and minerals for \$187 million. This brought debt down to just \$2.4 billion at the end of 2016. Management targets a long-term net debt/adjusted EBITDA ratio of 2 – 2.5 times, which we think is achievable.

### Dividend Pay-out ratio

Dividend pay-out ratio has more than doubled since 2011 despite having a 10% drop from 2015 – 2016. At the end of 2016, it stood at 31.05%. Albemarle is continuing to invest in growth. However, as expected, profits in the coming years are set to increase resulting in an expected increase in dividends. Its current forward yield is 1.23%.

(A full breakdown of financial statements in the Appendix as Figure 4)

| Dividend Pay out Ratio |      |
|------------------------|------|
| 2013                   | 0.20 |
| 2014                   | 0.43 |
| 2015                   | 0.43 |
| 2016                   | 0.31 |
| 2017                   | 2.61 |



| Financial Overview |          |         |          |          |          |          |         |
|--------------------|----------|---------|----------|----------|----------|----------|---------|
| Year End March     | 2016A    | 2017A   | 2018E    | 2019E    | 2020E    | 2021E    | 2022E   |
| Revenue            | 2,677.20 | 2,826.4 | 3,071.98 | 3,342.00 | 3,514.00 | 3,702.00 | 3985.00 |
| EBITDA             | 706.29   | 763.48  | 784.677  | 792.00   | 815.00   | 849.00   | 870.00  |
| Net Profit         | 334.91   | 643.68  | 99.468   | 602.87   | 678.32   | 702.89   | 801.98  |
| Profit Margin      | 12.51    | 22.77   | 3.24     | 18.04    | 19.30    | 18.99    | 20.12   |
| Free Cash Flow     |          |         |          |          |          |          |         |
| P/E                | 29.87    | 23.91   | 20.92    | 17.88    | 15.84    | 14.68    | 14.50   |
| EV/EBITDA          | 11.3     | 11.7    | 12.0     | 12.10    | 12.19    | 12.8     | 13.2    |

## Valuation: Comparable Company Analysis

We recommend a buy position on Albemarle with a price target of \$117.66. This estimate is based upon our sum of the parts relative multiples where we used EV/EBITDA valuation multiple which can be seen below. Our valuation is based upon our estimates for FY19 financials.

The overall multiple for Albemarle is 13.0. We used comparative analysis to derive an appropriate EV/EBITDA multiple for each segment (see figure 5) and a blended multiple for corporate.

The companies we have selected from the different industries are all global companies. The companies are all of similar equity values, less so in Bromine sector where Israel Chemicals is the closest by EV and is only half. However these companies simply specialize in Bromine, so comparison of revenue is a more balanced approach. In the comparable analysis Albemarle was relatively low when compared to competitors in the lithium market, however due to being the largest lithium producers in 2015, as well as the highest earnings and highest valued assets, with its recent acquisition of Rockwood Holdings we still expect strong growth in Albemarle's shares. Since Albemarle's multiple was gathered from its entire business it is also possible that other segments are limiting growth due to the maturity of their markets. We expect Lithium growth to be the key driver behind stock growth.

Albemarle also boasts the highest multiple in Bromine and Performance Catalysts, suggesting it is valued higher than its competitors. We expect these markets to see slow growth but strong results over the coming years so share price growth may not be the result of good performance in this sector.

A full breakdown of our comparable analysis can be seen in the appendix.

Figure 5.1: Albemarle Comps

| <b>Lithium</b>               |                  |             |                   |       |                 |
|------------------------------|------------------|-------------|-------------------|-------|-----------------|
| Comparable Companies         | Equity Value (M) | Revenue (M) | Net Profit Margin | ROIC  | Net Debt/EBITDA |
| Albemarle                    | 11,782.20        | 2,677.20    | 24.04             | 7.45  | 0.29            |
| SQM                          | 14,991.10        | 1,939.30    | 14.35             | 7.85  | 0.6             |
| FMC                          | 11,274.00        | 3,282.40    | 6.37              | 8.47  | 3.27            |
| Tianqi                       | 59,375.30        | 3,860.90    | 39.16             | 22.1  | 0.88            |
| Jiangxi                      | 39,914.70        | 2,823.10    | 16.45             | 25    | 0.6             |
| <b>Performance Catalysts</b> |                  |             |                   |       |                 |
| Comparable Companies         | Equity Value     | Revenue     | Net Profit Margin | ROIC  | Net Debt/EBITDA |
| Albemarle                    | USD 11782.2M     | 2677.2      | 24.04             | 7.45  | 0.29            |
| Johson Matthey               | GBP 6,355.6M     | 10,713.90   | 3.11              | 12.8  | 0.94            |
| Clariant                     | CHF 8,471.1M     | 5,400.00    | 0.13              | -1.45 | 12.58           |
| <b>Refining Solutions</b>    |                  |             |                   |       |                 |
| Comparable Companies         | Equity Value     | Revenue     | Net Profit Margin | ROIC  | Net Debt/EBITDA |
| Albemarle                    | USD 11782.2M     | 2677.2      | 24.04             | 7.45  | 0.29            |
| Chemours                     | 8,937.80         | 5931        | 26.4              | -1.45 | 0               |
| Elementis                    | 1822.2           | 740.3       | 36.7              | 10.8  | -0.92           |
| Clariant                     | 8,461.10         | 5,847.00    | 30.3              | 4.76  | 3.61            |
| <b>Bromine</b>               |                  |             |                   |       |                 |
| Comparable Companies         | Equity Value     | Revenue     | Net Profit Margin | ROIC  | Net Debt/EBITDA |
| Albemarle                    | 11,782.20        | 2,910.80    | 36.7              | 7.45  | 0.4             |
| Gulf resources               | 91.2             | 149.3       | 39.4              | 10.3  | -3.38           |
| Israel Chemicals             | 5,247.40         | 5,395.00    | 30.8              | -0.67 | 4.22            |
| Tosoh                        | 635              | 743         | 29.3              | 13.3  | 0.49            |

## Valuation: Sum-of-the-parts

Albemarle has a diversified presence in Lithium, Bromine, Refining Solutions, Performance Catalysts and other Specialty Chemical products.

As each of Albemarle’s segments are vastly different from the others in its industry, the state of its evolution and the basic nature of its activity creates a challenge for a model to value the company as a whole. Therefore we will use a Sum of the Parts Valuation to value each segment of its business and then aggregate to arrive at an overall value for Albemarle.

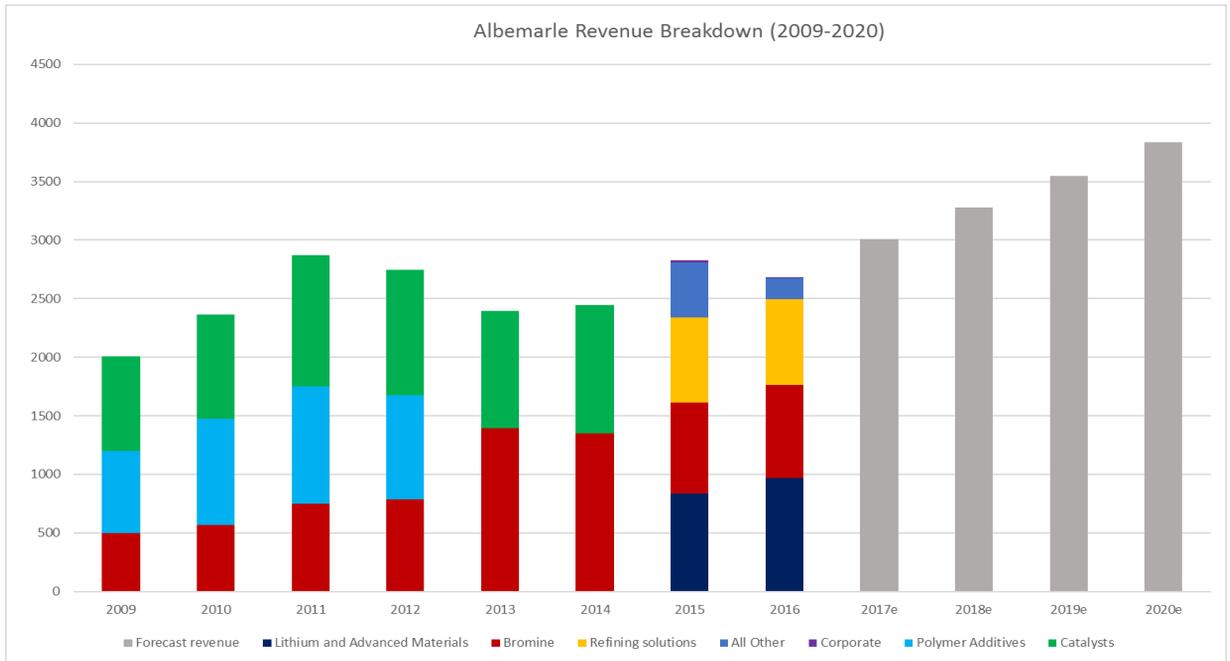
We have taken an average of Adjusted EBITDA / Sales for each segment between FY15 and 16. We have assumed revenue growth is an average of the previous years as well as accounting for adjustments due to market trends and research. Assuming Albemarle holds a slightly reduced EBITDA margin compared to previous years, we have calculated 2019 Equity Value and hence 2019 implied share price, which can be seen below. A full breakdown of our SOTP Valuation can be seen in the appendix.

Figure 6.0: Sum-of-the-parts Valuation

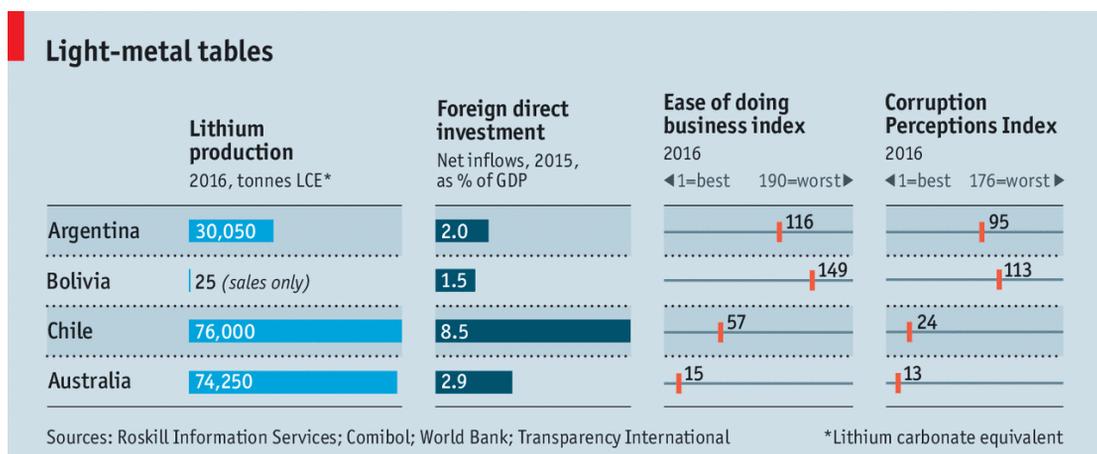
| 2019E                       | EBITDA         | % Total     | Multiple                   | EV               |
|-----------------------------|----------------|-------------|----------------------------|------------------|
| Lithium                     | 638.72         | 53%         | 15.0                       | 9580.83          |
| Bromine                     | 261.24         | 22%         | 11.0                       | 2873.60          |
| Refining                    | 225.30         | 19%         | 11.0                       | 2478.25          |
| PCS                         | 79.06          | 7%          | 10.0                       | 790.59           |
| Other                       | 10.61          | 1%          | 6.0                        | 63.65            |
| Corporate                   | -118.63        |             | 13.0                       | -1541.07         |
| <b>Total</b>                | <b>1096.29</b> | <b>100%</b> |                            | <b>14245.85</b>  |
| Cash                        |                |             |                            | 1045.30          |
| LT Debt                     |                |             |                            | 1407.20          |
| ST Debt                     |                |             |                            | 382.40           |
| Net Debt                    |                |             |                            | 744.30           |
| Minority Interest/Preferred |                |             |                            | 140.80           |
| Equity Value                |                |             |                            | 13360.75         |
| Diluted Shares (m)          |                |             |                            | 113.24           |
| Implied Share Price         |                |             |                            | 117.99           |
|                             |                |             | <b>Implied Share Price</b> | <b>\$ 117.99</b> |
|                             |                |             | <b>Current Share Price</b> | <b>\$ 106.63</b> |
|                             |                |             | <b>Implied Upside</b>      | <b>10.65%</b>    |
|                             |                |             | <b>Overall Multiple</b>    | <b>13.0</b>      |

## Appendix

➤ **Figure 1.0: Revenue Breakdown**



➤ **Figure 1.1: Lithium ease of doing business**

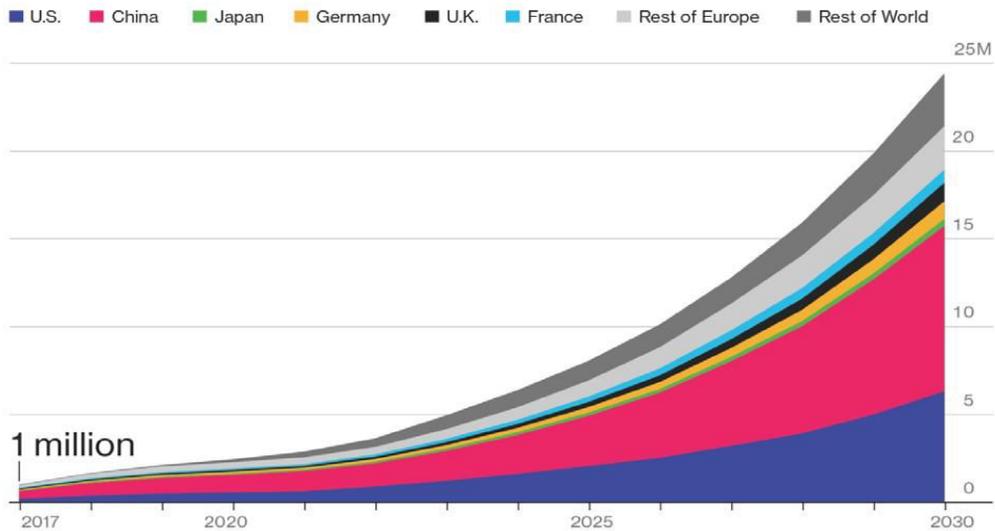


Economist.com

## Appendix

➤ **Figure 1.2: Demand for electric vehicles**

Annual global electric vehicle sales are forecast to hit 24.4 million by 2030



➤ **Figure 1.3: Corporate Forecasts**

| In Millions of USD<br>12 Months Ending | FY 2015<br>12/31/2015 | FY 2016<br>12/31/2016 | 2017E<br>12/31/2017 | 2018E<br>12/31/2018 | 2019E<br>12/31/2019 |
|--|-----------------------|-----------------------|---------------------|---------------------|---------------------|
| <b>Corporate</b>                       |                       |                       |                     |                     |                     |
| Revenue                                | 15.42                 | 3.44                  | 3.00                | 3.00                | 3.00                |
| <i>Growth</i>                          |                       |                       |                     |                     |                     |
| Adjusted EBITDA                        | -31.11                | -85.80                | -96.49              | -106.60             | -118.63             |
| <i>Growth</i>                          |                       |                       |                     |                     |                     |
| <b>Albermarle Total Revenue</b>        | 2826.00               | 2677.00               | 3010.54             | 3325.74             | 3701.29             |
| <i>Growth</i>                          |                       |                       | 12.46%              | 10.47%              | 11.29%              |
| <b>Forecasts</b>                       |                       |                       |                     |                     |                     |
| Lithium                                | 509.00                | 668.90                | 1007.20             | 1259.00             | 1573.75             |
| PCS                                    |                       |                       | 287.04              | 289.91              | 292.81              |
| Bromine                                |                       |                       | 833.80              | 867.15              | 897.50              |
| Refining                               |                       |                       | 755.50              | 779.68              | 804.63              |
| Other                                  |                       |                       | 127.00              | 130.00              | 132.60              |
| <b>Total Revenue</b>                   |                       |                       | 3010.54             | 3325.74             | 3701.29             |
| <b>Growth</b>                          |                       |                       |                     |                     |                     |