



Rating
Buy

North America
United States

Industrials
Chemicals / Specialty

Company
Albemarle

Reuters ALB.N Bloomberg ALB UN Exchange NYS Ticker ALB

Date
1 April 2016

Forecast Change

Price at 31 Mar 2016 (USD)	63.93
Price target	72.00
52-week range	64.38 - 41.78

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Meeting with CEO: Lithium Story is (Quietly) Taking Off

L-T a focused Lithium & Catalyst company. Valuation a fair 11.6x EBITDA. Buy

Our meetings with Albemarle's CEO highlighted the compelling growth story in lithium (the best story in chemicals, in our view), the company's growing free cashflow (8% FCF yield in '17) and Albemarle's long-term goal of becoming a lithium and catalyst company. While near-term portfolio changes are unlikely in Bromine (best option is run for cash to fund lithium growth for the next 3-5 years), options for Surface Treatment increase in late '17 as an onerous tax clawback (on a sale) falls away. With our SOTP analysis strongly supportive of our revised \$72 PT and valuation a fair 11.6x '16E EBITDA, we reiterate Buy.

Meetings with CEO. Raising '17-'18E by \$0.10 each to \$4.30 and \$4.90.

We hosted meetings with Albemarle CEO Luke Kissam and investors in NY and Boston this week. To reflect growing confidence in lithium, we are raising our '17E & '18E by \$0.10 each to \$4.35, up 16%, and \$4.90, up 13%, respectively.

Key takeaways

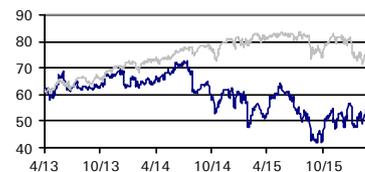
1) Q1 is firmly on track led by good growth in Lithium and solid growth in Surface Treatment, including in China, where auto/industrial demand is above expectations. The weakest region is Latin America where hydroprocessing catalyst demand is down as refiners in Brazil and Venezuela have sharply curtailed purchases. 2) Spot lithium carbonate prices in China of \$21,000/m.t. are "fiction" with no relation to prices Albemarle receives or its large battery customers pay. Albemarle sells no spot lithium in China. The vast majority of Albemarle's lithium is sold under annual contracts. We estimate Albemarle's battery grade lithium carbonate prices will be up ~15% in '16 to ~\$6,900 (vs \$6,000 in '15). 3) All options for Bromine have been explored. A spin does not work as it would increase Albemarle's leverage at a time when it is trying to reduce leverage. A sale does not work as there are no strategic buyers and private equity would likely only pay 7x. A JV does not work due to required divestitures. As such, Albemarle is focused on running Bromine for cash for the next 3-5 years and using the cash to fund organic growth in lithium. 4) A sale of Surface Treatment would be much easier (and valuable) as evidenced by last week's acquisition of Valspar for 15x EBITDA. However, with an onerous tax clawback until 2H'17 (stemming from the tax free separation of the business in '12), a sale before then is unlikely. 5) Assuming the recently announced MOU with Chile is formalized, Albemarle's next lithium capacity will be a 20k m.t. plant in Chile. If it is built in La Negra, where Albemarle's new 20k m.t. lithium carbonate plant is ramping (commercial sales '17), the cost would be <\$200MM versus \$220MM spent on the new plant. This next increment of capacity should be on-stream in '20 and will increase Albemarle's Chilean lithium carbonate capacity to 64k m.t. (70k m.t. with debottlenecking) plus 6k m.t. of US capacity. After Chile, Albemarle intends to bring on a 25k m.t. lithium hydroxide (from spodumene) plant in '22-'23 at a cost or ~\$300M.

Key changes

Price target	62.00 to 72.00	↑	16.1%
EPS (USD)	-	↓	-0.0%

Source: Deutsche Bank

Price/price relative



Performance (%)	1m	3m	12m
Absolute	13.7	14.1	21.0
S&P 500 INDEX	6.6	0.8	-0.4

Source: Deutsche Bank

Target Price: \$72

Our PT is based on Albemarle trading at 11.6x 2017E EBITDA, in-line with its current multiple. Risks: Bromine price erosion, lower consumer electronics demand, higher rare earths prices.

Forecasts And Ratios

Year End Dec 31	2015A	2016E	2017E	2018E
FY EPS (USD)	3.93	3.75	4.35	4.90

Source: Deutsche Bank estimates, company data

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Key Takeaways (cont.)

Total lithium capital spending over the next 6-7 years is project at \$600MM. This consists of i) slightly less than \$200MM for a 20k m.t. plant in Chile (\$250MM if the plant is not built at the La Negra); ii) \$25-\$50MM of spending in the Salar de Atacama to increase brine extraction and iii) \$300MM for the spodumene conversion (to lithium hydroxide) plant in Australia

Albemarle expects its 20k m.t. La Negra lithium carbonate expansion to begin commercial sales in 2017 and be fully sold out in 3 years. Assuming 7k m.t./year of additional lithium carbonate sales and a \$5k/m.t. cash margin, La Negra would add \$35MM to Lithium EBITDA in '17 and \$100MM-plus EBITDA by the time it is fully ramped up. Lithium EBITDA totaled \$213M in '15 and an estimated \$250MM in '16.

Albemarle expects lithium growth as follows: **i)** technical (non-battery) grade applications (for ceramics, glass, greases, organo-synthesis) (70-75% of its business, 65% of industry demand): GDP; **ii)** battery grade applications (25-30% of its business; 35% of industry): 8-10% for non-electric vehicles and 20-30% for electric vehicles.

The 20-30% projected growth in lithium for battery grade application in electric vehicles is based on electric vehicles rising from 0.6% of global auto sales in '15 (550,000 vehicles, up 70% YoY) to 2% in 5-6 years. A 1% increase in auto penetration, would increase lithium demand by ~50K m.t. while the new Tesla gigafactory is projected to use 25-30K m.t. of lithium. This compares to global lithium demand in '15 of 175k m.t. (growing 8-10%/year).

Albemarle is attempting to move its large lithium battery customers from 1-year contracts to multi-year contracts with annual price resets. Customers are, for the moment, resistant to the idea.

Albemarle is confident in fully realizing its 10% fluid cracking catalyst (FCC) price increase (effective 3/15/2016) over 3 years (the standard length of FCC contracts). Despite concerns over Albemarle competitive behavior during the last (2013) FCC price increase, Albemarle achieved 7-8% of the announced 10% price increase over 3 years.

Albemarle expects growth in catalyst will be more transaction / acquisition than organic based

Figure 1: Lithium Application and carbonate content

Application	Lithium Carbonate Content
Cell Phone	3 grams ~ 0.1 oz
Notebook	30 grams ~ 1.0 oz
Power Tool	30-40 grams ~ 1.0-1.4 oz
Hybrid (HEV) 3kWh	3.5 lbs
Plug-in Hybrid (PHEV) 15kWh	26 lbs
Electrical Vehicle (BEV) 25kWh	44 lbs
Tesla 85kWh	112 lbs

Source: Albemarle

Figure 2: Market growth driven by Energy related applications

	Application	2014 Market Size	Growth Rate	Products
Traditional Uses	Glass/Ceramics	46KT	GDP	Spodumene



	Greases/Lubricants	18KT	GDP	Li ₂ CO ₃
	Chemical Synthesis	11KT	GDP	LiOH
				Li Organometallics fed by Li Metal LiCl
Energy	Portable Electronics & Other Handhelds			BG Li ₂ CO ₃
	Hybrids			BG LiOH
	Battery Electric Vehicle (BEV)	48KT	16% (Base Case)	BG Li Metal
	Grid and Other Power Storage Applications			BG Electrolyte Salts
				BG LiCl
				BG Alloys
				BG Specialty Compounds

Source: Albemarle

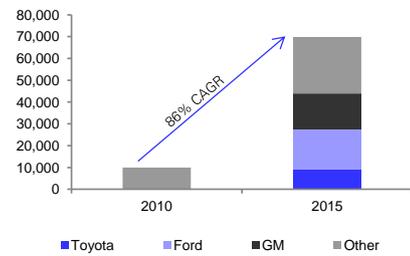
Figure 3: Mass uptake in Battery markets

Consumer Electronics	Transportation	Energy Storage	Consumer Devices
8-10% CAGR	20-30% CAGR	>30% CAGR	>15% CAGR

Source: Albemarle

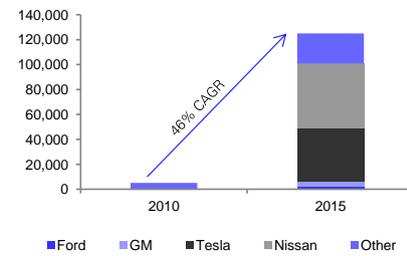


Figure 4: US Electric Vehicle Sales in PHEV



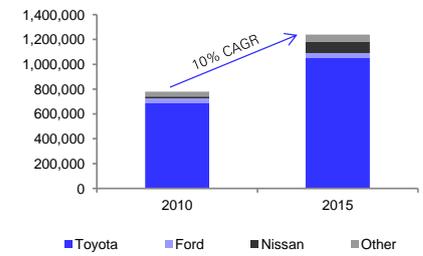
Source: Albemarle

Figure 5: US Electric Vehicle Sales in EV



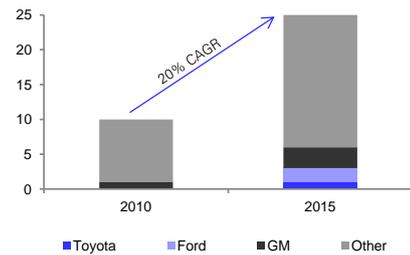
Source: Albemarle

Figure 6: US Electric Vehicle Sales in HEV



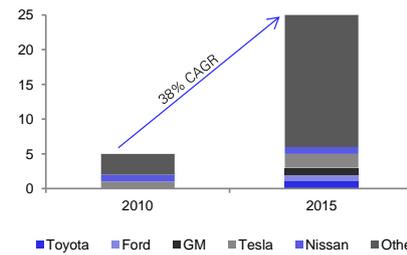
Source: Albemarle

Figure 7: New model launches in US (PHEV)



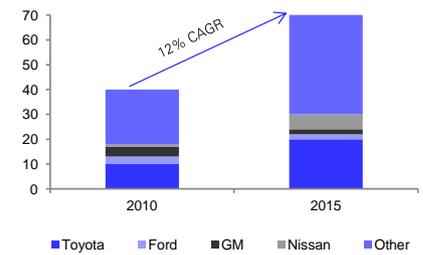
Source: Albemarle

Figure 8: New model launches in US (EV)



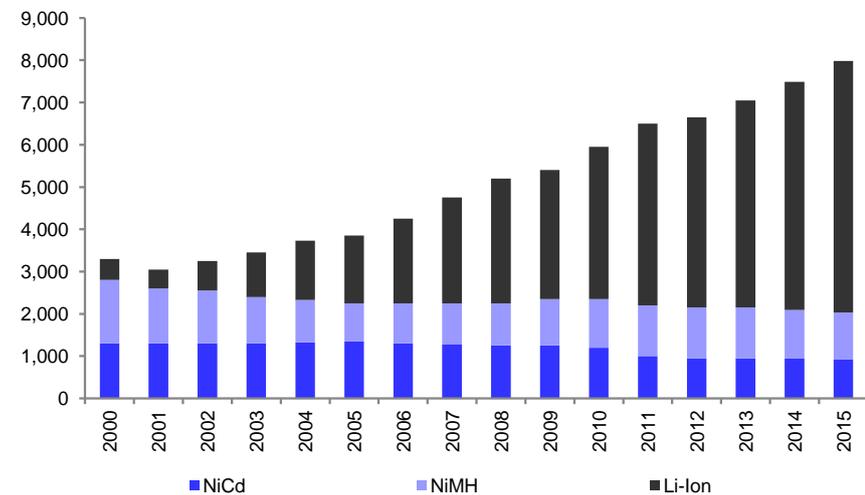
Source: Albemarle

Figure 9: New model launches in US (HEV)



Source: Albemarle

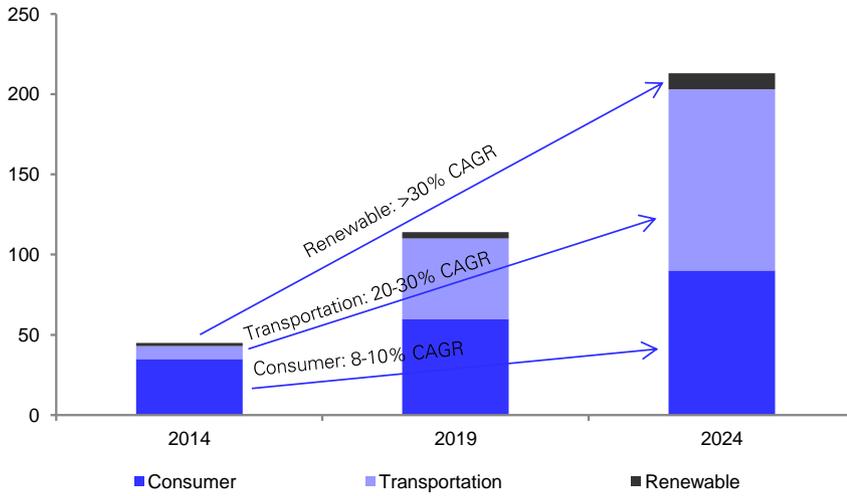
Figure 10: Strong Electric Vehicle sales coupled with new model launches driving Li-Ion battery growth (in Million cells)



Source: Albemarle

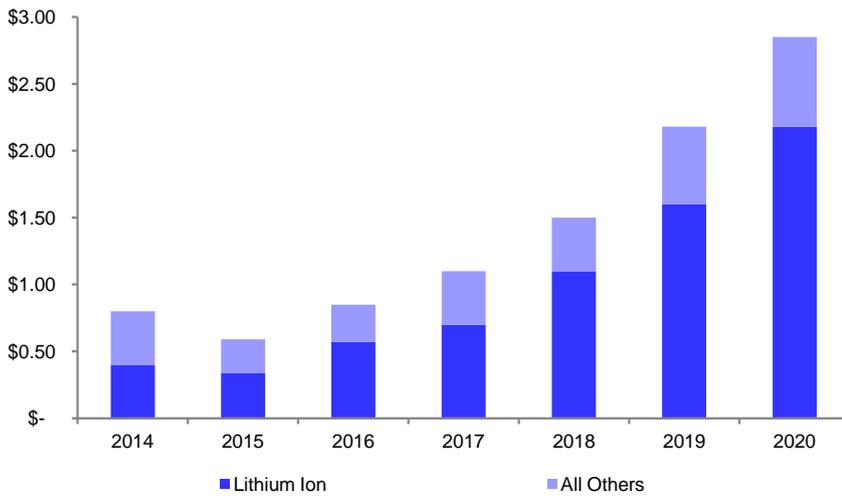


Figure 11: Battery LCE Long-term demand outlook (in KT)



Source: Albemarle

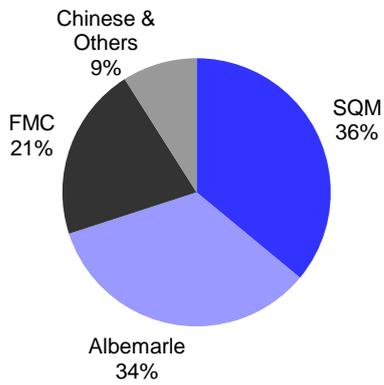
Figure 12: Stationary Energy Storage revenues by technology (\$ in Bn)



Source: Albemarle

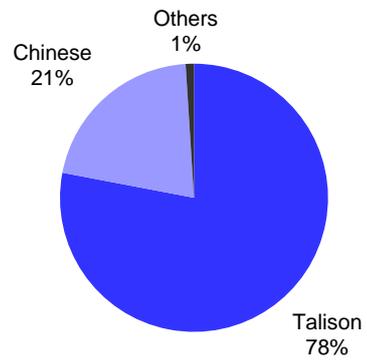


Figure 13: 2014 Brine LCE Production split (98kT)



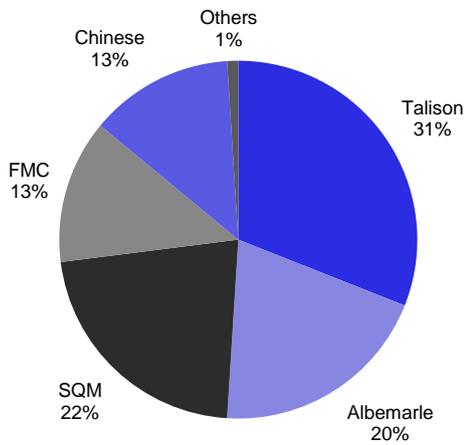
Source: Albemarle

Figure 14: 2014 Spodumene LCE Production split (62kT)



Source: Albemarle

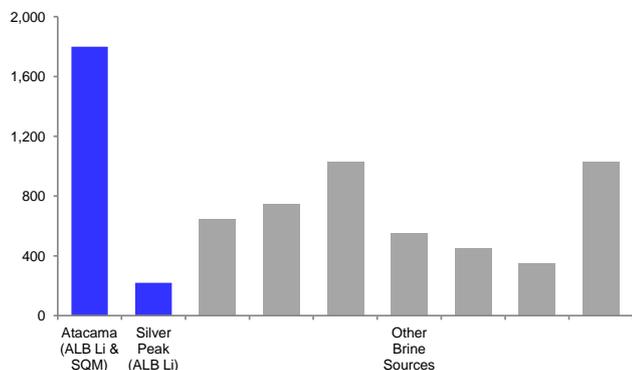
Figure 15: Albemarle holds >35% of total LCE's mined



Source: Albemarle

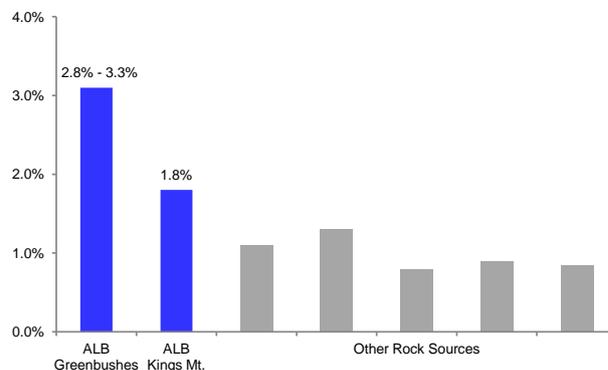


Figure 16: Lithium concentration in Brine (amount in ppm)



Source: Albemarle

Figure 17: Li₂O concentration in Hardrock



Source: Albemarle

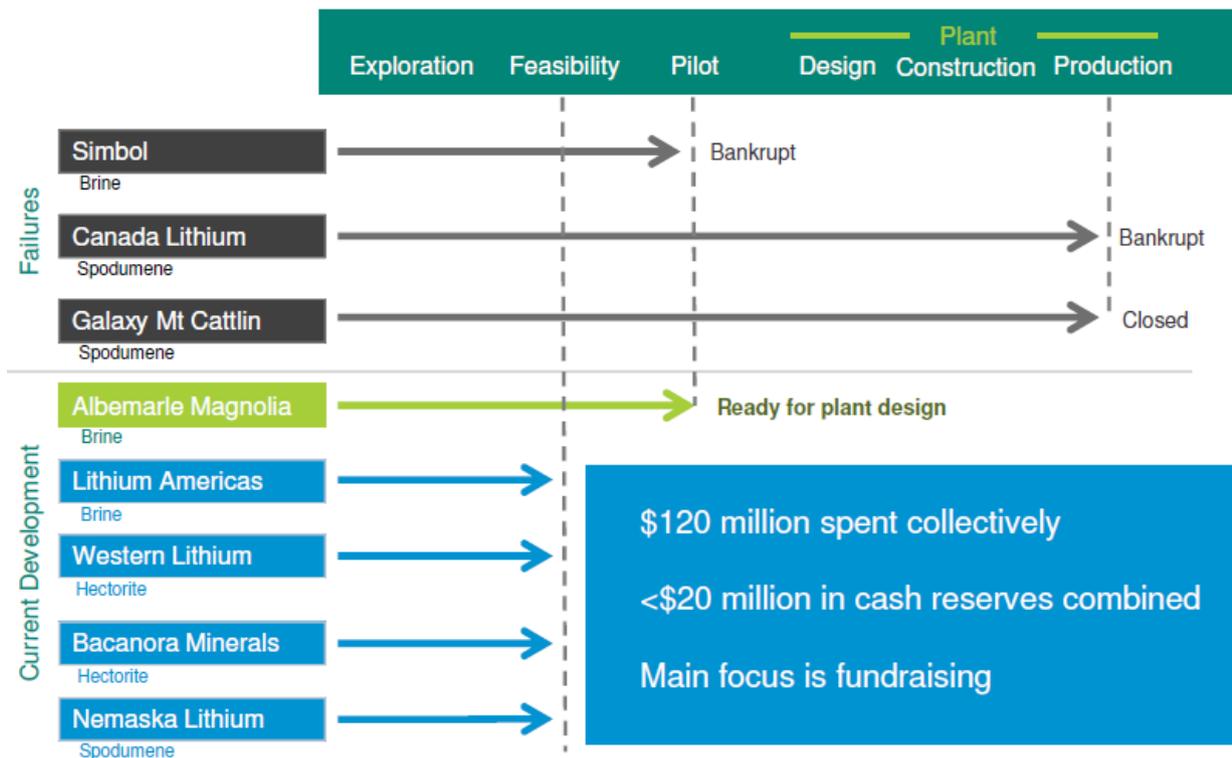
Figure 18: Lithium Resource Projects in Development

Company	Project Status	Category
Albemarle	Pilot Plant	Brine
Orocobre (started 2007)	Li ₂ CO ₃ Market Production 2015 - 2016	
Lithium Americas	Pilot Plant	
Galaxy Resources	Feasibility	
ADY Resources	Feasibility	
Rodinia	Feasibility	Rock
Critical Elements Corporation	Exploration	
RB Energy	Li ₂ CO ₃ Shut-down Receivership	
Nemaska	Post Feasibility	Clay
Neometals (Reed Resources)	Pilot	
Western Lithium	Demo Plant	
Bacanora Minerals	Feasibility	

Source: Albemarle



Figure 19: Lithium Resource development takes time and requires careful consideration



Source: Albemarle



Figure 20: Strategic Investments is the key to meet market demand

Battery Grade Li_2CO_3 Plant



- Located in La Negra, Chile
- 20kT battery grade lithium carbonate
- Produces lowest-cost, highest-quality battery grade material in the industry
- Start-up phase

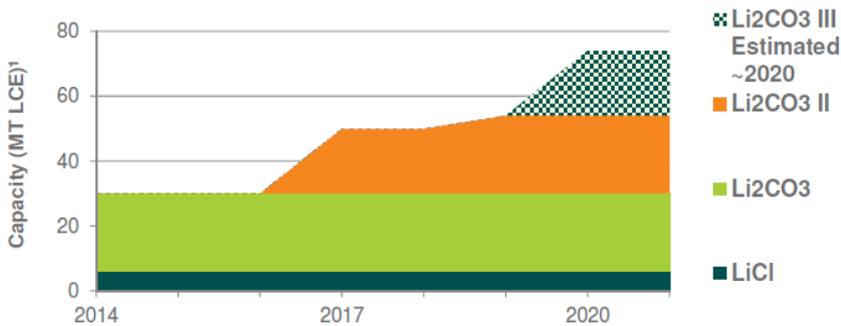
Planned Battery Grade Li Derivative Plant



- Will be the most technologically advanced mineral conversion plant ever built
- Up to 50kT battery grade lithium derivatives – Li_2CO_3 and LiOH
- Fed from the highest quality Spodumene resource in the world
- Expected startup: 2020

Source: Albemarle

Figure 21: Albemarle Derivative Capacity in Chile



Source: Albemarle



Valuation

Our \$72 price target is based on Albemarle trading at 11.6x 2017E EBITDA, in-line with its current multiple. We believe this is appropriate given Albemarle's improved earnings growth prospects, notably in Lithium, Refining Solutions and Surface Treatment. Our \$72 price target is supported by our Sum-of-the-Parts model (see below). This model derives segment value based on peer group trading multiples as follows:

Figure 22: Albemarle Sum-of-the-Parts Valuation

2017				
Segment	2017E EBITDA	Multiple	Enterprise Value	Comment
Bromine	212	6.0x	\$1,273	
Lithium	302	14.0x	\$4,227	
PCS	107	12.7x	\$1,364	W.R. Grace multiple
Refining Solutions	240	12.7x	\$3,045	W.R. Grace multiple
Chemetail Surface Treatment	239	11.0x	\$2,639	PPG, AXTA
All Other	0	8.0x	\$0	
Corporate	(80)	9.0x	(\$720)	
Total Firm Value			\$11,827	
Less: Net Debt			\$2,602	Year-End '17
Plus: Options Proceeds from In-the-Money Options			\$44	
Less: Underfunded Pension & OPEB Plans			\$443	
Less: Environmental Remediation			\$35	
Total Equity Value			\$8,791	
Fully Diluted Shares Outstanding			112	
Per Share Equity Value			\$78.33	
SOTP Discount			7.5%	
Per Share Equity Value with SOTP Discount			\$72.46	

Source: Deutsche Bank

Risks

Key risks include price erosion in elemental bromine and brominated flame retardants, a downturn in consumer electronics demand (a key end market for brominated flame retardants) escalating rare earths prices and an inability to pass thru higher rare earths and other metals prices in fluid catalytic cracking and hydroprocessing catalysts.



Figure 23: Albemarle Annual Income Statement, 2014-2018E (\$ in millions, except per-share data)

	2014	2015	2016E	2017E	2018E
Sales	2,502	3,651	3,357	3,487	3,723
<i>% Change</i>	(4%)	46%	(8%)	4%	7%
Cost of Goods Sold	(1,698)	(2,383)	(2,072)	(2,098)	(2,208)
Gross Profit	804	1,269	1,285	1,389	1,515
<i>Gross Margin</i>	32.1%	34.7%	38.3%	39.8%	40.7%
<i>% Change</i>	(2%)	58%	1%	8%	9%
Selling, General & Admin.	(265)	(555)	(571)	(593)	(633)
<i>SG&A/Sales</i>	10.6%	15.2%	17.0%	17.0%	17.0%
<i>% Change</i>	1%	109%	3%	4%	7%
Research & Development	(88)	(103)	(101)	(105)	(112)
<i>R&D/Sales</i>	3.5%	2.8%	3.0%	3.0%	3.0%
<i>% Change</i>	7%	16%	(2%)	4%	7%
<i>(SG&A+R&D)/Sales</i>	14.1%	18.0%	20.0%	20.0%	20.0%
Operating Profit	450	611	613	691	770
<i>Operating Margin</i>	18.0%	16.7%	18.3%	19.8%	20.7%
<i>% Change</i>	(5%)	36%	0%	13%	11%
Interest Expense	(37)	(126)	(90)	(86)	(82)
Other Income	1	53	1	1	1
Pretax Income	414	538	524	606	689
<i>Pretax Margin</i>	16.6%	14.7%	15.6%	17.4%	18.5%
<i>% Change</i>	(4%)	30%	(3%)	16%	14%
Income Taxes	(92)	(135)	(142)	(158)	(179)
<i>Tax Rate</i>	22.2%	25.1%	27.1%	26.0%	26.0%
Equity in Earnings of Affiliates	36	60	64	68	72
<i>% Change</i>	13%	68%	6%	6%	6%
Net Income Attributable to Noncontrolling Interests	(28)	(25)	(24)	(25)	(26)
Net Income	330	438	422	491	556
<i>Net Margin</i>	13.2%	12.0%	12.6%	14.1%	14.9%
<i>% Change</i>	(4%)	33%	(4%)	16%	13%
Basic Shares Outstanding	79	111	112	112	113
<i>% Change</i>	(6%)	41%	1%	0%	0%
Diluted Shares Outstanding	79	112	113	113	113
<i>hl % Change</i>	(6%)	41%	1%	0%	0%
Basic EPS	\$4.20	\$3.94	\$3.76	\$4.37	\$4.92
<i>% Change</i>	3%	(6%)	(5%)	16%	13%
Diluted EPS	\$4.17	\$3.93	\$3.75	\$4.35	\$4.90
<i>% Change</i>	3%	(6%)	(5%)	16%	13%

Source: Deutsche Bank estimates, company data



Figure 24: Albemarle Quarterly Income Statement, 2015-2016E (\$ in millions, except per-share data)

	2015					2016E				
	Q1	Q2	Q3	Q4	YEAR	Q1	Q2	Q3	Q4	YEAR
Sales	884	931	905	930	3,651	814	866	850	827	3,357
% Change	135%	54%	141%	155%	46%	92%	(7%)	94%	89%	(8%)
Cost of Goods Sold	(586)	(604)	(586)	(607)	(2,383)	(510)	(525)	(519)	(517)	(2,072)
Gross Profit	298	327	320	324	1,269	304	341	331	310	1,285
Gross Margin	33.7%	35.1%	35.3%	34.8%	34.7%	37.4%	39.4%	39.0%	37.5%	38.3%
% Change	52%	58%	54%	68%	58%	2%	4%	4%	(4%)	1%
Selling, General & Administrative	(139)	(148)	(138)	(129)	(555)	(142)	(152)	(145)	(132)	(571)
SG&A/Sales	15.7%	15.9%	15.3%	13.9%	15.2%	17.5%	17.5%	17.0%	16.0%	17.0%
% Change	105%	119%	107%	105%	109%	3%	2%	5%	2%	3%
Research & Development	(26)	(25)	(25)	(26)	(103)	(24)	(26)	(26)	(25)	(101)
R&D/Sales	3.0%	2.7%	2.8%	2.8%	2.8%	3.0%	3.0%	3.0%	3.0%	3.0%
% Change	17%	15%	13%	20%	16%	(8%)	3%	1%	(4%)	(2%)
(SG&A+R&D) % Change	83%	93%	83%	84%	86%	1%	2%	4%	1%	2%
(SG&A+R&D)/Sales	18.7%	18.7%	18.1%	16.7%	18.0%	20.5%	20.5%	20.0%	19.0%	20.0%
Operating Profit	133	154	156	169	611	137	164	161	153	613
Operating Margin	15.0%	16.5%	17.2%	18.1%	16.7%	16.9%	18.9%	19.0%	18.5%	18.3%
% Change	125%	131%	132%	156%	36%	103%	107%	103%	91%	0%
Interest and Financing Expenses	(34)	(33)	(32)	(26)	(126)	(23)	(23)	(22)	(22)	(90)
% Change	389%	280%	366%	248%	341%	67%	(31%)	69%	84%	(28%)
Other Income	54	1	0	(2)	53	0	0	0	0	1
Pretax Income	153	121	124	140	538	115	141	139	131	524
Pretax Margin	17.3%	13.0%	13.7%	15.0%	14.7%	14.1%	16.3%	16.4%	15.9%	15.6%
% Change	55%	13%	13%	43%	30%	(25%)	17%	12%	(6%)	(3%)
Income Taxes	(40)	(34)	(33)	(27)	(135)	(31)	(38)	(38)	(35)	(142)
Tax Rate	26.3%	28.4%	26.9%	19.3%	25.1%	27.0%	27.0%	27.0%	27.0%	27.1%
Equity in Earnings of Affiliates	18	16	15	11	60	19	17	16	12	64
% Change	106%	48%	75%	45%	68%	6%	6%	6%	6%	6%
Net Income Attributable to Noncontrolling Interests	(4)	(7)	(5)	(8)	(25)	(4)	(7)	(5)	(8)	(24)
Net Income	127	95	101	115	438	99	113	113	99	422
Net Margin	14.4%	10.2%	11.1%	12.4%	12.0%	12.2%	13.0%	13.3%	12.0%	12.6%
% Change	66%	10%	12%	49%	33%	(22%)	19%	12%	(14%)	(4%)
Basic Shares Outstanding	108.1	112.2	112.2	112.2	111.2	112.2	112.2	112.2	112.2	112.2
% Change	36%	43%	43%	44%	41%	4%	0%	0%	(0%)	1%
Diluted Shares Outstanding	108.5	112.6	112.5	112.6	111.6	112.6	112.6	112.6	112.6	112.6
% Change	35%	42%	43%	43%	41%	4%	(0%)	0%	(0%)	1%
Basic EPS	\$1.18	\$0.85	\$0.90	\$1.03	\$3.94	\$0.88	\$1.00	\$1.01	\$0.89	\$3.76
% Change	23%	(23%)	(22%)	4%	(6%)	(25%)	19%	12%	(14%)	(5%)
Diluted EPS	\$1.17	\$0.84	\$0.89	\$1.03	\$3.93	\$0.88	\$1.00	\$1.00	\$0.88	\$3.75
% Change	23%	(23%)	(21%)	4%	(6%)	(25%)	19%	12%	(14%)	(5%)

Source: Deutsche Bank estimates, company data



Figure 25: Albemarle Annual Segment Income Statement, 2014-2018E (\$ in millions, except per-share data)

	2014	2015	2016E	2017E	2018E
Sales					
<u>Performance Chemicals</u>					
Bromine	809	776	723	752	782
% Change	(6%)	(4%)	(7%)	4%	4%
Lithium	474	509	577	675	783
% Change	(1%)	7%	13%	17%	16%
PCS	313	326	332	345	359
% Change	9%	4%	2%	4%	4%
Performance Chemicals	1,596	1,610	1,632	1,773	1,925
% Change	(2%)	1%	1%	9%	9%
Refining Solutions	852	729	728	772	818
% Change	10%	(14%)	(0%)	6%	6%
Chemetall Surface Treatment	827	825	897	933	970
% Change	7%	(0%)	9%	4%	4%
All Other	585	471	90		
% Change	(1%)	(19%)			
Corporate	11	15	10	10	10
% Change	(22%)	45%	(35%)	0%	0%
Total Sales	3,870	3,651	3,357	3,487	3,723
% Change	3%	(6%)	(8%)	4%	7%
EBITDA					
<u>Performance Chemicals</u>					
Bromine	225	223	200	212	225
EBITDA Margin	27.8%	28.7%	27.7%	28.2%	28.7%
% Change	(21%)	(1%)	(10%)	6%	6%
Lithium	180	213	250	302	345
EBITDA Margin	37.9%	42.0%	43.3%	44.7%	44.0%
% Change	-3%	19%	17%	21%	14%
PCS	82	99	102	107	112
EBITDA Margin	26.1%	30.5%	30.8%	31.1%	31.3%
% Change	2%	22%	3%	5%	5%
Performance Chemicals	487	536	553	621	682
EBITDA Margin	30.5%	33.3%	33.9%	35.1%	35.4%
% Change	-11%	10%	3%	12%	10%
Refining Solutions	257	198	220	240	258
EBITDA Margin	30.1%	27.1%	30.3%	31.1%	31.6%
% Change	35%	(23%)	12%	9%	8%
Chemetall Surface Treatment	194	202	226	239	253
EBITDA Margin	23.5%	24.5%	25.2%	25.6%	26.0%
% Change	9%	4%	12%	6%	6%
All Other	98	54	14		
EBITDA Margin	16.8%	11.5%			
% Change	3%	(45%)			
Corporate	(127)	(30)	(80)	(80)	(80)
% Change	(2%)	(77%)	168%	0%	0%
Total EBITDA	908	959	934	1,020	1,112
EBITDA Margin	23%	26%	28%	29%	30%
% Change	3%	6%	(3%)	9%	9%
Interest expense		(126)	(90)	(86)	(82)
% Change			(28%)	(4%)	(5%)
Other		0	1	1	1
Pretax Income		574	554	649	735
Pretax Margin		15.7%	16.5%	18.6%	19.7%
% Change			(3%)	17%	13%
Income Taxes		(135)	(142)	(158)	(179)
Tax Rate		23.5%	25.6%	24.3%	24.4%
Net Income		438	412	491	556
Net Margin		12.0%	12.3%	14.1%	14.9%
% Change			(6%)	19%	13%
Basic Shares Outstanding	79	111	112	112	113
% Change	(6%)	41%	1%	0%	0%
Diluted Shares Outstanding	79	112	113	113	113
% Change	(6%)	41%	1%	0%	0%
Basic EPS	\$4.20	\$3.94	\$3.76	\$4.37	\$4.92
% Change	3%	(6%)	(5%)	16%	13%
Diluted EPS	\$4.17	\$3.93	\$3.75	\$4.35	\$4.90
% Change	3%	(6%)	(5%)	16%	13%

Source: Deutsche Bank estimates, company data



Figure 26: Albemarle Quarterly Segment Income Statement, 2015-2016E (\$ in millions, except per-share data)

	2015					2016E				
	Q1	Q2	Q3	Q4	YEAR	Q1	Q2	Q3	Q4	YEAR
Sales										
<u>Performance Chemicals</u>										
Bromine	190	224	191	171	776	174	186	196	166	723
% Change	(7%)	14%	(14%)	(9%)	(4%)	(8%)	(17%)	3%	(3%)	(7%)
Lithium	114	127	128	139	509	133	141	145	158	577
% Change	(1%)	9%	10%	12%	7%	16%	11%	13%	14%	13%
PCS	84	86	80	75	326	84	88	83	78	332
% Change	15%	2%	3%	(3%)	4%	(1%)	2%	3%	4%	2%
Performance Chemicals	388	437	400	385	1,610	391	415	424	403	1,632
% Change	(1%)	10%	(4%)	(1%)	1%	1%	(5%)	6%	4%	1%
Refining Solutions	179	165	185	200	729	165	168	189	206	728
% Change	(8%)	(20%)	(15%)	(14%)	(14%)	(8%)	2%	2%	3%	(0%)
Chemetall Surface Treatment	192	213	212	208	825	211	237	235	214	897
% Change	(6%)	0%	1%	3%	(0%)	10%	11%	11%	3%	9%
All Other	122	113	102	133	471	45	45	-	-	90
% Change	(24%)	(24%)	(32%)	8%	(19%)					
Corporate	2	3	6	3	15	2	2	2	4	10
% Change	(22%)	2%	127%	136%	45%	(17%)	(40%)	(69%)	21%	(35%)
Total Sales	884	931	905	930	3,651	814	866	850	827	3,357
% Change	(7%)	(4%)	(9%)	(2%)	(6%)	(8%)	(7%)	(6%)	(11%)	(8%)
EBITDA										
<u>Performance Chemicals</u>										
Bromine	53	69	59	42	223	48	55	57	41	200
EBITDA Margin	27.9%	30.7%	30.8%	24.6%	28.7%	27.5%	29.5%	29.0%	24.4%	27.7%
% Change	(7%)	31%	(6%)	(21%)	(1%)	(9%)	(20%)	(3%)	(4%)	(10%)
Lithium	51	54	52	57	213	60	61	60	69	250
EBITDA Margin	44.2%	42.2%	40.6%	41.1%	42.0%	45.0%	43.5%	41.5%	43.5%	43.3%
% Change	21%	26%	14%	15%	19%	18%	14%	16%	21%	17%
PCS	27	26	25	21	99	27	27	26	22	102
EBITDA Margin	32.0%	30.6%	31.5%	27.7%	30.5%	32.5%	31.0%	31.5%	28.0%	30.8%
% Change	62%	8%	26%	2%	22%	0%	3%	3%	5%	3%
Performance Chemicals	131	149	136	120	536	135	143	143	131	553
EBITDA Margin	33.6%	34.0%	34.1%	31.2%	33.3%	34.5%	34.6%	33.8%	32.6%	33.9%
% Change	13%	24%	6%	(3%)	10%	3%	(4%)	5%	9%	3%
Refining Solutions	42	48	55	53	198	45	55	60	60	220
EBITDA Margin	23.5%	29.3%	29.5%	26.3%	27.1%	27.3%	33.0%	32.0%	28.9%	30.3%
% Change	(31%)	(28%)	(12%)	(22%)	(23%)	7%	15%	11%	13%	12%
Chemetall Surface Treatment	46	48	54	54	202	55	57	59	56	226
EBITDA Margin	23.9%	22.7%	25.4%	25.8%	24.5%	26.0%	24.0%	24.9%	26.2%	25.2%
% Change	(1%)	(1%)	5%	13%	4%	19%	17%	9%	4%	12%
All Other	14	10	6	24	54	7	7			14
EBITDA Margin	11.1%	8.6%	6.1%	18.3%	11.5%					
% Change	(51%)	(66%)	(77%)	66%	(45%)					
Corporate	33	(25)	(16)	(22)	(30)	(20)	(20)	(20)	(20)	(80)
% Change	(198%)	(25%)	(51%)	(19%)	(77%)	(160%)	(20%)	26%	(10%)	168%
Total EBITDA	266	230	235	229	959	222	243	242	227	934
EBITDA Margin	30.0%	24.7%	26.0%	24.6%	26.3%	27.3%	28.0%	28.5%	27.4%	27.8%
% Change	23%	(0%)	(1%)	1%	6%	(17%)	5%	3%	(1%)	(3%)
Interest and Financing Expenses	(34)	(33)	(32)	(26)	(126)	(23)	(23)	(22)	(22)	(90)
% Change						(33%)	(31%)	(31%)	(16%)	(28%)
Other	0	0	0	0	0	0	0	0	0	1
Pretax Income	167	129	134	143	574	130	151	151	135	564
Pretax Margin	18.9%	13.9%	14.8%	15.3%	15.7%	16.0%	17.4%	17.7%	16.3%	16.8%
% Change						(2%)				
Income Taxes	(40)	(34)	(33)	(27)	(135)	(31)	(38)	(38)	(35)	(142)
Tax Rate	24.0%	26.6%	24.9%	19.0%	23.5%	23.8%	25.3%	25.0%	26.3%	25.2%
Net Income	127	95	101	116	438	99	113	113	99	422
Net Margin	14.4%	10.2%	11.1%	12.4%	12.0%	12.2%	13.0%	13.3%	12.0%	12.6%
% Change						(4%)				
Basic Shares Outstanding	108.1	112.2	112.2	112.2	111.2	112.2	112.2	112.2	112.2	112.2
% Change	36%	43%	43%	44%	41%	4%	0%	0%	(0%)	1%
Diluted Shares Outstanding	108.5	112.6	112.5	112.6	111.6	112.6	112.6	112.6	112.6	112.6
% Change	35%	42%	43%	43%	41%	4%	(0%)	0%	(0%)	1%
Basic EPS	\$1.18	\$0.85	\$0.90	\$1.03	\$3.94	\$0.88	\$1.00	\$1.01	\$0.89	\$3.76
% Change	23%	(23%)	(22%)	4%	(6%)	(25%)	19%	12%	(14%)	(5%)
Diluted EPS	\$1.17	\$0.84	\$0.89	\$1.03	\$3.93	\$0.88	\$1.00	\$1.00	\$0.88	\$3.75
% Change	23%	(23%)	(21%)	4%	(6%)	(25%)	19%	12%	(14%)	(5%)

Source: Deutsche Bank estimates, company data



Figure 27: Albemarle Annual Cash Flow Statement, 2014-2018E (\$ in millions, except per-share data)

	2014	2015	2016E	2017E	2018E
Operating Activities:					
Adjustments to Reconcile Net Income to Cash From Operations					
Net Income	\$161	\$360	\$422	\$491	\$556
Depreciation and Amortization	104	260	280	290	300
Restructuring Charges	6	(7)			
Loss (Gain) on Sale of Business	86				
Stock-Based Compensation	14	15	16	17	18
Excess Tax Benefit Realized from Stock-Based Compensation Arrangements	(1)	(0)			
Equity in Net Income of Unconsolidated Investments	(36)	(31)	(34)	(38)	(42)
Dividends Received from Unconsolidated Investments and Nonmarketable Securities	41	60	63	66	69
Pension and Postretirement Expense	134	(39)			
Pension and Postretirement Contributions	(14)	(22)	(20)	(20)	(20)
Deferred Income Taxes	(65)	(136)	88	78	58
Unrealized Gain on Investments in Marketable Securities	(1)	(1)			
Other			(110)	(25)	(25)
Change in Assets and Liabilities					
Working Capital (Increases)	57	(42)	(1)	(25)	(54)
Other	7	(57)	0	0	0
Cash Flow From Operations	493	361	705	835	861
Free Cash Flow					
Cash Flow From Operations	493	361	705	835	861
Less: Capital Expenditures	(111)	(228)	(235)	(244)	(279)
Free Cash Flow	382	133	470	591	581
Investing Activities:					
Capital Expenditures	(111)	(228)	(235)	(244)	(279)
Acquisitions		(2,100)			
Divestitures	105	9	250		
Decrease in Restricted Cash		58			
Investments in Marketable Securities	1	1			
Long-Term Advances to Joint Ventures	(7)	2			
Return of Capital from Unconsolidated Investment		98			
Other	(33)				
Total Investing Activities	(46)	(2,161)	15	(244)	(279)
Financing Activities:					
Increase (Decrease) in Debt	1,876	(322)	(588)	(448)	(427)
Issue (Repurchase) of Common Stock					
Dividends	(84)	(119)	(132)	(143)	(154)
Dividends Paid to Noncontrolling Interests	(16)	(23)			
Purchase of Non-Controlling Interest		(5)			
Repurchases of Common Stock	(150)				
Proceeds from Exercise of Stock Options	3	1			
Excess tax benefits realized from stock-based compensation arrangements	1	0			
Withholding taxes paid on stock-based compensation award distributions	(3)	(2)			
Debt financing costs	(18)	(5)			
Other		(4)			
Total Financing Activities	1,609	(478)	(720)	(591)	(581)
Effect of Exchange Rate Changes	(43)	2			
Net Increase (Decrease) in Cash	2,013	(2,276)	0	0	0

Source: Deutsche Bank estimates, company data



Figure 28: Albemarle Annual Balance Sheet, 2014-2018E (\$ in millions, except per-share data)

	2014	2015	2016E	2017E	2018E
Assets					
Current Assets					
Cash and Equivalents	\$2,490	\$214	\$214	\$214	\$214
Accounts Receivable	435	633	555	577	616
Inventories	358	509	519	525	553
Other Current Assets	66	71	71	71	71
Assets Held for Sale		404	404	404	404
Total Current Assets	3,349	1,831	1,763	1,791	1,858
Property, Plant & Equipment	1,232	2,485	2,127	2,014	1,924
Investments	194	455	455	455	455
Goodwill & Other Intangibles	287	4,627	4,627	4,627	4,627
Other Assets	161	217	361	423	490
Total Assets	5,223	9,615	9,333	9,311	9,355
Liabilities & Stockholders' Equity					
Current Liabilities					
Current Portion L/T Debt	711	677	677	677	677
Accounts Payable	232	307	238	241	254
Accrued Expenses	166	402	402	402	402
Dividends Payable	21	32	32	32	32
Liabilities Held for Sale		129	129	129	129
Income Taxes	9	69	69	69	69
Total Current Liabilities	1,140	1,617	1,548	1,551	1,564
Long-Term Debt	2,223	3,175	2,586	2,138	1,711
Other Liabilities	315	686	682	679	678
Deferred Income Taxes	57	736	824	902	960
Stockholders' Equity					
Common Shares	1	1	1	1	1
Additional Paid-in Capital	10	2,059	2,059	2,059	2,059
Accumulated Other Comp. Income (Loss)	(62)	(421)	(421)	(421)	(421)
Retained Earnings	1,411	1,615	1,906	2,254	2,656
Treasury Stock			0	0	0
Total Common Stockholders' Equity	1,359	3,254	3,545	3,893	4,295
Noncontrolling Interests	129	147	147	147	147
Total Equity	1,489	3,401	3,691	4,040	4,442
Total Liabilities & Stockholders' Equity	\$5,223	\$9,615	\$9,333	\$9,311	\$9,355

Source: Deutsche Bank estimates, company data



Appendix 1

Important Disclosures

Additional information available upon request

Disclosure checklist

Company	Ticker	Recent price*	Disclosure
Albemarle	ALB.N	63.93 (USD) 31 Mar 16	6,9,14

*Prices are current as of the end of the previous trading session unless otherwise indicated and are sourced from local exchanges via Reuters, Bloomberg and other vendors. Other information is sourced from Deutsche Bank, subject companies, and other sources. For disclosures pertaining to recommendations or estimates made on securities other than the primary subject of this research, please see the most recently published company report or visit our global disclosure look-up page on our website at <http://gm.db.com/ger/disclosure/DisclosureDirectory.eqsr>.

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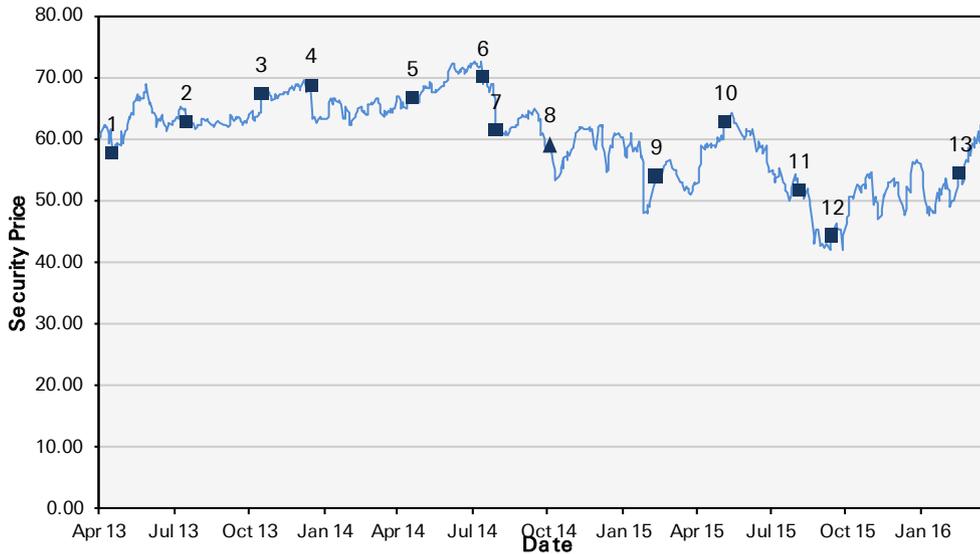
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Historical recommendations and target price: Albemarle (ALB.N)
 (as of 3/31/2016)



Previous Recommendations

- Strong Buy
- Buy
- Market Perform
- Underperform
- Not Rated
- Suspended Rating

Current Recommendations

- Buy
- Hold
- Sell
- Not Rated
- Suspended Rating

*New Recommendation Structure as of September 9, 2002

1.	04/19/2013:	Hold, Target Price Change USD63.00	8.	10/06/2014:	Upgrade to Buy, USD67.00
2.	07/19/2013:	Hold, Target Price Change USD65.00	9.	02/13/2015:	Buy, Target Price Change USD60.00
3.	10/18/2013:	Hold, Target Price Change USD72.00	10.	05/08/2015:	Buy, Target Price Change USD70.00
4.	12/18/2013:	Hold, Target Price Change USD70.00	11.	08/07/2015:	Buy, Target Price Change USD62.00
5.	04/21/2014:	Hold, Target Price Change USD72.00	12.	09/16/2015:	Buy, Target Price Change USD55.00
6.	07/16/2014:	Hold, Target Price Change USD75.00	13.	02/19/2016:	Buy, Target Price Change USD62.00
7.	08/01/2014:	Hold, Target Price Change USD67.00			

Equity rating key

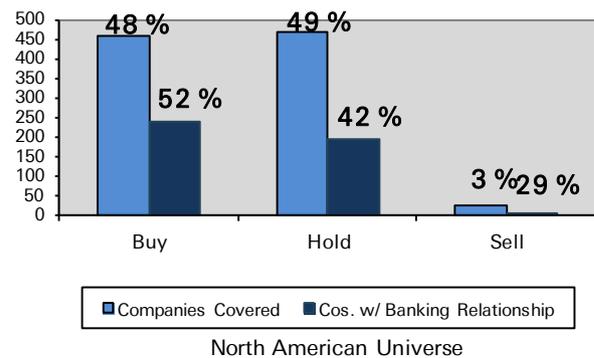
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Equity rating dispersion and banking relationships





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