LSB Industries, Inc. (NYSE: LXU)

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GLOBAL VALUE RESEARCH COMPANY
A Division Of Global Value Investment Corp

RESEARCH REPORT **PRICE TARGET: $12.70**

CONTINUOUS, METHODICAL PROGRESS

This report should be read in conjunction with GVRC's initiation report, dated 7/31/2018 and LSB Industries, Inc.'s regulatory filings with the U.S. Securities and Exchange Commission.

Summary of Recent Developments

LSB Industries, Inc. ("LSB") reported financial results for the quarter ended March 31, 2019 (FQ1 2019) that reflected a continued trend of strong operational reliability. Financial results were mixed: weak seasonal demand led to low agricultural sales volumes, which was offset by firming prices for agricultural products, while strong volumes in the industrial and mining segments were offset by price declines. Expense discipline led to positive operating income for the period.

Global Value Research Company (GVRC) has long held that LSB's long-term financial results will be driven by strong operational reliability. To that end, the average on-stream rate of 93% across LSB's three owned production facilities during the period was encouraging. FQ1 2019 is the third consecutive quarter in which each of LSB's facilities reported high on-stream rates, which is a testament to the efficacy of programs implemented by management over the past several quarters. Specifically, the facility in El Dorado, Arkansas ("El Dorado Facility") reported an on-stream rate of 96%, the facility in Cherokee, Alabama ("Cherokee Facility") reported an on-stream rate of 93%, and the facility in Pryor, Oklahoma ("Pryor Facility") reported an on-stream rate of 88%.

Although seasonal weakness weighed on results, LSB's fundamental operating and financial characteristics continue to improve. Supply dynamics and outlooks for LSB's agriculture and industrial segments are encouraging, and LSB is well-positioned to increase sales by capitalizing on new commercial opportunities, which will increase plant utilization. Firm long-term product prices are supported by cyclical trends, although short-term price fluctuations may occur. For these reasons, the company's valuation on the basis of both its tangible book value (TBV) and a range of earning-based measurements are attractive relative to the current stock price of $5.15. While the company's long-term value lies in its ability to produce consistent cash flow, GVRC assesses LSB's TBV of approximately $10.17 as a conservative valuation metric that provides a margin of safety until such time as the company is able to generate consistent earnings. GVRC applies a modest 1.25x multiple to TBV to arrive at a target price of $12.70, and notes the substantial upside to this target price due to an expectation of future earnings improvements.

Stock Information

Current Price:	$5.15
52-Week Range:	$4.75-$10.00
Avg Daily Volume:	93,859
Dividend Yield:	-
Shares Out (MM):	28.8
Float %:	84.2%
Market Cap (MM):	$148.2
Total Debt (MM):	$425.2
Cash (MM):	$21.7
Enterprise Value (MM):	$782.7

Financial Metrics

TTM Revenue (MM):	$371.9
TTM EBIT (Adj., MM):	($24.8)
EV/EBIT:	N/A
Tangible BV/Share:	$10.17
P/TBV:	0.51x

Company Description

LSB Industries, Inc. engages in the manufacture, marketing, and sale of chemical products for use in agriculture, mining, and industrial markets. It owns and operates three chemical manufacturing facilities, located in El Dorado, Arkansas; Cherokee, Alabama; and Pryor, Oklahoma; and operates a chemical manufacturing facility in Baytown, Texas on behalf of Covestro AG. The company's products include anhydrous ammonia, urea, urea ammonium nitrate solutions, and high-density ammonium nitrate for agricultural applications; anhydrous ammonia, nitric acid commercial blends, concentrated nitric acid, mixed acid, diesel exhaust fluid, and sulfuric acid for industrial applications; and ammonium nitrate solutions, ammonium nitrate-ammonia solutions, and low-density ammonium nitrate for mining applications. The majority of the company's sales are conducted in North America. LSB Industries, Inc. was founded by Jack Golsen in 1968 and is headquartered in Oklahoma City, Oklahoma.

PLEASE SEE ANALYST CERTIFICATION AND IMPORTANT DISCLOSURES ON PAGE 12.

Figure 1: five-year performance chart. Source: FactSet; data as of 5/14/2019.

Financial Assessment

Balance Sheet

Note: On January 1, 2019, the company adopted ASC 842, an accounting method modification that requires the reporting of operating lease right-to-use assets and corresponding operating lease liabilities. ASC 842 is applied only to periods ending after the adoption date. Therefore, stated assets and liabilities in comparative periods may not be apt reference points for equivalent results in the current period.

As of FQ1 2019, LSB's current assets were $141.5 million, which consisted of $21.7 million of cash and cash equivalents, $46.1 million of trade accounts receivable, and $73.8 million of inventory, supplies, and other short-term assets. FQ1 2019 current assets were lower than FQ4 2018 current assets of $166.4 million and FQ1 2018 assets of $158.8 million. FQ1 2019 long-term assets of $985.0 million consisted largely of $962.5 million of property, plant, and equipment. Operating lease assets, a new balance sheet item pursuant to ASC 842, were $15.3 million and pertained primarily to LSB's railcar leases.

Current liabilities were $105.7 million, which consisted of $49.9 million in accounts payable, $37.7 million in accrued and other liabilities, and $18.1 million in borrowings. FQ1 2019 current liabilities were lower than FQ4 2018 current liabilities of $125.8 million but higher than FQ1 2018 current liabilities of $94.8 million. Non-current liabilities of $697.9 million included $412.9 million of long-term debt, $209.9 million of redeemable preferred stock, and $75.1 million of other liabilities. Pursuant to ASC 842, LSB recorded $15.4 million in operating lease liabilities ($5.7 million under current liabilities and $9.7 million under long-term liabilities), which were not included in comparable periods.

Current liabilities compare favorably to current assets (current ratio of 1.34). Weak seasonal demand for agricultural products in FQ1 2019 resulted in an unusual inventory build during the period, which LSB expects to normalize in FQ2 2019. LSB has a revolving credit facility in place with a limit of $75.0 million, which is used to fund short-term working capital requirements. As of March 31, 2019, there was a balance of approximately $10.0 million drawn against this facility and availability of approximately $40.1 (based on eligible collateral). Between cash and availability on its revolving credit facility, LSB had approximately $61.8 million in liquidity. The company expects to have similar liquidity at the end of FY 2019. GVIC does not anticipate liquidity issues. Under the terms of its Senior Secured Notes due 2023, LSB can use liquidity in excess of $65 million to redeem these notes and its Series E 14% cumulative, redeemable preferred stock. GVIC notes that additional sources of liquidity exist, including the ability to expand the issuance of the Senior Secured Notes due 2023 by $35 million.

Capitalization

As of FQ1 2019, LSB's capitalization included 28.8 million shares of common stock (with 2.3 million potentially dilutive shares), $425.2 million of debt ($12.3 million of current portion of long-term debt and $412.9 million of non-current portion of long-term debt), and four issues of preferred stock.

LSB's long-term debt is presented below. The Senior Promissory Note due 2019 will be retired in June 2019 and involves a final balloon payment of approximately $6.7 million; LSB is currently negotiating a facility to refinance this amount. In March 2019, LSB entered a senior loan agreement with up to $7.5 million in available borrowings for the purpose of replacing the sulfuric acid converter at the El Dorado Facility. The counterparty to this facility is an affiliate of LSB Funding LLC (relationship discussed below). As of FQ1 2019, the facility's balance of $0.8 million is included in other debt. GVRC believes that between LSB's current assets, cash from operations, and its revolving credit facility, the company has adequate liquidity for working capital and debt service requirements.

	Interest Rate	*Outstanding (thousands)*
Working Capital Revolver Loan	6.000%*	$10,000
Senior Secured Notes due 2023	9.625%	$400,000
Secured Promissory Note due 2019	5.730%	$6,906
Secured Promissory Note due 2021	5.250%	$7,269
Secured Promissory Note due 2023	6.740%	$14,190
Other		$981
Unamortized Discount and Debt Issuance Costs		($14,158)
		$425,188

*Interest rate as of March 31, 2019. Working Capital Revolver Loan accrues interest at LIBOR plus 1.50% to 1.75% or prime plus 0.50% to 0.75%.

LSB carries four issues of preferred stock. The amounts outstanding under the company's Series B 12% cumulative, convertible preferred stock ("Series B Preferred") and Series D 6% cumulative, convertible preferred stock ("Series D Preferred") are $2.0 million and $1.0 million, respectively. Since late 2015, dividend payments have accumulated rather than been paid to holders. Together, the annual dividend on the Series B Preferred and Series D Preferred is 10% of the aggregate par value of $3.0 million. As of FQ1 2019, accumulated dividends on these two issues were $1.1 million. Neither the Series B Preferred nor the Series D Preferred is redeemable at the preference of the holder.

As of FQ1 2019, 139,768 shares of Series E 14% cumulative, redeemable preferred stock ("Series E Preferred") were outstanding, with participation rights equal to 303,646 shares of common stock. LSB carried a liability of $209.9 million related to the Series E Preferred, and the aggregate liquidation preference was $219.3 million. The participation rights, which are bifurcated from the Series E Preferred for accounting purposes and recorded as a separate liability, were carried at $1.8 million. The Series E Preferred are redeemable by the holder beginning in October 2023. LSB, at their option, may redeem the Series E Preferred at any time at a redemption price per share equal to the liquidation value.

The one issued and outstanding share of Series F Preferred has no par value and an aggregate liquidation preference of $100. It entitles the holder to a number of votes equal to 456,225 shares of common stock. Eldridge Industries, through its subsidiary, Security Benefit Corporation (collectively, "Security Benefit"), is the holder of all of the issued and outstanding Series E Preferred and Series F Preferred. Security Benefit is also the largest holder of common stock and a debt holder.

As LSB's operating reliability and financial results continue to improve, subject to the costs of retiring and reissuing securities, the company may be able to refinance its Senior Secured Notes due May 2023 and/or Series E Preferred with more attractively priced capital. LSB is actively engaged and has a close relationship with credit rating agencies; GVIC believes a credit rating upgrade may be forthcoming if continued operational reliability, sustained free cash flow, and adequate liquidity are demonstrated. GVIC assess these metrics as very achievable in advance of the first redemption date for the Senior Secured Notes due May 2023, which occurs in May 2020.

Income Statement

In FQ1 2019, LSB generated $94.2 million in revenue: $46.8 million from the agriculture segment, $37.9 million from the industrial segment, and $9.5 million from the mining segment. FQ1 2019 revenue was roughly unchanged versus FQ4 2018 revenue of $94.7 million and 6.3% lower than FQ1 2018 revenue of $100.5 million. In general, higher selling prices in the agriculture segment were offset by lower sales volumes of agricultural products, while higher sales volumes of industrial products were offset by lower selling prices in the industrial segment.

FQ1 2019 gross profit was $7.3 million, compared to $12.4 million in FQ4 2018 and $10.1 million in FQ1 2018 (note that FQ4 2018 cost of goods sold was reduced by $4.4 million to reflect a settlement reached during the period relating to a previous business interruption claim). The decline in revenue versus the 2018 comparable period is primarily attributable to lower sales volumes of agricultural products caused by cold and wet weather that hampered spring ammonia fertilizer application throughout much of LSB's geographic markets. FQ1 2019 selling, general, and administrative expenses were $7.2 million, compared to $15.0 million in FQ4 2018 and $8.3 million in FQ1 2018 (note that $5.3 million of one-time severance expense relating to the departure of former CEO Dan Greenwell was recorded in FQ4 2018). The decline in selling, general, and administrative expenses versus the 2018 comparable period is primarily attributable to lower compensation expenses; GVIC expects that $7.2 million represents a reasonable level for selling, general, and administrative expenses and does not expect meaningful changes to this number in the near- to medium-term, absent material changes to the business. FQ1 2019 operating income was $0.1 million, compared to -$2.5 million in FQ4 2018 and $1.9 million in FQ1 2018.

LSB's cost of goods sold included certain expenses related to the retention of consulting firms, which will eventually be removed from the cost structure. GVIC estimates that costs attributable to reliability improvement initiatives will fall between $1 million and $2 million annually and will continue through 2020. The expenses incurred for these consultants should drive better facility utilization and noticeably improved long-term earnings.

Natural gas, an input in the production of ammonia, has recently constituted between 15% and 30% of LSB's cost of goods sold. Fluctuations in natural gas pricing can meaningfully affect LSB's earnings. In late 2018, LSB consolidated its purchase of natural gas across its three owned facilities. GVIC believes this will result in modestly lower natural gas input costs in the future. On LSB's May 1, 2019 conference call, management reported that prices for 60% of the company's FQ2 2019 natural gas requirements were locked at $2.40 per mmBTU – a favorable price level relative to historic data.

Interest expense in FQ1 2019 was $11.0 million, consistent with LSB's debt structure. Dividends on preferred stock of $7.3 million were recorded during the period, almost entirely attributable to the Series E Preferred. Accretion of $0.5 million related to the Series E Preferred was also recorded.

Finally, in late 2018, Dyno Nobel, a manufacturer of commercial explosives, co-located an emulsion plant at the El Dorado Facility and began purchasing ammonium nitrate solution directly from the El Dorado Facility. While LSB does not quantify the financial benefit of this arrangement, GVIC estimates that EBITDA is positively affected to the tune of a few million dollars annually. While future guest plant arrangements may not bear similar economic characteristics, GVIC believes there are several similar additional opportunities that will be accretive to EBITDA with little cost to LSB.

Cash Flow

In FQ1 2019, LSB generated cash from operations of $7.1 million, which included net income of -$11.5 million, depreciation and amortization of $16.8 million, a change in inventories of -$3.4 million, a change in accounts payable of -$10.5 million, and a change in accrued interest of $9.7 million. Cash from investing was -$7.1 million, which was substantially all capital expenditures. Cash from financing was -$4.3 million, reflecting regular debt service requirements.

LSB projects FY 2019 full-year capital expenditures of $30 million to $35 million, which is in line with the company's long-term target. FY 2019 capital expenditures will include approximately $7.5 million for a new sulfuric acid converter at the El Dorado Facility. Note that LSB expenses plant turnaround costs, while some competitors capitalize these. LSB's normalized maintenance capital expenditure requirements should trend towards $25 million annually over the long-term, with the remainder of capital expenditures spent on growth initiatives.

Shareholders' Equity

Shareholders' equity has declined consistently since FQ3 2016 due to persistent net losses (much of this stems from depreciation related to the expansion of the El Dorado Facility, completed in early 2016). A series of new domestic ammonia plants constructed over the past several years and the associated disruption to the distribution networks for ammonia-based products have resulted in oversupply and unfavorable product pricing. However, the market has largely adjusted to these changes, as evidenced by generally firmer product pricing over the past several quarters. Furthermore, operational challenges at LSB's facilities have hindered production, although GVRC believes that recent and ongoing physical plant and process improvements are bearing fruit; on-stream rates for the past three quarters across LSB's three owned facilities have averaged 94%, supporting this position. Improved plant operations and firming prices should lead to meaningfully improved profitability, at which point GVRC expects retained earnings will be allocated in a manner accretive to shareholders.

Depreciation vs. Capital Expenditures

Depreciation of LSB's assets falls between $16 million and $19 million per quarter, or $64 million and $76 million annually. This compares to capital expenditures totaling between $30 million and $35 million annually. Although this relationship might suggest degradation of the capability of LSB's production assets, results suggest the contrary. GVRC believes that LSB's level of capital expenditures is appropriate to operate the business and even realize modest physical asset improvements over time, while recognizing that infrequent large capital outlays are likely necessary to a business such as that of LSB in the very long term. GVRC suspects that meaningful future expansion is more likely to be undertaken by acquisition than by new plant construction, although incremental downstream capacity additions are possible.

Plant Operations

Efficient operation of LSB's physical plant assets is critical to the company's financial performance. To measure operational reliability, LSB reports on-stream rates for each of its three owned facilities on a quarterly basis. On-stream rates measure the percent of time that the ammonia reactor at a plant operates. Because ammonia is the precursor for nearly every other product produced, this is a critical measure of plant performance. On-stream rates do not consider planned downtime for scheduled repairs, modification, or turnarounds (an overhaul that occurs every two to three years, depending on plant condition), but account for unplanned downtime for unscheduled repairs.

Cross-Plant Initiatives

In FQ3 2017, PriceWaterhouse Coopers was hired to assist in upgrading LSB's maintenance management system, a system for tracking current and future maintenance requirements across all plants with the objective of streamlining maintenance operations to reduce unplanned downtime. Full preventative maintenance programs were also implemented across critical pieces of equipment. This work was completed in late 2018, and constituted phase one of LSB's "Reliability and Operational Improvement" project.

Phase two of this multi-year project involves PeopleCore, a firm which consults on operations, maintenance, training, safety, and leadership for petrochemical companies with a focus on employees and the workforce. PeopleCore was retained in FQ4 2018 to implement operator training enhancements, procedure improvements, operations work process improvements, and leadership training. GVIC expects this engagement will last through FY 2020 and will result in better facility utilization and noticeably improved long-term earnings.

On-stream rates, which indicate the efficiency with which LSB's ammonia reactors operate, have improved recently. This was an essential step, as ammonia is the precursor for all of LSB's downstream products. LSB intends to now shift its focus to downstream operations. Early signs of this are evident in the company's recent and planned turnaround activities, which include improvements to high-density ammonium nitrate (HDAN) and urea production.

In late 2017, LSB hired Director of Logistics John Fogarty, and in early 2018, LSB hired Director of Procurement Steven Bach, each to introduce efficiencies in their respective areas. LSB's management has previously estimated that streamlining the company's procurement and logistics operations would result in $3 million to $5 million in annual cost savings. On the company's May 1, 2019 conference call, CEO Mark Behrman suggested that savings could eclipse this estimate.

As a consequence of increased logistical efficiency, LSB has been able to expand its geographic reach and now distributes into Mexico, Alaska, and to the east coast of Canada. Opportunities to gain a foothold in these markets could lead to substantial future revenue opportunities.

El Dorado

The El Dorado Facility's ammonia reactor operated at a 96% on-stream rate in FQ1 2019 after operating at an 98% on-stream rate in FQ4 2018. LSB expects an on-stream rate for FY 2019 of 95%, and believes that a long-term on-stream rate target of 97% is reasonable. The plant will undergo a 14-day turnaround in August 2019; this is shorter than a typical turnaround as much of the planned work was pulled forward and performed during unplanned downtime in FQ2 2018. The August 2019 turnaround will include HDAN capacity and reliability improvements and nitric acid plant efficiency improvements. After the August 2019 turnaround, the El Dorado Facility will be moved to a three-year turnaround schedule, with the next turnaround planned for FY 2022. As the El Dorado Facility is LSB's newest and most advanced facility, GVRC generally expects high on-stream rates.

During FQ4 2019, the sulfuric acid plant located at the El Dorado facility will undergo a replacement of its converter at a cost of $7.5 million (this will be capitalized). This will both improve the reliability of the sulfuric acid plant and increase its capacity from 140,000 tons annually to 160,000 tons annually. While the size of LSB's sulfuric acid operation is small relative to the size of its ammonia operations, management has identified sulfuric acid as an important business in which future acquisitive activity is possible.

Excess ammonia from the El Dorado Facility is injected into an ammonia pipeline owned by NuStar Energy, LP and is purchased by Koch Fertilizer, LLC under an offtake agreement, expiring in May 2020.

Cherokee Facility

The Cherokee Facility's ammonia reactor operated at a 93% on-stream rate in FQ1 2019 after operating at the same on-stream rate in FQ4 2018. LSB expects an on-stream rate for FY 2019 of 95%, and believes that a long-term on-stream rate target of 97% is reasonable. In late 2018, external consultants were hired to review urea operations at the Cherokee Facility and recommend improvements to reliability and operability; while improvements have been notable, minor modifications are still underway. The Cherokee Facility is now on a three-year turnaround schedule, with the next turnaround planned for FQ3 2021.

Pryor

The Pryor Facility's ammonia reactor operated at an 88% on-stream rate in FQ1 2019 after operating at a 97% on-stream rate in FQ4 2018. LSB expects an on-stream rate for FY 2019 of 90%, and believes that a long-term on-stream rate target of 93% to 95% is reasonable. Substantial improvements have been made at the facility during previous planned and unplanned downtime. In FQ3 2019, the plant will undergo a turnaround, during which overhauls to the ammonia, urea, and nitric acid plants will be conducted. External consultants were hired to review urea operations at the Pryor Facility, and consultation is ongoing. A new urea reactor was delivered and set in place in the second half of FY 2018, and installation and tie-in will be completed during the FQ3 2019 turnaround. After the FY 2019 turnaround, the Pryor Facility will next undergo a turnaround in FY 2021, after which it will be moved to a three-year turnaround schedule.

Baytown

LSB operates the Baytown Facility under an agreement with Covestro. In October 2018, Covestro announced an expansion at the Baytown Facility to increase production of methylene diphenyl diisocyanate, which requires nitric acid to synthesize. GVRC expects LSB will benefit from this expansion. In FQ1 2019, the Baytown facility operated at a 100% on-stream rate. The next turnaround will correspond with the turnaround at Covestro's adjacent facility.

Segment Analysis

Agriculture Segment

In FQ1 2019, 49.7% of LSB's revenue was attributable to the agriculture segment. LSB's agriculture sales are seasonal, with demand highest in spring (March through June) and fall (September through November). Because fertilizer use is dependent on crop selection, soil conditions, weather patterns, and other environmental factors, almost all agriculture sales are based on spot pricing, which is driven by relatively short-term supply and demand. FQ1 2019 agriculture sales reflected seasonally weak volumes due to cold and wet weather in LSB's geographic markets, particularly the Midwest. Weak volumes were partially offset by improving pricing for agricultural products

Due to low sales volumes, LSB built inventory and incurred unusual transportation expenses in FQ1 2019 as it strategically relocated product between its facilities for storage. The company expects to make up most of the lost volume in FQ2 2019. While anhydrous ammonia is applied prior to crop planting, post-planting fertilizers are primarily urea ammonia nitrate (UAN) and HDAN. UAN prices have recently come under pressure due to both incremental domestic production and increased imports.

Recent trends in selling prices and sales volume are presented below.

	FQ4 2017	*FQ1 2018*	*FQ2 2018*	*FQ3 2018*	*FQ4 2018*	*FQ1 2019*
UAN	$124	$138	$178	$156	$180	$213
HDAN	$203	$220	$254	$234	$240	$232
Ammonia	$215	$320	$316	$285	$316	$357

Source: Reported gross average selling prices (price per ton) are sourced from the appropriate period's 8-K issued in conjunction with that period's earnings announcement. Average selling prices represent net back prices, which are calculated as sales less freight expenses divided by product sales volume in tons.

	FQ4 2017	*FQ1 2018*	*FQ2 2018*	*FQ3 2018*	*FQ4 2018*	*FQ1 2019*
UAN	97,852	102,202	110,336	83,898	103,618	94,577
HDAN	48,782	92,713	93,126	51,944	46,650	59,845
Ammonia	13,821	32,996	12,956	17,564	19,070	19,205
Other Agricultural Products	4,801	4,183	12,822	4,394	2,023	3,328

Source: Product volumes (tons sold) are sourced from the appropriate period's 8-K issued in conjunction with that period's earnings announcement.

Because LSB's agriculture segment is cyclical, and prices reflect the commodity nature of the products, gross margins vary widely. In cyclical troughs, gross margins can be as small as a few percentage points, while at cyclical peaks, gross margins can be between 30% and 50%. In FQ1 2019, adjusted gross profit margin was 13.8% ($6.5 million of gross adjusted profit on $46.8 million of net sales). In FQ1 2018, adjusted gross profit margin was 9.0% ($4.7 million of gross adjusted profit on $52.3 million of net sales). FY 2018 adjusted gross margin was 11%.

Industrial and Mining Segments

In FQ1 2019, 40.2% and 10.1% of LSB's revenue was attributable to the industrial and mining segments, respectively. LSB's industrial and mining sales exhibit minimal seasonality, although quarterly results can be affected by the timing of orders. Historically, industrial and mining product pricing has been determined by long-term contracts and indexed to the Tampa Ammonia Index.

Because industrial and mining products are sold under cost-plus arrangements, sales volumes are the most appropriate proxy for revenue. To a certain extent, production can be shifted between products to opportunistically capitalize on price movements. Product sales volumes (tons sold) are presented on the following page.

	FQ4 2017	FQ1 2018	FQ2 2018	FQ3 2018	FQ4 2018	FQ1 2019
Industrial Products						
Ammonia	51,572	68,098	41,194	61,308	67,919	74,834
Nitric Acid*	25,375	20,213	33,504	21,388	35,870	22,375
Other Industrial Products	8,665	8,612	9,224	6,721	7,552	8,274
Mining Products						
LDAN/HDAN/AN Solution	38,990	38,179	48,001	34,852	42,277	36,615

*Excluding Baytown Facility
Source: Product volumes (tons sold) are sourced from the appropriate period's 8-K issued in conjunction with that period's earnings announcement.

Due to the non-cyclical nature of the industrial and mining segments and the use of cost-plus pricing, these segments provide earnings stability at high margins. In FQ1 2019, adjusted gross profit margin was 37.3% ($17.7 million of gross adjusted profit on $47.3 million of net sales). In FQ1 2018, adjusted gross profit margin was 48.6% ($23.4 million of gross adjusted profit on $48.2 million of net sales). FY 2018 adjusted gross margin was 39%.

Management Assessment

Since GVRC's most recent research report, dated March 11, 2019, there have not been changes to the company's executive management or the Board of Directors. On January 2, 2019, following CEO Dan Greenwell's resignation, Mark Behrman was promoted from CFO to CEO and Cheryl Maguire was promoted from VP of Finance to CFO. GVRC believes that experienced management at both the corporate level and facility level is crucial to the success of the business. CEO Behrman, CFO Maguire, and Executive Vice President of Manufacturing John Diesch have been with LSB since March 2014, November 2015, and August 2016, respectively. GVRC believes that improved corporate performance and plant operations are largely attributable to this executive management team's leadership.

Both corporate and plant-level management have focused on driving a culture of responsibility and accountability across the organization. While difficult to measure, subtle changes hint at a shifting corporate culture. The implementation of preventative and predictive maintenance programs suggests a high level of attention to the company's physical assets. Improving on-stream rates suggest data-driven performance modifications and operational training are yielding results. A continued emphasis on operational rigor as a core tenet of corporate culture should contribute to positive long-term results.

LSB's 10 largest shareholders are presented in the table below. Security Benefit (also referred to as LSB Funding LLC) remains the largest shareholder; GVRC perceives Security Benefit to be a rational and well-capitalized investment group and is encouraged by its continued ownership. Two representatives from Security Benefit, Jonathan Bobb and Kanna Kitamura, serve on LSB's Board of Directors. Security Benefit, through LSB Funding LLC, extended the aforementioned $7.5 million credit facility for the construction of a new sulfuric acid converter at the El Dorado Facility. Additionally, Security Benefit holds $50 million of LSB's Senior Secured Notes due 2023 and all of the issued and outstanding Series E Preferred and Series F Preferred. GVIC believes LSB's relationship with Security Benefit is excellent.

Shareholders (from recent 13D, 13F, 13G, or proxy filings):	
LSB Funding LLC	14.2%
BlackRock Fund Advisors	9.7%
Tontine Associates LLC	8.5%
Robotti & Co. Advisors LLC	7.1%
Jack Golsen	5.8%
Dimensional Fund Advisors LP	5.8%
The Vanguard Group, Inc.	4.6%
Maple Rock Capital Partners, Inc.	4.4%
Dan Greenwell	2.1%
Mark Behrman	2.0%
Top 10 Holders	**64.2%**

Competitive Positioning Update

LSB operates in a highly competitive industry against several larger companies. CF Industries Holdings, Inc., CVR Partners LP, Dyno Nobel, Koch Industries, Inc., Nutrien Ltd,. and Yara International ASA are notable competitors.

LSB's access to inexpensive natural gas feedstock is a particularly notable competitive advantage. At the El Dorado Facility and Cherokee Facility, feedstock pricing is approximated by Henry Hub spot pricing. However, at the Pryor Facility, LSB purchases feedstock at a substantial discount to Henry Hub pricing; this discount can approach 30%. As regional offtake capacity develops, GVRC expects this discount will narrow.

FQ1 2019 brought continued price improvement in LSB's agriculture segment, with prices for anhydrous ammonia, UAN, and HDAN rising 12%, 54%, and 5%, respectively, compared to FQ1 2018. Strong pricing was offset by lower sales volumes, although GVIC expects this seasonal variation will correct in the long term and does not attribute weak sales volumes to structural issues. High sales volumes in the industrial and mining segments were offset by lower prices, although GVIC views the long-term trends in LSB's industrial and mining segments as positive and notes that LSB has both additional production capacity and several emerging commercial growth opportunities.

LSB's agriculture segment represents approximately 50% of annual revenue. The segment's margins are far more cyclical than those in the industrial and mining segments. While GVRC believes that viewing LSB as an agricultural fertilizer company misrepresents the diversity of its end markets, the agriculture segment is nonetheless an important part of the overall business. The primary indicator for demand for LSB's agricultural products is acres of corn planted in the United States each season, due to (a) the sheer number of acres planted relative to other nitrogen-intensive crops, (b) the relatively high nitrogen demand of the crop, and (c) LSB's proximity to corn-producing regions. While acres of corn planted in the United States in 2018 (89.1 million acres) represented a three-year low (versus 90.2 million acres and 94.0 million acres 2017 and 2016, respectively), the USDA predicts that 92.0 million acres of corn will be planted in 2019, 93.0 million acres in 2020, and 93.0 million acres in 2021. Acres planted are generally sensitive to corn prices. Although corn spot prices have remained below $4.00 per bushel for the better part of the past several years, corn futures contracts expiring in mid-2020 indicate settlement prices above $4.00 per bushel.

Valuation Analysis

Note: Global Value Research Company does not premise valuation on financial modeling of future results. Each company analyzed is treated as unique and its value is appraised based on its circumstances and those of the industry and macroeconomic environment in which it operates. Various metrics are used based on a company's characteristics and historical pricing.

For much of its existence, LSB operated as a diversified holding company for a collection of manufacturing and industrial entities. This confounds historic results of the company's chemical operations. The last significant non-chemical holding, a climate control business, was divested in mid-2016. Certain ownership interests in natural gas-producing properties were divested in mid-2017 and a small industrial machinery and components business was sold in late 2017. LSB's operational and financial characteristics are now clear, but historical data are of limited analytical value.

Due to LSB's persistent operating losses and inconsistent operational performance since mid-2015, GVRC believes a valuation based on earnings is currently inappropriate; however, GVRC expects that a future recovery in earnings will render an earnings-based valuation preferable. Considering the volatility of product pricing, the multiple exogenous events that could affect markets for ammonia-based products, and LSB's ability to quickly change output volumes to opportunistically capitalize on price changes, GVRC refrains from forecasting future earnings.

LSB's industrial and mining segments have historically constituted more than 50% of its revenue. Because the company's relationships with industrial and mining customers typically involve long-term contractual agreements based on cost-plus pricing, GVRC believes that growth in these segments is less dependent on product pricing than it is on achieving additional commercial penetration and higher production rates. LSB's agriculture revenue, which typically involves sales on the spot market in which margin is determined by product pricing, is significantly more variable than that of the industrial and mining segments.

LSB has historically traded at a multiple of both earnings and TBV. Since FQ3 2016, the first full quarter as a standalone chemical business, LSB has traded at an average of 0.59x TBV. The company now trades at about 0.51x FQ1 2019 TBV of approximately $10.17 per share (fully diluted). Asset-based valuations for LSB's peer companies span a wide range: over the past 10 years, CF Industries Holdings, Inc. has traded at a P/TBV multiple ranging from 2.0x to 20.0x; CVR Partners, LP has traded at a P/TBV multiple ranging from 0.7x to 4.5x; and Yara International ASA has traded at a P/TBV multiple ranging from 1.1x to 3.2x. However, in strong pricing environments, an asset-based valuation should become subordinate to an earnings-based valuation. During such periods, it is not uncommon for ammonia chemical manufacturing companies to trade at several times TBV.

GVRC recognizes that ongoing financial losses have eroded shareholders' equity and TBV, which are now $322.8 million and $315.7 million, respectively. However, considering the many encouraging signs of improved plant operations and stronger product pricing, GVRC anticipates the company will begin to show modest but consistent profitability on an operating level.

LSB has a *raison d'etre* due to the longstanding demand for ammonia-based chemical products in numerous agricultural, industrial, and mining applications. Nitrogen (ammonia-based fertilizers) is an essential plant nutrient that has no substitute, and there are no known practical substitutes for many of LSB's industrial and mining products. Access to both inexpensive natural gas feedstock and geographic proximity to important end markets provides the company a competitive edge over many domestic and nearly all international competitors.

The margin of safety in an investment in LSB lies in its current price relative to the value of its assets. The company's assets, which GVRC believes are carried on its balance sheet at a fair value, are difficult to replace, necessary for the synthesis of ammonia and ammonia-based products, and would command substantial value in a private transaction. Considering the replacement value of these assets, which GVRC estimates is between $35.00 and $45.00 per share, GVRC views the sale of the company to a competitor at a price providing sufficient downside protection to shareholders as a worst-case scenario.

LSB's management has long held that industry consolidation would be beneficial for many smaller companies which, like LSB, operate only a few plants. While there are considerations specific to each transaction, such as plant design, end market access, and ownerships structure, GVIC anticipates consolidation will occur within the next few years, absent significant market disruption. Considering LSB's experience in improving physical plant facilities and plant operations, GVIC views LSB as a logical consolidator.

GVRC maintains its price target range of 1.0x – 1.5x TBV. GVRC believes a modest premium to TBV is appropriate considering operational improvement and firming product prices, and conservative in its reliance on tangible assets as a basis for valuation. To arrive at a target price of $12.70, a midpoint 1.25x TBV multiple is applied to the TBV of approximately $10.17 per share. However, based on both LSB's earnings potential and the replacement value of LSB's assets, GVRC believes shares will eventually trade substantially higher.

Risks, Catalysts and Expectations

Since GVRC's initiation report, many risks have been partially mitigated. Three consecutive quarter of consistently high on-stream rates at LSB's owned facilities are evidence of the efficacy of operational improvements undertaken over the past several quarters; any risk of operational degradation appears to be a fading concern. The most notable risk involves LSB's leverage and the expense of its debt. The company's Senior Secured Notes due 2023 carry an interest rate of 9.625%, which comprises the bulk of the company's quarterly interest expense of approximately $11.0 million. The Series E Preferred carries a dividend rate of 14%, and dividends are assessed against both principal and accrued and unpaid dividends. As such, the quarterly Series E Preferred dividend obligation has increased from $5.5 million in FQ4 2016 to $7.3 million in FQ1 2019. LSB can, at its option, redeem the Series E Preferred at any time. Delays in the partial or complete redemption of the Series E Preferred could be financially detrimental. While liquidity is not an imminent concern, overleverage will become an issue if not addressed in a timely manner.

While several obvious catalysts exist, GVRC believes that the most meaningful source of stock price appreciation will be improved earnings stemming from consistent and reliable plant operations. Reliable operations and high on-stream rates will beget both increased productivity and lower ongoing and unforeseen maintenance costs. Higher long-term sales volumes and firm product pricing represent a clear path to earnings growth.

GVRC expects that consistent operational reliability, robust product demand and pricing, incremental commercial opportunities resulting in revenue growth, and access to inexpensive manufacturing inputs (natural gas) will enable LSB to generate substantial cash flow in the near future. Balance sheet deleveraging should follow, enabling LSB to consider inorganic growth opportunities. As progress towards these goals become clear, shares will command a substantially higher valuation.

LSB trades at a 59.4% discount to GVRC's target price of $12.70. GVRC believes this discount to intrinsic value presents a compelling case for investment and an attractive entry point for patient, opportunistic investors.

About Global Value Research Company

Global Value Research Company is the investment research division of Global Value Investment Corp, a research and advisory firm serving individual and institutional clients. Founded in 2007 in Milwaukee, Wisconsin, the firm currently operates additional offices in Boston, Massachusetts; Charleston, South Carolina; and Hyderabad, India. Global Value Research Company espouses the value investing principles pioneered by Ben Graham and David Dodd, providing comprehensive fundamental analysis of publicly traded companies around the world. Our research process focuses on diligently examining company financial statements, understanding competitive positioning, assessing industry and macroeconomic trends, and speaking with company senior management on an ongoing basis. Further information about Global Value Research Company's services can be obtained by contacting the firm directly.

Global Value Investment Corp, through its subsidiaries, beneficially owns less than 5% of the common stock outstanding of LSB Industries, Inc.

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GVRC receives an annual non-contingent flat fee ranging from $25,000 to $75,000 from the Company for the publication of an initial report covering the Company, three quarterly updates, and any interim reports deemed necessary by GVRC. To mitigate the conflict of interest created by the Company compensating GVRC preparing the reports, GVRC requires its fee to be fully paid in advance of the publication of its initial report. GVRC has implemented policies and procedures to promote the objectivity of its analysts. GVRC does not rely on revenues from any single company, including the Company, engaging the firm for its research services. GVRC also prohibits companies from compensating it with stock-based or other forms of variable compensation and only accepts cash (or cash equivalents) for its services. Although GVRC and GVIC employees may own positions in the securities of companies covered by the firm, GVIC has implemented strict procedures that prohibit employees from trading securities, including options, directly related to the subjects of its reports within ten days before and three days after their publication.