



Manufacturing Supply Chain Stress

May 2020

Executive Summary

- **Production Restart**– Plants have begun to reopen; however many are taking a phased approach. Several OEMs have delayed openings due to lack of supplier readiness.
- **Earnings Calls Comments**– Most executives expect Q2 results to be significantly worse than Q1. Many companies drew down credit lines and issued bonds to increase available cash. Cash and liquidity were discussed more often by companies that may be at higher risk if the economic situation does not improve within the next year.
- **Supplier Stress**– Before the crisis, most reviewed companies could cover interest expenses, however many may not be able to meet obligations and debt covenants if sales decline by more than 30%.
- **Supply Risk**– Companies should review their supply base for critical suppliers that will lose large amounts of revenue and have low cash levels. Suppliers' approaches to COVID-19 risk mitigation should also be reviewed. In addition to financial risk, companies with low cash levels may have additional difficulties rapidly reopening.
- **Supplier Financial Risk**– Companies will undergo varying degrees of stress if operations remain suspended over the next few weeks and months. Public and Private suppliers' financials should be reviewed to determine exposure to the industry, cash reserves, and available means of mitigation.

1. Background & Supplier Impact

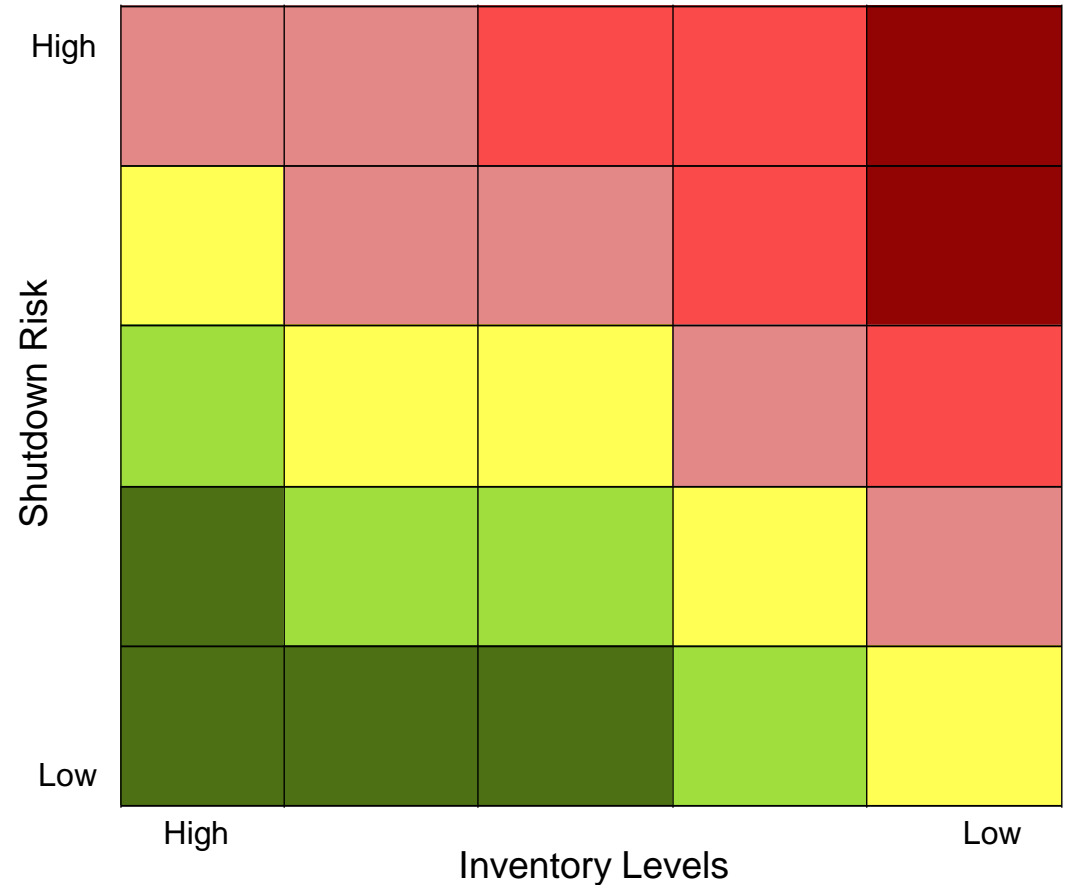
2. Cost & Capital Supplier Risk Approach

3. Reference Cases

Supply Risk Assessment

Companies should review their supply base for critical components from plants that have or might shutdown, have low safety stock levels, and are under financial stress.

- Resources should be focused on major suppliers as well as suppliers that provide supply-critical components
- Financial stress will increase as shutdowns become prolonged
- Working with manufacturing and engineering highlights critical components
- Working with supply chain highlights limited sources for critical components
- Efforts should be narrowed to the most critical suppliers



Recent Q1 Earnings Call Statements

Several executives highlighted the need for additional cash, raw material tailwinds, supply chain issues, and general uncertainty for the rest of the year.

Because of all the uncertainty in front of us at that time **we thought it was best to raise some additional capital** as liquidity shows, as such, we made the decision to use our secured debt capacity, we issued \$400 million in secured notes.

- Lourenco Goncalves, Cleveland-Cliffs CEO

We are entering this recession with liquidity similar to what we had heading into the global financial crisis, but with a much more streamlined and efficient footprint.

- Christie Breves, US Steel CFO

With regard to receivables, **we did increase our bad debt reserve** during the first quarter reflecting uncertainty regarding the breadth of the crisis in eventual customers' liquidity especially for many small customers globally.

- Vince Morales, PPG CFO

At the end of March, **we proactively tapped \$1 billion of the \$1.25 billion revolving credit facility**. As noted by our strong balance sheet and operating cash flow results, this was done **solely out of an abundance of caution**. In this low rate environment, it's an inexpensive insurance policy.

- Thomas Okray, Grainger CFO

Raw material costs are expected to have a moderately favorable impact for the first half of 2020. Continued margin management and cost-saving programs are in place and are being executed to address the current challenges.

- Thierry Vanlancker, AkzoNobel CEO

Overall, the **financial impact of COVID-19 and the substantial decline in crude oil prices was in line with our expectation** of an approximately \$200 million headwind in the quarter.

- Howard Ungerleider, Dow CFO

Not so sure our crystal ball is clearer than others, but I will say that it is positive looking through the lens of our order book and our order input right. I read this morning in American Metal, **individuals saying, well, nobody is buying, I guess perhaps they are not buying from other people, but they are buying from us**.

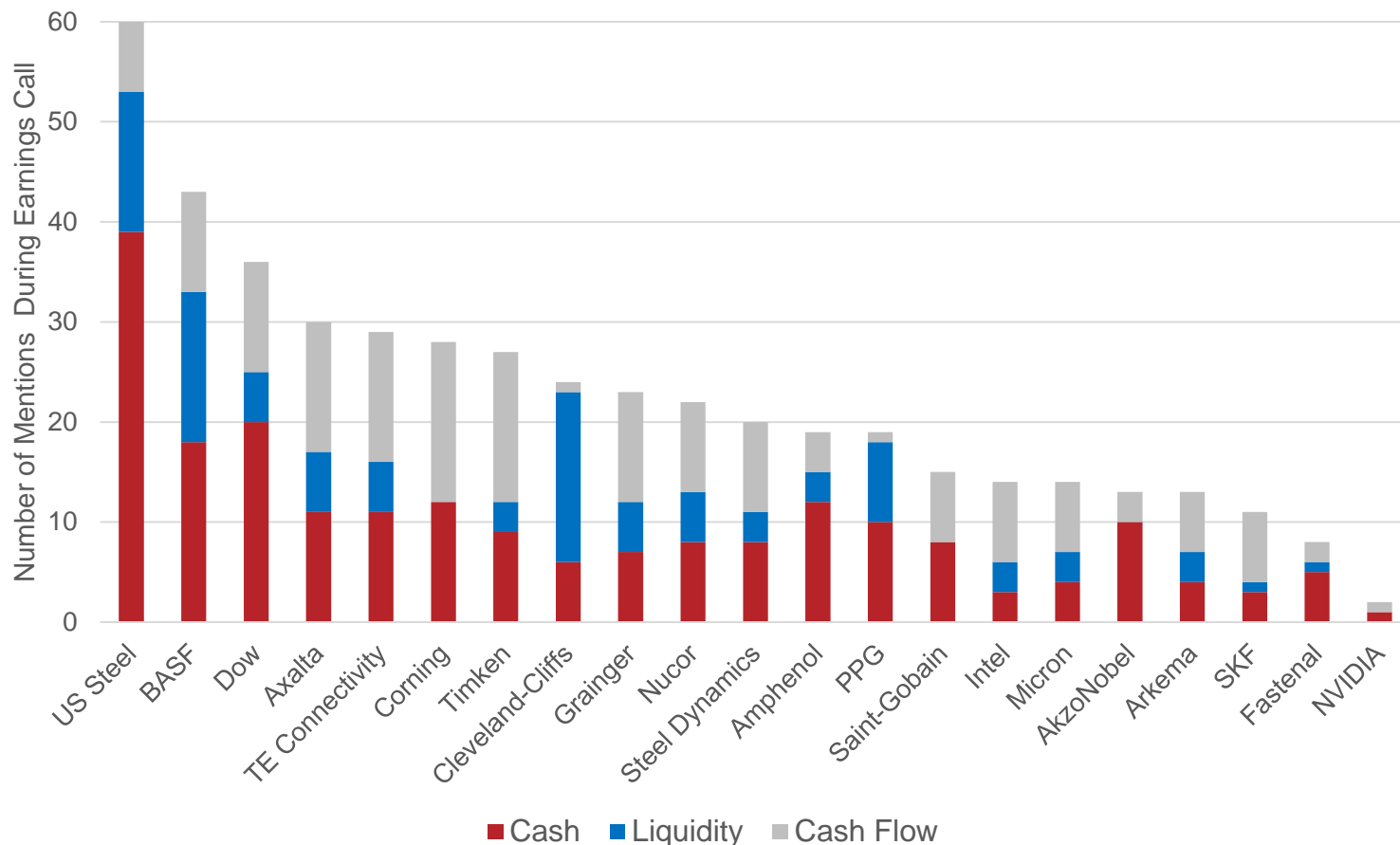
- Mark Millett, Steel Dynamics CEO

We anticipate utilization of China light vehicle plants that we serve to approach 80% of normal in May. Encouragingly, passenger vehicle retail sales in China have rebounded solidly. In fact, for April, the first three weeks were only 7% below the prior year, with **the third week essentially flat from the same week a year-ago**. This comes after a March where there was a 40% year-over-year drop in retail sales. This experience could serve as a template for other geographies in terms of recovery pacing once the coronavirus is more under control.

- Robert Bryant, Axalta CEO

Q1 Earnings Call Mentions Analysis

Cash and liquidity were discussed more often by companies that may be at higher risk if the economic situation does not improve within the next year.

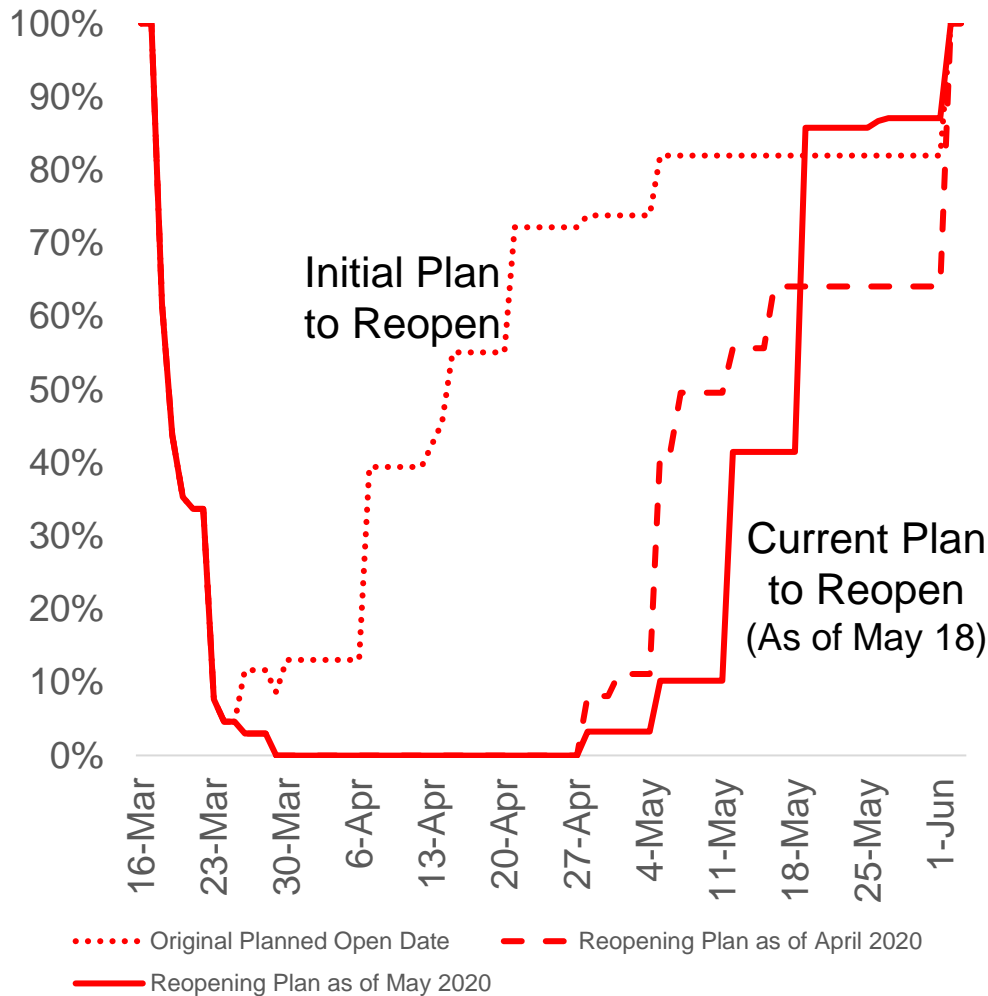


“Cash is just not king, it's queen, prince, princess the whole royal court”

-David Burritt, US Steel CEO during Q1 Earnings Call

Capacity Cuts and Planned Restarts

Automotive OEMs cut all US production capacity—plans on when to restart production have been delayed several times through public announcements.



- Plants have begun to reopen, however many plan to ramp up slowly with limited shifts
- Michigan announced plants would be able to reopen on May 18, which moved up several dates
- Toyota, VW, and Nissan had planned on resuming production in early May but delayed their restarts as they evaluate supplier readiness
- Automotive shutdowns and restarts reflect similar actions being taken in other manufacturing-related industries

Production Cut Analysis

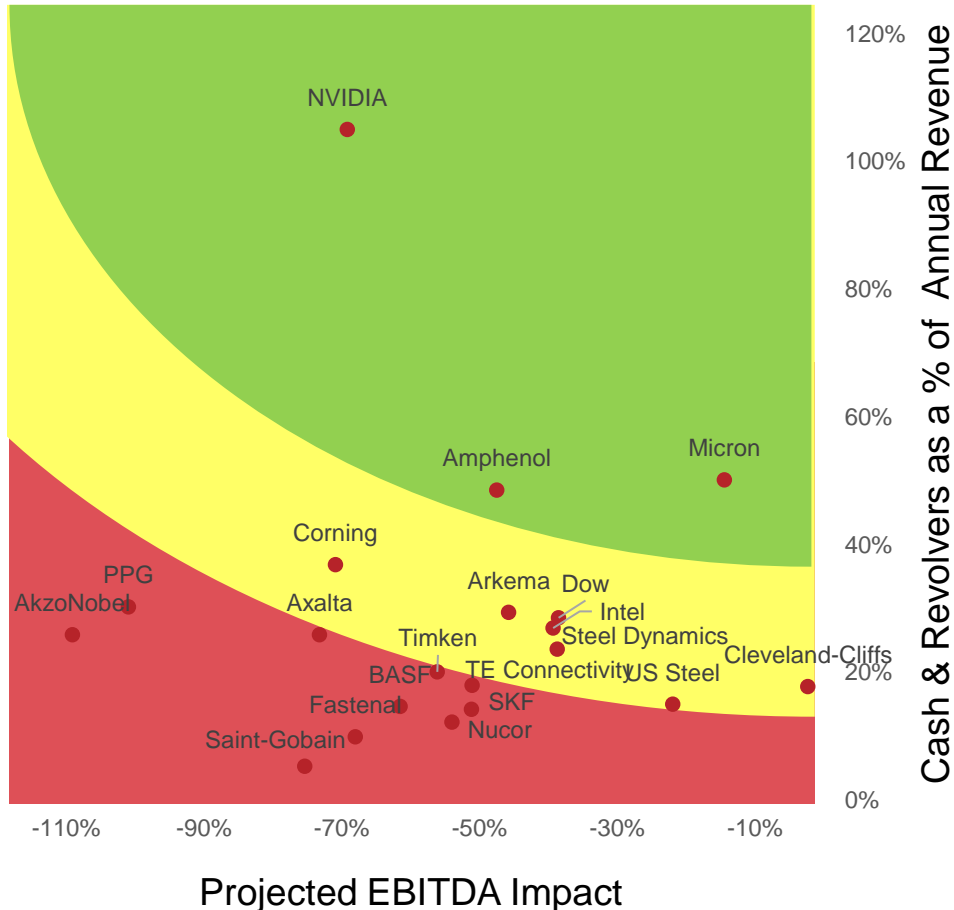
Companies started the year with large cash cushions and could easily cover interest payments. However, this will change if significant shutdowns continue.

	LT Debt / Equity	LT Debt / EBITDA	LT Debt Due in One Year	EBITDA / Interest Expense	EBITDA Margin	Current Ratio	(Cash + Credit) / Revenue	If 33% drop in Annual Revenue		
								EBITDA Margin	EBITDA / Interest Expense	Risk
Amphenol	105%	3.0	10%	13.5	21%	254%	49%	16%	7.1	Low
AkzoNobel	30%	1.8	13%	21.3	13%	145%	26%	-2%	(1.9)	High
Arkema	42%	2.0	22%	12.5	14%	210%	29%	12%	6.8	Low
Axalta	260%	5.7	1%	4.2	15%	217%	26%	6%	1.1	Moderate
BASF	33%	1.5	37%	16.2	14%	162%	15%	8%	6.2	Low
Cleveland-Cliffs	354%	(24.5)	0%	(1.4)	-12%	224%	18%	-19%	(1.5)	High
Corning	64%	7.5	0%	4.1	11%	218%	37%	5%	1.2	Moderate
Dow	121%	3.1	2%	6.1	14%	163%	29%	12%	3.8	Low
Fastenal	17%	0.4	1%	140.4	23%	425%	10%	11%	44.9	Low
Grainger	163%	4.0	1%	9.7	7%	328%	15%	-8%	(7.9)	High
Intel	48%	0.9	9%	74.7	51%	174%	27%	46%	45.4	Low
Micron	14%	0.4	4%	67.4	65%	274%	50%	83%	57.7	Low
Nucor	40%	2.8	1%	9.4	7%	354%	12%	5%	4.3	Low
NVIDIA	16%	0.6	4%	62.1	30%	767%	105%	14%	19.1	Low
PPG	98%	2.5	23%	15.0	14%	136%	30%	0%	(0.1)	High
Saint-Gobain	52%	2.2	15%	17.4	11%	135%	21%	4%	4.3	Low
SKF	41%	1.3	19%	16.8	16%	210%	14%	11%	8.2	Low
Steel Dynamics	67%	1.9	3%	12.6	14%	402%	24%	13%	7.7	Low
TE Connectivity	37%	1.4	14%	60.5	21%	144%	18%	15%	29.6	Low
Timken	98%	2.7	3%	9.6	18%	272%	20%	12%	4.2	Low
US Steel	124%	(5.4)	2%	(4.3)	-8%	169%	15%	-14%	(5.2)	High

Additionally, many companies have large long-term debt loads which could cause additional financial stress if waves of virus last 18-24 months.

Production Cut Analysis

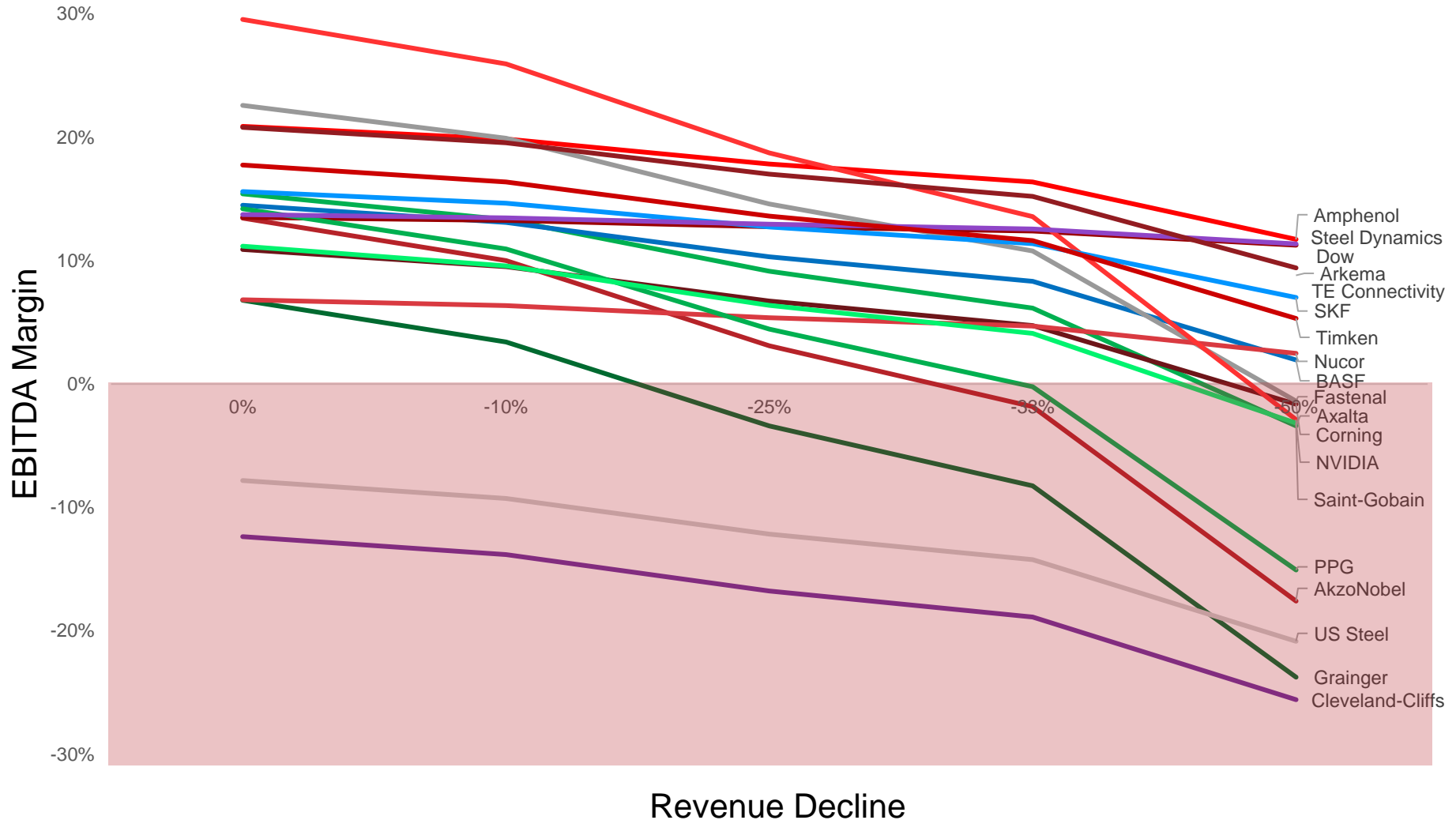
Companies will undergo varying degrees of stress if annual revenue declines 33%.



- Compared to the group, Saint-Gobain, Fastenal, and Nucor have less of a cash cushion on hand
- Low cash cushions might make it more difficult for companies to rapidly reopen and ramp up operations
- Companies that need to raise additional capital may risk violating credit covenants

Risk Exposure

Companies will undergo varying degrees of stress depending upon how much their revenue declines.



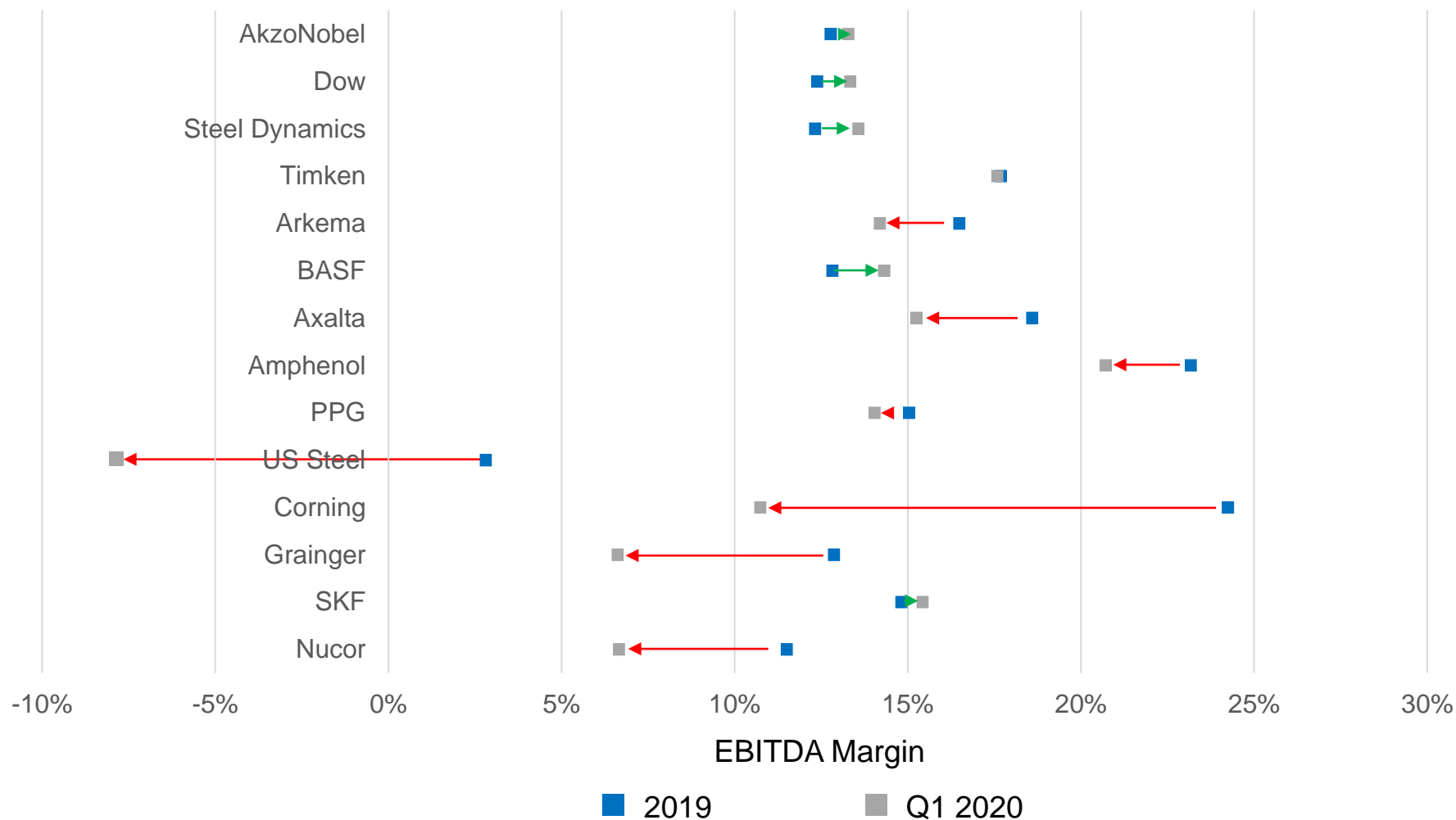
Interest Coverage

Before the crisis, most group companies could cover interest expenses¹, however many may not be able to meet obligations if sales decline by more than 30%.

	Annual Revenue Decline							
	0%	-5%	-10%	-20%	-30%	-40%	-50%	-60%
AkzoNobel	21.3	17.8	14.3	7.2	0.2	(6.9)	(13.9)	(21.0)
Amphenol	13.5	12.5	11.6	9.6	7.7	5.7	3.8	1.8
Arkema	12.5	11.6	10.8	9.0	7.3	5.6	3.8	2.1
Axalta	4.2	3.7	3.2	2.3	1.4	0.5	(0.5)	(1.4)
BASF	16.2	14.7	13.2	10.2	7.1	4.1	1.1	(1.9)
Cleveland-Cliffs	(1.4)	(1.4)	(1.4)	(1.5)	(1.5)	(1.5)	(1.5)	(1.5)
Corning	4.1	3.6	3.2	2.3	1.4	0.6	(0.3)	(1.2)
Dow	6.1	5.8	5.4	4.7	4.0	3.3	2.6	1.8
Fastenal	140.4	125.9	111.5	82.5	53.6	24.6	(4.3)	(33.3)
Grainger	9.7	7.0	4.4	(1.0)	(6.3)	(11.6)	(17.0)	(22.3)
Intel	74.7	70.3	65.8	56.9	48.0	39.1	30.2	21.3
Micron	67.4	65.9	64.5	61.5	58.6	55.6	52.7	49.7
Nucor	9.4	8.6	7.9	6.3	4.8	3.2	1.7	0.2
NVIDIA	62.1	55.6	49.0	36.0	23.0	10.0	(3.0)	(16.0)
PPG	15.0	12.7	10.4	5.8	1.2	(3.4)	(8.0)	(12.5)
Saint-Gobain	17.4	15.4	13.4	9.5	5.5	1.5	(2.5)	(6.4)
SKF	16.8	15.5	14.2	11.6	9.0	6.4	3.8	1.2
Steel Dynamics	12.6	11.9	11.1	9.7	8.2	6.7	5.2	3.7
TE Connectivity	60.5	55.8	51.1	41.7	32.4	23.0	13.7	4.3
Timken	9.6	8.8	8.0	6.3	4.7	3.1	1.4	(0.2)
US Steel	(4.3)	(4.4)	(4.6)	(4.9)	(5.2)	(5.4)	(5.7)	(6.0)

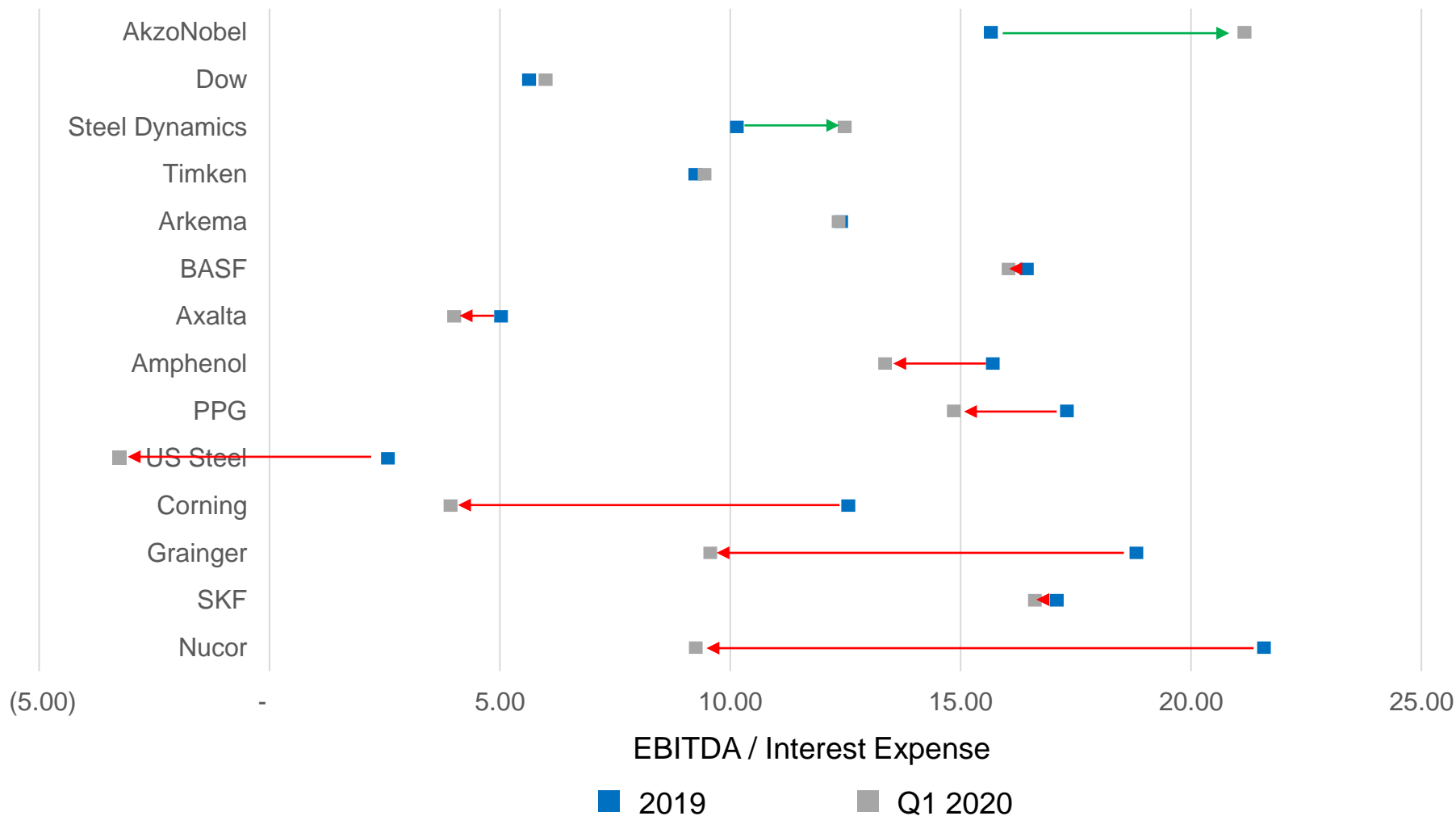
Change in EBITDA Margin

The majority of companies are experiencing deteriorating EBITDA Margins.



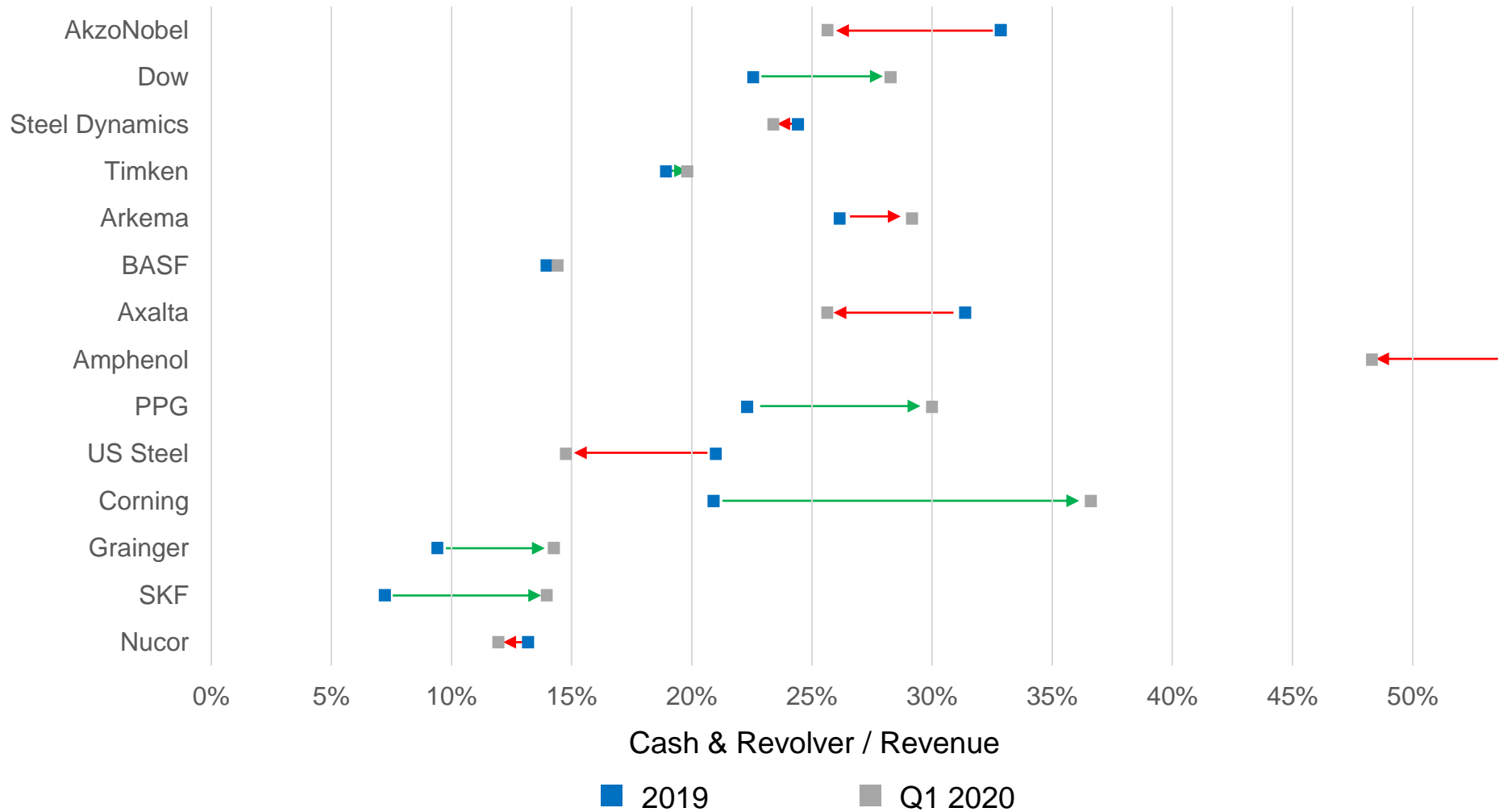
Change in EBITDA Interest Coverage

Most companies are experiencing deteriorating interest coverage ratios due to declining EBITDA and the situation could worsen as debt loads increase.



Change in Cash & Credit Revolver as % of Revenue

Several companies increased available credit, while about half of the companies saw Cash & Credit as a percent of revenue decline from December to March.



1. Background & Supplier Impact

2. Cost & Capital Supplier Risk Approach

3. Reference Cases

Risk Identification

Risk Assessment

- Review financial statements and analyze key metrics determine level of supplier risk
- Rank suppliers in terms of potential short term and long term stress
- Identify actions to address with the supply base, depending on level of risk

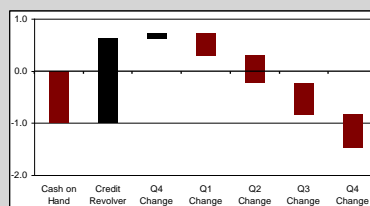
Cash Burn Walk Chart

Why: Based on the revenue and fixed cost assumptions, the model estimated the quarterly cash burn rate for each supplier

What to discuss with the supplier: The assumptions estimate reduced revenue based on exposure to GM, Chrysler, and automotive in general. Discuss revenue projections, specific programs and new business awards. If they show a near-term default (cash below 0) determine what steps they are taking to secure additional cash i.e. debt, selling assets, etc.

How to Calculate: The model uses the supplier's most recent revenue, EBIT and fixed asset numbers to estimate forward quarterly revenue and costs resulting in quarterly cash flows

Sample Cash Burn Walk Chart



Supplier Detail Report – ArvinMeritor

Summary

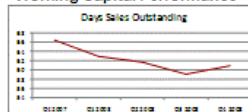
- ArvinMeritor will not be able to manage reduced volumes with their current access to liquidity
- Already highly leveraged, ArvinMeritor will need to look to bankruptcy protection

Constraints Analysis



Supplier Detail Report – ArvinMeritor

Working Capital Performance



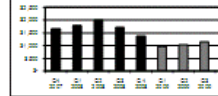
Uses of Cash for 2009



Supplier Detail Report – ArvinMeritor

Diagnostics

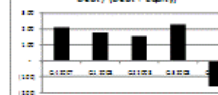
Quarterly Revenue and Projection



Cash Position



Debt / (Debt + Equity)



Cash Metrics

LT Debt / Equity	1.2
Current Portion of LT Debt / Equity	0.2
Current Ratio	0.9
Quick Ratio	0.8
LT Debt / Trailing EBITDA	4.0
Projected Change in Cash / Revenue for 2009	-42.7%
LT Debt Due in One Year	0.2
Cash Requirement for 2009 / Cash on Hand	110.8%
Percent of Cash Requirement as Credit Cash and Cash Equivalents (\$M US)	155

Volume Metrics

Percent of Non-Distressed Customers	0.2%
Projected Q1 2009 Volume vs. Q4 2008	70.8%
Total 2009 Volume vs. 2008 Volume	82.2%

Operating Metrics

COGS / Sales	64.7%
SG&A / Sales	7.2%
R&D / Sales	0.1%
CAPEX / Sales	0.2%
Operating Margin	-0.9%
D50	0.0
D90	0.0
D50 / D90	0.0
Days of Inventory	-0.9
Fixed Asset Turnover	1.4

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Cost & Capital

Supplier Engagement

Supplier Interviews

- Determine proper topics to address for both public and private suppliers to gauge financial risk
- Quantify supplier initiatives to reduce cash burn rates to maintain solvency
- Identify ownership structures and financing for private companies
- Calculate credit revolver covenants and understand supplier cash consequences for default
- Apply standard templates to collect financials from private suppliers

Enter Data in millions

P&L Data	Q1 2009	Q4 2008	Q3 2008	Q2 2008	Q1 2008	Q4 2007
Revenue						
COGS						
Depreciation						
EBIT						

Balance Sheet Data	Q1 2009	Q4 2008	Q3 2008	Q2 2008	Q1 2008	Q4 2007
Cash and Equivalents						
Accounts Receivable						
Inventory						
Total Current Assets						
Accounts Payable						
Current Portion of Long-Term Debt						
Total Current Liabilities						
Long Term Debt						
Equity						

Cash Flow Data	Q1 2009	Q4 2008	Q3 2008	Q2 2008	Q1 2008	Q4 2007
Net Income						
Depreciation						
Changes in Working Capital						
Cash Flow - Operating Activities						
CAPEX						
Debt - Net Issuance						
Cash Flow - Financing Activities						
Net Change in Cash						

Financials

Customer mix

Enter the amount of sales to the following industries in terms of a percent

Select industry from the drop down and include a percentage	0%
1	0%
2	0%
3	0%
4	0%
Other	0%

Customer Mix

Document all covenants

Document source of liquidity
(i.e. financial institution, private investors, etc.)

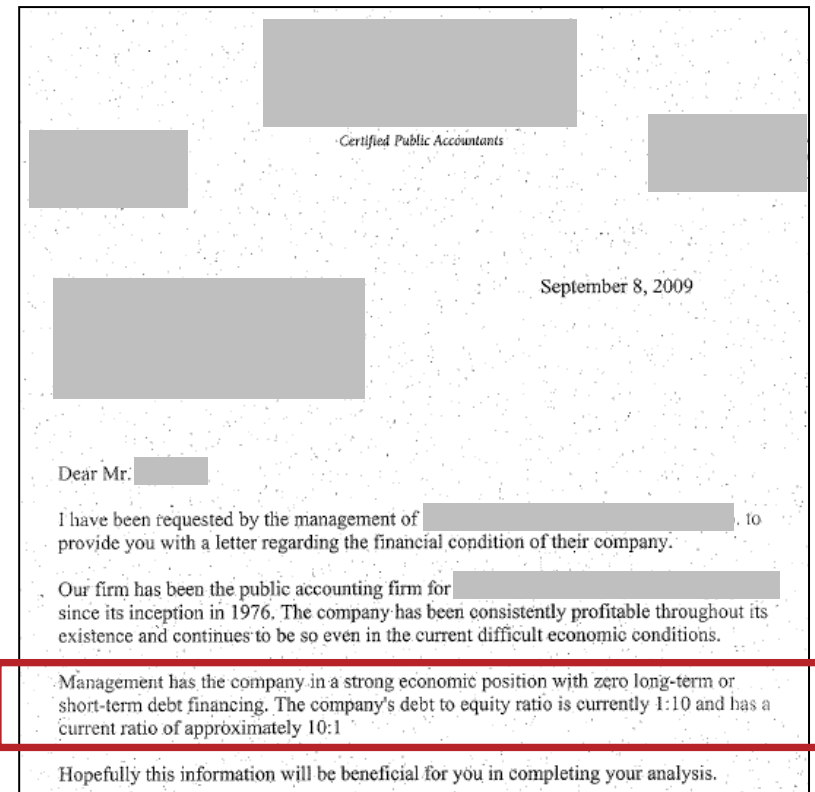
Liquidity

Private Supplier Assessment

Gut Check Data Received

- Suppliers may view this data request as unimportant and simply provide information to make the problem go away
- Thus, the materials provided will likely have unintentional missing information, incorrect information, or contradictory information

Examples



Supplier Engagement

	Liquidity	Viability	Volume
What to Ask	<ul style="list-style-type: none"> • Credit covenants • Sources of short term cash • Ownership of equity and their access to capital 	<ul style="list-style-type: none"> • Manufacturing footprint (e.g. components from sties deemed 'nonessential') • Stability of contracts • Sole sourced components 	<ul style="list-style-type: none"> • Capacity reduction • Cash management • Safety stock levels
Key Data	<ul style="list-style-type: none"> • Interest Coverage • CAPEX limits 	<ul style="list-style-type: none"> • Quantify initiatives and timing for cost reduction activities such as SG&A reduction, plant consolidation and business segment disposition 	<ul style="list-style-type: none"> • Cash Conversion Cycle • Working capital initiatives

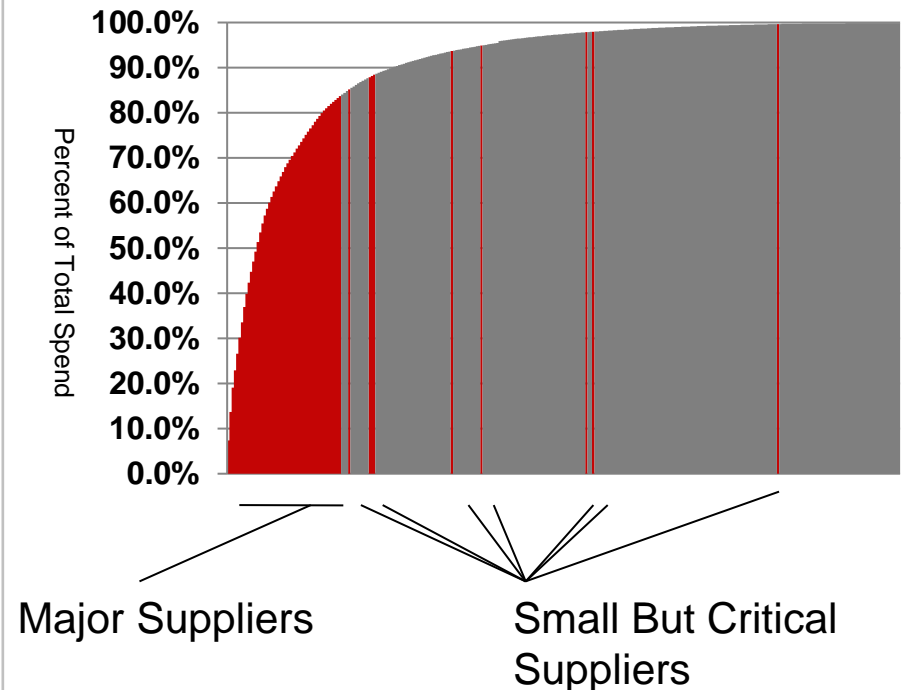
Supplier Prioritization

Risk assessment can be prioritized for large as well as small but critical suppliers.

Prioritized Approach

- Resources should be focused on major suppliers as well as suppliers that provide supply-critical components
- Working with manufacturing and engineering highlights critical components
- Working with supply chain highlights limited sources for critical components
- Efforts should be narrowed to the most critical suppliers

Supplier Focus by Spend



Supply Continuity

A daily call is critical as conditions are changing rapidly.

COVID-19 Readiness and Impact Scorecard													
Supplier Name	Date of last interview				State				City	Zip Code			
	March (Sample Data)												
	16	17	18	19	20	23	24	25	26	27	30	31	
Absentee Rate	3%	3%	2%	5%	5%	9%	8%	3%	12%	15%	13%		
On-Site Procedures													
PPE - Facemask		No	No	No	No	No	No	No	No	No	No	No	
PPE - Gloves	No	No	No	No	No	No	No	No	No	No	No	No	
Social Distancing	No	No	No	No	No	No	No	No	No	No	No	No	
Temperature Check	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes		
Paid Sick Leave	No	No	No	No	No	No	No	No	No	No	No	No	
State / Local Restrictions													
Deemed Essential	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
No Restrictions	Yes	Yes											
Non-Essential Businesses		Yes	Yes	Yes	Yes	Yes	Yes	Yes					
Stay At Home Order									Yes	Yes	Yes		
Local Rate of Infection	0.03%	0.03%	0.04%	0.06%	0.07%	0.08%	0.10%	0.12%	0.13%	0.16%	0.20%		
Tier 2 Supplier Assessment	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		

A standardized and consistent approach to critical suppliers will identify trends and sounds alarms when conditions deteriorate.

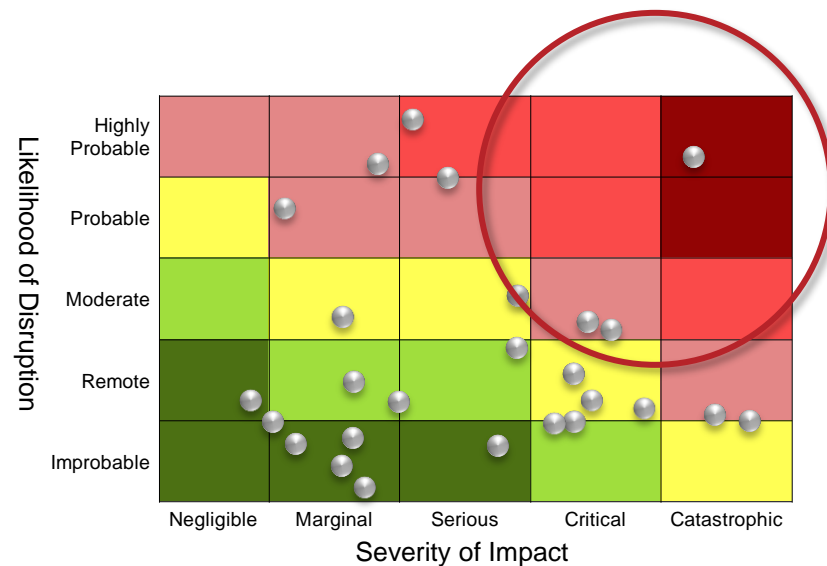
Risk Management Playbook

Developing counter measures for the riskiest suppliers

Focus Area

- Cost and Capital will work to develop risk mitigation playbooks for the identified high-risk, high-impact suppliers
- For each identified supplier, a specific contingency roadmap will be created with event triggers and defined countermeasures

Criticality Matrix



Private Supplier Process

Cost & Capital's private supplier evaluation



- Use the Cost & Capital template for P&L, Balance Sheet and Cash Flow

- Evaluate submission and calculate key ratios
- Assess liquidity position
- Gauge risk due to customer mix

- Interview CFO or controller to add detail behind the submitted template

- Generate risk profile for supplier

Sample Supplier Detail Report

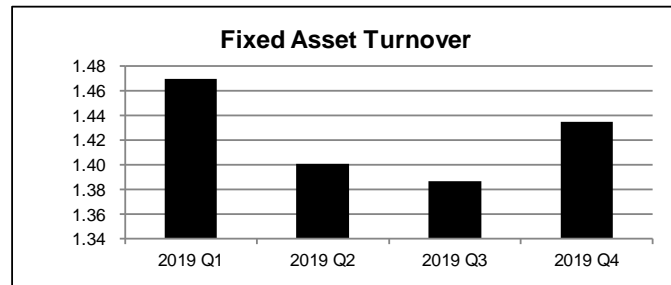
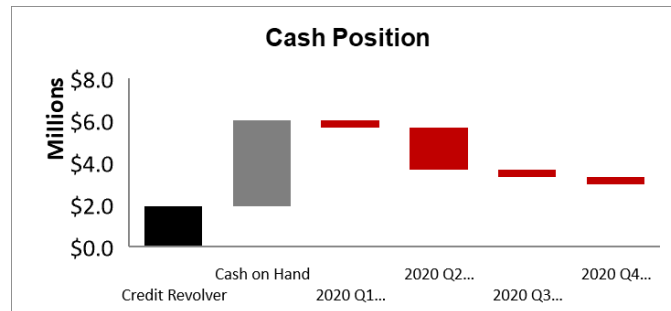
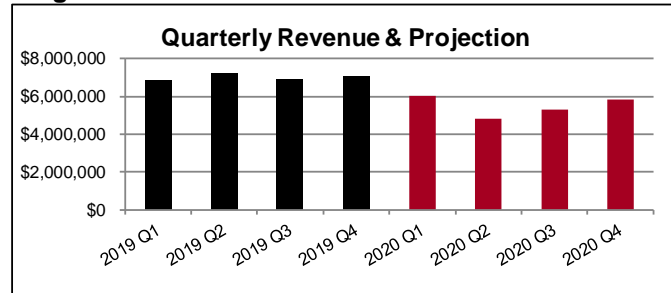
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	LT Debt / Equity	LT Debt / EBITDA	LT Debt Due in One Year	EBITDA / Interest Coverage	EBITDA Margin	Current Ratio	NTM Cash Required / (Cash + Credit)	(Cash + Credit) / Revenue	Z-Score	Risk
ABB	67.0%	12.0x	25%	3.5x	2.7%	131%	51%	21%	1.53	Moderate
Nidec	69.7%	12.5x	12%	5.7x	3.6%	145%	54%	15%	1.60	Moderate
Regal Beloit	48.4%	11.8x	0%	1.8x	3.0%	287%	0%	23%	1.85	Moderate
Yaskawa	79.9%	42.2x	25%	6.0x	1.0%	189%	7%	10%	2.07	Moderate
WEG	26.2%	3.2x	41%	9.1x	5.3%	217%	19%	25%	1.71	Remote
Emerson	71.3%	7.7x	33%	3.8x	4.2%	114%	41%	28%	3.01	Remote
Ametek	54.1%	7.7x	18%	4.1x	7.0%	142%	0%	27%	1.90	Remote

Sample Supplier Detail Report

ABB

Diagnostics



Cash Metrics

LT Debt / Equity Ratio	0.67
Current Portion of LT Debt / Total Capital	0.10
Current Assets / Current Liabilities	1.31
LT Debt / Trailing EBITDA	11.98
Percent of Debt Due in One Year	25.2%
Projected Change in Cash / Revenue NTM	(13.9%)
Cash Requirement NTM / Cash on Hand	74.5%
Cash Requirement NTM / Available Credit	161.5%
Cash Requirement NTM / (Cash + Credit)	51.0%
Cash and Cash Equivalents / Revenue NTM	18.6%
Credit Revolver Available / Revenue NTM	8.6%

Volume Metrics

Projected FY 2020 Volume vs. FY 2019	78.8%
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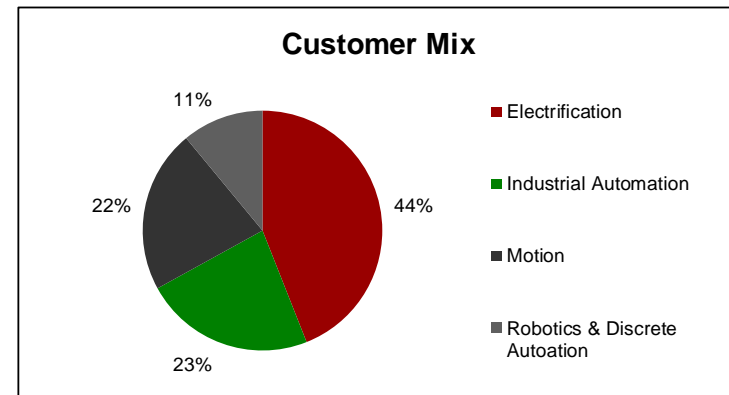
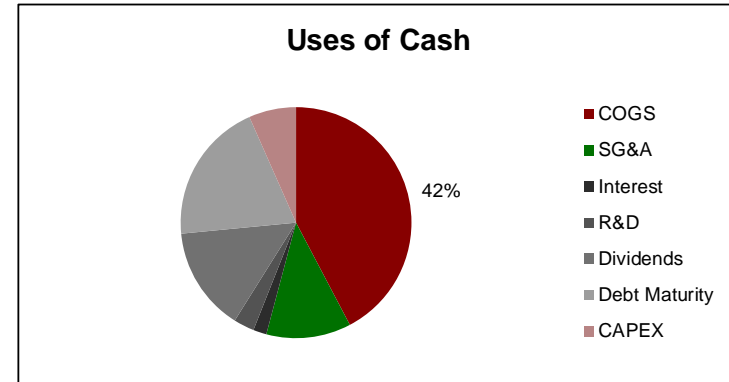
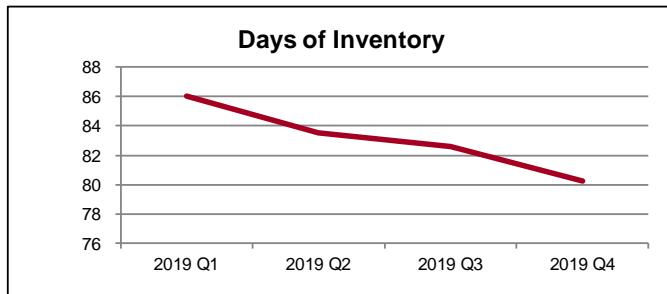
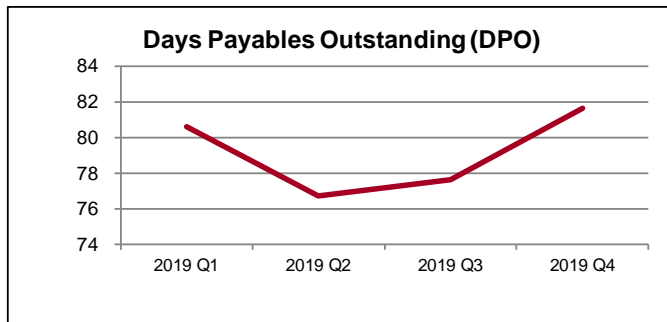
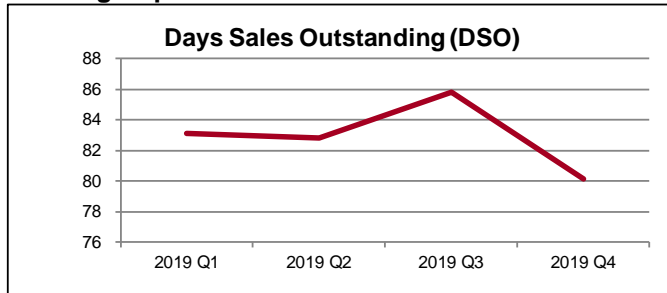
COGS / Sales

SG&A / Sales	19.3%
CAPEX / Sales	3.3%
Operating Profit Margin	7.2%
Days Sales Outstanding (DSO)	80.1
Days Payables Outstanding (DPO)	81.6
DSO / DPO	1.0
Days of Inventory	80.23
Cash Conversion Cycle	78.7
Working Capital Turnover	1.11
Fixed Asset Turnover	1.44

Sample Supplier Detail Report

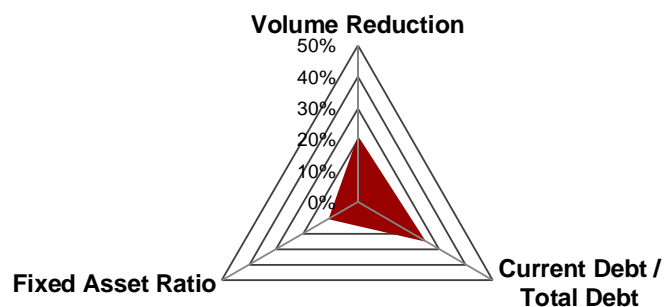
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Working Capital Performance



Sample Supplier Detail Report

ABB



Z Score	1.53
Working Capital / Total Assets	0.13
Retained Earnings / Total Assets	0.43
EBIT / Total Assets	0.05
Market Value fo Equity / Total Liabilities	0.00
Revenue / Total Assets	0.61

NTM Projected C&CE Score	3.78
Cash Flow / Revenue	3.0%
Cash Flow / Capital Employed	13.5%
Cash Flow / Debt	7.4%
Cash Flow / Current Liabilities	3.3%
Cash Flow / Equity	4.9%
Cash / Capital Employed	82.8%
Cash / Debt	45.4%
Cash / Current Liabilities	20.3%
Cash / Equity	30.4%

-
1. Background & Supplier Impact
 2. Cost & Capital Supplier Risk Approach
 3. Reference Cases

Cost & Capital Partners Introduction

- **Cost & Capital Partners focuses on the two most critical levers for shareholder value today - **Cost Efficiency** and **Capital Efficiency****
 - Cash should be treated as the valuable resource it is
 - Spend management preserves cash
 - Capital efficiency frees cash trapped in traditional operations
- **We deliver results – not just recommendations, each and every time**
 - We stand behind our recommendations and prefer to be involved in implementation
 - We conduct negotiations on behalf of our clients
 - We are passionate about our work and the results
 - We work with our clients to implement the changes required to improve the business

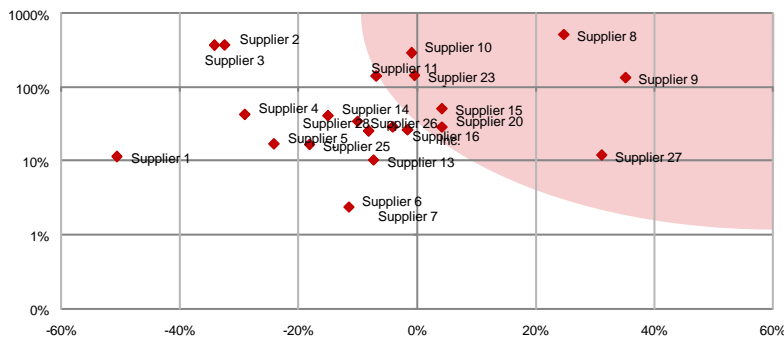
Previous project work



Reference Case

Risk Management

Packaging – Chemicals



Engagement Overview

- Cost & Capital was asked to review risk factors for packaging suppliers for a maker of lawn and garden care products
- The team analyzed and audited packaging suppliers to determine the level of risk in the supply chain due to financial strain, capacity and cost reduction initiatives
- Suppliers were segmented into low, medium, high and critical risk suppliers
- Detailed agendas were created to engage the suppliers and develop risk mitigation plans

Reference Case

Risk Management

Supplier Risk Management – Industrial Equipment

Rating	Financial Ratio	Value	Comment
	Annual Volume Change	(13.0%)	
	EBITDA Margin	1.5%	Very low cash generation from operations
	Debt to Assets	NA	5.1MM debt (25% of sales)
	Debt to Equity	(0.83)	Negative equity levels suggest financial distress
	Debt Due in One Year	31.9%	Large debt principal payment due in next 12 months
	(Cash + Credit) / Revenue	(0.5%)	No cash on hand and company did not disclose available credit line
	Current Ratio	1.53	Working capital ratios show signs of financial distress
	Interest Coverage Ratio	< 0	
	Debt to EBITDA Ratio	14.41	
	Quick Ratio	0.63	

Engagement Overview

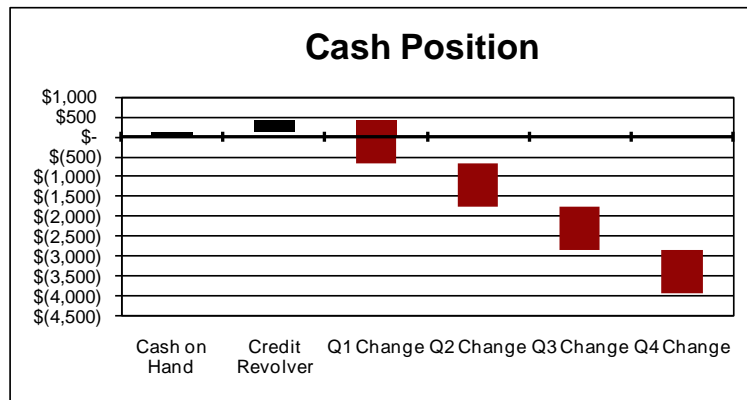
- A global industrial company needed to assess several dozen private suppliers for financial risk
- Templates were distributed to the suppliers and interviews were conducted to determine key operating and cash metrics
- Second round interviews were held to uncover any inconsistencies in data that was submitted
- Suppliers' financial risk was ranked and reported to management and risk mitigation plans were developed

Annual Volume Change	EBITDA Margin	Debt to Assets	Debt to Equity	Debt Due in One Year	(Cash + Credit) / Revenue	Current Ratio	Interest Coverage Ratio	Leverage Ratio (Debt / LTM EBITDA)	Quick Ratio	Assessment
(13.9%)	7.2%	1.35	(3.89)	18.8%	(0.6%)	1.70	1.61	5.65	1.09	Critical
(13.0%)	1.5%		(0.83)	31.9%	(0.5%)	1.53	<0	14.41	0.63	Probable
(43.0%)	3.5%				4.4%	2.80	5.00		1.54	Moderate
(39.6%)	5.4%	1.56	(2.80)	57.1%	1.7%	0.71	1.94	5.35	0.44	Moderate
(15.3%)	0.6%	0.61	1.54	9.5%	10.4%	1.56	0.43	18.50	0.94	Moderate
(26.1%)	9.7%	0.14	0.16	41.7%	0.0%	0.61	8.59	0.55	0.29	Remote
(9.7%)	(8.6%)	0.47	0.87	0.7%	29.7%	1.14	<0	<0	0.51	Remote
6.4%	6.2%	0.44	0.79	19.9%	(4.6%)	1.19	7.08	1.06	0.73	Remote
(13.3%)	2.8%	0.21			9.0%	3.40			1.33	Remote
(26.5%)	1.3%	0.40	0.66	0.2%	4.1%	2.83	1.46	6.90	1.67	Remote
		0.00	0.00	NA	1.5%	3.66	NA	NA	2.16	Remote
(45.2%)										Remote
(10.7%)	2.4%	0.00	0.00	NA	4.4%	10.48	NA	0.00	7.14	Remote
(33.3%)	0.7%	0.15	0.17	3.8%	27.6%	1.83	NA	3.64	1.06	Remote
(21.1%)		0.00	0.00	NA	18.9%	4.11	NA	NA	3.07	Improbable
(40.0%)		0.00	0.00	NA	6.3%		NA	NA		Improbable
(11.1%)		0.06	0.06	100.0%	36.1%	1.56			1.20	Improbable
(18.2%)	3.9%	0.00	0.00	NA	7.5%	1.96	13.33	0.00	1.18	Improbable
(31.1%)		0.00	0.00	NA	4.5%	4.93	NA	NA	2.36	Improbable
(36.3%)	5.5%	0.24	0.32	22.5%	19.4%	3.64	7.50	0.95	2.00	Improbable
12.4%	12.7%	0.00	0.00	NA	21.3%	1.92	NA	NA	1.83	Improbable
(12.5%)		0.00	0.00	NA	15.2%					Improbable
(18.7%)	16.1%			0.0%	18.5%	3.42	60.67	0.29	2.23	Improbable
(25.0%)	6.3%	0.00	0.00	NA	18.1%	1.70	NA	0.00	1.15	Improbable
(5.2%)	8.5%	0.15	0.18	0.0%	4.9%	2.38	381.50	0.99	1.25	Improbable
8.7%	7.1%	0.00	0.00	NA	15.0%	4.00	NA	0.00	2.70	Improbable
3.2%	5.6%	0.00	0.00	NA	21.5%	3.40	NA	0.00	2.40	Improbable
(23.6%)	14.7%	0.46	0.83	48.8%	47.9%	2.19	1.56	2.40	1.74	Improbable
(31.8%)	2.5%	0.00	0.00	NA	27.8%	8.23	<0	0.00	7.02	Improbable
(8.0%)	5.3%	0.25	0.33	5.7%	36.8%	1.66	2.03	1.09	1.53	Improbable

Reference Case

Risk Management

Supplier Risk Management – Industrial Equipment



Engagement Overview

- Maintaining plant continuity during a credit crunch, a major automotive OEM tasked the team with identifying troubled suppliers beyond D&B ratings for private suppliers
- Suppliers were audited and key cash burn rate details were summarized to identify the more critical suppliers to monitor
- Each supplier was assessed for access to credit, cash as well as upcoming debt maturities
- The resulting analysis helped the client to consolidate the supply base and manage reduced volumes

Reference Case

Cost Reduction

Skills Development – Industrial Equipment



Engagement Overview

- A global industrial equipment supplier needed to gauge the level of supply chain competence within a new structured organization
- Leveraging the experience and materials from supporting sourcing projects across multiple industries, the team developed a set of assessment questions for each competency area:

Benchmarking Cost Analysis

Finance Market Knowledge

Negotiations Risk Management

Value Chain Analysis

Question	Answers
<p>With all other business conditions the same, what is the effect on the ROIC performance of a supplier as Raw Material Prices decline?</p> <p>Return On Invested Capital (ROIC)</p> <p>Y-axis: Capital Turnover Ratio (CTR) (0 to 3) X-axis: Operating Margin (after tax) (0% to 20%)</p> <p>Curves: ROIC = 40%, ROIC = 20%, ROIC = 10%, ROIC = 2%</p> <p>Points: U, W, X, Y, Z</p>	<p>A U <input type="checkbox"/></p> <p>B W <input type="checkbox"/></p> <p>C X <input type="checkbox"/></p> <p>D Y <input type="checkbox"/></p> <p>E Z <input type="checkbox"/></p>

Cost & Capital

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