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TRIVARIATE RESEARCH

IT IS NO LONGER THE LEVER'AGE' OF INNOCENCE

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RESEARCH SUMMARY

In this, the last of our five-part series analyzing capital uses and their consequences, we assess corporate leverage. Previously we have analyzed buybacks, dividends, M&A, capital spending, and R&D.

With materially higher interest rates over the last few quarters, we think it is timely to analyze the level and changes to corporate debt, both total and net, and the impact corporate decision-making about leverage has on equity performance.

In an academic setting, many are taught the stability and sustainability of a business model translates to different optimal capital structures for some businesses relative to others. However, for much of the last 30 years, rates fell, and refinancing was somewhat easy. In most cases, companies refinanced at lower rates than they originally borrowed at - and faced less - not more - of a financial burden for their leverage.

Rising rates and the potential for earnings declines will mean leverage - for both fundamental and quantitative analysts - could matter more now than it has for much of the past 20 years. As such we looked at debt “the Trivariate way” by analyzing the predictive value of the top and bottom quintile, and spreads, of level and change of total and net debt by substance, style size, and sector to look for historical efficacy.

The lack of penalty for heavily indebted industries in the last 20 years could be misleading, as one could conclude that the capital structure of companies just isn't relevant to subsequent return. Our judgment is that while that be might factually true for the last twenty years, it is neither logical nor likely to persist as businesses are forced to refinance at higher rates and having a growing (not perpetually declining) interest expense burden.

INVESTMENT CONCLUSIONS

2022 has been anomalous: The most levered companies have beaten the least levered by 50% YTD, and for seven consecutive months – the biggest run in over twenty years. Obviously, growth stocks with limited debt have lagged, and typically indebted businesses like energy and utilities have performed well, explaining the recent perversity in factor efficacy.

More than growth vs. energy: However, it has been more than just the growth and sector performance. Why? Even within sector and group, debt-related signals have broadly failed to help investors pick winners from losers over the last two decades. For instance, “junk” stocks with high and rising debt have not really lagged “junk” stocks with relatively lower and declining debt. We see an inflection in the importance of the balance sheet for equity valuations. Debt-related metrics will matter for stock selection and management teams will be evaluated for decisions about their leverage over the coming decade.

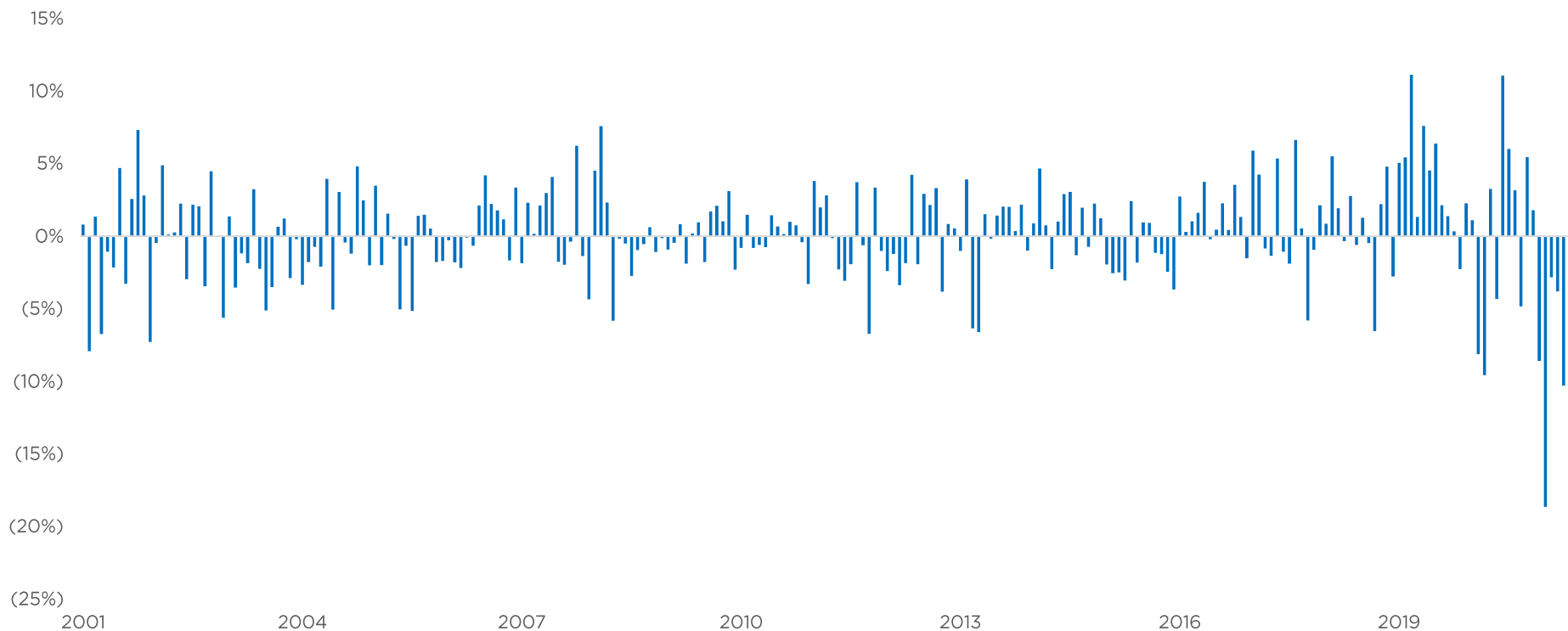
Recent decisions have mattered: Stocks that have issued debt have notably underperformed those that have retired debt, lagging by an average of 8.5% year-to-date.

At risk stocks – potential short ideas: Stocks with a junk credit rating, that have relatively high interest expense-to-net income and have an imminent refinancing (in next 12 months) event seem particularly vulnerable. Many have poor recent price momentum, but we view that as a reason to be short, not long from here. Please see our screen of short ideas on page 8.

TOTAL DEBT HAS RECENTLY FAILED TREMENDOUSLY AS A SIGNAL

We analyzed the monthly performance of the least levered quintile (total debt-to-market capitalization) relative to the most levered quintile over the last twenty years. All you had to do this year to be up 50% is to long levered companies and short companies with no leverage! This is obviously a function of the growthiest businesses (which typically have little or no debt) performing poorly and typically levered businesses like energy, metals, and utilities performing well.

Total Debt to Market Capitalization Spread Portfolio
Monthly Performance
January 2002 to End-May, 2022



TOTAL AND NET DEBT TO MARKET CAP SIGNAL EFFICACY

We assessed the volatility-adjusted performance of the top quintile (least levered), middle 60%, and bottom quintile (most levered) of total debt (left side of exhibit) and net debt (right side) by sector, substance, and style. We see little different in performance across quintile within most cohorts, suggesting using level and or change in debt to pick stocks has not been incredibly efficacious. One exception is value stocks.

Sharpe Ratio of Signals
January 2002 to End-May, 2022

Sector	Total Debt						Net Debt					
	Level			% Change			Level			% Change		
	Q1	Middle 60%	Q5	Q1	Middle 60%	Q5	Q1	Middle 60%	Q5	Q1	Middle 60%	Q5
Communication Services	0.31	0.39	0.06	0.53	0.22	0.17	0.33	0.32	0.14	0.42	0.34	0.09
Consumer Discretionary	0.65	0.50	0.39	0.45	0.49	0.50	0.60	0.53	0.35	0.57	0.50	0.42
Consumer Staples	0.80	0.82	0.66	0.73	0.73	0.99	0.97	0.78	0.69	0.77	0.79	0.92
Energy	0.40	0.42	0.61	0.66	0.35	0.50	0.40	0.43	0.59	0.49	0.42	0.48
Health Care	0.71	0.74	0.74	0.55	0.75	0.84	0.72	0.79	0.59	0.72	0.73	0.75
Industrials	0.51	0.69	0.55	0.43	0.72	0.49	0.56	0.66	0.58	0.54	0.67	0.55
Information Technology	0.58	0.46	0.51	0.52	0.46	0.51	0.67	0.47	0.47	0.50	0.52	0.52
Materials	0.52	0.63	0.32	0.68	0.53	0.37	0.62	0.58	0.32	0.72	0.57	0.27
Utilities	0.53	0.69	0.44	0.79	0.64	0.31	0.46	0.70	0.48	0.78	0.66	0.27
Substance												
High	0.69	0.76	0.89	0.75	0.84	0.66	0.73	0.73	0.87	0.72	0.80	0.72
Mid	0.43	0.70	0.75	0.55	0.69	0.65	0.55	0.65	0.75	0.65	0.68	0.57
Low	0.30	0.68	0.69	0.54	0.68	0.42	0.43	0.63	0.70	0.60	0.71	0.32
Junk	0.55	0.42	0.55	0.43	0.51	0.38	0.56	0.43	0.52	0.45	0.54	0.30
Style												
Growth	0.62	0.48	0.51	0.46	0.52	0.42	0.56	0.50	0.50	0.50	0.57	0.41
Value	0.68	0.72	0.51	0.60	0.70	0.62	0.75	0.67	0.54	0.58	0.72	0.56
Neither	0.88	0.67	0.67	0.77	0.79	0.46	0.94	0.64	0.68	0.82	0.78	0.46
Overall												
	0.63	0.69	0.62	0.65	0.73	0.53	0.66	0.68	0.62	0.68	0.74	0.49

TOTAL AND NET DEBT TO MARKET CAP SIGNAL EFFICACY

We analyzed the Q1-Q5 spread of level and change of total and net debt on a beta-adjusted basis since 2002. In aggregate these signals have not worked well for picking winners from losers. For instance, for “junk” stocks (the lowest quartile of our quality model), that have relatively lower debt, or reduce it (on total debt or net debt) don’t outperform those junk stocks that have high debt and / or increase their debt burden!

Sharpe Ratio of Beta Adjusted Spreads
January 2002 to End-May, 2022

Sector	Long Term Debt		Total Debt		Net Debt	
	Level	% Change	Level	% Change	Level	% Change
Communication Services	0.12	0.08	0.19	0.16	0.15	0.14
Consumer Discretionary	0.11	(0.06)	0.20	(0.14)	0.21	0.11
Consumer Staples	(0.35)	(0.73)	(0.25)	(0.67)	(0.07)	(0.59)
Energy	(0.55)	0.08	(0.57)	0.15	(0.48)	(0.11)
Health Care	(0.24)	(0.42)	(0.27)	(0.60)	(0.07)	(0.47)
Industrials	(0.12)	(0.13)	(0.12)	(0.08)	(0.16)	(0.11)
Information Technology	0.18	(0.30)	0.03	(0.33)	0.26	(0.30)
Materials	0.02	0.05	0.10	0.14	0.22	0.32
Utilities	(0.07)	0.21	(0.05)	0.29	(0.09)	0.33
Substance						
High	(0.43)	(0.13)	(0.50)	(0.18)	(0.48)	(0.20)
Mid	(0.46)	(0.34)	(0.40)	(0.32)	(0.39)	(0.12)
Low	(0.41)	(0.06)	(0.41)	0.00	(0.34)	0.23
Junk	(0.02)	0.00	(0.04)	0.04	0.01	0.18
Style						
Growth	0.18	(0.07)	0.12	(0.14)	0.04	(0.04)
Value	0.11	(0.26)	0.21	(0.19)	0.23	(0.13)
Neither	(0.02)	0.23	0.08	0.30	0.12	0.39
Overall						
	0.04	0.04	0.03	0.05	0.05	0.17

COMPANIES THAT HAVE RECENTLY LEVERED UP HAVE DONE POORLY

Companies that have taken on debt this year have lagged those that retired debt by 8.5% on average.

Select Companies that have Increased or Decreased Total Debt and Net Debt
End-May, 2022

Increased				Decreased			
Ticker	Company Name	Sector	Market Cap (\$ US. Bil)	Ticker	Company Name	Sector	Market Cap (\$ US. Bil)
JNJ	Johnson & Johnson	Health Care	474.86	AAPL	Apple Inc.	Information Technology	2551.59
NVDA	NVIDIA Corporation	Information Technology	464.42	MSFT	Microsoft Corporation	Information Technology	2075.58
PG	The Procter & Gamble Company	Consumer Staples	385.21	GOOGL	Alphabet Inc.	Communication Services	1508.19
HD	The Home Depot, Inc.	Consumer Discretionary	310.42	XOM	Exxon Mobil Corporation	Energy	359.16
LLY	Eli Lilly and Company	Health Care	262.96	CVX	Chevron Corporation	Energy	307.83
MRK	Merck & Co., Inc.	Health Care	224.24	ABBV	AbbVie Inc.	Health Care	259.43
TMO	Thermo Fisher Scientific Inc.	Health Care	216.43	PEP	PepsiCo, Inc.	Consumer Staples	237.42
MCD	McDonald's Corporation	Consumer Discretionary	184.28	COST	Costco Wholesale Corporation	Consumer Staples	235.67
DHR	Danaher Corporation	Health Care	179.78	DIS	The Walt Disney Company	Communication Services	203.24
INTC	Intel Corporation	Information Technology	178.22	NKE	NIKE, Inc.	Consumer Discretionary	196.25
TMUS	T-Mobile US, Inc.	Communication Services	154.37	ACN	Accenture plc	Information Technology	190.25
UNP	Union Pacific Corporation	Industrials	147.14	CMCSA	Comcast Corporation	Communication Services	178.13
NEE	NextEra Energy, Inc.	Utilities	139.52	BMJ	Bristol-Myers Squibb Company	Health Care	160.25
CAT	Caterpillar Inc.	Industrials	112.30	LIN	Linde plc	Materials	156.61
TGT	Target Corporation	Consumer Discretionary	105.73	PM	Philip Morris International Inc.	Consumer Staples	155.01
SBUX	Starbucks Corporation	Consumer Discretionary	85.86	MDT	Medtronic plc	Health Care	140.00
DUK	Duke Energy Corporation	Utilities	84.81	HON	Honeywell International Inc.	Industrials	131.73

COMPANIES WITH JUNK DEBT & IMMINENT REFINANCING MAY LAG

Below are stocks with a BB or worse credit rating, with high interest expense to net income and an imminent refinancing event. We view this group as at risk. Many are down materially YTD, but probably have more downside as their interest expense burden grows. Additional names with smaller capitalization or alternate criterion can be provided upon request.

Companies with Junk-Rated Debt & Imminent Refinancing
Through End-May, 2022

Ticker	Company Name	Sector	Market Cap (\$ US. Bil)
PCG	PG&E Corporation	Utilities	24.25
MGM	MGM Resorts International	Consumer Discretionary	14.90
NLOK	NortonLifeLock Inc.	Information Technology	14.05
RRC	Range Resources Corporation	Energy	8.46
THC	Tenet Healthcare Corporation	Health Care	6.97
VAC	Marriott Vacations Worldwide Corporation	Consumer Discretionary	6.12
AVNT	Avient Corporation	Materials	4.50
TNL	Travel + Leisure Co.	Consumer Discretionary	4.36

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