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Weekly Briefing

SKYView: BBB Risk

As the cycle ages and the outlook for coordinated global growth moderates, investor focus has shifted toward early signs of risk on the horizon. In a past note, we highlighted the often positive correlation between sector-specific debt growth and an eventual uptick in default rates, an intuitive outcome if the former is driven by over-exuberance. In this *Weekly Briefing*, we update our 2018 analysis on the buildup of BBB rated debt within the investment grade space, once again in an effort to gauge the impact future Fallen Angels may have on the high yield market. While **our analysis suggests a wave of downgrades is not likely a near-term event**, we identify some parts of the market worse positioned than others to absorb what could eventually be record amounts of fallen angel bonds entering the high yield index.

A clear trend this cycle has been the growth of investment grade debt (+148% as measured by face value), particularly within the more speculative BBB ratings cohort (+225%). The ICE BofAML US Corporate BBB Index (C0A4) is now $3.3tn in size, making up ~ 50% of the ICE BofAML US Corporate Index (C0A0), relative to ~ 38% of the investment grade index at the start of the current cycle (Q3'09). At its current size, the BBB index is 2.8x the size of the ICE BofAML US High Yield Index (H0A0) and 5.9x the size of the ICE BofAML BB US High Yield Index (H0A1), well above the relative comparisons a decade ago (~ 1.3x and 3.3x, respectively).

IG Market Growth has Outpaced HY

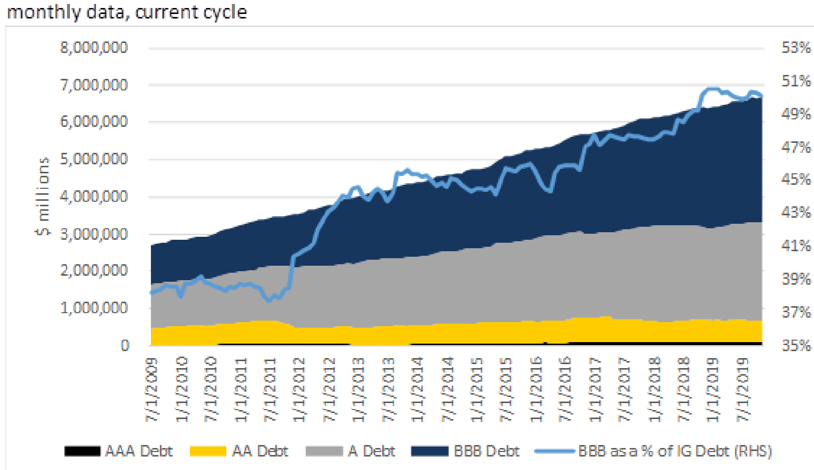
monthly data, July '09 through November '19

		Face Value of Debt ($ millions)		
Index	**Ticker**	**July '09**	**Nov '19**	**Growth**
US Corp AAA	C0A1	23,587	97,507	
US Corp AA	C0A2	429,588	560,983	
US Corp A	C0A3	1,210,886	2,671,574	
US Corp BBB	C0A4	1,029,947	3,342,788	+ 225%
US Corp Master	C0A0	2,694,007	6,672,851	+ 148%
US High Yield BB	H0A1	313,491	571,075	
US High Yield B	H0A2	230,525	462,011	
US High Yield CCC	H0A3	243,437	173,499	
US High Yield Index	H0A0	787,453	1,206,586	+ 53%

	July '09	Nov '19
US Corp BBB Size vs. US High Yield BB Size	3.3x	5.9x
US Corp BBB Size vs. US High Yield Index Size	1.3x	2.8x

BBB Growth has Outpaced IG Growth

monthly data, current cycle

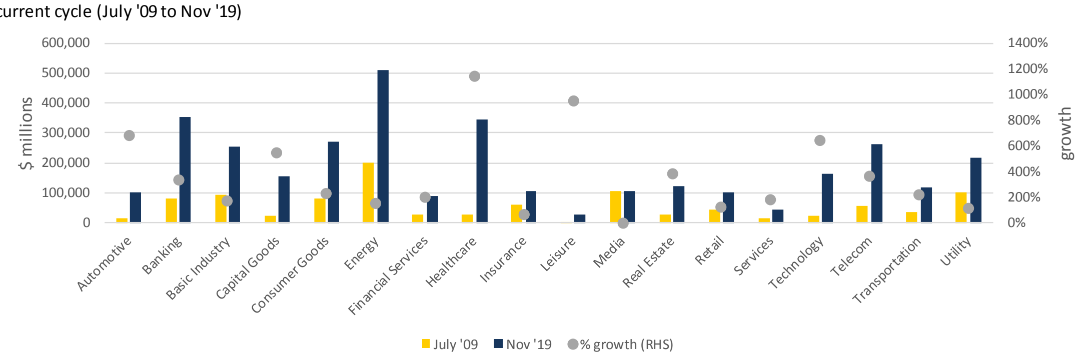


Source: SKY Harbor, ICE BofAML Indices

Furthermore, **BBB index growth has come from every sector, ranging from Healthcare (+1,148%) to Media (+1%), and includes both above and below average issue and issuer sizes**. Additionally, BBB growth has come from both downgrades and net new issuance, the latter driven by an uptick in M&A stemming from favorable market conditions and elevated CEO confidence earlier in the cycle.

BBB Debt by Sector

current cycle (July '09 to Nov '19)



Source: SKY Harbor, ICE BofAML Indices

Key Outliers

sector growth

Sectors w/ significant growth

Sector	Size ($ mm)	Growth (%)
Healthcare	344,011	1148%
Leisure	28,656	949%
Automotive	100,193	686%
Technology	164,478	646%
Capital Goods	154,223	547%

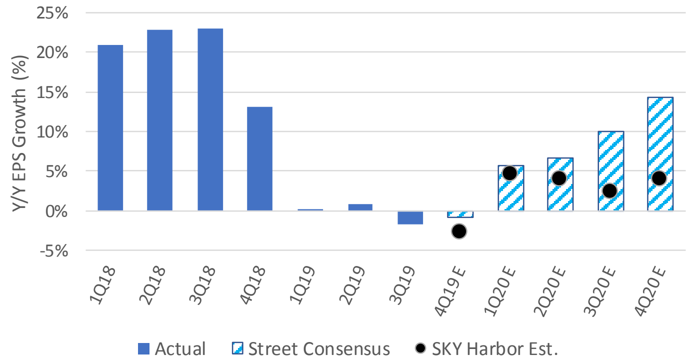
Sectors w/ limited growth

Sector	Size ($ mm)	Growth (%)
Media	105,052	1%
Insurance	103,758	68%
Utility	217,810	113%
Retail	102,936	130%
Energy	509,670	154%

While **the current cycle is closer to the end than the beginning, we find solace in relatively healthy credit metrics underpinned by low rates and stabilizing corporate earnings growth, a dynamic expected to continue over the next several quarters**. Recent earnings volatility aside, the agencies have been inclined to keep higher quality issuance ratings unchanged despite negative migration rates over the last several quarters (mostly impacting CCCs). Consequently, while HY market-wide downgrades now outpace upgrades, rising stars continue to outnumber fallen angels, as has been the case through 2018 and 2019.

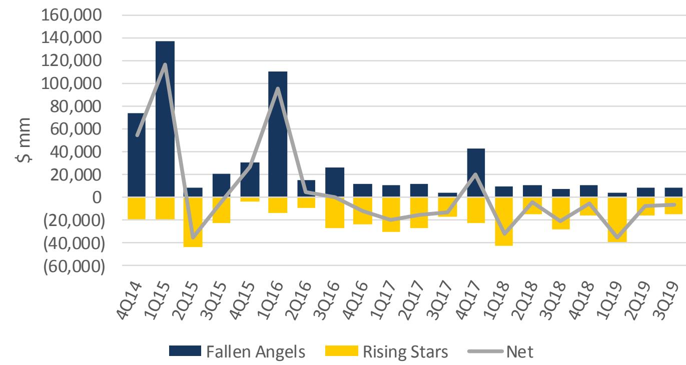
Corporate Earnings Growth Has Slowed; Expected Pick-Up in '20

S&P 500 EPS y/y growth (%), quarterly data



Net Rising Stars in 2018 and 2019

quarterly data

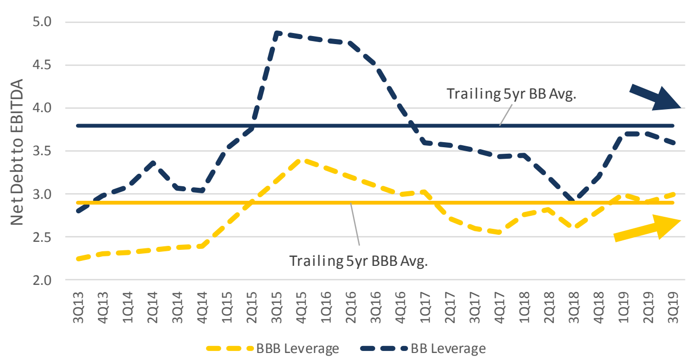


Source: SKY Harbor, Bloomberg, FactSet, BofA Merrill Lynch

There are, however, **signs of some risk factors building in the market, including our anticipation that corporate earnings growth may surprise to the downside** (see chart above). By way of example, average BB and BBB leverage have historically moved in tandem over longer periods of time, but directionality has diverged over the last several quarters (note that a change in the handling of operating leases drove modest re-leveraging at the start of 2019). The uptick in BBB leverage (while BB leverage has declined) has been attributed to heightened M&A activity in the investment grade space. We highlight that nearly 20% of debt within that rating bucket is issued by entities with leverage in excess of 4.0x at present, typically a level associated with a high yield rating, and above the trailing-5yr-average BB leverage metric, as shown below. While we acknowledge that rating agencies have historically allowed companies to maintain an IG rating post a leveraging transaction (it takes time to realize synergies, reduce costs and de-lever to more normalized levels following an acquisition), a turn in the cycle or simply a more benign growth outlook could provide an impetus to downgrade some of the more "cuspy" BBB credits.

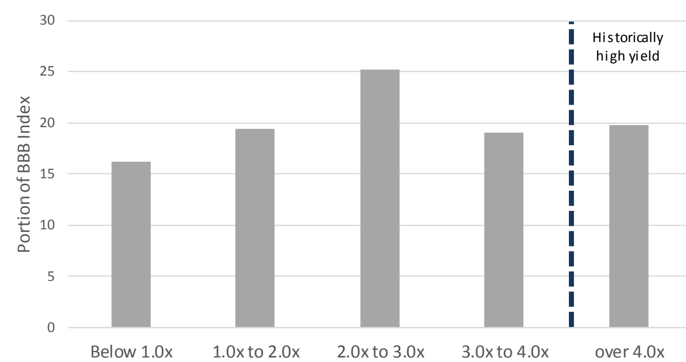
Leverage Metrics: BBB vs. BB

quarterly data



BBB Leverage Distribution

data as of Q3'18

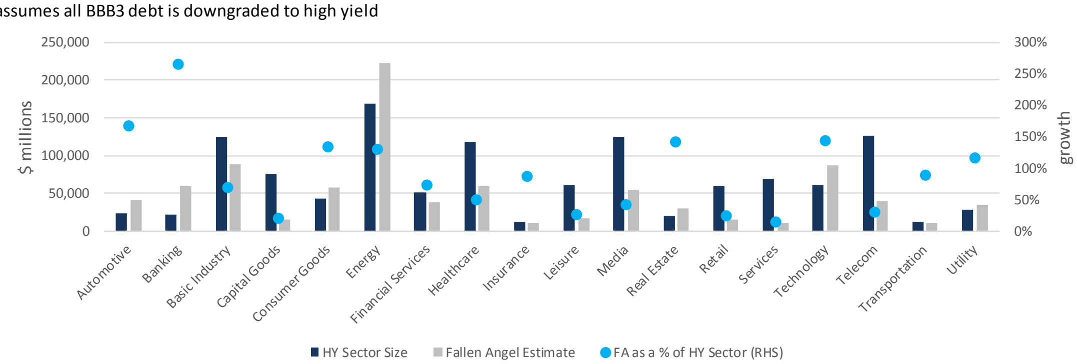


Source: SKY Harbor, Bloomberg, CapitalIQ, BofA Merrill Lynch, ICE BofAML Indices

With that in mind, we present a simple stress test below to measure potential fallen angel volumes relative to current high yield sector size, assuming all BBB3 debt (one notch above high yield) is downgraded and enters H0A0. While Energy, Basic Industry and Technology would be forced to absorb the most debt on an absolute basis, Banking and Automotive sectors would encounter the greatest stress on a relative basis, as the pool of downgrades far exceeds the existing high yield sector sizes.

Ratings Driven Fallen Angel Estimate by Sector

assumes all BBB3 debt is downgraded to high yield



Key Outliers

ratings driven fallen angels

Sectors with significant Fallen Angel Risk (absolute)

Sector	Size ($ mm)
Energy	221,920
Basic Industry	88,977
Technology	87,337
Banking	59,719
Healthcare	59,485

Sectors with significant Fallen Angel Risk (relative)

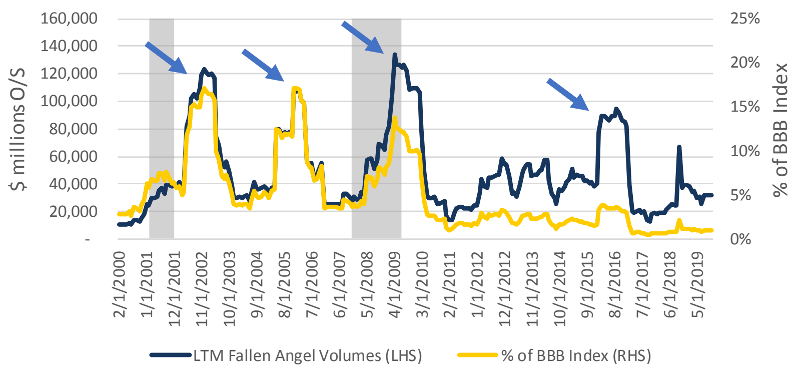
Sector	% of HY Sector
Banking	266%
Automotive	169%
Technology	144%
Real Estate	143%
Consumer Goods	136%

Source: SKY Harbor, ICE BofAML Indices

To more realistically estimate the magnitude of debt that could enter the high yield market upon a turn in the cycle, we look back at peak fallen angel periods over the last 20 years. As demonstrated below, **there have been four spikes in fallen angel volumes since the year 2000 (both in and out of recessions), the most recent driven by a wave of commodity downgrades in 2016**. On a cumulative basis (over the span of 24 months), an average of $150bn of fallen angels hit the high yield market during those periods. At the apex of each run-up, 4% to 17% of the then-existing BBB index was downgraded to high yield. An equivalent average percentage applied to today's significantly larger BBB index implies the potential for ~ $450bn of fallen angel volumes to enter the high yield market. **An average of methods calls for $300bn of debt to enter the high yield index in the next downturn** (approximately 25% and 50% of H0A0 and H0A1, respectively), and well above prior-peak totals.

Fallen Angel Size (Absolute and Relative to BBB Debt O/S)

monthly data since 2000, recessions shaded in grey



LTM Fallen Angel Peak Periods

monthly data since 2000

Date (LTM Peak)	2 Year Cumulative Fallen Angel Volume	Peak Fallen Angel Volume (% of BBB Index)	Implied Fallen Angel Volume Today (Peak)
December '02	$158 billion	17%	~$572 billion
December '05	$132 billion	17%	~$575 billion
April '09	$184 billion	14%	~$461 billion
September '16	$109 billion	4%	~$134 billion
4 Peak Average	**~ $150 billion**	**13%**	**~ $450 billion**
Avg. of Methods Est. Fallen Angel Volume (next recession)			**$300 billion**
ICE BofAML US High Yield Index (H0A0) Size			**$1,207 billion**
ICE BofAML BB US High Yield Index (H0A1) Size			**$571 billion**

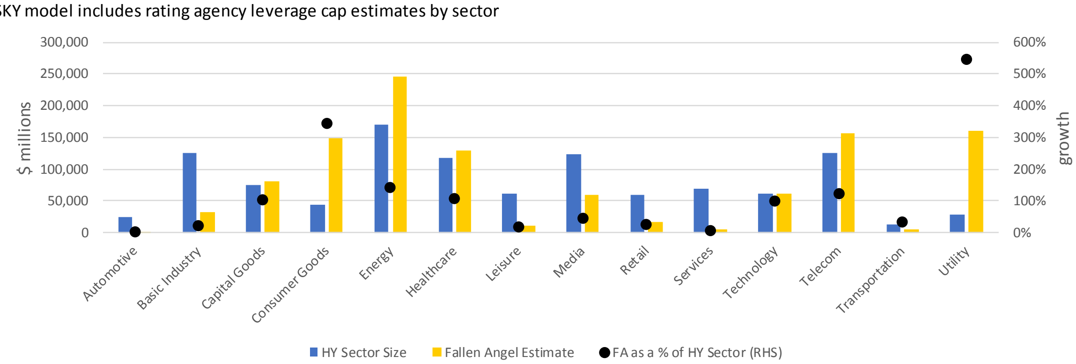
Source: SKY Harbor, BofA Merrill Lynch, ICE BofAML Indices

Even though management teams can proactively reduce net leverage by cutting dividends and growth capex, repatriating cash from overseas, selling assets, etc. to defend their investment grade rating, the analysis underscores the risk of fallen angels given BBB debt proliferation over the last several years.

To develop a more practical gauge of fallen angel risk by sector, we created a data set of all BBB issues (> 3,000 line items) and assigned each a net debt-to-EBITDA metric by leveraging publicly available financials through Bloomberg and Capital IQ. We then assigned each line item a sector-specific leverage threshold most often utilized by rating agencies as the cutoff for BB ratings. **Our analysis further assumes the cycle turns immediately, deleveraging ceases and rating agencies downgrade credits based solely on LTM leverage relative to sector-specific historical BB thresholds** (i.e., no leniency for credits with elevated leverage following an acquisition or temporary earnings degradation, and no consideration of non-leverage factors in the rating process). The results of this simulation imply that Energy, Utility and Telecom have the most acute fallen angel risk on an absolute basis, while Utility, Consumer Goods and Energy have the most relative risk (fallen angel volume relative to existing high yield sector size).

Leverage Driven Fallen Angel Estimate by Sector (ex Financials)

SKY model includes rating agency leverage cap estimates by sector



Key Outliers

leverage driven fallen angels

Sectors with significant Fallen Angel Risk (absolute)

Sector	Size ($ mm)
Energy	245,519
Utility	160,001
Telecom	157,380
Consumer Goods	149,592
Healthcare	129,349

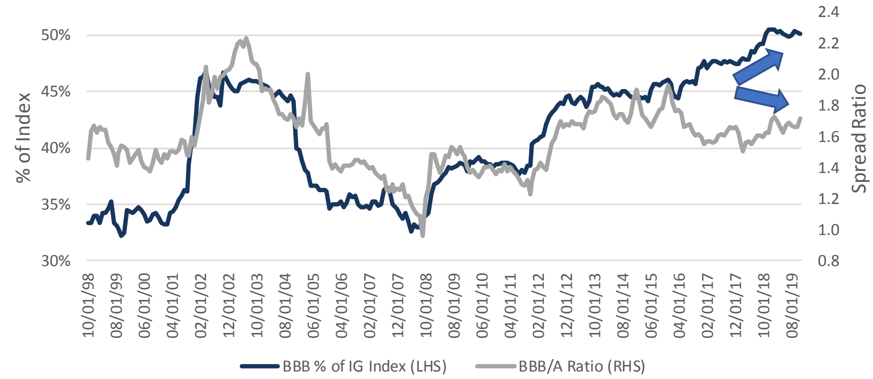
Sectors with significant Fallen Angel Risk (relative)

Sector	% of HY Sector
Utility	549%
Consumer Goods	346%
Energy	145%
Telecom	125%
Healthcare	110%

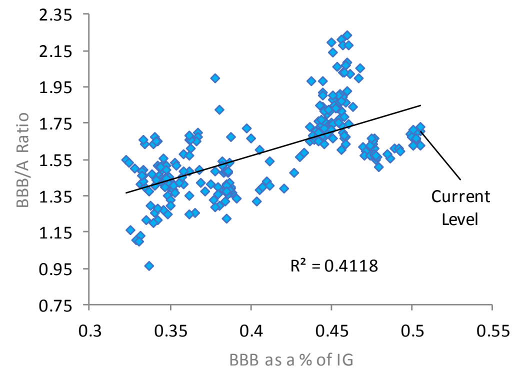
Source: SKY Harbor, ICE BofAML Indices, Morgan Stanley, Moody's

Now, some good news: empirical evidence shows that fallen angels have traded well upon entering the high yield index, likely the result of spread widening while still a BBB index constituent in the months preceding a downgrade, and spread tightening in the months immediately following a downgrade (driven by portfolio selling and then buying due to market technicals). Also, **current spread levels imply that high grade investors have not assigned significant probability to a wave of downgrades in the near term**. As demonstrated below, the relative size of the BBB index within the investment grade universe has historically been correlated with the ratio of BBB to A spreads. However, the ratio of BBB to A spreads has compressed concurrent with an uptick in relative BBB constituent size over the last two years, perhaps implying that downgrade risk is muted at present (although a more bearish interpretation could conclude that a correction is due).

BBB Penetration Within IG Relative to BBB/A Spreads
monthly data, trailing 20 years



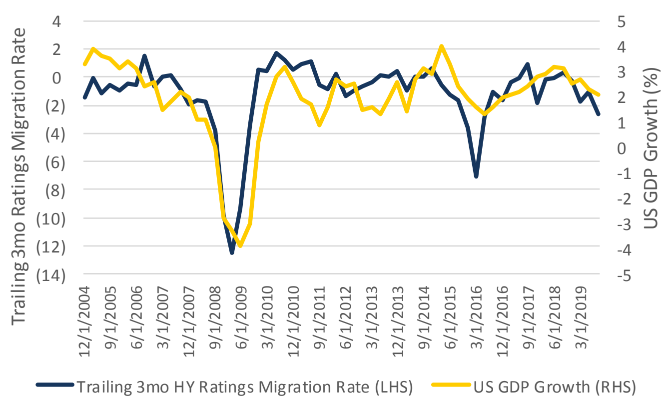
Regression Output
monthly data, trailing 20 years



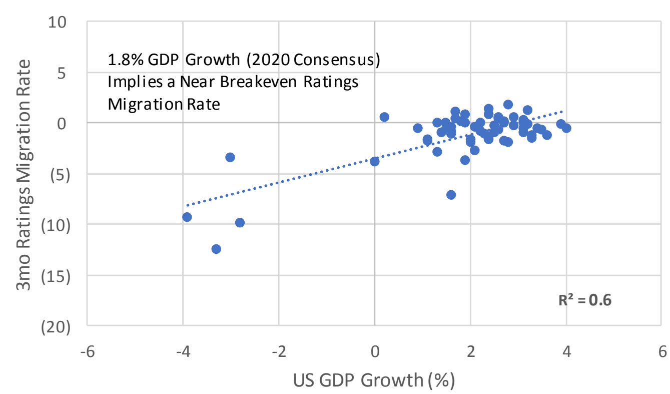
Source: SKY Harbor, ICE BofAML Indices

Additionally, ratings migration rates (in aggregate) are highly correlated with US GDP growth, a relationship that makes sense intuitively given understandable challenges corporations face in growing into and managing capital structures when macro headwinds are present. Fortunately, **GDP growth expectations for 2020 (~ 1.8%, based on Bloomberg consensus expectations at the time of publication) imply near-breakeven ratings migration rates for the coming year**. Our view, however, would become more pessimistic if GDP growth were to fall below 1%.

GDP Growth Highly Correlated to Ratings Migration Rates
quarterly data, trailing 15 years



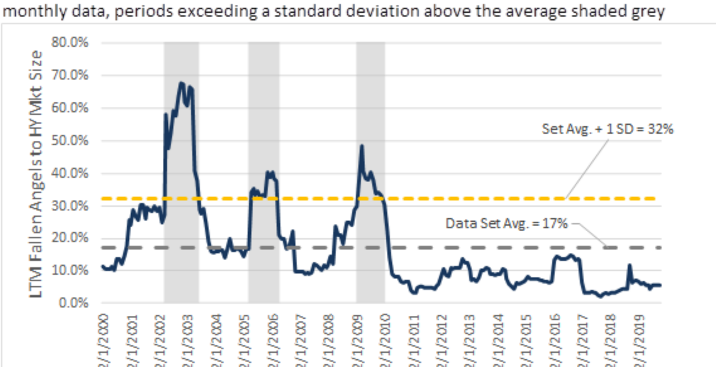
2020 Consensus GDP Growth Expectations Imply
quarterly data, trailing 15 years



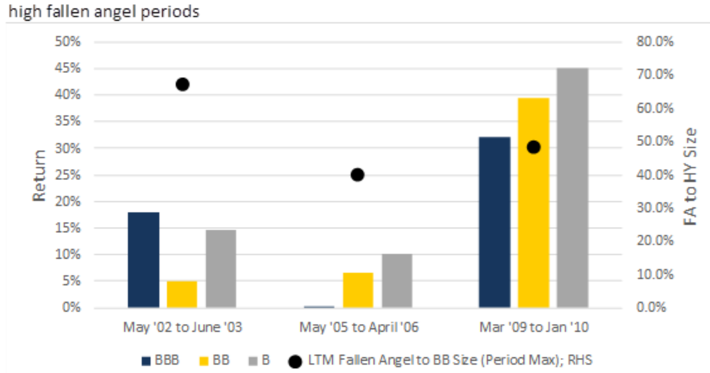
Source: SKY Harbor, ICE BofAML Indices, BofA Merrill Lynch, Bureau of Economic Analysis

Turning to market performance, we examine the three periods in the last two decades in which LTM fallen angel volumes, normalized by the size of the BB market, peaked at a standard deviation above the set average (‘02/’03, ‘05/’06, and ‘09/’10, shaded grey in the chart below). Returns were orderly in the latter two periods (i.e., Single-B returns exceeded BB returns, which exceeded BBB returns), giving credence to the aforementioned dynamic of fallen angel bonds changing hands ahead of a downgrade (and, therefore, not causing a BB performance drag upon entering high yield). An exception, however, occurred in the May ’02 to June ’03 period, when the BB index trailed Single-Bs and BBBs. While the relatively limited history of the high yield market leaves us with a set of test periods that is far from robust, we speculate that BB returns may have been muted given the need to absorb a relatively higher amount of fallen angel debt (fallen angel debt to BB market size was greatest in this period). **Importantly, these results support our view that the <u>relative</u> amount of fallen angel debt (as a % of existing debt in the constituency the downgraded bonds are entering), not the <u>absolute</u> amount, is the key risk factor for investors to monitor**.

LTM Fallen Angel Volumes as a % of BB Market Size
monthly data, periods exceeding a standard deviation above the average shaded grey



Returns in Elevated Fallen Angel Periods
high fallen angel periods

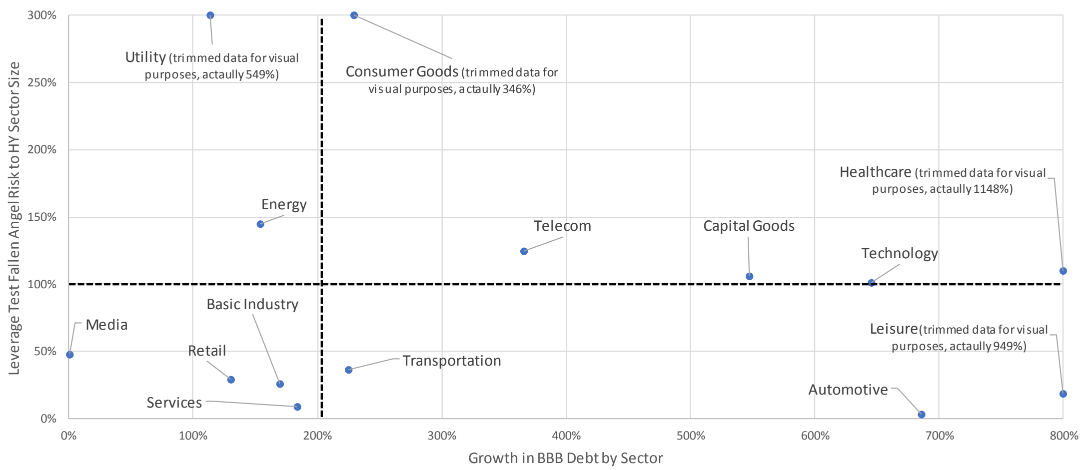


Source: SKY Harbor, ICE BofAML Indices

To conclude, the chart below plots sectors by current cycle BBB debt growth along the x-axis and by estimated fallen angel volume as a percentage of high yield sector size (using our sector leverage threshold simulation) across the y-axis, as we believe these are the two best predictors of future fallen angel stress. **Sectors above and to the right of index averages (dotted lines on the chart) likely possess the greatest fallen angel risk (Consumer Goods, Telecom and Healthcare), while sectors in the lower left quadrant likely possess the least fallen angel risk (Media, Retail, Basics Industry and Services).** We would also include Energy in the high-risk group given a marked change in investor sentiment for the sector over the last several years.

Sectors at Risk

dotted lines mark index averages



Source: SKY Harbor, ICE BofAML Indices, Morgan Stanley, Moody's

Concluding Points

- A clear trend this cycle has been the growth of investment grade debt (+148% as measured by face value), particularly within the more speculative BBB ratings cohort (+225%).
- BBB index growth has come from every sector, ranging from Healthcare (+1,148%) to Media (+1%), and includes both above and below average issue and issuer sizes.
- Relatively healthy credit metrics underpinned by low rates and stabilizing corporate earnings growth suggest a wave of downgrades is not likely a near-term event.
- However, some risk factors have been building, including our anticipation that corporate earnings growth may surprise to the downside.
- There have been four spikes in fallen angel volumes since the year 2000 (both in and out of recessions), the most recent driven by a wave of commodity downgrades in 2016; Our analysis suggests that the next "wave of fallen angels" could exceed prior peaks at ~ $300bn.
- Empirical evidence, however, shows that fallen angels have traded well upon entering the high yield index.
- Furthermore, GDP growth expectations for 2020 (~ 1.8%, based on Bloomberg consensus at the time of publication) imply near-breakeven ratings migration rates for the coming year, and little risk of a significant uptick in net fallen angels.
- We find that the relative amount of fallen angel debt, not the absolute amount, to be a key risk factor to monitor.
- Putting together all of our simulations, we find Consumer Goods, Telecom, Healthcare and Energy to have the greatest fallen angel risk and Media, Retail, Basic Industry and Services to be least at risk when the cycle turns (though we do not expect that to be a near-term event). These findings are partially offset by the fact that some high-risk sectors (Consumer Goods, Telecom, Healthcare) show greater earnings resiliency in downturns, while some low-risk sectors (Retail, Basics) show inferior earnings resiliency.

On the Calendar

Occurred

Event	Release Date	Period	Survey	Actual	Prior
ISM Manufacturing	2-Dec-19	Nov	49.2	48.1	48.3
ADP Employment Change	4-Dec-19	Nov	135k	67k	125k
Trade Balance	5-Dec-19	Oct	-$48.5bn	-$47.2bn	-$52.5bn

Upcoming

Event	Release Date	Period	Survey	Actual	Prior
NFIB Small Bus. Optimism	10-Dec-19	Nov	103.1		102.4
CPI MoM	11-Dec-19	Nov	0.2%		0.4%
PPI Final Demand MoM	12-Dec-19	Nov	0.2%		0.4%

Source: SKY Harbor, Bloomberg

Recommended Reading

Chaney, Sarah (2018, October 25). US Services Grew Solidly in November. *The Wall Street Journal* (subs. req.), Retrieved from https://www.wsj.com/articles/u-s-services-sector-grew-solidly-in-november-11575483154

Leonard, Jenny and Niu, Shuping (2018, October 25). US, China Move Closer to Trade Deal Despite Harsh Rhetoric. *Bloomberg*, Retrieved from https://www.bloomberg.com/news/articles/2019-12-04/u-s-china-move-closer-to-trade-deal-despite-heated-rhetoric?srnd=economics-vp

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