



## Credit Markets Experience Massive Repricing of Credit Risk



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### Initiating Credit Ratings

The coronavirus outbreak jolted credit markets as the economy ground to a halt and issuers faced cash crunches. Cash on hand, upcoming debt maturities, and ability to access the debt markets became the preferred metrics for analyzing equities. Credit spreads immediately widened as investors demanded higher interest rates to take on increased credit risk. Corporate bonds and municipal bonds both faced significant illiquidity. The commercial mortgage backed security market created waves as fund managers and traders unloaded debt at distressed prices to meet margin calls.

### Massive Stimulus Measures Enacted to Thaw Credit Markets; Two Investment Implications

Global central banks wasted no time in stepping in to support credit markets. Multiple central banks are purchasing corporate bonds and municipal bonds, and an overwhelming majority are cutting interest rates (**Figure 9**). The U.S. Federal Reserve's balance stands at \$6.7Tn, which represents a 15% month-over-month gain and 71% year-over-year gain (**Figure 10**).

The takeaway is clear to us: central bankers are prepared to go to extreme measures to protect the global economy and support credit markets. In our view, there are two implications. First, stimulus will likely lead investors to move down the credit rating spectrum, which could cause credit spreads to tighten. Central banks have limited ability to push interest rates lower, which we believe will lead them to focus on asset purchases. Second, we expect more of credit's total return to come from coupon yield and less from duration, which is a reversal from 2019 when the Federal Reserve cut interest rates three times (**Figure 17**). In our view, investors will need to accept higher credit risk in order to generate income.

### High Yield Credit More Appropriately Priced for Credit Risk After Outbreak

U.S. corporate health was already trending down before the coronavirus outbreak struck. Piotroski F-scores, which measure financial health, weakened throughout 2019 (**Figure 12**). Profit margins and free cash flow yields both declined as well in 2019 (**Figure 13**). EBITDA and sales growth within the Russell 1000 universe tumbled in 2019 (**Figure 14**), while Debt/EV rose and interest coverage declined (**Figure 15**).

The coronavirus outbreak woke investors up to the deterioration of credit quality. The result was a massive repricing of credit risk. Multiple figures show the extent of the repricing. Investors rushed to IG as the coronavirus outbreak spread. **Figure 27** shows the 6-month decline in yield to worst across most of the IG space as investors rushed to higher quality credit. In contrast, most HY debt yields surged over the past 6-month. Within IG, the BBB-AAA yield to worst spread widened materially (**Figure 32**). In the HY segment, the CCC-BB yield to worst spread surged even more (**Figure 38**). Both show a clear preference for higher quality credit.

In April, **Figure 27** shows the credit markets rebounded slightly. Yields fell across the HY space, indicating investor willingness to hold riskier assets. We attribute this to stimulus measures. In our view, HY debt is now an overweight due to a more attractive risk/reward setup. First, the incremental yield offered by HY as a percentage of IG is at a 20 year high (**Figure 41**). Additionally, the BBB-BB credit divide spread is now above the 20 year average and the 2015-2016 credit sell-off (**Figure 43**). Both indicate investors are being compensated more for assuming credit risk. Second, while we acknowledge the risk presented by HY energy and CCC debt, spreads today reflect that risk in our view. The CCC OAS spread today is only slightly below the highs of early 2016 (**Figure 40**).

### Muni Bond Spreads Widen Relative to Corporates

The municipal bond market is not immune from the ongoing health pandemic. States and cities are losing tax revenue as shutdown orders freeze economic activity. Municipal bonds were the worst performing credit class during April 2020. The credit class was hurt by Mitch McConnell's comments about municipalities declaring bankruptcy. Municipal bond yields are now higher than corporate rated peers, reflecting the higher municipal bond credit risk (**Figure 48**).

While we remain neutral municipal bonds, investors can now earn a higher tax adjusted yields from muni bonds than equal quality corporate bonds. To support municipal bonds, the Federal Reserve is stepping in to purchase certain municipal bonds. This should support municipal bonds for now, but the future remains too uncertain for us to overweight the segment.

### International Sovereign Debt Spreads Widen

You can read our emerging market debt views [here](#).

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**MarketDesk Credit Ratings:** The goal of this report is to simplify credit investing by focusing on the key drivers of risk and return. Below is a summary of our credit allocation views for the next 12 months. Up / down arrows indicate a positive (▲) or negative (▼) change in view since the prior monthly report.

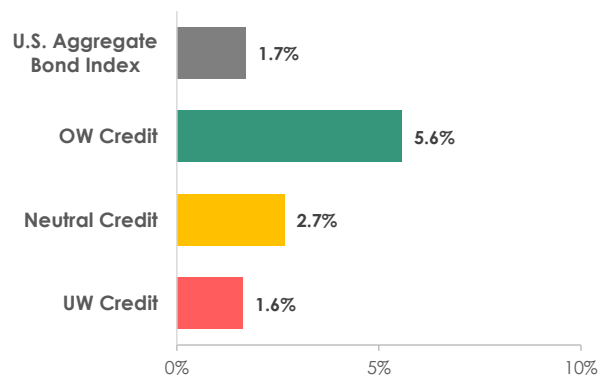
● Underweight (UW)    ● Neutral (N)    ● Overweight (OW)

Credit Markets	Allocation View				Current Drivers of Allocation Views	Rationale
	Chg	UW	N	OW		
U.S. Government & International Sovereigns						
U.S. Treasuries		•	●	•	Fed Demand; Low Yields	Steady purchase demand from Fed; Yields are too low to generate income = Use to fortify portfolio against equity market sell-off
EM Sovereign (Local)	▲	•	•	●	Yield Spread vs U.S. Treasuries	Spread vs 10yr UST at multi-year high; USD weakness = Potential catalyst; Global rate cuts = Cut rates w/out weakening currency
U.S. Credit						
Cash (3-Month Treasury)		•	●	•	More Attractive Opportunities	Cash yields collapsed; Higher yield opportunities exist elsewhere in credit markets
Investment Grade		•	●	•	High Duration	Increasing duration risk in IG bonds as firms issue more on low rates; Rising BBB exposure = downgrade risk
High Yield	▲	•	•	●	Credit Spread	Credit spreads are priced more attractively after coronavirus outbreak; Concern about default rate over the next 12mo
TIPS	▼	●	•	•	Low Inflation Expectations	Inflation expectations remain; Concerns about elevated risk of inflation from stimulus measures = Risk to UW position
Municipals		•	●	•	Default Risk	Spreads to corporate credit with identical ratings indicate higher tax adjusted yields; Default risk elevated due to shutdown orders
Convertibles		•	●	•	Potential Equity Sell-Off	Offers yield plus equity like exposure in a low interest rate environment; Concerns about equity sell-off justify a neutral rating
Preferreds	▲	•	•	●	Yield; Low Beta	Offers attractive yield amid low interest rates; Risk of limited upside in market rally, which could occur given stimulus measures
MBS		•	●	•	Fed Purchases; Prepayment Risk	Fed action to purchase MBS assets calmed the market; Risking risk of prepayment due to low interest rate environment
CMBS	▼	●	•	•	Missed Tenant Rent Payment	Uncertain when offices are reopened; Rising concerns about tenants either asking for lower rents or terminating leases
U.S. Credit Factors						
Duration	▼	●	•	•	Fed Policy Tools	We expect more of credit's total return to come from coupon yield than duration; Fed more likely to purchase bonds than cut rates
Quality	▲	•	•	●	Default Risk	Corporate health was already weakening before the coronavirus outbreak; Credit default risk elevated over the next 12mo

**Bond Duration** is a measure of the sensitivity of the price of a bond to a change in interest rates and is measured by years. As an example, if a bond has a duration of five years and interest rates increase 1%, the bond's price will drop by approximately 5% (1% X 5 years). **Credit Quality** is the measure of a company's creditworthiness or risk of default.

**Figure 1: Performance of MDR Ratings — April 2020**

Average monthly performance across credit by ratings.



Source: MarketDesk Research

**Figure 2: Long / Short Model Portfolio — Monthly Performance**

The average monthly performance assumes long OW credit and short UW credit. Returns do not factor in borrowing cost.

**Note:** MDR Credit Ratings Began 5/1/2020. Performance will begin next month.

Source: MarketDesk Research



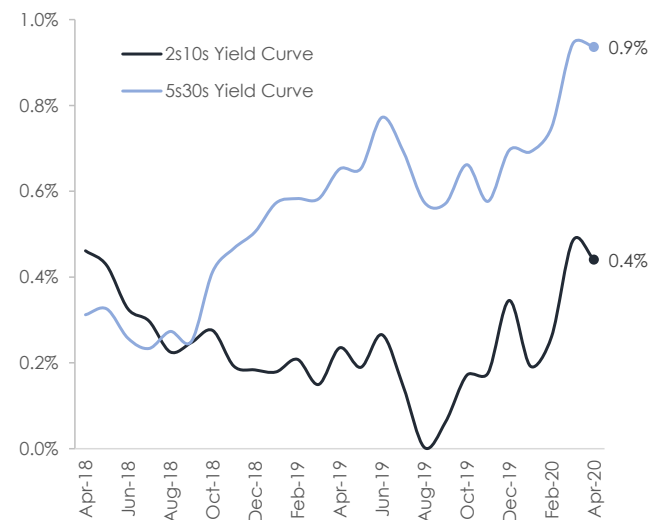
Figure 3: Credit Market Metrics

Credit Markets	Total Returns (%)			Asset Flows (%)			Spread vs 10Y UST			Yield to Maturity	Yield to Worst	Yield to Call	Duration (Years)	Duration Spread	Option Adj Spread	Current Yield to Maturity vs 20-Year Average							
	1M	6M	1Y	1M	6M	1Y	1M	6M	1Y							-3std				+3std			
U.S. Government & International Sovereigns																							
2-Year Treasuries	0.3	3.1	5.2	19.4	31.1	33.5	-1.1	-1.1	-0.7	0.18%	0.18%	0.18%	-	-	-			● -1.1					
10-Year Treasuries	0.3	9.0	16.9		-5.1	7.2	42.6	-0.7	-0.6	-0.5	0.62%	0.62%	0.62%	-	-	-			● -2.2				
30-Year Treasuries	1.2	19.1	37.3		-21.8	-13.3	11.4	0.0	0.0	0.0	1.28%	1.28%	1.28%	-	-	-			● -2.5				
EM Sovereign (Local)	2.5	-11.7	-8.0	-17.2		1.3	-3.6	2.2	2.5	2.0	3.47%	3.47%	3.47%	6.90	6.83	0			● -2.9				
U.S. Credit																							
Cash (3-Month Treasury)	0.0	0.6	1.7	25.6	34.4	54.5	-1.2	-1.2	-0.6	0.10%	0.10%	0.10%	-	-	-				● -0.8				
Investment Grade	4.8	2.7	11.8		3.4	5.1	17.2	0.9	1.5	0.4	2.22%	2.20%	2.19%	8.24	8.14	158			● -1.4				
High Yield	4.9	-4.9	-2.5		9.7	0.7	36.3	5.7	7.1	3.7	6.96%	6.76%	6.75%	4.90	4.20	631				● -0.5			
TIPS	3.0	5.0	9.1		-8.2	-3.3	-1.3	-1.4	-1.1	-1.9	-0.16%	-0.16%	-0.16%	8.59	6.40	0				● -1.1			
Municipals	-1.4	-1.4	2.2		-4.1	11.5	23.5	1.8	1.7	0.7	3.13%	2.37%	2.32%	9.38	5.91	48				● -1.2			
Convertibles	11.5	2.1	2.7		-11.2	-3.7	-0.2	-	-	-	-	-	-	-	-	-							
Preferreds	9.4	-5.1	0.0		-6.0	5.4	16.5	3.7	4.3	2.9	5.00%	3.59%	3.35%	11.28	8.51	236				● -1.0			
MBS	0.8	3.7	7.5		-7.5	19.0	36.0	0.1	0.3	0.4	1.35%	1.35%	1.35%	3.74	4.21	85				● -1.6			
CMBS	0.2	2.2	7.0		-13.0	2.3	18.1	1.5	1.7	0.3	2.81%	2.81%	2.81%	4.81	4.80	242				● -0.8			

Source: MarketDesk Research. Asset Flows = 5 largest ETFs for each category. Total net flows are divided by total beginning of period assets.

Figure 4: Treasuries — Long vs Short-End Yield Curve

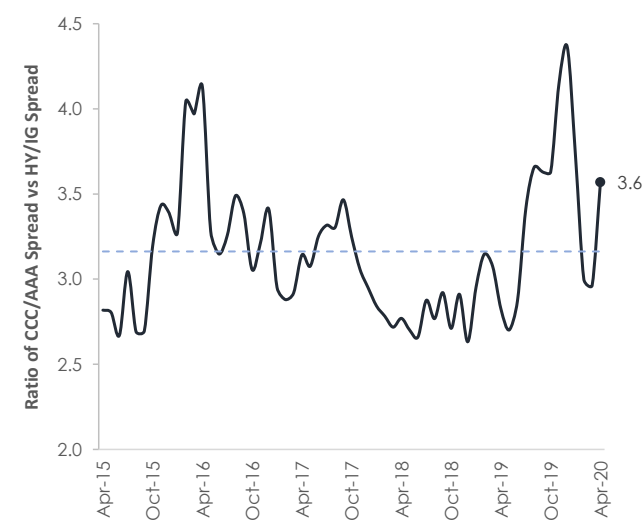
The analysis below highlights steepening and/or flattening yields at the long (5s30s) and short (2s10s) end of the yield curve.



Source: MarketDesk Research, St. Louis Federal Reserve

Figure 5: Corporates — Extremes vs Rating Groups

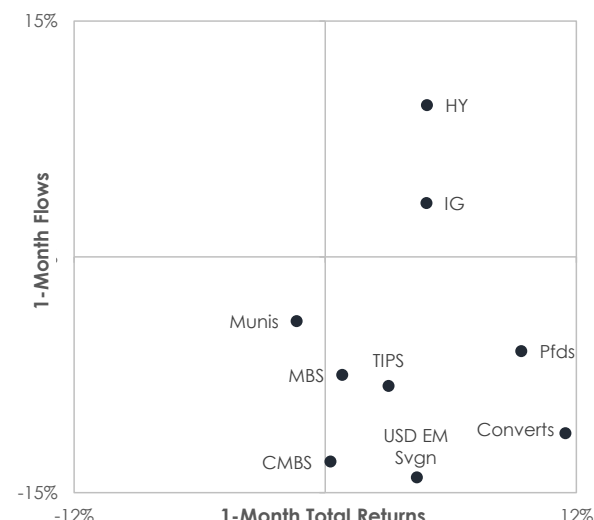
Net Difference between CCC/AAA spread and the broad HY/IG spread to highlight movements at the extremes.



Source: MarketDesk Research

Figure 6: Returns vs Flows (m/m%)

The scatter plot below highlights areas where investors are adding (or removing) capital based on recent returns.



Source: MarketDesk Research



Figure 7: Credit Market Total Returns

Monthly total returns over the past year by credit type.

	May 2019	June 2019	July 2019	August 2019	September 2019	October 2019	November 2019	December 2019	January 2020	February 2020	March 2020	April 2020	YTD	1-Year
Best	Trsy (30Y) 6.8%	Local EM Svgn 6.1%	Preferreds 1.8%	Trsy (30Y) 11.0%	Local EM Svgn 0.8%	Local EM Svgn 3.2%	Convertibles 2.9%	Local EM Svgn 3.6%	Trsy (30Y) 7.7%	Trsy (30Y) 6.6%	Trsy (30Y) 6.4%	Convertibles 11.5%	Trsy (30Y) 23.6%	Trsy (30Y) 37.3%
	Trsy (10Y) 3.0%	Convertibles 4.8%	Convertibles 1.6%	Trsy (10Y) 3.9%	Preferreds 0.7%	Convertibles 1.7%	Corp HY 0.6%	USD EM Svgn 2.9%	Trsy (10Y) 3.5%	Trsy (10Y) 3.0%	Trsy (10Y) 3.7%	Preferreds 9.4%	Trsy (10Y) 10.8%	Trsy (10Y) 16.9%
	CMBS 2.1%	USD EM Svgn 3.5%	Municipals 0.7%	Corp IG 3.9%	Corp HY 0.4%	USD EM Svgn 0.6%	Corp IG 0.5%	Convertibles 2.9%	Convertibles 3.1%	Corp IG 1.1%	Trsy (2Y) 1.2%	Corp HY 4.9%	TIPS 4.3%	Corp IG 11.8%
	TIPS 1.8%	Corp IG 3.2%	USD EM Svgn 0.7%	TIPS 2.3%	Cash 0.2%	Corp IG 0.4%	TIPS 0.3%	Preferreds 1.9%	CMBS 2.7%	Municipals 1.0%	MBS 1.1%	Corp IG 4.8%	MBS 3.5%	TIPS 9.1%
	Corp IG 1.6%	Corp HY 3.1%	MBS 0.4%	CMBS 2.1%	MBS 0.1%	Preferreds 0.4%	CMBS 0.2%	Corp HY 1.9%	Corp IG 2.4%	TIPS 0.9%	Cash 0.2%	USD EM Svgn 4.4%	Trsy (2Y) 3.0%	MBS 7.5%
	Municipals 1.4%	Preferreds 1.3%	TIPS 0.3%	USD EM Svgn 1.5%	Trsy (2Y) -0.1%	MBS 0.3%	Cash 0.1%	Corp IG 0.5%	TIPS 2.1%	Trsy (2Y) 0.9%	CMBS -1.2%	TIPS 3.0%	CMBS 2.4%	CMBS 7.0%
	MBS 1.2%	Trsy (10Y) 1.2%	Trsy (30Y) 0.3%	Municipals 1.5%	Convertibles -0.3%	Trsy (2Y) 0.3%	Municipals 0.1%	TIPS 0.3%	Municipals 1.7%	MBS 0.8%	TIPS -1.8%	Local EM Svgn 2.5%	Corp IG 1.7%	Trsy (2Y) 5.2%
	Trsy (2Y) 0.7%	CMBS 1.0%	Corp IG 0.3%	MBS 1.0%	CMBS -0.6%	Municipals 0.3%	MBS 0.0%	Municipals 0.3%	Preferreds 1.5%	CMBS 0.6%	Municipals -3.0%	Trsy (30Y) 1.2%	Cash 0.4%	Convertibles 2.7%
	USD EM Svgn 0.5%	Trsy (30Y) 0.9%	CMBS 0.2%	Trsy (2Y) 0.8%	Corp IG -0.8%	Trsy (10Y) 0.2%	Trsy (2Y) 0.0%	MBS 0.2%	USD EM Svgn 1.2%	Cash 0.1%	Corp IG -6.3%	MBS 0.8%	Municipals -1.8%	Municipals 2.2%
	Preferreds 0.3%	MBS 0.8%	Local EM Svgn 0.2%	Corp HY 0.7%	Municipals -0.8%	Cash 0.2%	Trsy (30Y) -0.4%	Trsy (2Y) 0.2%	MBS 0.7%	USD EM Svgn -1.2%	Corp HY -10.0%	Trsy (10Y) 0.3%	Convertibles -3.6%	Cash 1.7%
	Cash 0.2%	TIPS 0.7%	Cash 0.2%	Preferreds 0.6%	USD EM Svgn -1.1%	Corp HY 0.0%	Preferreds -0.4%	Cash 0.1%	Trsy (2Y) 0.6%	Corp HY -1.3%	Preferreds -11.8%	Trsy (2Y) 0.3%	Preferreds -6.5%	Preferreds 0.0%
	Local EM Svgn -0.5%	Trsy (2Y) 0.5%	Corp HY 0.2%	Cash 0.2%	TIPS -1.1%	TIPS 0.0%	Trsy (10Y) -0.7%	CMBS -0.3%	Cash 0.1%	Local EM Svgn -2.4%	Local EM Svgn -11.9%	CMBS 0.2%	Corp HY -7.3%	Corp HY -2.5%
	Corp HY -1.9%	Municipals 0.4%	Trsy (10Y) 0.0%	Convertibles -1.6%	Trsy (10Y) -1.2%	CMBS -0.2%	USD EM Svgn -0.9%	Trsy (10Y) -0.9%	Corp HY -0.5%	Convertibles -3.5%	Convertibles -13.1%	Cash 0.0%	USD EM Svgn -11.2%	USD EM Svgn -3.9%
Worst	Convertibles -5.4%	Cash 0.2%	Trsy (2Y) -0.1%	Local EM Svgn -5.3%	Trsy (30Y) -2.7%	Trsy (30Y) -1.1%	Local EM Svgn -3.1%	Trsy (30Y) -3.2%	Local EM Svgn -0.8%	Preferreds -4.4%	USD EM Svgn -14.9%	Municipals -1.4%	Local EM Svgn -12.6%	Local EM Svgn -8.0%

Source: MarketDesk Research

**Figure 8: Key Metrics — International Policy Rates**

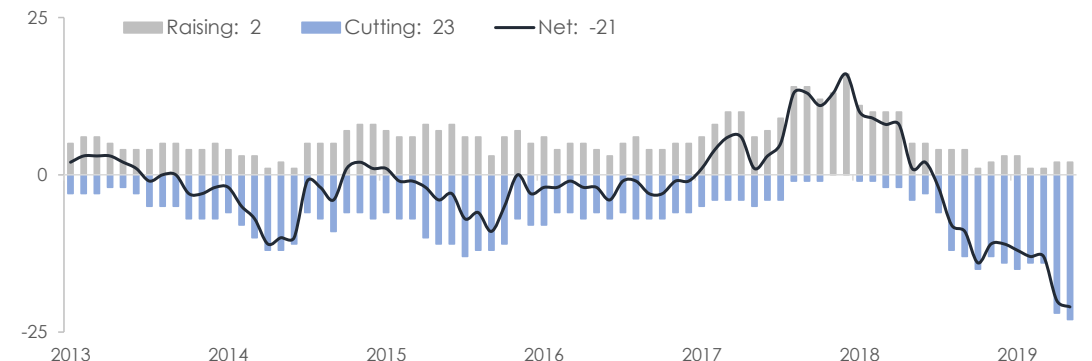
Global central banks have the ability to create enormous changes in the bond markets. Below we track the past, current and future rate targets of several countries.

Country	2-Year Trend	Current Policy Rate	LTM Chg (bps)	NTM Chg (bps)	Target Rate
<b>North America</b>					
United States		0.25%	▼ -225		0.25%
Canada		0.25%	▼ -150		0.25%
<b>Europe</b>					
Denmark		0.05%		▼ -65	-0.60%
Eurozone		0.00%			0.00%
Norway		0.25%	▼ -75		0.25%
Poland		0.50%	▼ -100	▲ 25	0.75%
Russia		5.50%	▼ -225	▲ 25	5.75%
Sweden		0.00%	▲ 25		0.00%
Iceland		1.75%	▼ -275		
Turkey		8.75%	▼ -1525	▲ 125	10.00%
Ukraine		8.00%	▼ -950	▼ -50	7.50%
United Kingdom		0.10%	▼ -65	▲ 40	0.50%
<b>Asia Pacific</b>					
Australia		0.25%	▼ -125		0.25%
China		4.35%		▼ -50	3.85%
Hong Kong		1.11%	▼ -164	▼ -25	0.86%
India		4.40%	▼ -160		4.40%
Indonesia		4.50%	▼ -150		4.50%
Japan		-0.10%			-0.10%
Philippines		2.75%	▼ -200	▲ 38	3.13%
South Korea		0.75%	▼ -100	▼ -25	0.50%
Taiwan		1.13%	▼ -25	▲ 22	1.35%
<b>Latin America</b>					
Argentina		38.00%	▼ -3593	▲ 550	43.50%
Brazil		3.75%	▼ -275	▼ -75	3.00%
Chile		0.50%	▼ -250	▲ 63	1.13%
Colombia		3.75%	▼ -50	▼ -50	3.25%
Mexico		6.00%	▼ -225	▼ -25	5.75%
<b>Middle East &amp; Africa</b>					
Israel		0.10%	▼ -15		
Qatar		2.50%	▼ -250		
Saudi Arabia		1.00%	▼ -200		
South Africa		4.25%	▼ -250	▲ 38	4.63%
UAE		1.50%	▼ -125		

Source: MarketDesk Research, Various global central banks

**Figure 9: Global Central Banks Raising vs Cutting Interest Rates**

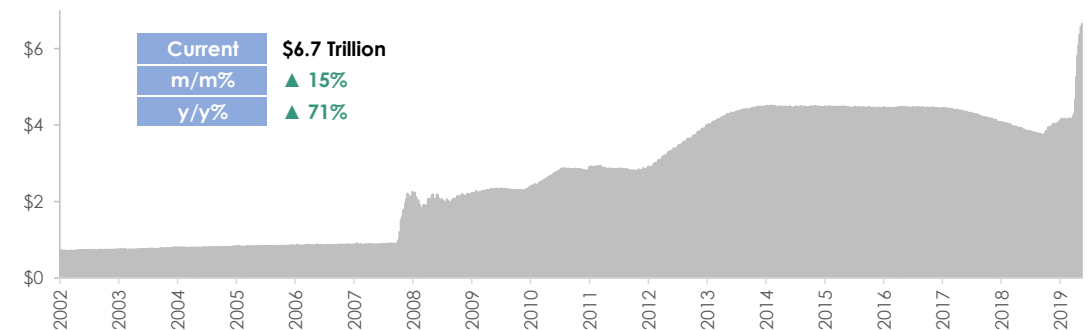
Tracking the direction of policy changes to highlight easing (lower) or tightening (higher rates) monetary policy.



Source: MarketDesk Research

**Figure 10: U.S. Federal Reserve Balance Sheet**

Snapshot of the size and directional trends of the U.S. Federal Reserve's balance sheet.



Source: MarketDesk Research, St. Louis Federal Reserve

**Figure 11: Upcoming Central Bank Meetings**

Summary of future meeting dates at the three most watched global central banks.

	U.S. Federal Reserve	ECB	BOJ
May			
Jun	9-10	4	15-16
Jul	28-29	16	14-15
Aug			
Sept	15-16	10	16-17
Oct		29	28-29
Nov	4-5		
Dec	15-16	10	17-18

Source: MarketDesk Research, U.S. Federal Reserve, European Central Bank (ECB), Bank of Japan (BOJ)

# U.S. Corporate Health

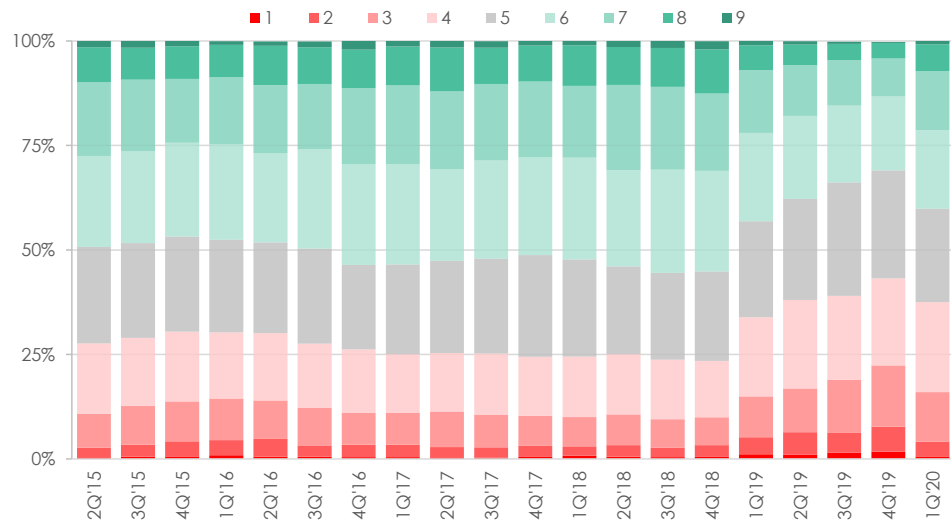
## Overview

Monthly Report

May 1, 2020

**Figure 12: U.S. Companies Financial Health — Piotroski F-Score**

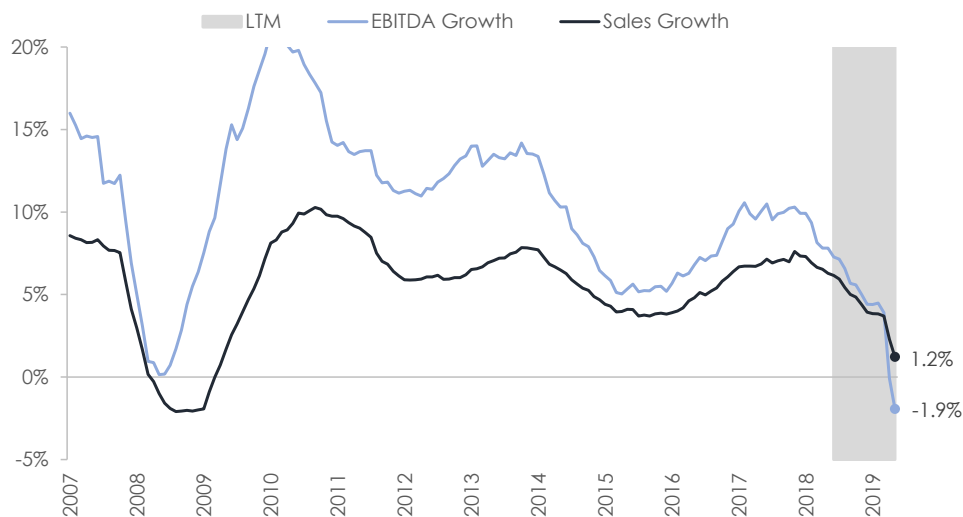
Piotroski F-Score is a gauge of corporate financial health taking into consideration a company's income statement and balance sheet. F-Scores 6 to 9 (1 to 4) are considered financially strong (weak).



Source: MarketDesk Research

**Figure 14: EBITDA & Sales Growth (y/y%)**

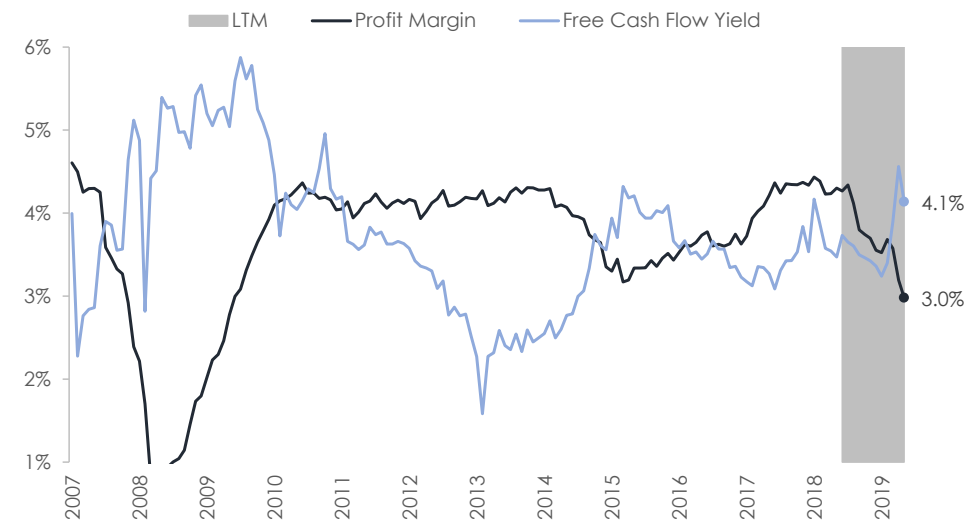
Top line sales and EBITDA growth are key indicators to highlight if companies are growing or shrinking their business. The analysis below uses the market cap weighted Russell 3000 universe.



Source: MarketDesk Research

**Figure 13: U.S. Profit Margins & Free Cash Flow Yield**

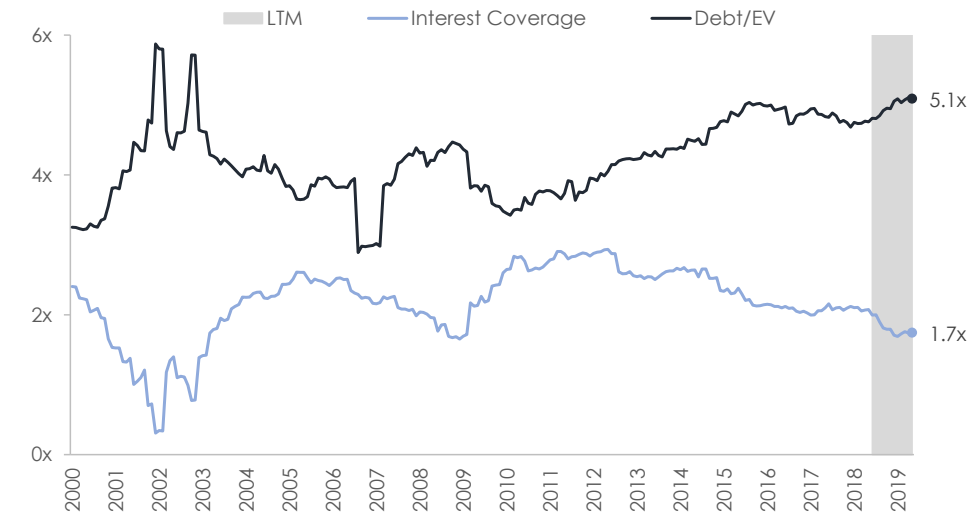
Investors pay close attention to income statement margins and cash flow generation to gauge financial health. The analysis below uses the market cap weighted Russell 3000 universe.



Source: MarketDesk Research

**Figure 15: Interest Coverage & Debt/EV Ratio**

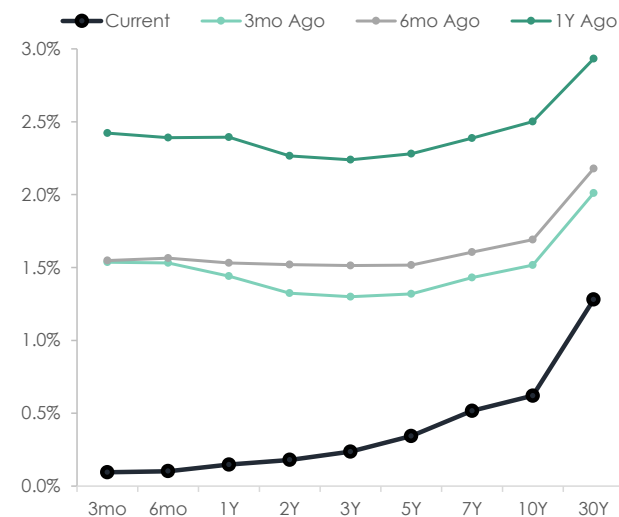
Two key credit ratios followed by investors are: Interest Coverage (EBIT / Interest Expense) and Debt/Enterprise Value. The analysis below uses the market cap weighted Russell 3000 universe.



Source: MarketDesk Research

**Figure 16: U.S. Treasury Yield Curve**

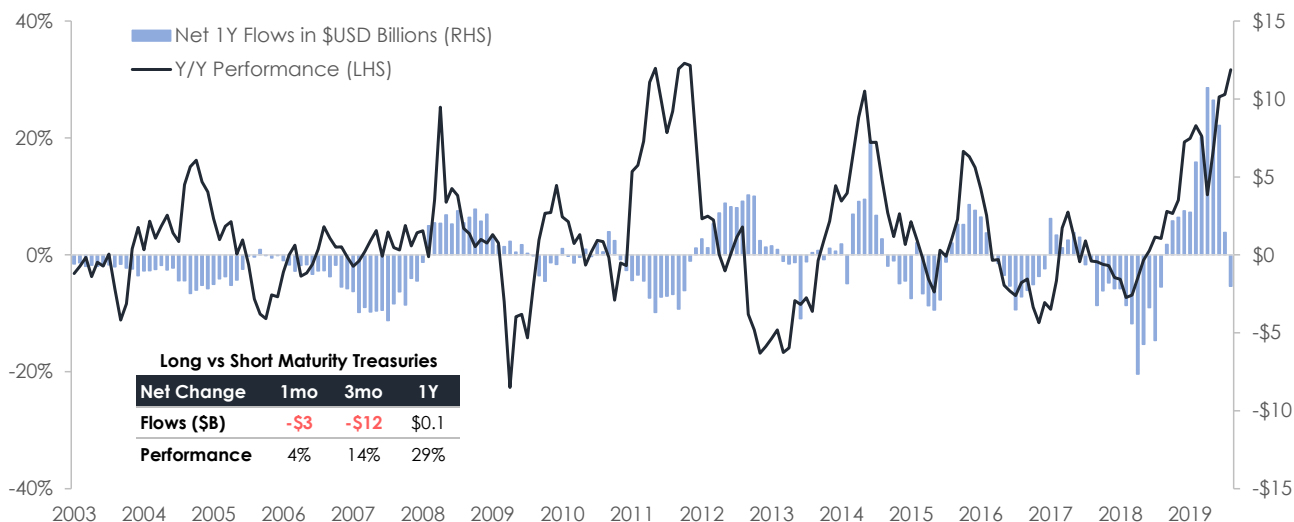
Highlighting recent shifts in the U.S. Treasury yield curve.



Source: MarketDesk Research

**Figure 17: Flows & Performance — Long vs Short Maturity Treasuries**

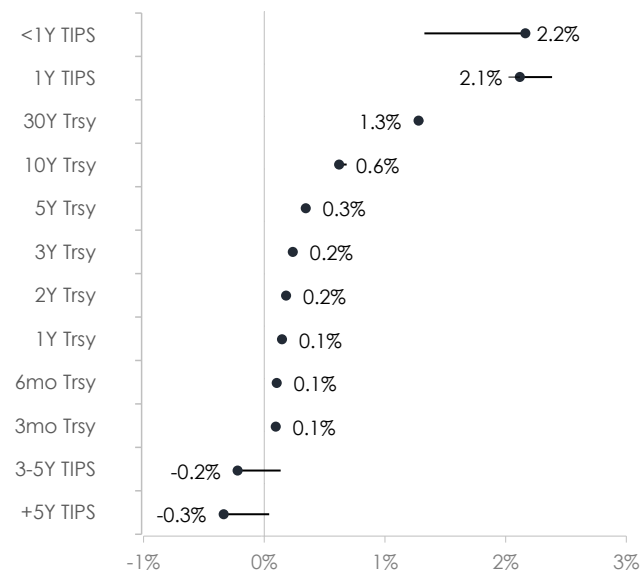
Rolling LTM return and net flows into long (TLT +20Y bond ETF) vs short (SHY 1-3Y bond ETF) maturity U.S. Treasuries.



Source: MarketDesk Research

**Figure 18: Current Yield & 1-Month Change**

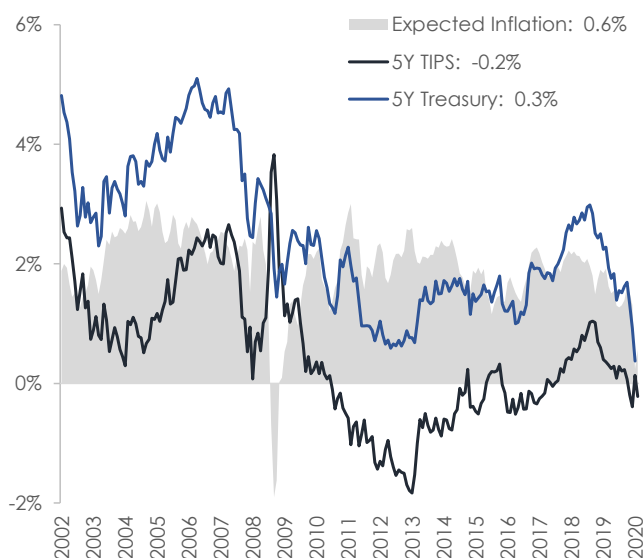
Current yield and the 1-month change in yield.



Source: MarketDesk Research

**Figure 19: Expected Inflation — 5Y Treasury vs 5Y TIPS**

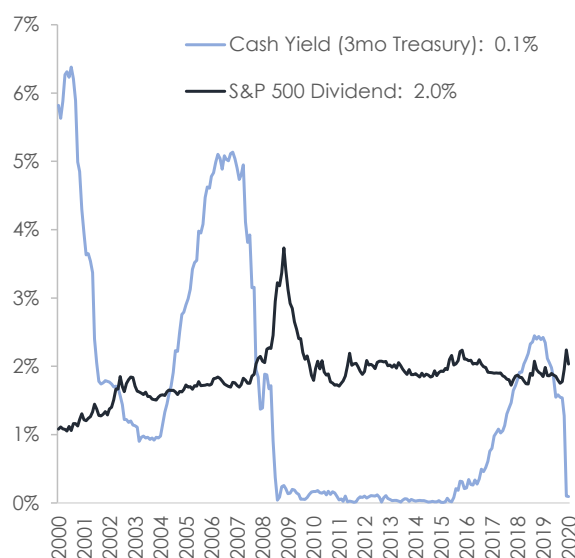
Expected inflation rate = 5Y Treasury yield minus 5Y TIPS yield.



Source: MarketDesk Research

**Figure 20: S&P 500 Dividend Yield vs Cash Yield**

Comparative yield of holding cash vs investing in equities.



Source: MarketDesk Research



**Figure 21: Key Metrics — Sovereign Bonds**

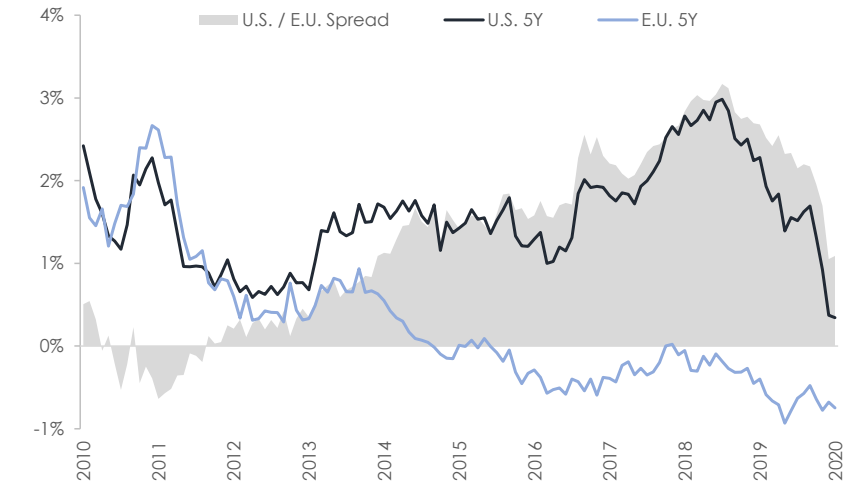
Key credit market metrics across developed and emerging market sovereign bonds. We use the 10-year bond as a broad proxy for each country and compare it to the U.S. 10-year Treasury bond.

Country	S&P Rating	10Y Yield (%)	30 Day Chg (bps)	10Y CDS (bps)	10Y / 2Y Spread	10Y U.S. Trsy Spread (bps)	U.S. Trsy Spread (1Y History)
<b>United States</b>	<b>AA+</b>	<b>0.62%</b>	<b>▼ -6</b>	<b>28</b>	<b>44</b>	<b>-</b>	<b>-</b>
<b>Developed Markets</b>							
Italy	BBB	1.79%	▲ 31	243	130	117	
Australia	AAA	0.89%	▲ 13	47	67	27	
Spain	A	0.73%	▲ 8	149	91	11	
Hong Kong	AA+	0.57%	▼ -14	72	21	-5	
United Kingdom	AA	0.23%	▼ -10	49	22	-39	
Japan	A+	-0.05%	▼ -7	53	14	-67	
France	AA	-0.10%	▼ -6	62	53	-72	
Sweden	AAA	-0.12%	▲ 2	26	11	-74	
Netherlands	AAA	-0.29%	▼ -5	30	37	-91	
Denmark	AAA	-0.32%	▼ -7	22	28	-94	
Switzerland	AAA	-0.54%	▼ -19	14	9	-116	
Germany	AAA	-0.57%	▼ -8	37	19	-119	
<b>Emerging Markets</b>							
South Africa	BB+	10.27%	▼ -66	462	-	965	
Indonesia	BBB	8.11%	▼ -7	288	193	749	
Brazil	BB-	7.72%	▼ -10	414	344	710	
Colombia	BBB	6.98%	▼ -22	336	284	636	
Mexico	BBB+	6.57%	▼ -50	363	132	595	
India	BBB-	6.11%	▼ -1	168	165	549	
Russia	BBB	6.04%	▼ -64	228	78	542	
Philippines	BBB+	3.95%	▼ -103	135	93	333	
Malaysia	A	2.85%	▼ -51	158	45	223	
China	A+	2.53%	▼ -8	86	122	191	
Greece	BB-	2.14%	▲ 53	286	-	152	
South Korea	AA	1.52%	▼ -4	62	57	90	
Thailand	A-	1.16%	▼ -27	106	47	54	
Singapore	-	0.90%	▼ -39	-	48	28	
Taiwan	-	0.48%	▼ 0	-	20	-14	

Source: MarketDesk Research

**Figure 22: 5-Year Bond Yields — U.S. vs E.U.**

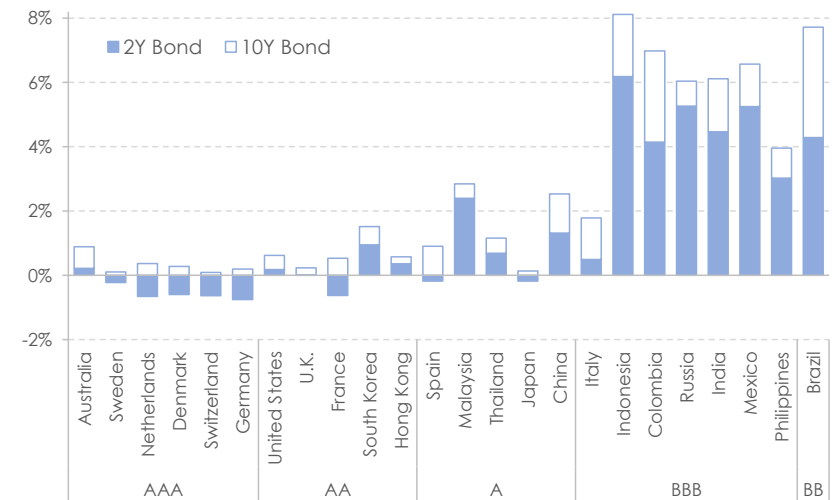
Comparing the yield investors earn holding a 5-year U.S. Treasury bond versus a 5-year European Union bond. The analysis does not account for currency differences.



Source: MarketDesk Research

**Figure 23: Sovereign Yields across Rating Levels & Regions**

A comparison of country yields across regions and similarly rated countries. The yield spread (10-year minus 2-year) for each country is shown in the white box.



Source: MarketDesk Research



**Figure 24: Key Metrics Across Corporate Bond Ratings**

Analysis	Investment Grade				High Yield		
	AAA	AA	A	BBB	BB	B	CCC
<b>Yield / Spread (%)</b>							
Yield To Maturity	1.88	1.91	2.29	3.46	6.00	8.54	18.20
Yield To Worst	1.84	1.89	2.26	3.43	5.85	8.39	18.12
Yield To Call	1.84	1.89	2.26	3.42	5.83	8.38	18.09
Option Adj Spread	1.05	1.28	1.65	2.82	5.39	7.98	17.79
<b>Bond Duration</b>							
Duration (Years)	11.6	8.4	8.1	7.6	5.1	4.3	3.5
Duration Spread	11.3	8.3	8.0	7.6	4.5	3.7	3.3
<b>Returns</b>							
1-Month	3.0%	3.7%	4.7%	7.3%	3.9%	6.1%	-0.3%
3-Month	3.8%	1.3%	0.3%	-3.6%	-8.3%	-10.4%	-24.8%
6-Month	6.3%	3.0%	2.1%	-1.7%	-7.7%	-9.0%	-22.4%
1-Year	15.3%	8.3%	7.8%	3.6%	-5.9%	-7.9%	-28.2%

Source: MarketDesk Research

**Figure 25: Y/Y Performance — HY vs IG**

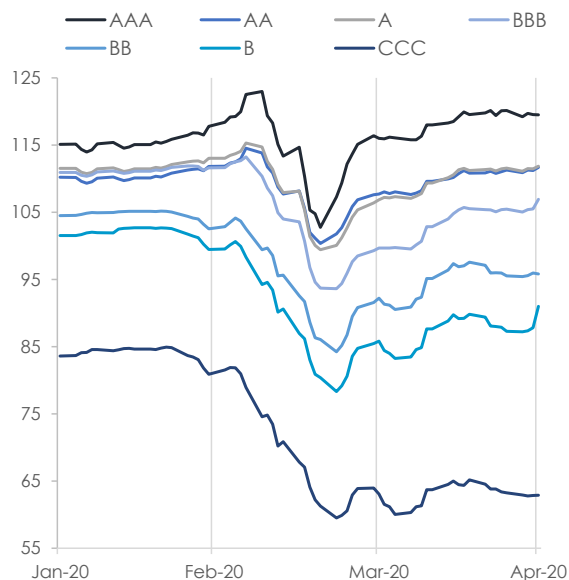
Rolling LTM price returns of high yield vs investment grade bonds.



Source: MarketDesk Research

**Figure 26: Index Prices Over The Past 3-Months**

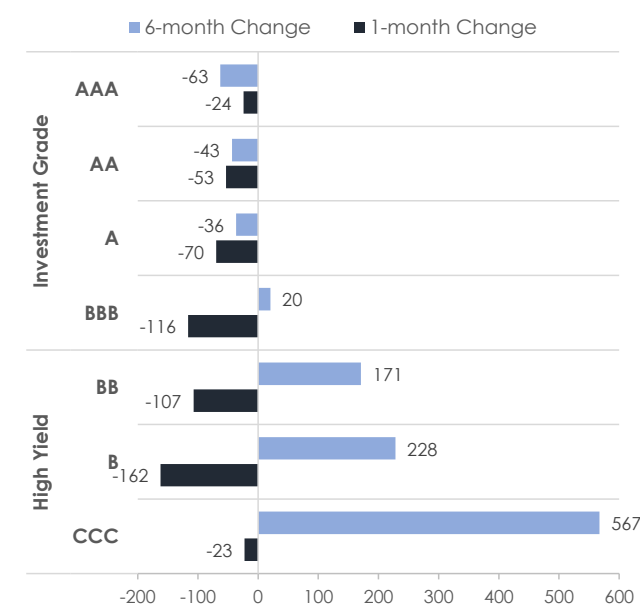
Price movement across corporate bonds by rating levels.



Source: MarketDesk Research

**Figure 27: YTW Across Ratings - 1mo & 6mo Change**

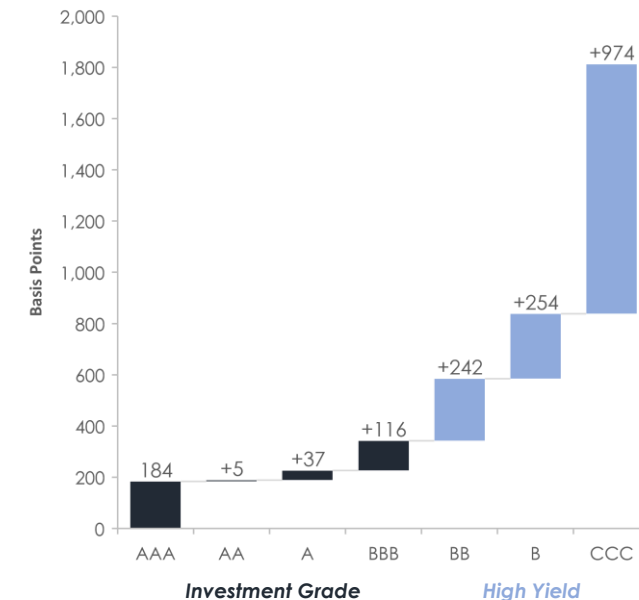
Trends in yield to worst (YTW) across corporate bond ratings.



Source: MarketDesk Research

**Figure 28: Incremental Corp Yield by Rating Levels**

Additional yield for owning one lower rating (using YTW).



Source: MarketDesk Research

# U.S. Corporates

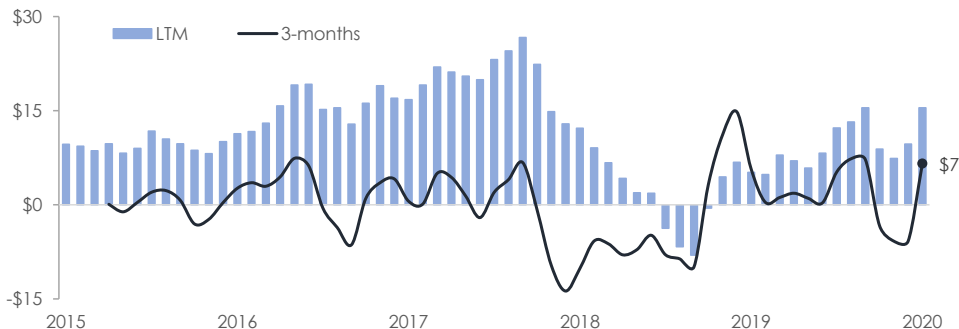
## Investment Grade (IG)

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**Figure 29: IG Asset Flows (\$USD Billions)**

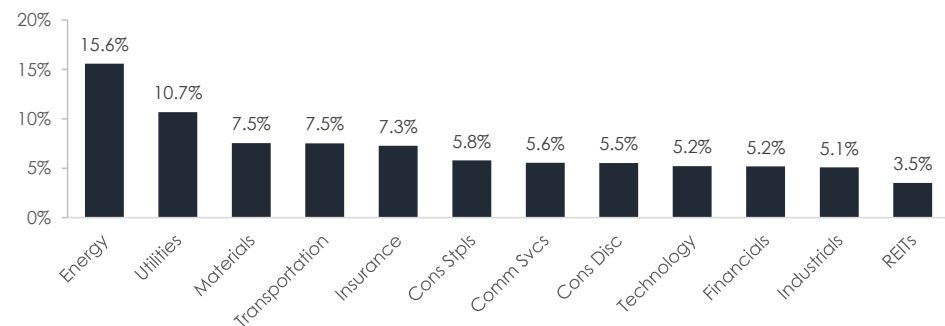
Trends in asset flows across investment grade bond ETFs.



Source: MarketDesk Research

**Figure 31: 1-month Price Return by IG Sector**

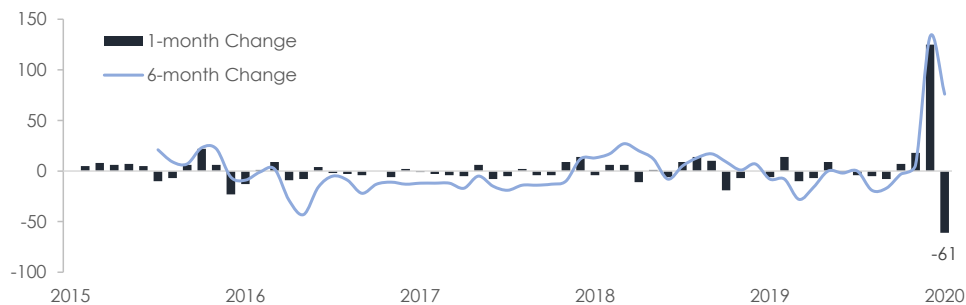
Recent performance trends across IG bond sectors.



Source: MarketDesk Research

**Figure 33: IG OAS Change (basis points)**

Change in option adjusted spread for a broad investment grade index measured in basis points (1bp = 0.01%).



Source: MarketDesk Research

**Figure 30: Y/Y Performance — IG Corp Bonds vs 10Y U.S. Treasury**

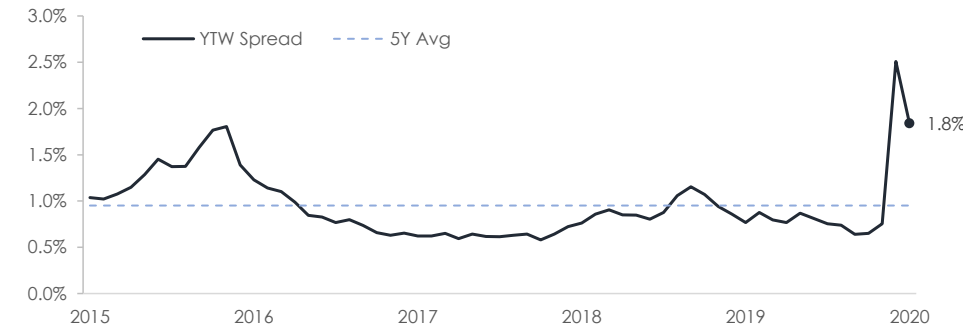
Rolling LTM price return of investment grade bonds vs 10-year U.S. Treasury bonds.



Source: MarketDesk Research

**Figure 32: YTW Spread — BBB vs AAA**

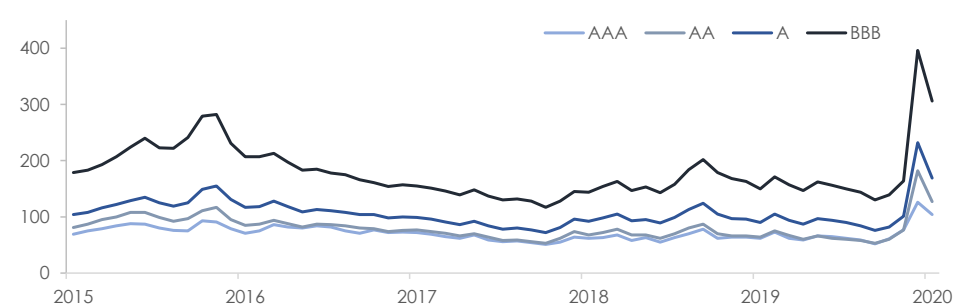
Yield to worst (YTW) difference between the lowest (BBB) and the highest (AAA) rated IG bonds.



Source: MarketDesk Research

**Figure 34: OAS Across IG Ratings (basis points)**

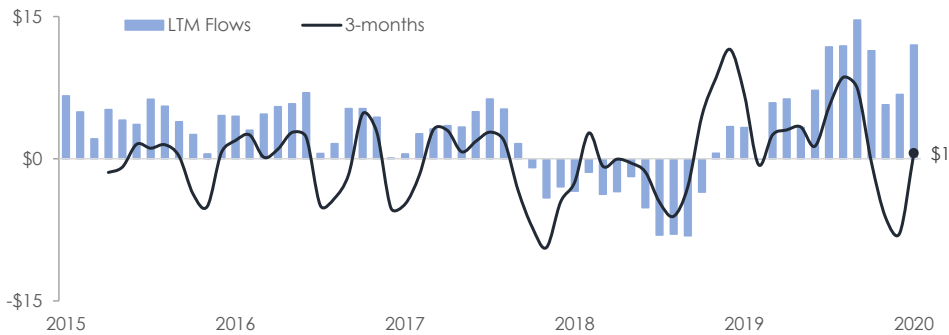
Option adjusted spread by investment grade rating level measured in basis points (1bp = 0.01%).



Source: MarketDesk Research

**Figure 35: HY Asset Flows (\$USD Billions)**

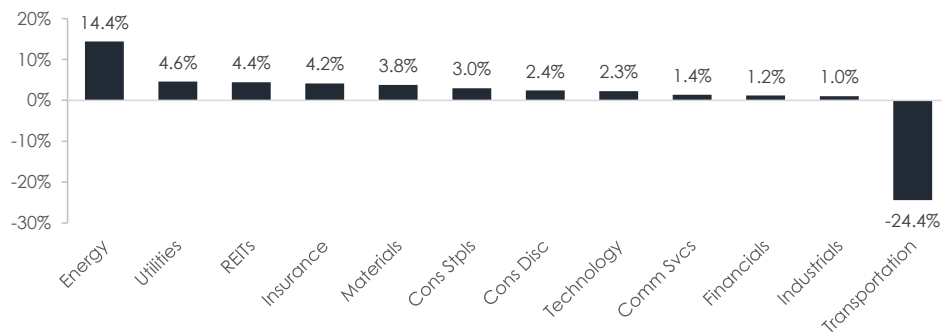
Trends in asset flows across high yield bond ETFs.



Source: MarketDesk Research

**Figure 37: 1-month Price Return by HY Sector**

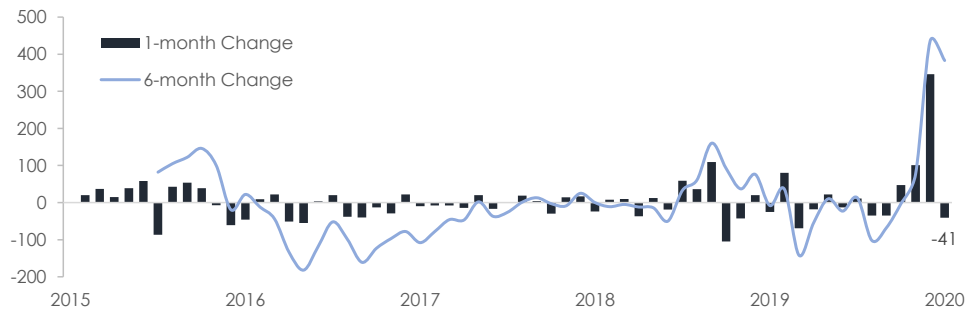
Recent performance trends across HY bond sectors.



Source: MarketDesk Research

**Figure 39: HY OAS Change (basis points)**

Change in the option adjusted spread for a broad high yield index measured in basis points (1bp = 0.01%).



Source: MarketDesk Research

**Figure 36: Y/Y Performance — Short-term HY vs Broad HY Corporate Bonds**

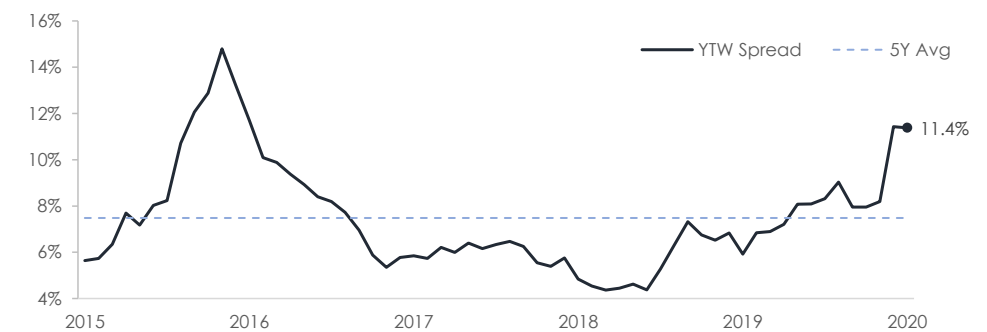
Rolling LTM price return of short-term high yield corporate bonds vs broad high yield corporate bonds.



Source: MarketDesk Research

**Figure 38: YTW Spread — CCC vs BB**

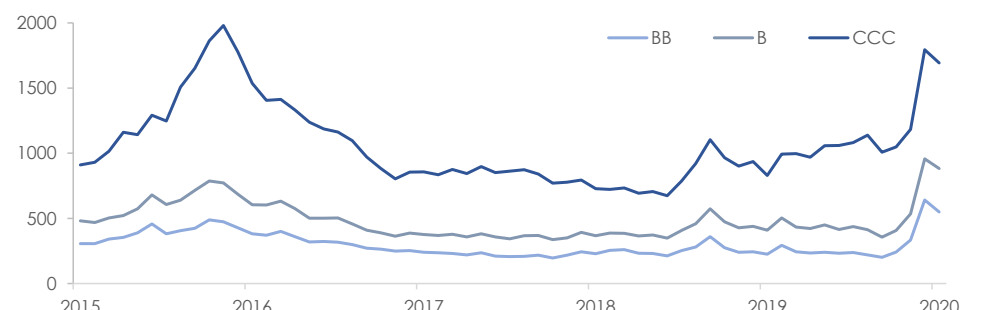
Yield to worst (YTW) difference between the lowest (CCC) and the highest (BB) rated HY bonds.



Source: MarketDesk Research

**Figure 40: OAS Across HY Ratings (basis points)**

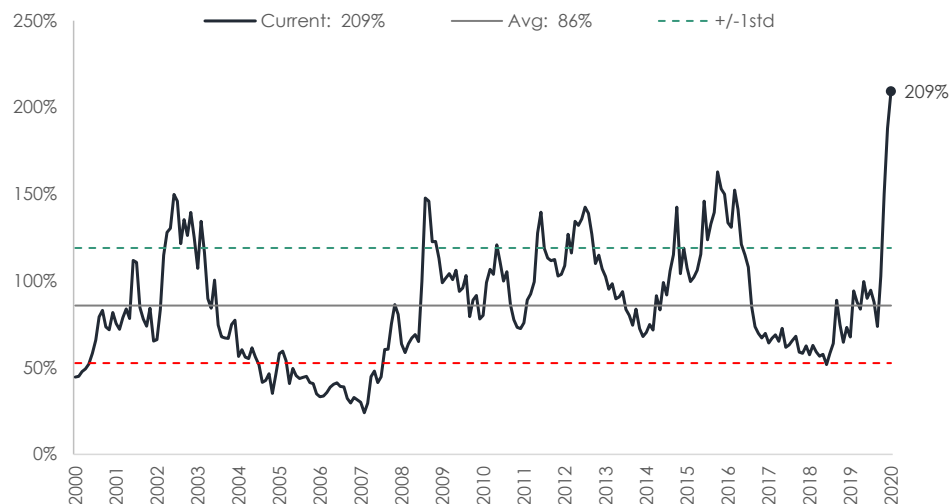
Option adjusted spread by high yield rating level measured in basis points (1bp = 0.01%).



Source: MarketDesk Research

**Figure 41: Incremental HY Yield as % of IG Yield**

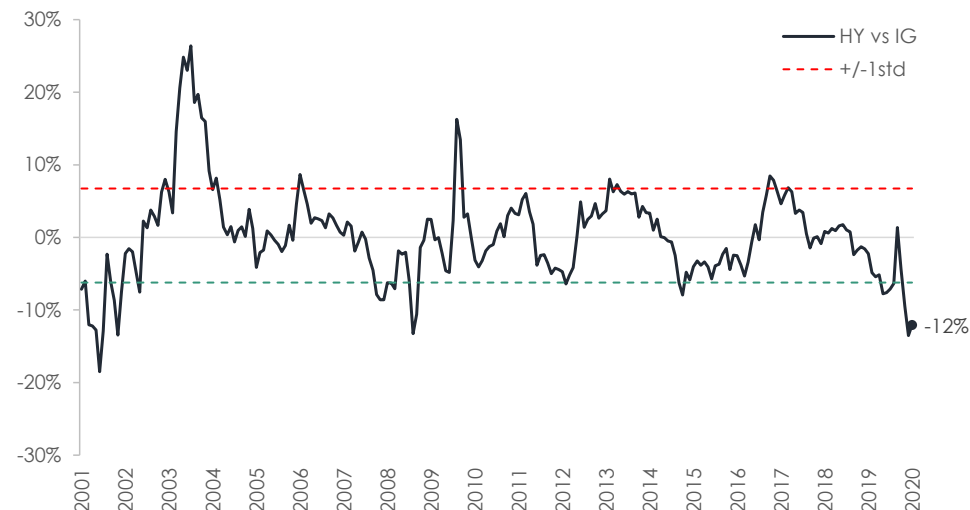
The additional yield earned by investors owning high yield bonds (measured as % of the IG yield).



Source: MarketDesk Research

**Figure 42: Y/Y Price Return — HY vs IG**

Rolling LTM price return of high yield bonds vs investment grade bonds.



Source: MarketDesk Research

**Figure 43: Credit Divide YTW Spread — BBB vs BB**

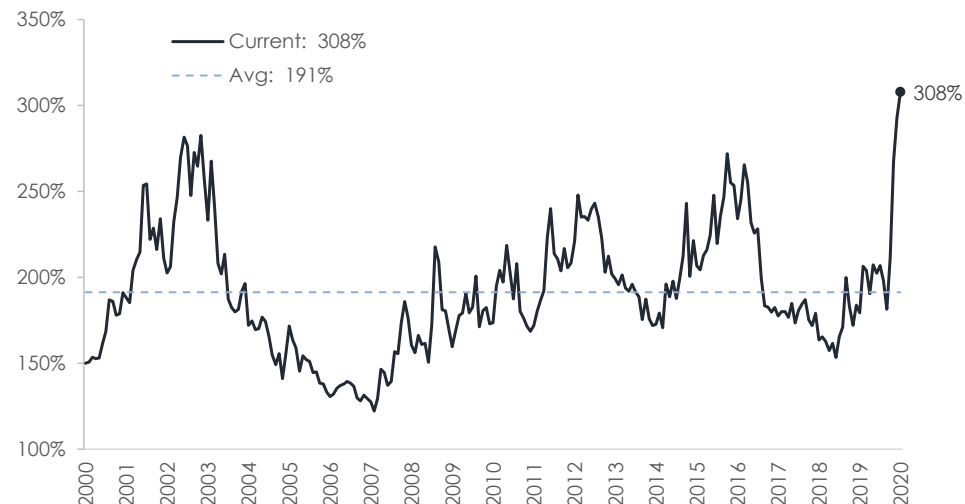
Incremental yield earned owning the highest rated HY bond (BB) vs lowest rated IG bond (BBB).



Source: MarketDesk Research

**Figure 44: YTW Spread — HY vs IG**

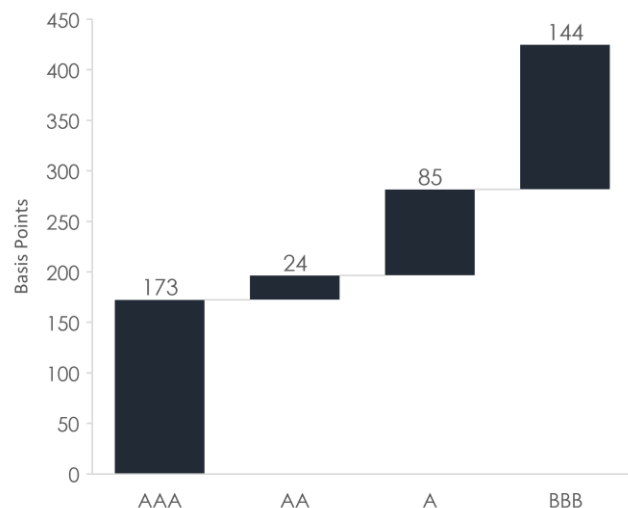
Yield to worst spread between high yield bonds and investment grade bonds.



Source: MarketDesk Research

**Figure 45: Incremental Muni Yield by Ratings Level**

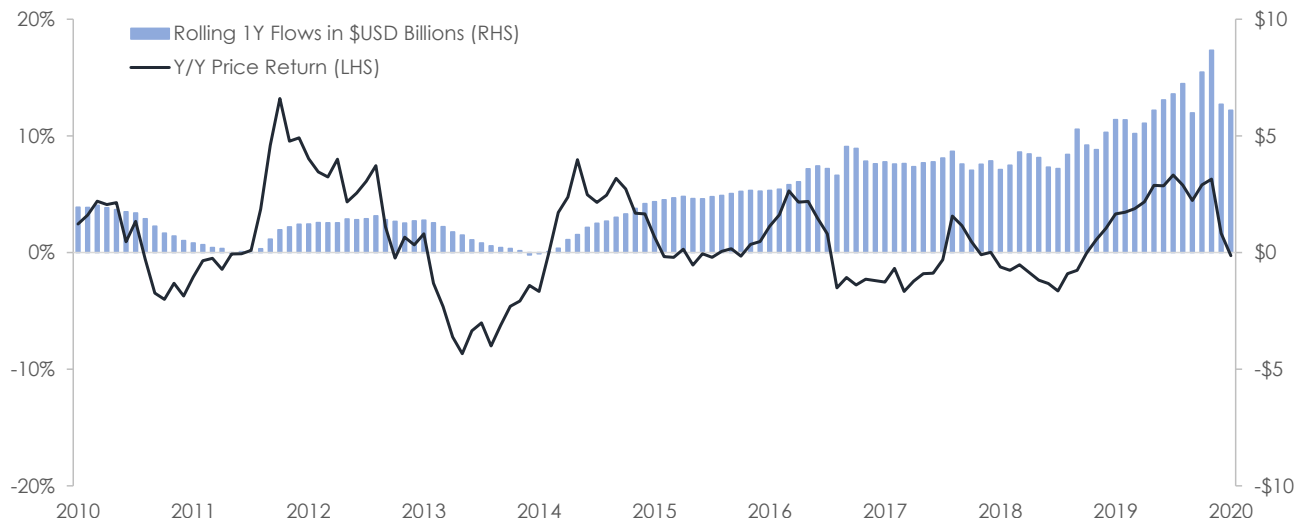
Additional muni yield earned owning one rating level lower.



Source: MarketDesk Research

**Figure 46: Municipal Bonds — Flows & Performance**

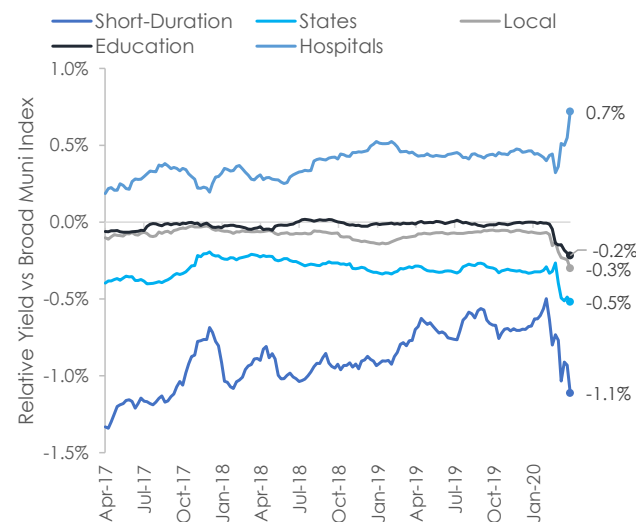
Rolling LTM return and net flows into municipal bond ETFs. This analysis highlights shifts in investor preference for municipal bonds.



Source: MarketDesk Research

**Figure 47: Relative Yields across Muni Bond Types**

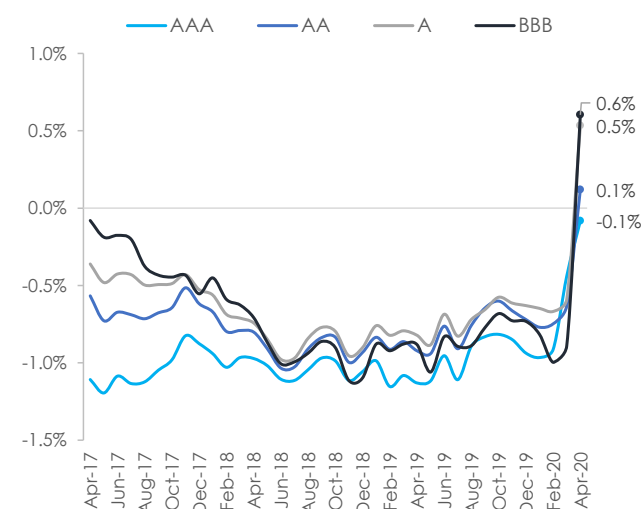
Yield of muni bond types vs diversified muni bond index.



Source: MarketDesk Research

**Figure 48: Muni Yields Relative to Corp Bonds by Ratings**

Comparative yield owning the same quality muni vs corp bonds.



Source: MarketDesk Research

**Figure 49: Muni Bond Spread — BBB vs AAA**

Yield spread between high (AAA) vs low (BBB) rated munis.



Source: MarketDesk Research

# Preferred Stocks & Convertible Bonds

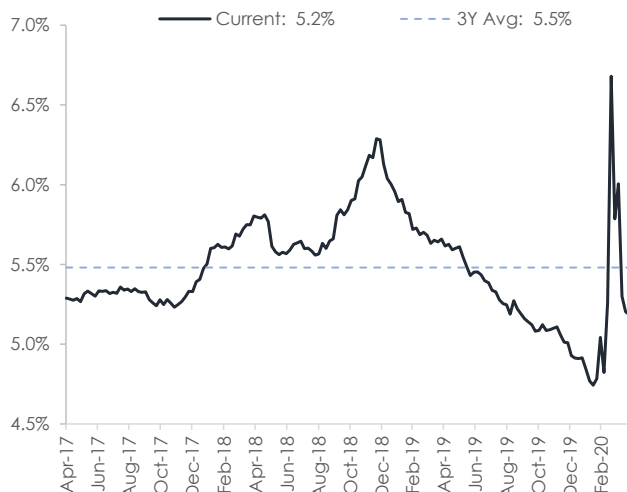
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**Figure 50: Preferred Stocks Yield vs 3-Year Average**

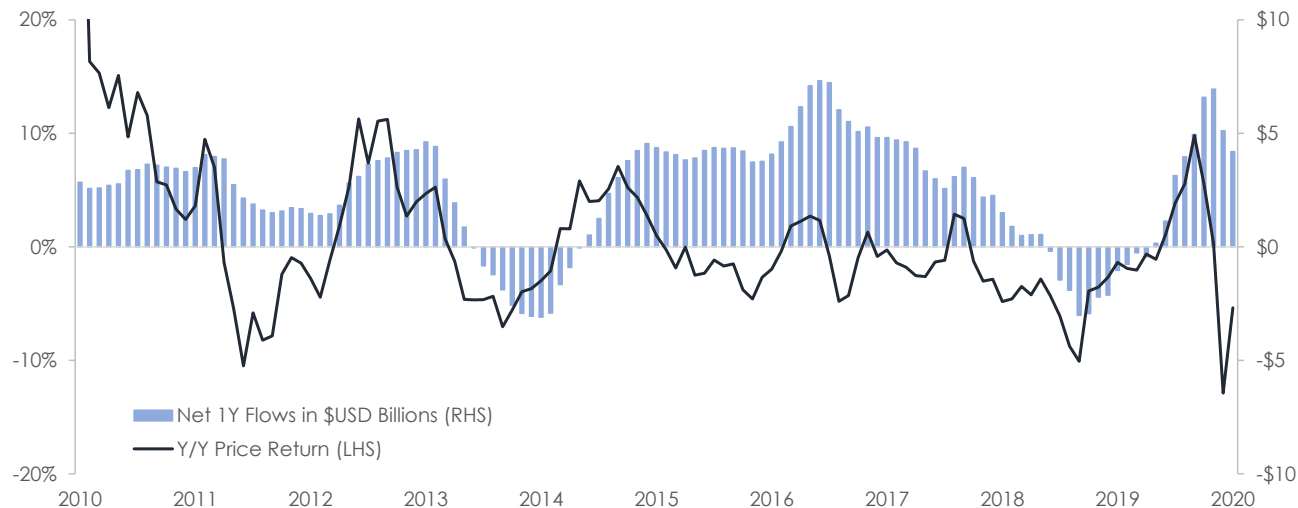
Historical yield earned owning preferred stocks.



Source: MarketDesk Research

**Figure 51: Preferred Stocks — Flows & Performance**

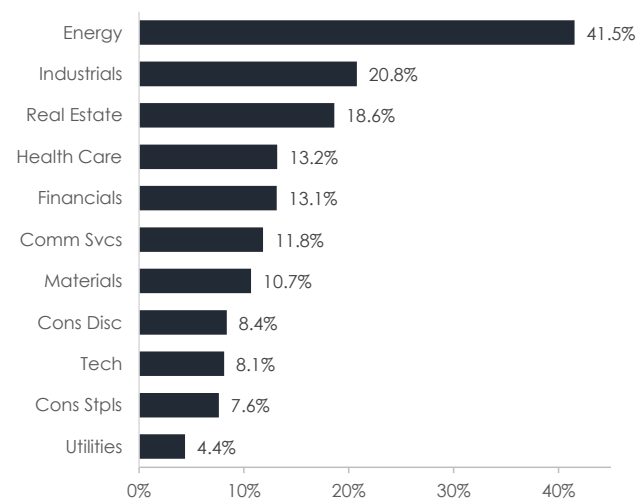
Rolling LTM return and net flows into preferred stock ETFs. This analysis highlights shifts in investor preference for preferred stocks.



Source: MarketDesk Research

**Figure 52: 1-Month Returns — Convertible Bonds by Sector**

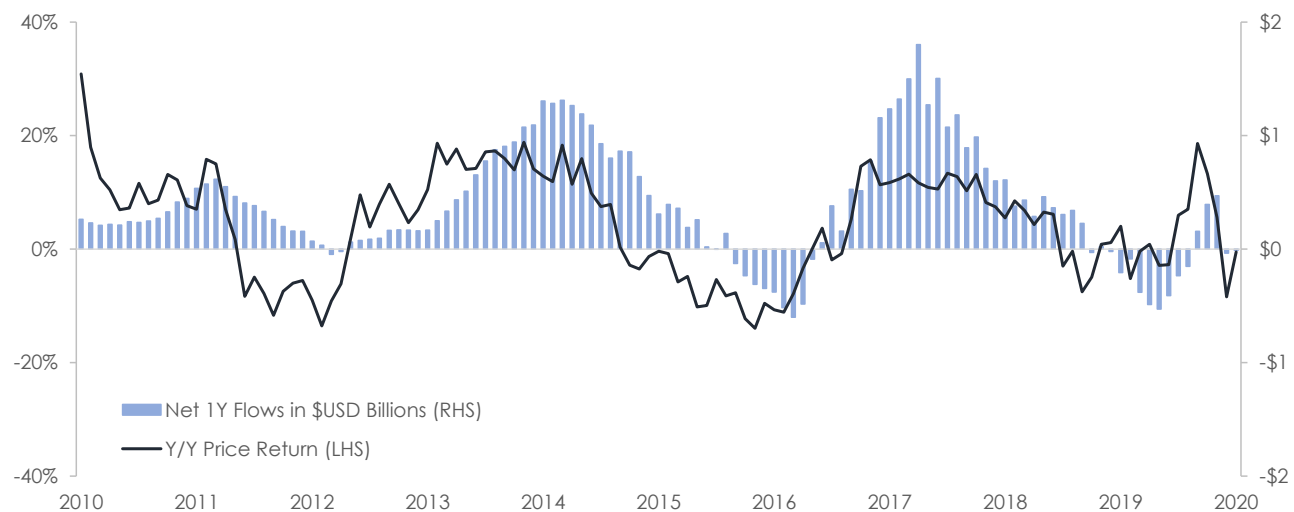
Trends in convertible bond performance by U.S. sector.



Source: MarketDesk Research

**Figure 53: Convertible Bonds — Flows & Performance**

Rolling LTM return and net flows into convertible bond ETFs. This analysis highlights shifts in investor preference for convertible bonds.



Source: MarketDesk Research

# Commercial Mortgage Backed Securities (CMBS)

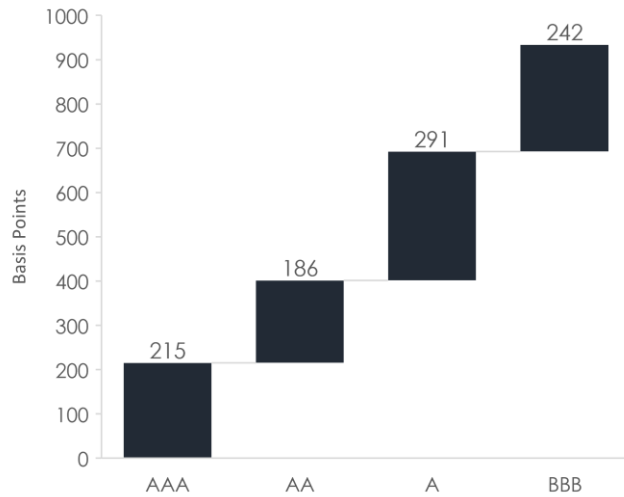
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## Overview

**Figure 54: Incremental CMBS Yield by Ratings Level**

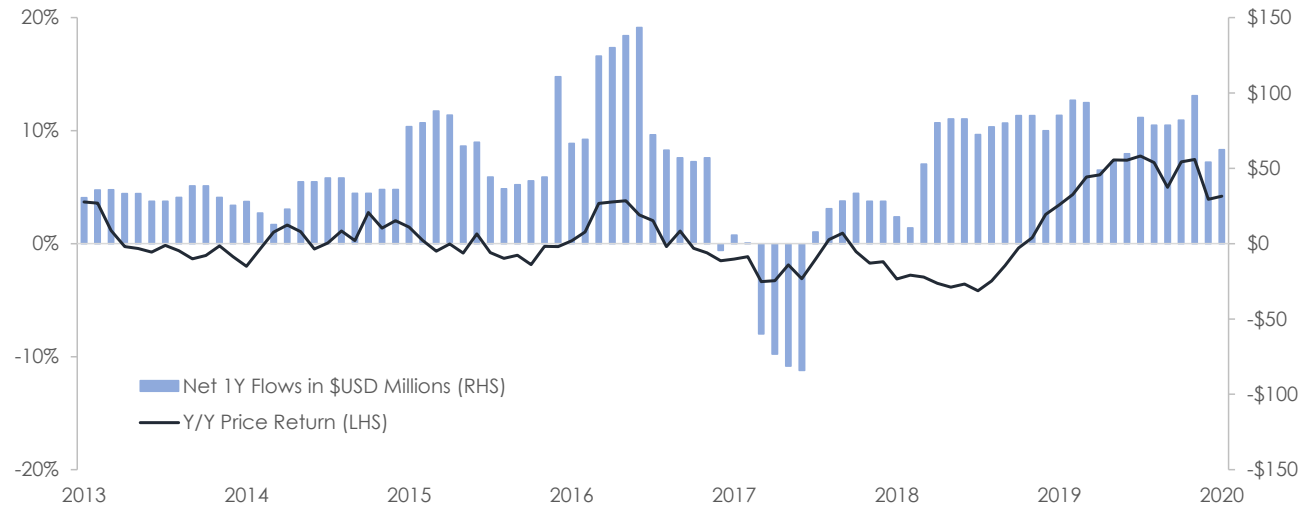
Additional CMBS yield earned owning one rating level lower.



Source: MarketDesk Research

**Figure 55: CMBS — Flows & Performance**

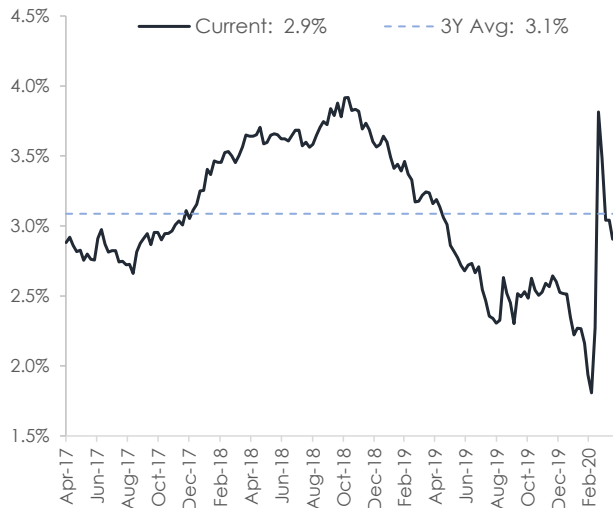
Rolling LTM return and net flows into CMBS ETFs. This analysis highlights shifts in investor preference for CMBS.



Source: MarketDesk Research

**Figure 56: CMBS Yield & 3-Year Average**

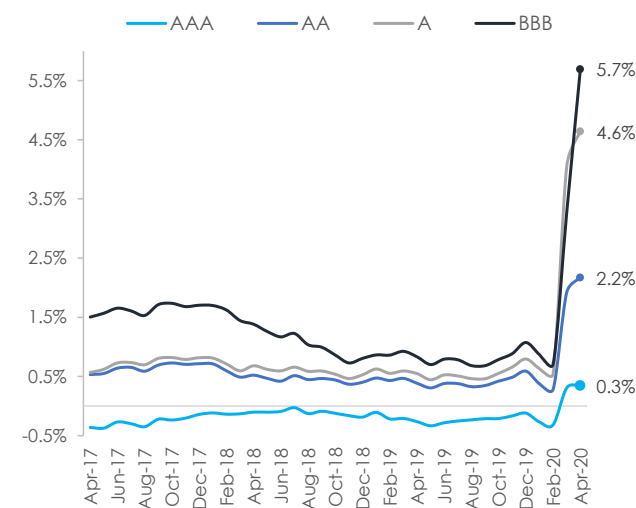
Historical yield earned owning CMBS.



Source: MarketDesk Research

**Figure 57: Relative Yields — CMBS vs Corporate Bonds**

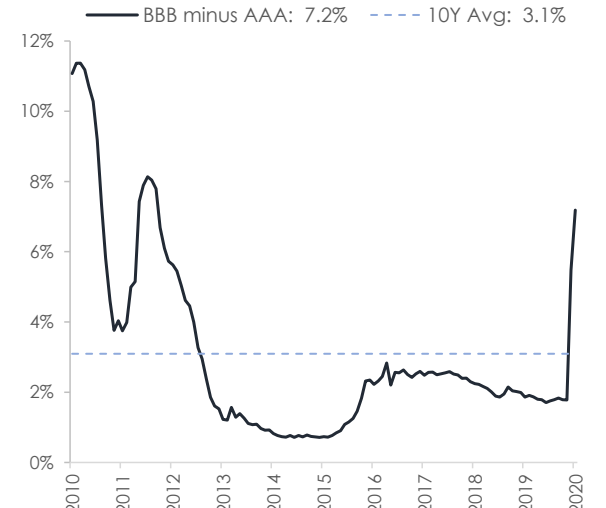
Comparative yield owning the same quality CMBS vs corp bonds.



Source: MarketDesk Research

**Figure 58: CMBS Spread — BBB vs AAA**

Yield spread between high (AAA) vs low (BBB) rated CMBS.



Source: MarketDesk Research





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