Shobhit Gupta +1 212 412 2056 shobhit.gupta@barclays.com BCI, US

James K Martin + 1 212 412 2345 james.k.martin@barclays.com BCI, US

Bradford Elliott, CFA +1 212 526 6704 bradford.elliott@barclays.com BCI, US

BBBs Have Only a Few Bad Apples

Macro headlines and monetary policy captured investor attention for much of 2019, but with recent US economic data showing signs of weakness, concerns about company balance sheets have increased. Indeed, we recently noted that some companies are likely facing margin compression through year-end (see *Some Weakness at the Margins*), and coming into the year there had already been a lot of ink spilled about the elevated leverage of large investment grade corporates (see *The Lowdown on the Lowest Rated BBBs*).

On the surface, stated net leverage for investment grade non-financials has increased materially, from 2.3x in 4Q18 to 2.5x in 2Q19. However, this increase is artificially inflated because of a 2019 GAAP accounting change that requires operating leases to be accounted for as liabilities. Many analysts were already adjusting for this manually, and while companies are now required to count operating lease obligations toward total debt from a GAAP standpoint, there obviously has not been any incremental risk added in the companies' ability to pay future liabilities. In fact, after we exclude operating leases from our 2019 debt numbers to construct an apples-to-apples comparison with historical data, leverage has actually declined through the first half of 2019, to 2.2x, which is in line with the long-term average (Figure 1). Furthermore, we find that the largest downward revision from this adjustment comes from BBBs, which at face value appeared to see net leverage rise from 2.7x to 3.0x in 2Q19, whereas, in fact, their net leverage was reduced to 2.5x (Figure 2).

Overall leverage numbers appear to be in line with historical levels even for BBBs. However, likely more troubling to investors is the "tail risk" in the cohort of lower-quality issuers with the highest leverage. Companies that engaged in large-scale debt-funded acquisitions in recent years have received increased scrutiny from ratings agencies and equity investors (see *M&A Names on Notice*), and with weaker economic data this year providing further evidence that we may be in the later stages of the economic cycle (see *Labor Market Momentum Shows Signs of Stalling*), concerns about the ability of these companies to reduce leverage organically appear warranted.

FIGURE 1
2019 Net Leverage Increase Was Due to the GAAP Change in Accounting for Operating Leases as Debt

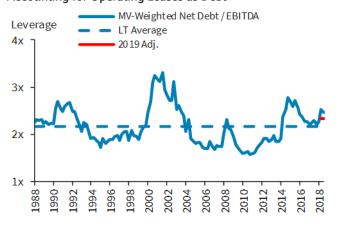
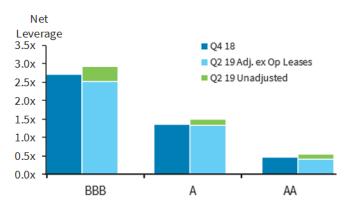


FIGURE 2

BBB Leverage Has Actually Declined after Adjusting for the GAAP Accounting Change



Source: Compustat, Bloomberg, Barclays Research

Source: Compustat, Bloomberg, Barclays Research

This document is intended for institutional investors and is not subject to all of the independence and disclosure standards applicable to debt research reports prepared for retail investors under U.S. FINRA Rule 2242. Barclays trades the securities covered in this report for its own account and on a discretionary basis on behalf of certain clients. Such trading interests may be contrary to the recommendations offered in this report. PLEASE SEE ANALYST CERTIFICATIONS AND IMPORTANT DISCLOSURES STARTING AFTER PAGE 5

FIGURE 3
Margins Have Improved for the Most Highly Leveraged BBBs

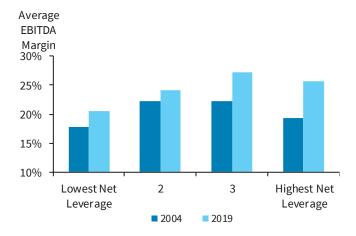
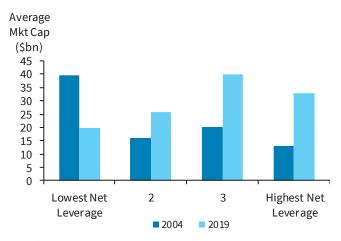


FIGURE 4
The Highest Leveraged BBBs Have Larger Market Caps

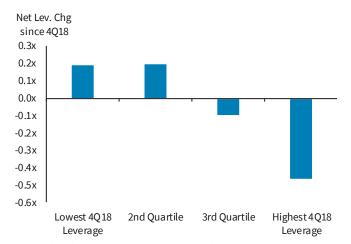


Note: Industrials only. Source: Compustat, Bloomberg, Barclays Research

Note: Industrials only. Source: Compustat, Bloomberg, Barclays Research

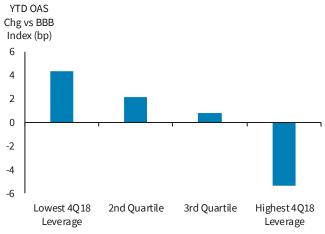
For the highest leverage BBBs, spot leverage does appear elevated relative to pre-crisis levels, but there are offsetting positive factors. When we group BBB industrial tickers into quartiles by net leverage, the average leverage of the names in the highest quartile is 4.4x as of 2Q19, compared with 3.6x in 2004. However, these companies have seen other fundamental factors improve. Figure 3 compares the average EBITDA margin by leverage quartile in 2004 with 2Q19. Each cohort aside from the lowest quartile posted an improvement in margins, but companies in the highest quartile have seen the greatest increase – from 19% in 2004 to 26% currently. This is important, as EBITDA margins are a better predictor of spread performance than starting leverage in a significant sell-off (see *Beyond Leverage: Fundamental Factors that Matter*). In addition, we find that the most highly leveraged companies have much larger market capitalizations than in 2004, on average (Figure 4). Because of their increased size and diversification, these companies have multiple levers to pull if the current economic slowdown accelerates, reducing the risk that they pose to investors (see *Big BBBs Won't Break Bad*).

FIGURE 5
BBB Industrials with the Highest 4Q18 Leverage Have
Brought Leverage Down the Most....



Source: Bloomberg, Compustat, Barclays Research

FIGURE 6And Have Also Been the Best Performers



Source: Bloomberg, Compustat, Barclays Research

Highly leveraged companies have also taken steps toward improving fundamentals this year. Figure 5 shows the 4Q18 to 2Q19 change in leverage for companies broken out by 4Q18 leverage quartiles. Companies in the highest quartile at the start of the year have reduced it by roughly 0.5x on average. They have also been the best performers this year – their spreads have tightened 6bp more than BBB industrials (Figure 6). Within this group, the best performing companies have, for the most part, been those that have either made reducing leverage a focus (General Electric, AT&T, Campbell, AB InBev), or that had an inorganic shift in their fundamental profiles, such as Mylan.

Although the cohort has outperformed as a whole, several names have lagged. Figure 7 lists highly leveraged companies that have underperformed BBBs the most (our analysts also provide leverage figures for 4Q18 and 2Q19, as well as estimates for YE2019 and 2020 where possible). At current levels, we believe the risk/reward appears more balanced, with leverage of most of these credits trending lower or remaining stable. Three exceptions are ONEOK, Plains All American, and Molson Coors, which we are Underweight. Below, we provide detailed analyst commentary on the leverage paths of these credits.

FIGURE 7
Highly Leveraged BBBs That Have Underperformed the Most Year-to-Date

				Net Leverage				
Ticker	Market Value (\$bn)	Current OAS (bp)	YTD OAS Move (bp)	4Q18	2Q19	4Q19 Est	2020 Est	Analyst Rating
KHC	\$21.9	226	+15	4.3x	4.7x			
NWL^1	\$4.7	203	-8	3.7x	4.2x			Overweight
AGN	\$13.9	143	-13	2.8x	2.7x			Market Weight
CI	\$28.6	137	-16	3.4x	3.1x			Market Weight
OKE	\$12.4	200	-22	3.8x	4.2x	4.5x	4.3x	Underweight
CVS	\$60.3	148	-24	4.4x	4.2x			
KMI	\$29.1	196	-26	4.4x	4.6x	4.5x	4.2x	Market Weight
TRPCN	\$15.9	175	-27	5.5x	5.1x	4.7x	4.7x	Market Weight
PAA	\$9.0	207	-29	3.8x	3.2x	3.6x	4.1x	Underweight
SHW	\$7.6	126	-31	3.2x	3.4x	2.8x	2.5x	Market Weight
WRK	\$6.8	144	-34	3.1x	3.1x	3.0x	2.8x	Overweight
TAP	\$6.6	159	-35	3.8x	3.9x			Underweight

Note: Includes only \$5bn+ capital structures. ¹ NWL net leverage excludes operating leases. Source: Bloomberg, Compustat, Barclays Research

Analyst Commentary

Harry Mateer - Energy

Plains All American Pipeline (PAA)

After largely reaching its deleveraging goal earlier in 2019, we estimate that the combination of weaker Supply & Logistics (S&L) segment EBITDA and capex required for new projects will cause total leverage to increase slightly through 2020, which contrasts with the deleveraging that we estimate for the overall midstream sector. We also think that PAA's \$1bn bond deal in September created a more challenging technical, and there are some fundamental concerns associated with potentially slowing production growth in the Permian at the same time that new pipeline capacity has come online.

ONEOK Inc. (OKE)

OKE outspent cash flow on its organic project backlog, which increased its near-term leverage profile. We expect EBITDA growth in 2020-21 to pull OKE's leverage back down next year, although low natural gas and NGL prices may add some uncertainty about its

Harry Mateer +1 212 412 7903 harry.mateer@barclays.com BCI, US

Andrew Keches, CFA +1 212 412 5248 andrew.keches@barclays.com BCI, US

Brittany Chen +1 212 412 3841 brittany.chen@barclays.com BCI. US

Priya Ohri-Gupta, CFA +1 212 412 3759 priya.ohrigupta@barclays.com BCI, US future volume growth. We expect that OKE will potentially trade slightly wide of the sector in the next few quarters as leverage continues to rise.

Andrew Keches - Basic Industry

WestRock Company (WRK)

Leverage remains elevated following the acquisition of Kapstone in 1Q19, in addition to earnings pressure from declining margins in containerboard and pulp. Containerboard fundamentals are expected to weaken through 2019 and into 2020 (although WRK is less exposed to margin pressure than peers given an advantaged cost position), but we think the company has capacity to repay debt in 2H19 and could accelerate paydown in 2020 as cash flow improves.

Sherman-Williams Co. (SHW)

Following the Valspar acquisition in 2Q17, leverage has been elevated and deleveraging has moved slowly, with additional earnings pressure from raw material inflation in 2018 that flowed through into early 2019. We expect coatings fundamentals to remain strong in 2019 and SHW to reach its target of 3.0x by YE19 by paying down debt; beyond 2019, we expect continued gradual deleveraging from EBITDA growth as the company works toward a 2.0-2.5x long term target

Brittany Chen - Healthcare

Cigna Corp (CI)

Despite the diversifying nature of its Express Scripts acquisition, Cigna's consolidated credit profile remains highly correlated to the performance of its legacy health insurance business. With the political narrative heavily centered on the ongoing "Medicare for All" debate and only expected to accelerate over time, investors have opportunistically trimmed their holdings throughout the year to lock in the returns generated since new issue. With the healthcare debate unlikely to subside soon, we do not anticipate a reversal of this weakness over the next few quarters, but also do not foresee another leg wider across the structure so long as management continues to reiterate its near-term deleveraging targets. We maintain a Market Weight rating on CI.

Allergan PLC (AGN)

In response to persistent pressure from equity investors, Allergan appeared increasingly likely to pursue one or more drastic actions to facilitate share price recovery through most of 1H19. Options it might have considered, according to management, included a break-up of the company, which is almost always credit negative for bondholders, who are left with a smaller and less diversified entity. This outlook, coupled with competitive concerns about the in-market portfolio, led the market to consider fallen angel risk. Around midyear, it was announced that Allergan would be sold to AbbVie, a deal that would purportedly eliminate downgrade risk if successfully completed. AGN bonds squeezed tighter briefly, but have since leaked wider given expectations of \$30bn in new senior notes pursuant to the financing plan and, to a lesser degree, concerns about a potential deal break-up.

Priya Ohri-Gupta – Food & Beverage/Consumer Products

BCI, US Molson Coors (TAP)

While TAP made progress toward its leverage target of 3.75x as it paid down \$936mn through 1H19 (net leverage at the end of the quarter was 3.9x), the company delayed its deleveraging trajectory, walking back a previously discussed 3.75x net debt/EBITDA objective to an expectation to be "below 4x" by year-end. With CEO Hunter stepping down at the end of September to be replaced by MillerCoors CEO Gavin Hattersley, the company has said that it will look to change through innovation. The name has traded within a 24bp OAS range relative to BBB industrials and currently trades modestly wide of the year-to-date average (60th

percentile). While we do not foresee the company having an issue meeting its leverage target by year-end, the lack of innovation, recent volatility related to its joint venture Truss with HEXO (the company recently pulled its guidance and announced that its CFO was stepping down), continued pressure within US beer, and the lack of a near-term catalyst support our Underweight rating.

Newell Brands (NWL)

NWL's year-to-date underperformance has been weighted toward the early part of the year, as the name underperformed BBB industrials by about 84bp through April 29, when the relationship was at the wides. Since then, however, NWL has outperformed BBB industrials by 54bp, as the company delivered solid earnings relative to expectations two quarters in a row, driven by operational momentum and strategic execution including asset sales and a recent tender offering. Moody's moved its outlook on the credit to stable on August 2. We feel comfortable fundamentally with regard to the story given working capital improvement that has led to strengthening free cash flow, as well as sharpened focus on innovation, SKU count, and improved positioning within a dynamic retail landscape.

Analyst Certification

We, Brittany Chen, Bradford Elliott, CFA, Shobhit Gupta, Andrew Keches, CFA, James K Martin, Harry Mateer and Priya Ohri-Gupta, CFA, hereby certify (1) that the views expressed in this research report accurately reflect our personal views about any or all of the subject securities or issuers referred to in this research report and (2) no part of our compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report.

Important Disclosures:

Barclays Research is produced by the Investment Bank of Barclays Bank PLC and its affiliates (collectively and each individually, "Barclays").

All authors contributing to this research report are Research Analysts unless otherwise indicated. The publication date at the top of the report reflects the local time where the report was produced and may differ from the release date provided in GMT.

Availability of Disclosures:

For current important disclosures regarding any issuers which are the subject of this research report please refer to https://publicresearch.barclays.com or alternatively send a written request to: Barclays Research Compliance, 745 Seventh Avenue, 13th Floor, New York, NY 10019 or call +1-212-526-1072.

Barclays Capital Inc. and/or one of its affiliates does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that Barclays may have a conflict of interest that could affect the objectivity of this report. Barclays Capital Inc. and/or one of its affiliates regularly trades, generally deals as principal and generally provides liquidity (as market maker or otherwise) in the debt securities that are the subject of this research report (and related derivatives thereof). Barclays trading desks may have either a long and / or short position in such securities, other financial instruments and / or derivatives, which may pose a conflict with the interests of investing customers. Where permitted and subject to appropriate information barrier restrictions, Barclays fixed income research analysts regularly interact with its trading desk personnel regarding current market conditions and prices. Barclays fixed income research analysts receive compensation based on various factors including, but not limited to, the quality of their work, the overall performance of the firm (including the profitability of the Investment Banking Department), the profitability and revenues of the Markets business and the potential interest of the firm's investing clients in research with respect to the asset class covered by the analyst. To the extent that any historical pricing information was obtained from Barclays trading desks, the firm makes no representation that it is accurate or complete. All levels, prices and spreads are historical and do not necessarily represent current market levels, prices or spreads, some or all of which may have changed since the publication of this document. Barclays Research Department produces various types of research including, but not limited to, fundamental analysis, equity-linked analysis, quantitative analysis, and trade ideas. Recommendations and trade ideas contained in one type of Barclays Research may differ from those contained in other type

In order to access Barclays Statement regarding Research Dissemination Policies and Procedures, please refer to https://publicresearch.barcap.com/S/RD.htm. In order to access Barclays Research Conflict Management Policy Statement, please refer to: https://publicresearch.barcap.com/S/CM.htm.

Materially Mentioned Issuers/Bonds

ALLERGAN FINANCE LLC, Market Weight, A/CD/D/E/J/K/L/M/N

CIGNA CORP, Market Weight, CD/CE/J/K/M/N

CVS HEALTH CORP, Overweight, A/CD/CE/D/E/J/K/L/M

DOW CHEMICAL CO/THE, Market Weight, A/CD/D/J/K/L/M

KINDER MORGAN INC/DE, Market Weight, CD/CE/D/J/K/L/M

KRAFT HEINZ FOODS CO, Market Weight, A/CD/D/J/K/L/M

MOLSON COORS BREWING CO, Underweight, CD/CE/J/K/N

NEWELL BRANDS INC, Overweight, CD/CE/D/J/K/L/M/N

ONEOK INC, Underweight, A/CD/CE/D/J/K/L/M

PLAINS ALL AMERICAN PIPELINE LP / PAA FINANCE CORP, Underweight, A/CD/D/J/K/L/M

SHERWIN-WILLIAMS CO/THE, Market Weight, CD/CE/J

TRANSCANADA PIPELINES LTD, Market Weight, CD/D/J/K/L/M

WRKCO INC, Overweight, CD/J/K/M/N

All pricing information is indicative only. Prices are sourced from Refinitiv as of the last available closing price at the time of production of the research report, unless another time and source is indicated.

Disclosure Legend:

A: Barclays Bank PLC and/or an affiliate has been lead manager or co-lead manager of a publicly disclosed offer of securities of the issuer in the previous 12 months

B: An employee or non-executive director of Barclays PLC is a director of this issuer.

CD: Barclays Bank PLC and/or an affiliate is a market-maker in debt securities issued by this issuer.

CE: Barclays Bank PLC and/or an affiliate is a market-maker in equity securities issued by this issuer.

D: Barclays Bank PLC and/or an affiliate has received compensation for investment banking services from this issuer in the past 12 months.

E: Barclays Bank PLC and/or an affiliate expects to receive or intends to seek compensation for investment banking services from this issuer within the next 3 months.

FA: Barclays Bank PLC and/or an affiliate beneficially owns 1% or more of a class of equity securities of this issuer, as calculated in accordance with US regulations.

FB: Barclays Bank PLC and/or an affiliate beneficially owns a long position of more than 0.5% of a class of equity securities of this issuer, as calculated in accordance with EU regulations.

FC: Barclays Bank PLC and/or an affiliate beneficially owns a short position of more than 0.5% of a class of equity securities of this issuer, as calculated in accordance with EU regulations.

GD: One of the analysts on the fundamental credit coverage team (or a member of his or her household) has a financial interest in the debt or equity securities of this issuer.

GE: One of the analysts on the fundamental equity coverage team (or a member of his or her household) has a financial interest in the debt or equity securities of this issuer.

H: This issuer beneficially owns more than 5% of any class of common equity securities of Barclays PLC.

I: Barclays Bank PLC and/or an affiliate is party to an agreement with this issuer for the provision of financial services to Barclays Bank PLC and/or an affiliate.

J: Barclays Bank PLC and/or an affiliate is a liquidity provider and/or trades regularly in the securities of this issuer and/or in any related derivatives.

K: Barclays Bank PLC and/or an affiliate has received non-investment banking related compensation (including compensation for brokerage services, if applicable) from this issuer within the past 12 months.

L: This issuer is, or during the past 12 months has been, an investment banking client of Barclays Bank PLC and/or an affiliate.

M: This issuer is, or during the past 12 months has been, a non-investment banking client (securities related services) of Barclays Bank PLC and/or an affiliate.

N: This issuer is, or during the past 12 months has been, a non-investment banking client (non-securities related services) of Barclays Bank PLC and/or an affiliate.

O: Not in use.

P: A partner, director or officer of Barclays Capital Canada Inc. has, during the preceding 12 months, provided services to the subject company for remuneration, other than normal course investment advisory or trade execution services.

Q: Barclays Bank PLC and/or an affiliate is a Corporate Broker to this issuer.

R: Barclays Capital Canada Inc. and/or an affiliate has received compensation for investment banking services from this issuer in the past 12 months.

S: This issuer is a Corporate Broker to Barclays PLC.

T: Barclays Bank PLC and/or an affiliate is providing equity advisory services to this issuer.

U: The equity securities of this Canadian issuer include subordinate voting restricted shares.

V: The equity securities of this Canadian issuer include non-voting restricted shares.

Explanation of the Barclays Research Corporate Credit Sector Rating System

Overweight (OW):

For sectors rated against the Bloomberg Barclays U.S. Credit Index, the Bloomberg Barclays Pan-European Credit Index, the Bloomberg Barclays EM Asia USD High Grade Credit Index or the Bloomberg Barclays EM USD Corporate and Quasi-Sovereign Index, the analyst expects the six-month excess return of the sector to exceed the six-month excess return of the relevant index.

For sectors rated against the Bloomberg Barclays U.S. High Yield 2% Issuer Capped Credit Index, the Bloomberg Barclays Pan-European High Yield 3% Issuer Capped Credit Index excluding Financials, the Bloomberg Barclays Pan-European High Yield Finance Index or the Bloomberg Barclays EM Asia USD High Yield Corporate Credit Index, the analyst expects the six-month total return of the sector to exceed the six-month total return of the relevant index.

Market Weight (MW):

For sectors rated against the Bloomberg Barclays U.S. Credit Index, the Bloomberg Barclays Pan-European Credit Index, the Bloomberg Barclays EM Asia USD High Grade Credit Index or the Bloomberg Barclays EM USD Corporate and Quasi-Sovereign Index, the analyst expects the six-month excess return of the sector to be in line with the six-month excess return of the relevant index.

For sectors rated against the Bloomberg Barclays U.S. High Yield 2% Issuer Capped Credit Index, the Bloomberg Barclays Pan-European High Yield 3% Issuer Capped Credit Index excluding Financials, the Bloomberg Barclays Pan-European High Yield Finance Index or the Bloomberg Barclays EM Asia USD High Yield Corporate Credit Index, the analyst expects the six-month total return of the sector to be in line with the six-month total return of the relevant index.

Underweight (UW):

For sectors rated against the Bloomberg Barclays U.S. Credit Index, the Bloomberg Barclays Pan-European Credit Index, the Bloomberg Barclays EM Asia USD High Grade Credit Index or the Bloomberg Barclays EM USD Corporate and Quasi-Sovereign Index, the analyst expects the six-month excess return of the sector to be less than the six-month excess return of the relevant index.

For sectors rated against the Bloomberg Barclays U.S. High Yield 2% Issuer Capped Credit Index, the Bloomberg Barclays Pan-European High Yield 3% Issuer Capped Credit Index excluding Financials, the Bloomberg Barclays Pan-European High Yield Finance Index or the Bloomberg Barclays EM Asia USD High Yield Corporate Credit Index, the analyst expects the six-month total return of the sector to be less than the six-month total return of the relevant index.

Sector definitions:

Sectors in U.S. High Grade Research are defined using the sector definitions of the Bloomberg Barclays U.S. Credit Index and are rated against the Bloomberg

Barclays U.S. Credit Index.

Sectors in U.S. High Yield Research are defined using the sector definitions of the Bloomberg Barclays U.S. High Yield 2% Issuer Capped Credit Index and are rated against the Bloomberg Barclays U.S. High Yield 2% Issuer Capped Credit Index.

Sectors in European High Grade Research are defined using the sector definitions of the Bloomberg Barclays Pan-European Credit Index and are rated against the Bloomberg Barclays Pan-European Credit Index.

Sectors in Industrials and Utilities in European High Yield Research are defined using the sector definitions of the Bloomberg Barclays Pan-European High Yield 3% Issuer Capped Credit Index excluding Financials and are rated against the Bloomberg Barclays Pan-European High Yield 3% Issuer Capped Credit Index excluding Financials.

Sectors in Financials in European High Yield Research are defined using the sector definitions of the Bloomberg Barclays Pan-European High Yield Finance Index and are rated against the Bloomberg Barclays Pan-European High Yield Finance Index.

Sectors in Asia High Grade Research are defined on Barclays Live and are rated against the Bloomberg Barclays EM Asia USD High Grade Credit Index.

Sectors in Asia High Yield Research are defined on Barclays Live and are rated against the Bloomberg Barclays EM Asia USD High Yield Corporate Credit Index.

Sectors in EEMEA and Latin America Research are defined on Barclays Live and are rated against the Bloomberg Barclays EM USD Corporate and Quasi Sovereign Index. These sectors may contain both High Grade and High Yield issuers.

definitions and monthly Tο view sector sector returns for Asia. **EEMEA** and Latin America Research. qo to https://live.barcap.com/go/research/EMSectorReturns on Barclays Live.

Explanation of the Barclays Research Corporate Credit Rating System

For all High Grade issuers covered in the US, Europe or Asia, and for all issuers in Latin America and EEMEA, the credit rating system is based on the analyst's view of the expected excess return over a six-month period of the issuer's index-eligible corporate debt securities* relative to the expected excess return of the relevant sector, as specified on the report.

Overweight (OW): The analyst expects the six-month excess return of the issuer's index-eligible corporate debt securities to exceed the six-month expected excess return of the relevant sector.

Market Weight (MW): The analyst expects the six-month excess return of the issuer's index-eligible corporate debt securities to be in line with the six-month expected excess return of the relevant sector.

Underweight (UW): The analyst expects the six-month excess return of the issuer's index-eligible corporate debt securities to be less than the six-month expected excess return of the relevant sector.

Rating Suspended (RS): The rating has been suspended temporarily due to market events that make coverage impracticable or to comply with applicable regulations and/or firm policies in certain circumstances including where the Investment Bank of Barclays Bank PLC is acting in an advisory capacity in a merger or strategic transaction involving the company.

Coverage Suspended (CS): Coverage of this issuer has been temporarily suspended.

Not Covered (NC): Barclays' fundamental credit research team does not provide formal, continuous coverage of this issuer and has not assigned a rating to the issuer or its debt securities. Any analysis, opinion or trade recommendation provided on a Not Covered issuer or its debt securities is valid only as of the publication date of this report and there should be no expectation that additional reports relating to the Not Covered issuer or its debt securities will be published thereafter.

For all High Yield issuers (excluding those covered in EEMEA or Latin America), the credit rating system is based on the analyst's view of the expected total returns over a six-month period of the rated debt security relative to the expected total return of the relevant sector, as specified on the report.

Overweight (OW): The analyst expects the six-month total return of the debt security subject to this rating to exceed the six-month expected total return of the relevant sector.

Market Weight (MW): The analyst expects the six-month total return of the debt security subject to this rating to be in line with the six-month expected total return of the relevant sector.

Underweight (UW): The analyst expects the six-month total return of the rated debt security subject to this rating to be less than the six-month expected total return of the relevant sector.

Rating Suspended (RS): The rating has been suspended temporarily due to market events that make coverage impracticable or to comply with applicable regulations and/or firm policies in certain circumstances including where the Investment Bank of Barclays Bank PLC is acting in an advisory capacity in a merger or strategic transaction involving the company.

Coverage Suspended (CS): Coverage of this issuer has been temporarily suspended.

Not Covered (NC): Barclays' fundamental credit research team does not provide formal, continuous coverage of this issuer and has not assigned a rating to the issuer or its debt securities. Any analysis, opinion or trade recommendation provided on a Not Covered issuer or its debt securities is valid only as of the publication date of this report and there should be no expectation that additional reports relating to the Not Covered issuer or its debt securities will be published thereafter.

Where a recommendation is made at the issuer level, it does not apply to any sanctioned securities, where trading in such securities would be prohibited under applicable law, including sanctions laws and regulations.

*In EEMEA and Latin America (and in certain other limited instances in other regions), analysts may occasionally rate issuers that are not part of the

Bloomberg Barclays U.S. Credit Index, the Bloomberg Barclays Pan-European Credit Index, the Bloomberg Barclays EM Asia USD High Grade Credit Index or Bloomberg Barclays EM USD Corporate and Quasi Sovereign Index. In such cases the rating will reflect the analyst's view of the expected excess return over a six-month period of the issuer's corporate debt securities relative to the expected excess return of the relevant sector, as specified on the report.

Distribution of ratings assigned by Barclays Corporate Credit Research at the issuer level:

25% have been assigned an Overweight rating which, for purposes of mandatory regulatory disclosures, is classified as a Buy rating; 65% of issuers with this rating category are investment banking clients of the Firm; 78% of the issuers with this rating have received financial services from the Firm.

49% have been assigned Market Weight rating which, for purposes of mandatory regulatory disclosures, is classified as a Hold rating; 68% of issuers with this rating category are investment banking clients of the Firm; 83% of the issuers with this rating have received financial services from the Firm.

26% have been assigned an Underweight rating which, for purposes of mandatory regulatory disclosures, is classified as a Sell rating; 58% of issuers with this rating category are investment banking clients of the Firm; 79% of the issuers with this rating have received financial services from the Firm.

Explanation of the Barclays EM Sovereign Credit Issuer Rating System

Overweight (OW):

The analyst expects the six-month excess return of the country's index eligible bonds to exceed the six-month excess return of the Bloomberg Barclays EM USD Sovereign Index.

Market Weight (MW):

The analyst expects the six-month excess return of the country's index eligible bonds to be in line with the six-month excess return of the Bloomberg Barclays EM USD Sovereign Index.

Underweight (UW):

The analyst expects the six-month excess return of the country's index eligible bonds to be less than the six-month excess return of the Bloomberg Barclays EM USD Sovereign Index.

Rating Suspended (RS):

The rating has been suspended temporarily due to market events that make coverage impracticable or to comply with applicable regulations and/or firm policies in certain circumstances including where the Investment Bank of Barclays Bank PLC is acting in an advisory capacity.

Distribution of ratings assigned by Barclays Emerging Markets Sovereign Research at the issuer level:

29% have been assigned an Overweight rating which, for purposes of mandatory regulatory disclosures, is classified as a Buy rating; 10% of issuers with this rating category are investment banking clients of the Firm; 60% of the issuers with this rating have received financial services from the Firm.

38% have been assigned Market Weight rating which, for purposes of mandatory regulatory disclosures, is classified as a Hold rating; 23% of issuers with this rating category are investment banking clients of the Firm; 69% of the issuers with this rating have received financial services from the Firm.

32% have been assigned an Underweight rating which, for purposes of mandatory regulatory disclosures, is classified as a Sell rating; 18% of issuers with this rating category are investment banking clients of the Firm; 91% of the issuers with this rating have received financial services from the Firm.

Types of investment recommendations produced by Barclays FICC Research:

In addition to any ratings assigned under Barclays' formal rating systems, this publication may contain investment recommendations in the form of trade ideas, thematic screens, scorecards or portfolio recommendations that have been produced by analysts in FICC Research. Any such investment recommendations produced by non-Credit Research teams shall remain open until they are subsequently amended, rebalanced or closed in a future research report. Any such investment recommendations produced by the Credit Research teams are valid at current market conditions and may not be otherwise relied upon.

Disclosure of other investment recommendations produced by Barclays FICC Research:

Barclays FICC Research may have published other investment recommendations in respect of the same securities/instruments recommended in this research report during the preceding 12 months. To view all investment recommendations published by Barclays FICC Research in the preceding 12 months please refer to https://live.barcap.com/go/research/Recommendations.

Legal entities involved in producing Barclays Research:

Barclays Bank PLC (Barclays, UK)

Barclays Capital Inc. (BCI, US)

Barclays Bank Ireland PLC, Frankfurt Branch (BBI, Frankfurt)

Barclays Bank Ireland PLC, Paris Branch (BBI, Paris)

Barclays Bank Ireland PLC, Milan Branch (BBI, Milan)

Barclays Securities Japan Limited (BSJL, Japan)

Barclays Bank PLC, Hong Kong branch (Barclays Bank, Hong Kong)

Barclays Capital Canada Inc. (BCCI, Canada)

Barclays Bank Mexico, S.A. (BBMX, Mexico)

Barclays Securities (India) Private Limited (BSIPL, India)

Barclays Bank PLC, India branch (Barclays Bank, India)

Barclays Bank PLC, Singapore branch (Barclays Bank, Singapore)

Disclaimer

This publication has been produced by Barclays Research Department in the Investment Bank of Barclays Bank PLC and/or one or more of its affiliates (collectively and each individually, "Barclays"). It has been prepared for institutional investors only and not for retail investors. It has been distributed by one or more Barclays affiliated legal entities listed below. It is provided to our clients for information purposes only, and Barclays makes no express or implied warranties, and expressly disclaims all warranties of merchantability or fitness for a particular purpose or use with respect to any data included in this publication. To the extent that this publication states on the front page that it is intended for institutional investors and is not subject to all of the

independence and disclosure standards applicable to debt research reports prepared for retail investors under U.S. FINRA Rule 2242, it is an "institutional debt research report" and distribution to retail investors is strictly prohibited. Barclays also distributes such institutional debt research reports to various issuers, media, regulatory and academic organisations for their own internal informational news gathering, regulatory or academic purposes and not for the purpose of making investment decisions regarding any debt securities. Media organisations are prohibited from re-publishing any opinion or recommendation concerning a debt issuer or debt security contained in any Barclays institutional debt research report. Any such recipients that do not want to continue receiving Barclays institutional debt research reports should contact debtresearch@barclays.com. Barclays will not treat unauthorized recipients of this report as its clients and accepts no liability for use by them of the contents which may not be suitable for their personal use. Prices shown are indicative and Barclays is not offering to buy or sell or soliciting offers to buy or sell any financial instrument.

Without limiting any of the foregoing and to the extent permitted by law, in no event shall Barclays, nor any affiliate, nor any of their respective officers, directors, partners, or employees have any liability for (a) any special, punitive, indirect, or consequential damages; or (b) any lost profits, lost revenue, loss of anticipated savings or loss of opportunity or other financial loss, even if notified of the possibility of such damages, arising from any use of this publication or its contents.

Other than disclosures relating to Barclays, the information contained in this publication has been obtained from sources that Barclays Research believes to be reliable, but Barclays does not represent or warrant that it is accurate or complete. Barclays is not responsible for, and makes no warranties whatsoever as to, the information or opinions contained in any written, electronic, audio or video presentations of third parties that are accessible via a direct hyperlink in this publication or via a hyperlink to a third-party web site ('Third-Party Content'). Any such Third-Party Content has not been adopted or endorsed by Barclays, does not represent the views or opinions of Barclays, and is not incorporated by reference into this publication. Third-Party Content is provided for information purposes only and Barclays has not independently verified its accuracy or completeness.

The views in this publication are solely and exclusively those of the authoring analyst(s) and are subject to change, and Barclays Research has no obligation to update its opinions or the information in this publication. Unless otherwise disclosed herein, the analysts who authored this report have not received any compensation from the subject companies in the past 12 months. If this publication contains recommendations, they are general recommendations that were prepared independently of any other interests, including those of Barclays and/or its affiliates, and/or the subject companies. This publication does not contain personal investment recommendations or investment advice or take into account the individual financial circumstances or investment objectives of the clients who receive it. The securities and other investments discussed herein may not be suitable for all investors. Barclays is not a fiduciary to any recipient of this publication. Investors must independently evaluate the merits and risks of the investments discussed herein, consult any independent advisors they believe necessary, and exercise independent judgment with regard to any investment decision. The value of and income from any investment may fluctuate from day to day as a result of changes in relevant economic markets (including changes in market liquidity). The information herein is not intended to predict actual results, which may differ substantially from those reflected. Past performance is not necessarily indicative of future results. The information provided does not constitute a financial benchmark and should not be used as a submission or contribution of input data for the purposes of determining a financial benchmark.

United Kingdom: This document is being distributed (1) only by or with the approval of an authorised person (Barclays Bank PLC) or (2) to, and is directed at (a) persons in the United Kingdom having professional experience in matters relating to investments and who fall within the definition of "investment professionals" in Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order"); or (b) high net worth companies, unincorporated associations and partnerships and trustees of high value trusts as described in Article 49(2) of the Order; or (c) other persons to whom it may otherwise lawfully be communicated (all such persons being "Relevant Persons"). Any investment or investment activity to which this communication relates is only available to and will only be engaged in with Relevant Persons. Any other persons who receive this communication should not rely on or act upon it. Barclays Bank PLC is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority and is a member of the London Stock Exchange.

European Economic Area ("EEA"): This material is being distributed in the EEA by Barclays Bank PLC. Barclays Bank PLC is not registered in France with the Autorité des marchés financiers or the Autorité de contrôle prudentiel.

Americas: The Investment Bank of Barclays Bank PLC undertakes U.S. securities business in the name of its wholly owned subsidiary Barclays Capital Inc., a FINRA and SIPC member. Barclays Capital Inc., a U.S. registered broker/dealer, is distributing this material in the United States and, in connection therewith accepts responsibility for its contents. Any U.S. person wishing to effect a transaction in any security discussed herein should do so only by contacting a representative of Barclays Capital Inc. in the U.S. at 745 Seventh Avenue, New York, New York 10019.

Non-U.S. persons should contact and execute transactions through a Barclays Bank PLC branch or affiliate in their home jurisdiction unless local regulations permit otherwise.

This material is distributed in Canada by Barclays Capital Canada Inc., a registered investment dealer, a Dealer Member of IIROC (www.iiroc.ca), and a Member of the Canadian Investor Protection Fund (CIPF).

This material is distributed in Mexico by Barclays Bank Mexico, S.A.

Japan: This material is being distributed to institutional investors in Japan by Barclays Securities Japan Limited. Barclays Securities Japan Limited is a joint-stock company incorporated in Japan with registered office of 6-10-1 Roppongi, Minato-ku, Tokyo 106-6131, Japan. It is a subsidiary of Barclays Bank PLC and a registered financial instruments firm regulated by the Financial Services Agency of Japan. Registered Number: Kanto Zaimukyokucho (kinsho) No. 143. Asia Pacific (excluding Japan): Barclays Bank PLC, Hong Kong Branch is distributing this material in Hong Kong as an authorised institution regulated by the Hong Kong Monetary Authority. Registered Office: 41/F, Cheung Kong Center, 2 Queen's Road Central, Hong Kong.

All Indian securities-related research and other equity research produced by Barclays' Investment Bank are distributed in India by Barclays Securities (India) Private Limited (BSIPL). BSIPL is a company incorporated under the Companies Act, 1956 having CIN U67120MH2006PTC161063. BSIPL is registered and regulated by the Securities and Exchange Board of India (SEBI) as a Research Analyst: INH000001519; Portfolio Manager INP000002585; Stock Broker/Trading and Clearing Member: National Stock Exchange of India Limited (NSE) Capital Market INB231292732, NSE Futures & Options INF231292732, NSE Currency derivatives INE231450334, Bombay Stock Exchange Limited (BSE) Capital Market INB011292738, BSE Futures & Options INF011292738; Depository Participant (DP) with the National Securities & Depositories Limited (NSDL): DP ID: IN-DP-NSDL-299-2008; Investment Adviser: INA000000391. The registered office of BSIPL is at 208, Ceejay House, Shivsagar Estate, Dr. A. Besant Road, Worli, Mumbai – 400 018, India. Telephone No: +91 2267196000. Fax number: +91 22 67196100. Any other reports produced by Barclays' Investment Bank are distributed in India by Barclays Bank PLC, India Branch, an associate of BSIPL in India that is registered with Reserve Bank of India (RBI) as a Banking Company under the provisions of The Banking Regulation Act, 1949 (Regn No BOM43) and registered with SEBI as Merchant Banker (Regn No INM000002129) and also as Banker to the Issue (Regn No INBI00000950). Barclays Investments and Loans (India) Limited, registered with RBI as Non Banking Financial Company (Regn No RBI CoR-07-00258), and Barclays Wealth Trustees (India) Private Limited, registered with Registrar of Companies (CIN U93000MH2008PTC188438), are associates of BSIPL in India that are not

authorised to distribute any reports produced by Barclays' Investment Bank.

This material is distributed in Singapore by the Singapore branch of Barclays Bank PLC, a bank licensed in Singapore by the Monetary Authority of Singapore. For matters in connection with this material, recipients in Singapore may contact the Singapore branch of Barclays Bank PLC, whose registered address is 10 Marina Boulevard, #23-01 Marina Bay Financial Centre Tower 2, Singapore 018983.

This material is distributed to persons in Australia by Barclays Bank PLC. None of Barclays Bank PLC, nor any other Barclays group entity, holds an Australian financial services licence and instead relies on an exemption from the requirement to hold such a licence. This material is intended to only be distributed to "wholesale clients" as defined by the Australian Corporations Act 2001.

Middle East: Nothing herein should be considered investment advice as defined in the Israeli Regulation of Investment Advisory, Investment Marketing and Portfolio Management Law, 1995 ("Advisory Law"). This document is being made to eligible clients (as defined under the Advisory Law) only. Barclays Israeli branch previously held an investment marketing license with the Israel Securities Authority but it cancelled such license on 30/11/2014 as it solely provides its services to eligible clients pursuant to available exemptions under the Advisory Law, therefore a license with the Israel Securities Authority is not required. Accordingly, Barclays does not maintain an insurance coverage pursuant to the Advisory Law.

This material is distributed in the United Arab Emirates (including the Dubai International Financial Centre) and Qatar by Barclays Bank PLC. Barclays Bank PLC in the Dubai International Financial Centre (Registered No. 0060) is regulated by the Dubai Financial Services Authority (DFSA). Principal place of business in the Dubai International Financial Centre: The Gate Village, Building 4, Level 4, PO Box 506504, Dubai, United Arab Emirates. Barclays Bank PLC-DIFC Branch, may only undertake the financial services activities that fall within the scope of its existing DFSA licence. Related financial products or services are only available to Professional Clients, as defined by the Dubai Financial Services Authority. Barclays Bank PLC in the UAE is regulated by the Central Bank of the UAE and is licensed to conduct business activities as a branch of a commercial bank incorporated outside the UAE in Dubai (Licence No.: 13/1844/2008, Registered Office: Building No. 6, Burj Dubai Business Hub, Sheikh Zayed Road, Dubai City) and Abu Dhabi (Licence No.: 13/952/2008, Registered Office: Al Jazira Towers, Hamdan Street, PO Box 2734, Abu Dhabi). Barclays Bank PLC in the Qatar Financial Centre (Registered No. 00018) is authorised by the Qatar Financial Centre Regulatory Authority (QFCRA). Barclays Bank PLC-QFC Branch may only undertake the regulated activities that fall within the scope of its existing QFCRA licence. Principal place of business in Qatar: Qatar Financial Centre, Office 1002, 10th Floor, QFC Tower, Diplomatic Area, West Bay, PO Box 15891, Doha, Qatar. Related financial products or services are only available to Business Customers as defined by the Qatar Financial Centre Regulatory Authority.

Russia: This material is not intended for investors who are not Qualified Investors according to the laws of the Russian Federation as it might contain information about or description of the features of financial instruments not admitted for public offering and/or circulation in the Russian Federation and thus not eligible for non-Qualified Investors. If you are not a Qualified Investor according to the laws of the Russian Federation, please dispose of any copy of this material in your possession.

IRS Circular 230 Prepared Materials Disclaimer: Barclays does not provide tax advice and nothing contained herein should be construed to be tax advice. Please be advised that any discussion of U.S. tax matters contained herein (including any attachments) (i) is not intended or written to be used, and cannot be used, by you for the purpose of avoiding U.S. tax-related penalties; and (ii) was written to support the promotion or marketing of the transactions or other matters addressed herein. Accordingly, you should seek advice based on your particular circumstances from an independent tax advisor.

© Copyright Barclays Bank PLC (2019). All rights reserved. No part of this publication may be reproduced or redistributed in any manner without the prior written permission of Barclays. Barclays Bank PLC is registered in England No. 1026167. Registered office 1 Churchill Place, London, E14 5HP. Additional information regarding this publication will be furnished upon request.

BRCF2242