Previously published in the U.S. Credit Alpha
17 May 2019

A Case for Hedging with Credit ETFs

Jigar Patel
+1 212 412 1161
jigar.n.patel@barclays.com
BCI, US

Following a rather extended period of calm, trade headlines over the past two weeks have reintroduced volatility to the marketplace, with equity and credit markets selling off sharply. Risk assets have recovered somewhat over the past several days, but the escalation of trade tensions between the US and China comes at a time when year-to-date high yield returns of 7.96% have already exceeded many investors' return expectations from the start of the year. But with more than seven months remaining until 2019 comes to a close, we think this is an opportune time for high yield investors to consider hedges to protect this year's gains.

In last week's *high yield section*, we discussed the tendency of the most liquid segments of the market to underperform in sell-offs and outperform in rallies, and we think this dynamic supports the use-case for credit ETFs as hedges. The two largest high yield ETFs, HYG and JNK, are both benchmarked to liquid subsets of broader high yield indices. HYG is benchmarked to the iBoxx USD Liquid HY Index, which uses a minimum amount outstanding of $400mn among other metrics as criteria for inclusion, while JNK is benchmarked to the Bloomberg Barclays US HY Very Liquid Index (VLI), which only includes bonds from the broader Bloomberg Barclays US High Yield Index ("the high yield index") that have at least $500mn outstanding and were issued within the past five years. Approximately 84% of the iBoxx index is also included in the VLI.

Looking at the three distinct periods over the past five years when the high yield index widened by at least 100bp within a six-month period, we found that the credit ETFs sold off as much or more than the broader high yield index (Figure 1). Furthermore, looking at performance over the past month (as of May 15), ETFs have again underperformed the high yield index.

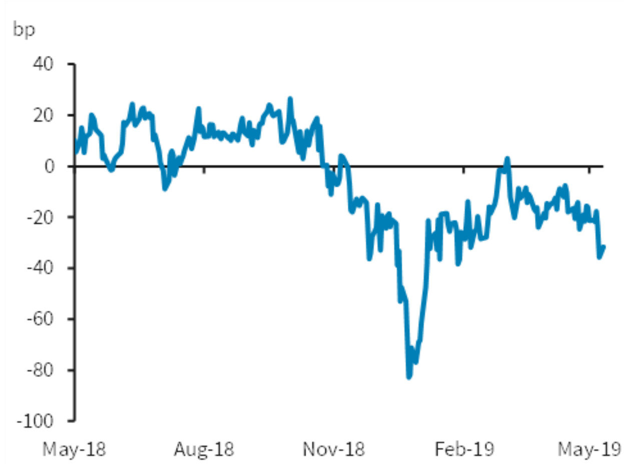
The use-case for credit ETFs was bolstered by their performance relative to CDX.HY in the first two periods in Figure 1. CDX.HY meaningfully outperformed (ie, sold off less) during those sell-offs, providing little protection for investors who chose to hedge with the derivatives index. At the time, CDX.HY had a significant underweight in terms of its energy exposure (4-5%), and we believe that this contributed to its relative outperformance versus cash. While the energy exposure of the index today (10%) is closer to that of the cash

FIGURE 1
HYG and JNK Performance Has Been in Line with or Worse Than the High Yield Index in Recent Sell-offs

	Jun-Dec '14	Aug '15-Feb '16	Q4 2018	1mth Ending 5/15/19
HY Index	-5.54%	-9.81%	-4.53%	-0.52%
HYG	-6.28%	-9.81%	-4.41%	-0.89%
JNK	-7.82%	-12.46%	-4.99%	-0.85%
CDX.HY	-1.95%	-2.98%	-4.07%	-0.91%

Source: Bloomberg, Bloomberg Barclays Indices, Barclays Research

FIGURE 2
The CDX.HY-VLI Basis Widened Significantly in 4Q18



Source: Bloomberg Barclays Indices, Barclays Research market (14%), there are other factors that continue to have the potential to drive tracking error between the derivatives index and the cash market, with the CDS-cash basis and interest rates being the two primary ones. We have found that the CDS-cash basis has tended to widen (ie, become more negative) during periods of significant weakness, and we think this dynamic has increased the attractiveness of hedging with credit ETFs. We saw this again in the fourth quarter of 2018 as the spread basis between CDX.HY and the VLI widened meaningfully (Figure 2).

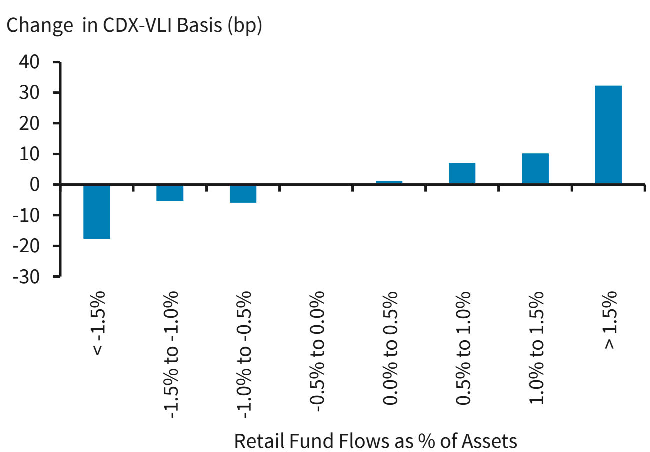
Given that the credit ETFs are benchmarked to cash indices, they are more directly affected by changes in cash market technicals than CDX.HY, including funding conditions, fund flows, and cash market liquidity, and we believe that these factors can drive meaningful changes in the CDS-cash basis, particularly in periods of stress. In Figure 3, we calculate weekly changes in the CDX-VLI basis and bucket them by fund flows as a percentage of AUM over the past five years (Figure 3). On average, periods with strong outflows have been associated with the CDX-VLI basis becoming more negative (VLI underperforming), while periods with significant inflows have corresponded with the basis becoming less negative (VLI outperforming). For investors that are concerned about this year's inflows to high yield potentially reversing in a sell-off, the credit ETFs could be a more compelling hedge than CDX.HY.

Something else to consider is how the premium/discount to NAV might change for credit ETFs and CDX.HY in a sell-off. On a long-term basis (using the past five years of data), HYG, JNK, and CDX.HY have on average traded at a premium to NAV: HYG +25bp, JNK +19bp, CDX.HY +39bp (or -9bp in spread terms). We can compare these levels to the average premium/discount for each in the 4Q18 sell-off. As Figure 4 shows, the premium for the credit ETFs declined significantly relative to the long-term average, while the premium for CDX.HY actually increased. And in the most recent sell-off (measured from May 1 to May 13), the premiums for HYG and JNK again declined. We think that the tendency for the ETFs to cheapen in the most recent sell-offs should increase their attractiveness as potential hedges.

While the prior discussion has focused on the historical justification for hedging with credit ETFs, we think that current market conditions also support using credit ETFs over CDX.HY. First, looking back at Figure 2, while the CDX-VLI basis has widened in the most recent sell-off, it remains well off the widest levels from 4Q18. Therefore, we think there is scope for it

FIGURE 3

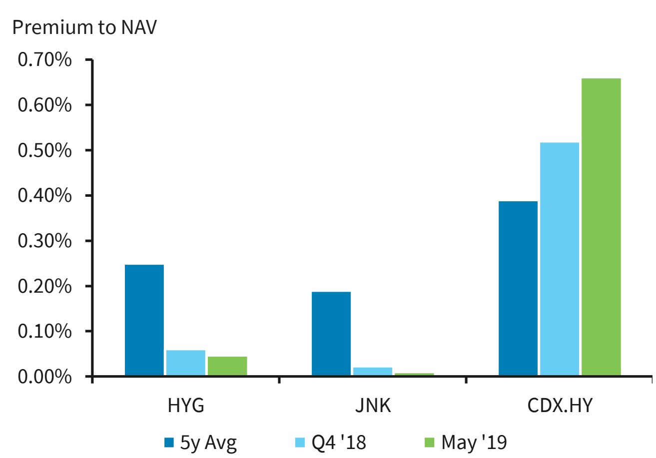
CDX-VLI Basis Has Exhibited a Strong Relationship with Weekly Fund Flows



Note: Analysis based on the past five years.
Source: EPFR, Bloomberg Barclays Indices, Barclays Research

FIGURE 4

The Premium to NAV Declined for Both HYG and JNK in Recent Sell-offs



Source: Bloomberg, Barclays Research

to widen further in a renewed bout of weakness. Second, with the market rallying over the past three days, the premium to NAV has actually increased for both JNK and HYG, to approximately 30bp as of the morning of May 16. We believe this creates a more attractive entry point for implementing hedges. Third, year-to-date inflows to high yield funds are still more than $13bn, according to EPFR. We think a reversal of flows would more directly affect the ETFs based on our prior analysis of the relationship between fund flows and the CDX-VLI basis. Since the ETFs are benchmarked to the most liquid parts of the high yield bond market, they should be more susceptible to risk reduction in that part of the market.

One consideration for investors is what they might be giving up by using the credit ETFs instead of CDX.HY. CDX remains the most liquid high yield portfolio product and does tend to respond to short-term market moves. Therefore, we believe it remains appropriate as a short-term market hedge. But for investors that are concerned about tracking error in a more prolonged selloff, we think the credit ETFs should be more effective.

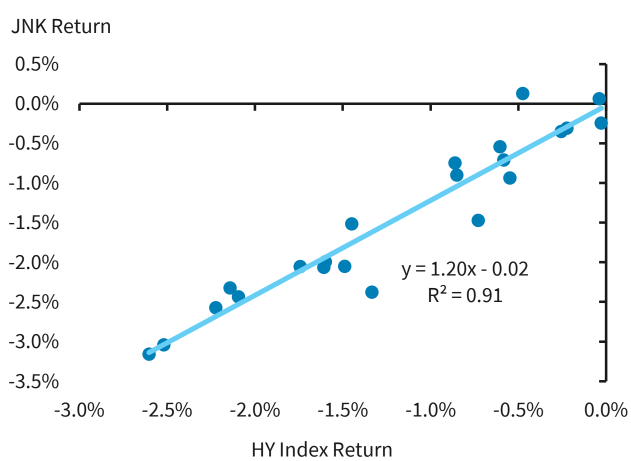
In terms of implementing a hedge, the simplest thing would be to go short the ETF shares. Looking back at Figure 1, JNK has generally displayed more downside than HYG during the sell-offs in our sample. Furthermore, if we examine the relationship of JNK and HYG to the high yield index in months over the past five years when the index returns were negative, we find that JNK has displayed a higher beta to index returns than HYG (Figures 5 and 6). We think that this is likely due to compositional differences between the two. Looking at a breakdown of each ETF by rating, we find that JNK has a lower BB weighting than HYG (46.6% versus 51.6%) and a higher CCC weighting (13.1% versus 10.7%).

As a result, for investors looking to hedge by going short ETF shares, we have a slight preference for JNK because of its higher historical beta to the high yield index in past sell-offs. JNK recently underwent a reverse split, which should also increase its attractiveness as a hedging vehicle, as now fewer shares will be required to hedge the same exposure. One thing to be aware of, however, is that HYG is the more liquid of the two, averaging $1.79bn in daily notional volume in 2019 versus $0.55bn for JNK. Depending on the size of the hedge, HYG's greater liquidity could outweigh JNK's higher beta.

One potential issue with shorting ETF shares is having to borrow the shares. The borrow costs are variable and tend to increase during times of stress, when the demand for shares increases. Notably, despite the weakness at the beginning of May, the borrow cost for both HYG and JNK remained stable at 0.4%. However, in the 4Q18 sell-off, borrow costs went as

FIGURE 5

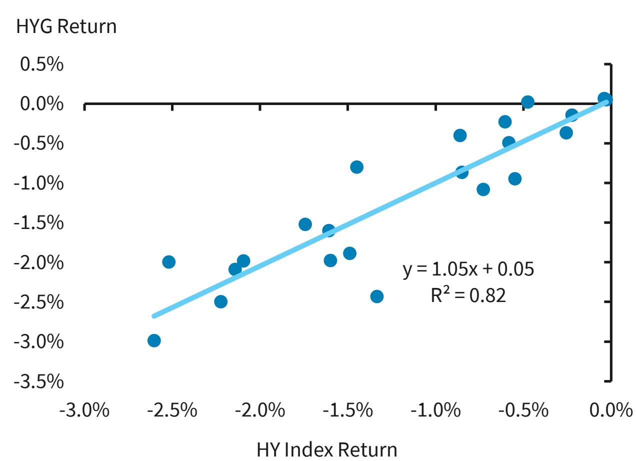
JNK Exhibited a High Beta to High Yield Index Returns in Months When High Yield Index Returns Were Negative



Note: Based on monthly returns for the five-year period ending April 30, 2019.
Source: Bloomberg, Bloomberg Barclays Indices, Barclays Research

FIGURE 6

HYG Also Exhibited a Strong Relationship with High Yield Index Returns, but with a Lower Beta



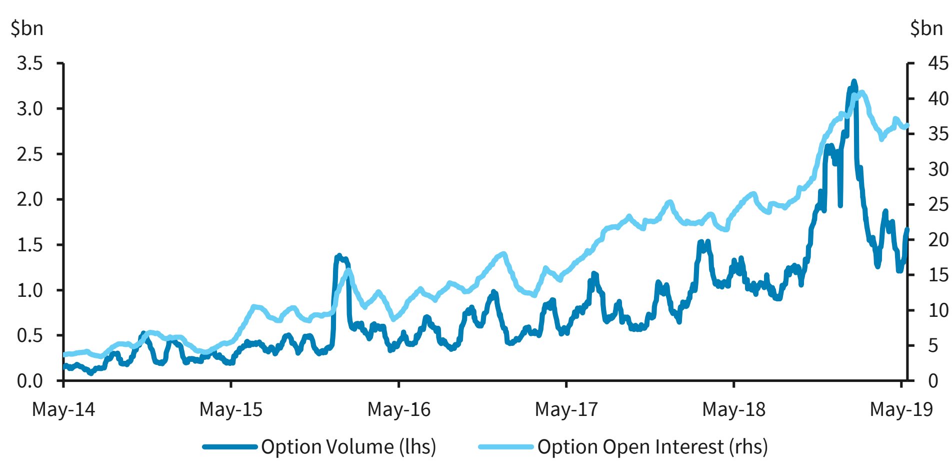
Note: Based on monthly returns for the five-year period ending April 30, 2019.
Source: Bloomberg, Bloomberg Barclays Indices, Barclays Research

high as 3%. One alternative to shorting the ETFs is to use total return swaps (TRS). We recently discussed the growth in standardized iBoxx HY TRS (see *iBoxx TRS Primer*), which has the same underlying index as HYG. Although the cost to go short via TRS will be tied to the borrow cost of HYG, as large divergences between the two would cause investors to favor one product over the other (all else being equal), there are some potential advantages to using TRS. Investors with a defined hedging horizon can benefit from only having to pay bid-ask when entering the TRS trade (as they can hold the position to maturity). TRS also allows investors looking to hedge to effectively lock in the current borrow cost, which, as we mentioned previously, does tend to increase for ETFs during times of stress.

One potential concern with shorting ETF shares or going short via TRS is that losses for both could be significant if the market were to rally from current levels. For these reasons, we think investors should consider hedging by using ETF options. Unfortunately, liquidity in JNK options has been slow to develop, but HYG options have become quite liquid, with volumes and open interest increasing over time, particularly in the fourth quarter of 2018 (Figure 7). For investors looking to protect against a moderate sell-off, we think a put spread can be an attractive way to hedge with defined risk-reward. For example, a July $85-$82 HYG put spread (ref $86.05) costs 55 cents and has a maximum net payout ratio of 4.5x the upfront premium paid if HYG closes at 82 or lower at July expiry. The trade provides protection and limits the downside to the upfront premium paid.

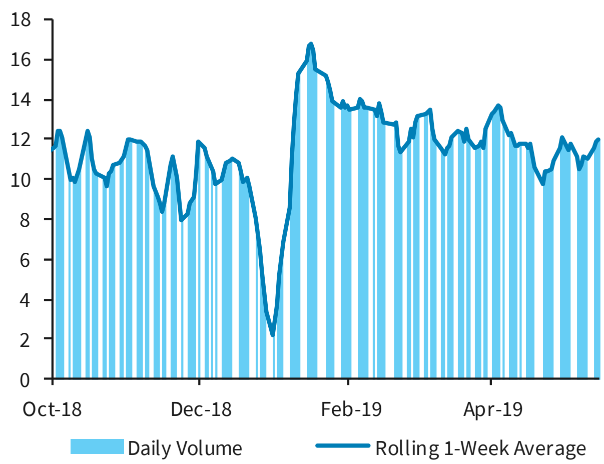
FIGURE 7

HYG Option Volumes and Open Interest Increased Sharply in 4Q18



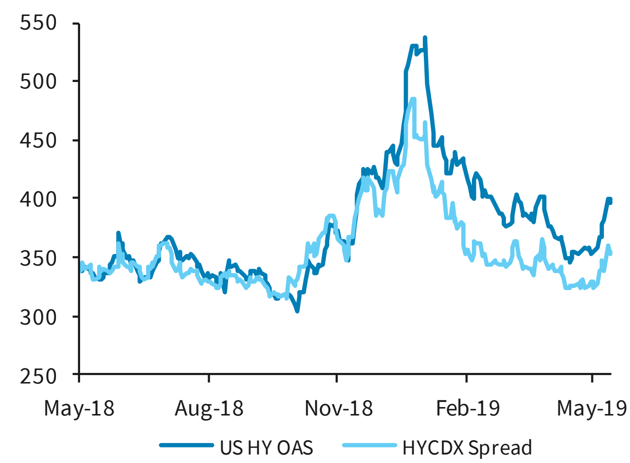
Note: Values shown are based on a rolling 21-day average and are in notional terms. Source: Bloomberg, Barclays Research

High Yield Average Institutional Trade Volume ($bn)



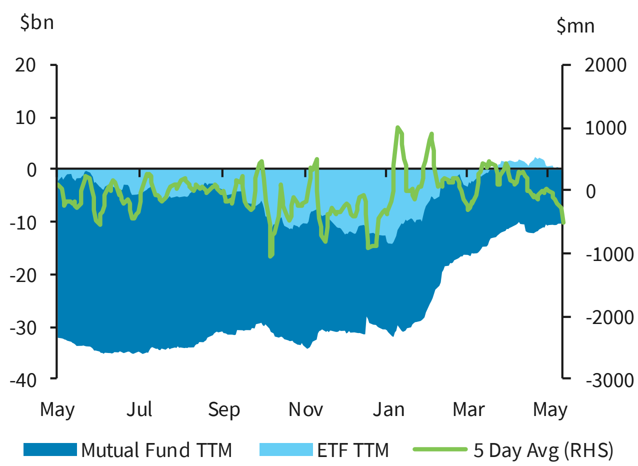
Note: Includes both registered and 144A volumes. Source: FINRA TRACE

On-the-Run HYCDX versus US High Yield Index (bp)



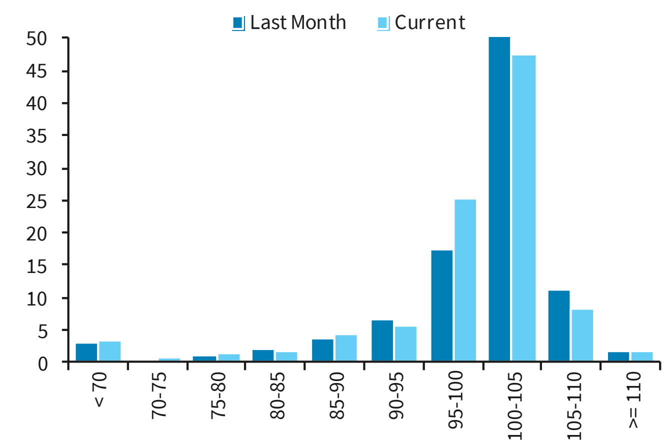
Source: Barclays Research

Flows to High Yield Mutual Funds and ETFs



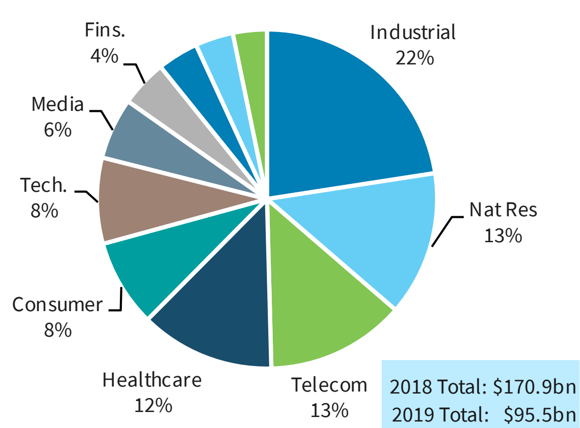
Note: Daily reporters only. Source: EPFR

High Yield Index Price Distribution by Par (%)



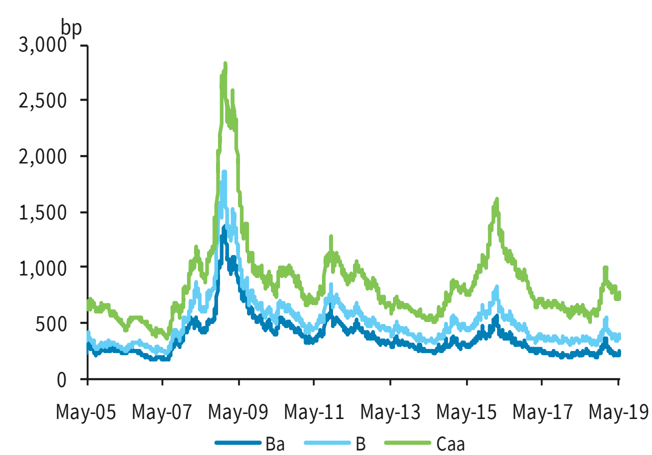
Source: Barclays Research

High Yield Supply by Sector



Note: 2019 new issue data as of May 15.
Source: Bloomberg Barclays Indices

High Yield Spreads by Credit Quality



Source: Bloomberg Barclays Indices

Analyst Certification
I, Jigar Patel, hereby certify (1) that the views expressed in this research report accurately reflect my personal views about any or all of the subject securities or issuers referred to in this research report and (2) no part of my 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 types of Barclays Research, whether as a result of differing time horizons, methodologies, or otherwise.
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*.

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.

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

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.

BRCF2242