BARCLAYS

Interest Rates Research
10 March 2020

US Money Markets

Unusual and exigent

Joseph Abate
+1 212 412 7459
joseph.abate@barclays.com
BCI, US

www.barclays.com

Last week, we briefly reviewed some steps the Federal Reserve might take to restore liquidity in key markets such as the Term Asset-backed securities Loan Facility (TALF) and the Term Auction Facility (TAF).[1] This week, we briefly review liquidity conditions and examine some of the limits placed on the Fed's ability to create emergency liquidity facility by the Dodd-Frank Act (DFA, 2010). We also consider what a "broader range" of asset purchases might entail.[2]

- **Signs of liquidity stockpiling have begun. Gov-only money balances are rising and daily CP issuance has slowed. Tier 2 borrowers have seen significant spread widening this week.**
- **To counter a potential intensification of liquidity pressures, the Fed increased the size of this week's open market operations.**
- **In addition, we expect it to increase pace of its monthly bill purchases while extending them through Q3.[3]**
- **The Fed's charter prevents it from purchasing corporate bonds and municipal debt longer than six months.**
- **Targeted lending programs such as the TALF, CPFF (commercial paper funding facility) and TSLF (term securities lending program) were created under the Fed's "unusual and exigent circumstances" clause.**
- **These programs may be more helpful in stimulating consumer and business lending than simply lowering the fed funds rate or expanding bank reserves.**
- **DFA limits, but does not prevent emergency lending from the Fed under this clause.**
- **Specifically, lending must be broad-based and not targeted to a specific firm. Borrowers must be solvent and the lending rate is meant to be a penalty rate.**
- **Pre-approval from the Treasury Secretary is required before the any program can be authorized. Congress must be informed within seven days.**
- **The Fed might have more flexibility with a discount window or TAF program.**

Finally, as we noted last week, the Treasury and Administration are considering programs to provide small business loans, lower payroll taxes, and paid sick leave.

[1] See *What comes next? Understanding the potential monetary and fiscal tool kits*, March 6, 2020.
[2] See "Rosengren Says Fed Should Consider a Wider Range of Assets", C. Condon and C. Torres, Bloomberg News, March 6, 2020
[3] See *Back to the zero lower bound*, March 9, 2020

Liquidity pressure

LOIS has widened by nearly 40bp since mid-February (Figure 1). Not surprisingly, this has added to market's anxiety. However, although there are emerging signs that liquidity conditions are tightening these have so far been relatively mild.

Daily CP issuance has slowed and WAMs have lengthened

In the past month, daily CP issuance has slowed by 6%. Companies are raising less short-term unsecured debt; however, they are also issuing it at longer tenors. CP WAMs have lengthened by about 2d since mid-February – to 56.1d. Overall CP outstanding has fallen about 2% (or $25bn) over the period. We do not have data on wholesale bank deposits, but our view, based on prime fund holdings, is that while lenders are becoming more cautious, they have not pulled away from unsecured financing markets. The CP data suggest that borrowers still have access to short-term unsecured funding – albeit at higher rates than in February. Borrowers appear more willing to lock in term funding to avoid the risk of a loss of financing market access. That said, lower quality Tier 2 as well energy company borrowers have seen a significant widening in spreads this week.

Repo rates are mildly heavier…

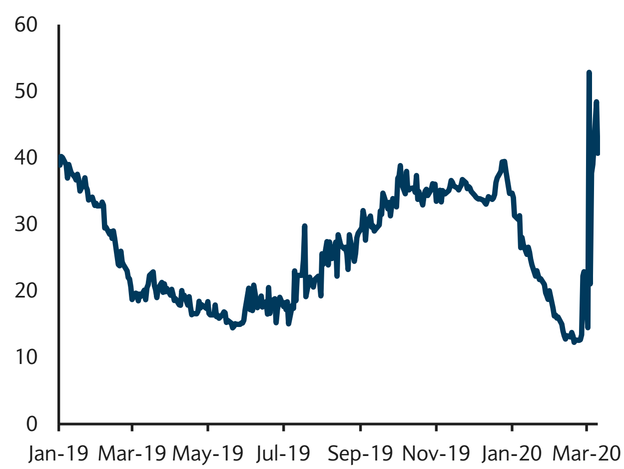
Repo markets reveal a similar dynamic. Rates have been mildly heavier than expected with the overnight SOFR rate trading a few basis points above the effective funds rate. But trading volumes are quite high – particularly in the cleared bilateral repo market where volumes have averaged $785bn/day this month compared with $695bn/day in the first half of February. But the repo market is considerably calmer than it was last September when SOFR jumped to more than 200bp above the fed funds rate. Term repo rates have widened about 25bp since late February.

Our sense is that the heaviness in repo rates is tied more to a sharp increase in funding demand caused by the dramatic rally in Treasuries rather than a pullback in the willingness of investors to lend against Treasury collateral. Instead, given where repo rates are trading relative to bills, it is more likely that cash lenders are struggling to get enough collateral. Moreover, dealer balance sheets are crowded as we head into the normal quarter-end reduction.

…and money has begun pouring into gov-only funds

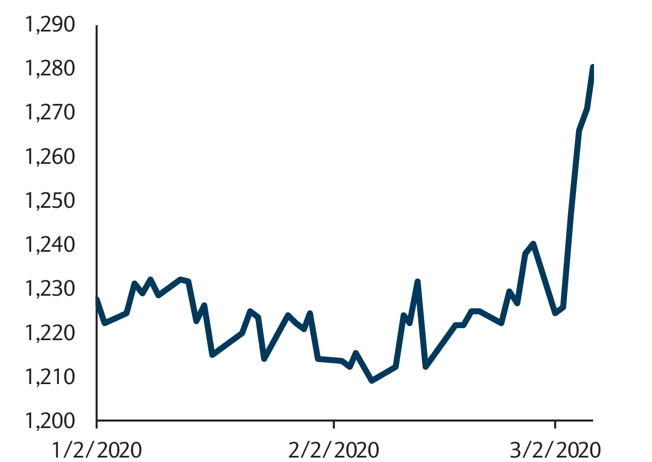
Indeed, institutional investors and corporate Treasurers are getting more nervous. Since last Wednesday, money has poured into gov-only money fund balances. These balances rose by $55bn (over 4%) between March 4 and 7 (Figure 2). As nervousness about access to credit and fears of a recession mount, we expect more institutional cash to flow into gov-only money funds. By contrast, retail balances were unchanged last week. However, the sharp decline in equity prices might push more retail money out of stocks into money fund balances and bank deposits this week.

FIGURE 1
LOIS 3m (bp)



Source: Bloomberg, Barclays Research

FIGURE 2
Institutional gov-only balances ($bn)



Source: Crane's Data, Barclays Research

More reserves

Clearly, as the strains in financial markets increase, the Fed may need to do more than cut the fed funds rate to the zero lower bound. But what it decides to do depends on the nature of strains in financial markets as well as what it can do under Dodd-Frank.

If the strains in financial markets are being driven by liquidity hoarding and a broad-based unwillingness to lend, one solution might simply be to increase the level of reserves through asset purchases or open market operations. Flooding the system with reserves might encourage banks and other lenders to more willingly part with their cash if they know that their own access to funding and liquidity levels was not at risk. Indeed, the Fed has already moved to increase reserves – early Monday morning it increased the size of this week's open market operations. Although we expect the Fed to keep these sizes in place after March 12, there is some chance that it increases them further – perhaps in conjunction with an interest rate cut. Indeed, on Tuesday, the newly enlarged 2w term operation was more than 2x oversubscribed.

We look for the Fed to increase its monthly bill purchases

We expect the Fed will go further. We look for the Fed to increase the size of its monthly bill purchases from $60bn/mo to between $80bn and $100bn/month and to extend these purchases through September. According to its now stale forecast from the January FOMC meeting, primary dealers looked for the Fed to shrink its purchase pace (of $60bn/mo) after April – to $30bn and $18bn in May and June, respectively.

Increasing the purchase pace might be problematic given the expected bill paydowns that start next month. We look for the Treasury to paydown $280bn in bills in Q2. However, this assumes that the Treasury keeps to its projected $400bn cash target that it predicted in early February. Boosting the size of this balance would allow the Treasury to reduce the size of this quarter's paydowns. That said, there have been no signs that the Fed's purchases are creating bill market disturbances. Auction bid-cover ratios and the monthly average turnover in the bill market are unchanged from before the start of the Fed's purchase program (Figure 3). As a result, we think the bill market can accommodate the Fed's extra purchases.

Can the Fed buy a broader range of assets?

The Fed's ability to buy assets is limited

The Federal Reserve Act limits the Fed's ability to buy assets other than government obligations. Under the Act, the Fed can buy municipal debt but only with maturities under 6m provided this debt has been issued in anticipation of "assured revenues." It cannot buy corporate credit. However, it is able to purchase bank acceptances and gold as well as some other relics of early 20th century (short-term) finance. Bank acceptances were short-term unsecured instruments used to finance trade. They were effectively post-dated bank certified checks that could be traded in the secondary market before maturity at a discount rate. The bank would (for a fee) guarantee the payment on the trade receivable. While these were popular in the 1970s and 1980s, they were gradually replaced by commercial paper. Moreover, we do not think the Fed has purchased any acceptances in decades.

Is it time for the Fed to consider buying short-maturity coupons?

In short, without a wholesale change to the Fed's charter, we do not expect the Fed to start buying corporate bonds in an effort to backstop market liquidity. Nor do we think buying very short maturity revenue anticipation municipals will help to unlock a liquidity jam should one develop in that market. Instead, short of buying MBS again, the Fed's asset purchases are limited to bills or longer maturity Treasuries.

As Fed officials have noted several times since December, if signs emerged that its bill purchases were creating distortions in the market, it would consider shifting its purchases to short-maturity coupons. Indeed, coupons with remaining maturities up to 2y have piled up on dealer balance sheets since last year (Figure 4). Together with their large holdings in longer date securities (>11y), Treasuries may be crowding dealer balance sheets. This crowding is compounded by the sharp rally in Treasury prices across the curve that has increased the nominal balance sheet consumption of these holdings. Thus, the Fed might be able to reduce some of the upward pressure on market repo rates by shifting its purchases from bills to coupons. Moreover, as the Fed approaches the zero lower bound, the distinction between reserve management purchases and QE may become less important. But, as noted above, the funding pressure in the repo market seems relatively mild – at least for now.

Unusual and exigent

Targeted lending may be more effective that reserve expansion

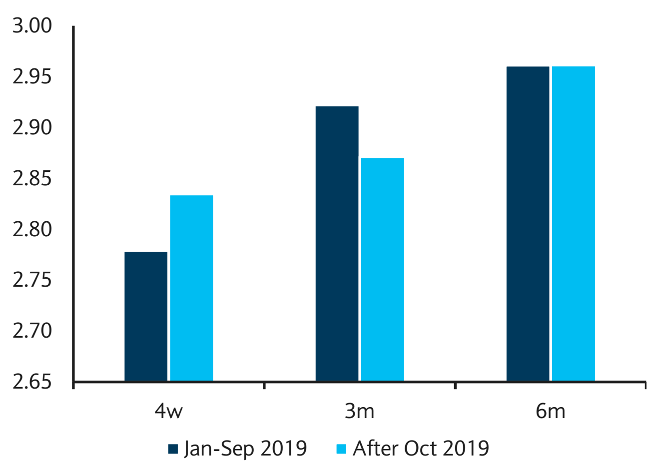
Clearly, if the stress in funding markets is tied to a specific sector or a general re-assessment of counterparty credit risk, then simply expanding the level of bank reserves may do little to stimulate lending to households and businesses. Instead, the Fed might have to reconsider some of the tools it used during the financial crisis to unlock liquidity. These tools were created under the “unusual and exigent circumstances” clause of the Federal Reserve Act. Section 13(3) allows the Fed – in times of severe market stress to provide credit to non-banks. Section 13(3) lending programs included Federal Reserve loans to JPM to purchase Bear Stearns and as well as to support AIG. It also included the TALF and CPFF programs as well as the TSLF. We believe these programs were some of the Fed’s most successful crisis tools. At their peak in November 2008, the Fed’s Section 13(3) lending exceeded $710bn.

TALF and CPFF were focused on unfreezing corporate credit

The TALF and CPFF programs focused directly on corporate credit – although two very different segments of that market. Under the TALF the Federal Reserve Bank of New York, lent $200bn to holders of asset-backed securities backed by new or recently issued consumer or small business loans. The Treasury provided a $20bn credit protection line to the Fed. This credit protection came from the Treasury’s Troubled Asset Relief Program (TARP). The commercial paper funding facility (CPFF) was a special purpose vehicle created by the Federal Reserve Bank of New York that instead focused on very short-maturity secured and unsecured corporate credit. The CPFF would buy 3m CP directly from issuers at a spread of 100bp above 3m OIS. The CPFF was created because the market for short-term unsecured debt had stopped functioning in September 2008. (It ultimately became the largest of the Fed’s liquidity programs at $350bn at its January 2009 peak). Liquidity hoarding and counterparty risk fears made investors unwilling to lend to the best non-bank companies at short maturities or at longer maturities against high quality loans and securities backed by loans on cars and other assets.

FIGURE 3

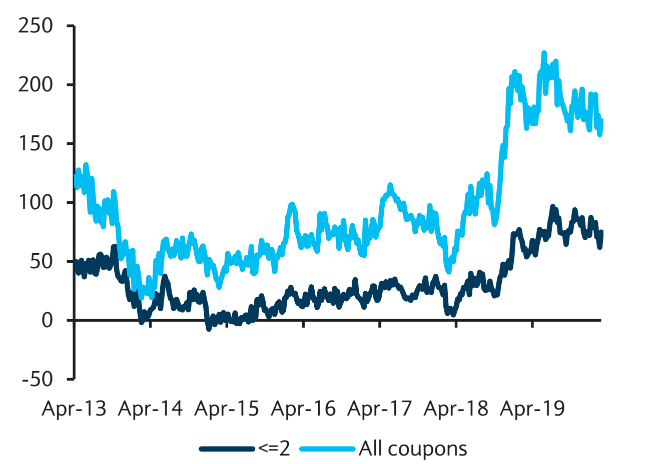
Average bill auction bid-cover ratios



Source: US Treasury, Barclays Research

FIGURE 4

Dealer holdings ($bn)



Source: Federal Reserve, Barclays Research

Although its focus was broader than corporate credit, the TSLF (or term securities lending facility) also helped loosen funding conditions. In this weekly program primary dealers were able to swap program-eligible securities (such as private label MBS) against Treasuries from the Fed's securities portfolio. Dealers would bid for a fixed amount of Treasuries in a competitive, single price auction for 28d financing, thus financing their non-Treasury collateral at a narrower spread to GC than what was otherwise available in the market. The TSLF program was created before the financial crisis – and several months before the CP and term asset-backed securities markets effectively shut down.

But can the Fed recreate these programs?

Dodd-Frank changes

Section 13(3) has been rewritten to provide aid to the financial system rather than a specific firm

Dodd-Frank (2010) limits the Fed's ability to use its exigent circumstances clause – but it does not remove it. Instead, the purpose of Section 13(3) has been modified somewhat to provide aid to the financial system rather than a specific firm. Firms applying to any 13(3) program must not be able to secure adequate credit from banks or markets.

Lending under the exigent circumstances clause always required the approval of five members of the Board of Governors. But Dodd-Frank, now requires the Fed to get additional pre-approval from the Treasury Secretary. In addition, the Fed must notify the House Banking and Senate Finance Committees within seven days of the program's creation. The notification letter must explain the justification of the program, name the borrowers, and include information on the amount borrowed, terms, and the expected cost to tax payers. The Fed must provide these Committee's with an update every 30 days. The Committees and the Fed are prohibited from releasing the names of the program borrowers to reduce any borrowing stigma. The Fed, however, is required to release identifying information including participant names one year after the program is terminated (or 24 months after the last credit extension assuming the Fed doesn't move to terminate the program).

Single name programs such as the $29bn loan the Fed provided to JPM to facility its purchase of Bear Stearns in March 2008 or the $85bn it lent to AIG in September 2008 would be prohibited under Dodd-Frank. Instead, any new lending program would need to be industry-wide or broad-based with at least five eligible borrowers. In theory, this would mean that the Fed's Maiden Lane programs would have had to been built to take collateral from a variety of investment banks and insurance companies.

That said, even with an industry-wide approach, Dodd-Frank prevents loans to insolvent companies. Borrowers must be current on all their borrowings over the past 90d. And, significantly, DFA prevents the Fed from removing impaired assets from a specific firm's balance sheet in order to keep it from filing for bankruptcy. Such asset removal – which was the basis of the Fed's Maiden Lane programs – would not meet DFA's broad-based eligibility requirements.

Fed lending programs must be collateralized and adequately margined. The Fed determines the value of any pledged collateral. Programs must be designed to sufficiently "protect taxpayers from losses. And all loans must be at a penalty rate.

So does this hamstring the Fed?

DFA may make it harder to create specific lending programs to nonbanks – but the Fed still has significant flexibility with respect to lending to depository intermediaries. Programs designed to make it easier for banks to lend to small businesses or households are easier for the Fed to create than ones in which it lends or provides guarantees directly to nonbanks and investors. We assume that getting approval from the Treasury Secretary to create a TALF-2020 would be fairly easy. The hurdle would come from structuring a line of credit protection for the Federal Reserve akin to the 2009 program. The original guarantee was created from TARP which itself was politically unpalatable in 2008. Recreating TARP in the middle of a very partisan election year seems unlikely. As an alternative, the Treasury Secretary might consider using the Exchange Stabilization Fund to protect the Fed from credit losses.[4] Indeed, the Treasury has a long history of using this fund for purposes other than buying and selling foreign currencies. During the crisis, the Fund was used as part of a guarantee program on money fund assets. Balances in the ESF are currently about $22bn.

As the Fed has more discretion over its discount window program we wonder if it might not be easier to recreate the TAF program. As part of the discount window, the TAF would already accept a wide range of collateral including small business loans as well as corporate bonds. As the program was structured as a recurring, competitive auction, it did not have the borrowing stigma associated with the discount window. As we noted last week, TAF became the "curtains on the discount window."

DFA permits FDIC to create a bank liability guarantee program

Separately, it is possible under DFA for the FDIC to guarantee bank liabilities. Unlike the financial crisis where capital injections and bank liability guarantees were focussed on large bank debt, a revised program could focus on smaller institutions most likely to be exposed to small businesses. Our sense, is that the FDIC might agree to provide these smaller banks with unlimited deposit insurance guarantee to ensure that their key funding base does not leave even if the bank experiences losses on its small business loan portfolio. Unlimited deposit insurance was also provided during the financial crisis. However, deposits rushed to the largest banks. Any bank liability guarantee provided by the FDIC is limited to solvent institutions. The Treasury Secretary and FDIC would jointly determine the policies, procedures, and fees for such a program. Significantly, the FDIC can borrow from the Treasury.

Horse to water

It is said you can lead a horse to water but you can't make it drink. This may also be true for bank lending. The Fed, Treasury, and FDIC have considerable flexibility with respect to supporting bank funding – whether through a TALF, the discount window, or with open market operations. But, they cannot compel banks to make loans to small businesses.

[4] The Treasury's website notes that "By law, the Secretary has considerable discretion in the use of ESF resources." This is not to suggest that unorthodox uses would not raise eyebrows in Congress. Recall that the ESF is regularly part of the Treasury's extraordinary measures once a debt ceiling suspension has expired.

Analyst Certification

I, Joseph Abate, 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. Unless otherwise indicated, prices are sourced from Refinitiv and reflect the closing price in the relevant trading market, which may not be the last available price at the time of publication.

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)
Barclays Bank PLC, DIFC Branch (Barclays Bank, DIFC)

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 and not for retail investors. It has been distributed by one

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. This material is distributed in New Zealand by Barclays Bank PLC, but it has not been registered, filed or approved by any New Zealand regulatory authority or under or in accordance with the Financial Markets Conduct Act of 2013, and this material is not a disclosure document under New Zealand law.

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). This material does not constitute or form part of any offer to issue or sell, or any solicitation of any offer to subscribe for or purchase, any securities or investment products in the UAE (including the Dubai International Financial Centre) and accordingly should not be construed as such. Furthermore, this information is being made available on the basis that the recipient acknowledges and understands that the entities and securities to which it may relate have not been approved, licensed by or registered with the UAE Central Bank, the Dubai Financial Services Authority or any other relevant licensing authority or governmental agency in the UAE. The content of this report has not been approved by or filed with the UAE Central Bank or Dubai Financial Services Authority. 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