

Credit Research Update

Peter Hajjar

Head of Cash and Structured Credit Research
Fixed Income, Cash and Currency

The third quarter of 2019 has certainly shaped up to be one of the more eventful quarters during the current business and credit cycle.

A summary of the seven major events that we must consider in relation to the current credit cycle, especially as it pertains to the Cash credit markets, are:

- 1 Escalation of the Trade War with China** On August 1, 2019 citing a lack of progress on trade talks, the United States announced that it would impose tariffs covering all imports from China by the end of the year. The United States also labeled China a “currency manipulator,” and later in the month President Trump “ordered” US companies to “start looking for an alternative to China.”
- 2 Weakening Economic Data** Real-time economic indicators such as global purchasing manager’s indices (PMIs) and trade data indicate that global growth is likely to decelerate further from its 2018 level. Global manufacturing is now in recession.
- 3 Government Bond Yields Plummet** Trade war escalation and weakening macroeconomic data prints triggered a precipitous drop in US Treasury bond (and global government bond) yields, further inverting the US yield curve at various tenors and stirring concerns about yield curve signals as it pertains to a possible recession.
- 4 Global Central Banks Respond to Slower Growth** Nineteen global central banks have eased policy since the fourth quarter of 2018 and it is widely expected that this number will grow.
- 5 Repo Chaos** In mid-September the US repurchase agreement (repo) markets were exceptionally volatile as a combination of factors reduced the amount of cash available to fund securities positions, prompting the Federal Reserve (Fed) to inject liquidity via open market operations on successive days.
- 6 Oil Price Spike** Also in mid-September, following an attack on critical oil infrastructure in Saudi Arabia, oil prices spiked (+15% one day price jump for WTI).
- 7 Record US Investment Grade Bond Issuance** Despite a general increase in global and/or US recession fears, during the first two weeks of September a record amount of investment grade bonds were issued. Money is pouring into the investment grade market and issuers/companies are happy to take it.

It's quite clear that, short of a Fed policy mistake, the most significant threat to the US and global economies is a further acceleration of protection trade policies by the Trump Administration. The previous rounds of escalation in trade tensions have already had a pronounced impact on global growth via corporate confidence and capital expenditure. Global growth has already decelerated meaningfully from a peak of 4.0% year-over-year in the first quarter of 2018 to just 3.0% year-over-year in the second quarter of 2018 (close to the lows of the 2015–2016 down cycle). Global PMIs and new order indices are at 7-year lows.¹ While the consumer and services-oriented segments of developed market economies have continued to perform relatively well (particularly in the US), it is only a matter of time before the weak corporate confidence and business investment trends have spillover effects to the rest of the economy, including the labor market. A sustained increase in oil prices would be additional pressure point for consumer spending and confidence. As such, we believe that it is quite important that ongoing US-China trade negotiations lead to some type of truce or deceleration of tensions.

While synchronous policy easing should help prevent a nonlinear impact on financial conditions, we probably need a sustained truce in the US-China trade dispute for the global growth trajectory to improve materially in the near- to medium-term. If there is no truce, we believe that the best central banks could do is mitigate the tightening of financial conditions, but we are also concerned that too much easing could end up being counterproductive in supporting growth, as it could negatively impact the credit creation mechanism by undermining the efficiency of global banking sectors. For example, the latest easing move by the European Central Bank (ECB) put its deposit rate further into negative territory. Banks are built on deposits and deposit income, so in a negative-rate environment the system is always going to struggle from a profitability perspective. Major portions of the European banking system have successfully built capital, liquidity and funding buffers (to be compliant with the post-Financial Crisis regulator regimes), so the profitability challenges that negative rates pose are generally more of a problem for equity investors than debt investors, at present. However, if economic conditions worsen, a banking sector hampered by negative rates is less incentivized to expand its balance sheet to support the economy given the low returns on capital.

We'd be remiss if we didn't comment on the dramatic spike in repurchase agreement rates in mid-September. Unlike in 2008, the rise in short-term rates wasn't evidence that the financial system was in trouble. Rather, it was the result of a confluence of forces, including corporate tax payments, large Treasury auctions and a swelling US budget deficit. Although the security's financing markets have generally become safer and more diverse in recent years, they remain susceptible to temporary mismatches in the demand for funding and the availability of cash. Ultimately, the Fed's open market operations intervened to bridge the mismatch. While this event does not imply that there are systemic credit problems in the banking system, it does indicate that the decline in bank reserves leaves the amount of cash in the system at uncomfortable levels in certain scenarios. It suggests that the level of excess reserves at banks has reached an inflection point such that they are reluctant to play the role of the marginal buyer of repo, even though the considerable spread between overnight general collateral repo funding and interest-on-excess-reserves should incentive the banks to lend their reserves at significant profit. Ultimately, stringent liquidity and funding regulations that were implemented after the Global Financial Crisis have pushed banks to prioritize excess reserve substitution for regulatory compliance purposes. While rates' markets beyond the very front-end were stable as funding pressures surged, we are cognizant of the risks that elevated repo funding rates could have across broader funding markets if they persist for a prolonged period.

So where does all this leave us, as we ponder the condition of the credit and business cycles? Clearly, recession risks have risen, as US protectionist trade initiatives escalated. Still, while data from the manufacturing sector has been grim, service sectors have continued to hold up well. Unemployment remains low, wages are rising and consumer confidence and spending has been relatively strong. The sharp fall in market interest rates over the past 12 months is starting to support the economy with activity growth in rate-sensitive sectors like durables consumption (household appliances, recreational goods and motor vehicles) and the housing sector rebounding in recent months. Lower rates are unquestionably good for debt serviceability (consumer and corporate).

Most often, recessions are caused by either tightening of monetary policy, tightening of fiscal policy, bursting of a credit bubble/debt crisis, bursting of a housing/asset price bubble, and/or banking crisis. We believe the risk of each of these is low, in the near-term. Yet the risk of a cyclical downturn driven by an exogenous shock (trade uncertainty) is moderate, while reactive monetary and/or fiscal policy may not be able to provide enough of a buffer to prevent a recession and a pronounced downturn in the credit cycle.

For the last two years, as a credit research team, our motto has been, “Don’t worry about the end of the credit cycle: be ready for it.” For us that means selecting Cash investment counterparties that are best-equipped to maintain their fundamental credit profiles in a downturn.

Financial Institutions

United States

Indicators of a slowing global economy continued to emerge in the third quarter, including in measures of global manufacturing and business sentiment, driven by reacceleration of global trade disputes. While US bank management teams continue to point to resiliency in their corporate clients, they also acknowledge an underlying sense of caution given uncertainties related to the impact of the trade war on pricing, supply chains and inventory management.

To support the economic expansion, the Fed cut its policy rate by 25 basis points (bps) on two separate occasions in the third quarter. In tandem with these cuts, the market’s expectation of an extended easing cycle increased, standing in stark contrast to expectations of rate hikes earlier in the year. For banks, with rates trending down and recession risks rising, sell-side analysts broadly downgraded expectations of revenue growth, efficiency and profitability. Offsets to lower rates on net interest margin (NIM) could include increased mortgage banking fees, accumulated other comprehensive income benefits to capital levels and the potential for higher loan growth.

While the operating environment has become more challenging for US banks, the sector is outperforming industrials year-to-date in credit markets. Even as both face earnings’ headwinds, non-financial corporates have increased their leverage post-crisis while US banks have done the opposite. Underpinned by a host of regulatory initiatives, more stringent oversight and annual stress testing, banks are extremely well-capitalized and have seen leverage metrics decline. New regulations also support asset risk and underwriting.

Quarterly results at major US banks were a bit mixed relative to expectations even as there were few real surprises beyond greater-than-expected margin compression at some banks. The sector experienced its second straight quarterly NIM decline after reaching a 7-year high in late 2018.

Still, results look stronger from a historical standpoint with the FDIC indicating that the sector reported record net income, revenues, loans and deposits this quarter.² In addition, return on assets is just 3 bps from an all-time high and underpinned by robust efficiency as technology investments bear fruit.

Industry-wide asset quality trends also remain encouraging with the non-current loan ratio at the lowest level since mid-2007 and net charge-offs at one-third of their long-run average. The consumer segment is showing particular strength, as evidenced in delinquency data, while commercial asset quality remains good but has many large banks being a bit cautious, particularly in commercial real estate. Looking ahead, as the probability of recession is debated, it is important to remember that except for the Global Financial Crisis, instances of past asset quality weakness in recent decades have been manageable for the banking sector, even as capital and earnings have weakened.

Europe

The major event of the third quarter was Deutsche Bank (DB) finally announcing its turn-around plan. This includes eliminating equity sales and trading (8% of the Group's revenues) and running off a fifth of risk weighted assets by 2022. The plan has massive execution risk, but at least gives DB some focus as well as some brief breathing-room from the rating agencies in the near-term.

DB's drastic cuts exemplify the harsh revenue environment for European banks. While DB is an outlier, the rest of the industry also continues to struggle under low rates. The 2019 second quarter results included another round of earnings cuts and setbacks. Nordic banks heavily hinted their dividends' policies may need to be lowered, RBS cut its return on tangible equity goal, and HSBC's CEO abruptly resigned. The doom and gloom in the sector should be put into the context that most of this pain falls on shareholders. Eroding revenues are a disappointment for dividend-hungry shareholders while only a small negative for bondholders. After three straight quarters of banks' cutting their profit goals; a good deal of bad news is now already baked into future expectations.

On the positive side, loan losses are slowly rising but remain well-below historical averages. ECB deposit tiering and expense reduction programs are small offsets to the sector's current headwinds. Capital levels are sound for the majority of banks. Exemplified by the Bank of England reiterating this quarter that UK banks can not only survive a hard Brexit; they have the capacity to increase their lending to absorb, not amplify, Brexit's shocks.³

Canada

Third quarter results for the Big 6 banks largely beat consensus as good underlying revenue trends and positive operating leverage offset higher credit costs. Some of the banks with growing US operations faced higher-than-expected NIM compression on the back of recent actions by the Fed and changes in market rate expectations. Comparatively, Canadian NIMs held up well with domestic retail banking operations generating year-over-year earnings growth. This stands in contrast to a drag on year to date results from capital markets businesses. Looking ahead, as the overall macro and geopolitical environment is uncertain and domestic margins are likely to feel pressure, the banks are focused on improving their operating efficiency and potentially pursuing international expansion. To date, management teams have remained relatively sanguine about the outlook.

Economically, Canada continues to perform well and has been buoyed by a resilient labor market. Authorities have yet to resort to monetary easing and the market is not pricing in imminent rate cuts, in contrast to the US. The housing market has experienced a soft landing which suggests that macroprudential measures taken by the government to cool extreme home price appreciation over the prior five years, including the tightening of mortgage eligibility requirements, have served their purpose. These actions have also reduced the flow of new home loans to highly-indebted households and slowed the growth of consumer debt in general, which is positive. Despite very well-secured mortgage portfolios with a high percentage of government guaranteed loans, rapid home price declines combined and consumer deleveraging would have knock-on implications for non-mortgage consumer lending products, which are worth watching.

The IMF released a financial stability assessment on Canada this summer.⁴ The report described concerns around elevated household debt and housing market imbalances but concluded that major banks would remain resilient in managing through severe economic and financial shocks, a per its own stress test.

Australia

One of the major Australian banks reported its full-year results in the third quarter while others released trading updates. Results were generally in line with expectations. Revenue growth is under pressure driven by lower rates, slow asset growth and weaker fee income while expenses continue to trend higher on technology, compliance and remediation-related costs. While margins could be a headwind going forward, the upshot is that credit costs are subdued, consumer credit quality is supported by a low unemployment and corporate credit is underpinned by low leverage (despite some signs of stress in certain sectors including retail). Slow asset growth may be a drag on profitability but is positive for creditors in a late-cycle environment. Fundamentals are further supported by higher capital levels which have benefitted in recent years from the reduction of higher-risk institutional exposures and changes to mortgage risk-weightings. The housing market, which has seen prices decline for the better part of the last two years, has rebounded in recent months, moving beyond stabilization and into recovery mode. This is important for the bank's given residential mortgages comprise the majority of bank loan portfolios. While these happenings are positive, we would note that certain risks that existed back in 2014 remain today including high prices, high debt, low rates and subdued income growth.

The Reserve Bank of Australia (RBA) cut rates two times in recent months for 50 bps in total while the Reserve Bank of New Zealand surprised markets with a 50 bps rate cut in August, despite unemployment hitting an 11-year low the prior day. These developments are aimed at supporting both domestic economies and as insurance against global trade uncertainty. Looking ahead, the RBA has signaled it could ease further given trend unemployment inching up, retail spending moderating and construction activity stalling. In addition to monetary policy, a solid annual budget outcome in September indicates that the RBA has room for fiscal stimulus, if needed.

Following a lengthy consultation period on its total loss-absorbing capacity (TLAC) proposal issued in November 2018, Australia's primary bank regulator issued a much-awaited rule this quarter. Positively, higher capital requirements provide additional protection for senior debt and new TLAC rules do not reduce the likelihood of government support for senior creditors, if necessary, with the use of public funds continued to be viewed as a useful option to resolve a failing bank.

Quarterly results for the Japanese megabanks remain challenged because of headwinds from NIM compression within domestic retail divisions and slow economic growth. The flat-to-downward trajectory of NIMs is expected to continue moving forward as the Bank of Japan (BOJ) foreshadows additional accommodative monetary policies. Such policies support economic growth but strain bank profits and incentivize banks search for yield in other non-yen denominated assets to offset the impact of lower rates. While anemic banking sector profitability is not a new phenomenon in Japan, core profitability pressures are becoming more apparent with adjusted pre-provision earnings (excluding realized gains from the sale of equity securities) trending lower. This reflects weaker investment returns, slower loan growth and higher restructuring charges. To counter challenging top-line trends, the megabanks are undergoing branch and headcount rationalization strategies in Japan, but these have their limitations and take time.

Overseas loans comprise roughly a third of total loans for the megabanks and have almost tripled between 2011 and 2019, following the BOJ's introduction of quantitative easing, compared to flattish growth in domestic loans. Loans outside of Japan have historically been pursued across a realm of large global corporate borrowers and large Japanese companies seeking foreign currency funding. This strategy has benefitted credit quality, as evidenced by a lower nonperforming loans ratio overseas relative to Japan, and the ability to cross-sell capital market services. However, competition for these loans, higher foreign currency funding costs and stricter capital regulations has resulted in a slowdown in overseas loan growth and the banks widening their traditional borrower base. In our view, any incremental overseas lending down the risk curve bears monitoring given ongoing profitability pressures.

Moody's affirmed the ratings of the three Japanese megabanks this quarter. The ratings incorporate a degree of government support without which standalone credit profiles are weaker. The agency also shares our views around government support, which we believe would be likely done preemptively to support banks and maintain financial stability.

**Structured Finance:
Asset-Backed
Securities (ABS)
— US**

Aggregate new issue US ABS volume has been marginally lower year-over-year through the third quarter of 2019, with most individual sectors reporting decreased volumes. The auto ABS, equipment ABS and unsecured consumer ABS sectors have seen stable (and modestly higher year-over-year) primary market issuance volume. The credit card ABS and student loan ABS sectors have seen material year-over-year declines in primary market issuance, although the pace of credit card issuance has picked up in September. As noted in previous Credit Research updates, credit card ABS is simply another funding vehicle for large banks with a plethora of funding options for their credit card businesses. Market conditions and cost-of-fund considerations often drive funding strategies.

ABS spreads have continued 2019 widening trends, although the degree of spread widening has been quite modest. We'd also note that ABS spreads are still materially tighter than they were in 2016, a period that represented the multi-year wides for spreads. High-quality vanilla sectors such as AAA-rated auto and credit card ABS are having difficulty keeping up with the rally in the 2-year Treasury, so relative spread widening has persisted. We continue to expect the benchmark sectors to outperform the higher yielding ABS sectors as the benchmark sectors benefit from relatively strong fundamentals.

Regarding the US credit card industry, US purchase volume continues to trend upward. According to the most recent data reported by the Fed, revolving debt increased approximately 5% year-over-year to \$1.07 trillion. The higher balance for revolving debt is consistent with the prior increases in the willingness to lend by banks, as reported in the Senior Loan Officer Opinion Survey.⁵ Overall, we believe credit performance for the credit card industry will continue to modestly weaken as the industry laps the impact of looser lending standards over the last few years (growth in new accounts, higher credit limits, and increased focus on revolvers). However, the performance for the credit card ABS trusts should outperform the related managed credit card portfolios as trust portfolios tend to have significantly more seasoning due to the lack of account additions.

**Non-Financial
Corporate/Industrial
— Global**

For non-financial investment grade corporate credit, a consistent theme for 2019 has been the divergence of capital management strategies between borrowers within the investment grade ratings spectrum. In general, the highly-rated (AA and A) borrowers continue to be willing to use their ample debt capacity for purposes such as shareholder returns and mergers and acquisitions, as their ratings are still high-enough such that a one or two notch downgrade would not become detrimental to their respective funding plans. In contrast, managements of firms with the largest BBB-rated debt structures remain focused on deleveraging and, in certain instances, improving their debt ratings following debt-funded mergers and acquisitions.⁶

As mentioned in the introduction, the first two weeks of September saw a record amount of investment grade bonds issued. Money is pouring into the investment grade market and issuers/ companies are happy to take it. This kind of expansion of borrowing at a late stage in the economic and credit cycle could be seen as a worrying sign. However, we are a bit more sanguine on the implications. Even if one believes a recession is inevitable, business-led recessions tend to be milder than financial ones preceded by rapid expansion in credit. While the median net debt-to-EBITDA ratio for borrowers in the Bloomberg Barclays US Corporate index is 2.2x — the highest level in a decade — it has been stable for the last two years. Further, elevated levels of debt won't necessarily aggravate a downturn. Rather, data related to past recessions shows that the growth rate of credit is a better indicator for the severity of recession as opposed to the absolute level of borrowing. On that, data from the Bank for International Settlements shows that credit to the non-financial private sector in the US grew just 1% of GDP in the five years through the end of 2018, compared to 22% growth in the five years through 2008.⁷

This is not to say that we don't have a level of concern for the fundamental credit outlook for non-financial corporate debt. On the contrary, we continue to have a negative view on the directional trend but also recognize that there are indeed idiosyncratic pockets of risks, as well as specific pockets of opportunity. We believe that the weakening of broad-based corporate fundamentals would be an accelerator of a credit cycle deterioration, rather than the instigator of it. At this stage of the cycle we would focus more on the pace of macroeconomic weakening, to the extent it continues, as the best leading indicator of corporate credit profile direction.

Endnotes

- 1 Morgan Stanley Research: Global Macro Briefing; 08/05/19.
- 2 <https://fdic.gov/bank/analytical/qbp/2018sep/qbp.pdf>.
- 3 "Financial Stability Report and Record — July 2019" Bank of England 11 Jul 2019.
- 4 <https://imf.org/en/Publications/CR/Issues/2019/06/24/Canada-Financial-System-Stability-Assessment-47024>.
- 5 Bank of America Merrill Lynch Research: Consumer ABS Alert; 08/16/19.
- 6 Goldman Sachs Credit Strategy Research: "IG capital management Q2 takeaways: Diverging strategies persist"; 08/14/19.
- 7 Bloomberg; 09/09/19; "Credit Boom Looks Like Short Blip in Slowing Trend: Macro View"; Sebastian Boyd.

ssga.com

State Street Global Advisors Worldwide Entities

Abu Dhabi: State Street Global Advisors Limited, Middle East Branch, 42801, 28, Al Khatem Tower, Abu Dhabi Global Market Square, Al Maryah Island, Abu Dhabi, United Arab Emirates. Regulated by ADGM Financial Services Regulatory Authority. T: +971 2 245 9000. **Australia:** State Street Global Advisors, Australia, Limited (ABN 42 003 914 225) is the holder of an Australian Financial Services Licence (AFSL Number 238276). Registered office: Level 17, 420 George Street, Sydney, NSW 2000, Australia. T: +612 9240-7600. F: +612 9240-7611. **Belgium:** State Street Global Advisors Belgium, Chaussée de La Hulpe 120, 1000 Brussels, Belgium. T: 32 2 663 2036, F: 32 2 672 2077. SSGA Belgium is a branch office of State Street Global Advisors Ireland Limited. State Street Global Advisors Ireland Limited, registered in Ireland with company number 145221, authorized and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. **Canada:** State Street Global Advisors, Ltd., 1981 McGill College Avenue, Suite 500, Montreal, Quebec, H3A 3A8, T: +514 282 2400 and 30 Adelaide Street East Suite 800, Toronto, Ontario M5C 3G6. T: +647 775 5900. **Dubai:** State Street Global Advisors Limited, DIFC Branch, Central Park Towers, Suite 15-38 (15th floor), P.O. Box 26838, Dubai International Financial Centre (DIFC), Dubai, United Arab Emirates. Regulated by the Dubai Financial Services Authority (DFSA). T: +971 (0)4-4372800. F: +971 (0)4-4372818. **France:** State Street Global Advisors

Ireland Limited, Paris branch is a branch of State Street Global Advisors Ireland Limited, registered in Ireland with company number 145221, authorized and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. State Street Global Advisors Ireland Limited, Paris Branch, is registered in France with company number RCS Nanterre 832 734 602 and whose office is at Immeuble Défense Plaza, 23-25 rue Delarivière-Lefoullon, 92064 Paris La Défense Cedex, France. T: (+33) 1 44 45 40 00. F: (+33) 1 44 45 41 92. **Germany:** State Street Global Advisors GmbH, Briener Strasse 59, D-80333 Munich. Authorized and regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht ("BaFin"). Registered with the Register of Commerce Munich HRB 121381. T: +49 (0)89-55878-400. F: +49 (0)89-55878-440. **Hong Kong:** State Street Global Advisors Asia Limited, 68/F, Two International Finance Centre, 8 Finance Street, Central, Hong Kong. T: +852 2103-0288. F: +852 2103-0200. **Ireland:** State Street Global Advisors Ireland Limited is regulated by the Central Bank of Ireland. Registered office address 78 Sir John Rogerson's Quay, Dublin 2. Registered number 145221. T: +353 (0)1 776 3000. F: +353 (0)1 776 3300. **Italy:** State Street Global Advisors Ireland Limited, Milan Branch (Sede Secondaria di Milano) is a branch of State Street Global Advisors Ireland Limited, registered in Ireland with company number 145221, authorized and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2. State Street Global Advisors Ireland Limited, Milan Branch (Sede Secondaria di Milano), is registered in Italy with company number 10495250960 - R.E.A. 2535585 and VAT

number 10495250960 and whose office is at Via Ferrante Aporti, 10 - 20125 Milano, Italy. T: +39 02 32066 100. F: +39 02 32066 155.

Japan: State Street Global Advisors (Japan) Co., Ltd., Toranomon Hills Mori Tower 25F 1-23-1 Toranomon, Minato-ku, Tokyo 105-6325 Japan. T: +81-3-4530-7380 Financial Instruments Business Operator, Kanto Local Financial Bureau (Kinsho #345), Membership: Japan Investment Advisers Association, The Investment Trust Association, Japan, Japan Securities Dealers' Association. **Netherlands:** State Street Global Advisors Netherlands, Apollo Building, 7th floor Herikerbergweg 29 1101 CN Amsterdam, Netherlands. T: 31 20 7181701. SSGA Netherlands is a branch office of State Street Global Advisors Ireland Limited, registered in Ireland with company number 145221, authorized and regulated by the Central Bank of Ireland, and whose registered office is at 78 Sir John Rogerson's Quay, Dublin 2.

Singapore: State Street Global Advisors Singapore Limited, 168, Robinson Road, #33-01 Capital Tower, Singapore 068912 (Company Reg. No: 200002719D, regulated by the Monetary Authority of Singapore). T: +65 6826-7555. F: +65 6826-7501. **Switzerland:** State Street Global Advisors AG, Beethovenstr. 19, CH-8027 Zurich. Authorized and regulated by the Eidgenössische Finanzmarktaufsicht ("FINMA"). Registered with the Register of Commerce Zurich CHE-105.078.458. T: +41 (0)44 245 70 00. F: +41 (0)44 245 70 16.

United Kingdom: State Street Global Advisors Limited. Authorized and regulated by the Financial Conduct Authority. Registered in England. Registered No. 2509928. VAT No. 5776591 81. Registered office: 20 Churchill Place, Canary Wharf, London, E14 5HJ. T: 020 3395 6000. F: 020 3395 6350.

United States: State Street Global Advisors, One Iron Street, Boston, MA 02210-1641. T: +1 617 786 3000.

Important Information

The information provided does not constitute investment advice and it should not be relied on as such. It should not be considered a solicitation to buy or an offer to sell a security. It does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon. You should consult your tax and financial advisor. All material has been obtained from sources believed to be reliable. There is no representation or warranty as to the accuracy of the information and State Street shall have no liability for decisions based on such information. The whole or any part of this work may not be reproduced, copied or transmitted or any of its contents disclosed to third parties without SSGA's express written consent. This document may contain certain statements deemed to be forward-looking statements. Please note that any such statements are not guarantees of any future performance and that actual results or developments may differ materially from those projected in the forward looking statements.

The above estimates are based on certain assumptions and analysis made by SSGA. There is no guarantee that the estimates will be achieved.

© 2019 State Street Corporation.
All Rights Reserved.
ID66550-2638415.3.1.GBL.RTL 0919
Exp. Date: 09/30/2020