

Whenever you need them, munis will be there

Overview

2018 was a tumultuous market environment, not only for equities, but also for municipal bonds. Volatility returned with a fervor as 10 year muni yields traded within a wide 79 basis point (bps) range while finishing the year 30bps higher than 2017 and notably, the 10 year U.S. Treasury (UST) breached 3% for the first time since the beginning of 2014. Despite the negative pressures of higher interest rates, munis were able to deliver positive total return and outperform other fixed income asset class returns such as USTs, investment-grade (IG) corporates and high yield (HY) corporates and most risk asset classes in 2018. This begs the question, “Should investors continue to allocate to municipal bonds?” Our answer is an emphatic “Yes” – for many of the same

reasons we have mentioned in the past, each still holding true. Municipal bonds have provided strong diversification benefits—a negative correlation to the S&P 500 index. Munis also offer attractive after-tax yields, more attractive today than the 2016 lower yield environment. In addition, historically, munis have displayed lower volatility in rising interest rate environments compared to other fixed income asset classes. For these reasons, we believe munis continue to offer an attractive risk/return profile in a balanced portfolio.

**“I’ll be there, I’ll be there,
Whenever you need me, I’ll be there (I’ll be there)”
—The Jackson 5 “I’ll Be There”**



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2018 market review

As mentioned, it was a challenging market environment for municipals in 2018 (by municipal bond standards) registering a total return of just 1.28% as measured by the Bloomberg Barclays Municipal Bond Index. The Bloomberg Barclays Municipal Bond Index outperformed the Bloomberg Barclays U.S. Aggregate Index primarily due to a favorable technical backdrop—lower supply and strong retail investor demand. These factors helped support the market as many new bond offerings were oversubscribed by investors throughout the year.

A look back to the financial crisis of 2008 reminds us just how much change has occurred in financial markets. In 2018, 10 years later, tax reform introduced additional big changes to markets, especially municipals. The Tax Cuts and Jobs Act (TCJA) lowered corporate income taxes from 35% to 21%, eliminated tax-exempt advance refunding, and ironically less importantly for muni demand, lowered federal income tax rates for individuals. In addition, the TCJA limited deductions for mortgages and state and local taxes. As expected, this tax reform, the largest since 1986, significantly impacted supply, demand, and more details of municipal bond structure. Other factors at play helped munis deliver superior returns compared to most major asset classes around the globe.

For the full year 2018, the effects of the TCJA on demand and supply were largely as expected. New issues supply dropped 24%, from \$436 billion to \$339 billion, due to the tax-exempt advance refunding limitation and because much of the first quarter 2018 supply was pushed into the market in the fourth quarter of 2017. Call structure changed a bit, with short call issuance increasing 41% in 2018 versus the previous three-year average. (Source: Morgan Stanley and DWS.) In other words, with the door virtually closed on tax-exempt advance refunding, more issuers chose to price deals with shorter calls instead of using the previously ubiquitous 10-year option. Most new issues, particularly during the first three quarters, were heavily oversubscribed, especially those with a bit of extra yield, i.e. deals rated single A and below.

The most notable impact of tax reform on demand came from bank activity. The lower corporate tax rate along with a change in accounting rules made munis, particularly those with short calls, less attractive to banks. Because banks had been an important source of demand in the long end over much of the past 10 years, their waning interest helped

steepen the curve. Property casualty insurance company demand also diminished due to the reduced tax rate. Some market participants had expected life insurance companies to be more of a buying force over the year, but an increase in demand from this source hasn't yet proven to be material. Individual buying demand continued strong, whether through separately managed accounts (SMA's), mutual funds or exchange-traded funds (ETFs). For the first three quarters, funds experienced inflows. Even with outflows in the fourth quarter investors poured \$5 billion into funds over the course of 2018, per Morningstar.

Increasing Treasury yields, along with the aforementioned supply and demand factors, influenced the cheapening of the muni curve over the year. While the Treasury curve cheapened and flattened, the muni curve cheapened and steepened. Strong SMA demand in short and intermediate maturities, combined with weaker demand in the long end from banks, and moderating demand from mutual funds in the fourth quarter, brought a steeper curve. Yields of 30-year AAA munis climbed 48 basis points (MMD), yet 2-year yields rose only 22bp, this in a year of four U.S. Federal Reserve (Fed) rate hikes! Yields of 30-year AAA municipals ended the year at 3.02% (MMD), equal to the 30-year Treasury yield. The 2-to 30-year curve closed 2018 at 124bp, remaining more than one standard deviation flatter than the fifteen-year average (see Figure 4). (Sources: DWS and Thompson Reuters Municipal Market Data – MMD)

Within the muni market, risk seekers were rewarded as lower credit quality—BBB and below—and sectors such as Puerto Rico and tobacco, outperformed higher quality paper. For the year 2018, as was true for seven of the past 10 years including 2018, paper rated BBB outperformed higher quality portions of the investment grade universe. The Bloomberg Barclays Muni High Yield Index outperformed the investment grade muni index in 2018 and in six of the past 10 years including 2018, following the nightmare 2008 when high yield underperformed the investment grade index by 2454bp. Credit spreads began the year somewhat tight, with 30-year BBB hospital credits yielding only 85bp over AAA munis. Inflows to mutual funds in the first three quarters kept demand robust for lower quality credits. In the fourth quarter, credit spreads widened due to an uptick in lower quality supply and mutual fund outflows. BBB hospital spreads closed the year at 125bp, approaching an 18-year average and the widest since

March 2017. While credit spreads have widened relative to a year ago, and the slow growth economic environment is generally supportive for credits, we recommend a prudent rather than aggressive approach to a concentration in bonds rated BBB and below. This is due to various anticipated sector and security specific challenges outlined in the next section.

Three observations in figures in 2018

Observation one: While 10-year U.S. Treasuries surpassed 3% for the first time since early 2014, 10-year AAA muni yields failed to breach that significant level.

FIGURE 1: 10YR AAA YIELD 2013–2018



Source: Thomson Reuters (As of 12/31/18). Past performance may not be indicative of future results.

Observation two: Tobacco revenue bonds have outperformed the S&P 500 Index

Among municipal high yield sectors, tobacco revenue bonds have performed remarkably well, outpacing the S&P 500 Index over the trailing 5 and 10 year periods by 355bps and 931bps (annualized return), respectively, as of 12/31/18. In 2008, the return for the high yield tobacco sector was negative 69.5%.

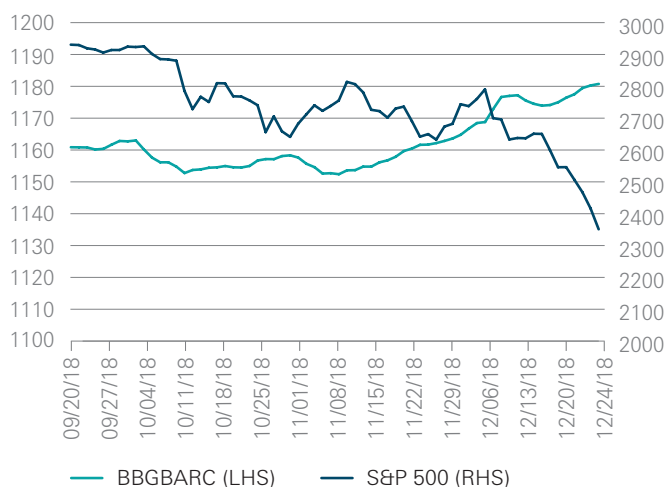
FIGURE 2: OUTSIZED AND VOLATILE HY TOBACCO RETURNS

Year	Total returns	
	HY Tobacco	S&P 500
2009	143.73	26.46
2010	-22.11	15.06
2011	23.02	2.11
2012	32.43	16
2013	-11.56	32.39
2014	19.21	13.69
2015	15.75	1.38
2016	4.44	11.96
2017	21.53	21.83
2018	3.46	-4.38
Avg Last 3 yrs	9.81	12.8
Avg Last 5 yrs	12.88	9.33
Avg Last 10 yrs	22.99	13.68

Source: Bloomberg as of 12/31/18. May not be indicative of future results.

Observation three: Zigging and zagging: In the nearly 20% drop in the S&P 500 from September 20 to December 24, 2018, munis were positive +1.7%, providing downside protection as risk assets sold off.

FIGURE 3: FROM SEPT 20 TO DEC 24 2018, S&P 500 WAS DOWN ALMOST 20% WHILE THE BLOOMBERG BARCLAYS MUNICIPAL BOND INDEX (BBGBARC) WAS UP 1.7%



Source Bloomberg as of 12/31/18. May not be indicative of future results. See last page for index definitions.

As interest rates continue to normalize, yields have become more attractive, in our view. For over five years now, investors have been warned to shorten duration due to rising interest rate fears. Those fears have not materialized by any large degree, yet investors heeding the warning have given up considerable total return. For instance over the trailing five year period ending 12/31/18, the average annual return of the Morningstar Muni Short category returned 1.01% while the Morningstar Muni Long category returned 4.05%, outperforming short duration strategies by over 3% (average annualized return). While we aren't suggesting an indiscriminate assessment of interest rate risk, we continue to see value in owning duration in the municipal bond market and suggest an approach using short and long duration strategies to achieve investment returns while remaining duration neutral.

FIGURE 4: 2/30 AA CURVE IS RELATIVELY FLAT



Source: Thomson Reuters as of 12/31/18. May not be indicative of future results. Standard deviation (dev) is often used to represent the volatility of an investment. It depicts how widely an investment's returns vary from the investment's average return over a certain period.

Municipal credit, turning the page from 2018 into 2019

U.S. economic growth had a favorable impact on state and local credit in 2018. State general fund revenue grew by 6.4% in fiscal 2018, driven by a 9.8% increase in personal income tax collections (Source: National Association of State Budget Officers). Many states built up rainy day funds in 2018, using excess revenue to prepare for the next recession. In 2019 this trajectory should continue, albeit at a slower pace.

Local governments are generally reliant on property taxes, along with state aid, as their largest revenue sources. In fiscal 2018, property tax revenues grew by 5%. While property tax revenue is expected to grow in 2019, softness in local real estate markets could negatively impact city and county credit quality. Additionally, the potential detrimental impact on housing values of the State and Local Tax federal deduction limits, part of the Tax Cuts and Jobs Act, has yet to be evidenced.

For state and local credits, sector pressures include: expenditure growth driven by pensions and other post-employment liabilities; need for increased infrastructure investment; rising education and health care costs; changes in federal government policies; expenses associated with climate risk mitigation; and cybersecurity. Demographic trends may exacerbate already-present fiscal issues in states and territories such as Puerto Rico, New Jersey, Illinois and Connecticut, which continue to experience net outmigration (U.S. Census Bureau). On the positive side, more Americans moved to Florida than to any other state between 2017 and 2018.

Competition between traditional K-12 school districts and charter schools is a trend that we expect will continue. Many charter schools target underserved markets where opportunity exists to address achievement gaps or overcrowding. Charter school expansion and penetration can result in increased fiscal pressure for traditional schools, as lower per-pupil revenue is available to cover public school fixed costs. Unlike traditional public schools, charter schools generally have relatively lower operational and financial stability, as they are subject to state charter renewal risk and lack strong local property tax funding. However, charter schools tend to have less pension liability exposure. For bond investors, charter operating environments can vary state-to-state depending on political factors, funding policy, and other considerations. Therefore, careful security selection is important.

In the health care sector in 2018, we saw continued margin compression, with generally slower revenue growth and higher expense growth. We expect nonprofit hospitals will continue to face tighter operating margins. Expense pressures in the sector include: salary and wage growth above inflation in many markets; increasing supply costs; technological investments; and investments related to transitioning from fee-for-service to value-based

reimbursement. Effective hospital management teams have generally responded by working to constrain expense growth and improve balance sheets.

Long-term federal and state Medicaid and Medicare funding policies are critical factors for health care credit. At the end of 2018, the Affordable Care Act (ACA) was ruled unconstitutional by a federal district court. The decision will likely be appealed up to the U.S. Supreme Court and the ACA remains in effect during the appeals process. If the decision is upheld, federal funding for Medicaid expansion could end, which would have a disruptive impact on hospitals and states which have opted to expand. Additionally, hospitals could suffer from volume declines and an increased proportion of uninsured patients.

The ACA has had a material impact on insurance coverage, reducing the national uninsured rate to roughly 8.8% from over 16% before the law became effective. It is possible that Congress could address any change brought about by a court ruling by writing new health care law. In 2018, Medicaid expansion was approved in Virginia, Idaho, Nebraska and Utah, which should reduce hospitals' uninsured exposure in those states, as long as the ACA remains in effect.

Lastly on health care, in recent years we have seen the entrance of non-traditional competitors into the market. We see continued merger and acquisition (M&A) activity as hospitals seek to address industry disruption. We favor large, mature health systems, ones we view as best-positioned to maintain market share and navigate the changing industry landscape.

For the public power sector, our outlook is stable. Strengths of many issuers include: autonomous rate setting capability; status as essential service provider; monopoly in service area with limited competition for customers; and solid financial position. Some of the challenges facing issuers include: meeting clean energy and renewable standards, particularly those imposed at the state level; less fuel diversity with recent increased reliance on affordable natural gas; cybersecurity; updating infrastructure; declining demand due to increased energy efficiency; and natural disasters.

For another "essential service" sector, water and sewer, our outlook is stable as well. The strengths of this sector mirror those of the public power sector: essentiality; monopoly position; solid finances; and autonomous rate

setting authority for many issuers. For challenges, water and sewer providers must also update infrastructure, increasing debt issuance to meet those needs. Concerns about lead pipes, drought and declining demand due to increased conservation must also be addressed, and these are among the factors we consider when evaluating credits within this sector.

In the transportation sectors of airports and toll roads, overall economic growth and lower energy prices support positive utilization trends. These factors have resulted in favorable operating results in recent years, which we expect will continue, thus we have found a number of credits we like in these sectors. Airports have large capital programs to address capacity constraints, aging infrastructure and non-airline projects. They have addressed effects of transportation network companies (e.g., Uber, Lyft) with replacement revenue through new contracts and tracking technologies. Toll roads have increasingly implemented electronic tolling and open road tolling to lower costs, as well have employed greater use of tolling indexed to inflation.

The higher education sector continues to experience some headwinds. Across the industry, pressure to slow the growth of tuition increases, the need to invest in updating academic and auxiliary facilities, and reliance on endowment spending to support operations are some of the larger challenges facing private and public colleges and universities. In general, small-to medium-sized institutions drawing from narrow geographic regions will continue to have the most difficulty in addressing these factors.

Puerto Rico credits could again be a significant factor in the overall performance of the high yield segment of the municipal market. A resolution on Puerto Rico's sales tax bonds, known as COFINA bonds, took place in mid-February this year. As a result, a large number of bonds emerged from bankruptcy, restoring the name into high yield benchmarks. Other Puerto Rico names, such as Puerto Rico Electric Power Authority, could also emerge from bankruptcy status this year as well.

As we enter 2019, we expect issuers and investors alike to pay increasing attention to preparing for the impacts of climate change. Recent high profile examples of municipalities supporting efforts to adapt to, or mitigate the impact of, climate risk include: voters in Harris County, home to Houston, approving \$2.5 billion in bonds to implement flood control projects; and the overwhelming

support from 82% of San Francisco voters to issue up to \$425 million in bonds to restore the Embarcadero seawall that protects the city from rising sea tides. We expect a strong appetite from the muni market for such debt given the growing interest from retail investors, particularly millennials, in supporting projects that are environmentally friendly or provide tangible social impact.

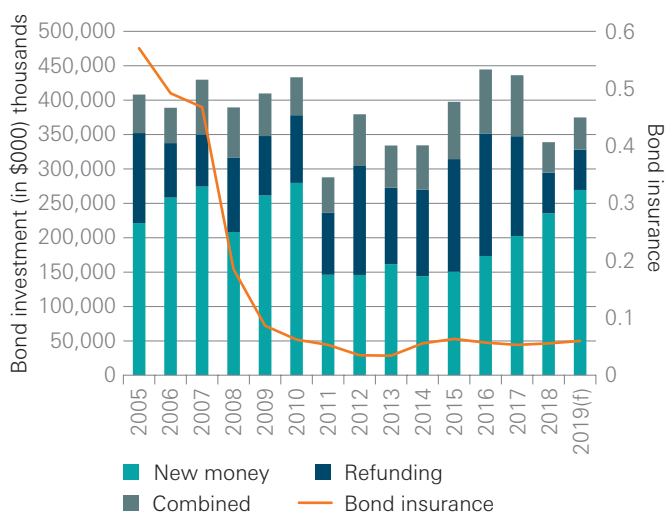
What about 2019?

Most Americans will owe less in taxes for 2018 than prior years due to the TCJA. Some taxpayers, particularly those itemizing, applying deductions, and subject to high state and local taxes, may find their tax reduction is less than they expected or not a reduction at all. Thus demand for munis from individual tax payers should continue to be robust. We expect buying by property casualty insurance companies and banks to continue to abate. When valuations of municipals are compelling compared to taxable alternatives, life insurance companies may step in and buy more long maturity municipal bonds than they previously have, now that the TCJA makes munis slightly more attractive for them. This combination of demand factors leads us to expect a curve that does not change materially in shape over the coming year.

We expect gross supply to increase 11% to \$375 billion due to a 15% increase in spending on new projects (new money issuance,) likely leading to another year of net negative supply. In November 2018 referenda across the country, voters expressed interest in spending to build new or maintain existing infrastructure. Amid an undeniable need for infrastructure improvements, local politicians are less likely to wait for a federal infrastructure program since one hasn't yet been forthcoming from Washington. And many state and local budgets are solid enough to make leaders comfortable borrowing for projects, particularly at today's reasonable borrowing rates. After seeing last year's deals heavily oversubscribed, and with our expectation of steady demand from individual buyers, we expect the extra supply to be easily absorbed.

Overall we see a constructive economic as well as technical environment, leading us to expect positive returns for municipals in 2019. The protracted growth cycle of the past 10 years is supportive of credits, and the growth slowdown we expect in the coming year should keep rate increases moderate. On the negative side for investors, our DWS economists expect global market volatility to continue. Municipals proved in 2018 to be a haven for investors, generating not only tax-free income, but also less volatility compared to many asset classes including equities and Treasuries, and positive returns amid a difficult year for most markets. With muni yields at attractive levels in 15 years+ when compared to U.S. Treasuries, especially on an after-tax basis, investors may be rewarded again in 2019 in our view. We're certain the Jackson 5 weren't singing about municipal bonds in their hit song "I'll Be There," but we believe the theme of reliability will ring true for muni investors in the coming year.

FIGURE 5: MUNICIPAL NEW ISSUE SUPPLY



Source: The Bond Buyer, DWS as of 12/31/18. May not be indicative of future results.

Definitions:

The Patient Protection and Affordable Care Act, often shortened to the Affordable Care Act (ACA) and nicknamed Obamacare, is a United States federal statute enacted by the United States Congress and signed into law by President Barack Obama. One basis point (bp) equals 1/100 of a percentage point. The Bloomberg Barclays Municipal Bond Index covers the investment grade tax-exempt bond market. The Bloomberg Barclays Municipal High Yield Index covers below-investment-grade municipal bonds. Bloomberg Barclays U.S. Aggregate Index measures the investment grade U.S. dollar-denominated fixed rate taxable bond market. Call structure is the feature that allows an issuer to redeem a bond prior to maturity. Correlation is a statistical measure of how two securities move in relation to each other. In the simplest of terms, credit quality refers to an independent assessment of a bond issuer's ability to make timely interest payments. This does not, however, guarantee payments or performance. Duration is a measure of the sensitivity of the price of a fixed-income investment to a change in interest rates and is calculated on the basis of present value, yield, coupon, final maturity and call features. Exchange traded funds (ETFs) are a sort of exchange traded product (ETP) that can hold a variety of underlying assets and that can be traded on a stock market. Financial crisis refers to the period of market turmoil that started in 2007 and worsened sharply in 2008 with the collapse of Lehman Brothers. High-yield (HY) bonds have lower credit quality than investment grade bonds. They typically are rated below investment grade or are nonrated. An investment-grade (IG) rating by a rating agency such as Standard & Poor's indicates that a bond has a relatively low risk of default. Inflation is the rate at which the general level of prices for goods and services is rising and, subsequently, purchasing power is falling. The Standard & Poor's 500 Index is a capitalization-weighted index of 500 stocks. The index is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing major industries. A separately managed account (SMA) is a customized share portfolio where the assets are owned by individual investors. The spread is the difference between the quoted yields on two different investments, usually of different credit quality. A yield curve is a representation of the relationship between market rates and the remaining time to maturity of debt securities, also known as the term structure of interest rates.

The opinions and forecasts expressed here are those of the contributors listed on the first page, are as of February, 2019, and may not actually come to pass. This information is subject to change at any time, based on market and other conditions, and should not be construed as a recommendation of any specific security.

Important risk information

Bond investments are subject to interest-rate and credit risks. When interest rates rise, bond prices generally fall. Credit risk refers to the ability of an issuer to make timely payments of principal and interest. Investments in lower-quality and non-rated securities present greater risk of loss than investments in higher-quality securities. Inverse floaters are derivatives that involve leverage and could magnify gains or losses on tax-free investments.

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