Overview of the Taxable Municipal Market

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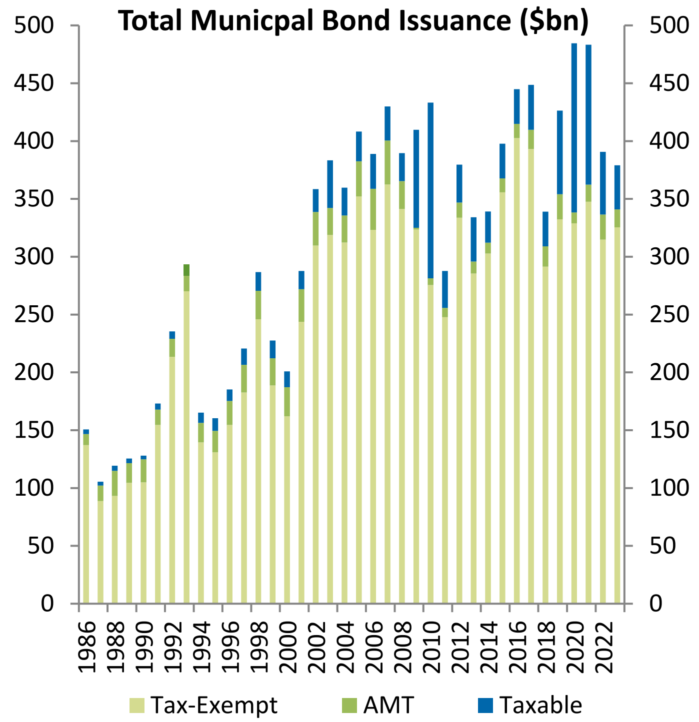
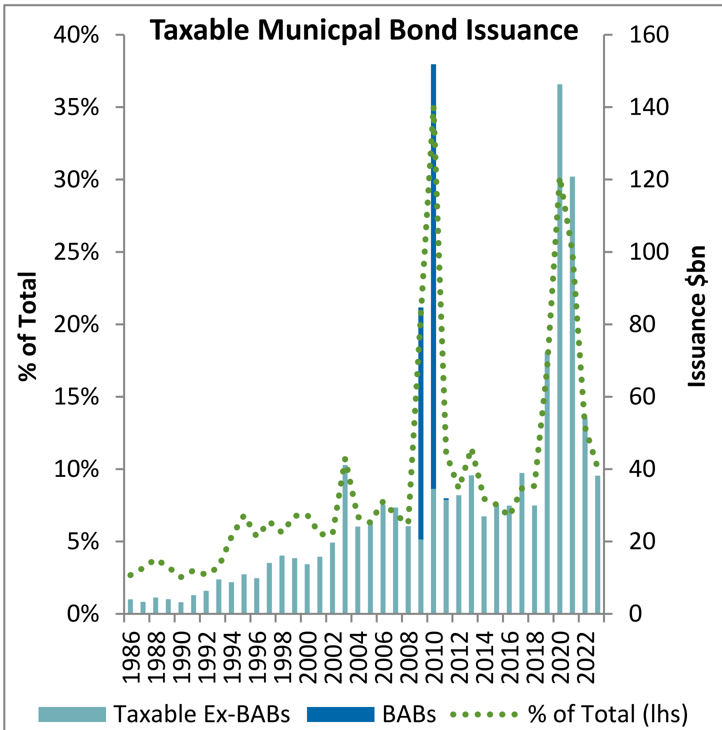
Background

The taxable municipal bond market began to develop after passage of the Tax Reform Act of 1986, which eliminated the ability for issuers to sell tax-exempt bonds for certain purposes. Taxable issuance grew along with the overall municipal market but remained between 3% to 7% of total issuance from 1986 to 2002. From there the share began to increase, culminating in 21% of the total in 2009 and 35% in 2010 due to the incentives provided under the Build America Bonds (BABs) program. Taxable issuance totaled $85 billion and $152 billion in those two years, respectively. In the years that followed taxable bonds represented 7% to 11% of total issuance, then increased again to 17%, 30%, and 25% in 2019-2021. The increases were motivated by issuers using taxable bonds to advance refund tax-exempt securities, a practice no longer permissible when using tax-exempt bonds following passage of the Tax Cuts and Jobs Act of 2017. The rise in interest rates in 2022 and 2023 has made taxable refunding much less economic, with 2022 issuance representing 13% of the total and annualized figures through October 2023 pointing to taxable bonds comprising 10% of the total, or $38 billion, down from $121 billion in 2021 and $146 billion in 2020. While the market has grown substantially from its early years, it remains quite small in comparison to the investment grade corporate bond market in the United States, where $1.25 trillion of debt was issued in 2022[i].



Source: Bond Buyer, Fidelity Capital Markets (FCM); As of November 7, 2023
Note: 2023 figures reflect first 10 months annualized



Source: Bond Buyer, Fidelity Capital Markets (FCM); As of November 7, 2023
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Taxability and Federal Programs

Interest on most municipal securities is exempt from federal income taxes, and most states exempt the interest on in-state bonds from state income taxes as well. However, interest on municipal bonds that are issued to finance a project that does not meet certain public purpose or public use tests under the Internal Revenue Service (IRS) requirements to qualify for tax exemption is taxable under federal law[ii].

For example, taxable municipal bonds may be issued to finance economic or industrial development, raise public pension funding levels, or, with the passage of the Tax Cuts and Jobs Act of 2017, to advance refund a new issue[iii]. States tend to treat municipal securities that do not meet IRS requirements for tax exemption the same as municipal securities that do meet those requirements[iv]. Increased issuance in recent years and the concurrent retirement and refunding of 2009-era debt, such as BABs, has boosted the share of the taxable municipal market that has no associated federal program to approximately 90% of the market.

In the past, there have been federal programs that supported the issuance of taxable bonds by state or local government issuers to promote a policy objective such as infrastructure, school construction, or energy conservation. Under certain federal programs, municipal bond issuers receive cash rebates from the U.S. Department of the Treasury (Treasury) to subsidize a portion of their interest payments. These taxable municipal bonds are sometimes referred to as direct-pay bonds. Such programs include BABs[v] and Recovery Zone Economic Development Bonds (RZEDBs)[vi], which were authorized by the American Recovery and Reinvestment Act of 2009 (A.R.R.A.) to encourage state and local government issuers to finance projects that would create jobs and stimulate the economy with the aid of a federal subsidy. Qualified School Construction

Bonds (QSCBs)[vii], Qualified Energy Conservation Bonds (QECBs), and Qualified Renewable Energy Bonds (QREBs) were also authorized by A.R.R.A. The program authorizations expired in 2010, and a significant number of BABs and similar bonds have either matured or been refunded in recent years.

Other federal programs that promoted taxable municipal bond issuance include qualified tax credit bonds. These bonds were issued by state or local governments to provide funds for certain eligible projects. Bondholders receive federal income tax credits in lieu of periodic interest payments. Tax credit bond programs include Qualified Zone Academy Bonds (QZABs), Clean Renewable Energy Bonds (CREBs), QECBs, QREBs[viii]. Authorization for new tax credit bonds under these programs was eliminated with the passage of the Tax Cuts and Jobs Act of 2017.

In these federally subsidized programs, issuers were usually given the option to either receive a direct-payment subsidy from Treasury (direct-pay bonds) to offset their interest payments on the bonds, or elect to issue tax credit bonds, where investors receive tax credits directly from Treasury. Due to investor preferences the vast majority of A.R.R.A. program bonds were issued in direct-pay form.

Considerations for Investing in the Taxable Municipal Market

Taxable municipal bonds can be exempt from state and local income taxes for investors who reside in the state of issuance, which may cause the after-tax yield earned on the bond to be higher than the after-tax yield on a corporate bond of similar credit quality and duration, where the interest is taxed at the federal, state, and local level. The official statement for new municipal securities issues typically includes detailed information with respect to the tax status of the issue. Appendix A provides a yield multiplier table comparing in-state taxable municipal bonds versus corporate bonds for each state[ix].

Taxable municipal bonds may be suitable in tax-deferred accounts such as IRAs, 401(k)s, and pension funds because interest earned in these types of accounts is tax deferred. Taxable municipal bonds may also be advantageous for foreign buyers who do not incur federal income tax liabilities. Other institutional investors, such as insurance companies and taxable mutual funds, are also players in this segment of the municipal bond market.

Taxable municipal bonds are secured with the same revenue streams and/or tax pledges that secure the tax-exempt bonds of the same issuers, whether they be state or local governments, public utilities, transportation enterprises, institutions of higher education, private schools, hospitals, or issuers from other sectors, and may offer credit risk diversification versus other taxable fixed income products such as corporate bonds.

While taxable municipal securities can be advantageous under certain circumstances, an investor should consider the overall impact of, among other things, federal income tax on interest. Investors should consult their tax advisor for personalized guidance on the specifics of tax liabilities related to municipal securities.

Early Redemption Features

Some taxable municipal bonds are issued with an early redemption feature known as a make-whole call. Make-whole call provisions are more common in the corporate bond market than in the traditional tax-exempt municipal market. This type of call provision on a bond allows the issuer to redeem the debt early. The issuer typically must make a lump-sum payment to the investor derived from a formula based on the net present value (NPV) of future coupon payments that would have been paid periodically over the life of the bond along with the principal payment(s). Issuers typically don't anticipate the need to use this type of call provision as they can be quite costly; therefore, make-whole calls are rarely exercised. However, if the issuer does decide to use this type of call provision, then investors will be compensated, or "made whole," for the remaining coupon and principal payments. While it could be more advantageous for an issuer to exercise a make-whole call after rates have fallen, the discount rate used in the NPV calculation would have likely also declined from the time that the bond was first issued. A lower discount rate can make the make-whole call payment more expensive for the issuer. The discount rate is typically expressed as a spread over an interpolated U.S. Treasury rate that is tied to the stated maturity of the bond. The official statement for new municipal securities issues includes detailed information with respect to all early redemption features, including any make-whole call provisions.

Taxable municipal bonds may also be issued with extraordinary redemption provisions (ERP). An ERP can be either mandatory or optional, meaning the occurrence of an event can either require the issuer to redeem the bonds early or provide the issuer the option to do so. Typically, an optional ERP gives the issuer the right to call a bond due to an unusual one-time event as specified in the official statement. An example would be a catastrophe that destroys the project financed with the bond proceeds. Many direct-pay A.R.R.A. program bonds were issued with optional ERPs that may be exercised by the issuer if the federal government was to reduce or eliminate the subsidy that the issuer receives to offset a portion of the cost of its interest payments [x]. In fact, when the federal government first reduced the subsidy payment in 2013, some issuers that had previously sold bonds with ERPs that could be exercised under such a condition at par value, did call their bonds early. However, a more typical premium redemption price for a direct-pay bond (such as a BAB) was expressed as a spread of 100 basis points over an interpolated U.S. Treasury rate that was tied to the stated maturity of the bond.

Performance

Taxable municipal securities have tended to exhibit return attributes like other investment grade fixed income categories such as tax-exempt municipal bonds, corporate bonds, and U.S. Treasuries. Table 1 compares the historical total return profiles of taxable municipal bonds against these other fixed income categories. The indices were chosen for comparison because they have similar duration profiles (see Appendix B for index definitions). Of the three indices, taxable municipals performed closer to corporate bonds than to tax-exempt bonds or Treasuries. For example, in the near-13-year period ending October 31, 2023, taxable municipal bonds generated an annualized total return of 3.51%, compared with a 2.78% return for corporates, a 2.49% return for tax-exempt bonds, and a 1.52% return for Treasuries. At 0.83, the correlation of monthly total returns with the corporate bond index was the highest. However, the dispersion of those returns (in terms of standard deviation) was narrower for taxable municipals than for corporates and Treasuries. Additionally, at 5.6 years, the average effective duration over the period for the taxable municipal index was shorter than that for the corporate index, which had an average effective duration of 6.4 years. Furthermore, the taxable municipal index has a higher composite credit rating of "AA3" as compared to a rating of "A2" for the corporate index. As with the tax-exempt index, no tax benefit adjustments were made to the interest component of total returns for the taxable municipal index.

TABLE 1: Annual Total Return

Year	ICE BofA 5-10 Year US Taxable Municipal Securities Index	ICE BofA 5-10 Year US Municipal Securities Index	ICE BofA 5-10 Year AAA-A US Corporate Excluding 144a Index	ICE BofA 5-10 Year US Treasury Index
2011	12.22	10.59	7.62	12.88
2012	10.62	4.42	11.53	3.56
2013	-4.23	-0.94	-2.23	-4.44
2014	10.11	6.06	7.50	6.15
2015	2.18	3.28	2.36	1.80
2016	4.45	-0.43	3.86	1.23
2017	4.49	4.69	4.93	2.09
2018	2.28	1.49	-1.21	1.21
2019	8.57	7.09	12.94	7.43
2020	9.47	5.05	10.17	9.06
2021	-0.72	0.70	-2.14	-2.97
2022	-11.37	-6.44	-13.92	-12.54
2023	0.29	-2.03	-1.90	-3.09
Annualized Total Return*	3.51%	2.49%	2.79%	1.52%
Correlation† w/ Taxable Municipal Securities Index	1.00	0.77	0.83	0.76
Annualized Standard Deviation‡ of Monthly Returns **	4.74%	4.17%	5.55%	5.11%
Index Effective Duration§ Average & [Range] (yrs)	[5.6] {4.7 - 6.2}	[5.3] {4.6 - 5.7}	[6.4] {6.1 - 6.7}	[6.4] {6.1 - 6.8}
Index Composite Rating†† as of 11/07/2023	AA3	AA3	A2	AA1

Source: ICE Data Indices, LLC, FCM; As of November 7, 2023

* Geometric average of annual total returns in USD 2011-2023 (2023 through 10/31)

† The correlation reveals the strength of return relationships between investments. A perfect linear relationship is represented by a correlation of 1, while a perfect negative relationship has a correlation of –1. A correlation of 0 indicates no relationship between the investments. Correlation is a critical component to asset allocation and can be a useful way to measure the diversity of a combined plan portfolio.

‡ Standard deviation shows how much variation there is from the average (mean or expected value). Low standard deviation indicates that the data points tend to be very close to the mean, whereas high standard deviation indicates that the data is spread out over a large range of values. A higher standard deviation represents greater relative risk.

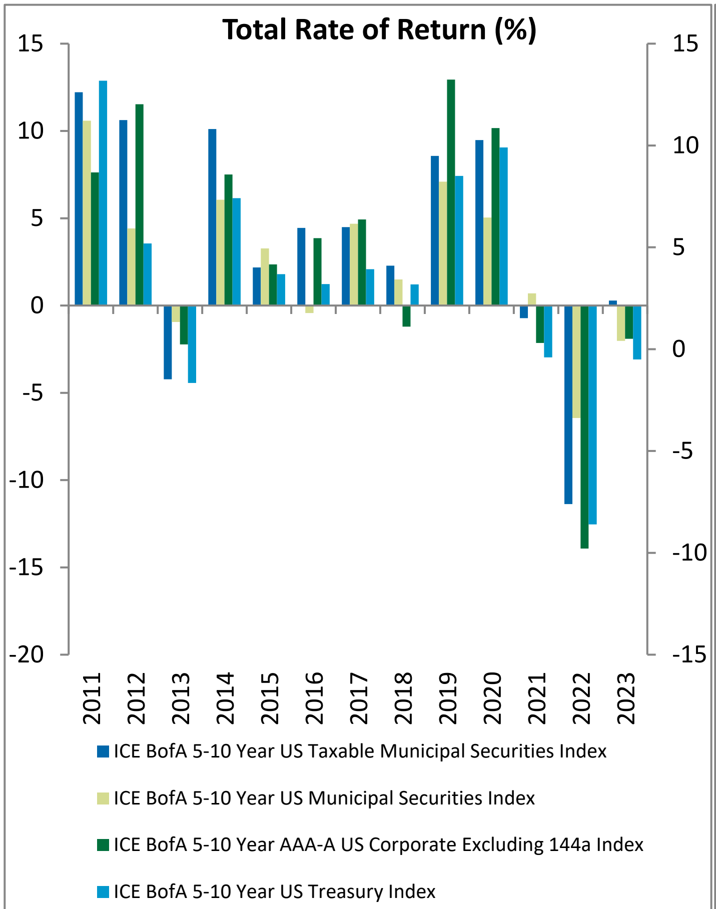
** Annualized standard deviation of monthly returns 2011-2023 (2023 through 10/31)

§ A quantitative measure that indicates the degree to which a bond or bond fund's price will fluctuate in response to changes in comparable interest rates. If rates rise 1.00%, for example, a bond or fund with a 5-year duration is likely to lose about 5.00% of its value.

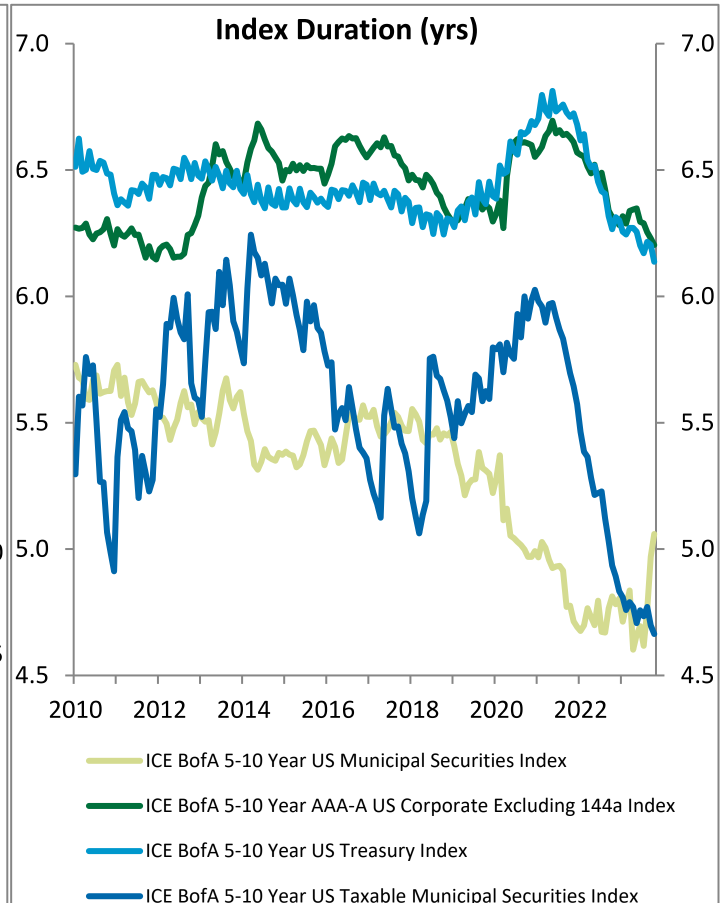
†† Fidelity Capital Markets provides the composite rating. The rating agencies used are Moody's, S&P, and Fitch.

Past performance is no guarantee of future results. It is not possible to invest directly in an index. All market indices are unmanaged. Index performance is not meant to represent that of any Fidelity mutual fund.

In the first ten months of 2023, the taxable municipal index was the only one of the four compared that did not show a negative total return. And in 2022, the taxable municipal index showed a smaller loss than the corporate index and the Treasury index. A greater decline in index durations for the two municipal indices may have contributed to their "outperformance" in recent years. As of October 31, 2023, the duration of the taxable municipal index was shorter by nearly 1.5 years from its 2020 high, while the other three indices showed duration to be shorter by one-third to two-thirds of one year compared with the peak in 2020.



Source: Bloomberg, ICE Data Indices, LLC, FCM; As of November 7, 2023



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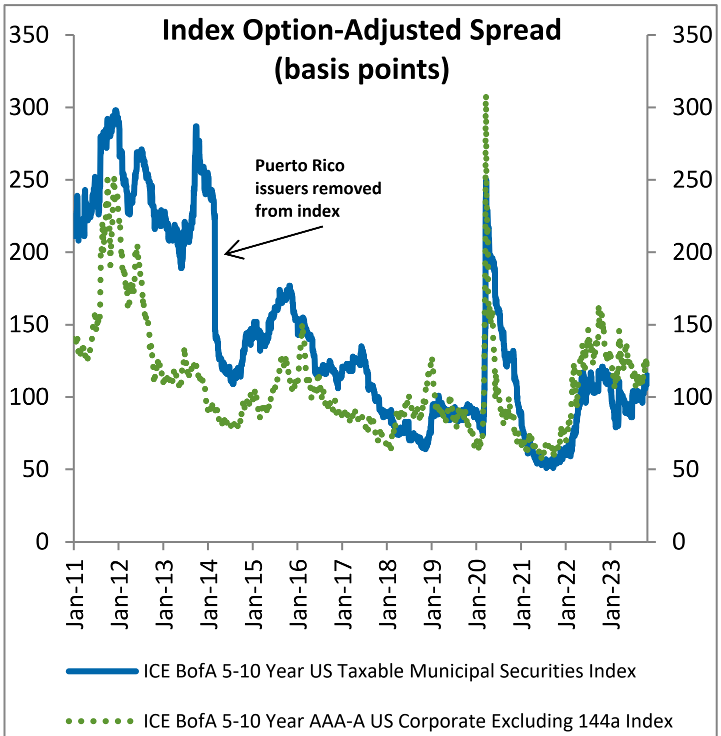
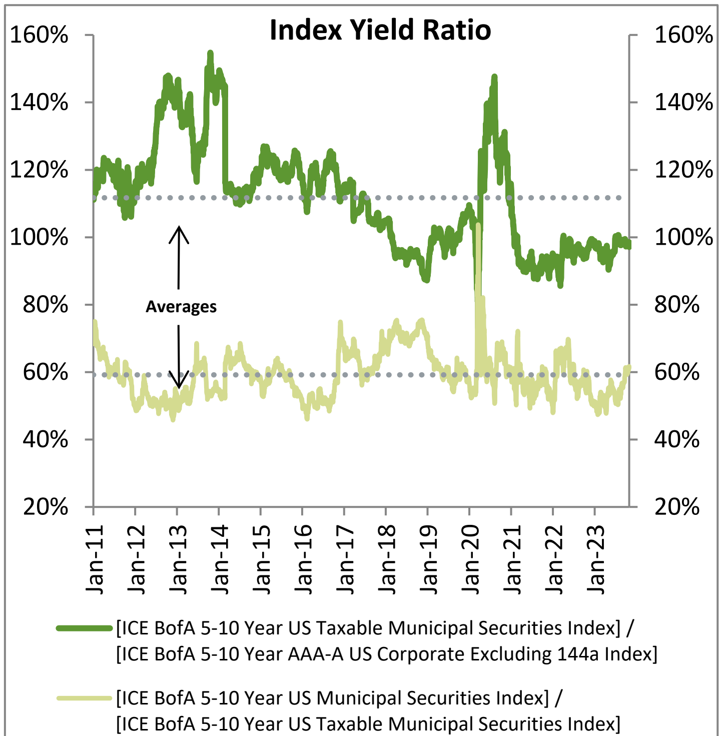
Relative Value

Using the same indices as in the above section on performance, from the start of 2023 through October 31, the option-adjusted spread (OAS)[xi] of the taxable municipal index decreased to 109 basis points from 112 basis points. Over the same period the OAS of the corporate index tightened to 123 basis points from 125 basis points. The generally tighter OAS of the taxable municipal index is a phenomenon that has developed since 2018 as the taxable municipal market has grown.

The relative performance between taxable municipals, corporates, and tax-exempt municipals in 2020 offers a unique case study. During the market dislocation in March taxable municipals initially outperformed both corporates and tax-exempts, as captured by the plunging yield ratio between taxable municipals and corporates and the spiking yield ratio between tax-exempt and taxable municipals. In both cases taxable municipal yields increased less than the yields on the comparative indices. However, once the panic subsided taxable municipals underperformed both corporates and tax-exempts by lagging during the subsequent decline in interest rates. Some plausible reasons for the disparities may relate to the differences in liquidity between the markets. Taxable municipals are a much smaller market and in the initial disorderly selling suffered less than corporates and tax-exempts, which investors could dispose of more easily to raise cash and reduce risk. In the aftermath, taxable municipals may have underperformed because (i) Federal Reserve support for the corporate bond market was more significant than for the municipal market, (ii) the less liquid nature of taxable municipals led to a slower contraction in risk premiums, and (iii) the significant increase in taxable municipal supply (dominated by refunding tax-exempt securities) relative to the size of the market led to a cannibalization of tax-exempt supply at the expense of taxable underperformance. In any case, the higher credit quality of taxable municipals may have contributed to their eventual catching-up to corporates in subsequent quarters; the yield ratio averaged 97% within a narrow 90%-101% range in the first ten months of 2023. In relation to tax-exempts, taxable municipals October was near the long-term average ratio of 60%.

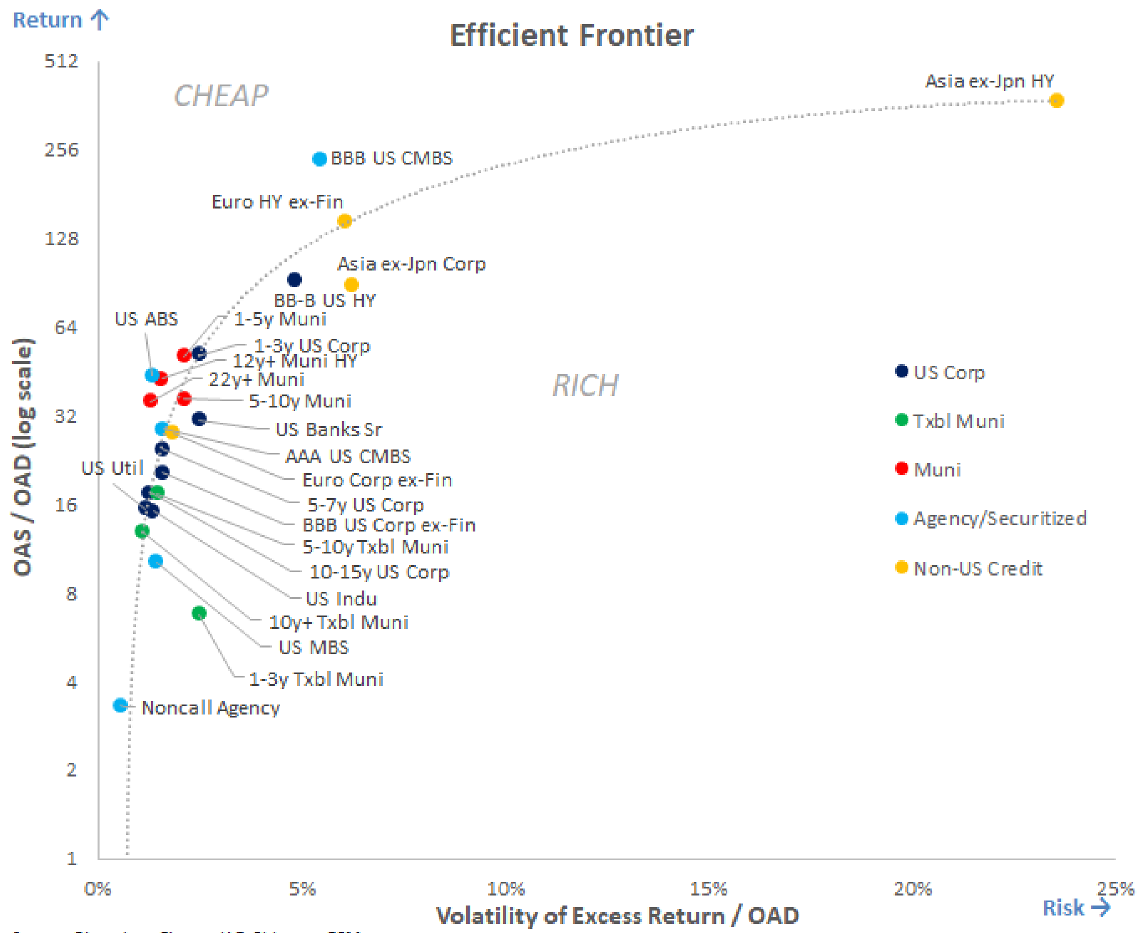


Source: ICE Data Indices, LLC, FCM; As of November 7, 2023



Source: ICE Data Indices, LLC, FCM; As of November 7, 2023

The efficient frontier below compares the OAS to the volatility of excess returns[xii], both normalized by duration (OAD[xiii]) for 25 fixed income indices on November 8, 2023. The color of the dots indicates an index's "asset class". On this relative measure, intermediate (5-10 year maturity) and long-term (10+ year maturity) taxable municipals plotted nearby similar maturity U.S. investment grade corporates in terms of return (spread) for a given level of risk (volatility). Shorter maturity taxable municipals appeared less efficient on this measure. See Appendix B for index definitions.



Source: Bloomberg Finance LLP, Citigroup, FCM
Note: Color of dot corresponds to asset class. Tax-exempt municipal indices adjusted for 40.8% tax rate.

Market Size

The total size of the municipal market is approximately $4.17 trillion[xiv], 76% of which is tax-exempt. Municipal bonds where the interest is federally taxable as ordinary income comprise approximately $810 billion, or 19% of the total. The remaining 5%, or $188 billion, represents private activity bonds where the interest is subject to the Alternative Minimum Tax (AMT) for individuals (see endnote ii). Three states – California, New York, and Texas – account for 34% of the total outstanding taxable municipal market. Table 2 shows the 10 states with the largest amount of taxable municipal bonds outstanding.

Taxable municipal bonds may be segmented into securities issued with a municipal (82%) or a corporate (18%) CUSIP. General obligation bonds and notes represent 25% of outstanding taxable municipals, revenue bonds and notes account for 72%. The remaining 3% of the market is comprised of certificates of participation, special assessment debt, and tax allocation bonds. Table 3 shows outstanding taxable municipal bonds by type.

TABLE 2

Top 10 States for Outstanding Taxable Municipal		
State	Outstanding	% of Total
CA	$157.12	16%
NY	$80.71	8%
TX	$80.18	9%
IL	$48.82	4%
MA	$34.39	2%
OH	$25.04	2%
PA	$24.95	2%
FL	$22.62	2%
MI	$21.92	2%
NJ	$20.56	2%
All others	$293.79	48%

Source: Bloomberg Finance LLP, FCM; As of November 7, 2023

TABLE 3

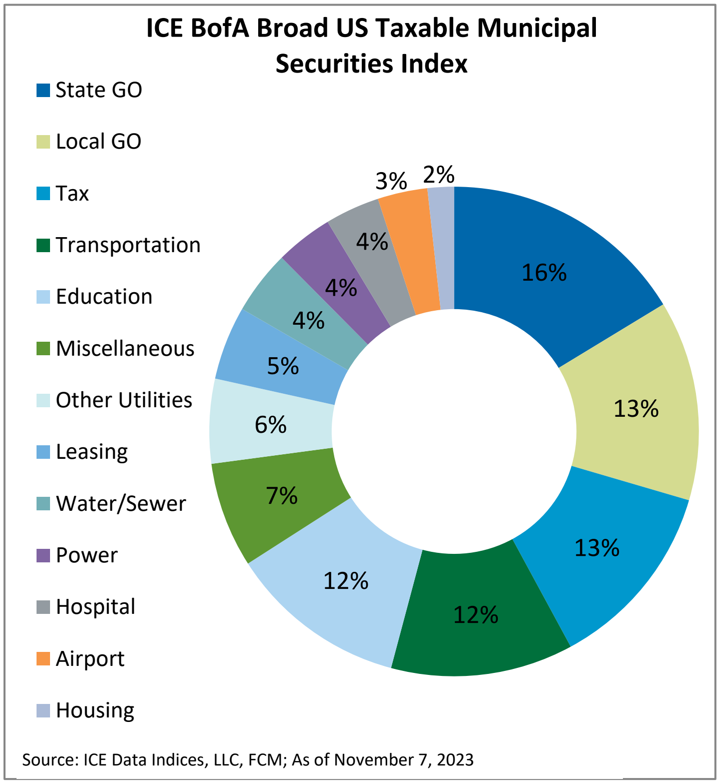
Outstanding Taxable Municipal Bonds (billions)		
Segment	Outstanding	% of Total
Municipal CUSIP	$664.33	82%
Corporate CUSIP	$145.78	18%
Total Taxable	$810.10	100%
AMT	$188.23	n/a

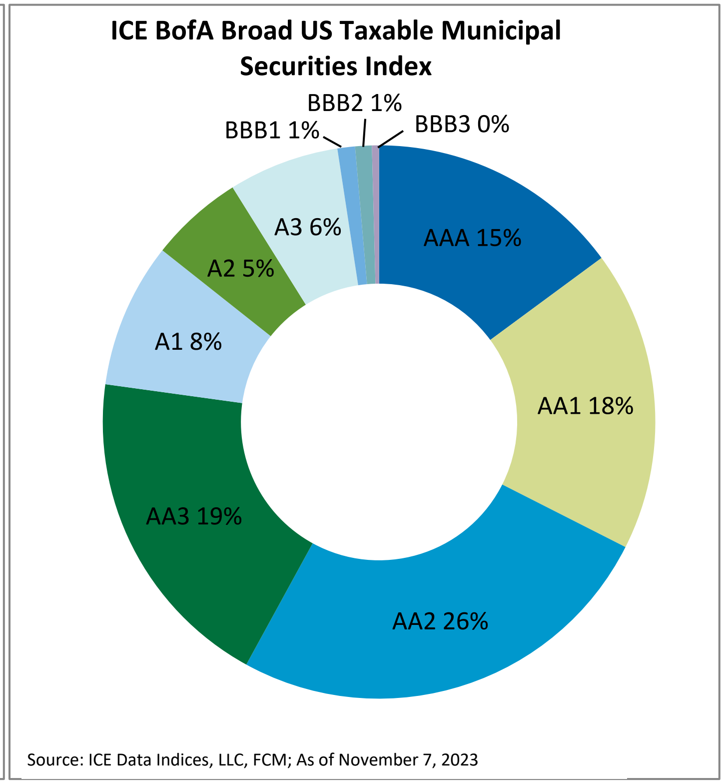
Issue Type	Outstanding	% of Total
General Obligation	$204.19	25%
Revenue	$581.94	72%
Other	$23.97	3%

Source: Bloomberg Finance LLP, FCM; As of November 7, 2023

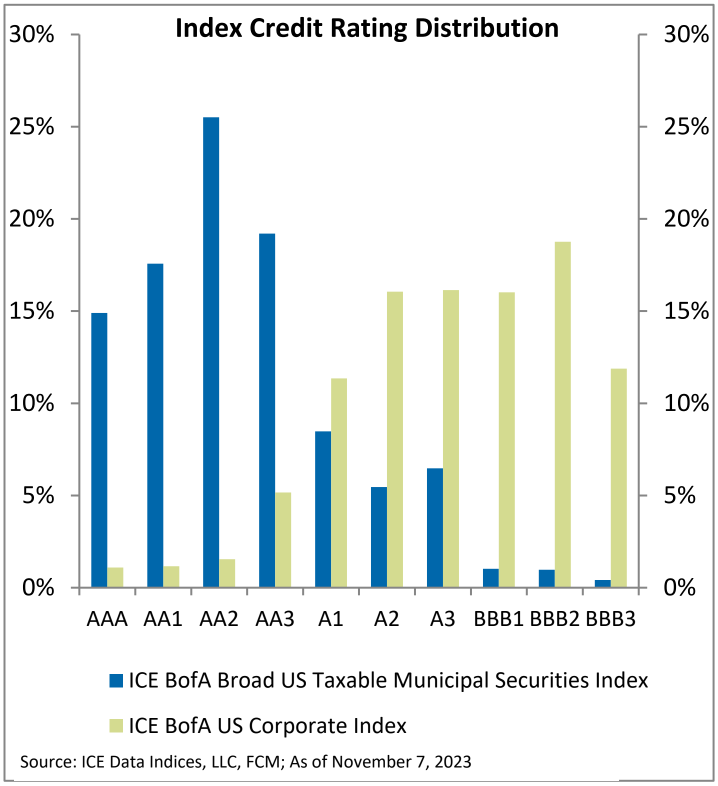
Sector, Credit Rating, and Maturity

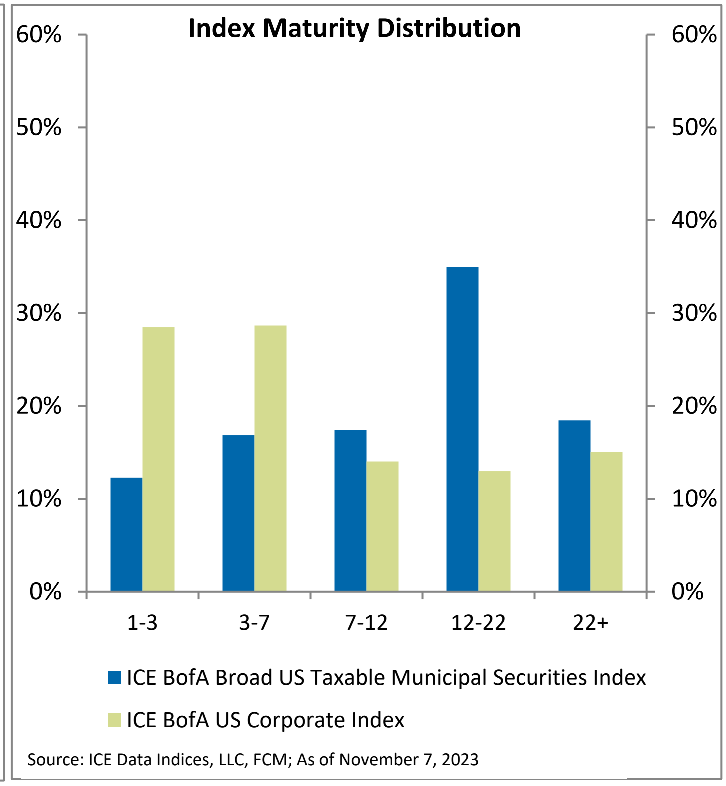
State general obligation (GO) is the largest sector in the broad taxable municipal index at 16%, followed by local GO at 13%, tax-backed at 13%, and transportation and education both at 12% (see Appendix B for index definitions). Given that GO bonds are typically repaid with tax revenues, or tax revenues are pledged in the instance that a primary dedicated revenue source is insufficient, nearly half (42%) of the broad taxable index is composed of tax-supported debt. Seventy-seven percent of the bonds in the broad taxable municipal index are in the top two rating categories. Bonds in the triple-B category comprise 2% of the index. By comparison, the investment grade corporate index has 9% of its bonds in the top two rating categories and 47% in the triple-B category.





The taxable municipal index has a ratings distribution centered around "AA2", which is almost two full rating categories higher than the corporate index's distribution, centered around "BBB1". On the other hand, the corporate index has a shorter maturity profile, with 57% of the bonds having a maturity of 7 years or less. Comparatively, the broad taxable municipal index has 29% of its bonds in this maturity range. The taxable municipal indices have a maturity distribution centered around the 12- to 22-year bucket, with 35% of the bonds in the broad taxable municipal index in this maturity range. Bonds in the longest maturity segment (22+ years) comprise 18%. The corporate index's maturity distribution is centered around the 3- to 7-year bucket at 29%, while 15% of the bonds are in the longest maturity segment.





Qualifying securities for the broad taxable municipal index, as well as for the corporate index, have minimum size requirements that vary based on the initial term to final maturity at time of issuance. Taxable municipal securities with an initial term to final maturity of 1–4 years must have a current amount outstanding of at least $10 million. Securities with an initial term to final maturity of 5–9 years must have a current amount outstanding of at least $15 million. And securities with an initial term to final maturity of 10 years or more must have a current amount outstanding of at least $25 million. Generally, securities that are part of a larger issue, particularly if the issue is index eligible, tend to trade more frequently in the secondary market, and are more liquid than securities that are part of a smaller issue that is not index eligible. The average issue size in the overall municipal bond market in 2022 was $46 million (total bonds issued divided by total number of issues; excludes notes). The average issue size for taxable municipal bonds was $48 million. By comparison, the average deal size in the U.S. investment grade corporate bond market in 2022 was approximately $760 million. The broad taxable municipal index has a face value of $384 billion and represents approximately 47% of total outstanding taxable municipal bonds with either a municipal or corporate CUSIP on Bloomberg. The corporate index has a face value of $8.6 trillion and represents approximately one-third of total U.S. financial and nonfinancial corporate debt.

Appendix A – Yield Multipliers (2022 Tax Year)

In-State Taxable Municipal Bond vs. Corporate Bond Yield Multiplier Table[1]

State	Interest on Corporate Bonds Taxable	Interest on In-State Municipals Taxable	Highest State Marginal Tax Rate[2]	Equivalent Yield Multiplier[3]	State	Interest on Corporate Bonds Taxable	Interest on In-State Municipals Taxable	Highest State Marginal Tax Rate[2]	Equivalent Yield Multiplier[3]
Alabama	Y	N	5.00%	1.053	Montana	Y	N	6.75%	1.072
Alaska	N	N	0.00%	1.000	Nebraska	Y	N	6.84%	1.073
Arizona	Y	N	2.98%	1.031	Nevada	N	N	0.00%	1.000
Arkansas	Y	N	4.90%	1.052	New Hampshire	Y	N	5.00%	1.053
California	Y	N	13.30%	1.153	New Jersey	Y	N	10.75%	1.120
Colorado	Y	N	4.40%	1.046	New Mexico	Y	N	5.90%	1.063
Connecticut	Y	N	6.99%	1.075	New York	Y	N	10.90%	1.122
Delaware	Y	N	6.60%	1.071	New York City	Y	N	14.78%	1.173
District of Columbia	Y	N	8.95%	1.098	North Carolina	Y	N	4.99%	1.053
Florida	N	N	0.00%	1.000	North Dakota	Y	N	2.90%	1.030
Georgia	Y	N	5.75%	1.061	Ohio	Y	N	3.99%	1.042
Hawaii	Y	N	11.00%	1.124	Oklahoma	Y	N	4.75%	1.050
Idaho	Y	N	6.00%	1.064	Oregon	Y	N	9.90%	1.110
Illinois	Y	Y	4.95%	1.000	Pennsylvania	Y	N	3.07%	1.032
Indiana	Y	N	6.09%	1.065	Rhode Island	Y	N	5.99%	1.064
Iowa	Y	Y	8.53%	1.000	South Carolina	Y	N	7.00%	1.075
Kansas	Y	N	5.70%	1.060	South Dakota	N	N	0.00%	1.000
Kentucky	Y	N	5.00%	1.053	Tennessee	N	N	0.00%	1.000
Louisiana	Y	N	4.25%	1.044	Texas	N	N	0.00%	1.000
Maine	Y	N	7.15%	1.077	Utah	Y	N	4.85%	1.051
Maryland	Y	N	8.95%	1.098	Vermont	Y	N	8.75%	1.096
Massachusetts	Y	N	9.00%	1.099	Virginia	Y	N	5.75%	1.061
Michigan	Y	N	6.65%	1.071	Washington	N	N	0.00%	1.000
Minnesota	Y	N	9.85%	1.109	West Virginia	Y	N	6.50%	1.070
Mississippi	Y	N	5.00%	1.053	Wisconsin	Y	Y	7.65%	1.000
Missouri	Y	N	5.30%	1.056	Wyoming	N	N	0.00%	1.000

1. Multipliers reflect the highest state marginal tax rates.

2. The highest state marginal tax rate assumes no deduction of state taxes from federal returns.

3. Equals "1.000" if interest on in-state municipals taxable or no state income tax. Otherwise equals 1 / (1 - state marginal rate).

Source: State sources, IRS, FCM

Appendix B – Index Definitions

ICE BofA 5-10 Year US Taxable Municipal Securities Index: ICE BofA 5-10 Year US Taxable Municipal Securities Index is a subset of ICE BofA US Taxable Municipal Securities Index including all securities with a remaining term to final maturity greater than or equal to 5 years and less than 10 years. Inception date: December 31, 2009.

ICE BofA US Taxable Municipal Securities Index: ICE BofA US Taxable Municipal Securities Index tracks the performance of US dollar denominated investment grade taxable municipal securities publicly issued in the US domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch). In addition, qualifying securities must have at least one year remaining term to final maturity, at least 18 months to maturity at point of issuance, a fixed coupon schedule and a minimum amount outstanding of $250 million. Callable perpetual securities qualify provided they are at least one year from the first call date. Fixed-to-floating rate securities also qualify provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Original issue zero coupon bonds and "global" securities (debt issued simultaneously in the eurobond and US domestic markets) qualify for inclusion in the Index. Tax-exempt U.S. municipal, 144a and securities in legal default are excluded from the Index. Index constituents are market capitalization weighted. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index. Information concerning constituent bond prices, timing and conventions is provided in the ICE BofA Bond Index Guide, which can be accessed on our public website (www.mlindex.ml.com), or by sending a request to iceindices@theice.com. The index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. New issues must settle on or before the calendar month end rebalancing date in order to qualify for the coming month. No changes are made to constituent holdings other than on month end rebalancing dates. Inception date: December 31, 2009.

ICE BofA Broad US Taxable Municipal Securities Index: ICE BofA Broad US Taxable Municipal Securities Index tracks the performance of U.S. dollar denominated debt publicly issued by U.S. states and territories, and their political subdivisions, in the U.S. domestic market. Qualifying securities must be subject to U.S. federal taxes and must have at least 18 months to maturity at point of issuance, at least one year remaining term to final maturity to enter the index and one month remaining term to final maturity to remain in the index, a fixed coupon schedule (including zero coupon bonds) and an investment grade rating (based on an average of Moody's, S&P and Fitch). The call date on which a pre-refunded bond will be redeemed is used for purposes of determining qualification with respect to final maturity requirements. Minimum size requirements vary based on the initial term to final maturity at time of issuance. Securities with an initial term to final maturity greater than or equal to one year and less than five years must have a current amount outstanding of at least $10 million. Securities with an initial term to final maturity greater than or equal to five years and less than ten years must have a current amount outstanding of at least $15 million. Securities with an initial term to final maturity of ten years or more must have a current amount outstanding of at least $25 million. "Direct pay" Build America Bonds (i.e., a direct federal subsidy is paid to the issuer) qualify for inclusion in the index, but "tax-credit" Build America Bonds (i.e., where the investor receives a tax credit on the interest payments) do not. Local bonds issued by U.S. territories within their jurisdictions that are tax exempt within the U.S. territory but not elsewhere are excluded from the Index. All 144a securities, both with and without registration rights, and securities in legal default are excluded from the Index. Index constituents are market capitalization weighted. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index. Information concerning constituent bond prices, timing and conventions is provided in the ICE BofA Bond Index Guide, which can be accessed on our public website (www.mlindex.ml.com), or by sending a request to iceindices@theice.com. The index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. New issues must settle on or before the calendar month end rebalancing date in order to qualify for the coming month. No changes are made to constituent holdings other than on month end rebalancing dates. Inception date: December 31, 2009.

ICE BofA 5-10 Year US Municipal Securities Index: ICE BofA 5-10 Year US Municipal Securities Index is a subset of ICE BofA US Municipal Securities Index including all securities with a remaining term to final maturity greater than or equal to 5 years and less than 10 years. Inception date: December 31, 1996.

ICE BofA US Municipal Securities Index: ICE BofA US Municipal Securities Index tracks the performance of US dollar denominated investment grade tax exempt debt publicly issued by US states and territories, and their political subdivisions, in the US domestic market. Qualifying securities must have at least one year remaining term to final maturity, at least 18 months to final maturity at the time of issuance, a fixed coupon schedule and an investment grade rating (based on an average of Moody's, S&P and Fitch). Minimum size requirements vary based on the initial term to final maturity at time of issuance. Securities with an initial term to final maturity greater than or equal to one year and less than five years must have a current amount outstanding of at least $10 million. Securities with an initial term to final maturity greater than or equal to five years and less than ten years must have a current amount outstanding of at least $15 million. Securities with an initial term to final maturity of ten years or more must have a current amount outstanding of at least $25 million. The call date on which a pre-refunded bond will be redeemed is used for purposes of determining qualification with respect to final maturity requirements. Original issue zero coupon bonds are included in the Index. Taxable municipal securities, 144a securities and securities in legal default are excluded from the Index. Index constituents are market capitalization weighted. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index.

Information concerning constituent bond prices, timing and conventions is provided in the ICE BofA Bond Index Guide, which can be accessed on our public website (www.mlindex.ml.com), or by sending a request to iceindices@theice.com. The index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. New issues must settle on or before the calendar month end rebalancing date in order to qualify for the coming month. No changes are made to constituent holdings other than on month end rebalancing dates. Inception date: December 31, 1988.

ICE BofA 5-10 Year AAA-A US Corporate Excluding 144a Index: ICE BofA 5-10 Year AAA-A US Corporate Excluding 144a Index is a subset of ICE BofA US Corporate Index including all securities with a remaining term to final maturity greater than or equal to 5 years and less than 10 years and rated AAA through A3, inclusive, excluding 144a securities. Inception date: December 31, 1996.

ICE BofA US Corporate Index: ICE BofA US Corporate Index tracks the performance of US dollar denominated investment grade corporate debt publicly issued in the US domestic market. Qualifying securities must have an investment grade rating (based on an average of Moody's, S&P and Fitch), at least 18 months to final maturity at the time of issuance, at least one year remaining term to final maturity as of the rebalancing date, a fixed coupon schedule and a minimum amount outstanding of $250 million. Original issue zero coupon bonds, 144a securities (with and without registration rights), and pay-in-kind securities (including toggle notes) are included in the index. Callable perpetual securities are included provided they are at least one year from the first call date. Fixed-to-floating rate securities are included provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Contingent capital securities ("cocos") are excluded, but capital securities where conversion can be mandated by a regulatory authority, but which have no specified trigger, are included. Other hybrid capital securities, such as those issues that potentially convert into preference shares, those with both cumulative and non-cumulative coupon deferral provisions, and those with alternative coupon satisfaction mechanisms, are also included in the index. Equity-linked securities, securities in legal default, hybrid securitized corporates, eurodollar bonds (USD securities not issued in the US domestic market), taxable and tax-exempt US municipal securities and DRD-eligible securities are excluded from the index. Index constituents are market capitalization weighted. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index. Information concerning constituent bond prices, timing and conventions is provided in the ICE BofA Bond Index Guide, which can be accessed on our public website (www.mlindex.ml.com), or by sending a request to iceindices@theice.com. The index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. New issues must settle on or before the calendar month end rebalancing date in order to qualify for the coming month. No changes are made to constituent holdings other than on month end rebalancing dates. Inception date: December 31, 1972.

ICE BofA 5-10 Year US Treasury Index: ICE BofA 5-10 Year US Treasury Index is a subset of ICE BofA US Treasury Index including all securities with a remaining term to final maturity greater than or equal to 5 years and less than 10 years. Inception date: June 30, 1986.

ICE BofA US Treasury Index: ICE BofA US Treasury Index tracks the performance of US dollar denominated sovereign debt publicly issued by the US government in its domestic market. Qualifying securities must have at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of $1 billion. Qualifying securities must have at least 18 months to final maturity at the time of issuance. Callable perpetual securities qualify provided they are at least one year from the first call date. Fixed-to-floating rate securities also qualify provided they are callable within the fixed rate period and are at least one year from the last call prior to the date the bond transitions from a fixed to a floating rate security. Bills, inflation-linked debt and strips are excluded from the Index; however, original issue zero coupon bonds are included in the index and the amounts outstanding of qualifying coupon securities are not reduced by any portions that have been stripped. Securities issued or marketed primarily to retail investors do not qualify for inclusion in the index. Index constituents are market capitalization weighted. Accrued interest is calculated assuming next-day settlement. Cash flows from bond payments that are received during the month are retained in the index until the end of the month and then are removed as part of the rebalancing. Cash does not earn any reinvestment income while it is held in the index. Information concerning constituent bond prices, timing and conventions is provided in the ICE BofA Bond Index Guide, which can be accessed on our public website (www.mlindex.ml.com), or by sending a request to iceindices@theice.com. The index is rebalanced on the last calendar day of the month, based on information available up to and including the third business day before the last business day of the month. New issues must settle on or before the calendar month end rebalancing date in order to qualify for the coming month. No changes are made to constituent holdings other than on month end rebalancing dates. Inception date: December 31, 1977.

Efficient Frontier chart refers to the following indices:

Bloomberg US Corporate 1-3 Index (1-3y US Corp), Bloomberg US Corporate 5-7 Index (5-7y US Corp), Bloomberg US Corporate 10-15 Index (10-15y US Corp), Bloomberg US Corporates BBB Ex Financials Index (BBB US Corp ex-Fin), Bloomberg US Corporates Investment Grade Industrials Index (US Indu), Bloomberg US Corporates Investment Grade Utilities Index (US Util), Bloomberg US Corporates Investment Grade Banks - Senior Index (US Banks Sr), Bloomberg Non-Callable Fannie Mae Agency Index (Noncall Agency), Bloomberg US Mortgage Backed Securities Index (US MBS), and Bloomberg US Asset Backed Securities Index (US ABS), are subsets of the Bloomberg US Aggregate Bond Index, a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, fixed-rate agency MBS, ABS and CMBS (agency and non-agency). Provided the necessary inclusion rules are met, US Aggregate-eligible securities also contribute to the multi-currency Global Aggregate Index and the US Universal Index. The US Aggregate Index was created in 1986, with history backfilled to January 1, 1976. Principal and interest must be denominated in USD. Securities must be rated investment grade (Baa3/BBB-/BBB- or higher) using the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. In cases where explicit bond level ratings may not be available, other sources may be used to classify securities by credit quality. For Treasury, government-related and corporate securities, USD300mn minimum par amount outstanding. For MBS pass-throughs, pool aggregates must have USD1bn par amount outstanding. For ABS, USD500mn minimum deal size and USD25mn minimum tranche size. For CMBS, USD500mn minimum deal size with at least USD300mn amount outstanding remaining in the deal and USD25mn minimum tranche size. US Treasuries held in the Federal Reserve SOMA account (both purchases at issuance and net secondary market transactions) are deducted from the total amount outstanding. New issuance bought at auction by the Federal Reserve does not enter the index. Net secondary market purchases/sales are adjusted in the Projected Universe of the index weekly, typically on Fridays, and in the Returns Universe once a month, based on the amount outstanding in the Projected Universe at prior month-end. Fixed-rate coupon. Callable fixed-to-floating rate bonds are eligible during their fixed-rate term only. Bonds with a step-up coupon that changes according to a predetermined schedule are eligible. At least one year until final maturity, regardless of optionality. MBS must have a weighted average maturity of at least one year. CMBS and ABS must have a remaining average life of at least one year. Bonds that convert from fixed to floating rate, including fixed-to-float perpetuals, will exit the index one year prior to conversion to floating-rate. Fixed-rate perpetuals are not included. Sub-indices based on maturity are inclusive of lower bounds. Intermediate maturity bands include bonds with maturities of 1 to 9.999 years. Long maturity bands include maturities of 10 years or greater. Only fully taxable issues are eligible. Build America Bonds (BAB) with the tax credit to the issuer are eligible; those with tax credits issued to investors are considered tax exempt. Dividend Received Deduction (DRD) and Qualified Dividend Income (QDI) eligible securities are excluded. SEC-registered securities, bonds exempt from registration at the time of issuance and SEC Rule 144A securities with registration rights are eligible. A security with both SEC Regulation-S (Reg-S) and SEC Rule 144A tranches is treated as one security for index purposes. The 144A tranche is used to prevent double-counting and represents the combined amount outstanding of the 144A and Reg-S tranches. Global bonds are included. Bonds that were previously SEC-registered or 144A with registration rights but later deregistered by the issuer remain index eligible. Senior and subordinated issues are included. Included: bullet, putable, sinkable/amortizing and callable bonds, taxable municipal securities, including Build America Bonds (BAB), original issue zero coupon and underwritten MTN, enhanced equipment trust certificates (EETC), certificates of deposit, fixed-rate and fixed-to-float (including fixed-to-variable) capital securities, covered bonds (as of January 1, 2011), US agency CMBS (as of July 1, 2014). Excluded: contingent capital securities, including traditional CoCos and contingent write-down securities, bonds with equity type features (eg, warrants, convertibles, preferreds, DRD/QDI-eligible issues), tax-exempt municipal securities, inflation-linked bonds, floating-rate issues, private placements, retail bonds, USD25/USD50 par bonds, structured notes, pass-through certificates, non-ERISA eligible CMBS issues, CMBS A1A tranches (as of January 1, 2011), Illiquid securities with no available internal or third-party pricing source. For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month. During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, and ticker changes) are reflected daily in the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced. Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the Returns Universe for the following month so that index results over two or more months reflect monthly compounding. Qualifying securities issued, but not necessarily settled on or before the month-end rebalancing date, qualify for inclusion in the following month's index if the required security reference information and pricing are readily available.

Bloomberg US Corporates B and BB High Yield Cash Index - 3% Issuer Cap (BB-B US HY) is a subset of the Bloomberg Barclays US Corporate High Yield Bond Index, which measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below. Bonds from issuers with an emerging markets country of risk, based on the indices' EM country definition, are excluded. The US Corporate High Yield Index is a component of the US Universal and Global High Yield Indices. The index was created in 1986, with history backfilled to July 1, 1983. Corporate (industrial, financial institutions, utility) issues only. Principal and interest must be denominated in USD. Securities must be rated high yield (Ba1/BB+/BB+ or below) using the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. In cases where explicit bond level ratings may not be available, other sources may be used to classify securities by credit quality. USD150mn minimum par amount outstanding. Fixed-rate coupon. Pay-in-kind (PIK) bonds and toggle notes are eligible. Partial PIKs are excluded. Callable fixed-to-floating rate and fixed-to-variable bonds are eligible during their fixed-rate term only. Bonds with a step-up coupon that changes according to a predetermined schedule are eligible. At least one year until final maturity, regardless of optionality. Bonds that convert from fixed to floating rate, including fixed-to-float perpetuals, will exit the index one year prior to conversion to floating-rate. Fixed-rate perpetuals are not included. Sub-indices based on maturity are inclusive of lower bounds. Intermediate maturity bands include bonds with maturities of 1 to 9.9999 years. Long maturity bands include maturities of 10 years or greater. Senior and subordinated issues are included. Only fully taxable issues are eligible. Dividend Received Deduction (DRD) and Qualified Dividend Income (QDI) eligible securities are excluded. SEC-registered bonds, bonds exempt from registration at the time of issuance and SEC Rule 144A securities (with or without registration rights) are eligible. A security with both SEC Regulation-S (Reg-S) and SEC 144A tranches is treated as one security for index purposes. The 144A tranche is used to prevent double-counting and represents the combined amount outstanding of the 144A and Reg-S tranches. Included: bullet, putable, sinkable/amortizing and callable bonds, original issue zero coupon bonds, pay-in-kind (PIK) bonds and toggle notes, fixed-rate and fixed-to-float (including fixed-to-variable) capital securities. Excluded: debt issued by emerging markets corporate issuers, defaulted bonds, contingent capital securities, including traditional CoCos and contingent write-down securities, with explicit capital ratio or solvency/balance sheet-based triggers, bonds with equity type features (eg, warrants, convertibles, preferreds, DRD/QDI-eligible issues), partial pay-in-kind (PIK) bonds, Eurodollar issues, inflation-linked bonds, floating-rate issues, private placements, retail bonds, structured notes, pass-through certificates, illiquid securities with no available pricing. For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month. During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, and ticker changes) are reflected daily in the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced. Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the returns universe for the following month so that index results over two or more months reflect monthly compounding. Qualifying securities issued, but not necessarily settled on or before the month-end rebalancing date, qualify for inclusion in the following month's index if the required security reference information and pricing are readily available.

Bloomberg Municipal Bond 1-5 Index (1-5y Muni), Bloomberg Municipal Bond 5-10 Index (5-10y Muni), and Bloomberg Municipal Bond 22+ Index (22y+ Muni) are subsets of the Bloomberg U.S. Municipal Index, which covers the USD-denominated long-term tax-exempt bond market. It includes general obligation and revenue bonds, which both can be pre-refunded years later and get reclassified as such. Many of the subindices of the Municipal Index have historical data to January 1980. In addition, several subindices based on maturity and revenue source have been created, some with inception dates after January 1980 but no later than July 1, 1993. Principal and interest must be denominated in USD. Securities must be rated investment grade (Baa3/BBB-/BBB- or higher) using the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. Par value of at least $7mn; issued as part of a transaction at least $75mn. Fixed-rate coupon. At least 1 year until final maturity. Bonds with a dated date of January 1, 1991, and later are eligible for inclusion into the benchmark. Only fully tax-exempt issues are eligible. Included: federal tax-exempt municipal bonds, original issue zero coupon bonds, fully refunded bonds. Excluded: taxable municipals, floating-rate, derivatives, private placements, limited offerings, monetary defaults, partially pre-refunded bonds, bonds backed by LOC or GICs. For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month. During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, and ticker changes) are reflected daily in the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced. Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the Returns Universe for the following month so that index results over two or more months reflect monthly compounding. Qualifying securities issued, but not necessarily settled on or before the month-end rebalancing date, qualify for inclusion in the following month's index if the required security reference information and pricing are readily available.

Bloomberg Taxable Municipal Bond 1-3 Index (1-3y Txbl Muni), Bloomberg Taxable Municipal Bond 5-10 Index (5-10y Txbl Muni), and Bloomberg Taxable Municipal Bond 10 Index - 1% Issuer Cap (10y+ Txbl Muni) are subsets of the Bloomberg Barclays Municipal Taxable Bonds Index, a flagship measure of the USD-denominated taxable municipal bond market over 1 year to maturity. The Municipal Taxable Bonds Index has history going back to January 2006. Par value of at least $7mn; issued as part of a transaction at least $75mn. Securities must be rated investment grade (Baa3/BBB-/BBB- or higher) using the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. At least 1 year until final maturity. Bonds with a dated date of January 1, 1991, and later are eligible for inclusion into the benchmark. Fixed-rate. Denominated in USD. Only taxable issues are eligible. Included: taxable municipals, original issue zero coupon bonds, fully refunded bonds. Excluded: floating-rate, derivatives, private placements, limited offerings, monetary defaults, partially pre-refunded bonds, bonds backed by LOC or GICs. For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month. During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, and ticker changes) are reflected daily in the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced. Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the returns universe for the following month so that index results over two or more months reflect monthly compounding. Qualifying securities issued, but not necessarily settled on or before the month-end rebalancing date, qualify for inclusion in the following month's index if the required security reference information and pricing are readily available.

Bloomberg Municipal High Yield Bond 12+ Index (12y+ Muni HY) is a subset of the Bloomberg Barclays Municipal High Yield Bond Index, a flagship measure of the non-investment grade and nonrated USD-denominated tax-exempt bond market. Included in the index are securities from all 50 US States and four other qualifying regions (Washington DC, Puerto Rico, Guam, and the Virgin Islands). The index includes state and local general obligation bonds and revenue bonds. All bonds in the Municipal High Yield Bond Index are tax exempt, and hence are not eligible for other indices that include taxable high yield bonds, such as the US High Yield Index and EM USD Aggregate Index. The Municipal High Yield Bond Index has history going back to October 1995. Par value of at least $3mn; issued as part of a transaction of at least $20mn. High yield (Ba1/BB+/BB+ or below) and non-rated issues are eligible. For rated securities, credit quality for index classification purposes is assigned as the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. Defaulted securities are not index eligible. A security is considered in default for index inclusion purposes if 1) the issuer misses an interest and/or principal payment, or 2) Moody's, S&P, or Fitch assigns a D rating. At least 1 year until final maturity. Bonds with a dated date of January 1, 1991, and later are eligible for inclusion into the benchmark. Coupon Fixed-rate coupon (including zero coupon). Currency Denominated in USD. Taxability Only fully tax-exempt issues are eligible. Included: mandatory put bonds, partial pre-refunded bonds containing only unrefunded portion, limited offerings (as of October 1, 2014), remarketed securities. Excluded: taxable municipals, pre-refunded bonds, Build America Bonds (BABs), floating-rate, derivatives, private placements, monetary defaults, crossover refunded bonds, bonds containing both pre-refunded and unrefunded portions, illiquid securities where reliable pricing is unavailable. For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month. During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, and ticker changes) are reflected daily in the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced. Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the returns universe for the following month so that index results over two or more months reflect monthly compounding. Qualifying securities issued, but not necessarily settled on or before the month-end rebalancing date, qualify for inclusion in the following month's index if the required security reference information and pricing are readily available.

Bloomberg US CMBS Investment Grade AAA Index (AAA US CMBS) and Bloomberg US CMBS Investment Grade BBB Index (BBB US CMBS) are subsets of the Bloomberg US CMBS Investment Grade Index, which measures the market of US Agency and US Non-Agency conduit and fusion CMBS deals with a minimum current deal size of $300mn. The index is divided into two subcomponents: the US Aggregate-eligible component, which contains bonds that are ERISA eligible under the underwriter's exemption, and the non-US Aggregate-eligible component, which consists of bonds that are not ERISA eligible. The Index was launched on January 1, 1997. Eligible US Agency CMBS Programs are Freddie Mac K-Certificates: Senior and Mezzanine, Fannie Mae GeMS/ACES: Senior tranches. Vintage (applicable to US Agency CMBS only) Deals issued after January 2009. USD500mn minimum deal size at issuance with at least USD 300mn amount outstanding remaining in the deal; no minimum tranche size requirement. For the US Aggregate-eligible portion of the CMBS Index, USD500mn minimum original deal size with at least USD300mn amount outstanding remaining in the deal; USD 25mn minimum tranche size. Securities must be rated investment grade (Baa3/BBB-/BBB- or higher) using the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. Securities that do not carry an explicit bond level rating, but are guaranteed by Freddie Mac or Fannie Mae are assigned the US government rating. Non-guaranteed deals that are not rated at the bond level are excluded from the index. Principal and interest must be denominated in USD. Must be fixed-rate, weighted average coupon (WAC), or capped WAC securities. Securities must have a remaining average life of at least one year. Publicly issued and US Rule 144A/private placements are eligible. SEC-registered securities, SEC Rule 144A securities with or without registration rights are index eligible. For the US Aggregate-eligible portion of the CMBS Index, securities must be publicly issued or US Rule 144A with registration rights. Included: public and Rule 144A/private placements, conduit and fusion deals, private label transactions, US Agency CMBS (as of July 1, 2014), Freddie Mac K-Certificates, Fannie Mae GeMS/ACES, senior and mezzanine tranches (Freddie Mac only). Excluded: single-borrower, single-asset deals, floating-rate issues, illiquid securities with no available internal or third-party price source, collateral not originated specifically for securitization, A1A tranches (as of January 1, 2011), Fannie Mae DUS deals, Ginnie Mae project loans, US Agency CMBS deals issued before January 2009, non-guaranteed deals without an explicit bond level rating. For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month. During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, and ticker changes) are reflected daily in the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced. Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the Returns Universe for the following month so that index results over two or more months reflect monthly compounding. Qualifying securities issued, but not necessarily settled on or before the month-end rebalancing date, qualify for inclusion in the following month's index if the required security reference information and pricing are readily available.

Bloomberg Euro AGG Corporate Ex Financials Index (Euro Corp ex-Fin) is a subset of the Bloomberg Pan-European Aggregate Bond Index, a broad-based flagship benchmark that measures fixed-rate, investment grade securities in the following European currencies: Swiss Franc, Czech Koruna, Danish Krone, Euro, British Pound, Hungarian Forint, Norwegian Krone, Polish Zloty, Romanian Leu, Russian Ruble, and Swedish Krona. The principal asset classes are treasuries, government-related, corporate, and securitized, which include Pfandbriefe, other covered bonds and asset-backed securities. Inclusion is based on currency denomination of a bond and not country of risk of the issuer. The Pan-European Aggregate is a component of other flagship indices, such as the multi-currency Global Aggregate Index. The Pan-European Aggregate Index was launched on January 1, 1999. Principal and interest must be denominated in: CHF, CZK, DKK, EUR, GBP, HUF, NOK, PLN, RON, RUB, SEK. Securities must be rated investment grade (Baa3/BBB-/BBB- or higher) using the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. In cases where explicit bond level ratings may not be available, other sources may be used to classify securities by credit quality. Amount Outstanding: 200mn GBP, 300mn CHF and EUR, 1bn RON, 2bn NOK, DKK and PLN, 2.5bn SEK, 10bn CZK, 20bn RUB, 200b: HUF. Fixed-rate coupon. Callable fixed-to-floating rate bonds are eligible during their fixed-rate term only. Bonds with a step-up coupon that changes according to a predetermined schedule are eligible. At least one year until final maturity, regardless of optionality. CMBS and ABS must have a remaining average life of at least one year. Bonds that convert from fixed to floating rate, including fixed-to-float perpetuals, will exit the index one year prior to conversion to floating-rate. Fixed-rate perpetuals are not included. Sub-indices based on maturity are inclusive of lower bounds. Intermediate maturity bands include bonds with maturities of 1 to 9.9999 years. Long maturity bands include maturities of 10 years or greater. Only fully taxable issues are eligible. Publicly issued in the global and regional markets. Senior and subordinated issues are included. Included: bullet, putable, sinkable/amortizing and callable bonds, original issue zero coupon, underwritten MTN, fixed-rate and fixed-to-float (including fixed-to-variable) capital securities. Excluded: contingent capital securities, including traditional CoCos and contingent write-down securities, bonds with equity type features (e.g., warrants, convertibles, preferreds), inflation-linked bonds, floating-rate issues, private placements, retail bonds, structured notes, pass-through certificates, illiquid securities with no available internal or third-party pricing source. For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month. During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, ticker changes, etc.) are reflected daily in both the Projected (Forward) and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected (Forward) of the index on a daily basis, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced. Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the Returns Universe for the following month so that index results over two or more months reflect monthly compounding. Qualifying securities issued/announced, but not necessarily settled, on or before the month-end rebalancing date, qualify for inclusion in the following month's index if required security reference information and pricing are readily available.

Bloomberg Pan-European HY Ex Financials Index (Euro HY ex-Fin) is a subset of the Bloomberg Barclays Euro High Yield Index, which measures the market of non-investment grade, fixed-rate corporate bonds denominated in Euro. Inclusion is based on the currency of issue and not the domicile of the issuer. The index excludes emerging market debt. It was created in 1999 and is part of the Global High Yield Index. Corporate (industrial, utility and financial institutions) issuers. Principal and interest must be denominated in EUR. Amount outstanding EUR 100mn. Securities must be rated investment grade (Ba1/BB+/BB+ or below) using the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. In cases where explicit bond level ratings may not be available, other sources may be used to classify securities by credit quality. At least one year until final maturity, regardless of optionality. Bonds that convert from fixed to floating rate, including fixed-to-float perpetuals, will exit the index one year prior to conversion to floating-rate. Fixed-rate perpetuals are not included. Fixed rate, pay-in-kind (PIK) and toggle notes are eligible. Callable fixed-to-floating rate bonds are eligible during their fixed-rate term only. Step-up coupons and those that change according to a predetermined schedule are also eligible. Publicly issued in the global and regional markets. Senior and subordinated issues are included. Included: bullet, putable, sinkable/amortizing and callable bonds, original issue zero coupons, fixed-rate and fixed-to-float (including fixed-to-variable) capital securities. Excluded: contingent capital securities, including traditional, CoCos and contingent write-down securities, with explicit capital ratio or solvency/balance sheet-based triggers, bonds with equity type features (e.g. warrants, convertibles, preferreds), inflation-linked bonds, private placements and retail bonds, partial pay-in-kind (PIK) bonds, defaulted issues, structured notes, pass-through certificates, unrated securities, securities where reliable pricing is unavailable. For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month. During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, ticker changes, etc.) are reflected daily in both the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced. Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the returns universe for the following month so that index results over two or more months reflect monthly compounding. Qualifying securities issued/announced, but not necessarily settled, on or before the month-end rebalancing date, qualify for inclusion in the following month's index if required security reference information and pricing are readily available.

Bloomberg Emerging Markets USD Corporates Index (EM Corp) is a subset of the Bloomberg Emerging Markets USD Aggregate Bond Index, a flagship hard currency Emerging Markets debt benchmark that includes fixed and floating-rate US dollar-denominated debt issued from sovereign, quasi-sovereign, and corporate EM issuers. Country eligibility and classification as Emerging Markets is rules-based and reviewed annually using World Bank income group and International Monetary Fund (IMF) country classifications. This index was previously called Bloomberg US EM Index, and history is available back to 1993. Principal and coupon must be denominated in USD. Hard currency debt from sovereign, agency (government owned, government guaranteed, and government sponsored entities), local authority and corporate issuers are eligible. Under the index classification schema, an issuer is classified as government-related (as opposed to corporate) if it is more than 50% government owned, carries a government guarantee or is government sponsored. For flagship EM hard currency indices, Bloomberg defines quasi-sovereigns as any non-sovereign government-related issuer inclusive of both government-related agency and local authority debt. Bloomberg uses a fixed list of emerging market countries that is reviewed annually to define country eligibility in dedicated EM hard currency, local currency, and inflation-linked benchmarks. Criteria for inclusion in the EM country list are rules-based and include: Countries that meet one of the following two criteria: World Bank Income group classifications of low/middle income OR International Monetary Fund (IMF) classification as a non-advanced country. Additional countries that bond investors classify as EM due to factors such as investability concerns, the presence of capital controls, and/or geographic considerations may also be included on the list and are also reviewed on an annual basis. As of April 2014, 4 additional markets are included in the Bloomberg EM country list: Czech Republic, Israel, South Korea, and Taiwan. Investment grade, high yield and unrated securities are permitted. Unrated bonds may use an implied issuer rating when not rated by a credit rating agency (Moody's, S&P, and Fitch). At the security level, USD 500mn minimum par amount outstanding. Fixed and floating-rate coupon structures are permitted. At least one year until final maturity for new and continuing issuers, regardless of optionality. Bonds that convert from fixed to floating rate, including fixed-to-float perpetual, will exit the index one year prior to conversion to floating rate. Fixed-rate perpetual are not included. SEC registered and 144A/Reg S bonds are eligible. Publicly issued in the global and local markets. Brady bonds, Eurobonds, globals, loans, and local issues are permitted. Warrants are excluded. Defaulted corporate bonds are removed from the index at the end of the month of default. Defaulted sovereigns remain in the index until they are restructured, defeased, exchanged, or no longer outstanding. For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month. During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, and ticker changes) are reflected daily in the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced. Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the Returns Universe for the following month so that index results over two or more months reflect monthly compounding. Qualifying securities issued, but not necessarily settled on or before the month-end rebalancing date, qualify for inclusion in the following month's index if the required security reference information and pricing are readily available.

Bloomberg Asia Ex Japan USD Credit Index (Asia Ex-Jpn Corp) and Bloomberg Asia Ex Japan USD High Yield Credit Index (Asia Ex-Jpn HY) are subsets of the Bloomberg Barclays EM Asia USD Credit Index, which tracks the performance of fixed-rate US dollar-denominated government-related and corporate debt of the Asia ex-Japan region. As of Sep 2018, the following Asian markets are eligible for inclusion: Bangladesh, China, Hong Kong, India, Indonesia, Macau, Malaysia, Mongolia, Pakistan, Philippines, South Korea, Singapore, Sri Lanka, Taiwan, Thailand, and Vietnam. Historical index returns are available from July 1, 2009, and are reported on a USD, unhedged basis. Principal and coupon must be denominated in USD. Corporate (industrials, financial institutions, utilities). Government-related (foreign agencies, sovereign, supranational and local authorities). Under the indices' classification schema, an issuer is classified as government-related (as opposed to corporate) if it is 50% or more government owned, carries a government guarantee or is government sponsored. At the security level, USD 150mn minimum par amount outstanding. Index eligibility is determined by the country of economic risk of each bond. Currently the eligible countries are Bangladesh, China, Hong Kong, India, Indonesia, Macau, Malaysia, Mongolia, Pakistan, Philippines, South Korea, Singapore, Sri Lanka, Taiwan, Thailand, and Vietnam. Additional Asian markets may be added to the index as new countries or substituted for existing countries based on a review of market liquidity and overall accessibility. Investment grade, high yield and unrated securities are permitted. Bonds in default are excluded. Bonds are rated using the middle rating of Moody's, S&P, and Fitch. When a rating from only two agencies is available, the lower is used; when a rating from only one agency is available, that rating is used to determine index eligibility. In cases where explicit bond level ratings may not be available, other sources may be used to classify securities by credit quality. Expected ratings at issuance may be used to ensure timely index inclusion or to properly classify split-rated issuers. Unrated securities may use an issuer rating for index classification purposes if available. At least one year until final maturity for new and continuing issuers, regardless of optionality. Bonds that convert from fixed to floating-rate, including fixed to floating-rate perpetuals, will exit the index one year prior to conversion to floating-rate. Fixed rate perpetuals are not included. Fixed-rate coupon. Fixed-to-floating rate bonds are eligible during their fixed-rate term only. Bonds with a step-up coupon that changes according to a predetermined schedule are eligible. Included: fixed-rate bullet, puttable, and callable bonds, fixed-to-float (including fixed-to-variable) securities, contingent capital. Excluded: bonds with equity type features (e.g. warrants, convertibles, preferreds), inflation-linked bonds, private placements, floating-rate issues, defaulted bonds, bonds with no available internal or third-party pricing source. SEC-registered securities, SEC Rule 144A and SEC Regulation-S (RegS) securities are eligible. A security with both SEC Regulation-S (Reg-S) and SEC Rule 144A tranches is treated as one security for index purposes. When both 144A and Reg-S tranches are available for a bond, the Reg-S tranche is used for emerging market issuers, except when the 144A has registration rights, in which case the 144A tranche is used, For non-emerging markets issuers, the 144A tranche is used. Market of Issue Publicly issued in the global and local markets. For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month. During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, and ticker changes) are reflected in the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced. Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the returns universe for the following month so that index results over two or more months reflect monthly compounding. Qualifying securities issued, but not necessarily settled on or before the month-end rebalancing date, qualify for inclusion in the following month’s index if the required security reference information and pricing are readily available.

Endnotes

[i] Source for municipal issuance is the Bond Buyer. Source for U.S. investment grade corporate issuance is Bloomberg.
[ii] Some municipal bonds may be deemed to be private activity bonds (PABs). Interest from PABs generally is not taxable, however interest from specified PABs issued after August 7, 1986, must be added to income for the purposes of calculating an individual's Alternative minimum Tax (AMT). A discussion of municipal bonds where the interest may be subject to the AMT is beyond the scope of this paper.
[iii] The Tax Cuts and Jobs Act of 2017 eliminated advance refundings as a qualified use of proceeds for tax-exempt bonds.
[iv] State and local government taxation of interest income on municipal securities is determined by individual state laws. The specific provisions and conditions of such exemption vary from state to state. Many states provide residents with a state income tax exemption for municipal securities issued by in-state borrowers, but not for municipal securities issued by out-of-state borrowers. However, not all states provide an exemption for interest income on municipal securities.
[v] The structure of the federal subsidy for most BABs is in the form of a direct payment subsidy paid by the U.S. Department of the Treasury directly to the issuer. The original subsidy to state or local governmental issuers was equal to 35% of the total coupon interest payable to investors. BABs may also have been issued as qualified tax credit bonds.
[vi] The structure of the federal subsidy for RZEDBs is in the form of a direct payment subsidy paid by the U.S. Department of the Treasury directly to the issuer. The original subsidy to state or local governmental issuers was equal to 45% of the total coupon interest payable to investors. RZEDBs may also have been issued as qualified tax credit bonds.
[vii] The structure of the federal subsidy for QSCBs is in the form of a direct payment subsidy paid by the U.S. Department of the Treasury directly to the issuer. The original subsidy to state or local governmental issuers was equal to 100% of the total coupon interest payable to investors. QSCBs may also have been issued as qualified tax credit bonds.
[viii] The Tax Cuts and Jobs Act of 2017 ended federal fund allocations for all tax credit bond programs effective January 1, 2018. Bondholders receive federal income tax credits in lieu of periodic interest payments. These credits compensate bondholders for lending money to the issuer and function as payments of interest on the bond. Bondholders that receive tax credits on bonds issued on or before December 31, 2017, continue to receive tax credits.
[ix] The yield multiplier that equates the yield on a taxable municipal bond to the yield on a corporate bond is calculated as 1 / (1 - state effective marginal rate). The difference between the after-tax yields on the two securities stems from the fact that while both are taxed at the federal level, only the corporate bond is taxed at the state and local level. The calculation is the same when comparing tax-exempt yields on in-state versus out-of-state bonds. However, not all states provide an exemption for interest income on municipal securities and some states do not tax out-of-state municipal bond interest but do tax corporate bond interest. States do not tax the interest on U.S. Treasury securities, and thus it is unnecessary calculate a multiplier to compare taxable municipal bonds with U.S. Treasuries.
[x] In 2012, automatic federal spending cuts known as "sequestration" were triggered by the failure of Congress to meet deficit reduction targets mandated by the Budget Control Act of 2011 (BCA). The reductions were effective for specified individual years and were noncumulative. In implementing sequestration, the Office of Management and Budget (OMB) concluded that tax credit payments to individuals were exempt from sequestration, but credit payments to other entities—including to issuers of BABs and other taxable municipal bonds that receive a direct subsidy—were not. There have been repeated extensions of sequestration's expiration date as it applies to interest subsidies, though the impacts on issuers has lessened as most A.R.R.A. era debt has been retired.
[xi] Option-adjusted spread (OAS) is a methodology using option-pricing techniques to value the embedded options risk component of a bond's total spread. Embedded options are call, put, or sink features of bonds. The total spread of the security is adjusted by removing all options to arrive at an OAS. The spread represents the interpolated yield spread to a selected "risk-free" yield curve. In this case the U.S. Treasury yield curve.
xii Excess return is the total return (accrued interest + price change) from an index above the "risk-free" benchmark, typically US Treasury securities. Volatility of excess return is calculated by annualizing the standard deviation of daily excess returns.
xiii Option adjusted duration (OAD) is an option-adjusted measure of a bonds or index's sensitivity to changes in interest rates. It is calculated as the average percentage change of a bond or index under shifts of the reference interest rate curve. OAD considers the effect of the call option on the expected life of a bond and is therefore the most appropriate measure for bonds with embedded options. OAD weighs the probability that the bond will be called based on the spread between its coupon rate and its yield, as well as the volatility of interest rates. Typically, OAD will be longer than modified duration when a bond is priced to a call date, and shorter than modified duration when a bond is priced to maturity.
[xiv] Data for size of market comes from Bloomberg and includes all outstanding municipal securities issued with either a municipal or corporate CUSIP as of November 7, 2023.

Investment decisions should be based on an individual's own goals, time horizon and tolerance for risk.
The contents of this communication do not constitute a research report or a research recommendation.

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All indexes are unmanaged, and performance of the indexes includes reinvestment of dividends and interest income, unless otherwise noted. Indexes are not illustrative of any particular investment, and it is not possible to invest directly in an index.

Although bonds generally present less short-term risk and volatility than stocks, bonds do entail interest rate risk (as interest rates rise, bond prices usually fall, and vice versa) and the risk of default, or the risk that an issuer will be unable to make upcoming or principal payments. Additionally, bonds and short-term investments may entail greater inflation risk, or the risk that the return of an investment will not keep up with increases in the prices of goods and services, than stocks. Any fixed-income security sold or redeemed prior to maturity may be subject to a substantial gain or loss.

Interest income generated by municipal bonds is generally expected to be exempt from federal income taxes and, if the bonds are held by an investor resident in the state of issuance, from state and local income taxes. Such interest income may be subject to federal and/or state alternative minimum taxes. Investing in municipal bonds for the purpose of generating tax-exempt income may not be appropriate for investors in all tax brackets. Generally, tax-exempt municipal securities are not appropriate holdings for tax-advantaged accounts such as IRAs and 401(k)s.

Interest income generated by Treasury bonds and certain securities issued by U.S. territories, possessions, agencies, and instrumentalities is generally exempt from state income tax but is generally subject to federal income and alternative minimum taxes, and may be subject to state alternative minimum taxes. Short- and long-term capital gains and gains characterized as market discount, recognized when bonds are sold or mature, are generally taxable at both the state and federal levels. Short- and long-term losses recognized when bonds are sold or mature may generally offset capital gains and/or ordinary income at both the state and federal levels.

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