

Fidelity Capital Markets FCM Municipal Compendium 2024

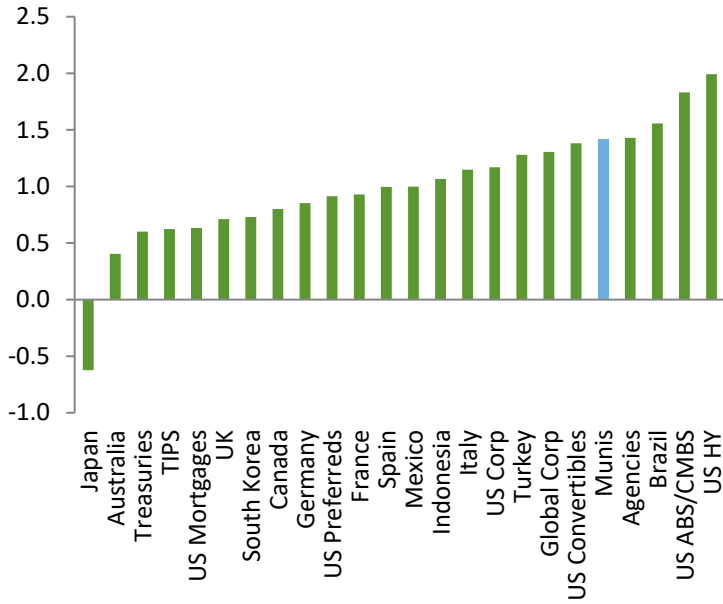
The FCM Municipal Compendium is a compilation of statistics relevant to the municipal bond market. The data includes information on returns, relative value, credit, state tax revenues and debt, bond issuance, and demographics. The focus of the Compendium is on the fifty U.S. states, but also covers market-wide trends. Aggregate statistics are provided for municipal bond market volatility-adjusted returns and correlations versus other fixed income investments; yield comparisons to Treasury and corporate bonds; credit rating trends; fund balance trends; municipal securities holders; bond issuance trends; and state tax revenue trends. Individual state statistics are provided for state bond market returns; debt and pension obligations; fund balances; state tax revenues and tax burdens; tax base trends; and economic diversity. The individual state statistics are ranked and presented in tables by quintile.

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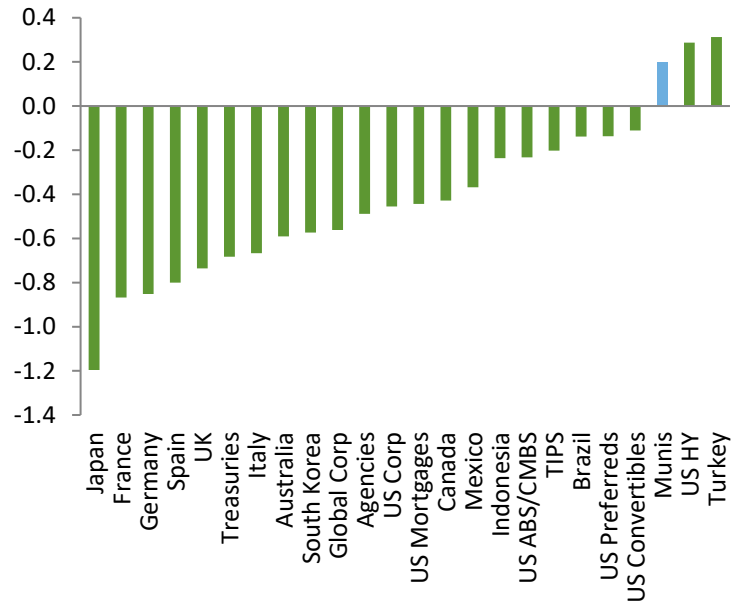


Total Returns, Volatility, and Correlations

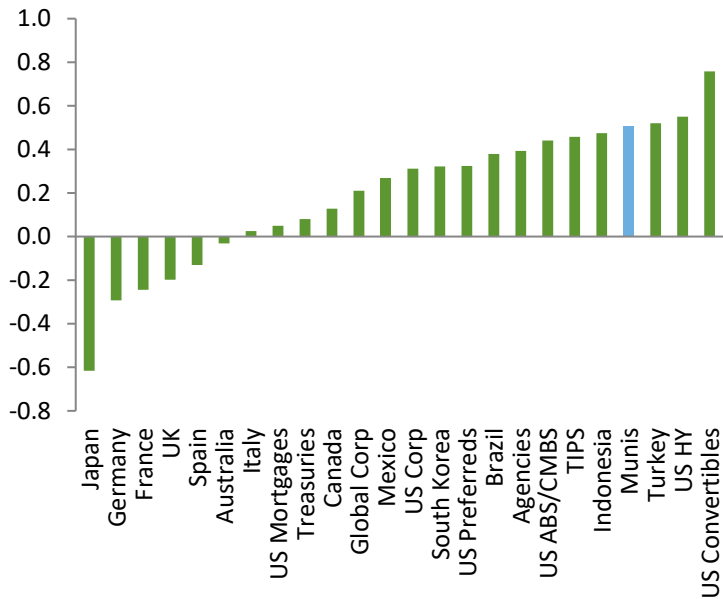
Fixed Income Return/Volatility Ratios
1 Year



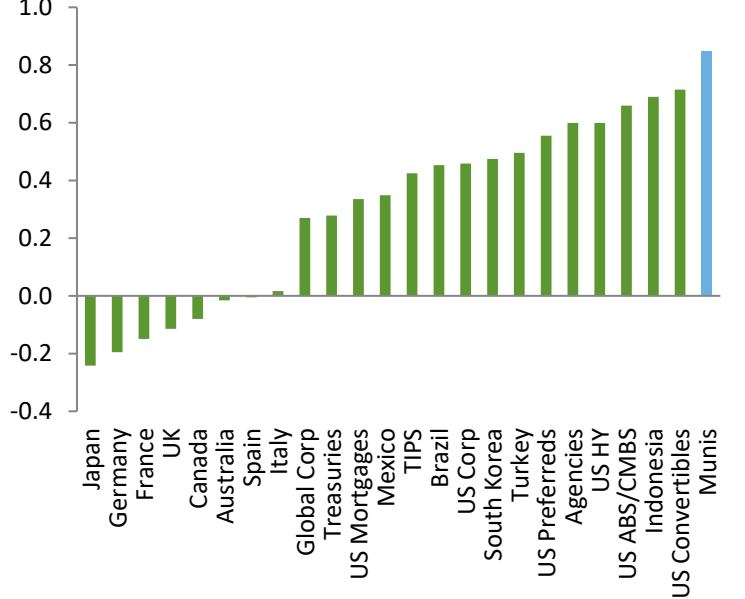
Fixed Income Return/Volatility Ratios
3 Years



Fixed Income Return/Volatility Ratios
5 Years



Fixed Income Return/Volatility Ratios
10 Years

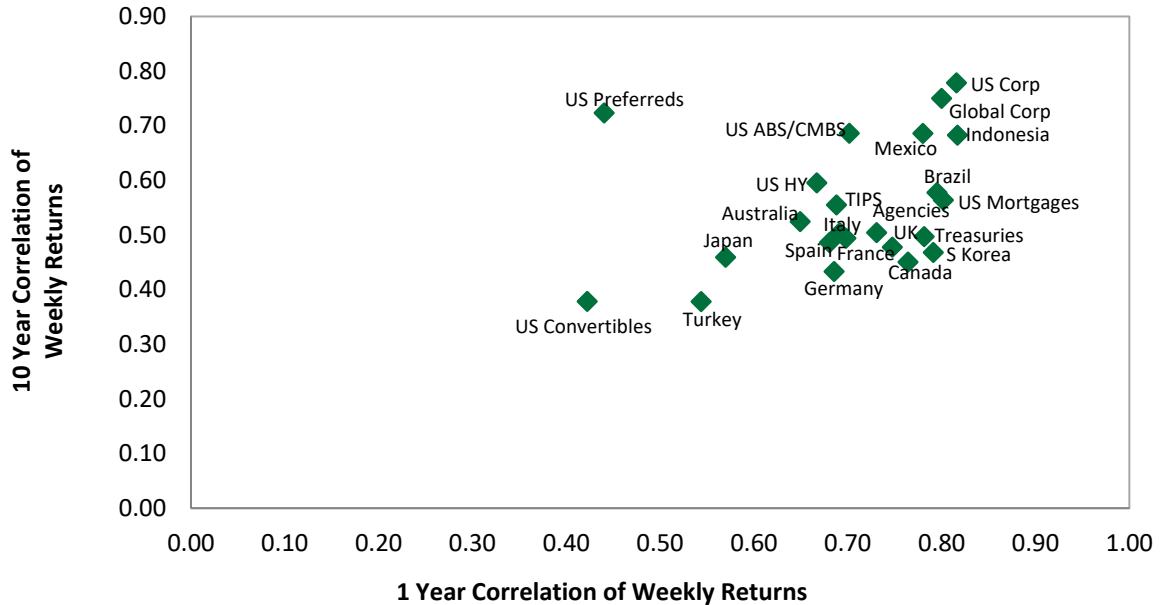


Source: ICE Data Indices, LLC, Bloomberg Finance LLP, FCM; Dec 31, 2023
 Return: annual total return in USD; Volatility: annualized standard deviation of weekly total returns
 Note: interest component of municipal index adjusted for top marginal tax rate

Total Returns, Volatility, and Correlations (cont.)

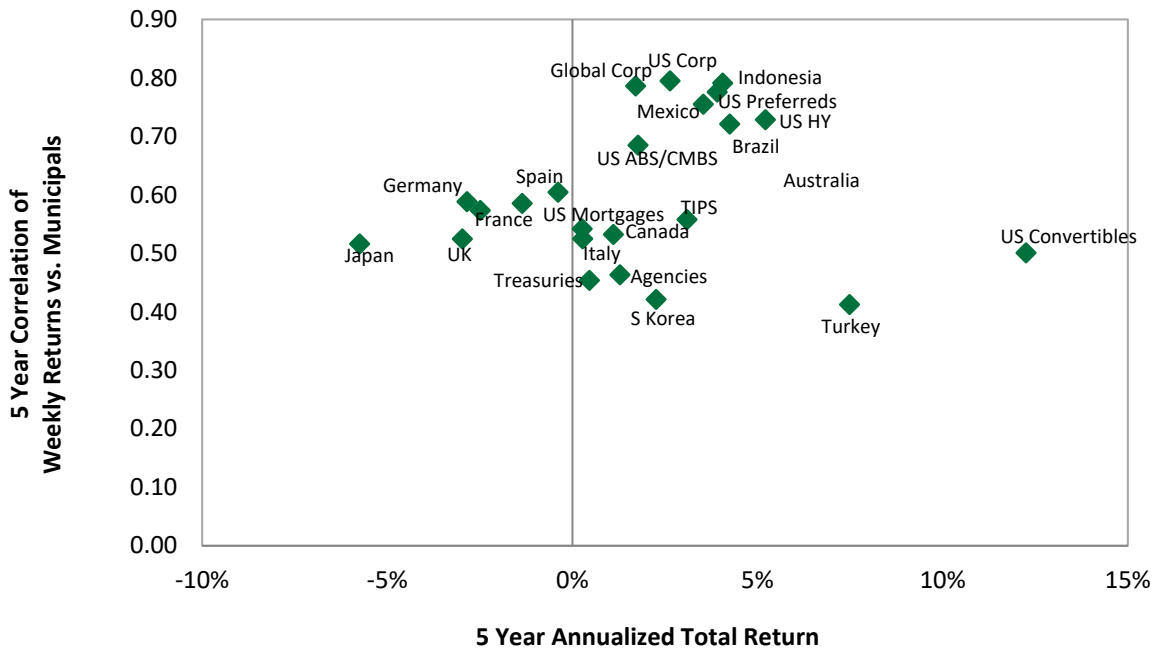
Municipals Correlation vs. Other Fixed Income

Long-term vs. Short-term Correlation of Total Returns in USD



Source: ICE Data Indices, LLC, Bloomberg Finance LLP, FCM; Dec 31, 2023

5-Year Correlation vs. Total Return in USD



Source: ICE Data Indices, LLC, Bloomberg Finance LLP, FCM; Dec 31, 2023

Total Returns, Volatility, and Correlations (cont.)

S&P Municipal Bond Indices - 1 Year Total Return 2023

State	Total Return	State	Total Return	State	Total Return	State	Total Return	State	Total Return
Arkansas	7.4%	South Carolina	6.0%	Idaho	5.8%	Texas	5.6%	Connecticut	5.2%
Illinois	7.0%	North Dakota	6.0%	Rhode Island	5.8%	Tennessee	5.6%	Minnesota	4.9%
New Jersey	6.9%	New Hampshire	5.9%	Michigan	5.8%	Oklahoma	5.5%	Kansas	4.9%
New York	6.8%	Maine	5.9%	Nebraska	5.8%	Indiana	5.5%	Washington	4.9%
Colorado	6.7%	Vermont	5.9%	Utah	5.7%	Montana	5.4%	Delaware	4.9%
Florida	6.6%	Wisconsin	5.9%	Massachusetts	5.7%	Arizona	5.4%	Alaska	4.8%
Iowa	6.3%	Kentucky	5.9%	Virginia	5.7%	Oregon	5.4%	Nevada	4.6%
West Virginia	6.2%	Ohio	5.9%	South Dakota	5.7%	Louisiana	5.4%	Mississippi	4.5%
Georgia	6.2%	California	5.9%	Pennsylvania	5.7%	North Carolina	5.3%	New Mexico	4.3%
Wyoming	6.1%	Missouri	5.8%	Alabama	5.7%	Maryland	5.2%	Hawaii	3.9%

S&P Municipal Bond Indices - 3 Year Annualized Total Return 2020 - 2023

State	Total Return	State	Total Return	State	Total Return	State	Total Return	State	Total Return
Illinois	0.7%	New York	-0.1%	Arizona	-0.3%	Tennessee	-0.4%	Massachusetts	-0.6%
New Jersey	0.4%	Kansas	-0.1%	Mississippi	-0.3%	Hawaii	-0.4%	North Carolina	-0.6%
Louisiana	0.2%	Idaho	-0.1%	New Mexico	-0.3%	Maryland	-0.5%	Montana	-0.6%
Rhode Island	0.2%	Missouri	-0.1%	South Carolina	-0.3%	California	-0.5%	Nebraska	-0.6%
Vermont	0.2%	Colorado	-0.2%	Washington	-0.4%	Nevada	-0.5%	Texas	-0.7%
Connecticut	0.1%	West Virginia	-0.2%	Pennsylvania	-0.4%	Georgia	-0.5%	New Hampshire	-0.7%
Florida	0.1%	Wisconsin	-0.2%	Virginia	-0.4%	Ohio	-0.5%	Iowa	-0.8%
Kentucky	0.0%	South Dakota	-0.2%	Alabama	-0.4%	Delaware	-0.5%	Oregon	-0.8%
Indiana	0.0%	Alaska	-0.2%	Minnesota	-0.4%	Arkansas	-0.5%	Wyoming	-1.4%
Oklahoma	-0.1%	Michigan	-0.3%	Maine	-0.4%	Utah	-0.5%	North Dakota	-1.9%

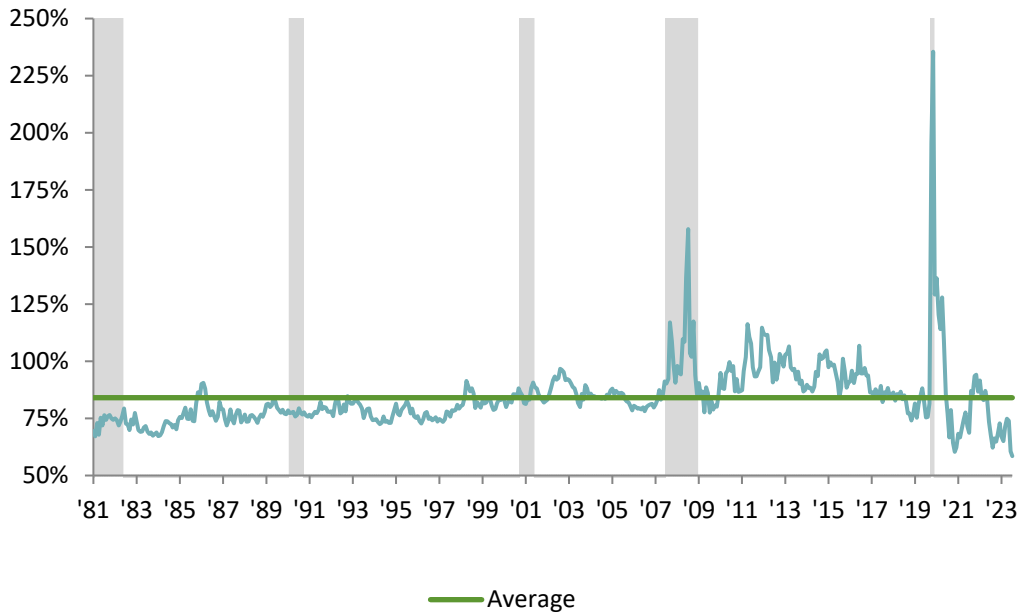
S&P Municipal Bond Indices - 5 Year Annualized Total Return 2018 - 2023

State	Total Return	State	Total Return	State	Total Return	State	Total Return	State	Total Return
Illinois	3.0%	Vermont	2.3%	New York	2.2%	Washington	2.0%	Oregon	1.9%
New Jersey	2.8%	Michigan	2.3%	Montana	2.1%	Tennessee	2.0%	Maryland	1.9%
Rhode Island	2.5%	Florida	2.3%	Utah	2.1%	Texas	2.0%	Delaware	1.9%
Colorado	2.5%	South Carolina	2.3%	California	2.1%	Oklahoma	2.0%	North Carolina	1.8%
Louisiana	2.5%	Alabama	2.3%	Kansas	2.1%	Massachusetts	2.0%	Iowa	1.8%
Ohio	2.5%	Idaho	2.2%	Virginia	2.1%	Georgia	2.0%	Alaska	1.8%
Connecticut	2.5%	Pennsylvania	2.2%	Nevada	2.1%	Hawaii	2.0%	New Mexico	1.8%
West Virginia	2.4%	Missouri	2.2%	Arizona	2.1%	Arkansas	1.9%	New Hampshire	1.6%
Kentucky	2.4%	Mississippi	2.2%	Nebraska	2.0%	Maine	1.9%	Wyoming	1.5%
South Dakota	2.4%	Indiana	2.2%	Minnesota	2.0%	Wisconsin	1.9%	North Dakota	1.3%

Source: Bloomberg Finance LLP, FCM; Dec 31, 2023

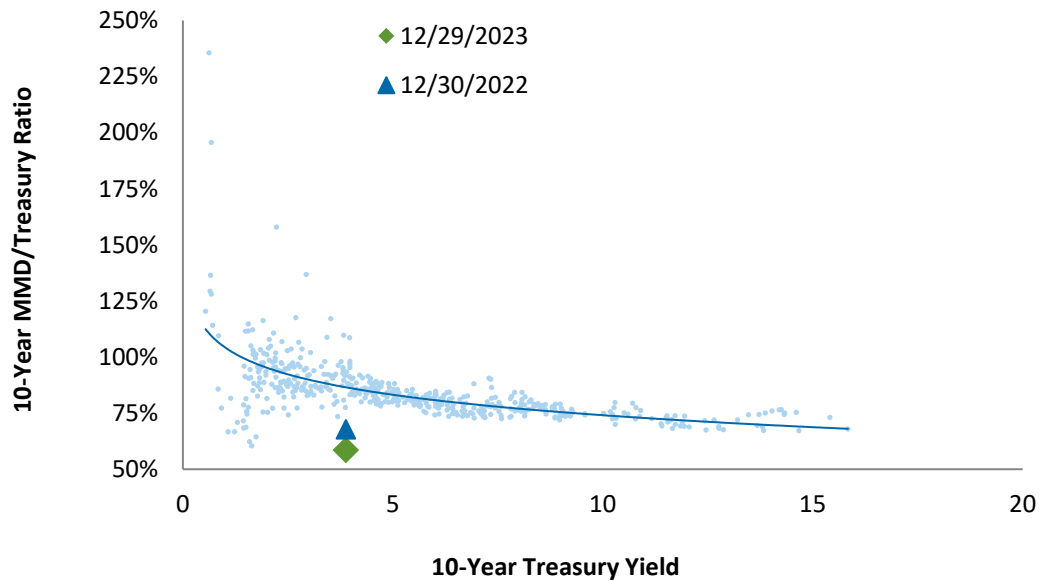
Relative Value vs. Treasuries

10-Year MMD / Treasury Yield Ratio



Source: Thomson Reuters, FCM; Dec 31, 2023
 Note: Gray bars denote US recessions.

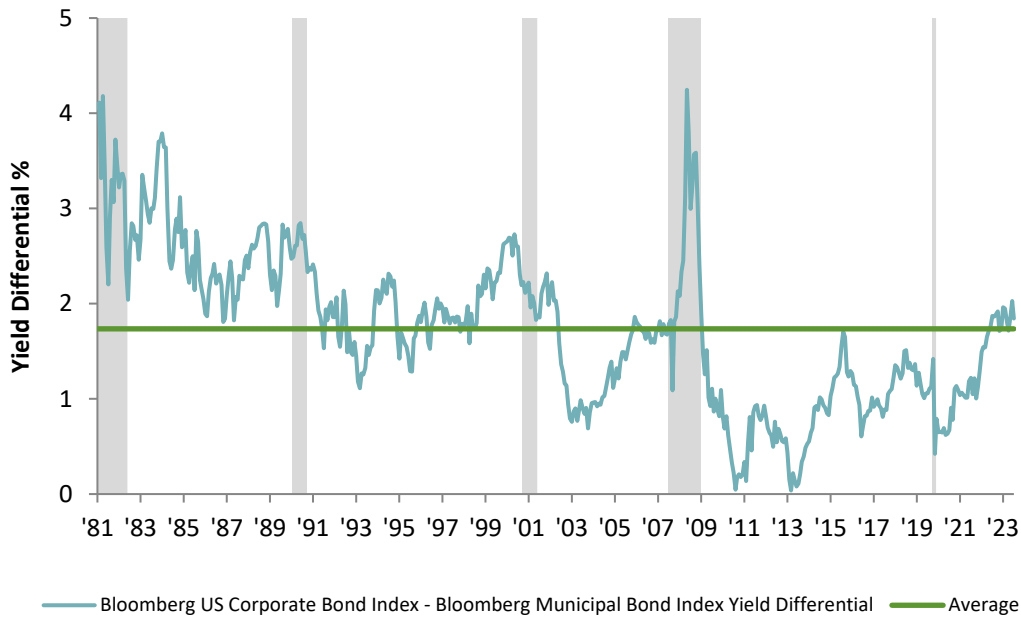
10-Year MMD / Treasury Yield Ratio Monthly 1981-2022



Source: Thomson Reuters, FCM; Dec 31, 2023

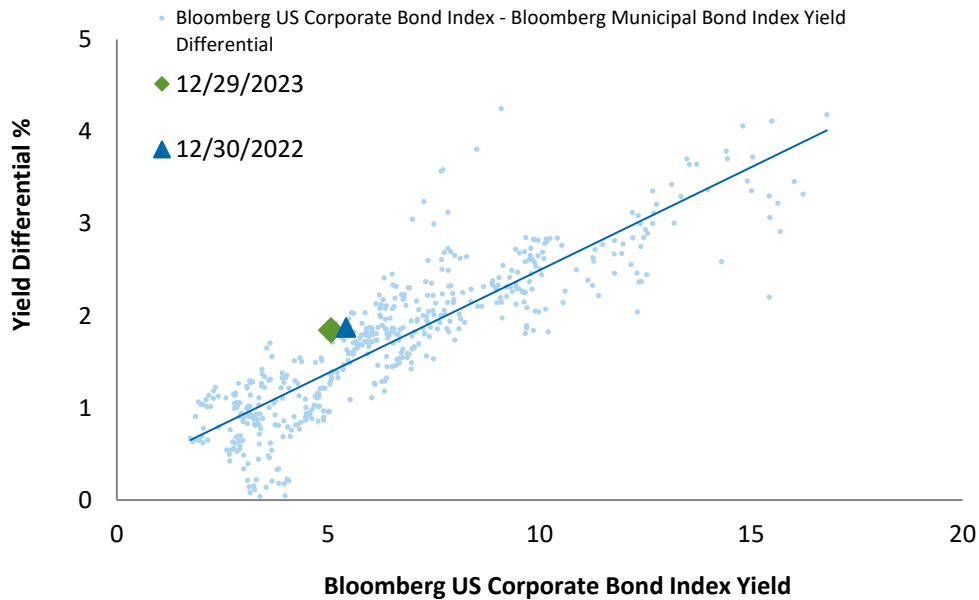
Relative Value vs. Corporates

Corporate - Municipal Yield Differential



Source: Bloomberg Finance LLP, FCM; Dec 31, 2023
 Note: Gray bars denote US recessions.

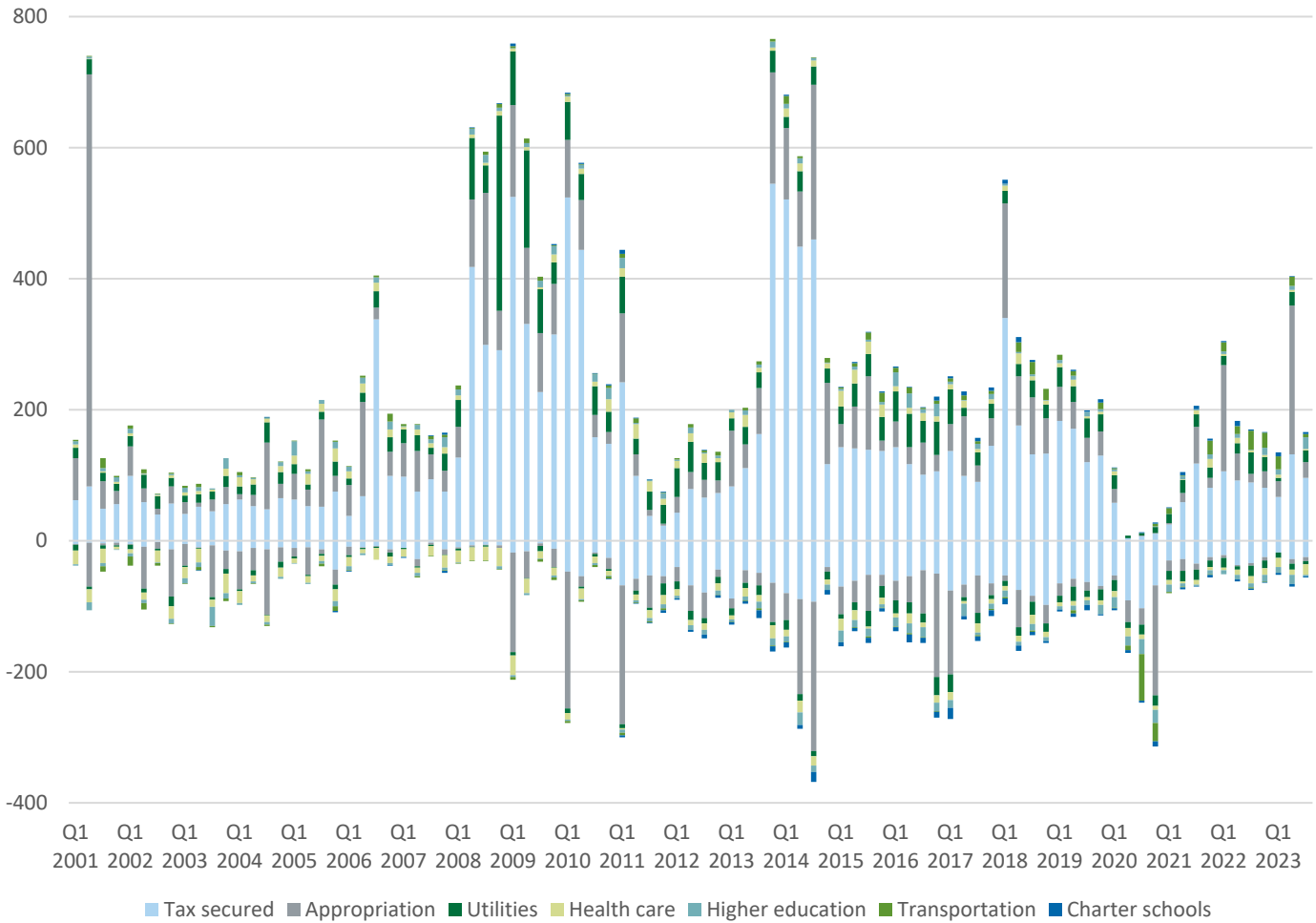
Corporate - Municipal Yield Differential Monthly 1981-2022



Source: Bloomberg Finance LLP, FCM; Dec 31, 2023

Public Finance Credit Ratings

Quarterly Upgrades vs. Downgrades Number of Public Finance Ratings by Sector



Source: S&P Global Ratings, FCM; as of Q3 2023
 Note: Data excludes housing sector.

State Debt and Pension Obligations

State Net Tax-Supported Debt (NTSD) as a % of State Personal Income (PI)

State	NTSD/PI	State	NTSD/PI	State	NTSD/PI	State	NTSD/PI	State	NTSD/PI
Nebraska	0.1%	South Dakota	0.8%	Utah	1.4%	Ohio	2.8%	Maryland	4.4%
Wyoming	0.3%	Oklahoma	0.9%	Michigan	1.5%	Kentucky	2.8%	Oregon	4.5%
Montana	0.5%	Florida	1.0%	Maine	1.9%	Virginia	3.0%	New York	4.5%
Tennessee	0.5%	New Hampshire	1.0%	Vermont	1.9%	New Mexico	3.1%	Rhode Island	4.7%
Indiana	0.6%	North Dakota	1.1%	Georgia	2.0%	Wisconsin	3.1%	West Virginia	5.4%
Arizona	0.6%	Idaho	1.1%	Alabama	2.3%	California	3.2%	New Jersey	6.4%
Missouri	0.7%	Texas	1.1%	Minnesota	2.4%	Louisiana	3.3%	Delaware	6.9%
Iowa	0.7%	Nevada	1.1%	Pennsylvania	2.4%	Illinois	4.2%	Massachusetts	8.2%
Arkansas	0.7%	North Carolina	1.2%	Kansas	2.5%	Mississippi	4.3%	Connecticut	9.4%
South Carolina	0.8%	Colorado	1.4%	Alaska	2.8%	Washington	4.3%	Hawaii	11.2%

State Adjusted Net Pension Liability (ANPL) as a % of State Personal Income (PI)

State	ANPL/PI	State	ANPL/PI	State	ANPL/PI	State	ANPL/PI	State	ANPL/PI
Florida	1.6%	New York	2.4%	Indiana	4.5%	Texas	7.6%	South Carolina	12.3%
Tennessee	1.8%	Utah	2.5%	Colorado	4.6%	Rhode Island	8.5%	Maryland	13.0%
Oklahoma	1.9%	Nebraska	2.5%	Missouri	4.7%	Delaware	9.0%	Massachusetts	16.6%
Georgia	2.0%	South Dakota	2.8%	Arkansas	5.0%	California	9.5%	Vermont	18.0%
Wisconsin	2.1%	Arizona	2.8%	Nevada	5.1%	Pennsylvania	10.6%	New Jersey	19.4%
Idaho	2.1%	Minnesota	3.2%	Iowa	5.3%	New Mexico	10.9%	Alaska	19.4%
North Carolina	2.2%	North Dakota	3.2%	Oregon	5.7%	Kansas	11.3%	Hawaii	20.8%
Virginia	2.2%	Washington	3.4%	Louisiana	5.8%	West Virginia	11.8%	Kentucky	23.2%
New Hampshire	2.3%	Alabama	3.6%	Mississippi	6.7%	Maine	12.0%	Connecticut	26.9%
Ohio	2.4%	Wyoming	3.9%	Michigan	7.6%	Montana	12.1%	Illinois	33.7%

Combined NTSD & ANPL as a % of State Personal Income

State	Combined	State	Combined	State	Combined	State	Combined	State	Combined
Tennessee	2.3%	Georgia	4.0%	Alabama	5.9%	Mississippi	11.0%	West Virginia	17.2%
Nebraska	2.6%	Wyoming	4.2%	Iowa	6.0%	Montana	12.6%	Maryland	17.4%
Florida	2.6%	North Dakota	4.3%	Colorado	6.0%	California	12.7%	Vermont	19.9%
Oklahoma	2.8%	Indiana	5.1%	Nevada	6.2%	Pennsylvania	13.0%	Alaska	22.2%
Idaho	3.2%	Virginia	5.2%	New York	6.9%	South Carolina	13.1%	Massachusetts	24.8%
New Hampshire	3.3%	Ohio	5.2%	Washington	7.7%	Rhode Island	13.2%	New Jersey	25.8%
Arizona	3.4%	Wisconsin	5.2%	Texas	8.7%	Kansas	13.8%	Kentucky	26.0%
North Carolina	3.4%	Missouri	5.4%	Michigan	9.1%	Maine	13.9%	Hawaii	32.0%
South Dakota	3.6%	Minnesota	5.6%	Louisiana	9.1%	New Mexico	14.0%	Connecticut	36.3%
Utah	3.9%	Arkansas	5.7%	Oregon	10.2%	Delaware	15.9%	Illinois	37.9%

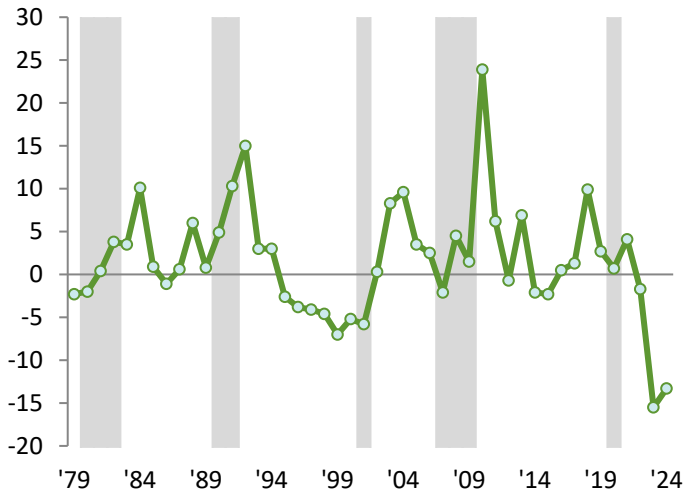
Source: Moody's, FCM; Dec 31, 2023

Net Tax Supported Debt: Debt secured by statewide taxes and other general resources, net of obligations that are self-supporting from pledged sources other than state taxes or operating resources, such as utility or local government revenues.

Adjusted Net Pension Liability: Moody's recalculation of net pension liabilities based on a market-determined discount rate and the market value of assets. Moody's allocates the net pension liabilities of multiple-employer cost-sharing plans among the plan sponsors based on the pro rata contribution of each sponsor to the plan and additional information from state officials and pension administrators.

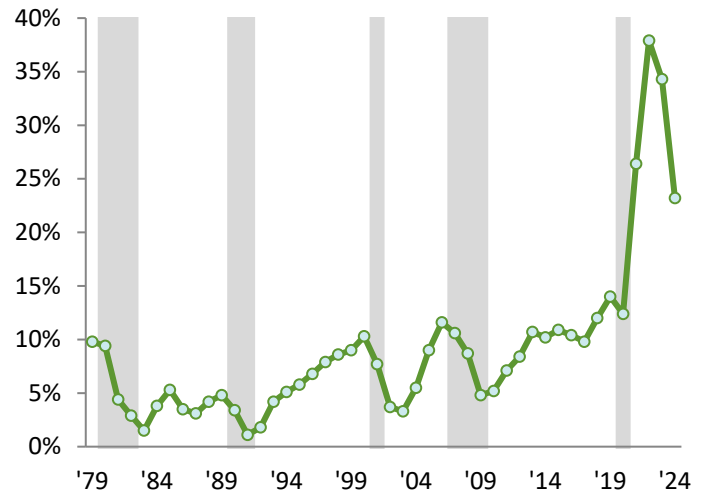
State Enacted Revenue Changes, Fund Balances, and Reserves

Total Enacted State Revenue Changes
\$bn



Source: National Association of State Budget Officers, FCM; Dec 31, 2023
Note: 2023 preliminary actual; 2024 projected. Gray bars denote years in which recession occurred.

Total State Fiscal Year-End Balances
as a % of Expenditures



Source: National Association of State Budget Officers, FCM; Dec 31, 2023
Note: 2023 preliminary actual; 2024 projected. Gray bars denote years in which recession occurred.

State Total Fiscal Year-End Balances as a % of Expenditures 2023

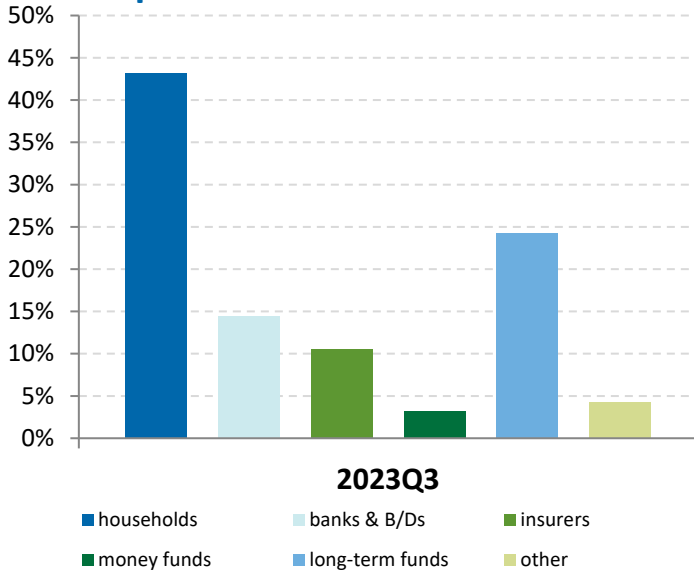
State	Balance/Expenditures	State	Balance/Expenditures	State	Balance/Expenditures	State	Balance/Expenditures	State	Balance/Expenditures
North Dakota	85.2%	Georgia	52.5%	North Carolina	35.9%	Kentucky	28.2%	South Dakota	15.0%
Wyoming	84.0%	Delaware	51.9%	Tennessee	35.2%	Montana	28.0%	Connecticut	14.9%
Texas	79.3%	New York	48.0%	Pennsylvania	34.6%	Nevada	28.0%	Washington	13.6%
Oregon	70.1%	Kansas	46.1%	Iowa	33.3%	Arizona	26.9%	Indiana	13.5%
West Virginia	67.8%	Ohio	46.1%	Idaho	33.1%	California	25.3%	New Hampshire	13.5%
Nebraska	66.0%	Florida	45.1%	Alabama	32.2%	Massachusetts	25.0%	Rhode Island	13.4%
Minnesota	59.8%	New Mexico	43.6%	Alaska	32.1%	Maine	24.1%	Colorado	12.3%
South Carolina	58.2%	Wisconsin	43.4%	Vermont	29.8%	New Jersey	19.8%	Mississippi	9.3%
Missouri	53.2%	Arkansas	42.6%	Hawaii	29.7%	Maryland	19.7%	Louisiana	8.3%
Oklahoma	52.9%	Utah	36.7%	Michigan	28.3%	Virginia	16.6%	Illinois	7.7%

Source: National Association of State Budget Officers, FCM; Dec 31, 2023

Note: Total balances include both the ending General Fund balance and Rainy Day Funds. Based on preliminary actual 2023 fiscal year end figures.

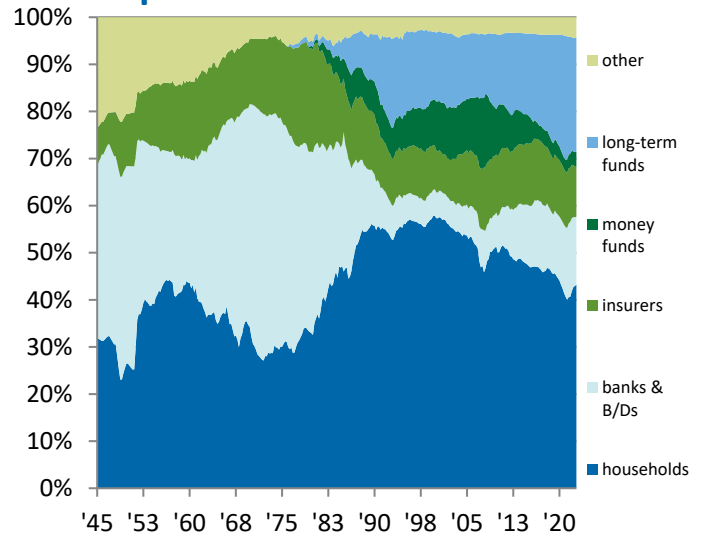
Municipal Securities Holders and Bond Issuance

Municipal Securities Holders



Source: Federal Reserve Board, FCM; Dec 31, 2023

Municipal Securities Holders

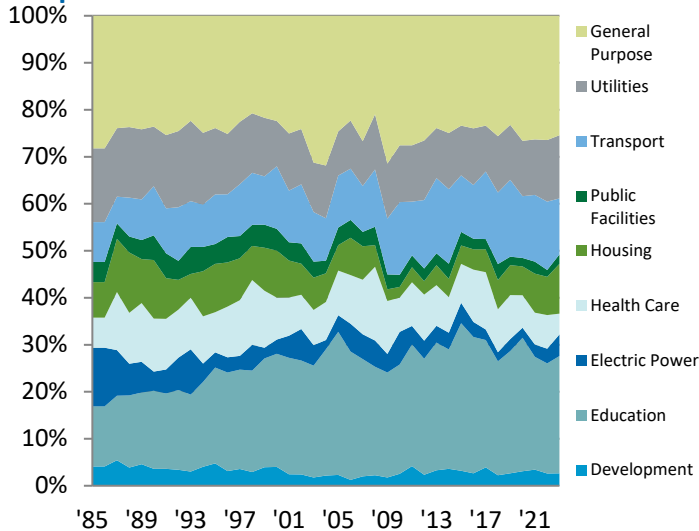


Source: Federal Reserve Board, FCM; Dec 31, 2023

Note: Household data smoothed 1991-2004 due to Federal Reserve 2004 methodology change

Municipal Bond Issuance

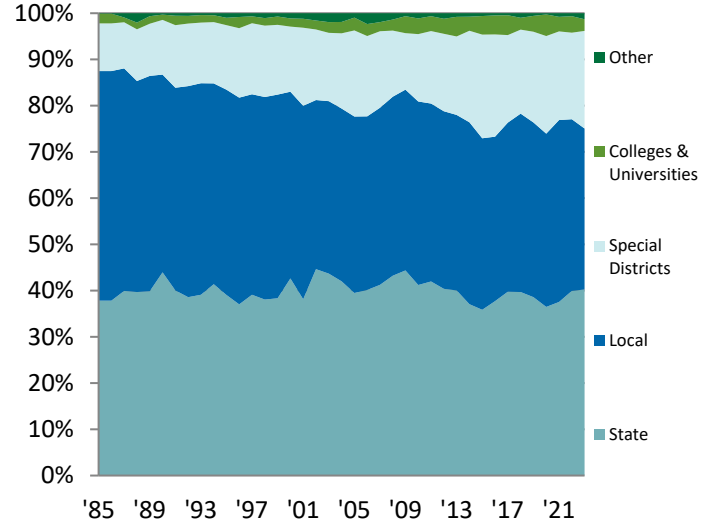
Purpose



Source: The Bond Buyer, FCM; Dec 31, 2023

Municipal Bond Issuance

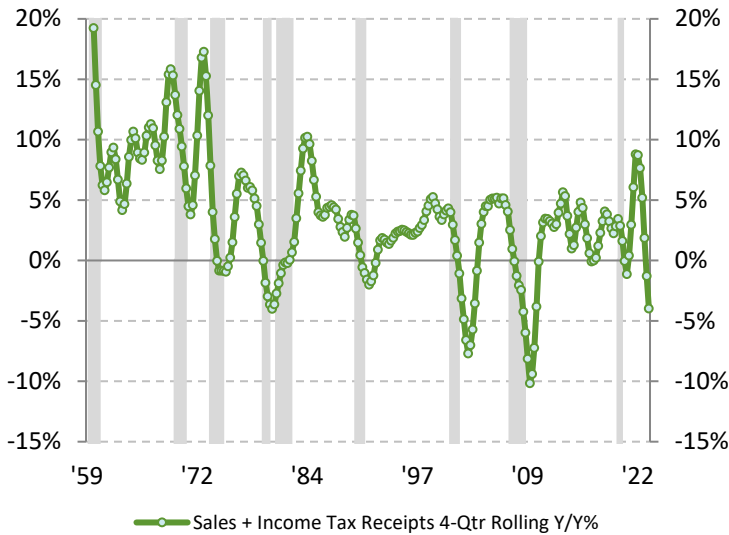
Government Type



Source: The Bond Buyer, FCM; Dec 31, 2023

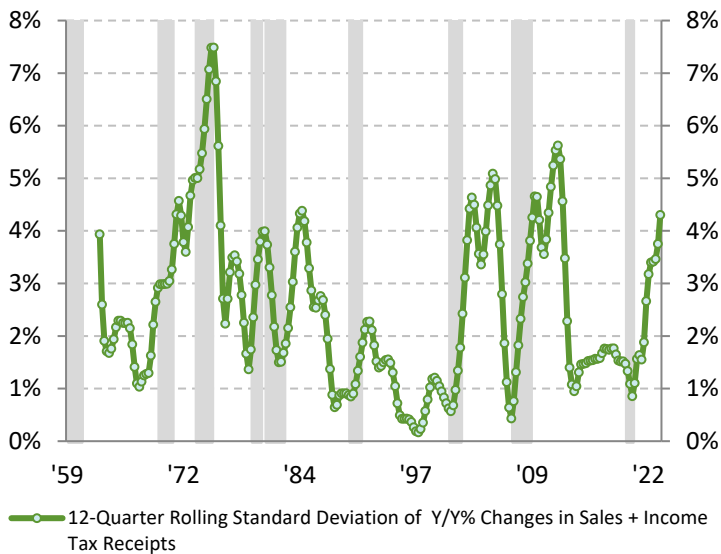
State Tax Revenues

Real Per Capita State & Local Government Sales and Income Tax Receipts



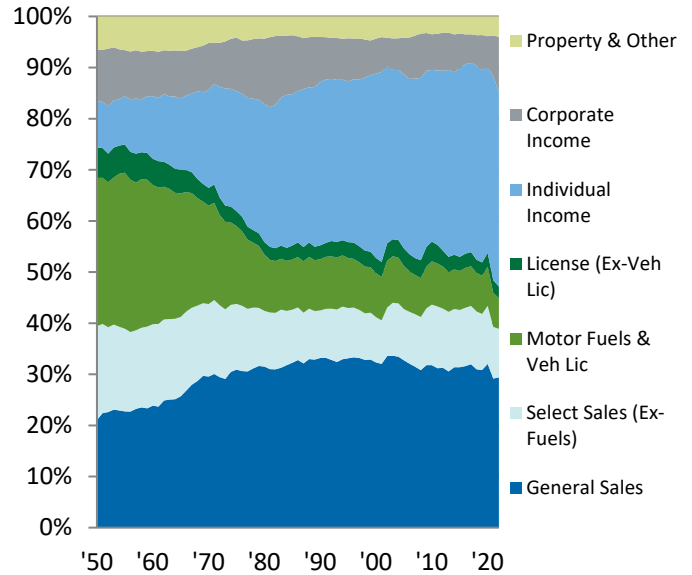
Source: Federal Reserve Board, FCM; Dec 31, 2023
 Note: Gray bars denote years in which recession occurred.

Volatility of Real Per Capita State & Local Sales and Income Tax Receipts



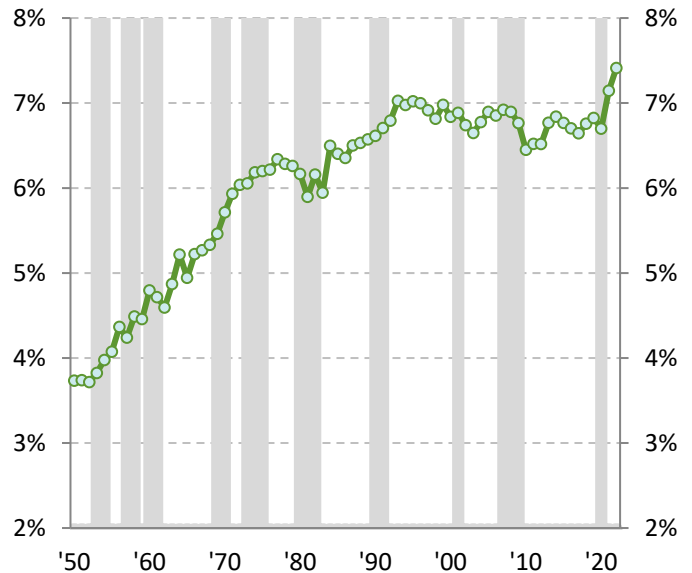
Source: Federal Reserve Board, FCM; Dec 31, 2023
 Note: Gray bars denote years in which recession occurred.

Composition of State Tax Revenue



Source: US Census Bureau, FCM; Dec 31, 2023

Median State Personal Tax Burden



Source: US Census Bureau, Bureau of Economic Analysis, FCM; Dec 31, 2023

State Tax Revenues (cont.)

Annual State Tax Revenue - Average All Negative Growth Years 1990 - 2022

State	Avg All Neg Yrs	State	Avg All Neg Yrs	State	Avg All Neg Yrs	State	Avg All Neg Yrs	State	Avg All Neg Yrs
Arkansas	-0.7%	Mississippi	-2.6%	Hawaii	-3.7%	Alabama	-4.5%	Louisiana	-6.0%
South Dakota	-0.8%	Nebraska	-2.6%	Kansas	-3.7%	Minnesota	-4.5%	Utah	-6.1%
Maryland	-1.3%	Virginia	-2.7%	New Jersey	-3.8%	Nevada	-4.7%	Arizona	-6.2%
New York	-1.7%	Wisconsin	-2.8%	Michigan	-3.8%	New Hampshire	-4.9%	New Mexico	-6.3%
Iowa	-1.9%	Rhode Island	-2.8%	Pennsylvania	-3.9%	Georgia	-5.1%	Massachusetts	-8.4%
Vermont	-1.9%	North Carolina	-3.0%	Missouri	-3.9%	Connecticut	-5.3%	Wyoming	-9.3%
Delaware	-2.0%	Indiana	-3.0%	South Carolina	-4.0%	Florida	-5.4%	California	-9.8%
Ohio	-2.1%	West Virginia	-3.4%	Montana	-4.2%	Oklahoma	-5.5%	Idaho	-10.4%
Maine	-2.5%	Illinois	-3.5%	Texas	-4.2%	Oregon	-5.7%	North Dakota	-10.5%
Kentucky	-2.6%	Washington	-3.6%	Tennessee	-4.3%	Colorado	-5.7%	Alaska	-28.9%

Annual State Tax Revenue - Y/Y% Change Sensitivity to Change in Nominal GDP 1990 - 2022

State	Beta	State	Beta	State	Beta	State	Beta	State	Beta
South Dakota	0.63	Arkansas	1.31	Hawaii	1.56	Massachusetts	1.76	Montana	2.06
Iowa	0.73	Mississippi	1.36	Virginia	1.61	Missouri	1.76	Connecticut	2.07
Kentucky	0.79	Ohio	1.39	South Carolina	1.65	Michigan	1.80	Georgia	2.12
Wisconsin	0.86	Alabama	1.39	Rhode Island	1.65	Pennsylvania	1.80	Colorado	2.27
New York	0.90	Indiana	1.43	Minnesota	1.66	New Jersey	1.85	Florida	2.28
North Dakota	0.91	Oklahoma	1.43	Tennessee	1.66	Nevada	1.86	Arizona	2.29
Maryland	1.00	West Virginia	1.46	Kansas	1.67	Illinois	1.98	Oregon	2.35
Wyoming	1.13	Louisiana	1.49	New Mexico	1.72	Idaho	2.02	California	3.13
Washington	1.20	Maine	1.53	Delaware	1.73	Vermont	2.02	Utah	3.17
Nebraska	1.24	Texas	1.56	New Hampshire	1.75	North Carolina	2.04	Alaska	4.42

Annual State Tax Revenue - Standard Deviation of Y/Y% Changes 1990 - 2022

State	Standard Deviation	State	Standard Deviation	State	Standard Deviation	State	Standard Deviation	State	Standard Deviation
South Dakota	3.4%	Nebraska	5.0%	Indiana	5.7%	Colorado	6.7%	Oregon	7.9%
Wisconsin	3.5%	Mississippi	5.1%	New York	5.7%	Florida	6.8%	Montana	8.1%
Iowa	3.5%	Rhode Island	5.2%	Massachusetts	6.0%	Hawaii	6.8%	Vermont	9.2%
Maryland	3.8%	Virginia	5.3%	Pennsylvania	6.1%	Michigan	6.9%	New Mexico	9.2%
Kentucky	4.1%	Maine	5.3%	Nevada	6.1%	Delaware	6.9%	Utah	9.5%
Ohio	4.2%	West Virginia	5.4%	Kansas	6.2%	Louisiana	7.0%	California	9.8%
Washington	4.4%	Missouri	5.5%	New Jersey	6.3%	Idaho	7.1%	Wyoming	12.2%
Arkansas	4.5%	North Carolina	5.7%	Texas	6.4%	Oklahoma	7.2%	New Hampshire	14.8%
Alabama	4.6%	South Carolina	5.7%	Illinois	6.5%	Arizona	7.4%	North Dakota	14.9%
Minnesota	4.7%	Tennessee	5.7%	Georgia	6.5%	Connecticut	7.5%	Alaska	44.8%

Source: US Census Bureau, FCM; Dec 31, 2023

State Tax Revenues (cont.)

State Personal Tax Burden 2022

State	2022	State	2022	State	2022	State	2022	State	2022
Alaska	1.4%	Oklahoma	6.1%	New Jersey	7.3%	New Mexico	7.5%	New York	9.1%
New Hampshire	2.6%	Georgia	6.2%	Nevada	7.3%	Alabama	7.6%	Minnesota	9.2%
Texas	4.5%	Nebraska	6.4%	Utah	7.3%	Iowa	7.7%	California	9.3%
Wyoming	4.6%	South Carolina	6.8%	Pennsylvania	7.3%	Massachusetts	7.8%	Maine	9.4%
South Dakota	4.6%	Arizona	6.9%	Connecticut	7.4%	Michigan	7.8%	Mississippi	9.5%
Florida	4.8%	Louisiana	6.9%	Montana	7.4%	Kansas	8.0%	West Virginia	9.5%
North Dakota	4.8%	Virginia	6.9%	North Carolina	7.5%	Rhode Island	8.1%	Arkansas	9.8%
Colorado	5.2%	Wisconsin	7.0%	Illinois	7.5%	Oregon	8.3%	Delaware	11.7%
Missouri	5.7%	Ohio	7.0%	Idaho	7.5%	Indiana	8.8%	Vermont	12.9%
Tennessee	6.0%	Washington	7.2%	Maryland	7.5%	Kentucky	8.8%	Hawaii	13.8%

State Personal Tax Burden Average 1990 - 2022

State	Average	State	Average	State	Average	State	Average	State	Average
Alaska	1.6%	Missouri	5.8%	Arizona	6.7%	Indiana	7.1%	New Mexico	7.9%
New Hampshire	3.0%	Illinois	6.0%	Pennsylvania	6.7%	Rhode Island	7.2%	Kentucky	8.5%
South Dakota	4.8%	Maryland	6.2%	South Carolina	6.7%	Iowa	7.3%	Maine	8.5%
Colorado	4.9%	Louisiana	6.2%	Kansas	6.7%	North Carolina	7.3%	Mississippi	8.7%
Texas	4.9%	New Jersey	6.2%	Ohio	6.8%	Washington	7.4%	Delaware	8.8%
Wyoming	5.2%	Nebraska	6.3%	Montana	6.8%	New York	7.5%	Minnesota	9.0%
Florida	5.4%	North Dakota	6.3%	Massachusetts	6.9%	California	7.5%	Arkansas	9.2%
Virginia	5.5%	Oklahoma	6.5%	Nevada	6.9%	Michigan	7.5%	West Virginia	9.3%
Tennessee	5.6%	Oregon	6.6%	Utah	7.0%	Idaho	7.5%	Vermont	10.2%
Georgia	5.8%	Alabama	6.6%	Connecticut	7.1%	Wisconsin	7.7%	Hawaii	10.8%

Source: US Census Bureau, Bureau of Economic Analysis, FCM; Dec 31, 2023

Tax Burden: Total state tax revenue excluding corporate income and severance taxes divided by total state personal income excluding federal transfer receipts.



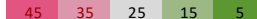
State-to-State Tax Base Migration

Net Outflow Breadth (number of states to which the tax base moved)

State	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21
AZ	16	6	6	6	6	3	4	4	3	3	7	5	3	8	13	12	21	14	14	10	12	9	11	8	4	5	6	10	20
FL	15	14	13	16	13	7	9	6	5	2	3	2	8	16	16	19	21	15	6	12	8	4	0	3	6	4	4	3	2
SC	20	20	17	13	9	9	6	9	15	6	10	8	11	7	9	5	11	6	10	8	9	4	9	7	5	7	2	6	4
TN	4	6	3	5	13	10	10	18	21	18	8	11	5	8	7	12	12	15	12	11	14	13	11	9	11	10	6	6	5
NC	9	8	9	10	10	8	6	11	13	11	13	14	10	12	11	9	10	16	10	10	14	13	15	10	7	8	5	9	7
MT	6	10	9	14	18	21	14	13	16	17	11	10	9	5	7	8	13	12	12	13	10	9	18	6	6	9	8	6	9
ID	7	6	11	8	10	11	11	12	13	13	14	12	7	9	17	16	17	22	23	17	10	8	15	5	3	5	7	4	16
OR	10	16	13	7	8	10	15	14	9	10	16	22	13	11	12	11	13	13	9	15	10	4	8	5	6	12	14	24	32
NV	14	8	9	8	5	3	6	8	3	7	7	6	13	17	18	18	22	26	23	17	19	10	11	13	13	10	15	18	22
CO	9	10	12	15	11	9	7	10	12	19	29	22	20	15	13	8	9	13	9	11	11	10	8	12	12	15	16	19	24
WA	10	23	15	14	9	9	18	23	14	15	19	19	14	11	13	13	15	23	9	12	10	10	3	4	6	12	15	24	29
TX	22	18	21	18	18	13	15	18	23	22	29	19	17	12	10	7	6	3	6	10	2	5	9	13	20	16	12	15	14
AL	6	13	17	14	13	17	20	26	25	26	16	11	9	16	16	10	13	14	18	16	15	18	22	19	14	13	17	9	6
GA	9	9	9	8	8	12	9	12	16	17	17	18	21	19	18	20	18	31	23	20	17	16	20	16	15	16	18	18	16
AR	8	9	6	9	15	19	20	17	21	19	12	8	13	10	12	10	7	15	25	25	28	26	23	22	22	28	21	17	10
UT	11	14	15	19	13	26	26	29	29	31	32	28	16	10	7	13	18	20	22	15	18	15	14	9	13	16	12	10	17
WY	18	18	20	23	20	19	24	18	20	16	19	19	20	9	11	14	12	17	20	16	25	19	17	27	30	23	18	16	20
NM	18	7	15	18	21	21	26	26	23	14	16	11	13	14	20	18	12	14	20	28	27	28	29	21	22	22	20	18	23
ME	35	35	32	22	23	24	14	13	16	13	12	19	24	26	22	26	26	30	18	18	21	21	28	20	10	9	12	7	8
SD	21	21	21	26	33	29	33	27	21	29	23	16	26	20	16	19	18	18	17	12	16	16	17	22	19	19	15	17	10
KY	20	13	16	16	15	27	24	19	25	25	18	19	14	24	15	20	26	20	30	20	22	27	28	25	21	24	23	20	16
MS	16	15	12	17	16	17	19	30	40	30	21	26	21	36	23	17	23	24	27	27	34	24	38	25	30	25	31	21	19
VT	32	25	26	27	26	25	23	22	19	14	24	24	25	24	30	28	30	29	26	32	27	33	23	27	27	23	29	18	13
OK	29	28	25	19	19	31	31	33	31	34	33	35	35	23	17	23	8	16	21	22	20	25	19	29	41	30	22	22	13
NH	33	32	31	22	24	22	15	18	17	16	27	32	32	27	34	31	30	31	30	25	22	27	30	26	24	28	24	21	24
VA	26	29	32	31	28	21	16	16	18	17	17	18	18	25	31	30	24	13	21	33	34	36	33	36	34	28	29	30	33
MO	26	22	17	19	22	27	27	34	30	32	28	29	26	21	22	23	27	36	35	37	31	29	31	31	28	29	29	23	23
HI	39	41	42	43	40	33	38	29	21	17	21	22	19	25	28	28	30	27	20	24	20	27	15	28	29	32	29	33	33
DE	35	33	30	36	30	30	29	26	26	30	24	25	28	28	29	28	32	32	32	35	30	30	19	34	29	22	25	22	25
WV	18	24	21	23	34	28	34	32	35	30	25	26	27	34	31	23	28	21	23	30	32	35	39	37	31	38	31	26	23
MN	17	26	26	23	24	29	27	24	25	33	31	32	38	29	32	31	35	37	35	29	31	34	30	29	24	23	30	32	38
LA	38	24	26	33	29	36	42	37	43	30	24	22	28	50	33	24	16	10	20	20	20	24	24	28	37	36	38	32	35
IN	20	28	28	27	25	31	28	33	36	37	34	32	33	30	34	37	38	35	38	34	30	27	31	32	26	28	31	31	24
WI	23	25	26	28	32	33	29	26	31	30	28	33	34	32	29	37	35	42	36	35	35	36	42	30	28	27	29	34	28
MA	41	35	36	34	32	23	22	22	15	26	39	43	36	38	35	35	32	33	32	28	31	33	28	32	25	32	30	32	38
KS	30	25	37	29	25	23	30	36	44	34	41	36	35	34	27	32	23	26	32	30	33	33	36	35	37	38	35	29	30
RI	37	38	37	35	37	31	24	23	21	17	21	38	38	42	38	43	39	34	34	34	32	32	31	29	28	33	38	29	29
ND	43	31	35	34	40	44	45	38	43	43	38	29	31	37	34	36	30	20	19	12	15	19	11	37	42	34	31	42	38
NE	31	34	23	26	37	39	37	39	42	39	35	35	37	37	34	31	35	28	33	28	28	31	28	29	38	39	35	37	37
CA	45	48	44	42	33	26	28	25	19	37	38	37	38	35	34	34	32	34	32	23	29	28	27	26	28	36	35	45	45
IA	27	33	31	36	38	35	38	43	43	44	38	32	35	29	36	24	29	30	33	33	33	30	35	37	36	31	36	36	32
MD	38	40	42	40	40	34	33	31	23	21	26	33	30	35	36	38	33	27	27	38	38	41	38	39	39	38	38	40	41
AK	31	37	45	37	39	38	40	46	35	24	30	24	31	24	27	33	25	22	28	37	42	39	33	40	49	43	44	43	37
MI	39	36	31	30	30	36	38	32	35	40	37	40	46	44	49	50	50	48	46	33	29	29	33	27	24	22	29	28	20
OH	30	37	29	36	36	39	33	39	36	39	38	38	39	39	40	44	42	41	44	35	35	31	39	30	29	28	31	31	30
PA	36	39	42	40	44	38	40	33	34	35	30	36	34	36	36	41	39	32	30	35	40	41	35	42	33	36	37	36	35
CT	45	43	43	47	42	41	38	34	33	31	34	39	41	38	38	40	44	42	40	41	41	43	42	45	46	41	46	44	38
IL	35	38	35	39	38	40	42	36	38	41	47	46	44	40	36	38	38	46	43	40	41	42	43	41	42	45	42	43	45
NY	47	48	47	49	46	44	41	41	38	45	43	43	42	41	44	42	44	43	45	47	42	45	47	42	46	44	44	49	49
NJ	47	48	48	49	48	46	43	38	35	42	48	46	46	44	47	40	47	45	42	47	43	47	45	44	42	42	44	47	46

Source: IRS, FCM; Dec 31, 2023

<<< # of states to which net outflows moved >>>



State-to-State Tax Base Migration (cont.)

State-to-State Adjusted Gross Income Migration Flows 2020-2021

Net Outflow Breadth (number of states to which the tax base moved)

State	Breadth	State	Breadth	State	Breadth	State	Breadth	State	Breadth
Florida	2	Vermont	13	Nevada	22	Washington	29	Nebraska	37
South Carolina	4	Texas	14	Missouri	23	Kansas	30	Connecticut	38
Tennessee	5	Georgia	16	New Mexico	23	Ohio	30	Massachusetts	38
Alabama	6	Idaho	16	West Virginia	23	Iowa	32	Minnesota	38
North Carolina	7	Kentucky	16	Colorado	24	Oregon	32	North Dakota	38
Maine	8	Utah	17	Indiana	24	Hawaii	33	Maryland	41
Montana	9	Mississippi	19	New Hampshire	24	Virginia	33	California	45
Arkansas	10	Arizona	20	Delaware	25	Louisiana	35	Illinois	45
South Dakota	10	Michigan	20	Wisconsin	28	Pennsylvania	35	New Jersey	46
Oklahoma	13	Wyoming	20	Rhode Island	29	Alaska	37	New York	49

Net Dollar Flow (\$ millions)

State	Net Flow	State	Net Flow	State	Net Flow	State	Net Flow	State	Net Flow
Florida	39,187	New Hampshire	1,465	Vermont	366	Kentucky	(122)	Minnesota	(1,563)
Texas	10,901	Georgia	1,268	Rhode Island	189	Indiana	(167)	Maryland	(1,857)
Nevada	4,618	Montana	1,111	Washington	178	Nebraska	(206)	Virginia	(1,858)
North Carolina	4,544	Maine	923	Hawaii	104	Missouri	(220)	Pennsylvania	(1,859)
Arizona	4,439	Alabama	738	New Mexico	95	Alaska	(227)	Ohio	(2,072)
South Carolina	4,193	Wyoming	548	Connecticut	57	Kansas	(234)	New Jersey	(3,794)
Tennessee	4,146	Arkansas	538	Mississippi	49	North Dakota	(249)	Massachusetts	(4,275)
Idaho	2,153	Delaware	537	West Virginia	33	Iowa	(260)	Illinois	(10,885)
Colorado	2,123	Oklahoma	505	Wisconsin	(61)	Louisiana	(862)	New York	(24,467)
Utah	1,640	South Dakota	451	Oregon	(122)	Michigan	(1,069)	California	(29,071)

Source: IRS, FCM; Dec 31, 2023

Migration of Adjusted Gross Income (AGI): The migration of AGI between and among the states provides a more accurate measure than population shifts of the trend in a state's tax base. The Statistics of Income Division of the IRS maintains records of all individual income tax forms filed in each year, including the state of residence of the filers. The data used to produce the migration statistics come from individual income tax returns and represent between 95% and 98% of total annual filings. One gauge of the degree of movement in a state's tax base is the extent to which it is on the sending or receiving end of AGI migration. Breadth measures the number of other states to which the state lost part of its tax base in any given year.

State Economic Diversity

Hachman Index 2022

State	2022	State	2022	State	2022	State	2022	State	2022
North Carolina	0.98	South Carolina	0.94	Alabama	0.90	Idaho	0.85	West Virginia	0.75
Missouri	0.97	Ohio	0.93	Maine	0.90	Delaware	0.84	Nevada	0.72
Georgia	0.97	Oregon	0.92	Kentucky	0.89	Colorado	0.83	Nebraska	0.70
New Jersey	0.96	Minnesota	0.92	Wisconsin	0.89	New York	0.82	Hawaii	0.70
Arizona	0.96	Tennessee	0.92	Massachusetts	0.88	Mississippi	0.81	Iowa	0.66
Utah	0.96	Michigan	0.92	Virginia	0.88	Washington	0.81	Alaska	0.62
Illinois	0.96	Kansas	0.92	Connecticut	0.88	New Mexico	0.80	Oklahoma	0.61
Pennsylvania	0.95	New Hampshire	0.91	Maryland	0.88	Texas	0.80	North Dakota	0.53
Florida	0.94	Vermont	0.91	Louisiana	0.86	Indiana	0.79	South Dakota	0.52
California	0.94	Rhode Island	0.91	Montana	0.85	Arkansas	0.77	Wyoming	0.49

Hachman Index Average All Years 1991 - 2022

State	Average All Years	State	Average All Years	State	Average All Years	State	Average All Years	State	Average All Years
Illinois	0.97	Oregon	0.94	Michigan	0.91	Mississippi	0.87	Iowa	0.77
Missouri	0.97	Ohio	0.93	Kentucky	0.90	Delaware	0.86	Nebraska	0.72
Utah	0.96	Florida	0.93	Vermont	0.90	Arkansas	0.84	West Virginia	0.71
Arizona	0.96	Alabama	0.93	Colorado	0.90	Indiana	0.84	Hawaii	0.71
California	0.96	Tennessee	0.92	Massachusetts	0.90	New York	0.83	Oklahoma	0.68
New Jersey	0.96	South Carolina	0.92	Maryland	0.90	Louisiana	0.81	Alaska	0.59
Georgia	0.95	Washington	0.91	Virginia	0.90	Montana	0.81	South Dakota	0.58
Pennsylvania	0.95	Kansas	0.91	Maine	0.90	Texas	0.80	North Dakota	0.58
North Carolina	0.95	New Hampshire	0.91	Wisconsin	0.89	New Mexico	0.80	Nevada	0.51
Minnesota	0.94	Rhode Island	0.91	Connecticut	0.88	Idaho	0.80	Wyoming	0.37

Hachman Index Lowest Year 1991 - 2022

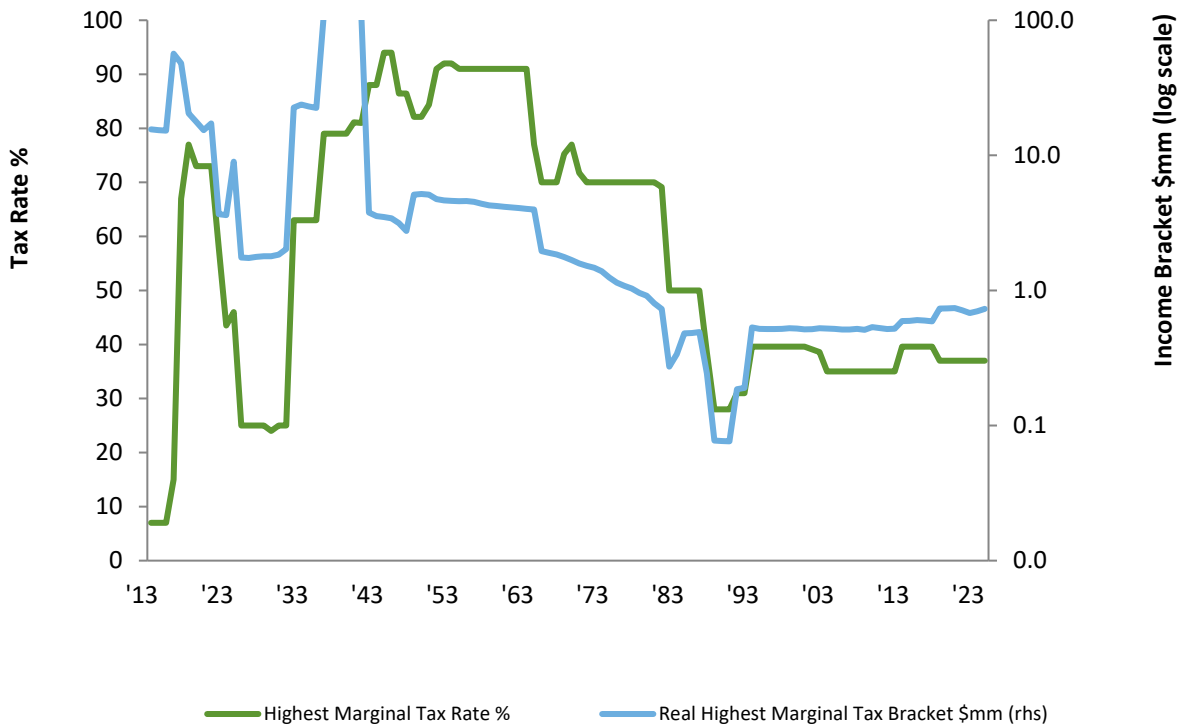
State	Lowest Year	State	Lowest Year	State	Lowest Year	State	Lowest Year	State	Lowest Year
Illinois	0.95	Florida	0.91	Virginia	0.87	New York	0.80	Iowa	0.61
Missouri	0.95	South Carolina	0.90	Michigan	0.86	Indiana	0.78	Louisiana	0.60
New Jersey	0.95	Tennessee	0.89	Kentucky	0.84	Connecticut	0.78	Alaska	0.51
Arizona	0.94	Alabama	0.89	Rhode Island	0.83	Arkansas	0.77	Nebraska	0.50
Utah	0.93	Minnesota	0.89	Maine	0.83	New Mexico	0.76	West Virginia	0.47
California	0.93	New Hampshire	0.88	Vermont	0.83	Delaware	0.73	Oklahoma	0.42
Pennsylvania	0.92	Maryland	0.88	Colorado	0.83	Idaho	0.73	North Dakota	0.37
Ohio	0.92	Wisconsin	0.88	Kansas	0.83	Texas	0.69	South Dakota	0.35
Oregon	0.92	North Carolina	0.88	Mississippi	0.81	Montana	0.67	Wyoming	0.25
Georgia	0.91	Massachusetts	0.88	Washington	0.81	Hawaii	0.64	Nevada	0.19

Source: US Bureau of Economic Analysis, FCM; Dec 31, 2023

Hachman Index: The measure of a state's overall economic diversity may be derived using the Hachman Index. This is an index of similarity that measures how closely industry earnings of the subject region (the state) resemble that of the reference region (the nation). The value of the index is between zero and one. As the value of the index approaches one, this means that the subject region's employment distribution among industries is more similar to that of the reference region. If the reference region is the nation, and, given the assumption that the nation's economy is diversified, a larger value of the Hachman Index relative to the nation means that a subject region is more diversified (and therefore less specialized).

U.S. Individual Income Tax Highest Tax Bracket

U.S. Individual Income Tax Highest Tax Bracket for Married Filing Jointly



Source: IRS, Robert J. Shiller, FCM; Dec 31, 2023

Note: The real highest marginal tax bracket was adjusted based on the annual average level of the Consumer Price Index.

Index Definitions

ICE Data Indices

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 US Corporate Index: The 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 Global Corporate Index: ICE BofA Global Corporate Index tracks the performance of investment grade corporate debt publicly issued in the major domestic and eurobond markets. 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 and a fixed coupon schedule. Qualifying currencies and their respective minimum size requirements (in local currency terms) are: AUD 100 million; CAD 100 million; EUR 250 million; JPY 20 billion; GBP 100 million; and USD 250 million. Original issue zero coupon bonds and pay-in-kind securities, including toggle notes, also qualify for inclusion.

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. 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, 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, 1996.

ICE BofA US High Yield Index: ICE BofA US High Yield Index tracks the performance of US dollar denominated below investment grade corporate debt publicly issued in the US domestic market. Qualifying securities must have a below 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. In addition, qualifying securities must have risk exposure to countries that are members of the FX-G10, Western Europe or territories of the US and Western Europe. The FX-G10 includes all Euro members, the US, Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden. Original issue zero coupon bonds, 144a securities (both 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. Securities issued or marketed primarily to retail investors, 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: August 31, 1986.

ICE BofA Fixed Rate Preferred Securities Index: ICE BofA Fixed Rate Preferred Securities Index tracks the performance of fixed rate US dollar denominated preferred securities 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) and must have an investment grade rated country of risk (based on an average of Moody’s, S&P and Fitch foreign currency long term sovereign debt ratings). In addition, qualifying securities must be issued as public securities or through a 144a filing, must be issued in \$25, \$50, or \$100 par/liquidation preference increments, must have a fixed coupon or dividend schedule and must have a minimum amount outstanding of \$100 million. \$1,000 par preferred securities and \$1,000 par DRD eligible debt securities qualify for inclusion in the Index, provided their amount outstanding is at least \$250 million. 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. The Index includes preference shares (perpetual preferred securities), American Depositary Shares/Receipts (ADS/R), domestic and Yankee trust preferred securities having a minimum remaining term of at least one year, both DRD-eligible and non-DRD eligible preferred stock and senior and subordinated debt issued in \$25, \$50 or \$100 par/liquidation increments. Auction market securities, convertibles, floaters, purchase units, purchase contracts, corporate pay-in-kind securities, securities issued by closed-end funds and derivative instruments such as repackaged securities and credit default swaps 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 and index governance and administration is provided in the ICE BofA Bond Index Methodologies, which can be accessed on our public website (<https://indices.theice.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 following calendar month end in order to qualify for the coming month. No changes are made to constituent holdings other than on month end rebalancing dates. Inception date: February 28, 1989.

ICE BofA US Convertible Excluding Mandatory Index: ICE BofA US Convertible Excluding Mandatory Index tracks the performance of publicly issued US dollar denominated non-mandatory convertible securities of US companies. Qualifying securities must have at least \$50 million face amount outstanding and at least one month remaining to the final conversion date. In order to qualify for inclusion in the index securities must pay at a fixed rate, which includes those with zero, step-up and rating-sensitive coupons. The underlying equity of qualifying securities must be exchange listed and actively trading, and have a US country of issue and a US country of risk. Convertible securities where the underlying is a basket of equities qualify for inclusion in the index, as do convertible preferred securities. Securities with mandatory conversion features and those in legal default are excluded from the index, as are synthetic and reverse convertibles, floating rate securities and securities with suspended or inactive underlying equities. 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 and index governance and administration is provided in the ICE BofA Bond Index Methodologies, which can be accessed on our public website (<https://indices.theice.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 following calendar month end 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, 1987.

ICE BofA US ABS & CMBS Index: ICE BofA US ABS & CMBS Index tracks the performance of US dollar denominated investment grade fixed and floating rate asset backed securities and fixed rate commercial mortgage backed 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), at least one year remaining term to final stated maturity and at least one month to the last expected cash flow. 144a securities qualify for inclusion in the Index. Callable perpetual securities qualify provided they are at least one year from the first call date. Inverse floating rate, interest only and principal only tranches of qualifying deals are excluded from the Index as are all tranches of re-securitized deals. Qualifying asset backed securities must have a fixed or floating rate coupon, an original deal size for the collateral group of at least \$250 million, a current outstanding deal size for the collateral group greater than or equal to 10% of the original deal size and a minimum outstanding tranche size of \$50 million for senior tranches and \$10 million for mezzanine and subordinated tranches. Qualifying commercial mortgage backed securities must have a fixed coupon schedule, an original deal size for the collateral group of at least \$250 million, a current outstanding deal size for the collateral group that is greater than or equal to 10% of the original deal size and at least \$50 million current amount outstanding for senior tranches and \$10 million current amount outstanding for mezzanine and subordinated tranches. U.S. agency securities qualify for inclusion. Fixed-to-floating rate securities 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. Floating rate securities are excluded. Index constituents are market capitalization weighted. Accrued interest is calculated assuming same-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 and index governance and administration is provided in the ICE BofA Bond Index Methodologies, which can be accessed on our public website (<https://indices.theice.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 following calendar month end 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, 1997.

ICE BofA US Mortgage Backed Securities Index: ICE BofA US Mortgage Backed Securities Index tracks the performance of US dollar denominated fixed rate and hybrid residential mortgage pass-through securities publicly issued by US agencies in the US domestic market. 30-year, 20-year and 15-year fixed rate mortgage pools are included in the Index provided they have at least one year remaining term to final maturity and a minimum amount outstanding of at least \$5 billion per generic coupon and \$250 million per production year within each generic coupon. Hybrid, interest-only, balloon, mobile home, graduated payment and quarter coupon fixed rate mortgages are excluded from the index, as are all collateralized mortgage obligations. Index constituents are market capitalization weighted. Accrued interest is calculated assuming same-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, 1975.

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.

ICE BofA US Inflation-Linked Treasury Index: ICE BofA US Inflation-Linked Treasury Index tracks the performance of US dollar denominated inflation-linked sovereign debt publicly issued by the US government in its domestic market. Qualifying securities must have at least 18 months to maturity at point of issuance, at least one year remaining term to final maturity, interest and principal payments tied to inflation and a minimum amount outstanding of \$1 billion. 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: February 28, 1997.

ICE BofA US Agency Index: ICE BofA US Agency Index tracks the performance of US dollar denominated US agency senior debt 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 be unsubordinated, must have at least one year remaining term to final maturity, at least 18 months to final maturity at point of issuance, a fixed coupon schedule and a minimum amount outstanding of \$250 million. "Global" securities (debt issued simultaneously in the eurobond and US domestic markets) qualify for inclusion in the Index. 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. 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, 1977.

ICE BofA Japan Government Index: ICE BofA Japan Government Index tracks the performance of JPY denominated sovereign debt publicly issued by the Japanese government in its domestic market. Qualifying securities must have at least 18 months to maturity at point of issuance, at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of JPY 200 billion. 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

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ICE BofA Australia Government Index: ICE BofA Australia Government Index tracks the performance of AUD denominated sovereign debt publicly issued by the Australian government in its domestic market. Qualifying securities must have at least 18 months to maturity at point of issuance, at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of AUD 1 billion. 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, 1985.

ICE BofA French Government Index: ICE BofA French Government Index tracks the performance of EUR denominated sovereign debt publicly issued by the French government in the French domestic or eurobond market. Qualifying securities must have at least 18 months to maturity at point of issuance, at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of EUR 1 billion. 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, 1985.

ICE BofA German Government Index: ICE BofA German Government Index tracks the performance of EUR denominated sovereign debt publicly issued by the German government in the German domestic or eurobond market. Qualifying securities must have at least 18 months to maturity at point of issuance, at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of EUR 1 billion. 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, 1985.

ICE BofA Italian Government Index: ICE BofA Italian Government Index tracks the performance of EUR denominated sovereign debt publicly issued by the Italian government in the Italian domestic or eurobond market. Qualifying securities must have at least 18

months to maturity at point of issuance, at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of EUR 1 billion. 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: November 30, 1987.

ICE BofA Spanish Government Index: ICE BofA Spanish Government Index tracks the performance of EUR denominated sovereign debt publicly issued by the Spanish government in the Spanish domestic or eurobond market. Qualifying securities must have at least 18 months to maturity at point of issuance, at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of EUR 1 billion. 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: May 31, 1992.

ICE BofA UK Gilt Index: ICE BofA UK Gilt Index tracks the performance of GBP denominated sovereign debt publicly issued by the UK government in its domestic market. Qualifying securities must have at least 18 months to maturity at point of issuance, at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of GBP 500 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. 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, 1985.

ICE BofA Canada Government Index: ICE BofA Canada Government Index tracks the performance of CAD denominated sovereign debt publicly issued by the Canadian government in its domestic market. Qualifying securities must have at least 18 months to maturity at point of issuance, at least one year remaining term to final maturity, a fixed coupon schedule and a minimum amount outstanding of CAD 1 billion. 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, 1985.

ICE BofA US Dollar South Korea Sovereign Index: ICE BofA US Dollar South Korea Sovereign Index is a subset of ICE BofA US Emerging Markets External Sovereign Index including all securities with South Korea as the country of risk. Inception date: April 30, 1998.

ICE BofA US Dollar Indonesia Sovereign Index: ICE BofA US Dollar Indonesia Sovereign Index is a subset of ICE BofA US Emerging Markets External Sovereign Index including all securities with an Indonesia country of risk. Inception date: December 31, 1996.

ICE BofA US Dollar Mexico Sovereign Index: ICE BofA US Dollar Mexico Sovereign Index is a subset of ICE BofA US Emerging Markets External Sovereign Index including all securities with a Mexico country of risk. Inception date: December 31, 1991.

ICE BofA US Dollar Brazil Sovereign Index: ICE BofA US Dollar Brazil Sovereign Index is a subset of ICE BofA US Emerging Markets External Sovereign Index including all securities with a Brazil country of risk. Inception date: December 31, 1991.

ICE BofA US Dollar Turkey Sovereign Index: ICE BofA US Dollar Turkey Sovereign Index is a subset of ICE BofA US Emerging Markets External Sovereign Index including all securities with a Turkey country of risk. Inception date: August 31, 1997.

ICE BofA US Emerging Markets External Sovereign Index: ICE BofA US Emerging Markets External Sovereign Index tracks the performance of US dollar emerging markets sovereign debt publicly issued in the US and eurobond markets. In order to qualify for inclusion in the Index an issuer must have risk exposure to countries other than members of the FX-G10, all Western European countries, and territories of the US and Western European countries. The FX-G10 includes all Euro members, the US, Japan, the UK, Canada, Australia, New Zealand, Switzerland, Norway and Sweden. Qualifying securities must have 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 (both with and without registration rights), and eurobonds are included in the index. Securities issued or marketed primarily to retail investors, or those 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, 1991.

S&P Municipal Bond Indices

The S&P Municipal Bond Index is a broad, comprehensive, market value-weighted index. All bonds in the index are exempt from U.S. federal income taxes, but may be subject to alternative minimum tax (AMT). The bond issuer is a U.S. state (including the Commonwealth of Puerto Rico and U.S. territories) or local government or agency such that interest on the bond is exempt from U.S. federal income taxes, but may be subject to alternative minimum tax (AMT). The bond must have a dated date within three months of the rebalancing date to be considered eligible for a new addition to the index. The bond must be held by a mutual fund and Securities Evaluations | ICE Data Services must provide daily pricing on the bond. The bond must be denominated in U.S. dollars. The amount outstanding, or par amount, is used to determine the weight of the bond in the index. The bond must have a minimum par amount of US\$ 2 million to be eligible for inclusion. As of the rebalancing date, the bond must have a minimum term to maturity greater than one calendar month. For any bond with an announced full call, the call date must be greater than one calendar month. Bonds are deleted from the index at the rebalancing for the following reasons: (1) bonds that are completely called or tendered during the course of the month, (2) defaulted bonds that have made a final distribution, (3) bonds that are scheduled to be completely called or redeemed during the course of the calendar month following the rebalancing date, (4) bonds where partial calls and redemptions have reduced the known outstanding amount to less than US\$ 2 million during the course of the month, (5) bonds that have gone through a partial pre-refunding and have, consequently, had new CUSIPs assigned (if the "new" bonds are considered eligible for inclusion, the bonds are added to the index on a monthly rebalancing date accordingly), (6) bonds that are no longer priced by Securities Evaluations | ICE Data Services for more than five consecutive days. The state level municipal bond sub-indices consists of bonds in the S&P Municipal Bond Index that have been issued by municipalities or municipal authorities within the 50 states, the District of Columbia, Puerto Rico, Guam and the U.S. Virgin Islands.



Municipal Market Data (MMD)

Municipal Market Data produces daily generic yield curves which reflect the offer-side of the municipal market determined from trading activity and primary markets. The MMD "AAA" curve represents non-AMT, tax-exempt yields on triple-A rated state general obligation bonds. The MMD curve evaluates trades and primary market maturities of at least \$2 million and assumes a 10-year par call for maturities longer than 10 years. Yields are reflective of coupon structures that are the general preference of institutional buyers and tend to be standard structures for primary issues. Currently, the coupon of preference is 5.00%, and maturities beyond 10 years are yield to call (callable in year 10), not yield to maturity.

Bloomberg Indices

Bloomberg Municipal Bond Index

The Bloomberg U.S. Municipal Index covers the USD-denominated long-term tax-exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds and prerefunded bonds.

Bloomberg US Corporate Bond Index

The Bloomberg US Corporate Bond Index measures the investment grade, fixed-rate, taxable corporate bond market. It includes USD denominated securities publicly issued by US and non-US industrial, utility and financial issuers.

Past performance is no guarantee of future results.

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.

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In general the bond market is volatile, and fixed income securities carry interest rate risk. (As interest rates rise, bond prices usually fall, and vice versa. This effect is usually more pronounced for longer-term securities.) Fixed income securities also carry inflation risk, liquidity risk, call risk, and credit and default risks for both issuers and counterparties.

Any fixed income security sold or redeemed prior to maturity may be subject to a substantial gain or loss.

Diversification does not ensure a profit or guarantee against a loss. Interest income earned from tax-exempt municipal securities generally is exempt from federal income tax, and may also be exempt from state and local income taxes if you are a resident in the state of issuance. A portion of the income you receive may be subject to federal and state income taxes, including the federal alternative minimum tax. In addition, you may be subject to tax on amounts recognized in connection with the sale of municipal bonds, including capital gains and "market discount" taxed at ordinary income rates. "Market discount" arises when a bond is purchased on the secondary market for a price that is less than its stated redemption price by more than a statutory amount. Before making any investment, you should review the official statement for the relevant offering for additional tax and other considerations.

The municipal market can be adversely affected by tax, legislative or political changes and the financial condition of the issuers of municipal securities. Investing in municipal bonds for the purpose of generating tax-exempt income may not be appropriate for investors in all tax brackets or for all account types. Tax laws are subject to change and the preferential tax treatment of municipal bond interest income may be revoked or phased out for investors at certain income levels. You should consult your tax adviser regarding your specific situation.

The Chartered Financial Analyst (CFA®) designation is offered by the CFA Institute. To obtain the CFA charter, candidates must pass three exams demonstrating their competence, integrity, and extensive knowledge in accounting, ethical and professional standards, economics, portfolio management, and security analysis, and must also have at least 4,000 hours of qualifying work experience completed in a minimum of 36 months, among other requirements. CFA is a trademark owned by CFA Institute.

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