



ETF Category Report

Fixed Income: Municipal

As of 1/31/2024

The ETF Action Category Reports present category averages, category breakdown, and ETF level data using the ETF Action Classification System. For more information, please reach out to team@etfaction.com. Category reports include data relating to:

Flows & Product Growth

Structure

Performance

Risk

Composition

Fundamentals

This report is currently in beta so if you have any questions or see any issues, please send a message to team@etfaction.com.

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Flows & Category Growth

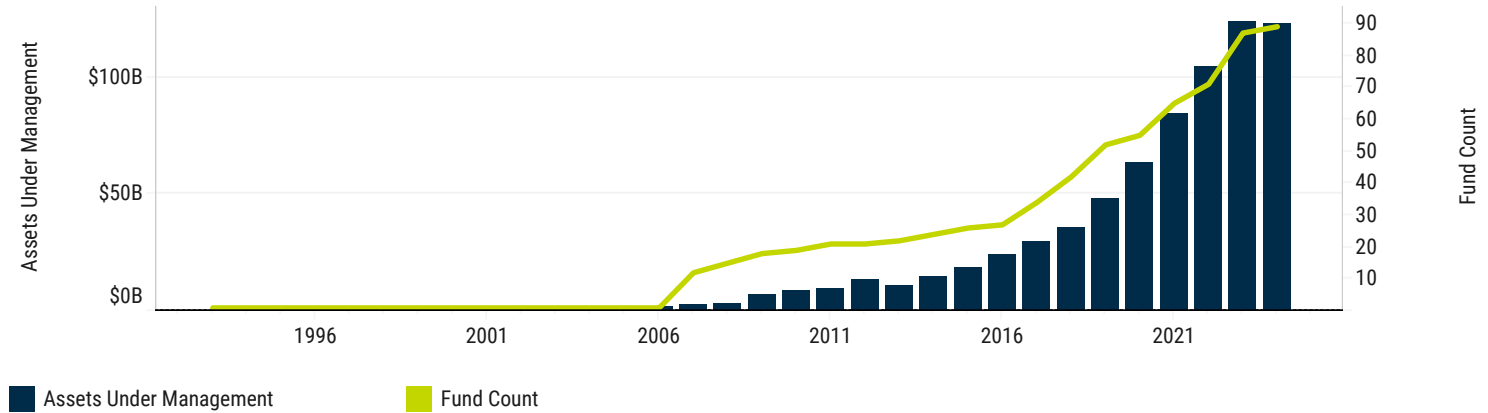


Category: Fixed Income: Municipal

As of 1/31/2024

Fund Count	Assets Under Management	1 Month Flows	3 Month Flows	Year To Date Flows	1 Year Flows	3 Year Flows	5 Year Flows
85	\$122.9B	(\$0.57B)	\$5.90B	(\$0.57B)	\$14.90B	\$61.90B	\$89.62B

Category Growth



Top 10 Funds by 1 Month Flows

Ticker	Name	Inception	AUM	1 Month	3 Month	Year To Date	1 Year	3 Year	5 Year
PZA	Invesco National AMT-Free Municipal Bond ETF	10/11/2007	\$2,718.28M	\$148.8M	\$263.1M	\$148.8M	\$539.8M	\$729.2M	\$1,357.5M
VTEB	Vanguard Tax-Exempt Bond ETF	8/21/2015	\$31,859.07M	\$137.7M	\$1,618.6M	\$137.7M	\$6,304.6M	\$21,339.6M	\$27,958.8M
JMUB	JPMorgan Municipal ETF	10/29/2018	\$1,111.64M	\$124.4M	\$337.1M	\$124.4M	\$720.2M	\$1,025.3M	\$1,069.1M
TAFI	AB Tax-Aware Short Duration Municipal ETF	9/14/2022	\$402.12M	\$67.8M	\$189.4M	\$67.8M	\$311.7M	\$373.6M	\$373.6M
DFNM	Dimensional National Municipal Bond ETF	11/15/2021	\$1,183.13M	\$50.7M	\$163.8M	\$50.7M	\$414.9M	\$1,169.1M	\$1,169.1M
CGMU	Capital Group Municipal Income ETF	10/25/2022	\$560.74M	\$50.1M	\$244.4M	\$50.1M	\$463.9M	\$520.5M	\$520.5M
FMB	First Trust Managed Municipal ETF	5/13/2014	\$1,976.21M	\$41.2M	\$48.9M	\$41.2M	\$38.3M	\$313.7M	\$1,587.9M
FCAL	First Trust California Municipal High Income ETF	6/20/2017	\$215.82M	\$39.9M	\$59.8M	\$39.9M	\$106.1M	\$129.7M	\$201.9M
CMF	iShares California Muni Bond ETF	10/4/2007	\$2,722.56M	\$28.9M	\$271.3M	\$28.9M	\$652.0M	\$1,142.9M	\$1,703.4M
IBMO	iShares iBonds Dec 2026 Term Muni Bond ETF	4/2/2019	\$431.97M	\$28.0M	\$103.5M	\$28.0M	\$137.4M	\$361.8M	\$434.6M

Bottom 10 Funds by 1 Month Flows

Ticker	Name	Inception	AUM	1 Month	3 Month	Year To Date	1 Year	3 Year	5 Year
MUB	iShares National Muni Bond ETF	9/7/2007	\$37,274.65M	(\$697.7M)	\$593.1M	(\$697.7M)	\$4,731.9M	\$17,699.3M	\$26,369.8M
HYD	VanEck High Yield Muni ETF	2/4/2009	\$2,858.63M	(\$351.5M)	\$88.8M	(\$351.5M)	(\$271.8M)	\$129.8M	\$1,100.0M
HYMB	SPDR Nuveen Bloomberg High Yield Municipal B..	4/13/2011	\$2,349.63M	(\$166.0M)	\$285.3M	(\$166.0M)	\$305.5M	\$1,110.9M	\$1,838.8M
TFI	SPDR Nuveen Bloomberg Municipal Bond ETF	9/11/2007	\$3,636.34M	(\$141.4M)	\$116.3M	(\$141.4M)	(\$285.9M)	\$672.6M	\$1,031.6M
SUB	iShares Short-Term National Muni Bond ETF	11/5/2008	\$9,037.71M	(\$78.7M)	\$232.8M	(\$78.7M)	(\$2,295.7M)	\$4,832.1M	\$6,961.6M
VTEB	Vanguard Short-Term Tax Exempt Bond ETF	3/9/2023	\$366.34M	(\$50.7M)	\$54.1M	(\$50.7M)	\$336.6M	\$336.6M	\$336.6M
ITM	VanEck Intermediate Muni ETF	12/4/2007	\$1,996.55M	(\$30.1M)	\$62.2M	(\$30.1M)	(\$2.5M)	\$381.7M	\$291.3M
SMMU	PIMCO Short Term Municipal Bond Active ETF	2/1/2010	\$549.11M	(\$18.0M)	\$17.6M	(\$18.0M)	(\$8.2M)	\$260.0M	\$476.8M
SHYD	VanEck Short High Yield Muni ETF	1/13/2014	\$339.30M	(\$15.6M)	(\$27.8M)	(\$15.6M)	(\$85.6M)	\$138.7M	\$214.6M
SMB	VanEck Short Muni ETF	2/22/2008	\$251.21M	(\$10.3M)	\$3.2M	(\$10.3M)	(\$40.0M)	\$14.1M	\$65.5M

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Overview & Structure



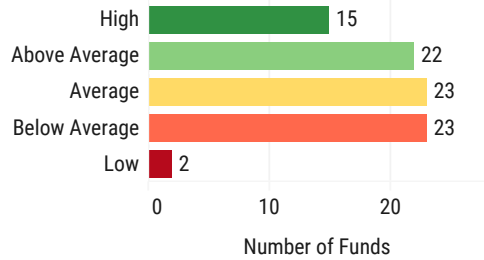
Category: Fixed Income: Municipal

As of 1/31/2024

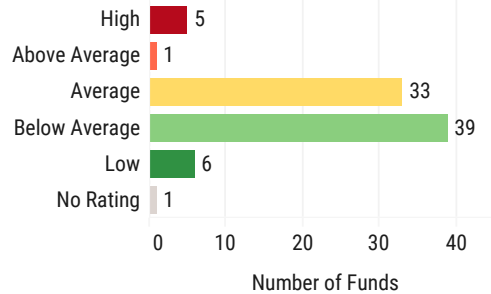
Fund Count	Assets Under Management	Average Expense Ratio	Average Lifespan	Average TTM Yield	Average Spread (%)	Average ADV (\$)
85	\$122.9B	0.33%	6.51 Years	2.12%	0.17%	\$12.78M

Breakdown of Category Universe Ratings

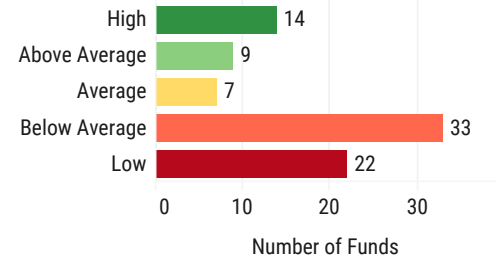
Assets Under Management



Expense Ratio



Liquidity



Top 10 Funds by Greatest Assets Under Management

Ticker	Name	Inception	AUM	Expense Ratio	Distribution Yield (TTM)	Average Spread	ADV
MUB	iShares National Muni Bond ETF	9/7/2007	\$37,274.65M	0.05%	2.67%	0.01%	\$455.92M
VTEB	Vanguard Tax-Exempt Bond ETF	8/21/2015	\$31,859.07M	0.05%	2.82%	0.02%	\$240.74M
SUB	iShares Short-Term National Muni Bond ETF	11/5/2008	\$9,037.71M	0.07%	1.74%	0.01%	\$55.51M
SHM	SPDR Nuveen Bloomberg Short Term Municipal Bond ETF	10/10/2007	\$3,874.33M	0.20%	1.15%	0.02%	\$20.92M
TFI	SPDR Nuveen Bloomberg Municipal Bond ETF	9/11/2007	\$3,636.34M	0.23%	2.44%	0.03%	\$35.57M
HYD	VanEck High Yield Muni ETF	2/4/2009	\$2,858.63M	0.32%	4.18%	0.06%	\$58.23M
CMF	iShares California Muni Bond ETF	10/4/2007	\$2,722.56M	0.08%	2.31%	0.02%	\$15.21M
PZA	Invesco National AMT-Free Municipal Bond ETF	10/11/2007	\$2,718.28M	0.28%	2.74%	0.05%	\$22.09M
JMST	JPMorgan Ultra-Short Municipal Income ETF	10/16/2018	\$2,638.54M	0.18%	3.09%	0.02%	\$19.81M
HYMB	SPDR Nuveen Bloomberg High Yield Municipal Bond ETF	4/13/2011	\$2,349.63M	0.35%	4.11%	0.04%	\$35.80M

Top 10 Funds by Lowest Expense Ratio

Ticker	Name	Inception	AUM	Expense Ratio	Distribution Yield (TTM)	Average Spread	ADV
SCMB	Schwab Municipal Bond ETF	10/12/2022	\$268.78M	0.03%	3.14%	0.07%	\$2.42M
MUB	iShares National Muni Bond ETF	9/7/2007	\$37,274.65M	0.05%	2.67%	0.01%	\$455.92M
VTEB	Vanguard Tax-Exempt Bond ETF	8/21/2015	\$31,859.07M	0.05%	2.82%	0.02%	\$240.74M
SMB	VanEck Short Muni ETF	2/22/2008	\$251.21M	0.07%	1.83%	0.06%	\$1.88M
SUB	iShares Short-Term National Muni Bond ETF	11/5/2008	\$9,037.71M	0.07%	1.74%	0.01%	\$55.51M
VTES	Vanguard Short-Term Tax Exempt Bond ETF	3/9/2023	\$366.34M	0.07%	0.00%	0.02%	\$6.58M
CMF	iShares California Muni Bond ETF	10/4/2007	\$2,722.56M	0.08%	2.31%	0.02%	\$15.21M
VTEC	Vanguard California Tax-Exempt Bond ETF	1/10/2024	\$35.13M	0.08%	0.00%	0.00%	\$0.00M
VTEI	Vanguard Intermediate-Term Tax-Exempt Bond ETF	1/30/2024	\$25.07M	0.08%	0.00%	0.00%	\$0.00M
AVMU	Avantis Core Municipal Fixed Income ETF	12/8/2020	\$139.95M	0.15%	2.53%	0.09%	\$0.72M

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Category Performance



Category: Fixed Income: Municipal

As of 1/31/2024

Fund Count	Average 1 Month Return	Average 3 Month Return	Average YTD Return	Average 1 Year Return	Average 3 Year Return**	Average 5 Year Return**	Average 10 Year Return**
85	0.00%	6.99%	0.00%	2.30%	-0.64%	0.81%	0.59%

*Annualized

Breakdown of Category Performance

1 Month Returns



Advancers* **Top 1 Month Return**

44 1.20%

Decliners* **Bottom 1 Month Return**

43 -1.10%

Top 10 Performers: 1 Month

Ticker	Name	Inception	AUM	1 Month	3 Month	YTD	1 Year	3 Year*	5 Year*
PZT	Invesco New York AMT-Free Municipal Bond ETF	10/11/2007	\$91.86M	1.20%	13.75%	1.20%	4.68%	-1.16%	2.21%
HYMB	SPDR Nuveen Bloomberg High Yield Municipal Bond ETF	4/13/2011	\$2,349.63M	1.15%	11.87%	1.15%	4.38%	-1.63%	1.97%
PWZ	Invesco California AMT-Free Municipal Bond ETF	10/11/2007	\$793.29M	0.95%	12.12%	0.95%	4.24%	-1.12%	2.07%
FMHI	First Trust Municipal High Income ETF	11/1/2017	\$545.17M	0.88%	9.88%	0.88%	4.52%	-0.82%	2.46%
IMSI	Invesco Municipal Strategic Income ETF	12/9/2022	\$30.42M	0.66%	8.30%	0.66%	4.43%		
XMPT	VanEck CEF Muni Income ETF	7/12/2011	\$232.80M	0.66%	17.74%	0.66%	-1.84%	-5.66%	0.81%
MINO	PIMCO Municipal Income Opportunities Active ETF	9/8/2021	\$116.15M	0.51%	9.67%	0.51%	5.44%		
OVM	Overlay Shares Municipal Bond ETF	9/30/2019	\$13.86M	0.46%	11.67%	0.46%	4.65%	-0.26%	
JHMU	John Hancock Dynamic Municipal Bond ETF	11/1/2023	\$22.15M	0.44%	0.00%	0.44%			
BAB	Invesco Taxable Municipal Bond ETF	11/17/2009	\$1,578.31M	0.38%	10.62%	0.38%	3.77%	-4.05%	1.33%

Bottom 10 Performers: 1 Month

Ticker	Name	Inception	AUM	1 Month	3 Month	YTD	1 Year	3 Year*	5 Year*
MUST	Columbia Multi-Sector Municipal Income ETF	10/10/2018	\$404.60M	-1.10%	7.87%	-1.10%	2.02%	-0.95%	2.23%
MLN	VanEck Long Muni ETF	1/2/2008	\$489.82M	-0.82%	12.87%	-0.82%	2.69%	-3.50%	1.15%
ITM	VanEck Intermediate Muni ETF	12/4/2007	\$1,996.55M	-0.70%	8.10%	-0.70%	2.30%	-1.66%	1.63%
MFLX	First Trust Flexible Municipal High Income ETF	9/27/2016	\$16.90M	-0.63%	9.33%	-0.63%	5.28%	-2.41%	2.48%
ZTAX	X-Square Municipal Income Tax Free ETF	5/19/2023	\$3.32M	-0.58%	4.69%	-0.58%			
MINN	Mairs & Power Minnesota Municipal Bond ETF	3/11/2021	\$18.28M	-0.56%	9.61%	-0.56%	1.03%		
GMUN	Goldman Sachs Community Municipal Bond ETF	3/7/2023	\$10.03M	-0.53%	5.16%	-0.53%			
PZA	Invesco National AMT-Free Municipal Bond ETF	10/11/2007	\$2,718.28M	-0.49%	11.28%	-0.49%	3.75%	-1.49%	1.80%
BSMW	Invesco BulletShares 2032 Municipal Bond ETF	3/1/2023	\$53.81M	-0.47%	10.65%	-0.47%			
IBMQ	iShares iBonds Dec 2028 Term Muni Bond ETF	4/16/2019	\$300.72M	-0.45%	5.44%	-0.45%	0.97%	-1.35%	

*Funds must have at least one month track record to be included in performance statistics.

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3 Year Risk Metrics Vs. S&P 500 (SPY)



Category: Fixed Income: Municipal

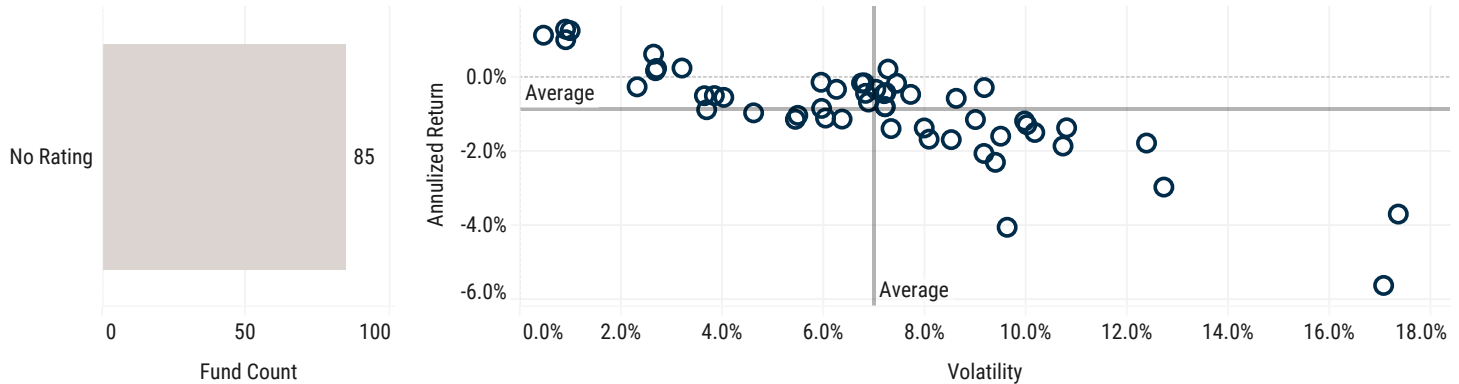
As of 1/31/2024

Fund Count	Average Return	Average Volatility	Average Correlation	Average Sharpe Ratio	Average Sortino Ratio	Average Beta	Average Alpha	Average Up Capture	Average Down Capture
85	-0.86%	6.99%	0.65	0.02	0.16	0.27	-3.56%	18.82%	32.17%

Breakdown of Category Risk

Category Breakdown: Volatility Ratings

3 Year Risk-Return Scatterplot



Top 10 Funds by Sharpe Ratio (3 Year)

Ticker	Name	AUM	Annualized Return	Volatility	Correlation (SPY)	Sharpe Ratio	Beta	Alpha	Up Capture	Down Capture	Volatility Rating (0-5)
PVI	Invesco Floating Rate Municipal Income E..	\$37.2M	1.2%	0.5%	-10.0%	2.58	0.00	1.2%	1.7%	-3.0%	
MEAR	BlackRock Short Maturity Municipal Bond ..	\$626.1M	1.3%	0.9%	51.6%	1.50	0.03	1.0%	4.5%	0.3%	
JMST	JPMorgan Ultra-Short Municipal Income E..	\$2,638.5M	1.3%	1.0%	56.1%	1.32	0.03	1.0%	4.9%	1.2%	
FUMB	First Trust Ultra Short Duration Municipal ..	\$215.8M	1.1%	0.9%	53.4%	1.18	0.03	0.8%	4.0%	1.0%	
SMMU	PIMCO Short Term Municipal Bond Active..	\$549.1M	0.7%	2.6%	64.0%	0.25	0.10	-0.4%	8.3%	9.3%	
SUB	iShares Short-Term National Muni Bond E..	\$9,037.7M	0.3%	2.7%	60.8%	0.10	0.09	-0.7%	7.7%	10.2%	
FSMB	First Trust Short Duration Managed Munic..	\$418.9M	0.3%	3.2%	67.3%	0.09	0.12	-1.0%	9.7%	13.3%	
BSMO	Invesco BulletShares 2024 Municipal Bon..	\$223.4M	0.2%	2.7%	64.9%	0.08	0.10	-0.8%	7.5%	10.2%	
FLMI	Franklin Dynamic Municipal Bond ETF	\$169.5M	0.3%	7.3%	70.4%	0.04	0.29	-2.7%	22.1%	31.8%	
MUNI	PIMCO Intermediate Municipal Bond Activ..	\$1,368.7M	-0.1%	5.9%	65.7%	-0.02	0.22	-2.4%	16.1%	24.6%	

Least Volatile 10 Funds by Volatility Rating

Ticker	Name	AUM	Annualized Return	Volatility	Correlation (SPY)	Sharpe Ratio	Beta	Alpha	Up Capture	Down Capture	Volatility Rating (0-5)
AVMU	Avantis Core Municipal Fixed Income ETF	\$139.9M	-0.8%	7.2%	67.9%	-0.11	0.28	-3.6%	19.4%	32.6%	
BAB	Invesco Taxable Municipal Bond ETF	\$1,578.3M	-4.0%	9.6%	59.9%	-0.43	0.33	-7.3%	16.8%	44.7%	
BSMO	Invesco BulletShares 2024 Municipal Bond..	\$223.4M	0.2%	2.7%	64.9%	0.08	0.10	-0.8%	7.5%	10.2%	
BSMP	Invesco BulletShares 2025 Municipal Bond..	\$212.2M	-0.5%	4.0%	67.4%	-0.13	0.15	-2.1%	10.6%	18.3%	
BSMQ	Invesco BulletShares 2026 Municipal Bond..	\$169.7M	-1.1%	5.4%	69.3%	-0.20	0.21	-3.3%	13.1%	24.9%	
BSMR	Invesco BulletShares 2027 Municipal Bond..	\$118.3M	-0.8%	5.9%	66.7%	-0.14	0.23	-3.1%	15.0%	26.3%	
BSMS	Invesco BulletShares 2028 Municipal Bond..	\$96.3M	-1.4%	7.3%	67.6%	-0.19	0.28	-4.2%	17.6%	32.8%	
BSMT	Invesco BulletShares 2029 Municipal Bond..	\$79.0M	-1.6%	8.1%	67.2%	-0.21	0.31	-4.7%	19.0%	36.2%	
BSMU	Invesco BulletShares 2030 Municipal Bond..	\$79.7M	-2.3%	9.4%	66.8%	-0.25	0.36	-5.8%	21.5%	43.0%	
CMF	iShares California Muni Bond ETF	\$2,722.6M	-0.8%	7.2%	69.9%	-0.11	0.29	-3.7%	19.8%	33.2%	

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Fixed Income Composition

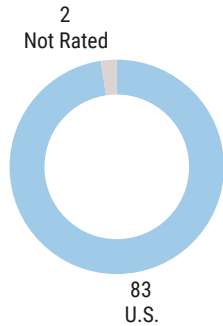


Category: Fixed Income: Municipal

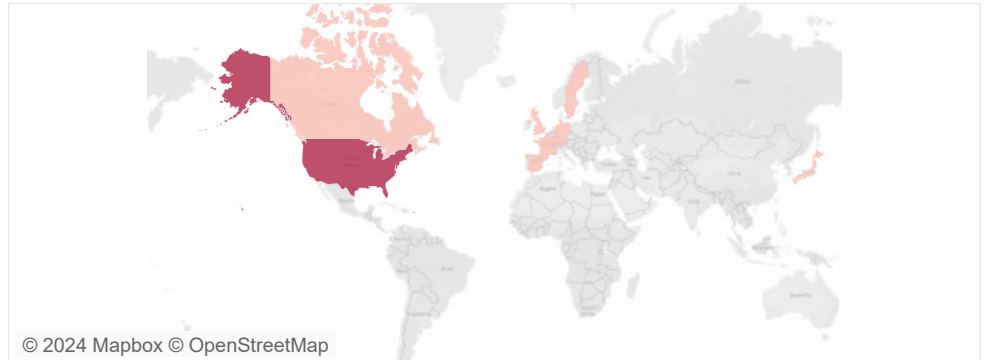
As of 1/31/2024

Fund Count*	Assets Under Management	Average FI Holdings	Average Credit Rating	Average Yield Rating	Average Duration Rating	Average Convexity Rating
83	\$122.9B	1,128	Average	Below Average	Average	Below Average

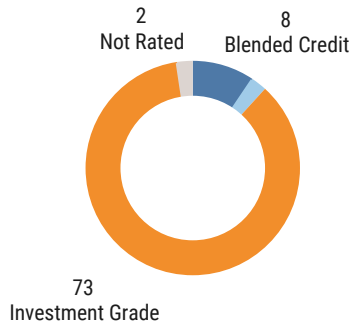
Category Breakdown: Market



Average Fixed Income Geographic Exposure



Category Breakdown: Credit



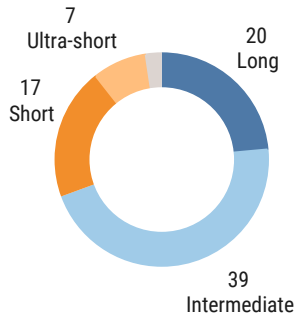
Average FI Market Development

U.S.	98.12%
Developed ex-U.S.	0.18%
Emerging	0.00%
Frontier	0.00%
Unassigned	0.50%

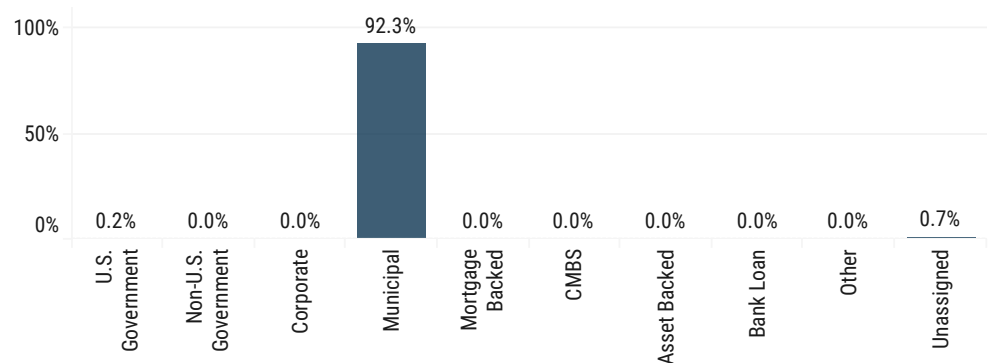
Average FI Regional Exposure

North America	92.62%
Europe	0.15%
Asia Pacific	0.01%
Latin America	0.00%
Africa	0.00%
Unassigned	0.48%

Category Breakdown: Duration



Average Issue Type Exposure



*Fund count for composition and fundamentals excludes funds with no recent holdings date (ie: ETNs)

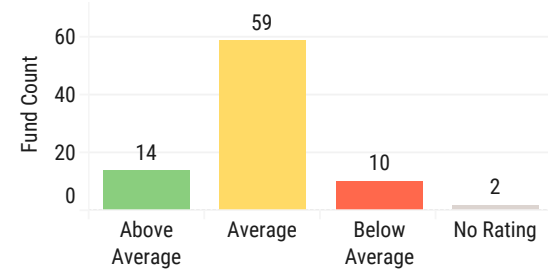
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Category: Fixed Income: Municipal

As of 1/31/2024

Fund Count*	Average Weighted Coupon	Average Yield To Maturity	Average Yield To Worst	Average Option Adjusted Spread	Average Effective Maturity (Years)	Average Effective Duration	Average Effective Convexity
83	4.62%	3.92%	3.61%	0.65%	8.29	4.93	-0.05

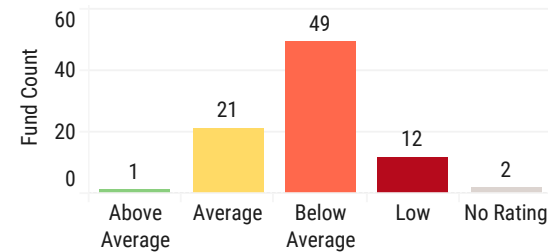
Category Breakdown: Credit



Top 10 Funds by Credit Score

Ticker	Name	AUM	Credit Rating (0-5) (Lower=Better)
DFCA	Dimensional California Municipal Bond ETF	\$226.01M	1.71
CMF	iShares California Muni Bond ETF	\$2,722.56M	1.82
PWZ	Invesco California AMT-Free Municipal Bond ETF	\$793.29M	1.88
BSMP	Invesco BulletShares 2025 Municipal Bond ETF	\$212.22M	1.90
BSMQ	Invesco BulletShares 2026 Municipal Bond ETF	\$169.70M	1.94
PVI	Invesco Floating Rate Municipal Income ETF	\$37.20M	1.95
BSMO	Invesco BulletShares 2024 Municipal Bond ETF	\$223.43M	1.96
BSMR	Invesco BulletShares 2027 Municipal Bond ETF	\$118.29M	1.96
BSMS	Invesco BulletShares 2028 Municipal Bond ETF	\$96.27M	1.99
SUB	iShares Short-Term National Muni Bond ETF	\$9,037.71M	1.99

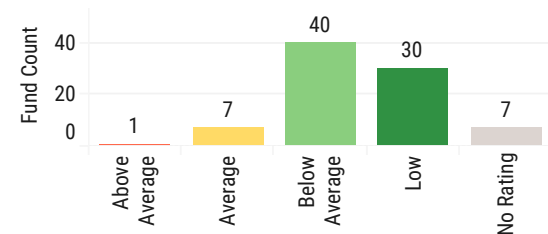
Category Breakdown: Yield



Top 10 Funds by Yield Score

Ticker	Name	AUM	FI Yield Rating (0-5)
JMHI	JPMorgan High Yield Municipal ETF	\$173.72M	3.24
ZTAX	X-Square Municipal Income Tax Free ETF	\$3.32M	2.99
HYMU	BlackRock High Yield Muni Income Bond ETF	\$81.24M	2.94
HYMB	SPDR Nuveen Bloomberg High Yield Municipal Bond ETF	\$2,349.63M	2.88
HYD	VanEck High Yield Muni ETF	\$2,858.63M	2.84
BAB	Invesco Taxable Municipal Bond ETF	\$1,578.31M	2.73
FMHI	First Trust Municipal High Income ETF	\$545.17M	2.69
SHYD	VanEck Short High Yield Muni ETF	\$339.30M	2.68
FLMI	Franklin Dynamic Municipal Bond ETF	\$169.54M	2.48
MFLX	First Trust Flexible Municipal High Income ETF	\$16.90M	2.42

Category Breakdown: Convexity



*Fund count for composition and fundamentals excludes funds with no recent holdings date (ie: ETNs)

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Appendix: Category Funds



Appendix: Category Funds 1-50

Ticker	Name	Inception	AUM	1 Month	3 Month	YTD	1 Year	3 Year*	5 Year*
APMU	ActivePassive Intermediate Municipal Bond ETF	5/3/2023	\$60M	-0.13%	5.44%	-0.13%			
AVMU	Avantis Core Municipal Fixed Income ETF	12/8/2020	\$140M	-0.18%	8.17%	-0.18%	2.40%	-0.89%	
BAB	Invesco Taxable Municipal Bond ETF	11/17/2009	\$1,578M	0.38%	10.62%	0.38%	3.77%	-4.05%	1.33%
BSMO	Invesco BulletShares 2024 Municipal Bond ETF	9/25/2019	\$223M	-0.41%	1.30%	-0.41%	1.49%	-0.09%	
BSMP	Invesco BulletShares 2025 Municipal Bond ETF	9/25/2019	\$212M	0.02%	3.12%	0.02%	1.60%	-0.58%	
BSMQ	Invesco BulletShares 2026 Municipal Bond ETF	9/25/2019	\$170M	-0.21%	4.19%	-0.21%	1.42%	-1.40%	
BSMR	Invesco BulletShares 2027 Municipal Bond ETF	9/25/2019	\$118M	-0.22%	5.56%	-0.22%	1.97%	-1.04%	
BSMS	Invesco BulletShares 2028 Municipal Bond ETF	9/25/2019	\$96M	-0.17%	6.73%	-0.17%	2.10%	-1.67%	
BSMT	Invesco BulletShares 2029 Municipal Bond ETF	9/25/2019	\$79M	-0.07%	7.94%	-0.07%	2.36%	-1.86%	
BSMU	Invesco BulletShares 2030 Municipal Bond ETF	9/16/2020	\$80M	-0.12%	9.13%	-0.12%	2.64%	-2.53%	
BSMV	Invesco BulletShares 2031 Municipal Bond ETF	9/15/2021	\$53M	-0.26%	9.96%	-0.26%	2.80%		
BSMW	Invesco BulletShares 2032 Municipal Bond ETF	3/1/2023	\$54M	-0.47%	10.65%	-0.47%			
BSSX	Invesco BulletShares 2033 Municipal Bond ETF	9/20/2023	\$29M	-0.03%	11.86%	-0.03%			
CA	Xtrackers California Municipal Bond ETF	12/14/2023	\$23M	0.12%		0.12%			
CALY	BlackRock Short-Term California Muni Bond ETF	7/11/2023	\$20M	0.07%	1.98%	0.07%			
CGMU	Capital Group Municipal Income ETF	10/25/2022	\$561M	0.17%	7.68%	0.17%	4.08%		
CGSM	Capital Group Short Duration Municipal Income ETF	9/26/2023	\$46M	-0.15%	3.89%	-0.15%			
CMF	iShares California Muni Bond ETF	10/4/2007	\$2,723M	0.02%	7.81%	0.02%	3.10%	-0.89%	1.72%
DFCA	Dimensional California Municipal Bond ETF	6/26/2023	\$226M	0.04%	5.31%	0.04%			
DFNM	Dimensional National Municipal Bond ETF	11/15/2021	\$1,183M	-0.14%	5.40%	-0.14%	2.06%		
EVIM	Eaton Vance Intermediate Municipal Income ETF	10/16/2023	\$21M	0.15%	6.98%	0.15%			
FCAL	First Trust California Municipal High Income ETF	6/20/2017	\$216M	0.02%	7.55%	0.02%	3.09%	-0.61%	2.31%
FLMB	Franklin Municipal Green Bond ETF	8/31/2017	\$114M	0.15%	11.08%	0.15%	3.57%	-1.75%	2.08%
FLMI	Franklin Dynamic Municipal Bond ETF	8/31/2017	\$170M	0.25%	8.65%	0.25%	4.65%	-0.06%	2.61%
FMB	First Trust Managed Municipal ETF	5/13/2014	\$1,976M	-0.02%	7.99%	-0.02%	3.44%	-0.90%	1.97%
FMHI	First Trust Municipal High Income ETF	11/1/2017	\$545M	0.88%	9.88%	0.88%	4.52%	-0.82%	2.46%
FMNY	First Trust New York Municipal High Income ETF	5/12/2021	\$18M	0.11%	9.17%	0.11%	3.44%		
FSMB	First Trust Short Duration Managed Municipal ETF	11/1/2018	\$419M	0.07%	3.66%	0.07%	2.27%	0.15%	1.60%
FUMB	First Trust Ultra Short Duration Municipal ETF	11/1/2018	\$216M	0.35%	1.41%	0.35%	2.94%	1.15%	1.34%
GMUN	Goldman Sachs Community Municipal Bond ETF	3/7/2023	\$10M	-0.53%	5.16%	-0.53%			
HMOP	Hartford Municipal Opportunities ETF	12/13/2017	\$403M	0.00%	7.85%	0.00%	4.05%	-0.37%	2.40%
HYD	VanEck High Yield Muni ETF	2/4/2009	\$2,859M	0.37%	9.54%	0.37%	3.06%	-2.57%	0.51%
HYMB	SPDR Nuveen Bloomberg High Yield Municipal Bond ETF	4/13/2011	\$2,350M	1.15%	11.87%	1.15%	4.38%	-1.63%	1.97%
HYMU	BlackRock High Yield Muni Income Bond ETF	3/16/2021	\$81M	0.04%	12.25%	0.04%	4.96%		
IBMM	iShares iBonds Dec 2024 Term Muni Bond ETF	3/20/2018	\$506M	0.19%	1.38%	0.19%	1.90%	-0.21%	1.55%
IBMN	iShares iBonds Dec 2025 Term Muni Bond ETF	11/13/2018	\$569M	-0.13%	2.01%	-0.13%	1.10%	-0.95%	1.49%
IBMO	iShares iBonds Dec 2026 Term Muni Bond ETF	4/2/2019	\$432M	0.00%	3.43%	0.00%	1.17%	-1.02%	
IBMP	iShares iBonds Dec 2027 Term Muni Bond ETF	4/9/2019	\$401M	-0.30%	4.37%	-0.30%	1.11%	-1.21%	
IBMQ	iShares iBonds Dec 2028 Term Muni Bond ETF	4/16/2019	\$301M	-0.45%	5.44%	-0.45%	0.97%	-1.35%	
IBMR	iShares iBonds Dec 2029 Term Muni Bond ETF	5/9/2023	\$71M	-0.43%	7.76%	-0.43%			
IMSI	Invesco Municipal Strategic Income ETF	12/9/2022	\$30M	0.66%	8.30%	0.66%	4.43%		
INMU	BlackRock Intermediate Muni Income Bond ETF	3/16/2021	\$24M	0.09%	8.12%	0.09%	3.94%		
ITM	VanEck Intermediate Muni ETF	12/4/2007	\$1,997M	-0.70%	8.10%	-0.70%	2.30%	-1.66%	1.63%
JHMU	John Hancock Dynamic Municipal Bond ETF	11/1/2023	\$22M	0.44%	0.00%	0.44%			
JMHI	JPMorgan High Yield Municipal ETF	7/14/2023	\$174M	0.08%	9.16%	0.08%			
JMSI	JPMorgan Sustainable Municipal Income ETF	7/14/2023	\$222M	-0.07%	7.31%	-0.07%			
JMST	JPMorgan Ultra-Short Municipal Income ETF	10/16/2018	\$2,639M	0.20%	1.58%	0.20%	3.25%	1.35%	1.59%
JMUB	JPMorgan Municipal ETF	10/29/2018	\$1,112M	0.15%	8.00%	0.15%	3.41%	-0.27%	2.36%
MBND	SPDR Nuveen Municipal Bond ETF	2/3/2021	\$49M	-0.27%	7.61%	-0.27%	2.93%		
MBNE	SPDR Nuveen Municipal Bond ESG ETF	4/4/2022	\$40M	-0.32%	7.74%	-0.32%	3.09%		

*Annualized performance. Returns based on market price.

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Appendix: Category Funds



Appendix: Category Funds 51-100

Ticker	Name	Inception	AUM	1 Month	3 Month	YTD	1 Year	3 Year*	5 Year*
MEAR	BlackRock Short Maturity Municipal Bond ETF	3/3/2015	\$626M	0.38%	1.63%	0.38%	3.86%	1.48%	1.48%
MFLX	First Trust Flexible Municipal High Income ETF	9/27/2016	\$17M	-0.63%	9.33%	-0.63%	5.28%	-2.41%	2.48%
MINN	Mairs & Power Minnesota Municipal Bond ETF	3/11/2021	\$18M	-0.56%	9.61%	-0.56%	1.03%		
MINO	PIMCO Municipal Income Opportunities Active ETF	9/8/2021	\$116M	0.51%	9.67%	0.51%	5.44%		
MLN	VanEck Long Muni ETF	1/2/2008	\$490M	-0.82%	12.87%	-0.82%	2.69%	-3.50%	1.15%
MMCA	IQ MacKay California Municipal Intermediate ETF	12/21/2021	\$24M	0.12%	7.11%	0.12%	3.35%		
MMIN	IQ MacKay Municipal Insured ETF	10/18/2017	\$435M	-0.12%	10.76%	-0.12%	3.57%	-1.30%	2.23%
MMIT	IQ MacKay Municipal Intermediate ETF	10/18/2017	\$656M	-0.16%	6.24%	-0.16%	2.61%	-0.58%	2.38%
MNBD	ALPS Intermediate Municipal Bond ETF	5/19/2022	\$31M	0.07%	7.14%	0.07%	3.64%		
MUB	iShares National Muni Bond ETF	9/7/2007	\$37,275M	0.05%	8.14%	0.05%	3.07%	-0.50%	2.08%
MUNI	PIMCO Intermediate Municipal Bond Active ETF	11/30/2009	\$1,369M	-0.17%	7.39%	-0.17%	3.71%	-0.30%	2.08%
MUST	Columbia Multi-Sector Municipal Income ETF	10/10/2018	\$405M	-1.10%	7.87%	-1.10%	2.02%	-0.95%	2.23%
NYF	iShares New York Muni Bond ETF	10/4/2007	\$658M	0.22%	8.58%	0.22%	3.37%	-0.39%	1.82%
OVM	Overlay Shares Municipal Bond ETF	9/30/2019	\$14M	0.46%	11.67%	0.46%	4.65%	-0.26%	
PVI	Invesco Floating Rate Municipal Income ETF	11/15/2007	\$37M	0.27%	0.66%	0.27%	2.93%	1.23%	1.03%
PWZ	Invesco California AMT-Free Municipal Bond ETF	10/11/2007	\$793M	0.95%	12.12%	0.95%	4.24%	-1.12%	2.07%
PZA	Invesco National AMT-Free Municipal Bond ETF	10/11/2007	\$2,718M	-0.49%	11.28%	-0.49%	3.75%	-1.49%	1.80%
PZT	Invesco New York AMT-Free Municipal Bond ETF	10/11/2007	\$92M	1.20%	13.75%	1.20%	4.68%	-1.16%	2.21%
RTAI	Rareview Tax Advantaged Income ETF	10/21/2020	\$20M	-0.27%	18.58%	-0.27%	-0.37%	-4.01%	
RVNU	Xtrackers Municipal Infrastructure Revenue Bond ETF	6/4/2013	\$119M	0.08%	13.78%	0.08%	5.33%	-1.99%	2.11%
SCMB	Schwab Municipal Bond ETF	10/12/2022	\$269M	-0.25%	8.56%	-0.25%	2.76%		
SHM	SPDR Nuveen Bloomberg Short Term Municipal Bond ETF	10/10/2007	\$3,874M	-0.25%	3.46%	-0.25%	1.17%	-0.58%	0.83%
SHYD	VanEck Short High Yield Muni ETF	1/13/2014	\$339M	0.00%	3.92%	0.00%	1.34%	-1.77%	0.92%
SMB	VanEck Short Muni ETF	2/22/2008	\$251M	0.12%	3.27%	0.12%	2.29%	-0.57%	1.15%
SMI	VanEck HIP Sustainable Muni ETF	9/8/2021	\$19M	0.09%	8.64%	0.09%	2.44%		
SMMU	PIMCO Short Term Municipal Bond Active ETF	2/1/2010	\$549M	0.31%	3.46%	0.31%	3.54%	0.71%	1.66%
STAX	Macquarie Tax-Free USA Short Term ETF	11/28/2023	\$5M	-0.08%		-0.08%			
SUB	iShares Short-Term National Muni Bond ETF	11/5/2008	\$9,038M	-0.20%	2.56%	-0.20%	2.01%	0.19%	1.16%
TAFI	AB Tax-Aware Short Duration Municipal ETF	9/14/2022	\$402M	0.04%	3.67%	0.04%	3.11%		
TAFL	AB Tax-Aware Long Municipal ETF	12/13/2023	\$27M	0.09%		0.09%			
TAFM	AB Tax-Aware Intermediate Municipal ETF	12/13/2023	\$25M	0.16%		0.16%			
TAXF	American Century Diversified Municipal Bond ETF	9/10/2018	\$400M	0.06%	8.77%	0.06%	3.91%	-0.39%	2.62%
TFI	SPDR Nuveen Bloomberg Municipal Bond ETF	9/11/2007	\$3,636M	-0.23%	9.48%	-0.23%	2.01%	-1.78%	1.42%
VTEB	Vanguard Tax-Exempt Bond ETF	8/21/2015	\$31,859M	-0.24%	8.21%	-0.24%	3.13%	-0.60%	2.06%
VTEC	Vanguard California Tax-Exempt Bond ETF	1/10/2024	\$35M						
VTEI	Vanguard Intermediate-Term Tax-Exempt Bond ETF	1/30/2024	\$25M						
VTES	Vanguard Short-Term Tax Exempt Bond ETF	3/9/2023	\$366M	-0.17%	3.50%	-0.17%			
XMPT	VanEck CEF Muni Income ETF	7/12/2011	\$233M	0.66%	17.74%	0.66%	-1.84%	-5.66%	0.81%
ZTAX	X-Square Municipal Income Tax Free ETF	5/19/2023	\$3M	-0.58%	4.69%	-0.58%			

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Cash & Equivalents include direct cash positions and underlying cash positions within fund positions within a model. This also includes money market funds that may be held by the model or underlying positions.

Unassigned designations are used for positions that include options, commodities contracts, or other derivatives, and may not have composition data available.

Commodities include securities that tract bulk goods and raw materials, such as grains, metals, livestock, oil, cotton, coffee, sugar, and cocoa, that are used to produce consumer products. Buying commodities allows for a source of diversification for those sophisticated persons who wish to add this asset class to their portfolios and who are prepared to assume the risks inherent in the commodities market. Any commodity purchase represents a transaction in a non-income-producing asset and is highly speculative. Therefore, commodities should not represent a significant portion of an individual's portfolio.

Alternatives are securities that are typically less or inversely correlated with Equities and Fixed Income such as Index Volatility ETFs. Alternative investments are often non income producing and highly speculative. Therefore, alternative investments should not represent a significant portion of an individual's portfolio.

Dividends are not guaranteed and are subject to change or elimination.

ETFs are subject to substantially the same risks as those associated with the direct ownership of the underlying securities owned by the ETF. Additionally, the value of the investment will fluctuate in response to the performance of the underlying index or securities. ETFs typically charge therefore, investments in ETFs will result in the layering of expenses.

DEFINITIONS:

Acquired Fund Fees is the weighted average of the expense ratios of all model holdings.

Distribution yield refers to the percentage of income a portfolio has distributed to investors over the last 12 months. At the model level, this is calculated as a weighted average of TTM yield for all model holdings. This is based on fund and/or stock distributions, and is not a look-through calculation.

Geometric return is a measure of the compound rate of growth in a portfolio. This method eliminates the distorting effects created by inflows of new money. This is also called the 'geometric mean return,' as the reinvestment is captured by using the geometric total and mean, rather than the arithmetic total and mean. It is assumed that all cash distributions are reinvested in the portfolio and the exact same periods are used for comparisons. The difference between the two return measures is caused by volatility. The more volatile the asset class, the bigger the difference between its geometric and average annual returns. The geometric mean return is typically lower than the arithmetic mean return.

Pure gross returns are calculated before the deduction of advisory fees, trading expenses and other fees. Net of fees performance reflects the deduction of the advisory fees charged to the client, trading expenses, and other costs associated with investments made by the client. Returns do not include the reinvestment of dividends.

Standard deviation is a measure of the dispersion of a set of data from its mean. The more spread apart the data is, the higher the deviation. Calculated using monthly returns.

Alpha refers to the performance differential between a specific investment and that of the investment's beta multiplied by its benchmark. It isolates the portion of total return not accredited to movement in the broader market. Calculated using monthly returns.

Beta is a measure of the volatility—or systematic risk—of a security or portfolio compared to its relative benchmark. Securities with betas higher than 1.0 can be interpreted as more volatile relative to movements in the market benchmark while securities with a beta less than 1.0 can be interpreted as less volatile relative to movements in the market benchmark. Calculated using monthly returns.

The Sharpe ratio is the average return earned in excess of the risk-free rate per unit of volatility or total risk. Volatility is a measure of the price fluctuations of an asset or portfolio. Calculated using monthly returns.

The correlation coefficient is a statistical measure of the strength of the relationship between the relative movements of two variables. The values range between -1.0 and 1.0. A calculated number greater than 1.0 or less than -1.0 means that there was an error in the correlation measurement. A correlation of -1.0 shows a perfect negative correlation, while a correlation of 1.0 shows a perfect positive correlation. A correlation of 0.0 shows no linear relationship between the movement of the two variables. Calculated using monthly returns.

R-squared (R²) is a statistical measure that represents the proportion of the variance for a dependent variable that's explained by an independent variable or variables in a regression model. Calculated using monthly returns.

Tracking error is the divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark. This is often in the context of a hedge fund, mutual fund, or exchange-traded fund (ETF) that did not work as effectively as intended, creating an unexpected profit or loss. Tracking error is reported as a standard deviation percentage difference, which reports the difference between the return an investor receives and that of the benchmark they were attempting to imitate. Calculated using monthly returns.

The upside capture ratio measures an investment manager's relative performance during bull markets. The ratio is calculated by comparing the manager's returns in up-markets with that of a benchmark. Calculated using monthly returns.

The down-market capture ratio is a statistical measure of an investment manager's overall performance in down-markets. It is used to evaluate how well an investment manager performed relative to an index during periods when that index has dropped. The ratio is calculated by dividing the manager's returns by the returns of the index during the down-market and multiplying that factor by 100. Calculated using monthly returns.

A drawdown refers to how much an investment or trading account is down from the peak before it recovers back to the peak. Drawdowns are typically quoted as a percentage, but dollar terms may also be used if applicable for a specific trader. Drawdowns are a measure of downside volatility. Calculated using monthly returns.

Market capitalization is the sum of the total value of a company's outstanding shares multiplied by the price of one share. With a weighted average market capitalization, components that have a higher market cap have more influence because they constitute a higher percentage in the index; those with smaller caps have less influence.

The Price/Earnings Ratio or P/E Ratio is a valuation metric that assesses how many dollars investors are willing to pay for one dollar of a company's earnings. It's calculated by dividing a stock's price by the company's trailing 12-month earnings per share from continuous operations. Negative P/E ratios are excluded. Calculated using weighted harmonic average.

The forward (or leading) P/E uses future earnings guidance rather than trailing figures. Negative P/E ratios are excluded. Calculated using weighted harmonic average.

The Price/Sale (P/S) ratio is a stock's current price divided by the company's trailing 12-month sales per share. This represents the weighted average of the price/sales ratios of the stocks in a fund's portfolio. Price/sales represents the amount an investor is willing to pay for a dollar generated from a particular company's operations. Calculated using weighted harmonic average.

The forward (or leading) P/S uses future sales estimates rather than trailing figures. Calculated using weighted harmonic average.

The price/book (P/B) ratio of a fund is the weighted average of the price/book ratios of all the stocks in a fund's portfolio. Book value is the total assets of a company, less total liabilities (sometimes referred to as carrying value). A company's book value is calculated by dividing the market price of its outstanding stock by the company's book value, and then adjusting for the number of shares outstanding (Stocks with negative book values are excluded from this calculation.). Calculated using weighted harmonic average.

The price-to-cash flow (P/CF) ratio is a stock valuation indicator or multiple that measures the value of a stock's price relative to its operating cash flow per share over the trailing twelve months. The ratio uses operating cash flow (OCF), which adds back non-cash expenses such as depreciation and amortization to net income. Calculated using weighted harmonic average.

Price to free cash flow is an equity valuation metric used to compare a company's per-share market price to its per-share amount of free cash flow (FCF) over the trailing twelve months. This metric is very similar to the valuation metric of price to cash flow but is considered a more exact measure, owing to the fact that it uses free cash flow, which subtracts capital expenditures (CAPEX) from a company's total operating cash flow, thereby reflecting the actual cash flow available to fund non-asset-related growth. Negative P/E ratios are excluded. Calculated using weighted harmonic average.

The price/earnings to growth ratio (PEG ratio) is a stock's price-to-earnings (P/E) ratio divided by the growth rate of its earnings for a specified time period (NTM - next twelve months). The PEG ratio is used to determine a stock's value while also factoring in the company's expected earnings growth, and it is thought to provide a more complete picture than the more standard P/E ratio. Calculated using weighted harmonic average.

The dividend yield, expressed as a percentage, is a financial ratio (dividend/price) that shows how much a company pays out in dividends each year relative to its stock price. Unless otherwise stated, dividend yield takes the distributions over the trailing 12 months divided by the price on the as of date. Note that the dividend yield is a look through of all funds and securities to underlying holdings, and may not reflect what the fund or model actually distributes. Calculated using weighted harmonic average.

Gross margin is a ratio that equates to net sales minus the cost of goods sold divided by net sales. The gross margin shows the ratio of profit made before deducting selling, general, and administrative (SG&A) costs. Calculated using weighted average.

The net margin is a measure of profitability. It is equal to annual net income divided by revenues over the trailing 12 months. The resulting figure is then multiplied by 100. Calculated using weighted average.

Return on equity (ROE) is the percentage a company earns on its total equity in a given year. ROE shows how much profit a company generates on the money shareholders have invested in the firm. Calculated using weighted average.

Return on assets (ROA) is the percentage a company earns on its assets in a given year (Year 1, 2, etc.). The calculation is net income divided by end-of-year total assets. The resulting figure is then multiplied by 100. For a mutual fund, ROA represents a weighted median figure such that approximately 50% of the domestic stocks in the portfolio will have a greater ROA and roughly 50% of these domestic stocks will have a lower ROA than the weighted median. Calculated using weighted average.

Return on invested capital (ROIC) is the percentage of money a company earns that is above the average cost it pays for its debt and equity capital. Calculated using weighted average.

The interest coverage ratio is a debt and profitability ratio used to determine how easily a company can pay interest on its outstanding debt. The interest coverage ratio is calculated by dividing a company's earnings before interest and taxes (EBIT) by its interest expense during a given period. Calculated using weighted average.

The debt-to-equity (D/E) ratio is used to evaluate a company's financial leverage and is calculated by dividing a company's total liabilities by its shareholder equity. Calculated using weighted average.

The payout ratio, also known as the dividend payout ratio, shows the percentage of a company's earnings paid out as dividends to shareholders over the trailing twelve months. Calculated using weighted average.

Per share growth metrics calculate the growth metrics over the trailing twelve months (TTM) or estimated growth metrics over the next twelve months (NTM) for Earnings, Sales, Cash Flow, Free Cash Flow, Book Value, and Dividends. Calculated using weighted median.

Long-Term earnings (LT Earnings) calculates the growth in earnings per share over longer time horizons (5 years). Calculated using weighted median.

The coupon rate is calculated by weighting each bond's coupon by its relative size in the portfolio. It indicates whether the underlying fund owns more high- or low-coupon bonds. There can be advantages to holding higher coupon bonds, but many funds buy them simply to tempt investors with a high payout. This can be damaging to investors for two reasons. The first is that higher-coupon bonds often carry greater risk than lower-coupon issues. The second is that when these bonds don't carry extra risk, they are old issues that the fund has paid up for and if the offering doesn't amortize the extra yield, investors are likely to find that their principal erodes over time. Calculated using weighted average.

Effective duration is a measure of a fund's interest-rate sensitivity; the longer a fund's duration, the more sensitive the fund is to shifts in interest rates. Duration is determined by a formula that includes coupon rates and bond maturities. Small coupons tend to increase duration, while shorter maturities and higher coupons shorten duration. The relationship between funds with different durations is straightforward: A fund with a duration of 10 years is twice as volatile as a fund with a five-year duration. Calculated using weighted average.

Modified Duration expresses the measurable change in the value of a security in response to a change in interest rates. Calculated using weighted average.

Average effective maturity is a weighted average of all the maturities of the bonds in a portfolio, computed by weighting each bond's effective maturity by the market value of the security. Average effective maturity takes into consideration all mortgage prepayments, puts, and adjustable coupons. Longer-maturity funds are generally considered more interest-rate sensitive than their shorter counterparts. We list Average Effective Maturity for Taxable Fixed-Income and Hybrid funds and Average Nominal Maturity for Municipal Bond Funds. Since this is collected by survey, it is important to bear in mind that different fund companies may use different interest-rate assumptions in determining call likelihood and timing. Generally speaking, the longer the maturity, the greater the interest rate risk. When duration is unavailable, this is used in the calculation of the fixed income style box. Calculated using weighted average.

Yield to Maturity: is the holding weighted average yield of all applicable holdings within a portfolio. Yield is a measure of the expected rate of return. Calculation of yield to maturity of a security ignores the impact of options such as a call or put feature. Calculated using weighted average.

Yield to worst is calculated on all possible call dates. It is assumed that prepayment occurs if the bond has call or put provisions and the issuer can offer a lower coupon rate based on current market rates. If market rates are higher than the current yield of a bond, the yield to worst calculation will assume no prepayments are made, and yield to worst will equal the yield to maturity.

The assumption is made that prevailing rates are static when making the calculation. The yield to worst will be the lowest of yield to maturity or yield to call (if the bond has prepayment provisions); yield to worst may be the same as yield to maturity but never higher. Calculated using weighted average.

Convexity demonstrates how the duration of a bond changes as the interest rate changes. If a bond's duration increases as yields increase, the bond is said to have negative convexity. If a bond's duration rises and yields fall, the bond is said to have positive convexity. Calculated using weighted average.

Key rate duration measures how the value of a debt security or a debt instrument portfolio, generally bonds, changes at a specific maturity point along the entirety of the yield curve. When keeping other maturities constant, the key rate duration is used to measure the sensitivity in a debt security's price to a 1% change in yield for a specific maturity.

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