

Investment Performance Review  
Period Ending December 31, 2023

## **Butler County Employees Retirement Plan**

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## **4th Quarter 2023 Market Environment**



## **The Economy**

- The US Federal Reserve Bank (the Fed) paused on additional rate hikes during the fourth quarter. As evidenced by capital market performance during the quarter, the pause was welcomed by participants. The Fed continued to prioritize fighting higher inflation over full employment. In its press release for the December meeting, the Fed said that in determining the extent of any additional policy firming that may be appropriate to return inflation to 2 percent over time, the Committee will take into account the cumulative tightening of monetary policy, the lags with which monetary policy affects economic activity and inflation, and economic and financial developments. They also indicated the Committee will continue to reduce the holdings on its balance sheet.
- The Fed's prolonged pause in its rate-hiking cycle and the insertion of the word "any" in its December press release gave the market hope that the Fed may be ready to pivot in its stance and begin reducing rates to a less restrictive level in 2024.
- Muted growth in the US labor market continued in December, as nonfarm payrolls increased by 216,000, and unemployment held steady at 3.7%. Unemployment was little changed over the last year, closing 2022 at a level of 3.5%.

## **Equity (Domestic and International)**

- US equities moved broadly higher during the fourth quarter, led by a broad recovery across multiple sectors and expectations of a more favorable interest rate environment. The S&P 500 Index rose 11.7% for the quarter, its best-performing period since the first quarter of 2021. Small-cap value (15.3%) was the best-performing segment of the domestic equity market during the quarter, while large-cap value (9.5%), though solid, was the weakest relative performer for the period.
- International stocks experienced robust growth during the year, helped by a weakening US Dollar (USD). USD performance outpaced local currency (LCL) performance in most regions for the quarter, though both benchmarks were positive as the USD traded lower during the period.
- Global GDP growth continued to face challenges despite falling energy prices. European growth remained under pressure amid hawkish central bank policies. China continued to face economic challenges and drag on growth in the region. Additionally, renewed conflicts in the Middle East weighed on performance for the region and threatened to be a headwind going into 2024.

## **Fixed Income**

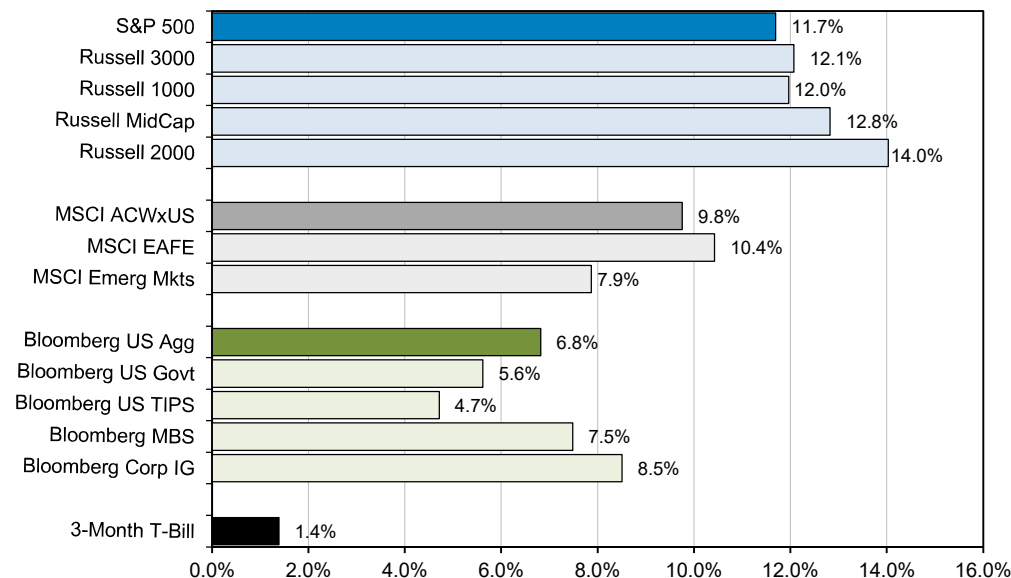
- While economic data signaled that inflation continued to moderate, the Fed maintained its conviction in fighting inflation by keeping the fed funds rate unchanged during the quarter. Equity and fixed-income markets rallied on the hope that this could signal a pivot in the Fed's policy stance in 2024.
- US Government securities were the lowest relative performing US Aggregate Bond sector during the quarter, but bond returns surged as longer maturity yields fell significantly. Credit spreads also narrowed during the quarter, lifting performance for non-government sectors.
- Lower quality investment grade corporate bonds outperformed higher quality corporate issues, aided by narrowing credit spreads as well as higher coupons. Although the high yield bond benchmark's duration is almost half of the US Aggregate Bond index's duration, the high yield index managed to edge out the bellwether bond benchmark for the quarter.
- Global bonds outpaced the domestic bond market with the Global Aggregate ex-US Index besting the US Aggregate Index by 2.4% due to USD weakness. This brought results for the full year slightly ahead of the domestic bond market.

## **Market Themes**

- Central banks remained vigilant in their stance against inflation going into the new year. Signs of cooling price pressures have shown up in most regions around the world, and many central banks have chosen to pause on their rate hiking cycle, much in line with the US Fed's stance.
- Geopolitical risk around the world continues to be a headwind for global growth and economic stability. In addition to the conflict in Ukraine, a proxy war arose in the Middle East in October between Israel and Palestine, which could drag on performance in the region in quarters to come.
- Short-term interest rates remained consistent across most developed markets as central banks continued their tight policy stance with an eye towards potential rate cuts in the indeterminate future.
- 2023 closed with both US and international equity markets affirming their recovery from the disappointing performance of 2022. Growth sectors significantly outpaced value sectors during the year.

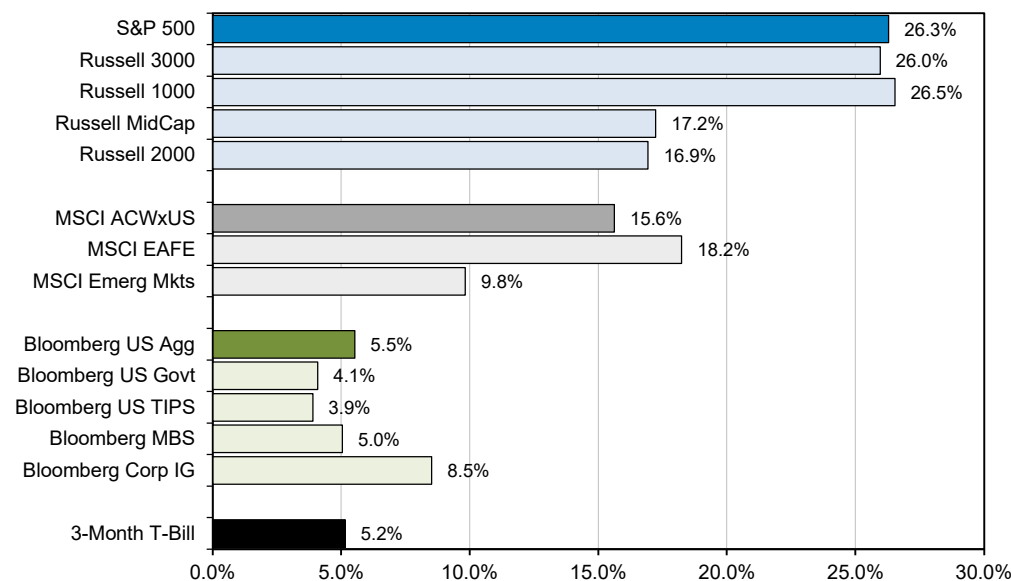
- Domestic equity market performance surged in the fourth quarter. Many of the challenges facing the U.S. economy over the past several quarters have begun to wane and forecasts for easing inflation and positive economic growth have been a growing consensus. For the period, the S&P 500 large-cap benchmark returned 11.7% versus 12.8% for the Russell Mid Cap Index and 14.0% for the Russell 2000 small-cap index.
- International developed and emerging market equities also delivered strong results. Europe continued to face geopolitical risks related to the conflict in Ukraine and elevated interest rates. The developed market MSCI EAFE Index returned 10.4% for the quarter and the MSCI Emerging Markets Index rose by 7.9%.
- The domestic bond market rallied during the final two months of the year as the Fed took on a more dovish tone at their recent meetings. The Bloomberg US Aggregate Index returned 6.8% for the period, while investment-grade corporate bonds beat out the government and securitized sectors with a gain of 8.5%.

### Quarter Performance



- During the 2023 calendar year, US equity markets posted their strongest performance since 2021. The large-cap S&P 500 Index finished 2023 with an exceptional 26.3% return. The weakest relative performance for the year was from the Russell 2000 Index, which still climbed 16.9%.
- International markets also reverted from their poor performance of the year prior. The MSCI EAFE Index was the best international index performer, returning 18.2%, while the MSCI Emerging Markets Index added a more tempered, but still solid, 9.8%.
- Bond markets were broadly higher for the year. Investment-grade corporate bonds were the best-performing sector of the US Aggregate Index and gained 8.5% for the year. Treasuries lagged at 4.1% during the year but were still a welcome relief from 2022's negative bond market results. The bellwether fixed-income benchmark, the Bloomberg US Aggregate Index, climbed 5.5% in 2023.

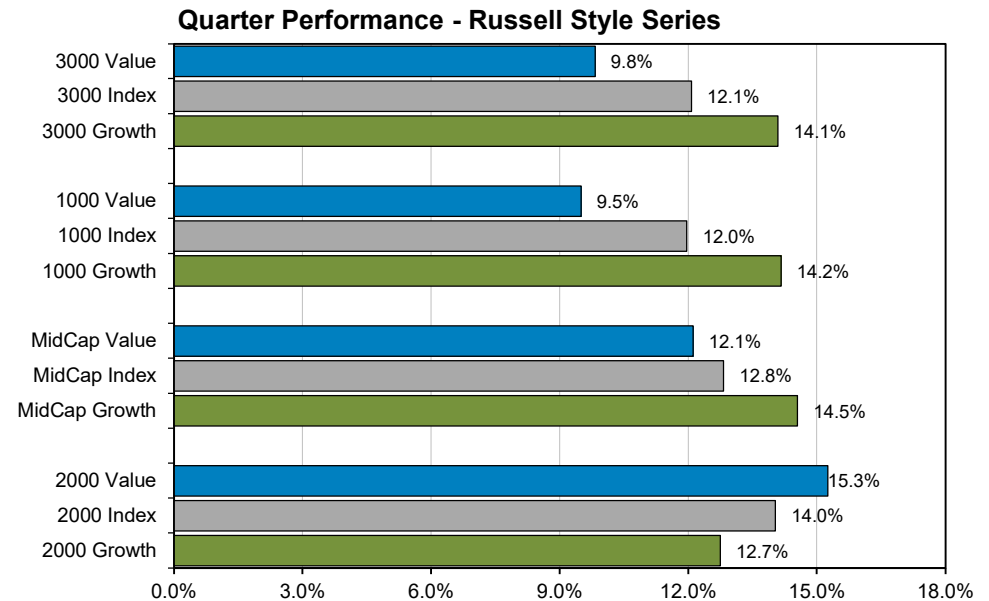
### 1-Year Performance



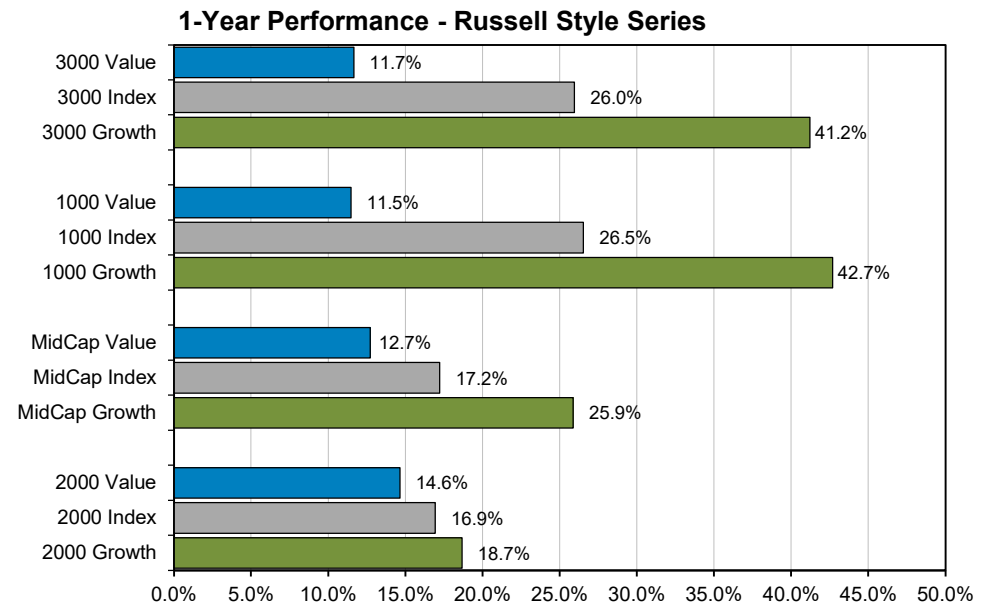
Source: Investment Metrics



- After softening in the third quarter, core domestic equity benchmarks finished 2023 on a strong note. Increasing optimism regarding taming inflation and future economic growth were the primary factors driving performance during the quarter. While the global economy still faces geopolitical risk in the Middle East and Eastern Europe, the US economy remains resilient heading into 2024. The small-cap Russell 2000 Index (14.0%) led results this quarter among the core capitalization-based benchmarks, besting both the mid-cap (12.8%) and large-cap (12.0%) indices. Growth was favored over value across the broad market as the Russell 3000 Growth Index outpaced its value counterpart by 4.3%. However, among small-cap stocks, value led the way with the Russell 2000 Value Index returning 15.3%. The Russell 2000 Growth Index was not far behind, gaining 12.7% for the quarter.
- Outside of small cap, growth stocks broadly outperformed their value counterparts by a sizable margin for the quarter. This continued a persistent theme for 2023 of growth-based benchmark outperformance. Despite these differentials, the large-, mid-, and small-cap value benchmarks each posted solid performance for the quarter with the Russell 2000 Value Index posting a chart-leading return of 15.3%.



- The broad rally in domestic equity markets during the fourth quarter contributed to a strong year of index results. Within large-cap stocks, the Russell 1000 Growth Index returned an exceptional 42.7% for the year, leading the way among style and market capitalization-based benchmark results. The lowest relative performing equity index was the Russell 1000 Value, but still posted a double-digit return of 11.5% for the year.
- Growth rebounded during 2023 and led value-based benchmarks at all market capitalization ranges for the year. The Russell 2000 Growth Index returned 18.7%, outpacing the Russell 2000 Value Index's 14.6% return by a span of 4.1%. The Russell 1000 Growth and Russell Midcap Growth benchmarks gained 42.7% and 25.9%, respectively, while their corresponding value index counterparts returned solid, but lagging, performance of 11.5% and 12.7%, respectively.

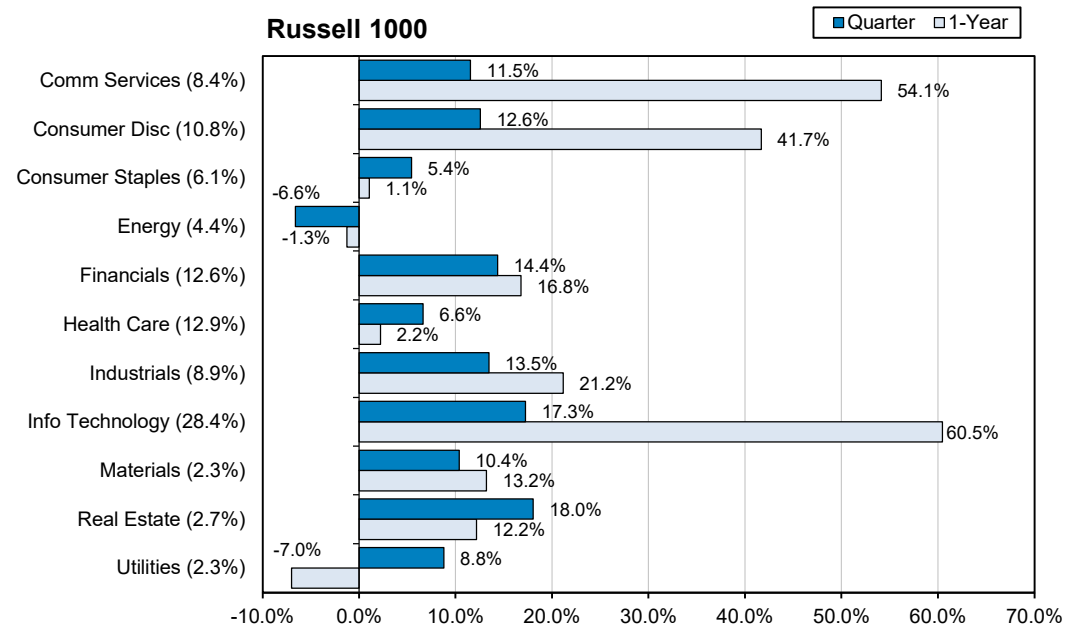


Source: Investment Metrics



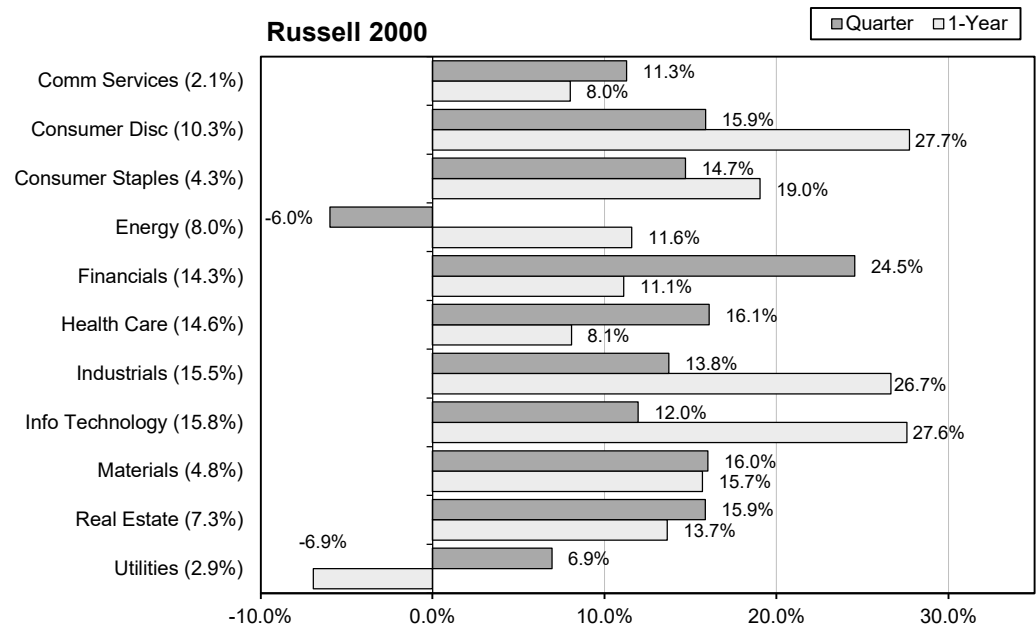
- Large-cap sector performance was generally positive for the fourth quarter. Ten of 11 economic sectors posted positive absolute performance for the quarter, with five sectors outpacing the return of the Russell 1000 Index.
- After being challenged by rapidly rising inflation and an uncertain growth trajectory in 2022, the information technology sector rebounded significantly during 2023, ending the year with an impressive 17.3% return in the fourth quarter. The other four sectors that outpaced the headline index's return for the quarter were consumer discretionary (12.6%), financials (14.4%), industrials (13.5%) and real estate (18.0%). Energy was the only sector to lose ground for the quarter, returning -6.6%.
- For the full year, just three economic sectors exceeded the return of the broad large-cap benchmark but nine of the 11 sectors posted positive performance. Performance in the Information technology (60.5%), communication services (54.1%), and consumer discretionary (41.7%) sectors made the greatest contributions to the index's 26.5% return during the year. The weakest economic sector in the Russell 1000 for the year was utilities, which declined by -7.0%.

**Russell 1000**



- Ten small-cap economic sectors posted positive results during the quarter while six of 11 sectors exceeded the 14.0% return of the Russell 2000 Index. Performance in the financials (24.5%) sector led the way for the quarter while the energy (-6.0%) was the only sector to post a negative result.
- Like large-cap sector performance over the trailing year, ten small-cap sectors were positive. Consumer discretionary (27.7%) posted the strongest sector result, with honorable mentions going to the industrials and information technology sectors, which each returned more than 20% for the year. Seven of the 11 economic sectors fell short of the core small-cap benchmark's return of 16.9% for the year. The worst-performing sector for the year was utilities, which slid -6.9% and was the only sector to post a negative return for 2023.

**Russell 2000**



Source: Morningstar Direct  
As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.



**The Market Environment**  
**Top 10 Index Weights & Quarterly Performance for the Russell 1000 & 2000**  
As of December 31, 2023

Top 10 Weighted Stocks				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Apple Inc	6.5%	12.6%	49.0%	Information Technology
Microsoft Corp	6.4%	19.3%	58.2%	Information Technology
Amazon.com Inc	3.1%	19.5%	80.9%	Consumer Discretionary
NVIDIA Corp	2.7%	13.9%	239.0%	Information Technology
Alphabet Inc Class A	1.9%	6.7%	58.3%	Communication Services
Meta Platforms Inc Class A	1.8%	17.9%	194.1%	Communication Services
Alphabet Inc Class C	1.6%	6.9%	58.8%	Communication Services
Tesla Inc	1.6%	-0.7%	101.7%	Consumer Discretionary
Berkshire Hathaway Inc Class B	1.5%	1.8%	15.5%	Financials
Eli Lilly and Co	1.1%	8.7%	60.9%	Health Care

Top 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Coinbase Global Inc Ordinary Shares	0.1%	131.6%	391.4%	Financials
Affirm Holdings Inc Ordinary Shares	0.0%	131.0%	408.2%	Financials
Gap Inc	0.0%	99.6%	96.8%	Consumer Discretionary
Spirit AeroSystems Holdings Inc	0.0%	96.9%	7.4%	Industrials
Karuna Therapeutics Inc	0.0%	87.2%	61.1%	Health Care
Rocket Companies Inc Ordinary Shares	0.0%	77.0%	106.9%	Financials
Block Inc Class A	0.1%	74.8%	23.1%	Financials
Macy's Inc	0.0%	74.8%	1.6%	Consumer Discretionary
SentinelOne Inc Class A	0.0%	62.8%	88.1%	Information Technology
Frontier Communications Parent Inc	0.0%	61.9%	-0.5%	Communication Services

Bottom 10 Performing Stocks (by Quarter)				
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
ChargePoint Holdings Inc	0.0%	-52.9%	-75.4%	Industrials
Plug Power Inc	0.0%	-40.8%	-63.6%	Industrials
Maravai LifeSciences Holdings Inc	0.0%	-34.5%	-54.2%	Health Care
R1 RCM Inc	0.0%	-29.9%	-3.5%	Health Care
Agilon Health Inc	0.0%	-29.3%	-22.2%	Health Care
BILL Holdings Inc Ordinary Shares	0.0%	-24.9%	-25.1%	Information Technology
Lucid Group Inc Shs	0.0%	-24.7%	-38.4%	Consumer Discretionary
AMC Entertainment Holdings Inc	0.0%	-23.4%	-83.0%	Communication Services
Petco Health and Wellness Co Inc	0.0%	-22.7%	-66.7%	Consumer Discretionary
Hasbro Inc	0.0%	-21.6%	-12.0%	Consumer Discretionary

Top 10 Weighted Stocks				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Super Micro Computer Inc	0.5%	3.7%	246.2%	Information Technology
Simpson Manufacturing Co Inc	0.3%	32.4%	125.3%	Industrials
e.l.f. Beauty Inc	0.3%	31.4%	161.0%	Consumer Staples
Cytokinetics Inc	0.3%	183.4%	82.2%	Health Care
MicroStrategy Inc Class A	0.3%	92.4%	346.2%	Information Technology
UFP Industries Inc	0.3%	22.9%	60.3%	Industrials
Light & Wonder Inc Ordinary Shares	0.3%	15.1%	40.1%	Consumer Discretionary
Onto Innovation Inc	0.3%	19.9%	124.6%	Information Technology
Rambus Inc	0.3%	22.3%	90.5%	Information Technology
BellRing Brands Inc Class A	0.3%	34.4%	116.2%	Consumer Staples

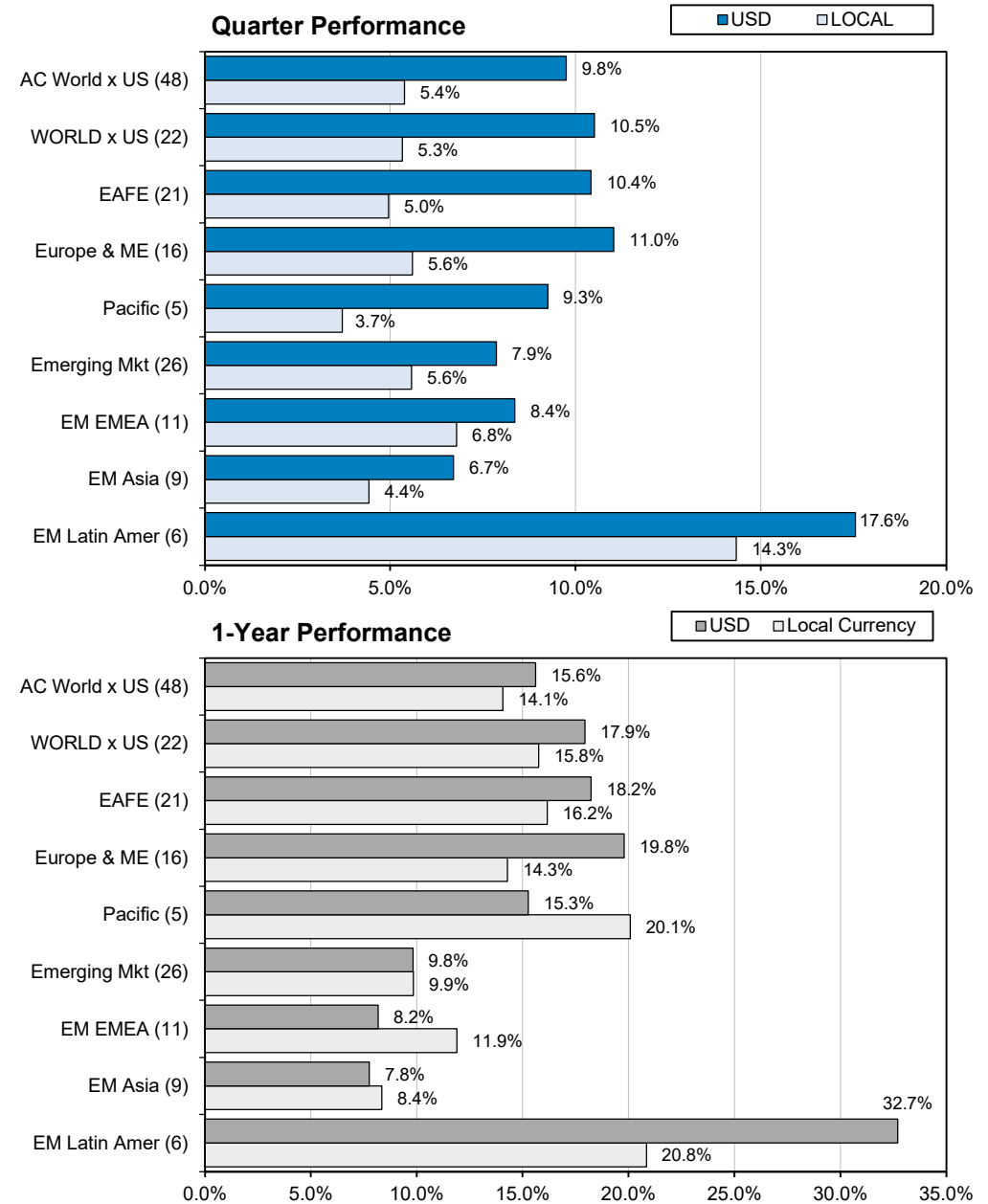
Top 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Nkarta Inc Ordinary Shares	0.0%	374.8%	10.2%	Health Care
Altimmune Inc	0.0%	332.7%	-31.6%	Health Care
ALX Oncology Holdings Inc	0.0%	210.2%	32.1%	Health Care
Pulse Biosciences Inc	0.0%	203.7%	341.9%	Health Care
ImmunityBio Inc Ordinary Shares	0.0%	197.0%	-1.0%	Health Care
Cleanspark Inc	0.1%	189.5%	440.7%	Information Technology
EyePoint Pharmaceuticals Inc	0.0%	189.2%	560.3%	Health Care
Cytokinetics Inc	0.3%	183.4%	82.2%	Health Care
RayzeBio inc	0.0%	180.0%	N/A	Health Care
Marathon Digital Holdings Inc	0.2%	176.4%	586.8%	Information Technology

Bottom 10 Performing Stocks (by Quarter)				
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
Ventyx Biosciences Inc	0.0%	-92.9%	-92.5%	Health Care
Enviva Inc	0.0%	-86.7%	-98.1%	Energy
Aclaris Therapeutics Inc	0.0%	-84.7%	-93.3%	Health Care
Li-Cycle Holdings Corp Ordinary	0.0%	-83.5%	-87.7%	Industrials
Ocean Biomedical Inc	0.0%	-83.1%	N/A	Health Care
Reneo Pharmaceuticals Inc	0.0%	-79.0%	-31.3%	Health Care
Charge Enterprises Inc	0.0%	-77.1%	-90.8%	Communication Services
Cano Health Inc Ordinary Shares	0.0%	-76.9%	-95.7%	Health Care
CareMax Inc Ordinary Shares	0.0%	-76.5%	-86.4%	Health Care
Velo3D Inc	0.0%	-74.5%	-77.8%	Industrials

Source: Morningstar Direct



- The fourth quarter ended with strong performance across international equity markets in both in LCL and USD terms. The USD weakened substantially against most non-US currencies for the quarter, which boosted USD index performance relative to LCL returns. The developed market MSCI EAFE Index gained 10.4% in USD and 5.0% in LCL terms for the quarter. The MSCI Emerging Markets Index rose 7.9% in USD and a lower 5.6% in LCL terms.
- Latin America (LATAM) continued to lead the way, closing out 2023 with a quarterly return of 17.6% in USD terms. Performance in the region was driven by strong demand for commodity exports from growing worldwide production along with a USD performance boost due to LCL strength in the region.
- The performance of the largest weighted country in the emerging market index (China, 26.7%) lagged during the year with a return of -4.4% for the fourth quarter and -13.3% for the year in USD terms. Investors have struggled to accurately forecast the pace of China's recovery after its economic reopening from COVID-19 lockdowns, which led to a flurry of spending that has since cooled.
- Similar to domestic markets, results for international developed and emerging markets were much stronger in 2023 after inflationary pressures and geopolitical risks stunted growth in 2022. Much of the strong USD performance in late 2022 abated in 2023 with many of the international indices showcasing modestly stronger performance in USD terms.
- Annual returns across emerging markets were bifurcated. The LATAM index finished significantly ahead of the other regional indexes in USD terms, with strengthening currencies contributing significantly to the region's strong performance. The LATAM index returned 32.7% in USD and 20.8% in LCL terms for year. Performance in the EM Asia regional benchmark detracted from the emerging market index, with the EM Asia index posting returns of 7.8% in USD and 8.4% in LCL terms versus an overall MSCI Emerging Markets index return of 9.8% and 9.9% in USD and LCL terms, respectively. The EMEA, Asia and Pacific regions saw local currencies depreciate overall in 2023 due to factors related to additional military conflicts in the region and China's sluggish growth.



Source: MSCI Global Index Monitor (Returns are Net)





**The Market Environment**  
**US Dollar International Index Attribution & Country Detail**  
As of December 31, 2023

MSCI - EAFE	Sector Weight	Quarter Return	1-Year Return
Communication Services	4.1%	8.9%	13.1%
Consumer Discretionary	11.8%	8.0%	21.7%
Consumer Staples	9.3%	5.2%	4.5%
Energy	4.3%	0.4%	12.5%
Financials	18.9%	10.0%	18.8%
Health Care	12.8%	4.9%	9.3%
Industrials	16.4%	14.3%	27.6%
Information Technology	8.6%	21.3%	36.4%
Materials	7.8%	17.1%	19.9%
Real Estate	2.5%	14.9%	9.1%
Utilities	3.5%	14.0%	17.0%
<b>Total</b>	<b>100.0%</b>	<b>10.4%</b>	<b>18.2%</b>

MSCI - ACWIxUS	Sector Weight	Quarter Return	1-Year Return
Communication Services	5.2%	4.7%	5.7%
Consumer Discretionary	11.5%	5.7%	12.7%
Consumer Staples	8.0%	5.6%	4.9%
Energy	5.6%	2.3%	15.0%
Financials	21.2%	10.1%	16.2%
Health Care	9.3%	5.2%	8.0%
Industrials	13.4%	12.8%	23.2%
Information Technology	12.5%	20.0%	36.3%
Materials	8.0%	12.5%	12.2%
Real Estate	2.1%	11.1%	5.3%
Utilities	3.2%	13.6%	12.0%
<b>Total</b>	<b>100.0%</b>	<b>9.8%</b>	<b>15.6%</b>

MSCI - Emerging Mkt	Sector Weight	Quarter Return	1-Year Return
Communication Services	8.8%	0.1%	-1.1%
Consumer Discretionary	12.8%	0.8%	-3.4%
Consumer Staples	6.0%	6.1%	4.2%
Energy	5.1%	6.7%	26.8%
Financials	22.3%	8.3%	11.5%
Health Care	3.8%	7.3%	-1.3%
Industrials	6.8%	6.3%	5.4%
Information Technology	22.1%	17.8%	32.3%
Materials	7.9%	6.8%	1.5%
Real Estate	1.6%	-0.2%	-7.1%
Utilities	2.7%	12.8%	2.0%
<b>Total</b>	<b>100.0%</b>	<b>7.9%</b>	<b>9.8%</b>

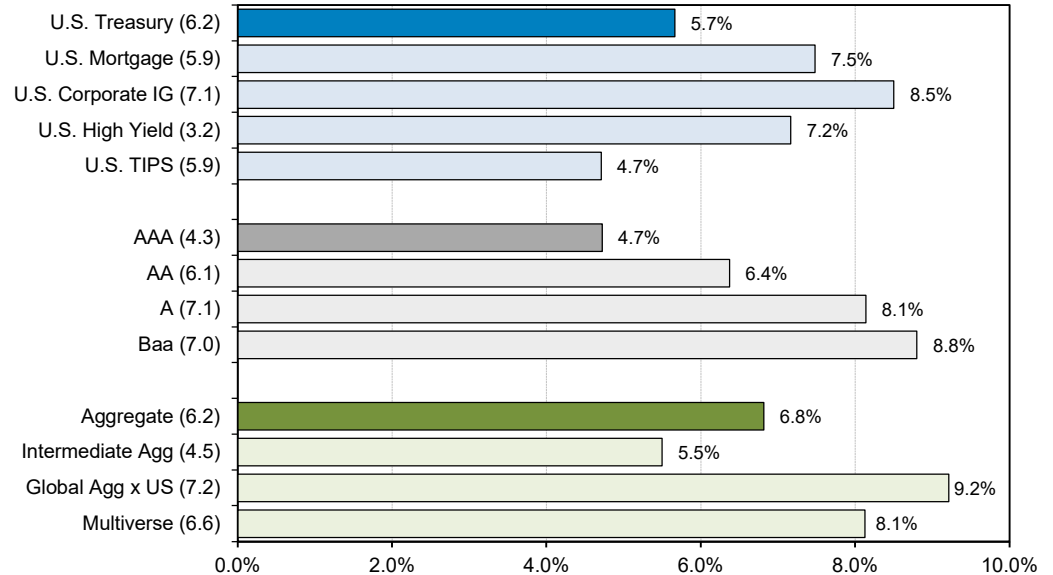
Country	MSCI-EAFE Weight	MSCI-ACWIxUS Weight	Quarter Return	1-Year Return
Japan	22.5%	14.4%	8.0%	17.8%
United Kingdom	14.7%	9.5%	6.1%	9.5%
France	12.1%	7.7%	10.1%	18.8%
Switzerland	10.0%	6.4%	10.1%	13.4%
Germany	8.6%	5.5%	13.0%	19.9%
Australia	7.6%	4.9%	14.5%	10.0%
Netherlands	4.6%	3.0%	19.6%	23.7%
Denmark	3.3%	2.2%	12.2%	29.7%
Sweden	3.2%	2.1%	20.9%	21.0%
Spain	2.7%	1.7%	11.3%	28.2%
Italy	2.6%	1.7%	11.9%	31.7%
Hong Kong	2.2%	1.4%	2.9%	-17.8%
Singapore	1.4%	0.9%	3.8%	0.4%
Finland	1.1%	0.7%	8.8%	-8.2%
Belgium	1.0%	0.6%	6.1%	4.1%
Israel	0.7%	0.4%	9.0%	9.3%
Norway	0.7%	0.4%	2.2%	-0.4%
Ireland	0.5%	0.3%	6.2%	22.9%
Portugal	0.2%	0.1%	15.0%	5.1%
New Zealand	0.2%	0.1%	14.4%	3.4%
Austria	0.2%	0.1%	9.6%	12.8%
<b>Total EAFE Countries</b>	<b>100.0%</b>	<b>64.3%</b>	<b>10.4%</b>	<b>18.2%</b>
Canada		7.7%	10.6%	12.6%
<b>Total Developed Countries</b>		<b>72.0%</b>	<b>10.5%</b>	<b>17.9%</b>
China		7.5%	-4.4%	-13.3%
India		4.7%	11.6%	19.6%
Taiwan		4.5%	17.2%	26.9%
Korea		3.6%	14.7%	21.7%
Brazil		1.6%	15.8%	23.4%
Saudi Arabia		1.2%	8.5%	7.2%
South Africa		0.9%	12.1%	-1.6%
Mexico		0.8%	16.9%	36.2%
Indonesia		0.5%	1.7%	3.3%
Thailand		0.5%	3.6%	-12.6%
Malaysia		0.4%	4.2%	-7.2%
United Arab Emirates		0.4%	-3.2%	-3.0%
Poland		0.3%	37.7%	45.0%
Qatar		0.3%	4.7%	-2.9%
Kuwait		0.2%	-0.3%	-10.4%
Turkey		0.2%	-12.5%	-8.9%
Philippines		0.2%	6.1%	1.7%
Chile		0.1%	6.2%	-1.2%
Greece		0.1%	11.7%	44.2%
Peru		0.1%	22.8%	30.2%
Hungary		0.1%	17.0%	45.5%
Czech Republic		0.0%	4.6%	22.4%
Colombia		0.0%	12.8%	2.3%
Egypt		0.0%	20.2%	37.7%
<b>Total Emerging Countries</b>		<b>28.0%</b>	<b>7.9%</b>	<b>9.8%</b>
<b>Total ACWIxUS Countries</b>		<b>100.0%</b>	<b>9.8%</b>	<b>15.6%</b>

Source: Morningstar Direct, MSCI Global Index Monitor (Returns are Net in USD)  
As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.

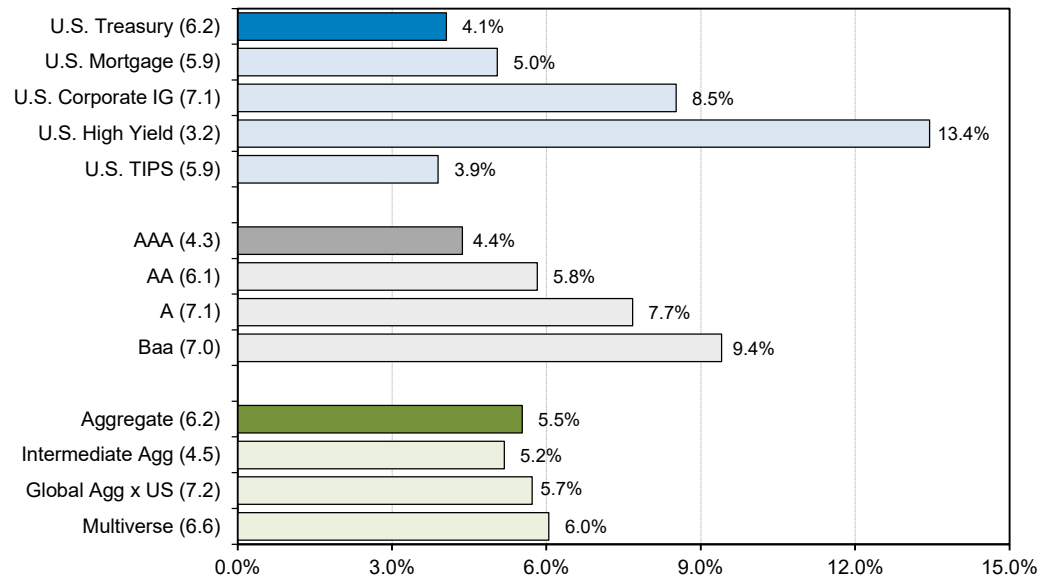


- Fixed-income markets rallied during the fourth quarter. Yields remained elevated for much of the year as economies across the globe attempted to stave off inflationary pressures. A five-month-long pause in rate hikes by the Fed coupled with expectations of cooler price pressures drove a rally in bonds globally. After a challenging 2022 in fixed-income markets brought on by the largest and most rapid increase in interest rates since the early 1980s, higher starting yields and a slower pace of rate increases led to better results in 2023. While not without its challenges during the year, the fourth-quarter's rally helped some of the fixed income sectors realize their best calendar-year performance since prior to the COVID-19 pandemic.
- The Bloomberg US Aggregate Bond Index, the bellwether US investment grade benchmark, posted its best-performing quarter of the year to close out 2023, returning 6.8% for the period. Performance across the investment grade index's segments was broadly higher during the period with the Bloomberg US Corporate Investment Grade Index returning 8.5%, the US Mortgage Index finishing slightly lower at 7.5% and the US Treasury sector returning a more modest, but still solid, 5.7% for the quarter.
- Outside of the aggregate index's sub-components, high-yield bonds continued their strong performance for the year with a return of 7.2% for the quarter as credit spreads narrowed by more than 1.0%. US TIPS gained 4.7% for the quarter, lagging most of the fixed-income market. The Bloomberg Global Aggregate ex-US Index outpaced the domestic indices during the quarter, returning a strong 9.2%.
- Over the trailing one-year period, the Bloomberg US Aggregate Bond Index posted a return of 5.5%. The Corporate Investment-grade sector outperformed the broader index during the year, gaining 8.5%. US TIPS, which are excluded from the aggregate index, lagged at just 3.9% for the year. High-yield corporate bonds, which have a much shorter duration, outpaced their investment grade counterparts with the Bloomberg US High Yield Index returning a strong 13.4% for the calendar year.
- Non-US bonds exceeded their domestic counterparts for the quarter, lifting the 5.7% return of the Bloomberg Global Aggregate ex-US Index past the 5.5% return of US Aggregate Index for the year. Rising interest rates, elevated inflation, and geopolitical risks have hindered non-US index performance. Some of those headwinds eased in the fourth quarter, contributing to the index's positive performance for the calendar year.

#### Quarter Performance



#### 1-Year Performance

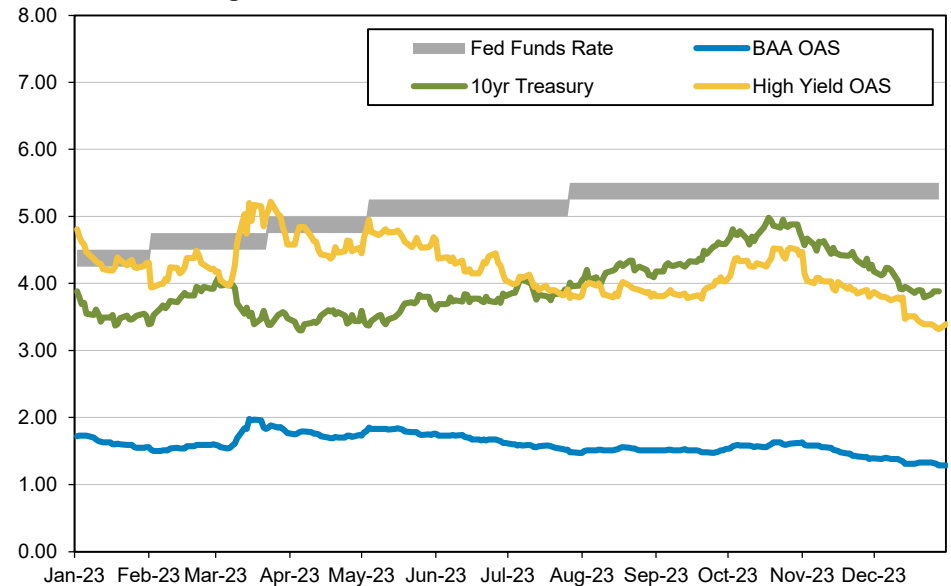


Source: Bloomberg

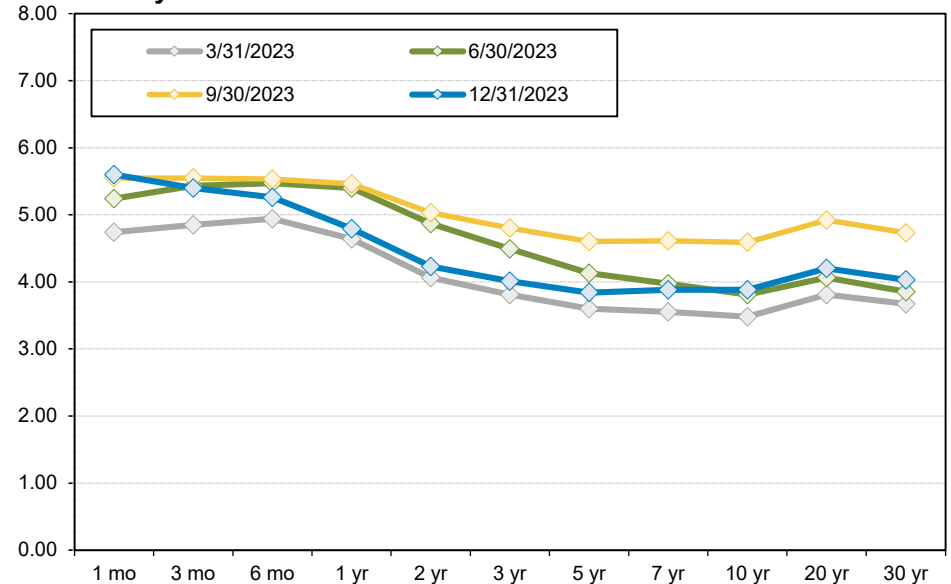


- The gray band across the graph illustrates the range of the fed funds target rate. The Fed last raised its rate range at the July 2023 meeting. The lower end of the range remained at 5.25% at year-end. The Fed's decision to pause on additional rate increases for the remainder of 2023 and took on a more dovish tone in their December press release, which was well-received by market participants.
- The yield on the US 10-year Treasury (green line) exceeded 5.00% during the final week of October, its highest mark since July 2007. However, the benchmark yield proceeded to fall more than 1.00% over the final two months of the year, with the 10-Year Treasury finishing the year at a yield of 3.88%. The sharp decline in yields was likely a response to market participants anticipating rate cuts by the Fed in 2024.
- The blue line illustrates changes in the BAA OAS (Option Adjusted Spread) for lower-quality investment-grade corporate bonds. This measure quantifies the additional yield premium that investors require to purchase and hold non-US Treasury issues with the lowest investment grade rating. For the full calendar year, the spread narrowed 0.44% from 1.73% to 1.29%, signaling a lower premium for credit risk than the beginning of the year.
- High Yield OAS spreads have narrowed from 4.81% in January 2023 to 3.39% as of the end of 2023. High-yield spreads reached their widest point in March 2023, before trending lower for the remainder of the year. The spike in both the BAA OAS and High Yield spreads in March was a result of a short-lived crisis of confidence in the banking sector, which was addressed quickly by the Federal Deposit Insurance Corporation (FDIC) and supported further by the Fed's aggressive short-term par loan program. Though spreads tightened since the high, spreads traded slightly wider during October on the heels of a spark in the conflict between Israel and Palestine.
- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four quarters. Short-term yields rose modestly during the year and remained elevated. Despite this, both intermediate and longer-term yields are lower than they were at the end of the third quarter. Since September, the yield curve has further inverted (meaning that short-term rates are higher than long-term rates) between the two- and 10-year maturities. This is consistent with market expectations for a lower interest rate environment going forward. Since the Fed generally lowers rates to support economic growth, a persistent inversion of these two key rates has historically suggested an economic recession within six to 24 months, though this is an imprecise predictor of future economic growth.

### 1-Year Trailing Market Rates



### Treasury Yield Curve



Source: US Department of Treasury, FRED (Federal Reserve of St. Louis)



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PLEASE NOTE ALL PERFORMANCE IN THIS REPORT IS NET OF FEES.

# Comparative Performance

## Total Fund

As of December 31, 2023

Comparative Performance Trailing Returns																	
	QTR		FYTD		1 YR		2 YR		3 YR		5 YR		10 YR		15 YR		Inception
																	Inception Date
<b>Total Fund Performance</b>	<b>10.06</b>	<b>(10)</b>	<b>15.13</b>	<b>(26)</b>	<b>15.13</b>	<b>(26)</b>	<b>-1.43</b>	<b>(70)</b>	<b>3.47</b>	<b>(62)</b>	<b>7.90</b>	<b>(78)</b>	<b>6.24</b>	<b>(68)</b>	<b>8.48</b>	<b>(50)</b>	<b>6.16 (40) 01/01/2001</b>
Total Fund Policy	9.69	(16)	15.02	(28)	15.02	(28)	-1.04	(57)	3.68	(56)	8.19	(72)	6.45	(57)	8.74	(32)	6.28 (36)
Allocation Index	10.06	(10)	15.09	(27)	15.09	(27)	-1.46	(71)	3.48	(62)	7.84	(79)	N/A		N/A		N/A
All Public Plans-Total Fund Median	8.34		13.66		13.66		-0.91		3.84		8.73		6.59		8.47		5.96
<b>All Public Plan Sponsor Universes with 50% or Less Equities</b>																	
<b>Total Fund Performance</b>	<b>10.06</b>	<b>(6)</b>	<b>15.13</b>	<b>(14)</b>	<b>15.13</b>	<b>(14)</b>	<b>-1.43</b>	<b>(78)</b>	<b>3.47</b>	<b>(65)</b>	<b>7.90</b>	<b>(69)</b>	<b>6.24</b>	<b>(59)</b>	<b>8.48</b>	<b>(43)</b>	<b>6.16 (40) 01/01/2001</b>
Total Fund Policy	9.69	(10)	15.02	(16)	15.02	(16)	-1.04	(67)	3.68	(63)	8.19	(63)	6.45	(48)	8.74	(28)	6.28 (35)
All Public Plans =< 50% Equities Median	7.70		12.70		12.70		-0.43		4.10		8.44		6.42		8.25		5.96
<b>All Public Plan Sponsor Universes with 60% or More Equities</b>																	
<b>Total Fund Performance</b>	<b>10.06</b>	<b>(18)</b>	<b>15.13</b>	<b>(42)</b>	<b>15.13</b>	<b>(42)</b>	<b>-1.43</b>	<b>(64)</b>	<b>3.47</b>	<b>(60)</b>	<b>7.90</b>	<b>(90)</b>	<b>6.24</b>	<b>(81)</b>	<b>8.48</b>	<b>(60)</b>	<b>6.16 (47) 01/01/2001</b>
Total Fund Policy	9.69	(27)	15.02	(45)	15.02	(45)	-1.04	(49)	3.68	(52)	8.19	(86)	6.45	(73)	8.74	(40)	6.28 (43)
All Public Plans >=60% Equities Median	9.15		14.79		14.79		-1.08		3.70		9.03		6.88		8.58		6.07

Returns for periods greater than one year are annualized.  
Returns are expressed as percentages.



# Comparative Performance

## Total Fund

As of December 31, 2023

	QTR		FYTD		1 YR		2 YR		3 YR		5 YR		10 YR		15 YR		Inception	Inception Date
Domestic Equity																		
Total Fund Domestic Equity	12.31		22.57		22.57		1.11		9.07		13.92		N/A		N/A		10.34	07/01/2014
Vanguard Inst'l Index Fund (VINIX)	11.68	(18)	26.24	(15)	26.24	(15)	1.66	(11)	9.96	(9)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11/01/2020
S&P 500 Index	11.69	(8)	26.29	(5)	26.29	(5)	1.69	(2)	10.00	(1)	15.69	(3)	12.03	(1)	13.97	(1)	14.46	(1)
IM S&P 500 Index (MF) Median	11.61		25.96		25.96		1.40		9.67		15.34		11.65		13.49		14.10	
Vanguard Growth Index (VIGIX)	14.41	(38)	46.78	(19)	46.78	(19)	-0.93	(36)	7.69	(23)	19.17	(10)	13.97	(15)	N/A		14.58	(14)
Vanguard Growth Index Hybrid	14.42	(37)	46.86	(18)	46.86	(18)	-0.90	(35)	7.73	(23)	19.21	(10)	14.02	(14)	16.12	(13)	14.64	(12)
Russell 1000 Growth Index	14.16	(48)	42.68	(37)	42.68	(37)	0.55	(14)	8.86	(12)	19.50	(7)	14.86	(4)	16.68	(5)	15.26	(6)
IM U.S. Large Cap Growth Equity (MF) Median	14.07		40.78		40.78		-1.75		5.70		16.40		12.59		14.89		13.32	
Vanguard Value Index (VIVIX)	9.09	(67)	9.26	(71)	9.26	(71)	3.45	(31)	10.62	(35)	11.74	(51)	9.74	(22)	N/A		12.49	(25)
Vanguard Value Index Hybrid	9.01	(69)	9.17	(72)	9.17	(72)	3.43	(32)	10.61	(36)	11.74	(51)	9.75	(22)	11.89	(32)	12.52	(24)
Russell 1000 Value Index	9.50	(53)	11.46	(55)	11.46	(55)	1.52	(71)	8.86	(66)	10.91	(70)	8.40	(62)	11.09	(57)	11.71	(45)
IM U.S. Large Cap Value Equity (MF) Median	9.58		12.47		12.47		2.57		9.57		11.78		8.70		11.29		11.50	
Vanguard Mid-Cap 400 Index Fund I (VSPMX)	11.65	(49)	16.36	(31)	16.36	(31)	0.55	(46)	8.02	(45)	12.55	(33)	N/A		N/A		9.71	(36)
S&P MidCap 400 Index	11.67	(48)	16.44	(30)	16.44	(30)	0.61	(45)	8.09	(44)	12.62	(31)	9.27	(12)	13.33	(11)	9.78	(35)
IM U.S. Mid Cap Core Equity (MF) Median	11.54		13.86		13.86		0.23		7.63		11.70		7.56		11.80		9.02	
Vanguard Small-Cap 600 Index I (VSMSX)	15.10	(9)	15.99	(51)	15.99	(51)	-1.40	(54)	7.21	(51)	11.01	(47)	N/A		N/A		8.05	(49)
S&P SmallCap 600 Index	15.12	(8)	16.05	(49)	16.05	(49)	-1.32	(52)	7.28	(50)	11.03	(46)	8.66	(10)	12.74	(12)	8.07	(48)
IM U.S. Small Cap Core Equity (MF) Median	12.91		15.99		15.99		-1.00		7.23		10.85		7.16		11.37		7.95	

Returns for periods greater than one year are annualized.  
Returns are expressed as percentages.



# Comparative Performance

## Total Fund

As of December 31, 2023

	QTR	FYTD	1 YR	2 YR	3 YR	5 YR	10 YR	15 YR	Inception	Inception Date
<b>International Equity</b>										
<b>Total Fund Performance - International Equity</b>	<b>9.33</b>	<b>14.07</b>	<b>14.07</b>	<b>-3.56</b>	<b>-0.17</b>	<b>5.92</b>	<b>N/A</b>	<b>N/A</b>	<b>3.00</b>	<b>07/01/2014</b>
Vanguard Intl Value (VTRIX)	9.27 (27)	16.15 (65)	16.15 (65)	1.29 (64)	N/A	N/A	N/A	N/A	3.59 (68)	12/01/2021
MSCI AC World ex USA Value	8.51 (50)	18.13 (51)	18.13 (51)	4.28 (33)	6.51 (40)	7.03 (57)	3.55 (42)	6.71 (25)	6.74 (35)	
IM International Multi-Cap Value Equity (MF) Median	8.50	18.18	18.18	2.76	5.49	7.26	3.29	5.90	5.51	
Vanguard Intl Growth (VWILX)	11.37 (47)	14.81 (78)	14.81 (78)	-10.86 (86)	N/A	N/A	N/A	N/A	-11.01 (91)	12/01/2021
MSCI AC World ex USA Growth	11.17 (53)	14.40 (79)	14.40 (79)	-6.02 (64)	-2.37 (64)	7.83 (71)	4.91 (75)	7.63 (80)	-4.43 (63)	
IM International Multi-Cap Growth Equity (MF) Median	11.28	16.69	16.69	-4.64	0.08	9.08	5.26	8.53	-2.56	
Vanguard FTSE AW ex-US SC Index (VFSNX)	10.42 (67)	15.19 (58)	15.19 (58)	-4.76 (84)	0.76 (91)	N/A	N/A	N/A	13.88 (78)	04/01/2020
FTSE Global ex U.S. Small Cap Index (Net)	10.27 (69)	15.35 (57)	15.35 (57)	-4.89 (84)	0.74 (91)	6.72 (70)	3.71 (85)	N/A	13.72 (85)	
IM International SMID Cap Core Equity (MF) Median	11.05	17.24	17.24	-1.13	4.69	8.07	4.83	N/A	14.62	
Vanguard Developed Markets Index (VTMNX)	11.18 (22)	17.84 (40)	17.84 (40)	-0.12 (41)	3.59 (37)	8.41 (26)	4.57 (24)	N/A	6.84 (31)	07/01/2009
Vanguard Spliced Developed ex U.S. Index (Net)	10.83 (30)	17.97 (37)	17.97 (37)	-0.21 (42)	3.58 (37)	8.38 (27)	4.56 (24)	7.12 (35)	6.81 (32)	
MSCI EAFE (Net) Index	10.42 (40)	18.24 (33)	18.24 (33)	0.57 (31)	4.02 (32)	8.16 (34)	4.28 (35)	6.93 (44)	6.61 (41)	
IM International Multi-Cap Equity (MF) Median	9.95	16.81	16.81	-0.92	2.50	7.57	3.98	6.69	6.41	
Vanguard Emerging Markets Index (VEMIX)	6.53 (77)	9.18 (65)	9.18 (65)	-5.23 (32)	-3.22 (33)	4.69 (36)	3.01 (35)	N/A	2.12 (45)	10/01/2010
FTSE Emerging Mkts All Cap China A Inclusion Index	6.82 (73)	9.95 (59)	9.95 (59)	-4.62 (27)	-2.54 (28)	5.32 (27)	3.71 (22)	7.50 (25)	2.72 (29)	
MSCI Emerging Markets (Net) Index	7.86 (47)	9.83 (60)	9.83 (60)	-6.32 (41)	-5.08 (45)	3.68 (57)	2.66 (44)	6.56 (46)	2.07 (47)	
IM Emerging Markets Equity (MF) Median	7.73	10.91	10.91	-7.28	-5.62	4.02	2.41	6.44	1.94	

Returns for periods greater than one year are annualized.  
Returns are expressed as percentages.





# Comparative Performance

## Total Fund

As of December 31, 2023

	QTR	FYTD	1 YR	2 YR	3 YR	5 YR	10 YR	15 YR	Inception	Inception Date
<b>Fixed Income</b>										
<b>Total Fund Performance - Fixed Income</b>	<b>6.73</b>	<b>7.70</b>	<b>7.70</b>	<b>-2.24</b>	<b>-1.49</b>	<b>2.37</b>	<b>N/A</b>	<b>N/A</b>	<b>1.99</b>	<b>07/01/2014</b>
Vanguard Short Term Bond Index (VBIRX)	3.39 (12)	4.88 (87)	4.88 (87)	-0.50 (96)	-0.66 (96)	1.48 (81)	1.38 (64)	N/A	1.28 (63)	04/01/2013
Bloomberg 1-5 Year Gov/Credit Idx	3.44 (10)	4.89 (87)	4.89 (87)	-0.44 (94)	-0.62 (96)	1.54 (77)	1.43 (60)	1.90 (65)	1.33 (59)	
IM U.S. Short Term Investment Grade (MF) Median	2.80	5.67	5.67	0.95	0.73	1.95	1.52	2.15	1.42	
Vanguard Total Bond Index (VBTIX)	6.69 (60)	5.72 (54)	5.72 (54)	-4.18 (31)	-3.34 (39)	N/A	N/A	N/A	-0.76 (59)	09/01/2019
Blmbg. U.S. Aggregate Index	6.82 (46)	5.53 (65)	5.53 (65)	-4.19 (32)	-3.31 (38)	1.10 (58)	1.81 (46)	2.68 (75)	-0.74 (57)	
IM U.S. Broad Market Core Fixed Income (MF) Median	6.77	5.77	5.77	-4.43	-3.44	1.19	1.77	3.26	-0.64	
Vanguard High Yield Bond Fund (VWEAX)	7.30 (11)	11.74 (62)	11.74 (62)	0.85 (23)	1.82 (44)	5.21 (30)	N/A	N/A	4.32 (17)	12/01/2014
Blmbg. U.S. Corp High Yield	7.16 (17)	13.45 (14)	13.45 (14)	0.38 (38)	1.98 (38)	5.37 (23)	4.60 (9)	9.17 (5)	4.62 (8)	
IM U.S. High Yield Bonds (MF) Median	6.56	12.16	12.16	0.07	1.62	4.68	3.67	7.74	3.73	
Vanguard International Bond (VTIFX)	6.50 (63)	8.85 (23)	8.85 (23)	-2.62 (44)	-2.47 (34)	0.92 (30)	N/A	N/A	1.79 (8)	05/01/2015
Blmbg. Global Agg ex-USD Flt Adj RIC Cpd (H)	6.38 (70)	8.75 (31)	8.75 (31)	-2.57 (42)	-2.42 (33)	1.02 (28)	2.59 (8)	N/A	1.80 (8)	
IM International Fixed Income (MF) Median	6.67	7.17	7.17	-2.78	-3.72	-0.68	-0.47	2.19	-0.38	
Vanguard EM Bond (VEGBX)	9.21 (46)	13.80 (10)	13.80 (10)	-0.51 (12)	N/A	N/A	N/A	N/A	0.34 (11)	12/01/2021
Blmbg. Emerging Markets USD Aggregate Index	8.10 (77)	9.09 (82)	9.09 (82)	-3.85 (74)	-3.13 (62)	1.84 (61)	3.03 (23)	6.21 (12)	-3.25 (79)	
IM Emerging Markets Debt (MF) Median	8.95	11.41	11.41	-2.80	-2.69	2.10	2.47	5.53	-2.16	
<b>REIT</b>										
Vanguard Real Estate Index Fund (VGSNX)	18.13 (11)	11.82 (55)	11.82 (55)	-9.15 (56)	5.05 (61)	7.35 (45)	7.38 (41)	N/A	8.29 (33)	10/01/2010
Vanguard Spliced REIT Index	18.18 (10)	11.96 (50)	11.96 (50)	-9.05 (52)	5.15 (57)	7.44 (42)	7.47 (37)	10.50 (31)	8.36 (29)	
IM Real Estate Sector (MF) Median	16.27	11.91	11.91	-8.98	5.35	7.25	7.22	10.00	7.93	

Returns for periods greater than one year are annualized.  
Returns are expressed as percentages.



# Comparative Performance

## Total Fund

As of December 31, 2023

	QTR	FYTD	1 YR	2 YR	3 YR	5 YR	10 YR	15 YR	Inception	Inception Date
<b>Total Fund - Domestic Equity</b>	<b>12.31</b>	<b>22.57</b>	<b>22.57</b>	<b>1.11</b>	<b>9.07</b>	<b>13.92</b>	<b>N/A</b>	<b>N/A</b>	<b>10.34</b>	<b>07/01/2014</b>
Total Domestic Large Cap Equity	11.84	26.14	26.14	1.71	9.54	14.32	N/A	N/A	11.16	06/01/2014
S&P 500 Index	11.69	26.29	26.29	1.69	10.00	15.69	12.03	13.97	12.02	
Large Cap Growth	14.41	46.78	46.78	-0.93	7.69	19.43	N/A	N/A	14.24	06/01/2014
Vanguard Growth Index Hybrid	14.42	46.86	46.86	-0.90	7.73	19.21	14.02	16.12	14.15	
Russell 1000 Growth Index	14.16	42.68	42.68	0.55	8.86	19.50	14.86	16.68	15.05	
Large Cap Core	11.87	26.46	26.46	1.71	9.54	13.14	N/A	N/A	10.39	06/01/2014
S&P 500 Index	11.69	26.29	26.29	1.69	10.00	15.69	12.03	13.97	12.02	
Large Cap Value	9.09	9.42	9.42	3.53	10.67	11.78	N/A	N/A	9.66	06/01/2014
Vanguard Value Index Hybrid	9.01	9.17	9.17	3.43	10.61	11.74	9.75	11.89	9.61	
Russell 1000 Value Index	9.50	11.46	11.46	1.52	8.86	10.91	8.40	11.09	8.17	
Mid Cap Equity	11.65	16.52	16.52	0.62	8.07	12.58	N/A	N/A	9.09	06/01/2014
Mid Cap Hybrid Index	11.67	16.44	16.44	0.61	8.09	12.62	9.21	N/A	9.09	
Small Cap Equity	15.10	15.99	15.99	-1.40	7.21	11.01	N/A	N/A	8.17	06/01/2014
Small Cap Hybrid Index	15.12	16.05	16.05	-1.32	7.28	11.03	7.98	N/A	8.18	
<b>Total Fund - International Equity</b>	<b>9.33</b>	<b>14.07</b>	<b>14.07</b>	<b>-3.56</b>	<b>-0.17</b>	<b>5.92</b>	<b>N/A</b>	<b>N/A</b>	<b>3.00</b>	<b>07/01/2014</b>
Small Cap - International Equity	10.42	15.19	15.19	-4.76	0.76	N/A	N/A	N/A	6.68	03/01/2020
FTSE Global ex U.S. Small Cap Index (Net)	10.27	15.35	15.35	-4.89	0.74	6.72	3.71	N/A	7.00	
Developed Markets - International Equity	11.18	17.84	17.84	-0.12	3.59	8.41	N/A	N/A	4.34	06/01/2014
Vanguard Spliced Developed ex U.S. Index (Net)	10.83	17.97	17.97	-0.21	3.58	8.38	4.56	7.12	4.36	
Emerging Markets - International Equity	6.53	9.18	9.18	-5.23	-3.16	4.73	N/A	N/A	2.70	06/01/2014
FTSE Emerging Mkts All Cap China A Inclusion Index	6.82	9.95	9.95	-4.62	-2.54	5.32	3.71	7.50	3.43	
MSCI Emerging Markets (Net) Index	7.86	9.83	9.83	-6.32	-5.08	3.68	2.66	6.56	2.42	

Returns for periods greater than one year are annualized.  
Returns are expressed as percentages.



# Comparative Performance

## Total Fund

As of December 31, 2023

	QTR	FYTD	1 YR	2 YR	3 YR	5 YR	10 YR	15 YR	Inception	Inception Date
<b>Total Fund - Fixed Income</b>	<b>6.73</b>	<b>7.70</b>	<b>7.70</b>	<b>-2.24</b>	<b>-1.49</b>	<b>2.37</b>	<b>N/A</b>	<b>N/A</b>	<b>1.99</b>	<b>07/01/2014</b>
Short - Term Fixed Income	3.39	4.88	4.88	-0.50	-0.66	1.45	N/A	N/A	1.30	06/01/2014
Bloomberg 1-5 Year Gov/Credit Idx	3.44	4.89	4.89	-0.44	-0.62	1.54	1.43	1.90	1.37	
High Yield - Fixed Income	7.30	11.74	11.74	0.85	1.82	5.21	N/A	N/A	4.29	11/01/2014
Blmbg. U.S. Corp High Yield	7.16	13.45	13.45	0.38	1.98	5.37	4.60	9.17	4.50	
Non-US Fixed Income	6.50	8.85	8.85	-2.62	-2.47	0.92	N/A	N/A	1.85	05/01/2015
Blmbg. Global Agg ex-USD Flt Adj RIC Cpd (H)	6.38	8.75	8.75	-2.57	-2.42	1.02	2.59	N/A	1.80	
<b>Real Estate</b>	<b>18.13</b>	<b>11.82</b>	<b>11.82</b>	<b>-9.15</b>	<b>5.05</b>	<b>7.35</b>	<b>N/A</b>	<b>N/A</b>	<b>5.90</b>	<b>06/01/2014</b>
Vanguard Spliced REIT Index	18.18	11.96	11.96	-9.05	5.15	7.44	7.47	10.50	6.12	

Returns for periods greater than one year are annualized.  
Returns are expressed as percentages.



# Comparative Performance

## Total Fund

As of December 31, 2023

Comparative Performance Trailing Returns										
	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>Total Fund Performance</b>	<b>-15.61</b>	<b>14.00</b>	<b>9.84</b>	<b>20.21</b>	<b>-5.76</b>	<b>13.91</b>	<b>8.58</b>	<b>-0.72</b>	<b>8.24</b>	<b>18.07</b>
Total Fund Policy	-14.86	13.81	11.44	19.49	-4.94	13.67	8.48	-0.69	8.15	16.99
Allocation Index	-15.63	14.11	9.90	19.76	-5.32	14.25	7.44	-0.62	N/A	N/A
<b>Domestic Equity</b>										
<b>Total Fund Domestic Equity</b>	<b>-16.59</b>	<b>26.91</b>	<b>13.96</b>	<b>29.77</b>	<b>-7.16</b>	<b>20.07</b>	<b>13.45</b>	<b>-0.10</b>	<b>N/A</b>	<b>33.56</b>
Twin Capital Low Volatility	N/A	N/A	5.51 (91)	29.24 (53)	-5.37 (48)	19.16 (77)	16.03 (7)	-1.31 (79)	12.91 (46)	N/A
S&P 500 Index	-18.11 (61)	28.71 (30)	18.40 (41)	31.49 (26)	-4.38 (32)	21.83 (45)	11.96 (24)	1.38 (44)	13.69 (31)	32.39 (49)
IM U.S. Large Cap Core Equity (SA+CF) Median	-16.91	26.89	15.80	29.43	-5.66	21.58	9.87	1.08	12.69	32.29
Twin Capital Enhanced Index	N/A	N/A	15.07 (58)	29.73 (40)	-6.43 (65)	20.37 (77)	11.66 (57)	2.42 (25)	13.42 (52)	N/A
S&P 500 Index	-18.11 (52)	28.71 (49)	18.40 (43)	31.49 (32)	-4.38 (26)	21.83 (57)	11.96 (55)	1.38 (39)	13.69 (44)	32.39 (65)
IM U.S. Large Cap Enhanced Index Equity (SA+CF) Median	-17.89	28.63	16.26	29.40	-5.66	22.11	12.21	0.96	13.59	33.06
Vanguard Inst'l Index Fund (VINIX)	-18.14 (12)	28.67 (8)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
S&P 500 Index	-18.11 (3)	28.71 (1)	18.40 (9)	31.49 (3)	-4.38 (7)	21.83 (1)	11.96 (3)	1.38 (2)	13.69 (1)	32.39 (1)
IM S&P 500 Index (MF) Median	-18.36	28.25	18.05	31.08	-4.66	21.37	11.55	0.97	13.18	31.77
Vanguard Growth Index (VIGIX)	-33.14 (70)	27.27 (20)	40.20 (28)	37.25 (12)	-3.32 (72)	27.82 (64)	6.11 (19)	3.23 (75)	13.70 (17)	32.44 (69)
Vanguard Growth Index Hybrid	-33.13 (69)	27.30 (19)	40.27 (28)	37.31 (11)	-3.34 (73)	27.86 (64)	6.16 (18)	3.38 (72)	13.69 (17)	32.51 (68)
Russell 1000 Growth Index	-29.14 (27)	27.60 (17)	38.49 (34)	36.39 (19)	-1.51 (54)	30.21 (39)	7.08 (10)	5.67 (49)	13.05 (24)	33.48 (57)
IM U.S. Large Cap Growth Equity (MF) Median	-31.30	22.39	35.62	33.26	-1.22	29.28	2.21	5.61	10.49	34.12
Vanguard Value Index (VIVIX)	-2.05 (12)	26.48 (44)	2.30 (70)	25.83 (59)	-5.42 (22)	17.14 (47)	16.87 (21)	-0.81 (18)	13.20 (10)	33.01 (38)
Vanguard Value Index Hybrid	-2.01 (11)	26.51 (43)	2.26 (71)	25.85 (59)	-5.40 (22)	17.16 (46)	16.93 (20)	-0.86 (19)	13.29 (9)	33.20 (35)
Russell 1000 Value Index	-7.54 (66)	25.16 (63)	2.80 (61)	26.54 (50)	-8.27 (45)	13.66 (82)	17.34 (17)	-3.83 (69)	13.45 (8)	32.53 (44)
IM U.S. Large Cap Value Equity (MF) Median	-6.10	25.96	3.82	26.50	-8.61	16.95	13.85	-3.00	10.82	32.11
Vanguard Mid-Cap 400 Index Fund I (VSPMX)	-13.11 (50)	24.67 (59)	13.58 (26)	26.13 (72)	N/A	N/A	N/A	N/A	N/A	N/A
S&P MidCap 400 Index	-13.06 (50)	24.76 (59)	13.66 (26)	26.20 (72)	-11.08 (40)	16.24 (38)	20.74 (12)	-2.18 (29)	9.77 (41)	33.50 (58)
IM U.S. Mid Cap Core Equity (MF) Median	-13.21	25.73	8.44	28.59	-11.64	14.94	14.51	-3.74	8.88	34.49
Vanguard Small-Cap 600 Index I (VSMX)	-16.18 (57)	26.74 (37)	11.46 (39)	22.74 (61)	N/A	N/A	N/A	N/A	N/A	N/A
S&P SmallCap 600 Index	-16.10 (54)	26.82 (36)	11.29 (41)	22.78 (61)	-8.48 (9)	13.23 (38)	26.56 (16)	-1.97 (21)	5.76 (34)	41.31 (18)
IM U.S. Small Cap Core Equity (MF) Median	-15.77	25.12	9.89	23.94	-12.71	12.09	21.66	-4.35	4.73	36.85

Returns for periods greater than one year are annualized.  
Returns are expressed as percentages.



# Comparative Performance

## Total Fund

As of December 31, 2023

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>International Equity</b>										
<b>Total Fund Performance - International Equity</b>	<b>-18.46</b>	<b>6.98</b>	<b>10.24</b>	<b>21.55</b>	<b>-14.50</b>	<b>28.00</b>	<b>5.26</b>	<b>-5.56</b>	<b>N/A</b>	<b>13.97</b>
Vanguard Intl Value (VTRIX)	-11.66 (67)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MSCI AC World ex USA Value	-7.95 (33)	11.13 (52)	-0.21 (69)	16.45 (64)	-13.45 (14)	23.35 (51)	9.59 (17)	-9.59 (94)	-4.60 (25)	15.65 (94)
IM International Multi-Cap Value Equity (MF) Median	-10.16	11.39	2.60	17.47	-16.91	23.48	2.91	-3.08	-6.25	22.47
Vanguard Intl Growth (VWILX)	-30.79 (83)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MSCI AC World ex USA Growth	-22.80 (44)	5.37 (72)	22.56 (33)	27.84 (34)	-14.10 (32)	32.47 (31)	0.50 (37)	-0.91 (69)	-2.29 (18)	15.86 (74)
IM International Multi-Cap Growth Equity (MF) Median	-24.22	8.82	19.24	26.40	-15.75	29.11	-0.61	0.16	-5.01	18.77
Vanguard FTSE AW ex-US SC Index (VFSNX)	-21.25 (85)	12.76 (55)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FTSE Global ex U.S. Small Cap Index (Net)	-21.58 (87)	13.02 (53)	11.40 (14)	21.55 (30)	-18.91 (39)	29.78 (50)	3.93 (29)	-0.61 (82)	-4.34 (30)	N/A
IM International SMID Cap Core Equity (MF) Median	-17.04	13.19	5.76	19.58	-19.67	29.44	-0.75	4.70	-6.30	24.68
Vanguard Developed Markets Index (VTMNX)	-15.34 (47)	11.44 (34)	10.27 (43)	22.14 (43)	-14.49 (35)	26.46 (46)	2.46 (35)	-0.19 (44)	-5.62 (55)	22.07 (35)
Vanguard Spliced Developed ex U.S. Index (Net)	-15.58 (49)	11.57 (33)	10.00 (44)	22.34 (42)	-14.79 (38)	26.31 (47)	2.29 (37)	-0.28 (45)	-4.85 (44)	22.71 (28)
MSCI EAFE (Net) Index	-14.45 (40)	11.26 (37)	7.82 (57)	22.01 (45)	-13.79 (25)	25.03 (62)	1.00 (52)	-0.81 (53)	-4.90 (45)	22.78 (28)
IM International Multi-Cap Equity (MF) Median	-15.71	10.28	8.74	21.55	-15.87	25.85	1.12	-0.72	-5.32	20.37
Vanguard Emerging Markets Index (VEMIX)	-17.74 (21)	0.92 (36)	15.26 (65)	20.37 (50)	-14.54 (29)	31.43 (72)	11.76 (26)	-15.39 (68)	0.72 (18)	-5.06 (80)
FTSE Emerging Mkts All Cap China A Inclusion Index	-17.26 (19)	1.76 (32)	15.84 (62)	20.81 (47)	-14.49 (29)	31.46 (72)	10.66 (34)	-13.28 (46)	2.96 (10)	-2.82 (59)
MSCI Emerging Markets (Net) Index	-20.09 (32)	-2.54 (58)	18.31 (47)	18.42 (63)	-14.57 (29)	37.28 (43)	11.19 (29)	-14.92 (62)	-2.19 (43)	-2.60 (58)
IM Emerging Markets Equity (MF) Median	-22.45	-1.60	17.68	20.17	-16.46	35.66	8.25	-13.73	-3.00	-1.46

Returns for periods greater than one year are annualized.  
Returns are expressed as percentages.



# Comparative Performance

## Total Fund

As of December 31, 2023

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>Fixed Income</b>										
<b>Total Fund Performance - Fixed Income</b>	<b>-11.27</b>	<b>0.05</b>	<b>6.75</b>	<b>10.16</b>	<b>-0.71</b>	<b>3.82</b>	<b>4.79</b>	<b>-0.18</b>	<b>N/A</b>	<b>-3.65</b>
Vanguard Short Term Bond Index (VBIRX)	-5.61 (91)	-0.97 (94)	4.71 (11)	4.84 (23)	1.37 (42)	1.19 (71)	1.51 (59)	0.98 (9)	1.32 (13)	N/A
Bloomberg 1-5 Year Gov/Credit Idx	-5.50 (89)	-0.97 (94)	4.71 (11)	5.01 (18)	1.38 (41)	1.27 (66)	1.56 (56)	0.97 (9)	1.42 (11)	0.28 (63)
IM U.S. Short Term Investment Grade (MF) Median	-3.79	0.02	3.02	4.12	1.24	1.45	1.68	0.27	0.67	0.47
Vanguard Total Bond Index (VBTIX)	-13.15 (27)	-1.65 (64)	7.73 (65)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. U.S. Aggregate Index	-13.01 (22)	-1.55 (60)	7.51 (73)	8.72 (53)	0.01 (18)	3.54 (54)	2.65 (62)	0.55 (20)	5.97 (27)	-2.02 (54)
IM U.S. Broad Market Core Fixed Income (MF) Median	-13.66	-1.33	8.16	8.76	-0.62	3.60	2.90	0.04	5.55	-1.96
Vanguard High Yield Bond Fund (VWEAX)	-8.97 (18)	3.78 (80)	5.38 (52)	15.90 (9)	-2.87 (46)	7.13 (31)	11.27 (86)	-1.31 (13)	N/A	N/A
Blmbg. U.S. Corp High Yield	-11.19 (58)	5.28 (42)	7.11 (20)	14.32 (38)	-2.08 (22)	7.50 (21)	17.13 (8)	-4.47 (58)	2.45 (24)	7.44 (32)
IM U.S. High Yield Bonds (MF) Median	-10.97	4.94	5.43	13.83	-2.97	6.63	13.77	-3.98	1.50	6.72
Vanguard International Bond (VTIFX)	-12.89 (48)	-2.17 (20)	4.59 (75)	7.89 (25)	3.00 (2)	2.43 (86)	4.69 (35)	N/A	N/A	N/A
Blmbg. Global Agg ex-USD Flt Adj RIC Cpd (H)	-12.72 (44)	-2.10 (19)	4.75 (72)	8.06 (24)	3.16 (1)	2.57 (82)	4.90 (33)	1.34 (3)	9.14 (9)	1.26 (16)
IM International Fixed Income (MF) Median	-12.94	-5.39	6.55	6.64	-2.47	9.80	3.34	-5.82	0.63	-3.74
Vanguard EM Bond (VEGBX)	-13.02 (31)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Emerging Markets USD Aggregate Index	-15.26 (52)	-1.65 (23)	6.52 (38)	13.11 (61)	-2.46 (8)	8.17 (88)	9.88 (59)	1.29 (12)	4.76 (18)	-4.12 (22)
IM Emerging Markets Debt (MF) Median	-15.10	-2.96	5.74	13.63	-5.92	10.54	10.43	-2.53	1.32	-6.53
<b>REIT</b>										
Vanguard Real Estate Index Fund (VGSNX)	-26.20 (51)	40.47 (61)	-4.67 (54)	29.02 (33)	-5.93 (54)	4.93 (58)	8.51 (21)	2.56 (58)	30.17 (36)	2.46 (29)
Vanguard Spliced REIT Index	-26.12 (47)	40.56 (60)	-4.55 (53)	29.03 (33)	-5.86 (52)	5.07 (54)	8.60 (20)	2.52 (58)	30.38 (30)	2.47 (29)
IM Real Estate Sector (MF) Median	-26.17	41.32	-4.31	27.32	-5.71	5.32	6.34	2.91	29.47	1.64

Returns for periods greater than one year are annualized.  
Returns are expressed as percentages.



# Comparative Performance

## Total Fund

As of December 31, 2023

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>Total Fund - Domestic Equity</b>	<b>-16.59</b>	<b>26.91</b>	<b>13.96</b>	<b>29.77</b>	<b>-7.16</b>	<b>20.07</b>	<b>13.45</b>	<b>-0.10</b>	<b>N/A</b>	<b>33.56</b>
Total Domestic Large Cap Equity	-17.98	27.04	14.02	30.31	-5.16	20.67	13.09	1.00	N/A	N/A
S&P 500 Index	-18.11	28.71	18.40	31.49	-4.38	21.83	11.96	1.38	13.69	32.39
Large Cap Growth	-33.14	27.27	41.61	37.36	-3.51	27.82	5.87	3.78	N/A	N/A
Vanguard Growth Index Hybrid	-33.13	27.30	40.27	37.31	-3.34	27.86	6.16	3.38	13.69	32.51
Russell 1000 Growth Index	-29.14	27.60	38.49	36.39	-1.51	30.21	7.08	5.67	13.05	33.48
Large Cap Core	-18.20	27.04	9.03	29.41	-5.71	19.57	14.29	0.18	N/A	N/A
S&P 500 Index	-18.11	28.71	18.40	31.49	-4.38	21.83	11.96	1.38	13.69	32.39
Large Cap Value	-2.05	26.48	2.30	25.83	-5.50	17.14	16.87	-0.27	N/A	N/A
Vanguard Value Index Hybrid	-2.01	26.51	2.26	25.85	-5.40	17.16	16.93	-0.86	13.29	33.20
Russell 1000 Value Index	-7.54	25.16	2.80	26.54	-8.27	13.66	17.34	-3.83	13.45	32.53
Mid Cap Equity	-13.11	24.67	13.58	26.13	-10.44	19.29	11.23	-1.31	N/A	N/A
Mid Cap Hybrid Index	-13.06	24.76	13.66	26.20	-10.67	19.30	11.25	-1.28	13.83	35.21
Small Cap Equity	-16.18	26.74	11.46	22.74	-10.45	16.25	18.32	-3.63	N/A	N/A
Small Cap Hybrid Index	-16.10	26.82	11.29	22.78	-10.32	16.24	18.26	-3.68	7.54	37.77
<b>Total Fund - International Equity</b>	<b>-18.46</b>	<b>6.98</b>	<b>10.24</b>	<b>21.55</b>	<b>-14.50</b>	<b>28.00</b>	<b>5.26</b>	<b>-5.56</b>	<b>N/A</b>	<b>13.97</b>
Small Cap - International Equity	-21.25	12.76	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FTSE Global ex U.S. Small Cap Index (Net)	-21.58	13.02	11.40	21.55	-18.91	29.78	3.93	-0.61	-4.34	N/A
Developed Markets - International Equity	-15.34	11.44	10.27	22.14	-14.49	26.46	2.46	-0.41	N/A	N/A
Vanguard Spliced Developed ex U.S. Index (Net)	-15.58	11.57	10.00	22.34	-14.79	26.31	2.29	-0.28	-4.85	22.71
Emerging Markets - International Equity	-17.74	1.10	15.26	20.37	-14.54	31.43	11.76	-15.80	N/A	N/A
FTSE Emerging Mkts All Cap China A Inclusion Index	-17.26	1.76	15.84	20.81	-14.49	31.46	10.66	-13.28	2.96	-2.82
MSCI Emerging Markets (Net) Index	-20.09	-2.54	18.31	18.42	-14.57	37.28	11.19	-14.92	-2.19	-2.60

Returns for periods greater than one year are annualized.  
Returns are expressed as percentages.



Comparative Performance

Total Fund

As of December 31, 2023

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
<b>Total Fund - Fixed Income</b>	<b>-11.27</b>	<b>0.05</b>	<b>6.75</b>	<b>10.16</b>	<b>-0.71</b>	<b>3.82</b>	<b>4.79</b>	<b>-0.18</b>	<b>N/A</b>	<b>-3.65</b>
Short - Term Fixed Income	-5.61	-0.97	4.71	4.71	1.37	1.19	1.51	0.98	N/A	N/A
Bloomberg 1-5 Year Gov/Credit Idx	-5.50	-0.97	4.71	5.01	1.38	1.27	1.56	0.97	1.42	0.28
High Yield - Fixed Income	-8.97	3.78	5.38	15.90	-2.87	6.65	10.89	-1.28	N/A	N/A
Blmbg. U.S. Corp High Yield	-11.19	5.28	7.11	14.32	-2.08	7.50	17.13	-4.47	2.45	7.44
Non-US Fixed Income	-12.89	-2.17	4.59	7.89	3.00	2.43	4.69	N/A	N/A	N/A
Blmbg. Global Agg ex-USD Flt Adj RIC Cpd (H)	-12.72	-2.10	4.75	8.06	3.16	2.57	4.90	1.34	9.14	1.26
<b>Real Estate</b>	<b>-26.20</b>	<b>40.47</b>	<b>-4.67</b>	<b>29.02</b>	<b>-5.93</b>	<b>4.93</b>	<b>8.51</b>	<b>2.56</b>	<b>N/A</b>	<b>N/A</b>
Vanguard Spliced REIT Index	-26.12	40.56	-4.55	29.03	-5.86	5.07	8.60	2.52	30.38	2.47

Returns for periods greater than one year are annualized.  
Returns are expressed as percentages.





**Multi Time Period Statistics**  
**Butler County Employees Retirement Plan**  
As of December 31, 2023

**Multi Time Period Statistics**

	3 YR Return		3 YR Standard Deviation		3 YR Sharpe Ratio		5 YR Return		5 YR Standard Deviation		5 YR Sharpe Ratio	
Total Fund Performance	3.47		12.95		0.16		7.90		13.35		0.50	
Total Fund Policy	3.64		12.28		0.18		8.19		12.90		0.53	
Vanguard Instl Indx;Inst (VINIX) *	9.96	(8)	17.29	(33)	0.52	(8)	15.66	(6)	18.37	(37)	0.79	(7)
S&P 500 Index	10.00		17.29		0.52		15.69		18.37		0.79	
IM S&P 500 Index (MF) Median	9.67		17.29		0.50		15.34		18.36		0.77	
Vanguard Growth Index (VIGIX)	7.69	(23)	21.79	(25)	0.35	(26)	19.17	(10)	21.55	(21)	0.84	(17)
Vanguard Growth Index Hybrid	7.73		21.80		0.36		19.21		21.56		0.84	
IM U.S. Large Cap Growth Equity (MF) Median	5.70		20.63		0.27		16.40		20.65		0.76	
Vanguard Value Index (VIVIX)	10.62	(35)	15.69	(66)	0.59	(29)	11.74	(51)	17.71	(68)	0.61	(43)
Vanguard Value Index Hybrid	10.61		15.67		0.59		11.74		17.70		0.61	
IM U.S. Large Cap Value Equity (MF) Median	9.57		16.17		0.52		11.78		18.31		0.60	
Vanguard S&P MC400;Inst (VSPMX) *	8.02	(45)	19.74	(6)	0.38	(53)	12.55	(33)	22.25	(15)	0.56	(48)
S&P MidCap 400 Index	8.09		19.74		0.39		12.62		22.26		0.56	
IM U.S. Mid Cap Core Equity (MF) Median	7.63		17.98		0.39		11.70		20.67		0.56	
Vanguard S&P SC600;Inst (VSMSX) *	7.21	(51)	20.98	(33)	0.33	(52)	11.01	(47)	23.98	(44)	0.48	(48)
S&P SmallCap 600 Index	7.28		20.97		0.34		11.03		23.98		0.48	
IM U.S. Small Cap Core Equity (MF) Median	7.23		20.45		0.34		10.85		23.87		0.47	

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All performance is reported net of fees.



**Multi Time Period Statistics**  
**Butler County Employees Retirement Plan**  
As of December 31, 2023

	3 YR Return		3 YR Standard Deviation		3 YR Sharpe Ratio		5 YR Return		5 YR Standard Deviation		5 YR Sharpe Ratio	
Vanguard Intl Val;Inv (VTRIX)*	3.47	(45)	17.07	(75)	0.16	(45)	7.77	(54)	19.34	(32)	0.39	(59)
MSCI EAFE Index	4.53		16.60		0.22		8.69		17.91		0.45	
IM International Large Cap Core Equity (MF) Median	3.05		17.32		0.14		7.92		18.51		0.41	
Vanguard Intl Gro;Adm (VWILX)*	-7.61	(99)	22.41	(6)	-0.34	(98)	10.62	(17)	23.01	(1)	0.47	(37)
MSCI EAFE Growth Index	0.59		18.75		0.01		9.18		18.16		0.47	
IM International Large Cap Growth Equity (MF) Median	0.33		17.72		-0.02		8.40		18.72		0.43	
Vanguard FTSExUSSC;Ins (VFSNX) *	0.76	(25)	17.62	(78)	0.01	(26)	6.87	(46)	20.41	(51)	0.34	(45)
FTSE Global ex U.S. Small Cap Index (Net)	0.74		17.38		0.01		6.72		20.32		0.33	
IM International SMID Cap Growth Equity (MF) Median	-1.61		18.71		-0.10		6.67		20.41		0.33	
Vanguard Developed Markets Index (VTMNX)	3.59	(37)	17.62	(35)	0.17	(37)	8.41	(26)	18.84	(47)	0.42	(27)
Vanguard Spliced Developed ex U.S. Index (Net)	3.58		17.00		0.17		8.38		18.48		0.43	
IM International Multi-Cap Equity (MF) Median	2.50		17.29		0.10		7.57		18.71		0.38	
Vanguard Emerging Markets Index (VEMIX)	-3.22	(33)	15.98	(84)	-0.26	(36)	4.69	(36)	18.21	(90)	0.24	(35)
FTSE Emerging Mkts All Cap China A Inclusion Index	-2.54		15.58		-0.23		5.32		17.92		0.28	
IM Emerging Markets Equity (MF) Median	-5.62		17.71		-0.36		4.02		19.85		0.21	
Vanguard Short Term Bond Index (VBIRX)	-0.66	(96)	3.14	(6)	-0.92	(77)	1.48	(81)	2.68	(44)	-0.14	(79)
Bloomberg 1-5 Year Gov/Credit Idx	-0.62		3.11		-0.92		1.54		2.67		-0.12	
IM U.S. Short Term Investment Grade (MF) Median	0.73		2.22		-0.66		1.95		2.50		0.05	
Vanguard Tot Bd;Inst (VBTIX) *	-3.34	(40)	7.11	(63)	-0.76	(50)	1.13	(55)	6.13	(75)	-0.09	(59)
Blmbg. U.S. Aggregate Index	-3.31		7.14		-0.75		1.10		6.11		-0.10	
IM U.S. Broad Market Core Fixed Income (MF) Median	-3.44		7.18		-0.76		1.19		6.46		-0.07	
Vanguard High Yield Bond Fund (VWEAX)	1.82	(44)	8.15	(51)	0.00	(44)	5.21	(30)	8.84	(78)	0.41	(23)
Vanguard High Yield Corporate Composite Index	1.62		7.91		-0.03		5.28		8.73		0.42	
IM U.S. High Yield Bonds (MF) Median	1.62		8.15		-0.02		4.68		9.44		0.34	

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**Multi Time Period Statistics**  
**Butler County Employees Retirement Plan**  
As of December 31, 2023

	3 YR Return		3 YR Standard Deviation		3 YR Sharpe Ratio		5 YR Return		5 YR Standard Deviation		5 YR Sharpe Ratio	
Vanguard Tot Intl BI;Inst (VTIFX) *	-2.48	(35)	6.13	(70)	-0.74	(54)	0.91	(31)	5.38	(84)	-0.15	(41)
Blmbg. Global Agg ex-USD Flt Adj RIC Cpd (H)	-2.42		5.91		-0.77		1.02		5.22		-0.14	
IM International Fixed Income (MF) Median	-3.72		9.47		-0.74		-0.68		8.73		-0.20	
Vanguard Em Mkt Bond;Adm (VEGBX)*	-0.75	(24)	10.93	(40)	-0.21	(23)	5.82	(5)	11.53	(80)	0.39	(5)
JPM GBI-EM Diversified	-4.67		11.92		-0.53		-0.22		12.09		-0.11	
IM Emerging Markets Debt - LC (MF) Median	-1.08		10.89		-0.26		3.04		12.54		0.16	
Vanguard Real Estate Index Fund (VGSNX)	5.05	(61)	21.44	(20)	0.24	(62)	7.35	(45)	20.88	(28)	0.36	(49)
Vanguard Spliced REIT Index	5.15		21.43		0.24		7.44		20.87		0.36	
IM Real Estate Sector (MF) Median	5.35		20.98		0.25		7.25		20.26		0.36	

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**Multi Time Period Statistics**  
**Butler County Employees Retirement Plan**  
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**Multi Time Period Statistics**

	10 YR Return		10 YR Standard Deviation		10 YR Sharpe Ratio		15 YR Return		15 YR Standard Deviation		15 YR Sharpe Ratio	
Total Fund Performance	6.24		11.18		0.49		8.48		11.29		0.71	
Total Fund Policy	6.46		10.89		0.52		8.74		11.43		0.72	
Vanguard Instl Indx;Inst (VINIX) *	12.00	(4)	15.31	(13)	0.75	(4)	13.95	(2)	16.00	(9)	0.86	(3)
S&P 500 Index	12.03		15.31		0.75		13.97		16.00		0.86	
IM S&P 500 Index (MF) Median	11.65		15.29		0.73		13.49		15.98		0.83	
Vanguard Growth Index (VIGIX)	13.97	(15)	18.65	(40)	0.74	(24)	N/A		N/A		N/A	
Vanguard Growth Index Hybrid	14.02		18.67		0.74		16.12		18.07		0.89	
IM U.S. Large Cap Growth Equity (MF) Median	12.59		18.22		0.69		14.89		18.08		0.83	
Vanguard Value Index (VIVIX)	9.74	(22)	14.63	(68)	0.63	(19)	N/A		N/A		N/A	
Vanguard Value Index Hybrid	9.75		14.62		0.63		11.89		16.15		0.73	
IM U.S. Large Cap Value Equity (MF) Median	8.70		15.33		0.54		11.29		16.58		0.68	
Vanguard S&P MC400;Inst (VSPMX)*	9.21	(10)	18.94	(71)	0.50	(10)	N/A		N/A		N/A	
S&P MidCap 400 Index	9.27		18.94		0.51		13.33		19.44		0.71	
IM U.S. SMID Cap Core Equity (MF) Median	7.38		19.60		0.41		11.39		20.02		0.61	
Vanguard S&P SC600;Inst (VSMSX)*	8.64	(10)	21.17	(45)	0.45	(11)	N/A		N/A		N/A	
S&P SmallCap 600 Index	8.66		21.16		0.45		12.74		21.43		0.64	
IM U.S. Small Cap Core Equity (MF) Median	7.16		21.09		0.38		11.37		21.56		0.58	

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**Multi Time Period Statistics**  
**Butler County Employees Retirement Plan**  
As of December 31, 2023

	10 YR Return		10 YR Standard Deviation		10 YR Sharpe Ratio		15 YR Return		15 YR Standard Deviation		15 YR Sharpe Ratio	
Vanguard Intl Val;Inv (VTRIX)*	3.78	(37)	17.35	(42)	0.23	(42)	6.60	(47)	19.40	(25)	0.39	(49)
MSCI EAFE Index	4.78		16.07		0.30		7.44		18.21		0.44	
IM International Large Cap Core Equity (MF) Median	3.44		16.81		0.22		6.52		18.55		0.38	
Vanguard Intl Gro;Adm (VWILX)*	7.09	(5)	21.74	(2)	0.37	(17)	9.98	(6)	22.18	(1)	0.50	(18)
MSCI EAFE Growth Index	5.53		16.67		0.34		8.03		17.92		0.48	
IM International Large Cap Growth Equity (MF) Median	4.42		17.07		0.27		7.28		18.82		0.43	
Vanguard FTSExUSSC;Ins (VFSNX)*	3.94	(61)	18.96	(70)	0.24	(59)	N/A		N/A		N/A	
FTSE Global ex U.S. Small Cap Index (Net)	3.71		18.83		0.23		N/A		N/A		N/A	
IM International SMID Cap Growth Equity (MF) Median	4.22		19.34		0.26		9.02		21.28		0.48	
Vanguard Developed Markets Index (VTMNX)	4.57	(24)	16.76	(59)	0.28	(22)	N/A		N/A		N/A	
Vanguard Spliced Developed ex U.S. Index (Net)	4.56		16.55		0.28		7.12		18.48		0.42	
IM International Multi-Cap Equity (MF) Median	3.98		17.06		0.24		6.69		18.93		0.40	
Vanguard Emerging Markets Index (VEMIX)	3.01	(35)	17.10	(93)	0.19	(36)	N/A		N/A		N/A	
FTSE Emerging Mkts All Cap China A Inclusion Index	3.71		16.96		0.23		7.50		19.88		0.42	
IM Emerging Markets Equity (MF) Median	2.41		18.87		0.16		6.44		21.00		0.36	
Vanguard Sh-Tm B;Inst (VBITX)*	1.38	(64)	2.37	(45)	0.07	(64)	N/A		N/A		N/A	
Bloomberg 1-5 Year Gov/Credit Idx	1.43		2.38		0.10		1.90		2.14		0.51	
IM U.S. Short Term Investment Grade (MF) Median	1.52		2.23		0.14		2.15		2.31		0.57	
Vanguard Tot Bd;Inst (VBTIX)*	1.80	(47)	5.02	(71)	0.14	(47)	2.67	(76)	4.54	(82)	0.42	(74)
Blmbg. U.S. Aggregate Index	1.81		4.97		0.14		2.68		4.49		0.43	
IM U.S. Broad Market Core Fixed Income (MF) Median	1.77		5.17		0.13		3.26		4.91		0.50	
Vanguard HY Corp;Adm (VWEAX)*	4.43	(14)	7.32	(91)	0.47	(7)	7.85	(44)	7.83	(95)	0.90	(3)
Vanguard High Yield Corporate Composite Index	4.47		7.60		0.46		8.08		8.19		0.89	
IM U.S. High Yield Bonds (MF) Median	3.67		8.39		0.33		7.74		9.22		0.75	

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Multi Time Period Statistics  
Butler County Employees Retirement Plan  
As of December 31, 2023

	10 YR Return		10 YR Standard Deviation		10 YR Sharpe Ratio		15 YR Return	15 YR Standard Deviation	15 YR Sharpe Ratio
Vanguard Tot Intl BI;Inst (VTIFX)*	2.45	(8)	4.57	(83)	0.29	(8)	N/A	N/A	N/A
Blmbg. Global Agg ex-USD Flt Adj RIC Cpd (H)	2.59		4.53		0.32		N/A	N/A	N/A
IM International Fixed Income (MF) Median	-0.47		8.53		-0.14		2.19	9.05	0.19
Vanguard Em Mkt Bond;Adm (VEGBX)*	N/A		N/A		N/A		N/A	N/A	N/A
JPM GBI-EM Diversified	-0.80		12.67		-0.10		2.23	12.64	0.17
IM Emerging Markets Debt - LC (MF) Median	0.20		13.12		-0.02		N/A	N/A	N/A
Vanguard Real Estate Index Fund (VGSNX)	7.38		17.61		0.43		N/A	N/A	N/A
Vanguard Spliced REIT Index	7.47		17.63		0.43		10.50	21.55	0.54

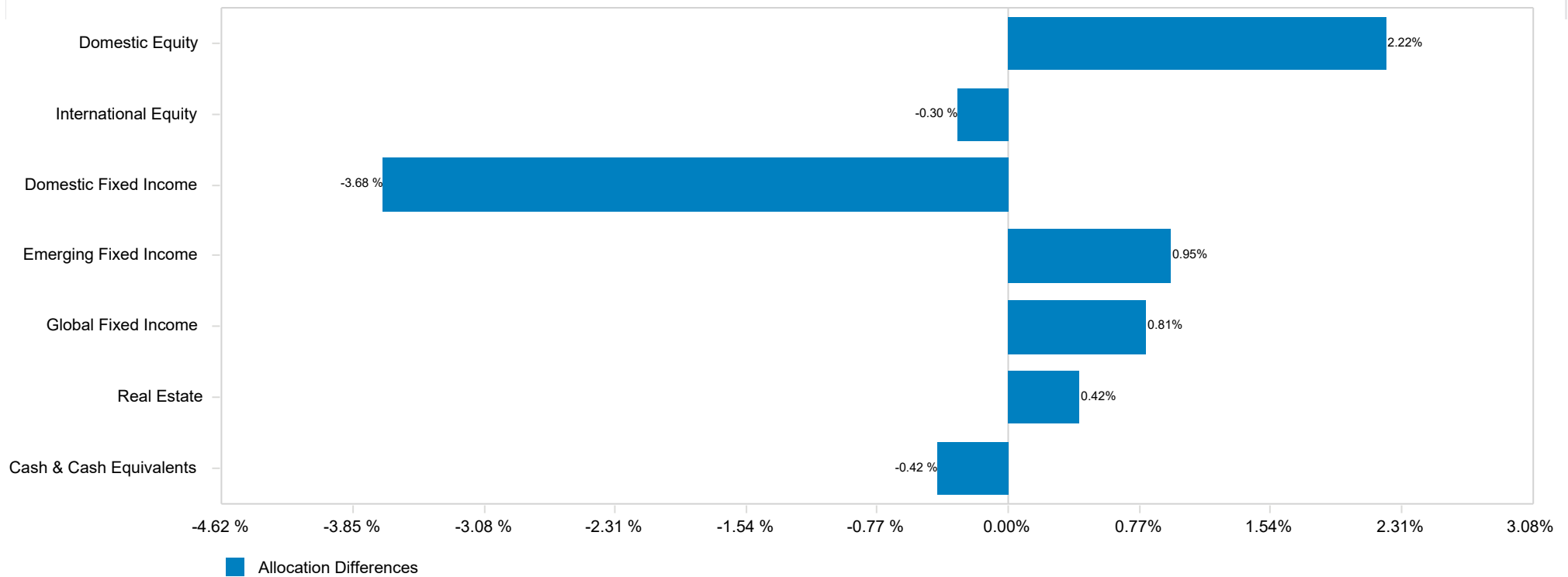
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# Total Fund Asset Allocation Analysis

Total Fund

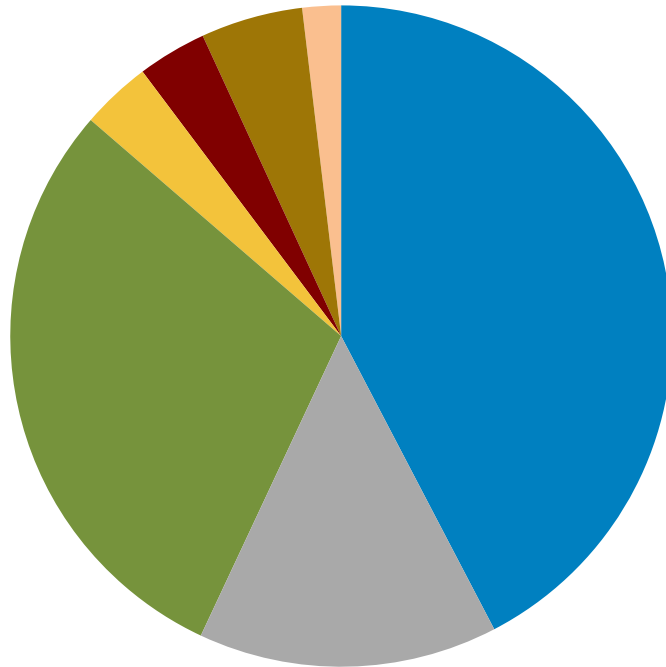
As of December 31, 2023



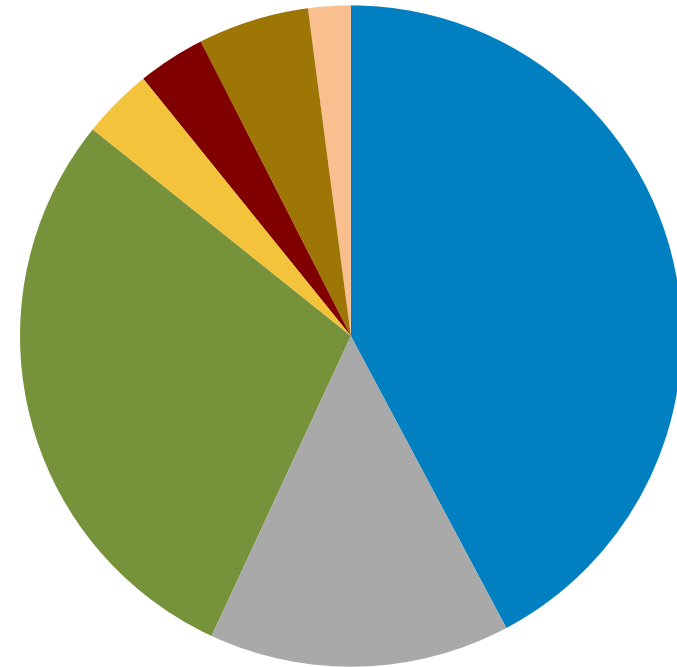
## Asset Allocation Compliance

	Current Allocation (%)	Target Allocation (%)	Minimum Allocation (%)	Maximum Allocation (%)
Domestic Equity	42.22	40.00	15.00	65.00
International Equity	14.70	15.00	5.00	25.00
Domestic Fixed Income	28.82	32.50	15.00	50.00
Emerging Fixed Income	3.45	2.50	0.00	5.00
Global Fixed Income	3.31	2.50	0.00	5.00
Real Estate	5.42	5.00	0.00	10.00
Cash & Cash Equivalents	2.08	2.50	0.00	5.00
<b>Total Fund</b>	<b>100.00</b>	<b>100.00</b>	<b>N/A</b>	<b>N/A</b>

Asset Allocation By Segment as of  
September 30, 2023 : \$235,892,757

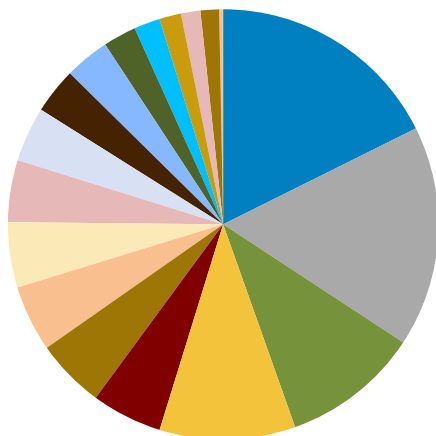
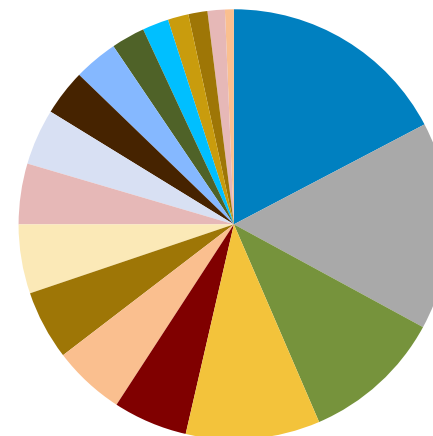


Asset Allocation By Segment as of  
December 31, 2023 : \$256,503,010



Allocation			Allocation		
Segments	Market Value	Allocation	Segments	Market Value	Allocation
Domestic Equity	99,896,426	42.3	Domestic Equity	108,291,593	42.2
International Equity	34,490,147	14.6	International Equity	37,708,964	14.7
Domestic Fixed Income	69,269,083	29.4	Domestic Fixed Income	73,924,309	28.8
Emerging Fixed Income	8,064,888	3.4	Emerging Fixed Income	8,860,878	3.5
Global Fixed Income	7,960,381	3.4	Global Fixed Income	8,491,754	3.3
Real Estate	11,760,647	5.0	Real Estate	13,893,100	5.4
Cash	4,451,186	1.9	Cash	5,332,412	2.1



Asset Allocation By Manager as of  
Sep-2023 : \$235,892,757Asset Allocation By Manager as of  
Dec-2023 : \$256,503,010

Allocation			Allocation		
	Market Value	Allocation		Market Value	Allocation
Vanguard Total Bond Index (VBTIX)	41,602,697	17.6	Vanguard Total Bond Index (VBTIX)	44,387,626	17.3
Vanguard Inst'l Index Fund (VINIX)	39,189,243	16.6	Vanguard Inst'l Index Fund (VINIX)	40,081,751	15.6
Vanguard Mid-Cap 400 Index Fund I (VSPMX)	24,354,501	10.3	Vanguard Mid-Cap 400 Index Fund I (VSPMX)	27,191,747	10.6
Vanguard High Yield Bond Fund (VWEAX)	24,065,653	10.2	Vanguard High Yield Bond Fund (VWEAX)	25,821,779	10.1
Vanguard Growth Index (VIGIX)	12,514,964	5.3	Vanguard Growth Index (VIGIX)	14,317,772	5.6
Vanguard Value Index (VIVIX)	12,246,742	5.2	Vanguard Real Estate Index Fund (VGSNX)	13,893,100	5.4
Vanguard Real Estate Index Fund (VGSNX)	11,760,647	5.0	Vanguard Value Index (VIVIX)	13,359,679	5.2
Vanguard Small-Cap 600 Index I (VSMSX)	11,590,977	4.9	Vanguard Small-Cap 600 Index I (VSMSX)	13,340,645	5.2
Vanguard Emerging Markets Index (VEMIX)	10,973,987	4.7	Vanguard Emerging Markets Index (VEMIX)	11,690,738	4.6
Vanguard Developed Markets Index (VTMNX)	9,723,845	4.1	Vanguard Developed Markets Index (VTMNX)	10,811,007	4.2
Vanguard EM Bond (VEGBX)	8,113,864	3.4	Vanguard EM Bond (VEGBX)	8,860,878	3.5
Vanguard International Bond (VTIFX)	7,973,602	3.4	Vanguard International Bond (VTIFX)	8,491,754	3.3
Vanguard FTSE AW ex-US SC Index (VFSNX)	5,866,533	2.5	Vanguard FTSE AW ex-US SC Index (VFSNX)	6,477,533	2.5
Vanguard Intl Value (VTRIX)	4,634,226	2.0	Vanguard Intl Value (VTRIX)	5,063,789	2.0
Vanguard Short Term Bond Index (VBIRX)	3,850,099	1.6	Vanguard Short Term Bond Index (VBIRX)	3,980,762	1.6
NMA	3,427,125	1.5	Vanguard Intl Growth (VWILX)	3,665,897	1.4
Vanguard Intl Growth (VWILX)	3,291,555	1.4	NMA	3,360,184	1.3
Disbursement & MF Cash	712,497	0.3	Disbursement & MF Cash	1,706,370	0.7

**Asset Allocation Attributes**

	Domestic Equity		International Equity		Domestic Fixed Income		Emerging Fixed Income		Global Fixed Income		Real Estate		Cash		Total Fund	
	(\$)	%	(\$)	%	(\$)	%	(\$)	%	(\$)	%	(\$)	%	(\$)	%	(\$)	%
Vanguard Inst'l Index Fund (VINIX)	40,082	100.0	-	-	-	-	-	-	-	-	-	-	-	-	40,082	15.6
Vanguard Value Index (VIVIX)	13,360	100.0	-	-	-	-	-	-	-	-	-	-	-	-	13,360	5.2
Vanguard Small-Cap 600 Index I (VSM SX)	13,341	100.0	-	-	-	-	-	-	-	-	-	-	-	-	13,341	5.2
Vanguard Mid-Cap 400 Index Fund I (VSPMX)	27,192	100.0	-	-	-	-	-	-	-	-	-	-	-	-	27,192	10.6
Vanguard Growth Index (VIGIX)	14,318	100.0	-	-	-	-	-	-	-	-	-	-	-	-	14,318	5.6
Twin Capital Enhanced Index	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.0
Vanguard Intl Value (VTRIX)	-	-	5,064	100.0	-	-	-	-	-	-	-	-	-	-	5,064	2.0
Vanguard Intl Growth (VWILX)	-	-	3,666	100.0	-	-	-	-	-	-	-	-	-	-	3,666	1.4
Vanguard FTSE AW ex-US SC Index (VFSNX)	-	-	6,478	100.0	-	-	-	-	-	-	-	-	-	-	6,478	2.5
Vanguard Developed Markets Index (VTMNX)	-	-	10,811	100.0	-	-	-	-	-	-	-	-	-	-	10,811	4.2
Vanguard Emerging Markets Index (VEMIX)	-	-	11,691	100.0	-	-	-	-	-	-	-	-	-	-	11,691	4.6
Vanguard High Yield Bond Fund (VWEAX)	-	-	-	-	25,693	99.5	-	-	-	-	-	-	129	0.5	25,822	10.1
Vanguard Short Term Bond Index (VBIRX)	-	-	-	-	3,971	99.8	-	-	-	-	-	-	10	0.2	3,981	1.6
Vanguard Total Bond Index (VBTIX)	-	-	-	-	44,261	99.7	-	-	-	-	-	-	127	0.3	44,388	17.3
Vanguard International Bond (VTIFX)	-	-	-	-	-	-	-	-	8,492	100.0	-	-	-	-	8,492	3.3
Vanguard EM Bond (VEGBX)	-	-	-	-	-	-	8,861	100.0	-	-	-	-	-	-	8,861	3.5
Vanguard Real Estate Index Fund (VGSNX)	-	-	-	-	-	-	-	-	-	-	13,893	100.0	-	-	13,893	5.4
Disbursement & MF Cash	-	-	-	-	-	-	-	-	-	-	-	-	1,706	100.0	1,706	0.7
NMA	-	-	-	-	-	-	-	-	-	-	-	-	3,360	100.0	3,360	1.3
<b>Total Fund</b>	<b>108,292</b>	<b>42.2</b>	<b>37,709</b>	<b>14.7</b>	<b>73,924</b>	<b>28.8</b>	<b>8,861</b>	<b>3.5</b>	<b>8,492</b>	<b>3.3</b>	<b>13,893</b>	<b>5.4</b>	<b>5,332</b>	<b>2.1</b>	<b>256,503</b>	<b>100.0</b>



**Fee Analysis**  
**Total Fund**  
**As of December 31, 2023**

	Estimated Annual Fee (%)	Market Value (\$)	Estimated Annual Fee (\$)	Fee Schedule
Vanguard Inst'l Index Fund (VINIX)	0.03	40,081,751	12,025	0.03 % of Assets
Vanguard Growth Index (VIGIX)	0.04	14,317,772	5,727	0.04 % of Assets
Vanguard Value Index (VIVIX)	0.04	13,359,679	5,344	0.04 % of Assets
Vanguard Mid-Cap 400 Index Fund I (VSPMX)	0.08	27,191,747	21,753	0.08 % of Assets
Vanguard Small-Cap 600 Index I (VSM SX)	0.08	13,340,645	10,673	0.08 % of Assets
Vanguard Intl Value (VTRIX)	0.35	5,063,789	17,723	0.35 % of Assets
Vanguard Intl Growth (VWILX)	0.33	3,665,897	12,097	0.33 % of Assets
Vanguard FTSE AW ex-US SC Index (VFSNX)	0.11	6,477,533	7,125	0.11 % of Assets
Vanguard Developed Markets Index (VTMNX)	0.05	10,811,007	5,406	0.05 % of Assets
Vanguard Emerging Markets Index (VEMIX)	0.10	11,690,738	11,691	0.10 % of Assets
Vanguard Short Term Bond Index (VBIRX)	0.07	3,980,762	2,787	0.07 % of Assets
Vanguard Total Bond Index (VBTIX)	0.03	44,387,626	13,316	0.03 % of Assets
Vanguard High Yield Bond Fund (VWEAX)	0.13	25,821,779	33,568	0.13 % of Assets
Vanguard International Bond (VTIFX)	0.07	8,491,754	5,944	0.07 % of Assets
Vanguard EM Bond (VEGBX)	0.45	8,860,878	39,874	0.45 % of Assets
Vanguard Real Estate Index Fund (VGSNX)	0.10	13,893,100	13,893	0.10 % of Assets
<b>Total Fund Performance</b>	<b>0.09</b>	<b>253,142,827</b>	<b>218,946</b>	

Does not include Non-Measured Assets (NMA).  
Fee information on this page is an illustrative estimate of management fees based on current reported portfolio values. Fee estimates do not reflect actual calculation methodologies or applicable carried interest.



**Financial Reconciliation**  
**Total Fund**  
as of December 31, 2023

Quarter To Date	Market Value 10/01/2023	Management Fees	Net Flows	Return On Investment	Market Value 12/31/2023
<b>Domestic Equity</b>					
Vanguard Inst'l Index Fund (VINIX)	39,189,243	-	-3,500,000	4,392,508	40,081,751
Vanguard Value Index (VIVIX)	12,246,742	-	-	1,112,938	13,359,679
Vanguard Small-Cap 600 Index I (VSM SX)	11,590,977	-	-	1,749,668	13,340,645
Vanguard Mid-Cap 400 Index Fund I (VSPMX)	24,354,501	-	-	2,837,245	27,191,747
Vanguard Growth Index (VIGIX)	12,514,964	-	-	1,802,808	14,317,772
<b>International Equity</b>					
Vanguard Intl Value (VTRIX)	4,634,226	-	-	429,563	5,063,789
Vanguard Intl Growth (VWILX)	3,291,555	-	-	374,341	3,665,897
Vanguard FTSE AW ex-US SC Index (VFSNX)	5,866,533	-	-	611,000	6,477,533
Vanguard Developed Markets Index (VTMNX)	9,723,845	-	-	1,087,161	10,811,007
Vanguard Emerging Markets Index (VEMIX)	10,973,987	-	-	716,751	11,690,738
<b>Fixed Income</b>					
Vanguard Short Term Bond Index (VBIRX)	3,850,099	-	-	130,663	3,980,762
Vanguard Total Bond Index (VBTIX)	41,602,697	-	-	2,784,929	44,387,626
Vanguard High Yield Bond Fund (VWEAX)	24,065,653	-	-	1,756,126	25,821,779
Vanguard International Bond (VTIFX)	7,973,602	-	-	518,152	8,491,754
Vanguard EM Bond (VEGBX)	8,113,864	-	-	747,014	8,860,878
<b>REIT</b>					
Vanguard Real Estate Index Fund (VGSNX)	11,760,647	-	-	2,132,454	13,893,100
Disbursement & MF Cash	712,497	-	970,983	22,890	1,706,370
<b>Total Fund Performance</b>	<b>232,465,632</b>	<b>-</b>	<b>-2,529,017</b>	<b>23,206,212</b>	<b>253,142,827</b>
NMA	3,427,125	-	-66,941	-	3,360,184
<b>Total Fund</b>	<b>235,892,757</b>	<b>-</b>	<b>-2,595,958</b>	<b>23,206,212</b>	<b>256,503,010</b>



**Financial Reconciliation**  
**Total Fund**  
as of December 31, 2023

Year To Date	Market Value 01/01/2023	Management Fees	Net Flows	Return On Investment	Market Value 12/31/2023
<b>Domestic Equity</b>					
Vanguard Inst'l Index Fund (VINIX)	34,668,004	-	-3,500,000	8,913,747	40,081,751
Vanguard Value Index (VIVIX)	14,189,986	-	-2,000,000	1,169,694	13,359,679
Vanguard Small-Cap 600 Index I (VSM SX)	11,501,932	-	-	1,838,712	13,340,645
Vanguard Mid-Cap 400 Index Fund I (VSPMX)	25,186,430	-	-2,000,000	4,005,317	27,191,747
Vanguard Growth Index (VIGIX)	9,754,505	-	-	4,563,267	14,317,772
<b>International Equity</b>					
Vanguard Intl Value (VTRIX)	4,359,758	-	-	704,030	5,063,789
Vanguard Intl Growth (VWILX)	3,193,010	-	-	472,887	3,665,897
Vanguard FTSE AW ex-US SC Index (VFSNX)	5,623,130	-	-	854,404	6,477,533
Vanguard Developed Markets Index (VTMNX)	9,174,392	-	-	1,636,614	10,811,007
Vanguard Emerging Markets Index (VEMIX)	10,707,303	-	-	983,435	11,690,738
<b>Fixed Income</b>					
Vanguard Short Term Bond Index (VBIRX)	3,795,614	-	-	185,147	3,980,762
Vanguard Total Bond Index (VBTIX)	41,986,723	-	-	2,400,903	44,387,626
Vanguard High Yield Bond Fund (VWEAX)	23,109,650	-	-	2,712,130	25,821,779
Vanguard International Bond (VTIFX)	7,801,035	-	-	690,719	8,491,754
Vanguard EM Bond (VEGBX)	7,786,237	-	-	1,074,641	8,860,878
<b>REIT</b>					
Vanguard Real Estate Index Fund (VGSNX)	12,424,512	-	-	1,468,588	13,893,100
Disbursement & MF Cash	39,388	-	1,550,081	116,902	1,706,370
<b>Total Fund Performance</b>	<b>225,301,609</b>	<b>-</b>	<b>-5,949,919</b>	<b>33,791,138</b>	<b>253,142,827</b>
NMA	1,198,200	-	2,161,984	-	3,360,184
<b>Total Fund</b>	<b>226,499,809</b>	<b>-</b>	<b>-3,787,936</b>	<b>33,791,138</b>	<b>256,503,010</b>



### Goals

- Maintain the actuarial soundness of the Plan in order to meet future obligations by preserving the inflation adjusted value of the Plan's assets after all investment expenses, administrative costs, benefit payments and refunds.
- Obtain an average annual rate of investment return equal to or greater than the actuarial assumed rate of 7.5% (net of fees), with an emphasis over a longer term (fifteen year) trailing period.

### Asset Allocation Ranges (Based on IPS Second Addendum)

Asset Class	Minimum	Target	Maximum
Large Cap Core	10%	15%	20%
Large Cap Value	0%	5%	10%
Large Cap Growth	0%	5%	10%
Mid Cap Core	5%	10%	15%
Small Cap Core	0%	5%	10%
International Developed Markets	5%	7.5%	15%
International Emerging Markets	0%	5%	10%
All World ex US Small Cap	0%	2.5%	5%
Aggregate Fixed Income	10%	20%	30%
Short-Term Fixed Income	0%	2.5%	5%
High Yield Fixed Income	5%	10%	15%
Non-US Fixed Income	0%	5%	10%
Real Estate	0%	5%	10%
Cash	0%	2.5%	5%

### Rebalancing Policy

The Investment Consultant will monitor the asset allocation policy and shall recommend any necessary rebalancing on a quarterly basis, or more frequently. At each quarterly Board meeting, the Investment Consultant will provide the Plan's actual and target allocations (including ranges). Upon any Board approval, the Investment Consultant will initiate rebalancing.

### Other Portfolio Guidelines and Restrictions

- Additional investment policies and guidelines are contained in the formal Investment Policy Statement.

### Portfolio Guidelines and Restrictions

#### Equity Guidelines

- Equity investment manager of a separate account should diversify their portfolio in an attempt to minimize the impact of a substantial loss in any specific sector, industry or company.
- No more than 5% of each manager's equity holdings shall be invested in the securities of any one company (valued at market).
- The economic sector weightings shall not exceed the greater of two and half times the appropriate benchmark, valued at market, or 15% of the equity portfolio.
- The market for individual security holdings in the equity portfolio shall be liquid enough to allow for easy monetization.

#### Fixed Income Guidelines

- A fixed income investment manager of a separate account should diversify their portfolio in an attempt to minimize the adverse effects of interest rate fluctuations and default risk.
- No more than 5% of the fixed income portfolio in any one issuer, excluding direct and/or indirect obligations of the US Government.
- The market for individual security holdings in the fixed income shall be liquid enough to allow for easy monetization.
- The minimum quality rating for any fixed income security is an "investment grade" rating as determined by at least one nationally recognized credit ratings agency. Bond held in the fixed income portfolio must be rated investment grade ("Baa/BBB") or better by at least one agency, with the exception of securities held in a high-yield bond fund.
- The duration of the bonds held in the portfolios are at the discretion of the investment manager(s). However, the effective duration of the fixed income security should be within +/-20% of the index.

#### Cash & Equivalents Restrictions

- Commercial paper must be rated A-1 or P-1 by at least one nationally recognized credit rating agency.

#### Permissible Investments

- Permissible investments include those identified in the Plan's Asset Allocation Policy, subject to state statute and local ordinance.

#### Prohibited Investments

- Prohibited investments include those not specifically identified in the Plan's Asset Allocation Policy without prior approval of the Board, upon recommendation of the Investment Consultant.



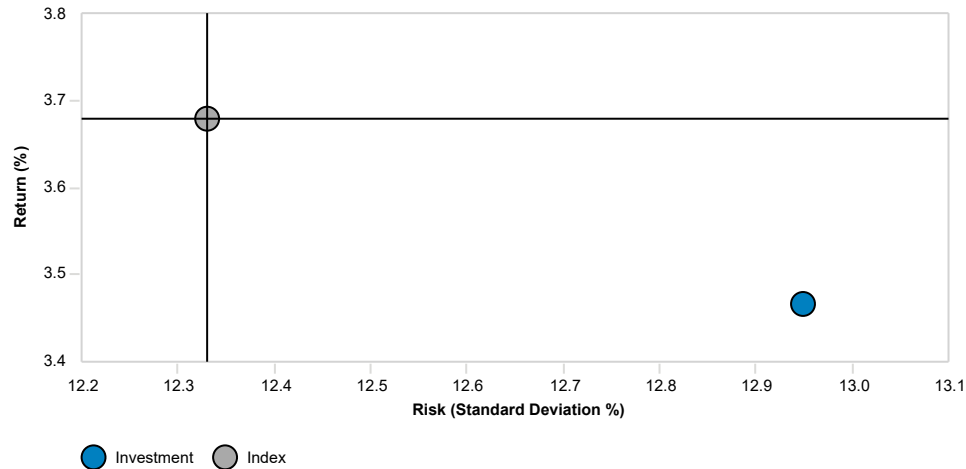
### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	3.47	12.95	0.16	104.35	7	106.39	5
Index	3.68	12.33	0.18	100.00	7	100.00	5

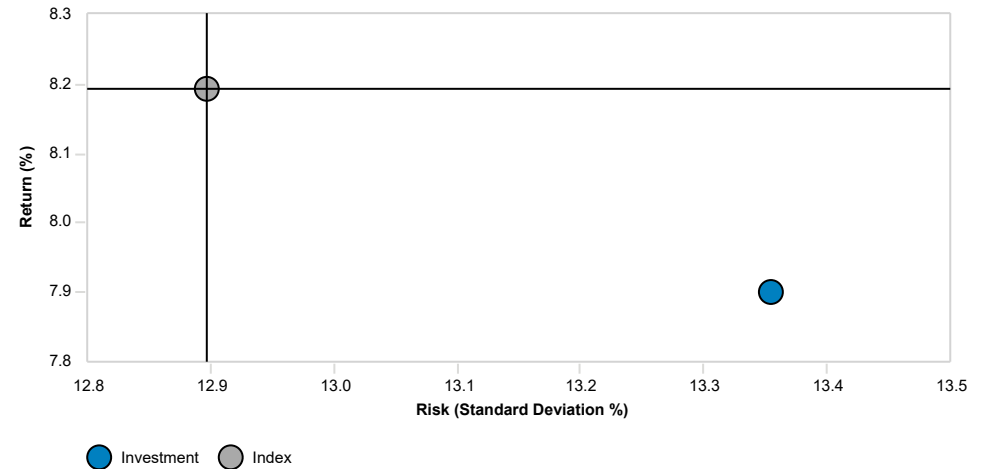
### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	7.90	13.35	0.50	102.33	14	105.31	6
Index	8.19	12.90	0.53	100.00	14	100.00	6

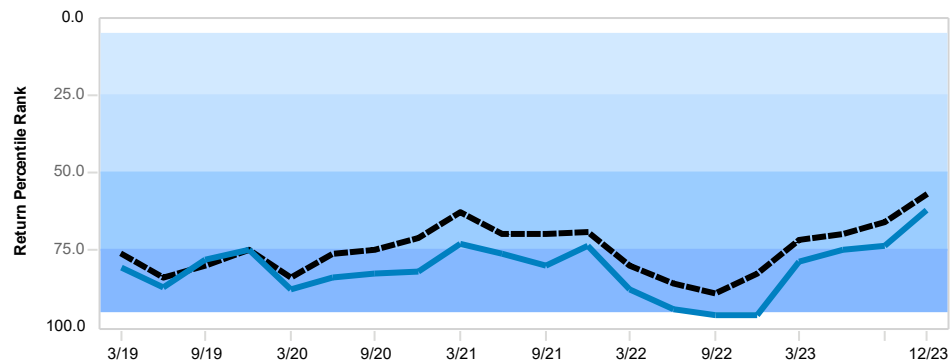
### Risk and Return 3 Years



### Risk and Return 5 Years

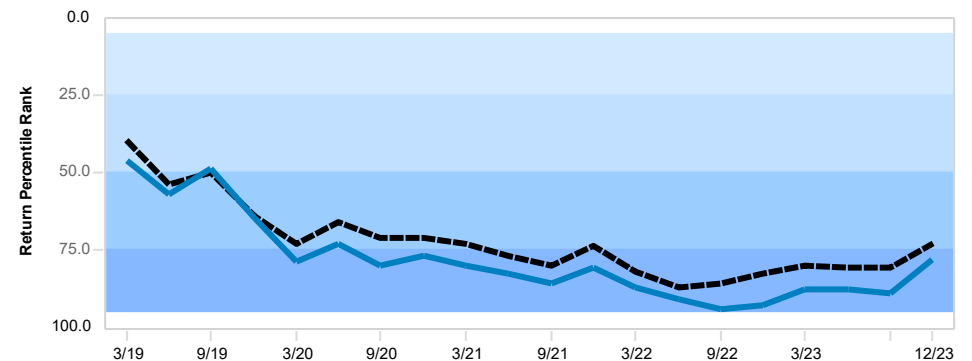


### 3 Year Rolling Percentile Rank All Public Plans-Total Fund



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	0 (0%)	6 (30%)	14 (70%)
Index	20	0 (0%)	0 (0%)	11 (55%)	9 (45%)

### 5 Year Rolling Percentile Rank All Public Plans-Total Fund

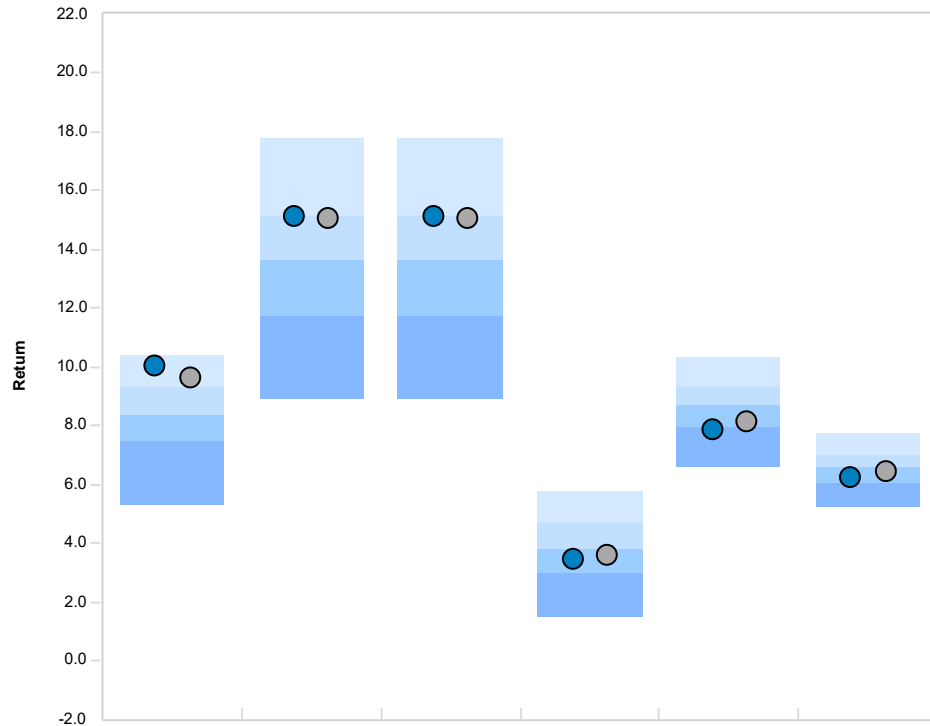


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	2 (10%)	3 (15%)	15 (75%)
Index	20	0 (0%)	2 (10%)	9 (45%)	9 (45%)

Does not include Non-Measured Assets (NMA).

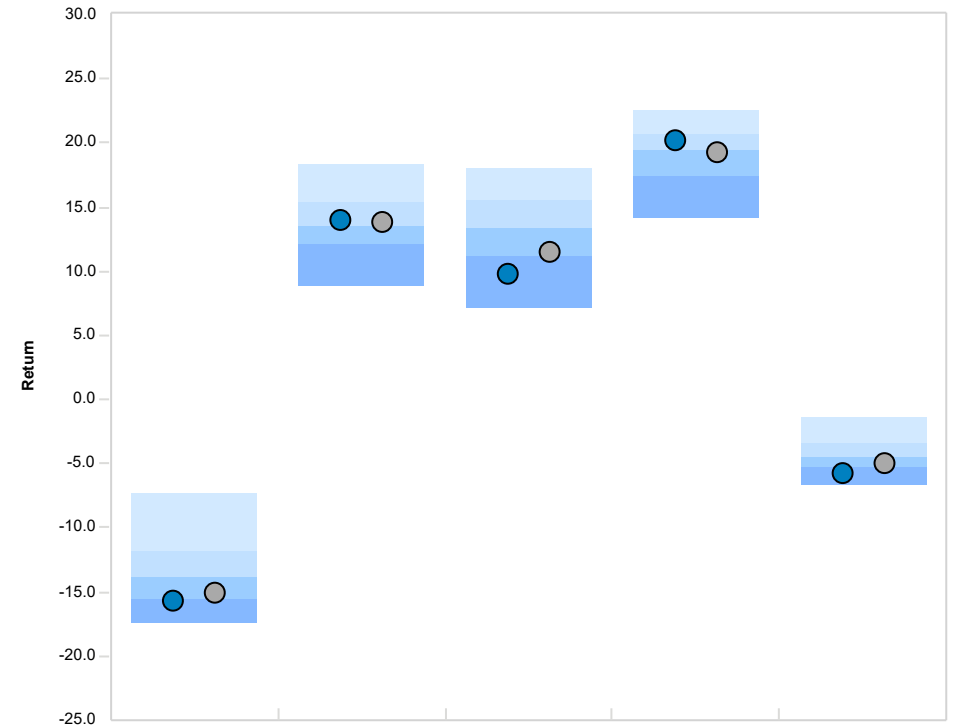


Plan Sponsor Peer Group Analysis vs. All Public Plans-Total Fund



	QTR	YTD	1 YR	3 YR	5 YR	10 YR
Investment	10.06 (10)	15.13 (26)	15.13 (26)	3.47 (62)	7.90 (78)	6.24 (68)
Index	9.66 (16)	15.06 (27)	15.06 (27)	3.64 (57)	8.16 (73)	6.45 (57)
Median	8.34	13.66	13.66	3.84	8.73	6.59

Plan Sponsor Peer Group Analysis vs. All Public Plans-Total Fund



	2022	2021	2020	2019	2018
Investment	-15.61 (76)	14.00 (44)	9.84 (87)	20.21 (37)	-5.76 (86)
Index	-15.03 (68)	13.87 (47)	11.44 (73)	19.29 (52)	-4.94 (64)
Median	-13.84	13.61	13.34	19.37	-4.46

Financial Reconciliation Since Inception Ending December 31, 2023

	Market Value 04/01/2001	Net Flows	Return On Investment	Market Value 12/31/2023
Investment	59,528,253	-30,350,083	223,964,656	253,142,827

Comparative Performance

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	-3.29	3.29	4.72	6.81	-5.15	-11.85
Index	-2.94	3.29	4.60	6.41	-4.91	-11.37



### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	9.96	17.29	0.52	99.94	8	100.07	4
Index	10.00	17.29	0.52	100.00	8	100.00	4

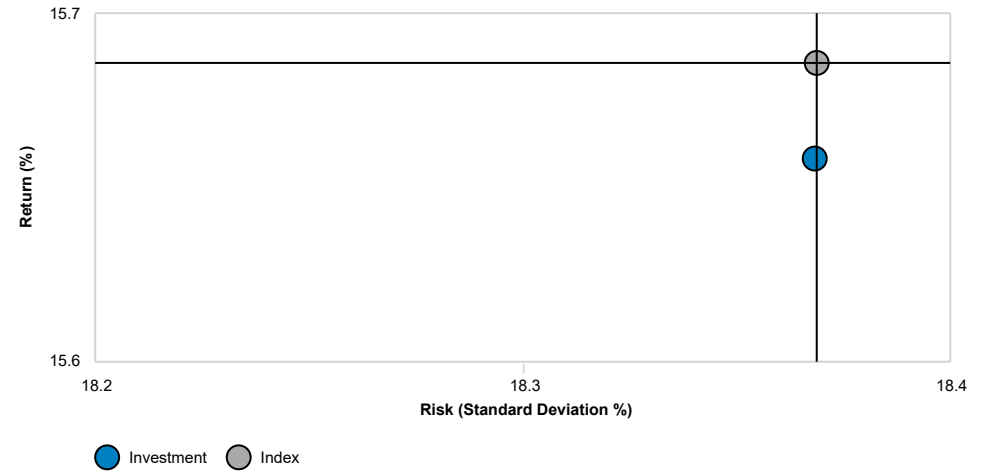
### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	15.66	18.37	0.79	99.96	15	100.05	5
Index	15.69	18.37	0.79	100.00	15	100.00	5

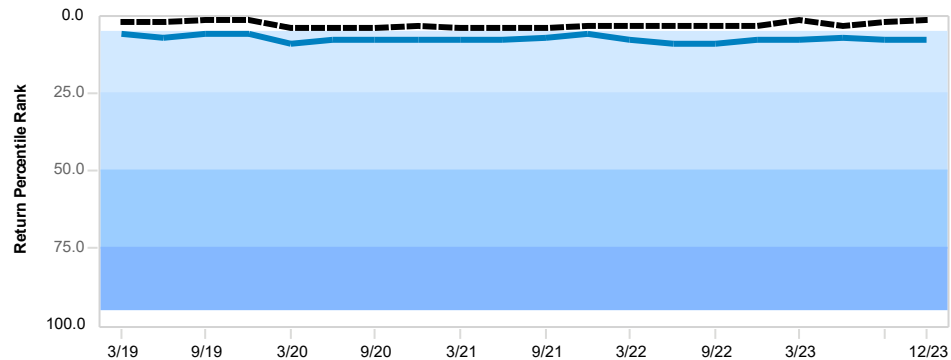
### Risk and Return 3 Years



### Risk and Return 5 Years

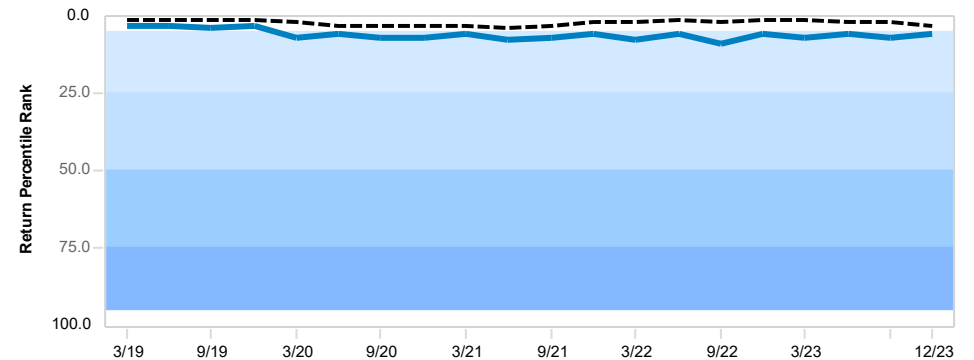


### 3 Year Rolling Percentile Rank IM S&P 500 Index (MF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	20 (100%)	0 (0%)	0 (0%)	0 (0%)
Index	20	20 (100%)	0 (0%)	0 (0%)	0 (0%)

### 5 Year Rolling Percentile Rank IM S&P 500 Index (MF)

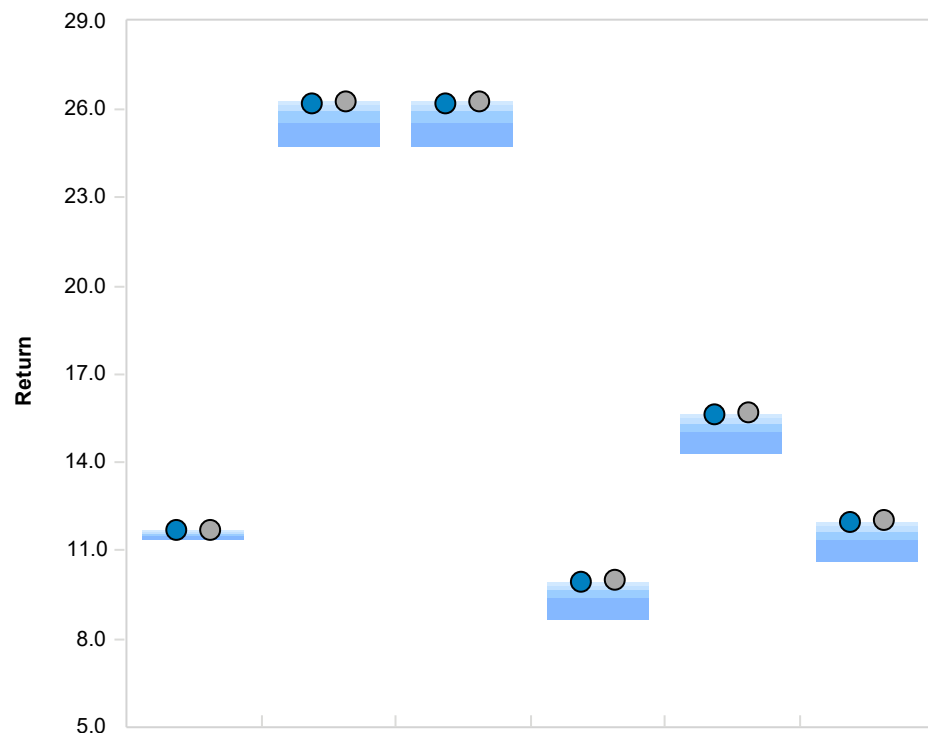


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	20 (100%)	0 (0%)	0 (0%)	0 (0%)
Index	20	20 (100%)	0 (0%)	0 (0%)	0 (0%)

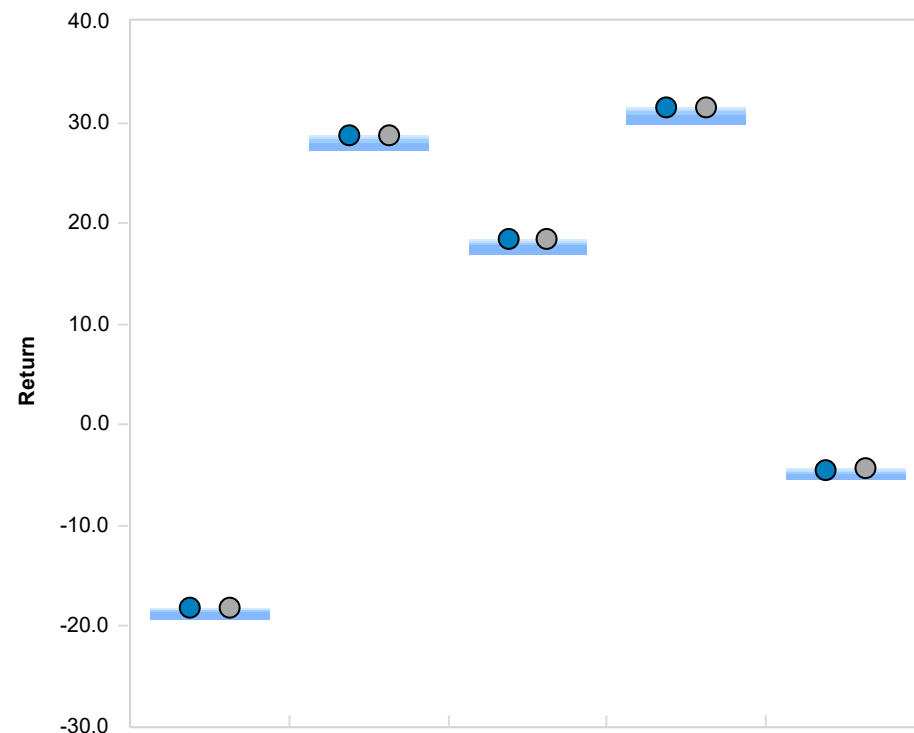
Inception date for VINIX is 12/2020. Manager returns for VINIX have been used for this report.



**Peer Group Analysis - IM S&P 500 Index (MF)**



**Peer Group Analysis - IM S&P 500 Index (MF)**



**Financial Reconciliation Since Inception Ending December 31, 2023**

No data found.

**Comparative Performance**

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	-3.28 (16)	8.73 (15)	7.49 (13)	7.55 (15)	-4.89 (16)	-16.11 (14)
Index	-3.27 (12)	8.74 (8)	7.50 (5)	7.56 (8)	-4.88 (5)	-16.10 (7)
Median	-3.34	8.66	7.43	7.47	-4.94	-16.17

Inception date for VINIX is 12/2020. Manager returns for VINIX have been used for this report.



### Fund Information

Fund Name :	Vanguard Institutional Index Fund: Vanguard Institutional Index Fund; Institutional Shares	Portfolio Assets :	\$256,299 Million
Fund Family :	Vanguard	Portfolio Manager :	Louie/Birkett
Ticker :	VINIX	PM Tenure :	2017--2023
Inception Date :	07/31/1990	Fund Style :	IM S&P 500 Index (MF)
Fund Assets :	\$108,748 Million	Style Benchmark :	S&P 500 Index
Portfolio Turnover :	3%		

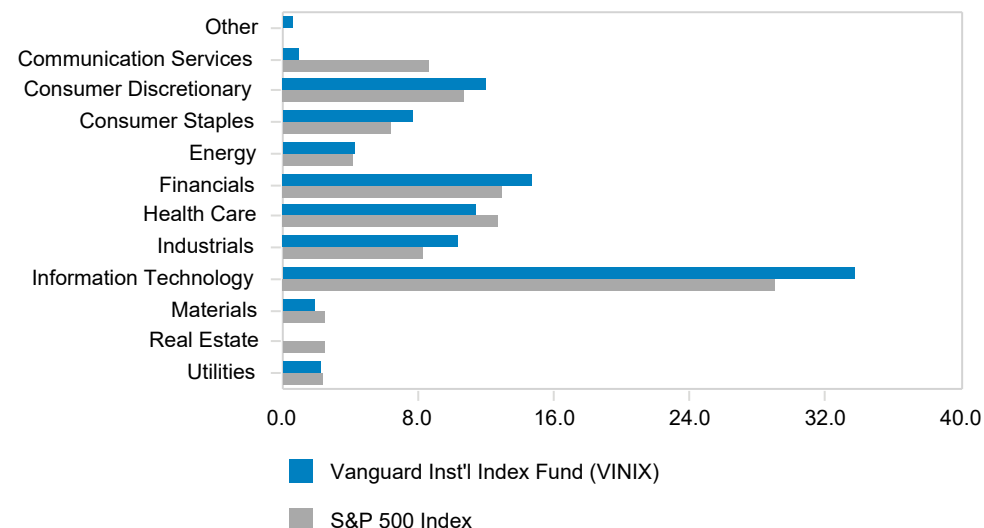
### Portfolio Characteristics As of 11/30/2023

	Portfolio	Benchmark
Total Securities	505	503
Avg. Market Cap	688,169,493,191	717,545,563,985
Price/Earnings (P/E)	31.25	22.99
Price/Book (P/B)	9.86	4.38
Dividend Yield	1.93	1.56
Annual EPS	3.17	7.75
5 Yr EPS	16.39	17.15
3 Yr EPS Growth	18.66	N/A
Beta (3 Years, Monthly)	1.00	1.00

### Top Ten Securities As of 11/30/2023

Microsoft Corp ORD	7.3 %
Apple Inc ORD	7.3 %
Amazon.com Inc ORD	3.5 %
NVIDIA Corp ORD	3.0 %
Alphabet Inc Class A ORD	2.1 %
Meta Platforms Inc ORD	1.9 %
Alphabet Inc Class C ORD	1.8 %
Tesla Inc ORD	1.7 %
Berkshire Hathaway Inc ORD	1.7 %
UnitedHealth Group Inc ORD	1.3 %

### Sector Weights As of 11/30/2023



### Region (%)

No data found.

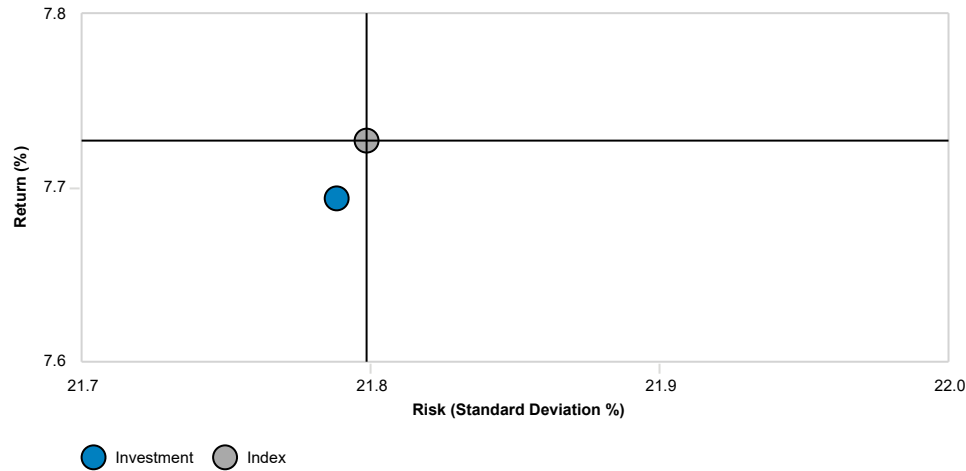
### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	7.69	21.79	0.35	99.91	7	100.01	5
Index	7.73	21.80	0.36	100.00	7	100.00	5

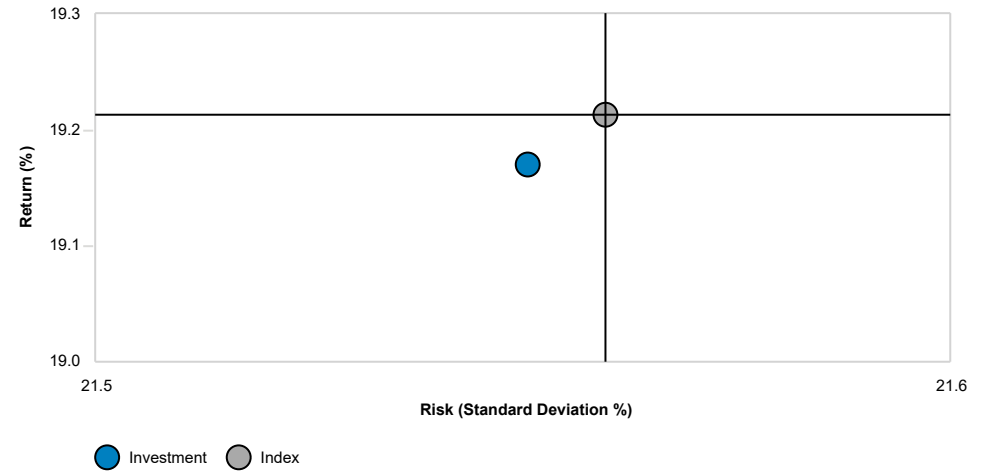
### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	19.17	21.55	0.84	99.91	14	100.02	6
Index	19.21	21.56	0.84	100.00	14	100.00	6

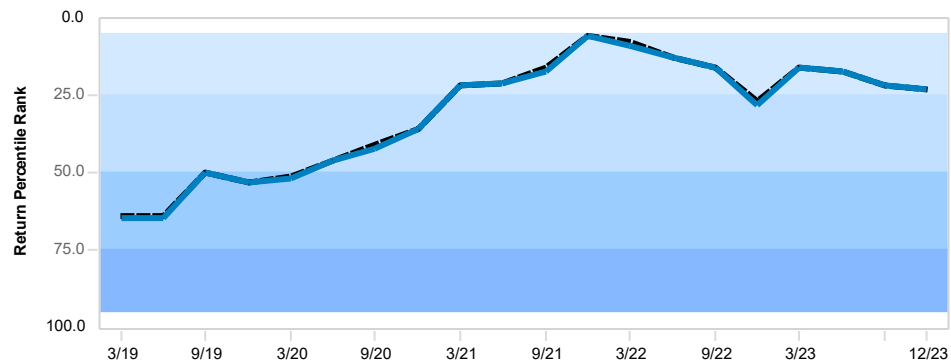
### Risk and Return 3 Years



### Risk and Return 5 Years

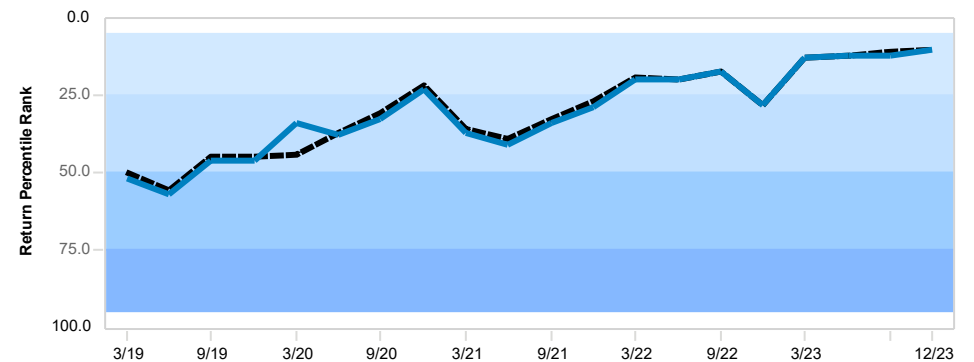


### 3 Year Rolling Percentile Rank IM U.S. Large Cap Growth Equity (MF)



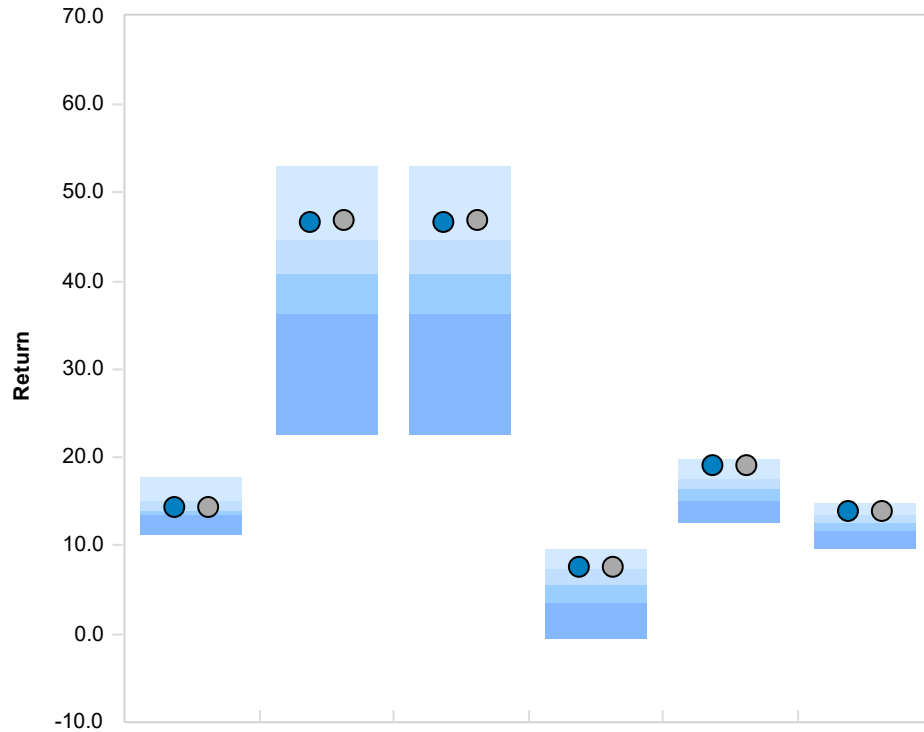
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	11 (55%)	5 (25%)	4 (20%)	0 (0%)
Index	20	11 (55%)	5 (25%)	4 (20%)	0 (0%)

### 5 Year Rolling Percentile Rank IM U.S. Large Cap Growth Equity (MF)

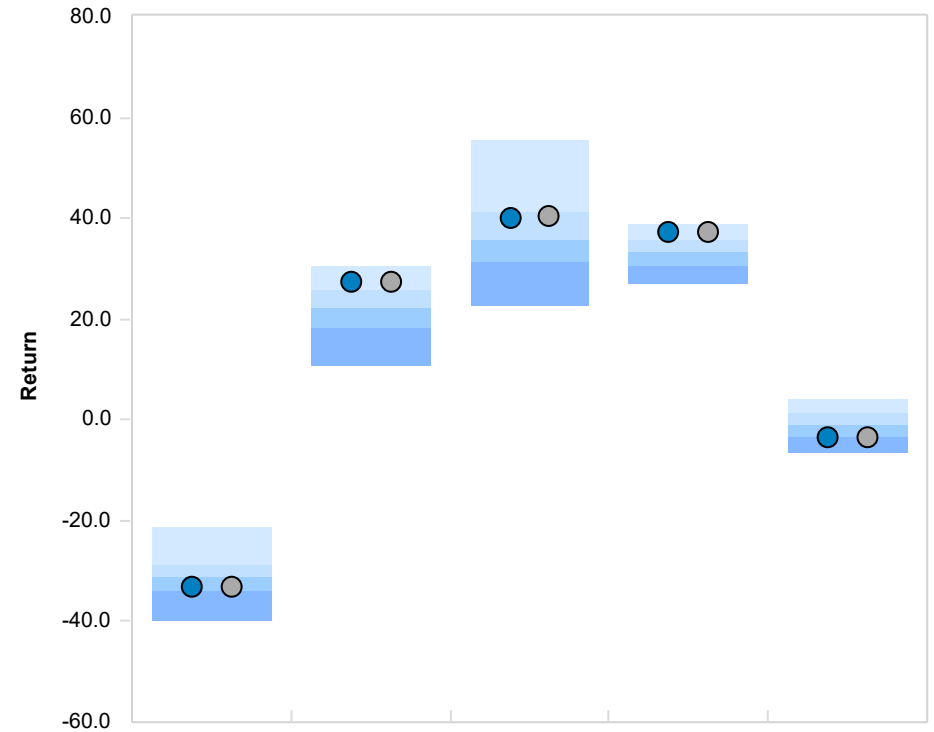


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	8 (40%)	10 (50%)	2 (10%)	0 (0%)
Index	20	8 (40%)	11 (55%)	1 (5%)	0 (0%)

**Peer Group Analysis - IM U.S. Large Cap Growth Equity (MF)**



**Peer Group Analysis - IM U.S. Large Cap Growth Equity (MF)**



**Financial Reconciliation Since Inception Ending December 31, 2023**

	Market Value 05/01/2010	Net Flows	Return On Investment	Market Value 12/31/2023
Investment	16,642,537	-27,644,975	25,320,210	14,317,772

**Comparative Performance**

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	-3.69	13.61	17.25	-0.15	-3.79	-22.41
Index	-3.68	13.63	17.27	-0.15	-3.78	-22.42



December 31, 2023

**Fund Information**

Fund Name : Vanguard Index Funds: Vanguard Growth Index Fund; Institutional Class Shares  
Fund Family : Vanguard  
Ticker : VIGIX  
Inception Date : 05/14/1998  
Fund Assets : \$26,837 Million  
Portfolio Turnover : 5%

Portfolio Assets : \$198,749 Million  
Portfolio Manager : O'Reilly/Nejman  
PM Tenure : 2000--2016  
Fund Style : IM U.S. Large Cap Growth Equity (MF)  
Style Benchmark : CRSP U.S. Large Cap Growth TR Index

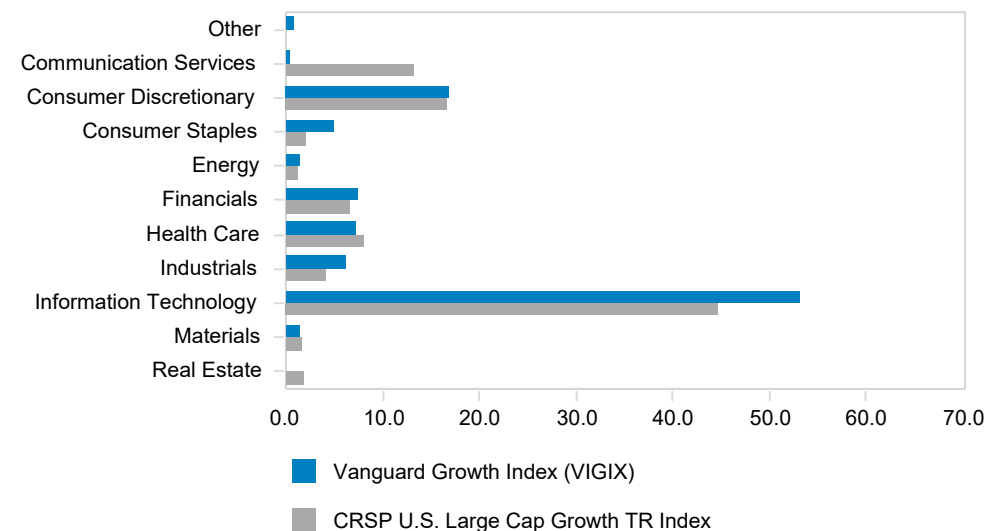
**Portfolio Characteristics As of 11/30/2023**

	Portfolio	Benchmark
Total Securities	223	220
Avg. Market Cap	-	1,128,368,970,709
Price/Earnings (P/E)	39.77	35.38
Price/Book (P/B)	13.99	9.04
Dividend Yield	0.92	0.59
Annual EPS	0.13	7.04
5 Yr EPS	19.67	21.49
3 Yr EPS Growth	19.58	N/A
Beta (5 Years, Monthly)	1.00	1.00

**Top Ten Securities As of 11/30/2023**

Apple Inc ORD	13.0 %
Microsoft Corp ORD	13.0 %
Amazon.com Inc ORD	6.2 %
NVIDIA Corp ORD	5.1 %
Alphabet Inc Class A ORD	3.6 %
Meta Platforms Inc ORD	3.3 %
Alphabet Inc Class C ORD	3.0 %
Tesla Inc ORD	3.0 %
Eli Lilly and Co ORD	2.3 %
Visa Inc ORD	1.8 %

**Sector Weights As of 11/30/2023**



**Region (%)**

No data found.

Statistics provided by Lipper. Most recent available data shown.



### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	10.62	15.69	0.59	100.03	7	100.02	5
Index	10.61	15.67	0.59	100.00	7	100.00	5

### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	11.74	17.71	0.61	100.03	14	100.01	6
Index	11.74	17.70	0.61	100.00	14	100.00	6

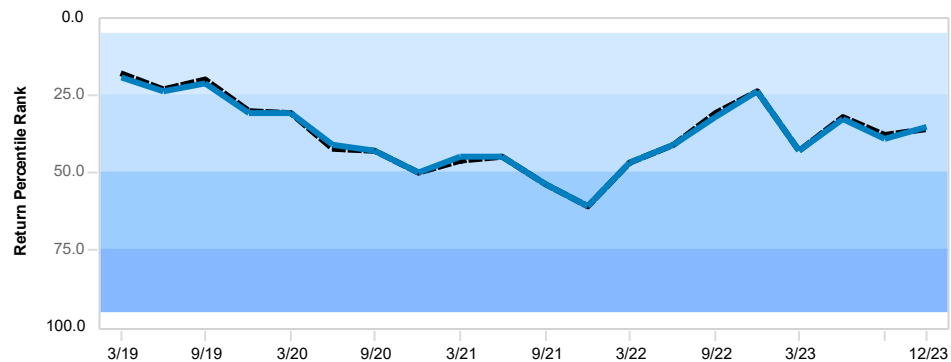
### Risk and Return 3 Years



### Risk and Return 5 Years

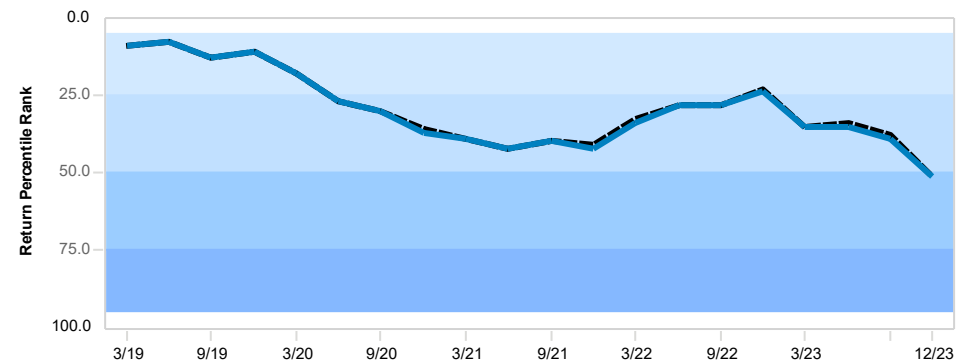


### 3 Year Rolling Percentile Rank IM U.S. Large Cap Value Equity (MF)



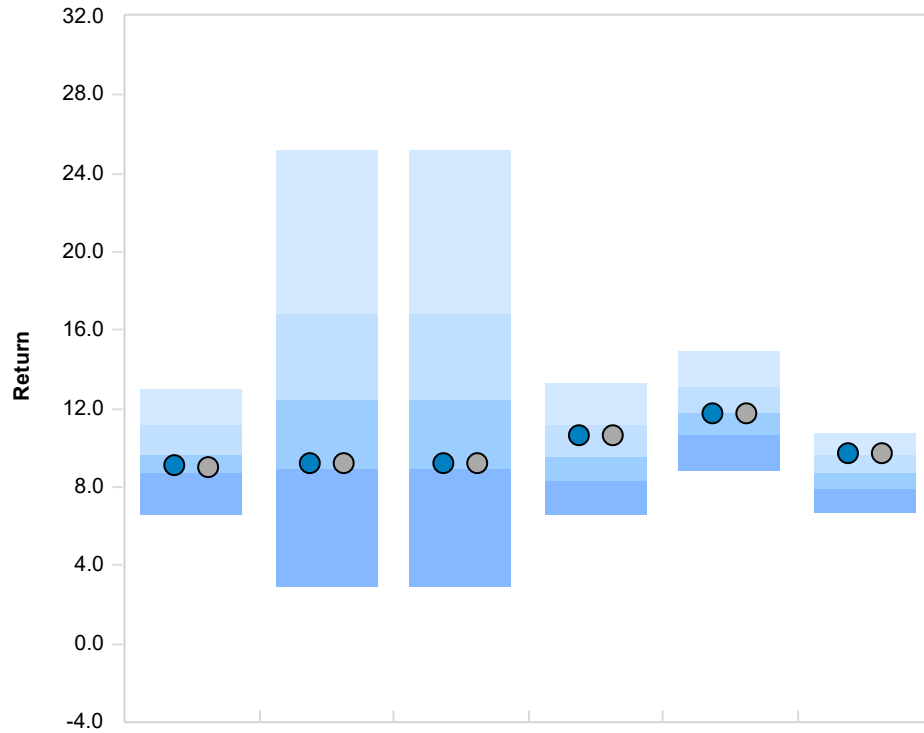
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	4 (20%)	14 (70%)	2 (10%)	0 (0%)
Index	20	4 (20%)	14 (70%)	2 (10%)	0 (0%)

### 5 Year Rolling Percentile Rank IM U.S. Large Cap Value Equity (MF)

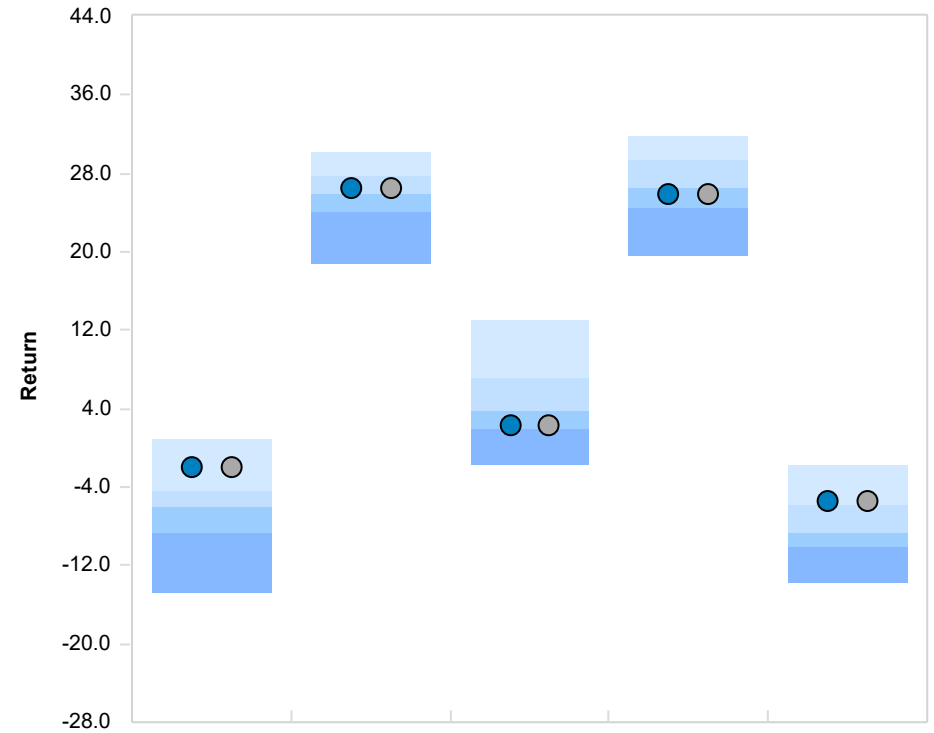


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	6 (30%)	13 (65%)	1 (5%)	0 (0%)
Index	20	6 (30%)	13 (65%)	1 (5%)	0 (0%)

**Peer Group Analysis - IM U.S. Large Cap Value Equity (MF)**



**Peer Group Analysis - IM U.S. Large Cap Value Equity (MF)**



**Financial Reconciliation Since Inception Ending December 31, 2023**

	Market Value 07/01/2009	Net Flows	Return On Investment	Market Value 12/31/2023
Investment	1,021,656	-2,963,564	15,301,587	13,359,679

**Comparative Performance**

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	-2.33	3.57	-1.00	14.67	-5.74	-10.27
Index	-2.33	3.57	-1.00	14.68	-5.72	-10.27





# Fund Information

Fund Name : Vanguard Index Funds: Vanguard Value Index Fund; Institutional Shares  
Fund Family : Vanguard  
Ticker : VIVIX  
Inception Date : 07/02/1998  
Fund Assets : \$15,322 Million  
Portfolio Turnover : 5%

Portfolio Assets : \$155,111 Million  
Portfolio Manager : O'Reilly/Nejman  
PM Tenure : 1998--2016  
Fund Style : IM U.S. Large Cap Value Equity (MF)  
Style Benchmark : CRSP U.S. Large Cap Value TR Index

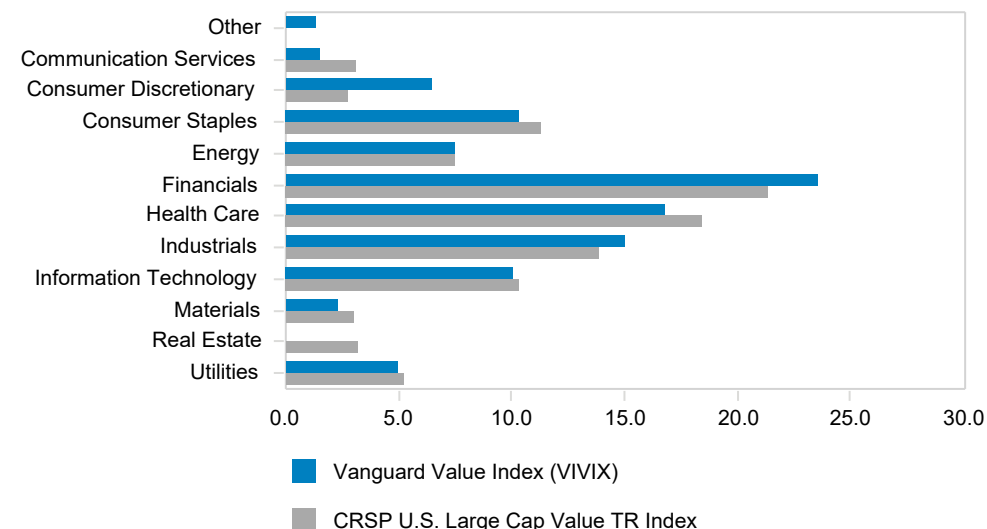
## Portfolio Characteristics As of 11/30/2023

	Portfolio	Benchmark
Total Securities	344	340
Avg. Market Cap	164,749,848,993	178,223,607,278
Price/Earnings (P/E)	21.15	16.13
Price/Book (P/B)	5.03	2.70
Dividend Yield	2.73	2.66
Annual EPS	6.02	-161.02
5 Yr EPS	13.08	12.17
3 Yr EPS Growth	17.45	N/A
Beta (5 Years, Monthly)	1.00	1.00

## Top Ten Securities As of 11/30/2023

Berkshire Hathaway Inc ORD	3.8 %
UnitedHealth Group Inc ORD	3.0 %
JPMorgan Chase & Co ORD	2.6 %
Exxon Mobil Corp ORD	2.4 %
Broadcom Inc ORD	2.4 %
Johnson & Johnson ORD	2.2 %
Procter & Gamble Co ORD	2.1 %
Merck & Co Inc ORD	1.5 %
Chevron Corp ORD	1.5 %
Abbvie Inc ORD	1.5 %

## Sector Weights As of 11/30/2023



## Region (%)

No data found.

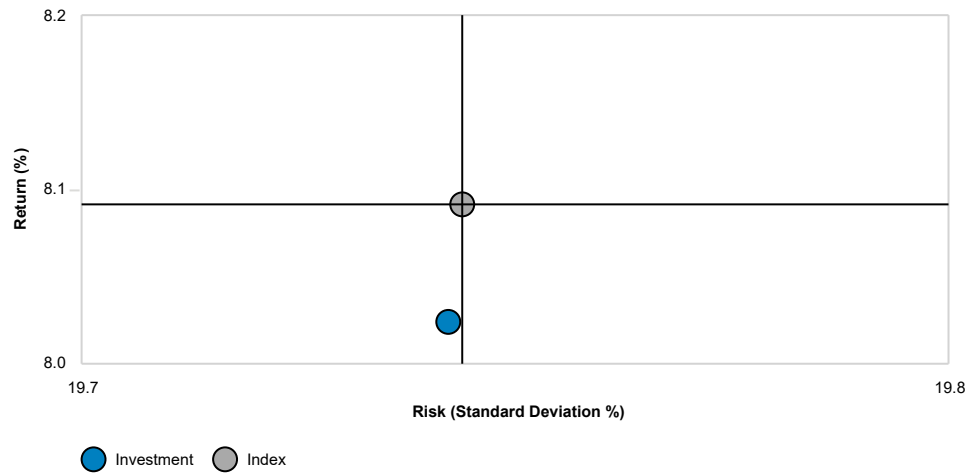
### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	8.02	19.74	0.38	99.89	7	100.11	5
Index	8.09	19.74	0.39	100.00	7	100.00	5

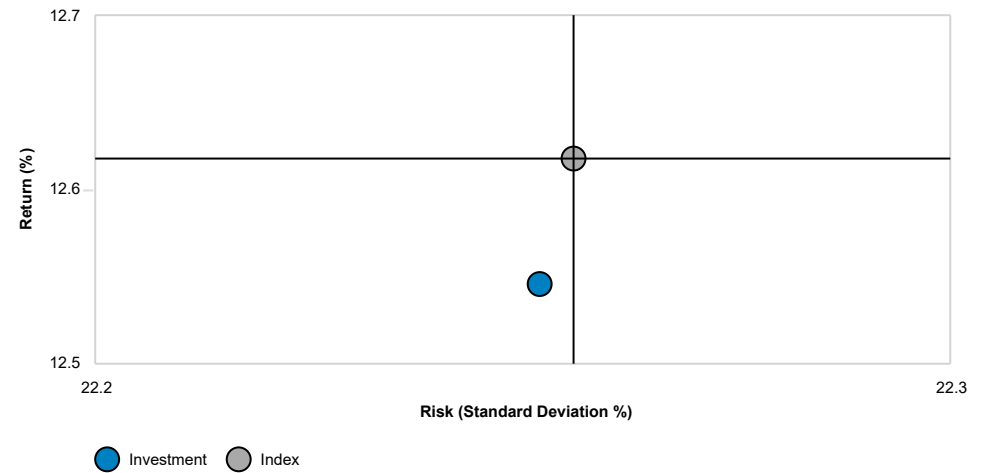
### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	12.55	22.25	0.56	99.88	13	100.09	7
Index	12.62	22.26	0.56	100.00	13	100.00	7

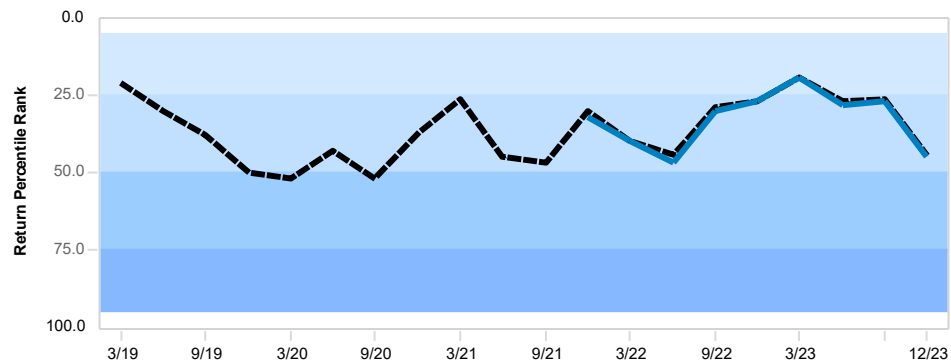
### Risk and Return 3 Years



### Risk and Return 5 Years

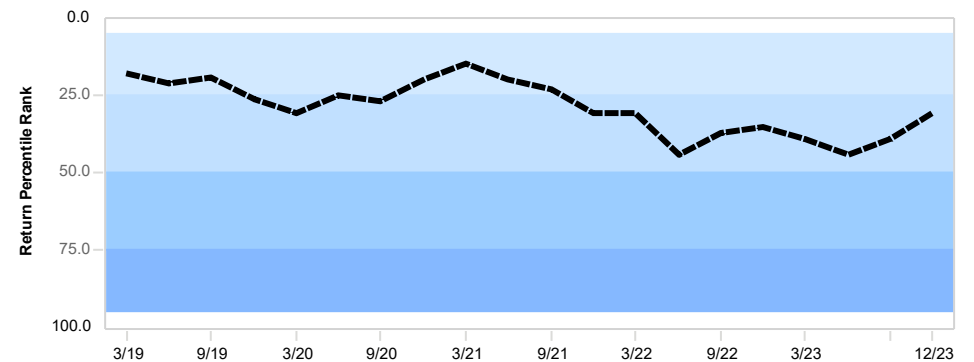


### 3 Year Rolling Percentile Rank IM U.S. Mid Cap Core Equity (MF)



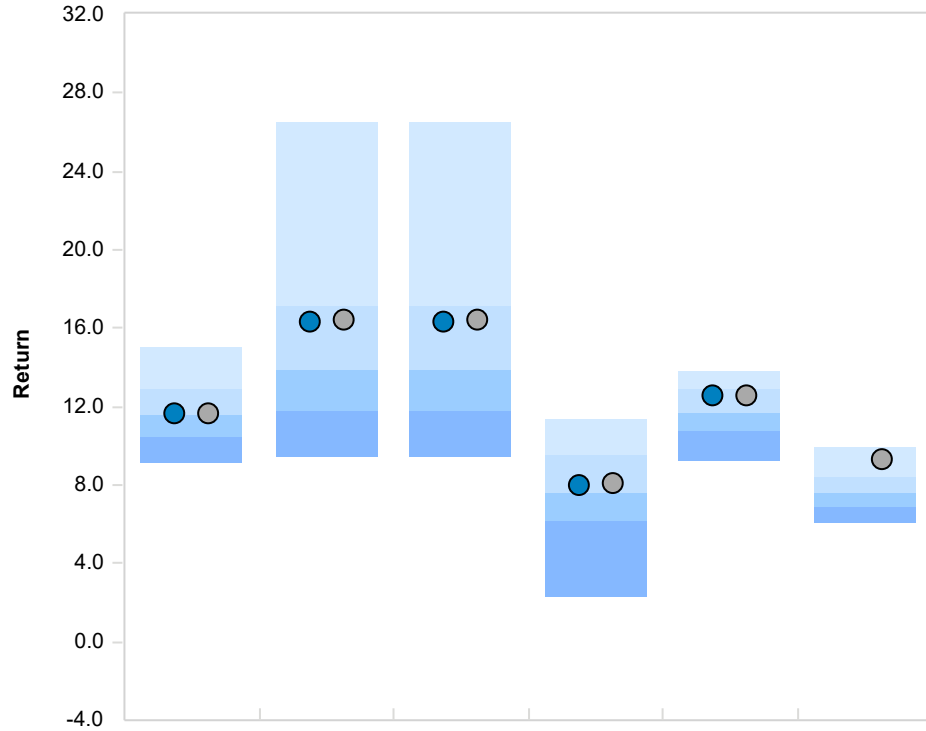
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	9	1 (11%)	8 (89%)	0 (0%)	0 (0%)
Index	20	2 (10%)	16 (80%)	2 (10%)	0 (0%)

### 5 Year Rolling Percentile Rank IM U.S. Mid Cap Core Equity (MF)

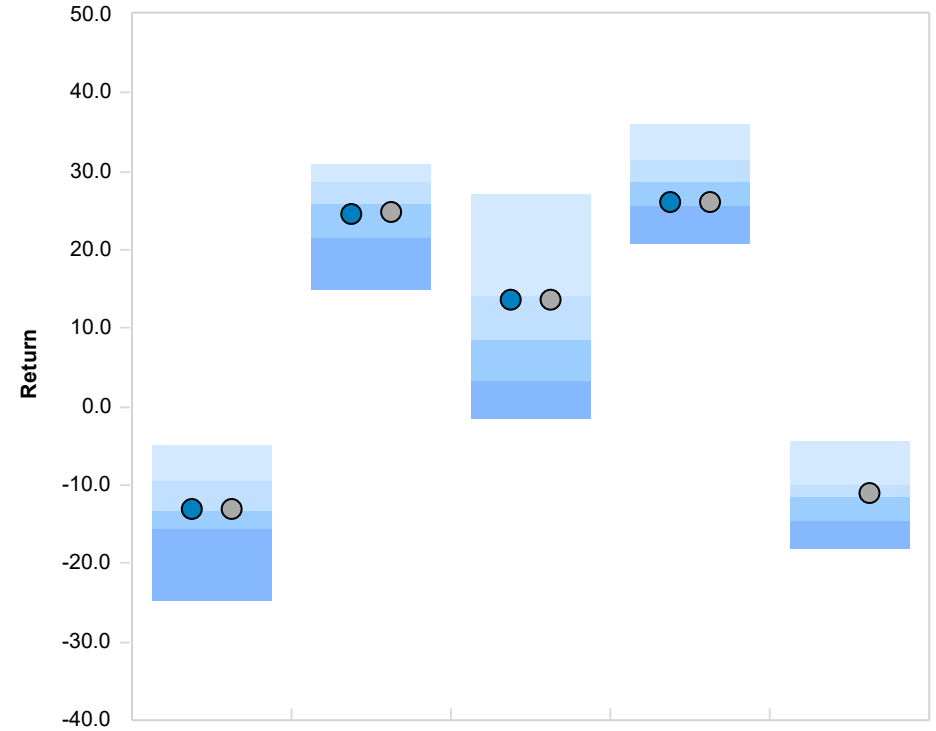


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	1	0 (0%)	1 (100%)	0 (0%)	0 (0%)
Index	20	8 (40%)	12 (60%)	0 (0%)	0 (0%)

**Peer Group Analysis - IM U.S. Mid Cap Core Equity (MF)**



**Peer Group Analysis - IM U.S. Mid Cap Core Equity (MF)**



**Financial Reconciliation Since Inception Ending December 31, 2023**

	Market Value 12/01/2018	Net Flows	Return On Investment	Market Value 12/31/2023
Investment	21,384,601	-6,500,000	12,307,145	27,191,747

**Comparative Performance**

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	-4.22 (51)	4.83 (39)	3.79 (30)	10.77 (35)	-2.46 (13)	-15.43 (77)
Index	-4.20 (49)	4.85 (38)	3.81 (30)	10.78 (35)	-2.46 (13)	-15.42 (77)
Median	-4.22	4.64	2.27	9.65	-4.33	-13.63



December 31, 2023

### Fund Information

Fund Name : Vanguard Admiral Funds: Vanguard S&P Mid-Cap 400 Index Fund; Institutional Shares  
Fund Family : Vanguard  
Ticker : VSPMX  
Inception Date : 12/15/2010  
Fund Assets : \$1,388 Million  
Portfolio Turnover : 14%

Portfolio Assets : \$3,201 Million  
Portfolio Manager : Khan/Narzikul  
PM Tenure : 2017--2023  
Fund Style : IM S&P Midcap 400 Index Funds (MF)  
Style Benchmark : S&P MidCap 400 Index

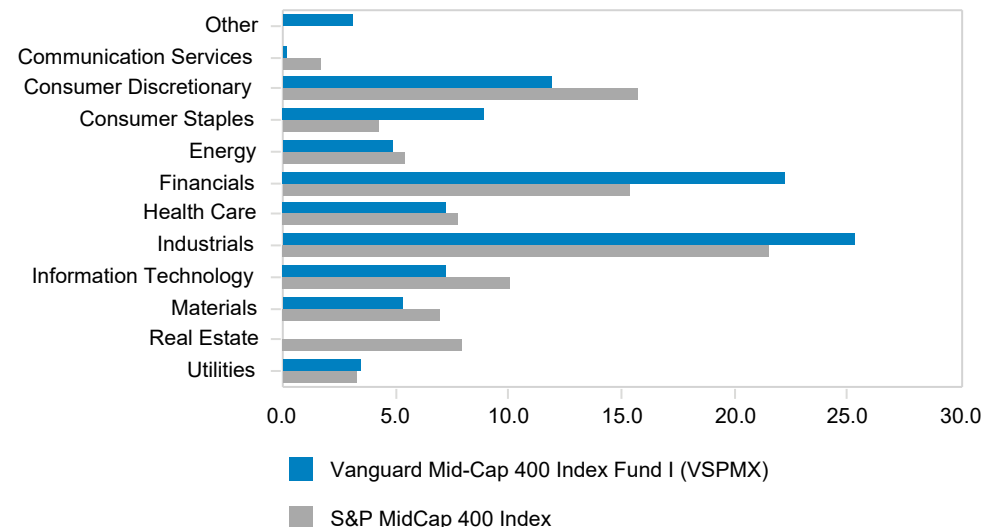
### Portfolio Characteristics As of 11/30/2023

	Portfolio	Benchmark
Total Securities	403	401
Avg. Market Cap	7,764,903,220	7,622,940,113
Price/Earnings (P/E)	24.53	14.79
Price/Book (P/B)	4.29	2.54
Dividend Yield	2.54	1.76
Annual EPS	20.40	5.63
5 Yr EPS	16.62	12.58
3 Yr EPS Growth	22.05	N/A
Beta (5 Years, Monthly)	1.00	1.00

### Top Ten Securities As of 11/30/2023

Deckers Outdoor Corp ORD	0.7 %
Builders FirstSource Inc ORD	0.7 %
Reliance Steel & Aluminum Co ORD	0.7 %
Jabil Inc ORD	0.7 %
GoDaddy Inc ORD	0.6 %
Carlisle Companies Inc ORD	0.6 %
Manhattan Associates Inc ORD	0.6 %
Graco Inc ORD	0.6 %
WP Carey Inc ORD	0.6 %
RPM International Inc ORD	0.6 %

### Sector Weights As of 11/30/2023



### Region (%)

No data found.

### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	7.21	20.98	0.33	99.89	7	100.13	5
Index	7.28	20.97	0.34	100.00	7	100.00	5

### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	11.01	23.98	0.48	100.00	13	100.07	7
Index	11.03	23.98	0.48	100.00	13	100.00	7

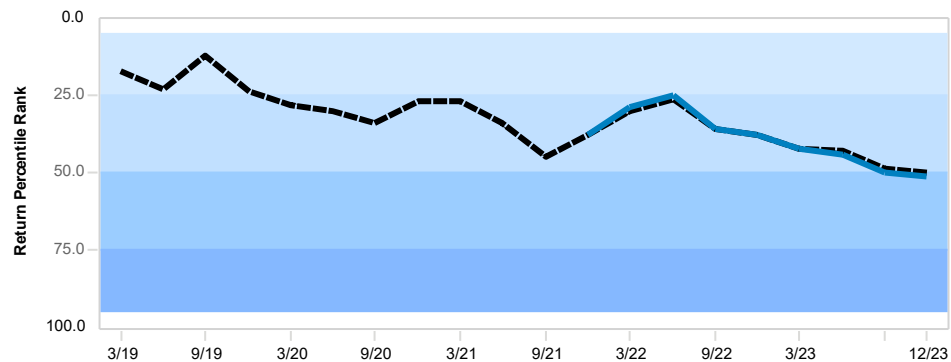
### Risk and Return 3 Years



### Risk and Return 5 Years

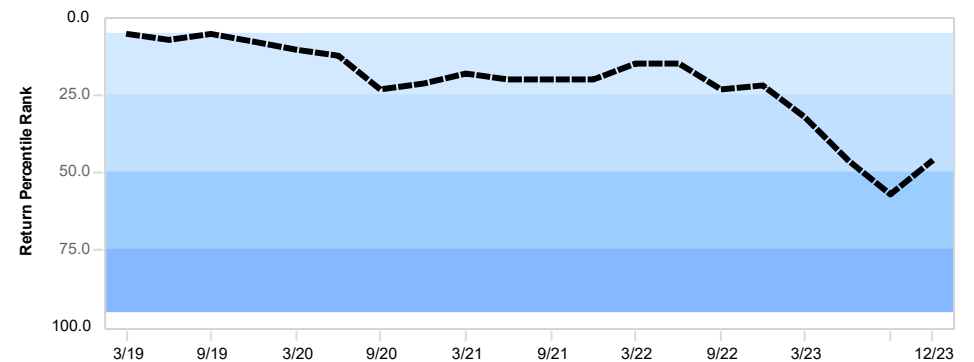


### 3 Year Rolling Percentile Rank IM U.S. Small Cap Core Equity (MF)



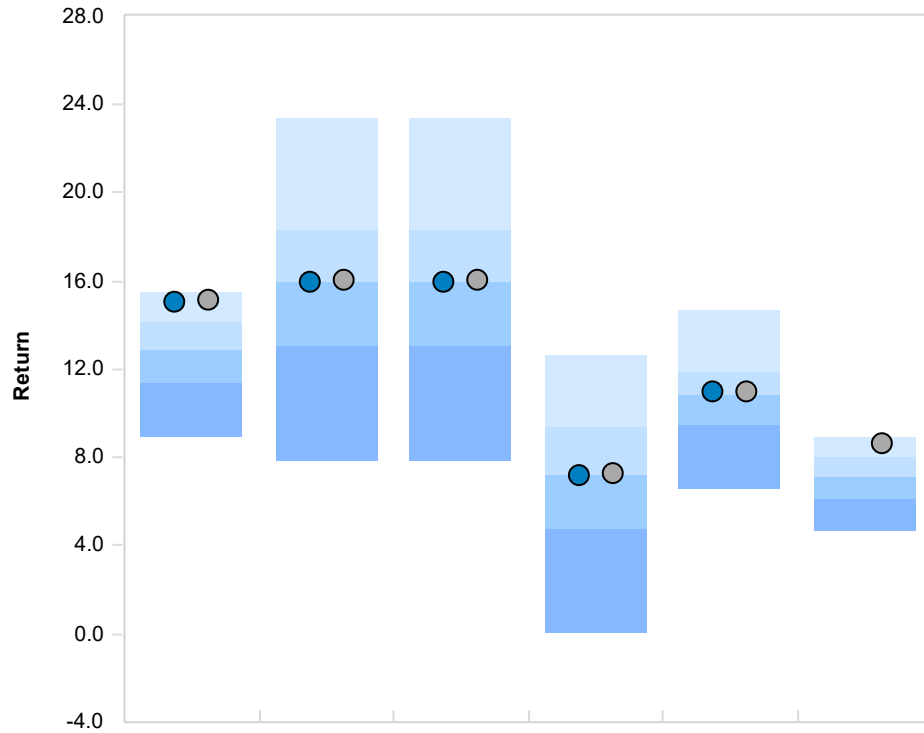
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	9	1 (11%)	7 (78%)	1 (11%)	0 (0%)
Index	20	4 (20%)	16 (80%)	0 (0%)	0 (0%)

### 5 Year Rolling Percentile Rank IM U.S. Small Cap Core Equity (MF)

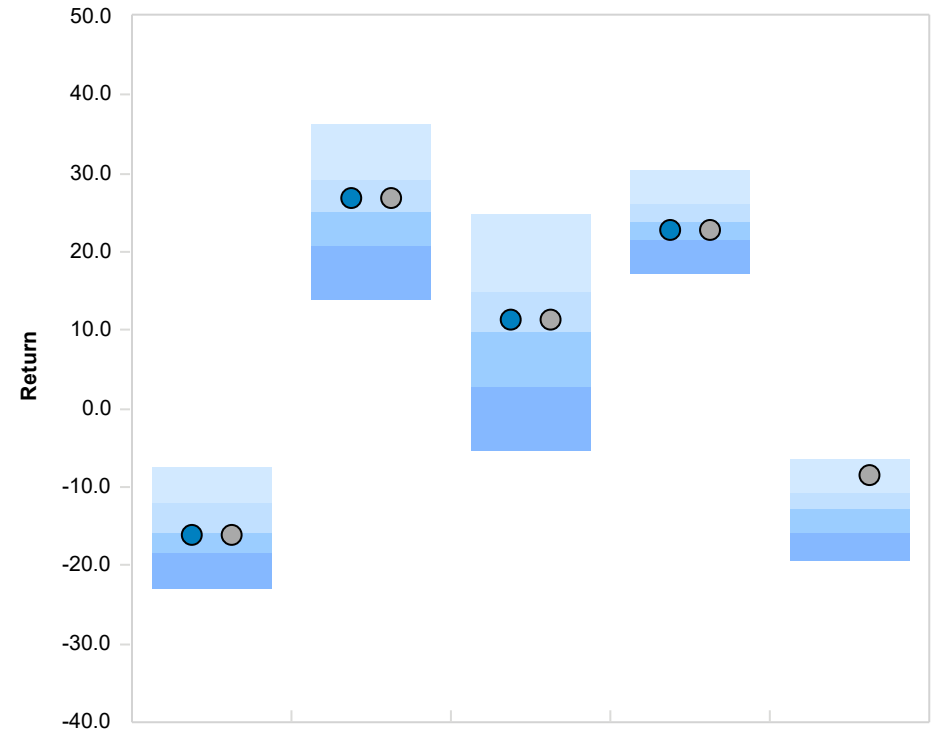


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	1	0 (0%)	1 (100%)	0 (0%)	0 (0%)
Index	20	16 (80%)	3 (15%)	1 (5%)	0 (0%)

**Peer Group Analysis - IM U.S. Small Cap Core Equity (MF)**



**Peer Group Analysis - IM U.S. Small Cap Core Equity (MF)**



**Financial Reconciliation Since Inception Ending December 31, 2023**

	Market Value 12/01/2018	Net Flows	Return On Investment	Market Value 12/31/2023
Investment	10,695,104	-2,500,000	5,145,540	13,340,645

**Comparative Performance**

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	-4.94 (70)	3.37 (67)	2.55 (54)	9.17 (58)	-5.22 (69)	-14.14 (42)
Index	-4.93 (69)	3.38 (66)	2.57 (53)	9.19 (57)	-5.20 (68)	-14.11 (42)
Median	-4.04	3.95	2.71	9.65	-4.49	-14.52



### Fund Information

Fund Name :	Vanguard Admiral Funds: Vanguard S&P Small-Cap 600 Index Fund; Institutional Shares	Portfolio Assets :	\$4,422 Million
Fund Family :	Vanguard	Portfolio Manager :	Narzikul/Birkett
Ticker :	VSMSX	PM Tenure :	2023--2023
Inception Date :	12/15/2010	Fund Style :	IM U.S. Small Cap Core Equity (MF)
Fund Assets :	\$1,895 Million	Style Benchmark :	S&P SmallCap 600 Index
Portfolio Turnover :	19%		

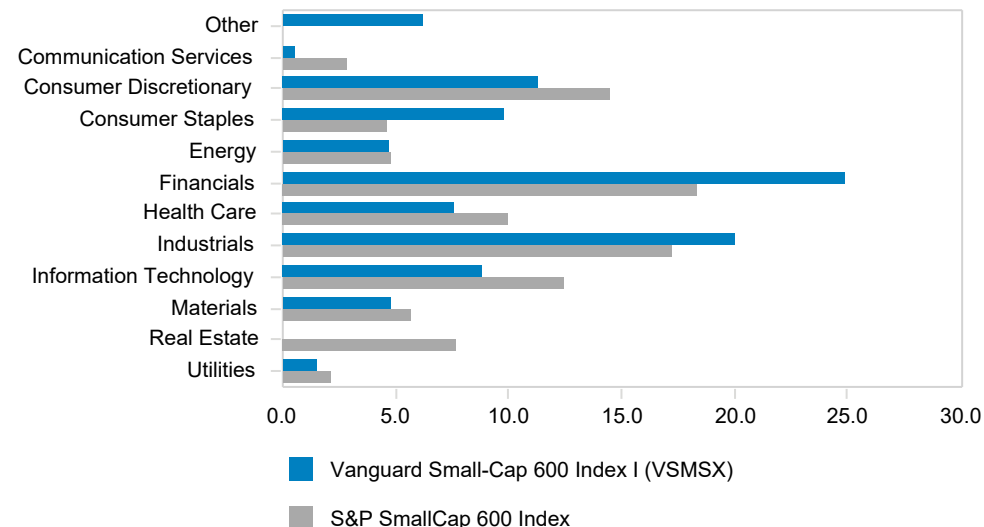
### Portfolio Characteristics As of 11/30/2023

	Portfolio	Benchmark
Total Securities	607	602
Avg. Market Cap	2,580,738,001	2,591,432,306
Price/Earnings (P/E)	23.18	13.04
Price/Book (P/B)	2.78	2.09
Dividend Yield	3.38	2.04
Annual EPS	15.68	3.96
5 Yr EPS	14.61	11.24
3 Yr EPS Growth	19.77	N/A
Beta (5 Years, Monthly)	1.00	1.00

### Top Ten Securities As of 11/30/2023

Vanguard Market Liquidity Fund	1.0 %
Rambus Inc ORD	0.7 %
Comfort Systems USA Inc ORD	0.7 %
elf Beauty Inc ORD	0.6 %
SPS Commerce Inc ORD	0.6 %
Applied Industrial Technologies	0.6 %
Ensign Group Inc ORD	0.6 %
Fabrinet ORD	0.6 %
ATI Inc ORD	0.6 %
Meritage Homes Corp ORD	0.5 %

### Sector Weights As of 11/30/2023



### Region (%)

No data found.

# Strategy Review

## Vanguard Developed Markets Index (VTMNX) | Vanguard Spliced Developed ex U.S. Index (Net)

As of December 31, 2023

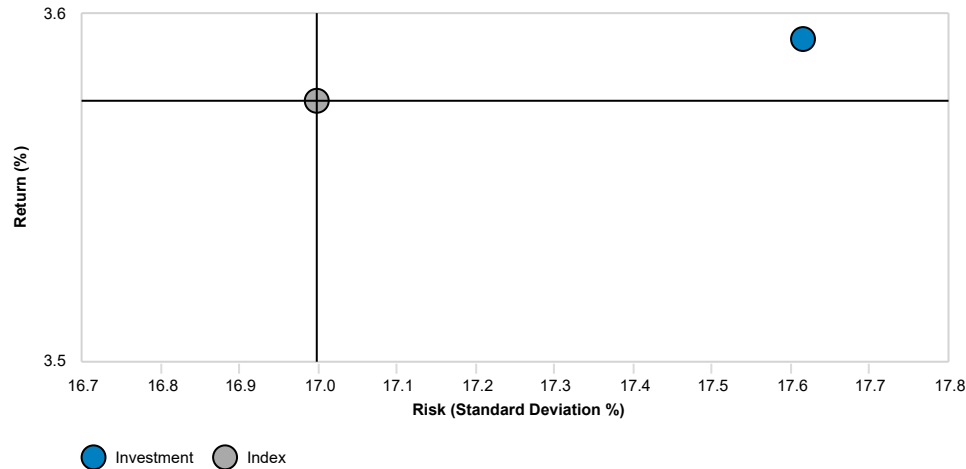
### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	3.59	17.62	0.17	104.65	7	105.19	5
Index	3.58	17.00	0.17	100.00	7	100.00	5

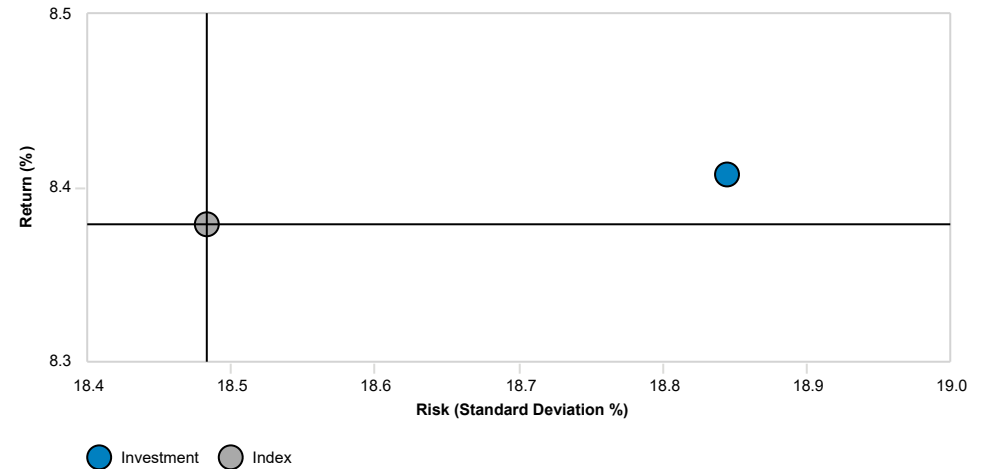
### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	8.41	18.84	0.42	102.61	13	103.37	7
Index	8.38	18.48	0.43	100.00	13	100.00	7

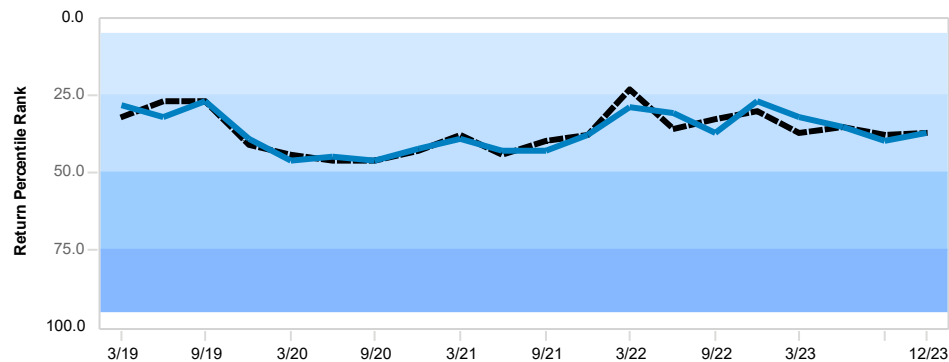
### Risk and Return 3 Years



### Risk and Return 5 Years

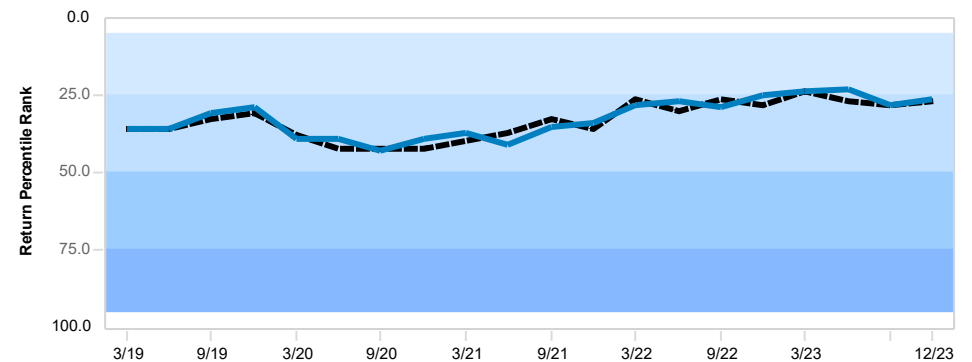


### 3 Year Rolling Percentile Rank IM International Multi-Cap Equity (MF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	20 (100%)	0 (0%)	0 (0%)
Index	20	1 (5%)	19 (95%)	0 (0%)	0 (0%)

### 5 Year Rolling Percentile Rank IM International Multi-Cap Equity (MF)

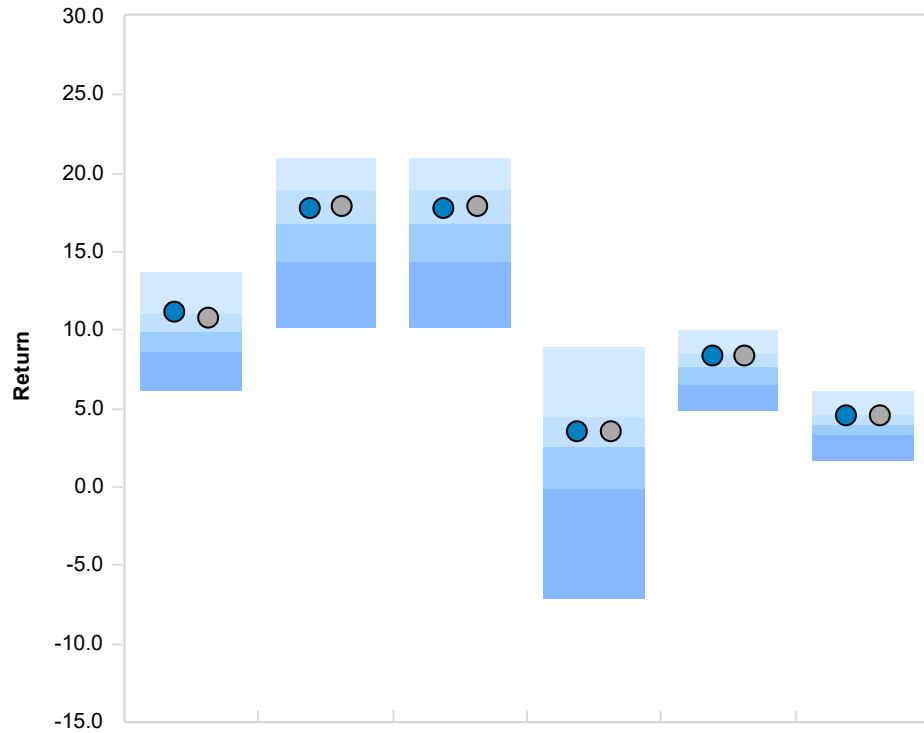


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	3 (15%)	17 (85%)	0 (0%)	0 (0%)
Index	20	1 (5%)	19 (95%)	0 (0%)	0 (0%)

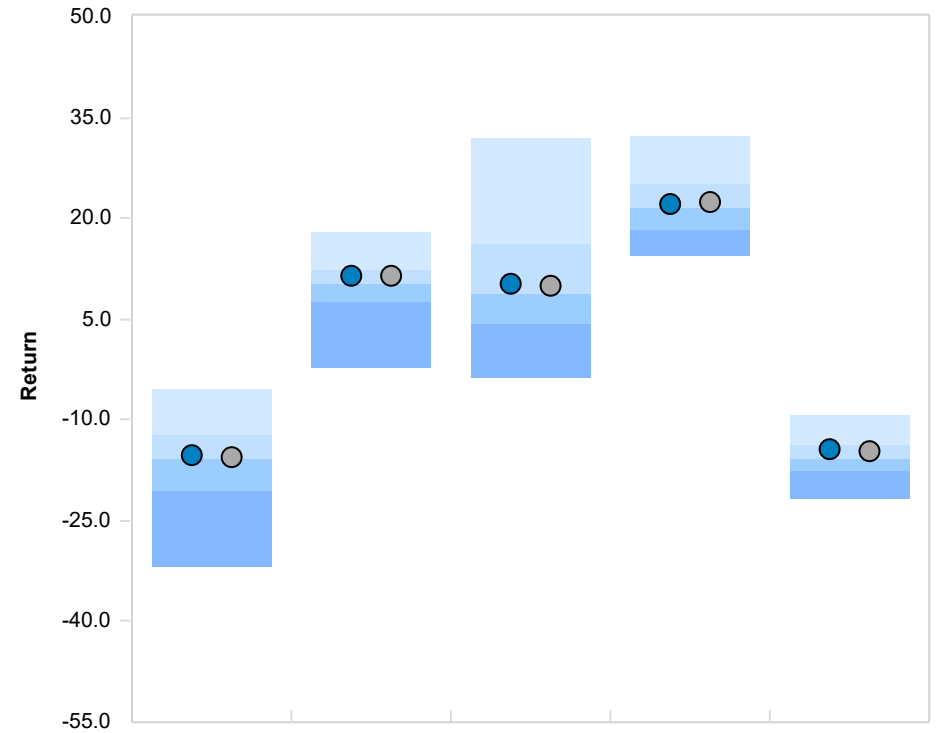




**Peer Group Analysis - IM International Multi-Cap Equity (MF)**



**Peer Group Analysis - IM International Multi-Cap Equity (MF)**



**Financial Reconciliation Since Inception Ending December 31, 2023**

	Market Value 07/01/2009	Net Flows	Return On Investment	Market Value 12/31/2023
Investment	253,831	45,927	10,511,248	10,811,007

**Comparative Performance**

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	-4.67	3.15	7.79	17.10	-10.49	-14.04
Index	-3.97	3.00	7.62	16.28	-9.59	-15.23



### Fund Information

Fund Name : Vanguard Tax-Managed Funds: Vanguard Developed Markets Index Fund; Institutional Shares  
Fund Family : Vanguard  
Ticker : VTMNX  
Inception Date : 01/04/2001  
Fund Assets : \$13,565 Million  
Portfolio Turnover : 4%

Portfolio Assets : \$177,328 Million  
Portfolio Manager : Franquin/Perre  
PM Tenure : 2013--2017  
Fund Style : IM International Multi-Cap Core Equity (MF)  
Style Benchmark : FTSE Developed x North America Index (Net)

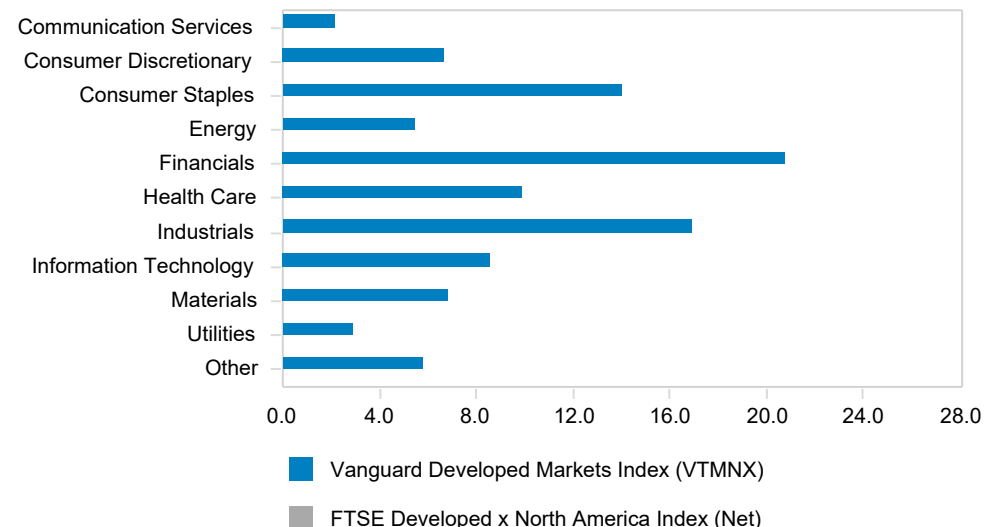
### Portfolio Characteristics As of 11/30/2023

	Portfolio	Benchmark
Total Securities	4,049	N/A
Avg. Market Cap	71,300,052,915	-
Price/Earnings (P/E)	20.92	N/A
Price/Book (P/B)	3.74	N/A
Dividend Yield	3.29	N/A
Annual EPS	12.11	N/A
5 Yr EPS	9.05	N/A
3 Yr EPS Growth	16.37	N/A
Beta (5 Years, Monthly)	1.03	1.00

### Top Ten Securities As of 11/30/2023

Vanguard Market Liquidity Fund	2.3 %
Novo Nordisk A/S ORD	1.5 %
Nestle SA ORD	1.4 %
ASML Holding NV ORD	1.2 %
Samsung Electronics Co Ltd ORD	1.2 %
Toyota Motor Corp ORD	1.1 %
Shell PLC ORD	1.0 %
Novartis AG ORD	0.9 %
AstraZeneca PLC ORD	0.9 %
LVMH Moet Hennessy Louis Vuitton	0.9 %

### Sector Weights As of 11/30/2023



### Region (%)

No data found.

**Strategy Review**  
**Vanguard Emerging Markets Index (VEMIX) | FTSE Emerging Mkts All Cap China A Inclusion Index**  
As of December 31, 2023

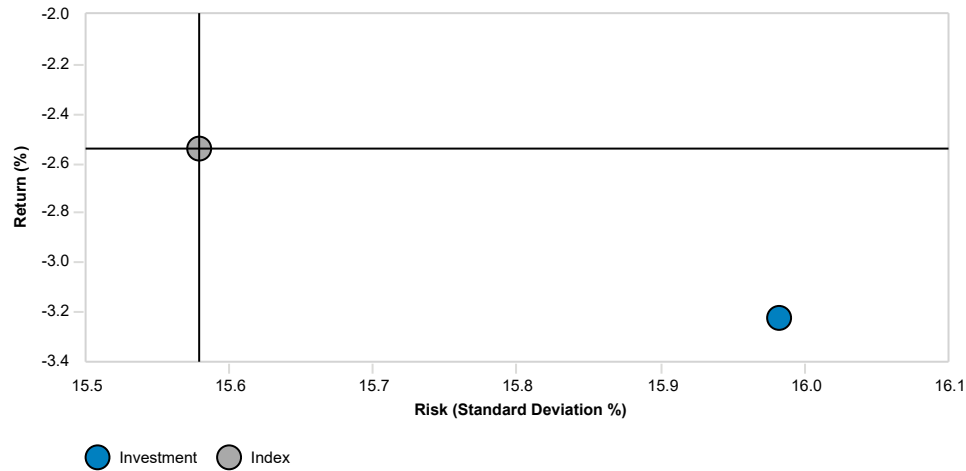
### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-3.22	15.98	-0.26	99.99	6	102.95	6
Index	-2.54	15.58	-0.23	100.00	6	100.00	6

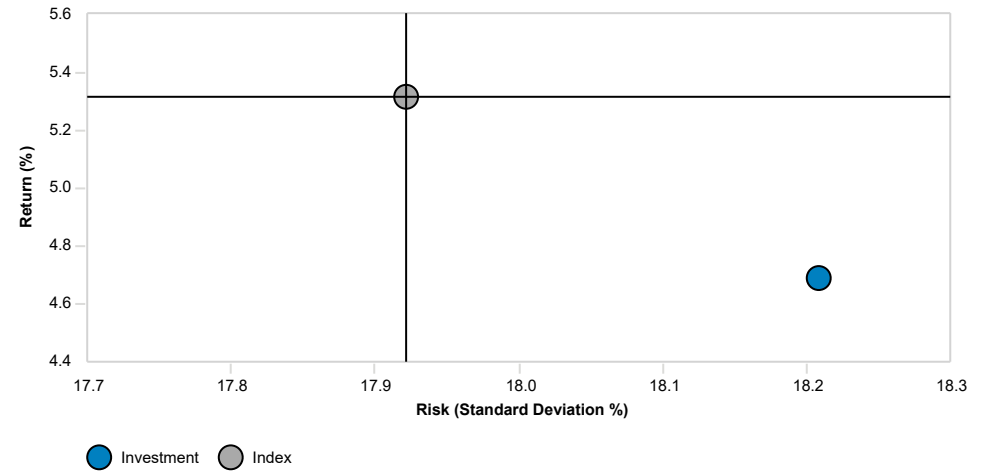
### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	4.69	18.21	0.24	99.72	12	102.23	8
Index	5.32	17.92	0.28	100.00	12	100.00	8

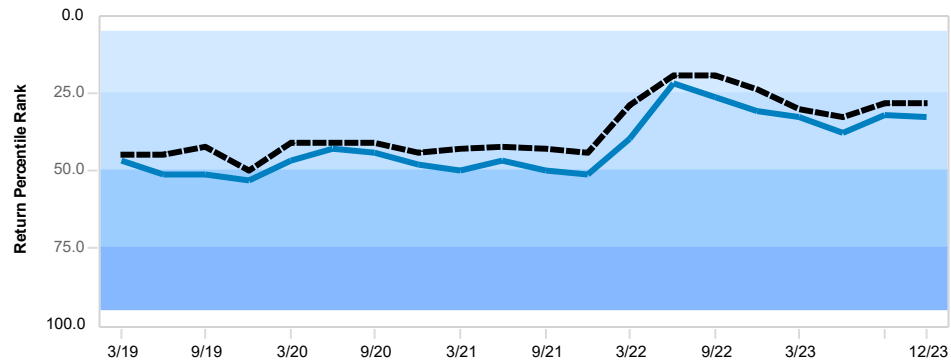
### Risk and Return 3 Years



### Risk and Return 5 Years

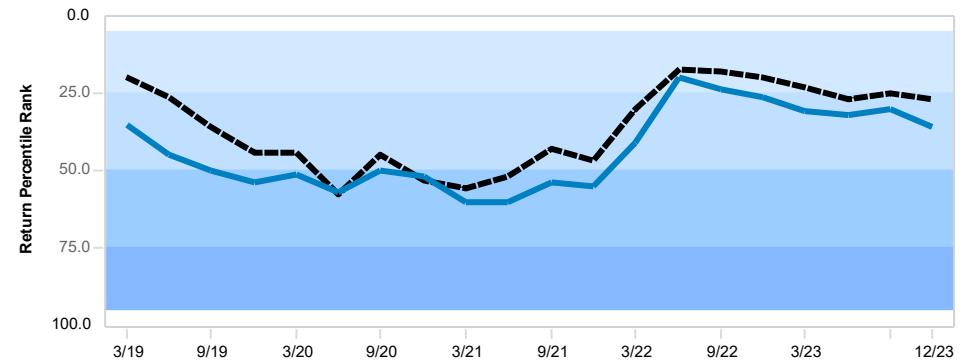


### 3 Year Rolling Percentile Rank IM Emerging Markets Equity (MF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	1 (5%)	15 (75%)	4 (20%)	0 (0%)
Index	20	3 (15%)	17 (85%)	0 (0%)	0 (0%)

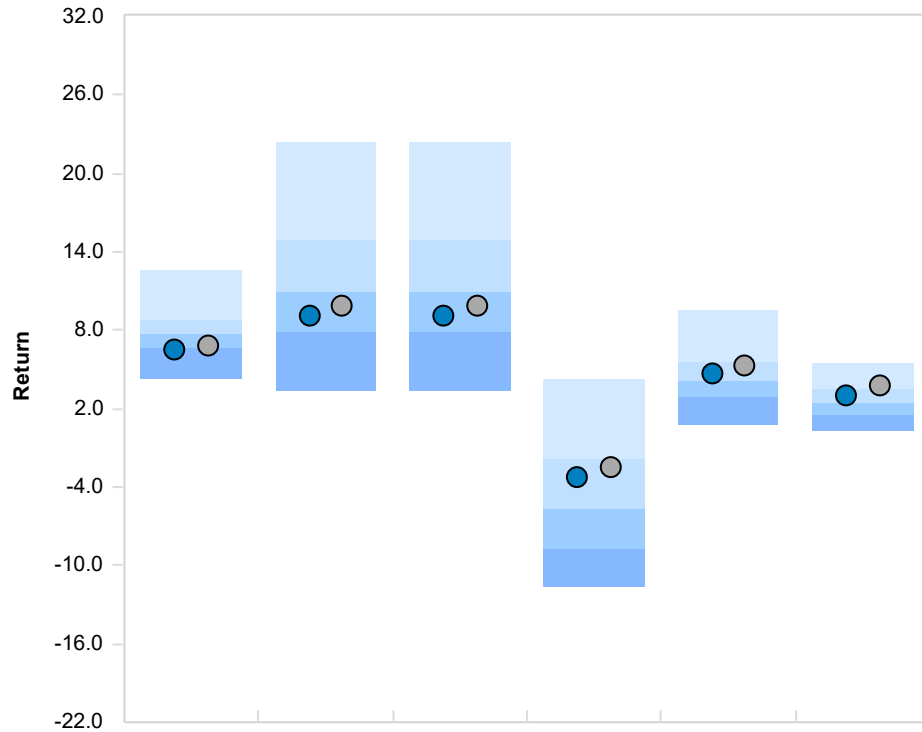
### 5 Year Rolling Percentile Rank IM Emerging Markets Equity (MF)



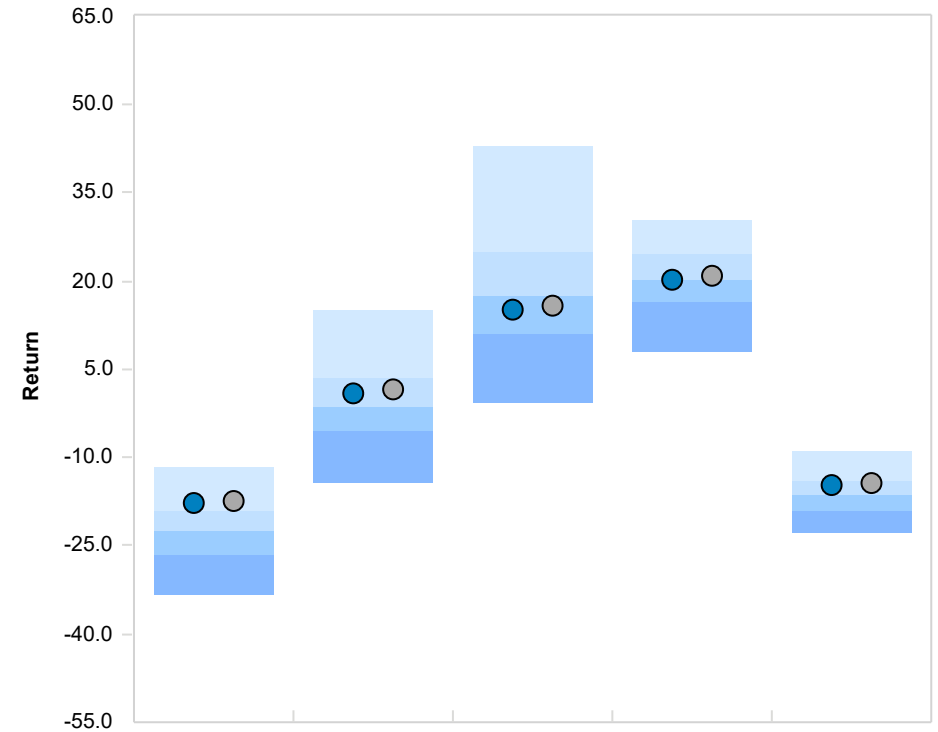
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	2 (10%)	10 (50%)	8 (40%)	0 (0%)
Index	20	6 (30%)	10 (50%)	4 (20%)	0 (0%)



**Peer Group Analysis - IM Emerging Markets Equity (MF)**



**Peer Group Analysis - IM Emerging Markets Equity (MF)**



**Financial Reconciliation Since Inception Ending December 31, 2023**

	Market Value 10/01/2010	Net Flows	Return On Investment	Market Value 12/31/2023
Investment	5,147,163	3,164,289	3,379,286	11,690,738

**Comparative Performance**

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	-2.14	1.09	3.60	8.22	-10.73	-9.18
Index	-1.35	1.19	3.11	8.23	-9.78	-10.40

### Fund Information

Fund Name :	Vanguard International Equity Index Funds: Vanguard Emerging Markets Stock Index Fund; Instl Class Shares	Portfolio Assets :	\$101,265 Million
Fund Family :	Vanguard	Portfolio Manager :	Perre/Miller
Ticker :	VEMIX	PM Tenure :	2008--2016
Inception Date :	06/22/2000	Fund Style :	IM Emerging Markets Equity (MF)
Fund Assets :	\$6,880 Million	Style Benchmark :	FTSE Emerging Mkts All Cap China A Inclusion Index
Portfolio Turnover :	7%		

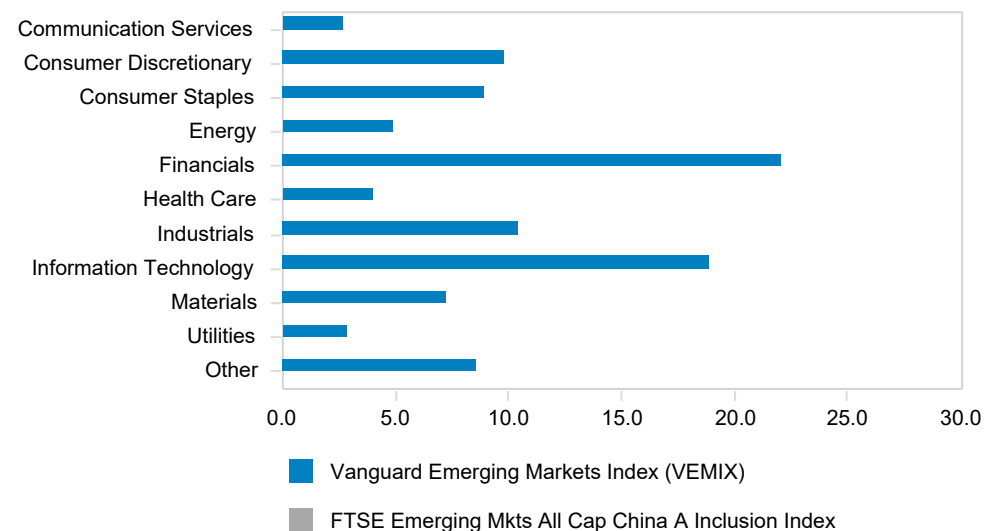
### Portfolio Characteristics As of 11/30/2023

	Portfolio	Benchmark
Total Securities	4,768	N/A
Avg. Market Cap	83,268,798,659	-
Price/Earnings (P/E)	21.89	N/A
Price/Book (P/B)	3.77	N/A
Dividend Yield	3.65	N/A
Annual EPS	20.36	N/A
5 Yr EPS	15.50	N/A
3 Yr EPS Growth	21.97	N/A
Beta (5 Years, Monthly)	1.01	1.00

### Top Ten Securities As of 11/30/2023

Taiwan Semiconductor Manufacturing	5.2 %
Tencent Holdings Ltd ORD	3.5 %
Vanguard Market Liquidity Fund	3.2 %
Alibaba Group Holding Ltd ORD	2.1 %
Reliance Industries Ltd ORD	1.3 %
PDD HOLDINGS ADS	1.2 %
HDFC Bank Ltd ORD	1.0 %
Meituan ORD	0.8 %
Infosys Ltd ORD	0.8 %
Vale SA ORD	0.8 %

### Sector Weights As of 11/30/2023



### Region (%)

No data found.

### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-0.66	3.14	-0.92	100.41	5	101.30	7
Index	-0.62	3.11	-0.92	100.00	6	100.00	6

### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	1.48	2.68	-0.14	98.18	13	99.22	7
Index	1.54	2.67	-0.12	100.00	14	100.00	6

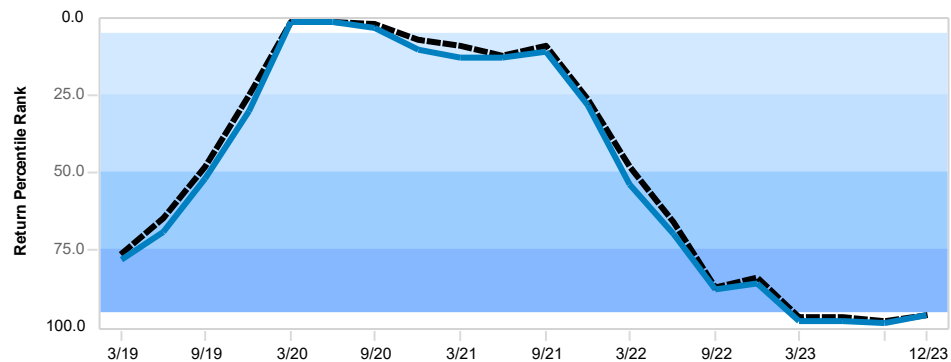
### Risk and Return 3 Years



### Risk and Return 5 Years

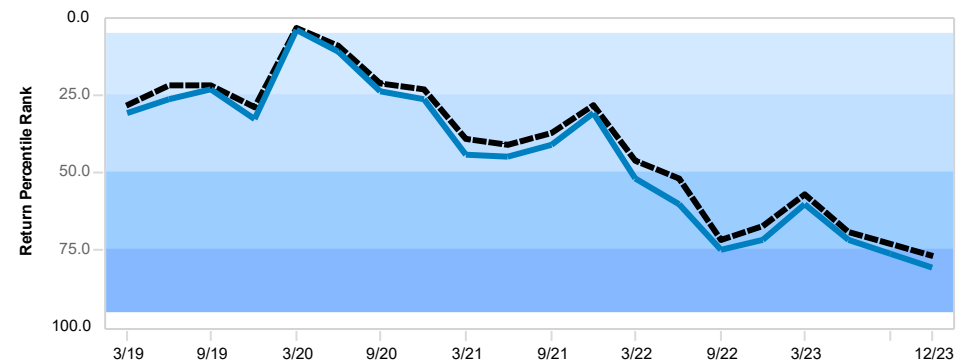


### 3 Year Rolling Percentile Rank IM U.S. Short Term Investment Grade (MF)



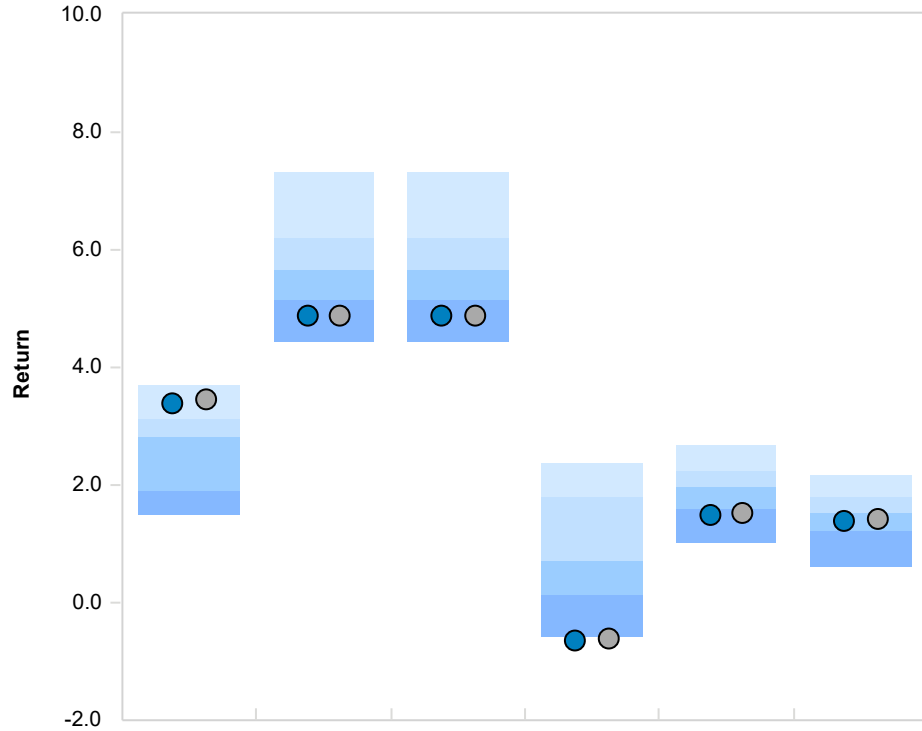
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	7 (35%)	2 (10%)	4 (20%)	7 (35%)
Index	20	8 (40%)	3 (15%)	2 (10%)	7 (35%)

### 5 Year Rolling Percentile Rank IM U.S. Short Term Investment Grade (MF)

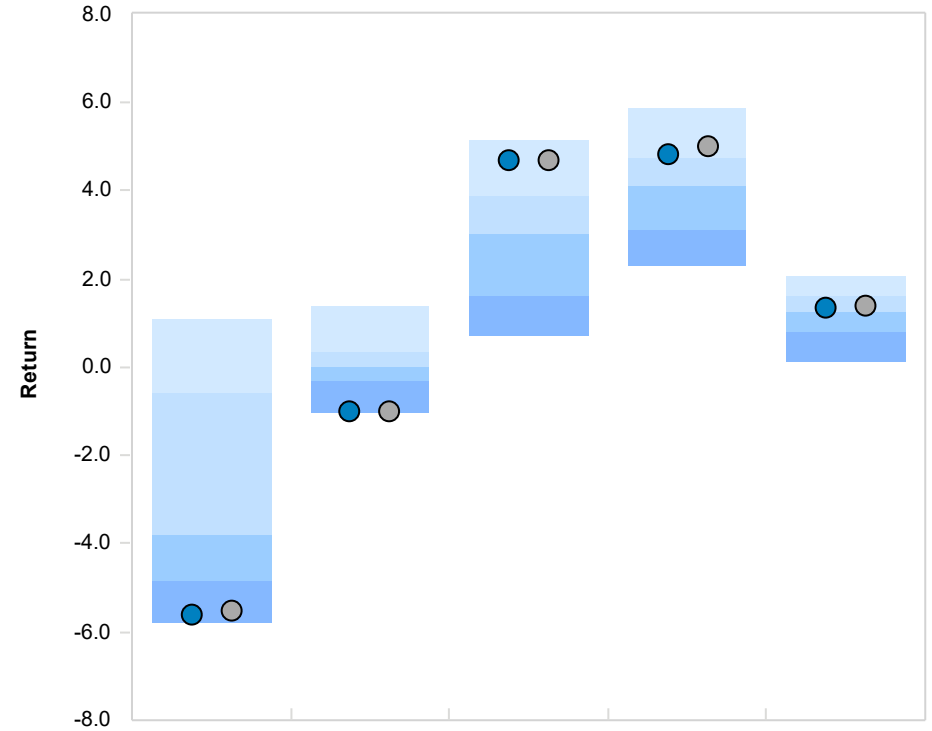


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	4 (20%)	8 (40%)	6 (30%)	2 (10%)
Index	20	6 (30%)	7 (35%)	6 (30%)	1 (5%)

**Peer Group Analysis - IM U.S. Short Term Investment Grade (MF)**



**Peer Group Analysis - IM U.S. Short Term Investment Grade (MF)**



**Financial Reconciliation Since Inception Ending December 31, 2023**

	Market Value 04/01/2013	Net Flows	Return On Investment	Market Value 12/31/2023
Investment	10,001,804	-7,569,350	1,548,308	3,980,762

**Comparative Performance**

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	0.15	-0.64	1.93	1.07	-2.11	-1.15
Index	0.21	-0.62	1.82	1.20	-2.16	-1.14



### Fund Information

Fund Name :	Vanguard Bond Index Funds: Vanguard Short-Term Bond Index Fund; Admiral Shares	Portfolio Assets :	\$61,948 Million
Fund Family :	Vanguard	Portfolio Manager :	Joshua C. Barrickman
Ticker :	VBIRX	PM Tenure :	2013
Inception Date :	11/12/2001	Fund Style :	IM U.S. Short Term Investment Grade (MF)
Fund Assets :	\$13,196 Million	Style Benchmark :	Bloomberg U.S. Aggregate 1-3 Yrs
Portfolio Turnover :	41%		

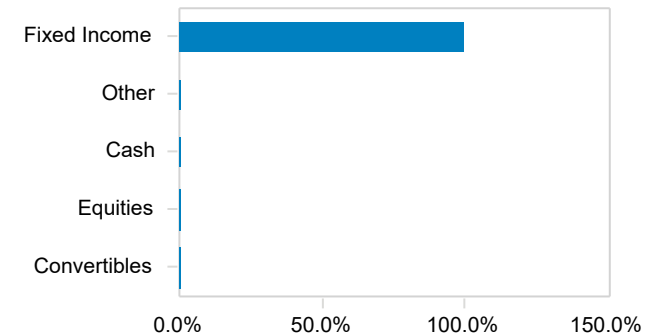
### Fund Characteristics As of 09/30/2023

Avg. Coupon	2.70 %
Nominal Maturity	N/A
Effective Maturity	2.80 Years
Duration	2.60 Years
SEC 30 Day Yield	1.0
Avg. Credit Quality	AA

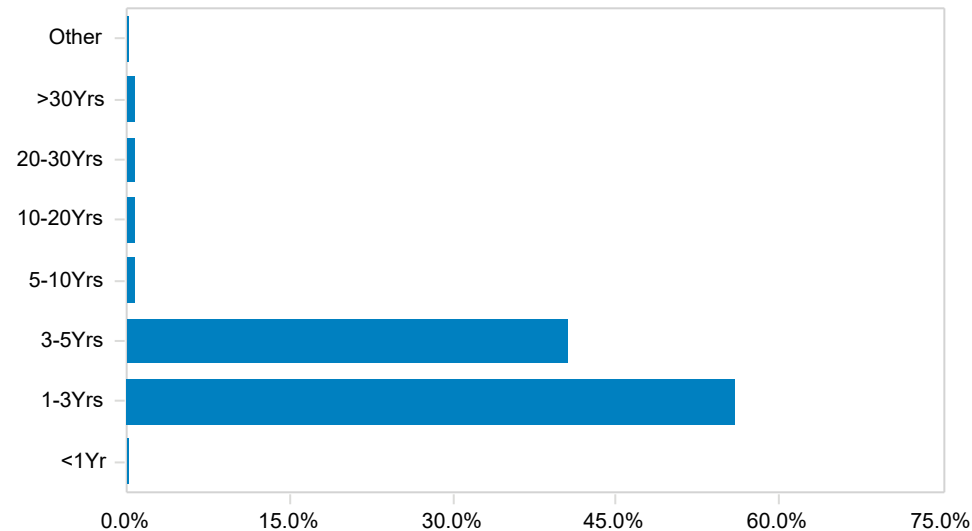
### Top Ten Securities As of 09/30/2023

Government Agency Securities	33.6 %
Treasury Notes/Bonds	33.6 %
Corporate Notes/Bonds	27.0 %
Fgn. Currency Denominated Bonds	5.6 %

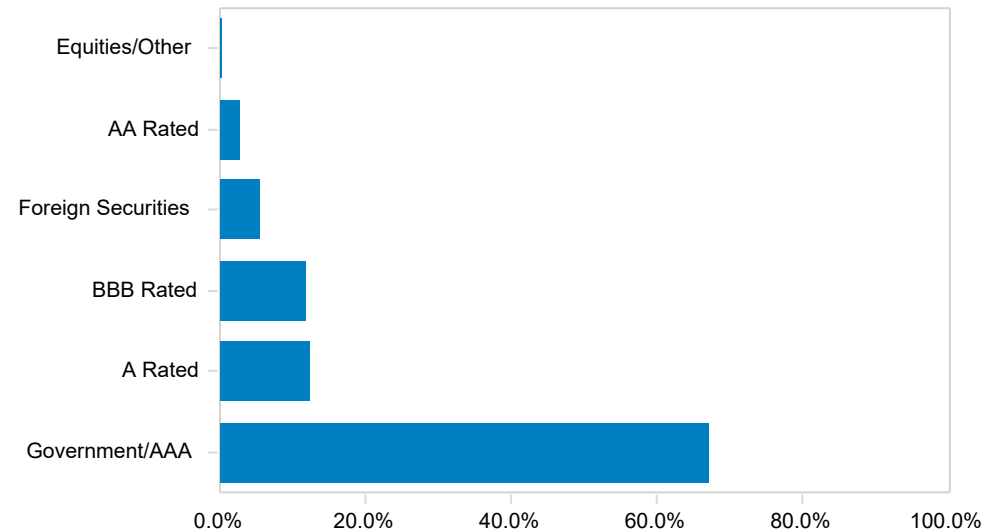
### Asset Allocation As of 09/30/2023



### Maturity Distribution As of 09/30/2023



### Sector/Quality Allocation As of 09/30/2023





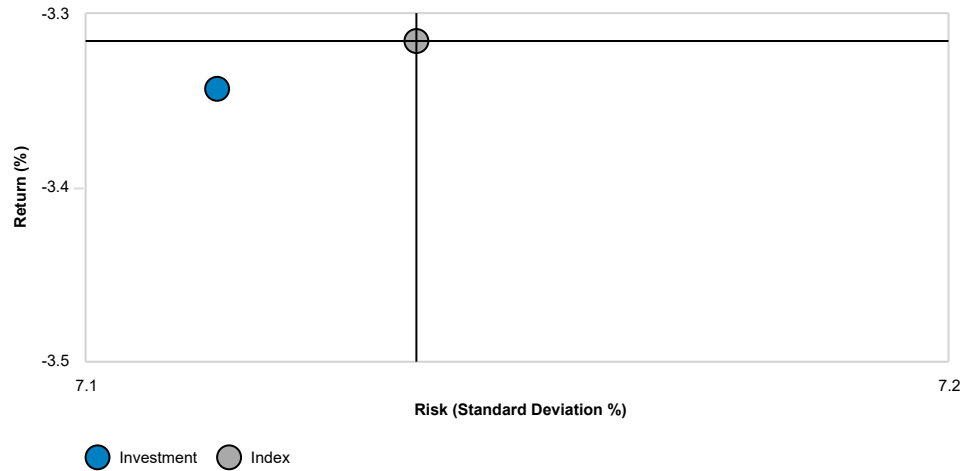
### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-3.34	7.12	-0.76	100.53	5	100.65	7
Index	-3.31	7.14	-0.75	100.00	6	100.00	6

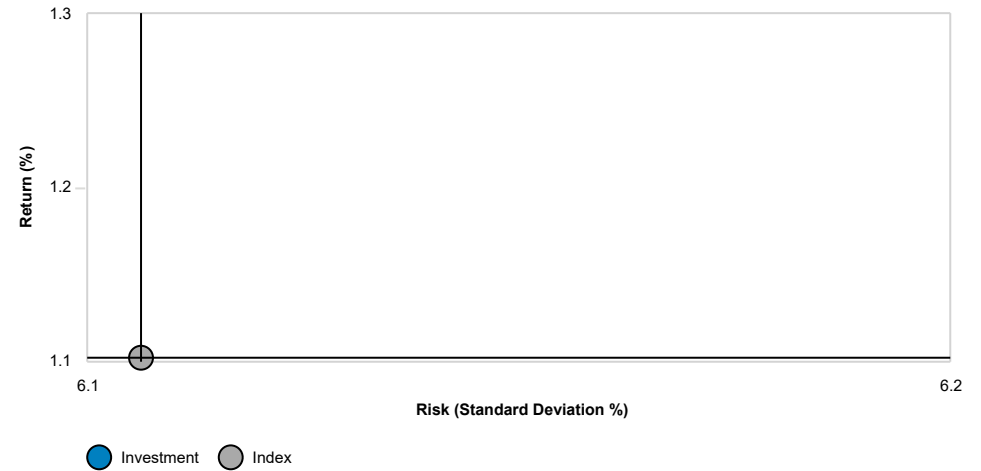
### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Index	1.10	6.11	-0.10	100.00	14	100.00	6

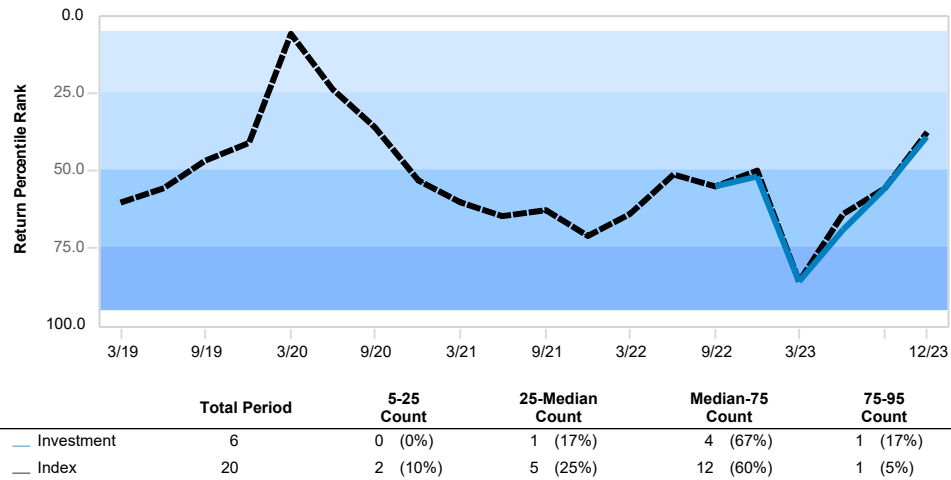
### Risk and Return 3 Years



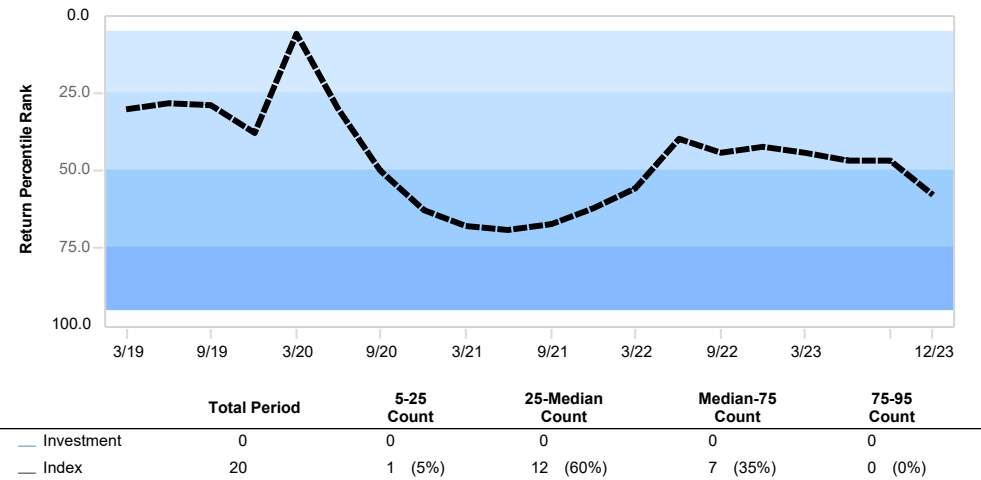
### Risk and Return 5 Years



### 3 Year Rolling Percentile Rank IM U.S. Broad Market Core Fixed Income (MF)



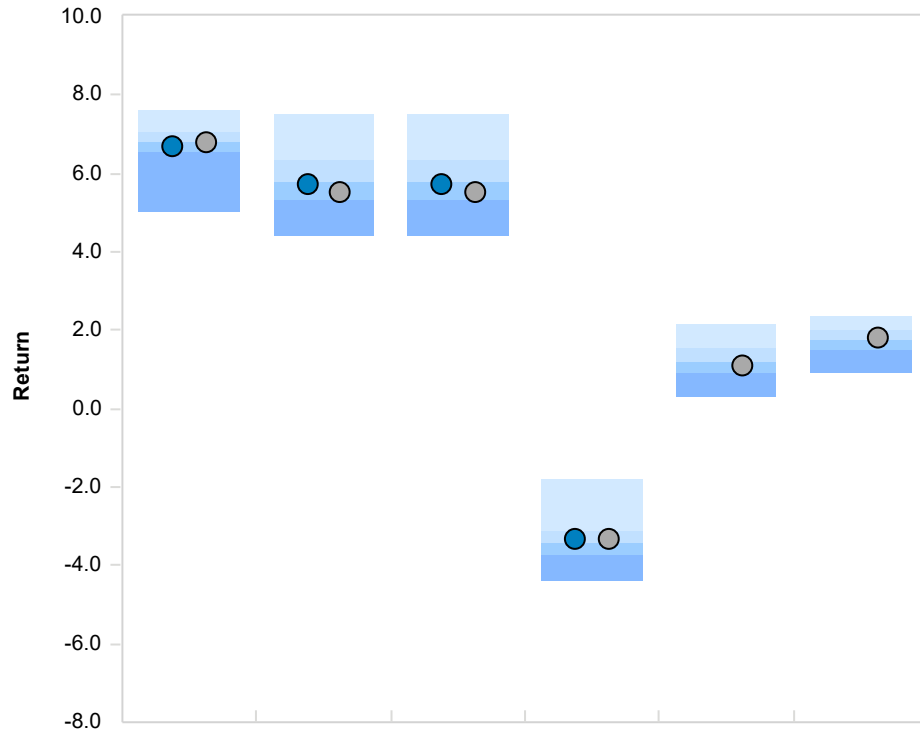
### 5 Year Rolling Percentile Rank IM U.S. Broad Market Core Fixed Income (MF)



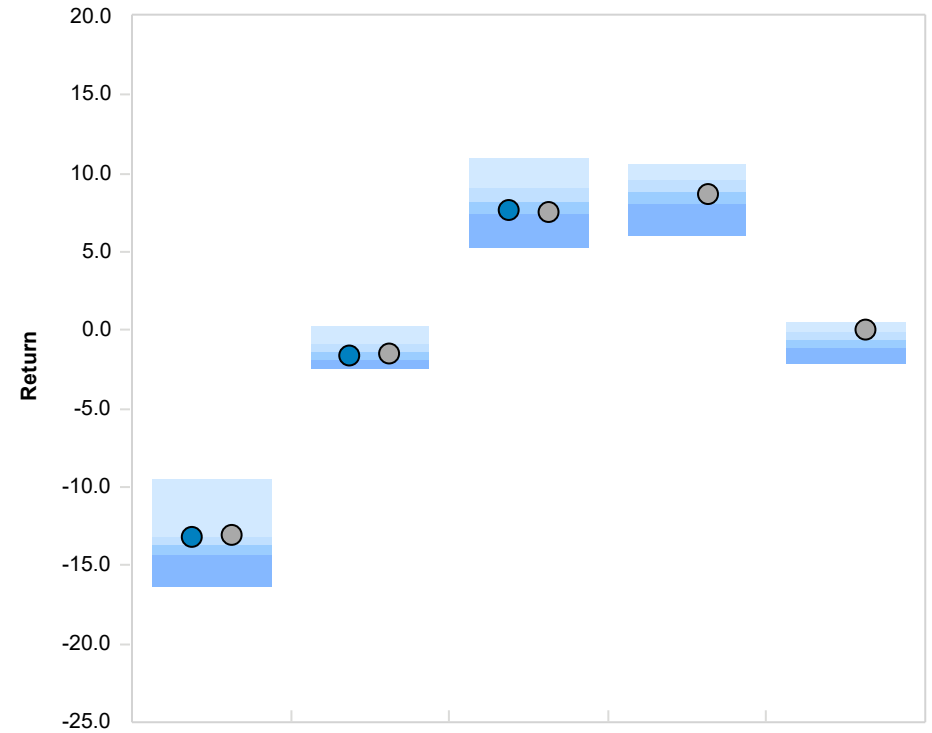
Inception Date for VBTIX is 9/2019. Manager returns for VBTIX have been used for this report.



**Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (MF)**



**Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (MF)**



**Financial Reconciliation Since Inception Ending December 31, 2023**

	Market Value 09/01/2019	Net Flows	Return On Investment	Market Value 12/31/2023
Investment	5,041,017	40,803,437	-1,456,827	44,387,626

**Comparative Performance**

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	-3.08 (51)	-0.90 (63)	3.16 (46)	1.67 (56)	-4.65 (47)	-4.71 (17)
Index	-3.23 (70)	-0.84 (55)	2.96 (69)	1.87 (35)	-4.75 (61)	-4.69 (16)
Median	-3.08	-0.81	3.14	1.71	-4.67	-5.35

Inception Date for VBTIX is 9/2019. Manager returns for VBTIX have been used for this report.



### Fund Information

Fund Name :	Vanguard Bond Index Funds: Vanguard Total Bond Market Index Fund; Institutional Shares	Portfolio Assets :	\$311,633 Million
Fund Family :	Vanguard	Portfolio Manager :	Joshua C. Barrickman
Ticker :	VBTIX	PM Tenure :	2013
Inception Date :	09/18/1995	Fund Style :	IM U.S. Broad Market Core Fixed Income (MF)
Fund Assets :	\$41,733 Million	Style Benchmark :	Bloomberg U.S. Aggregate
Portfolio Turnover :	40%		

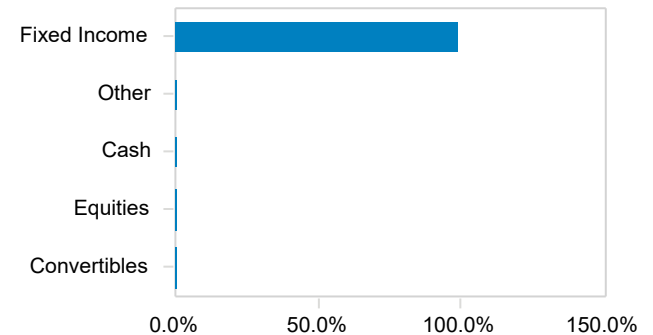
### Fund Characteristics As of 09/30/2023

Avg. Coupon	3.10 %
Nominal Maturity	N/A
Effective Maturity	8.70 Years
Duration	6.30 Years
SEC 30 Day Yield	2.7
Avg. Credit Quality	AA

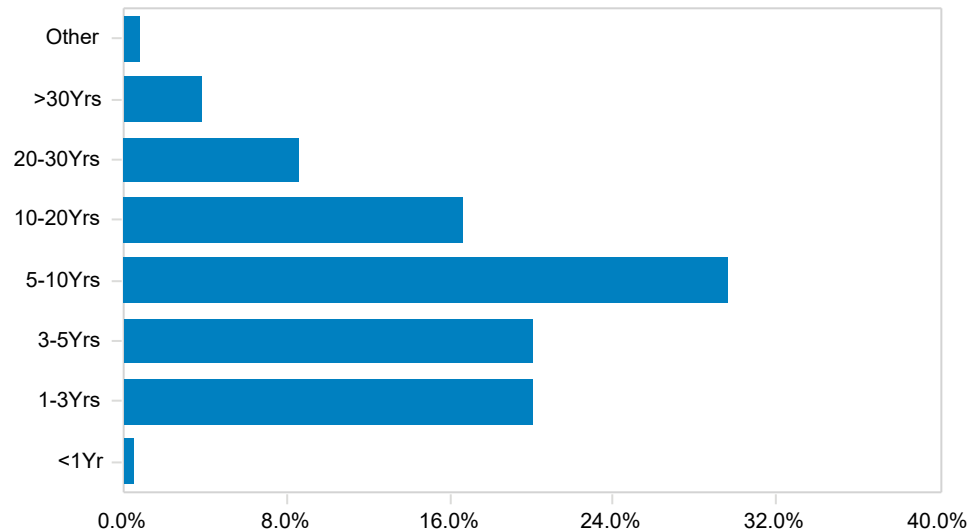
### Top Ten Securities As of 09/30/2023

Corporate Notes/Bonds	26.8 %
Government Agency Securities	23.1 %
Treasury Notes/Bonds	23.1 %
GNMA and Other Mtg Backed	22.1 %
Fgn. Currency Denominated Bonds	3.7 %
Asset Backed Securities	0.6 %

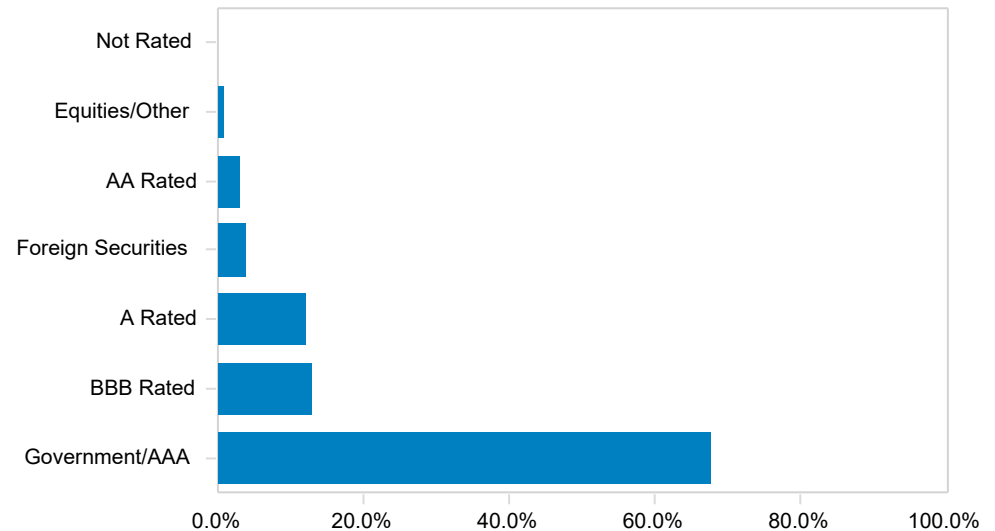
### Asset Allocation As of 09/30/2023



### Maturity Distribution As of 06/30/2023



### Sector/Quality Allocation As of 09/30/2023



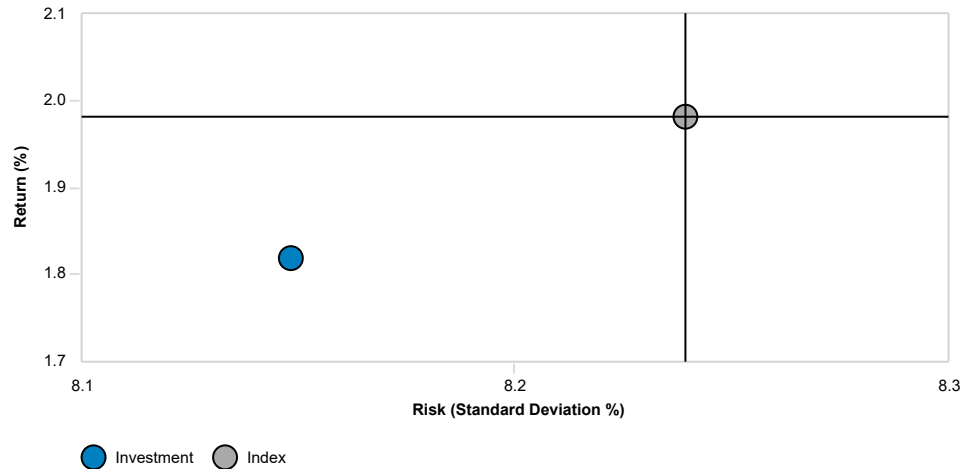
### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	1.82	8.15	0.00	96.58	7	97.56	5
Index	1.98	8.24	0.02	100.00	9	100.00	3

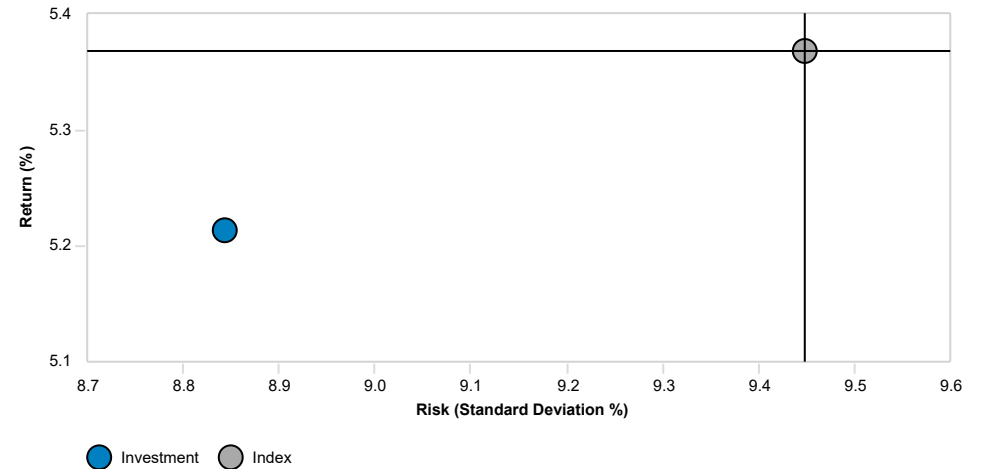
### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	5.21	8.84	0.41	94.17	14	92.71	6
Index	5.37	9.45	0.40	100.00	16	100.00	4

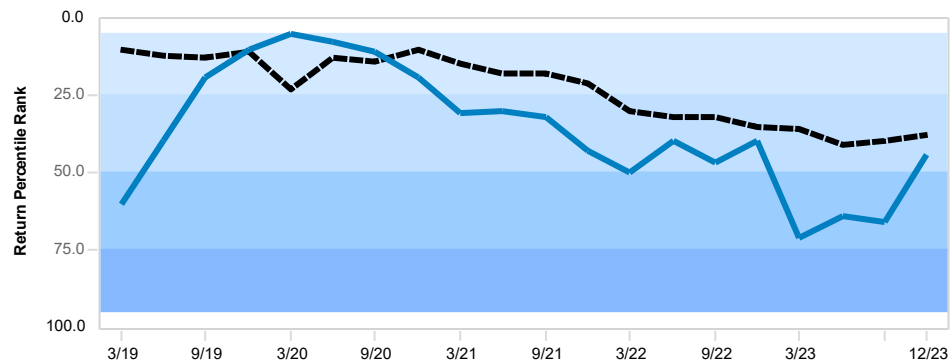
### Risk and Return 3 Years



### Risk and Return 5 Years

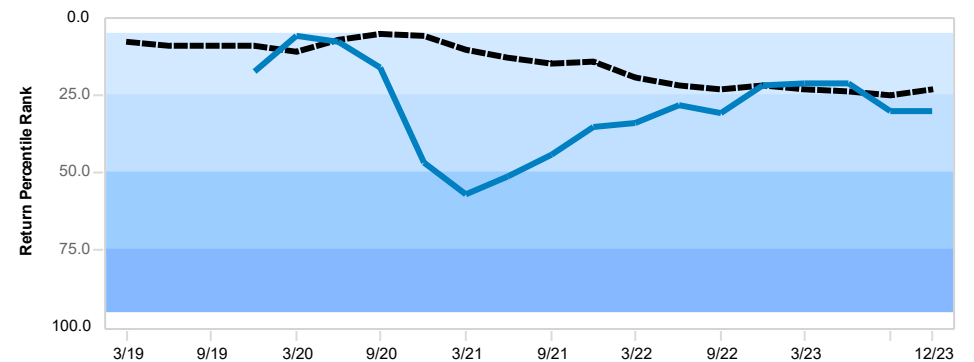


### 3 Year Rolling Percentile Rank IM U.S. High Yield Bonds (MF)



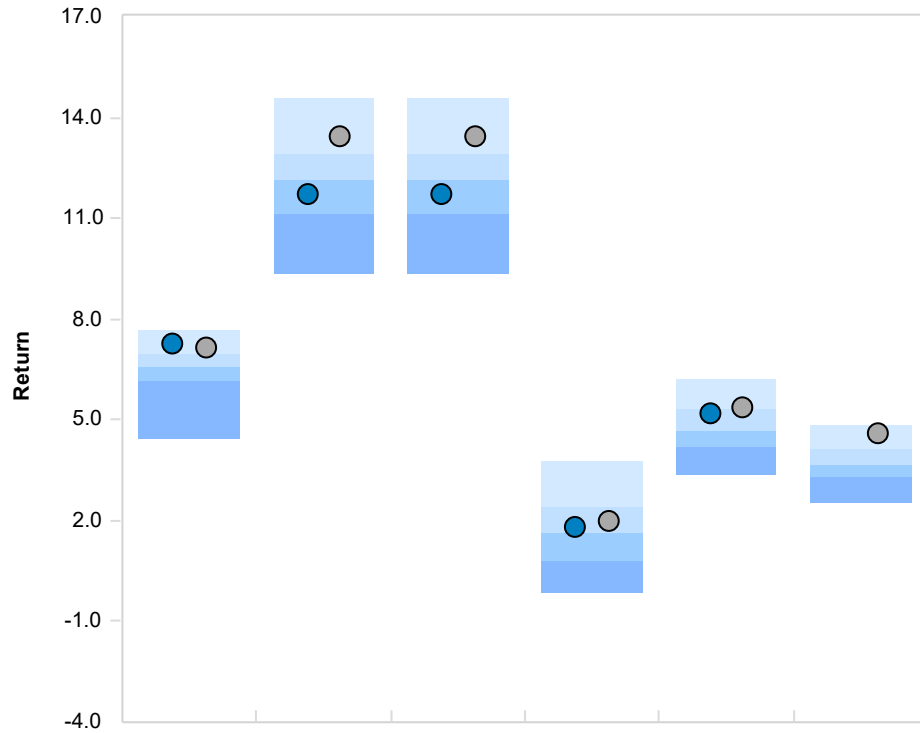
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	6 (30%)	10 (50%)	4 (20%)	0 (0%)
Index	20	12 (60%)	8 (40%)	0 (0%)	0 (0%)

### 5 Year Rolling Percentile Rank IM U.S. High Yield Bonds (MF)

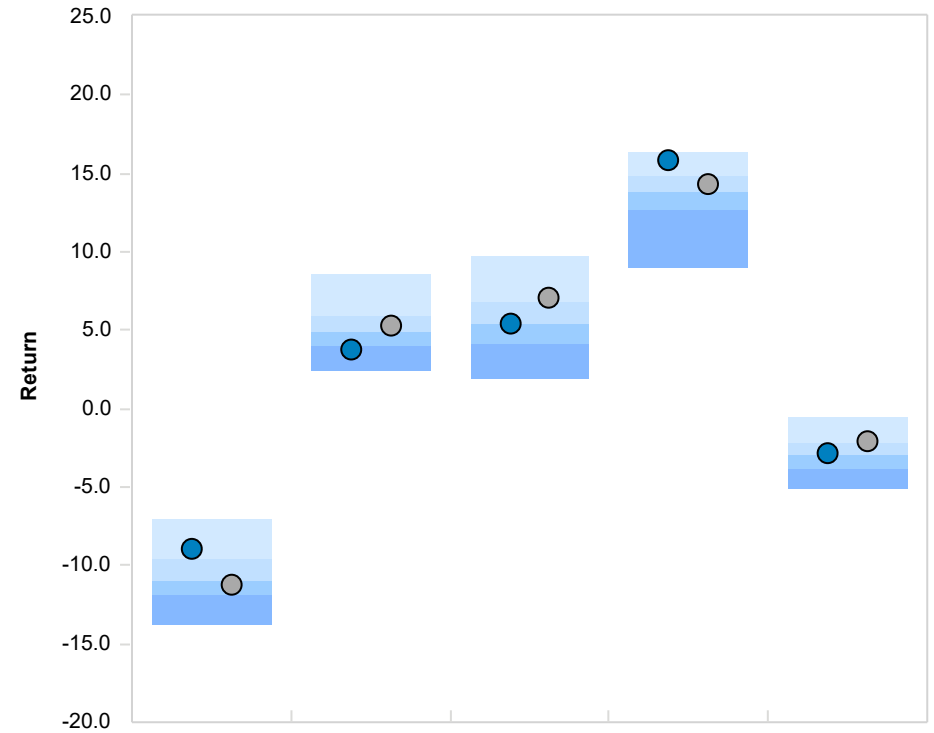


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	17	7 (41%)	8 (47%)	2 (12%)	0 (0%)
Index	20	20 (100%)	0 (0%)	0 (0%)	0 (0%)

**Peer Group Analysis - IM U.S. High Yield Bonds (MF)**



**Peer Group Analysis - IM U.S. High Yield Bonds (MF)**



**Financial Reconciliation Since Inception Ending December 31, 2023**

	Market Value 12/01/2014	Net Flows	Return On Investment	Market Value 12/31/2023
Investment	12,642,764	5,350,000	7,829,015	25,821,779

**Comparative Performance**

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	-0.20	1.12	3.19	4.88	-0.85	-8.62
Index	0.46	1.75	3.57	4.17	-0.65	-9.83



### Fund Information

Fund Name :	Vanguard Fixed Income Securities Funds: Vanguard High-Yield Corporate Fund; Admiral Shares	Portfolio Assets :	\$23,002 Million
Fund Family :	Vanguard	Portfolio Manager :	Shortsleeve/Chang
Ticker :	VWEAX	PM Tenure :	2022--2022
Inception Date :	11/12/2001	Fund Style :	IM U.S. High Yield Bonds (MF)
Fund Assets :	\$20,022 Million	Style Benchmark :	FTSE High Yield Market Index
Portfolio Turnover :	36%		

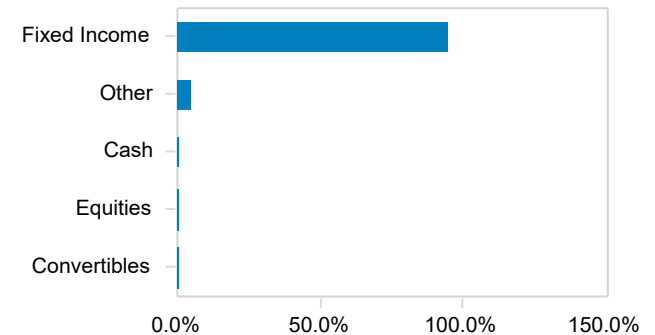
### Fund Characteristics As of 09/30/2023

Avg. Coupon	5.30 %
Nominal Maturity	N/A
Effective Maturity	4.80 Years
Duration	3.70 Years
SEC 30 Day Yield	6.5
Avg. Credit Quality	BB

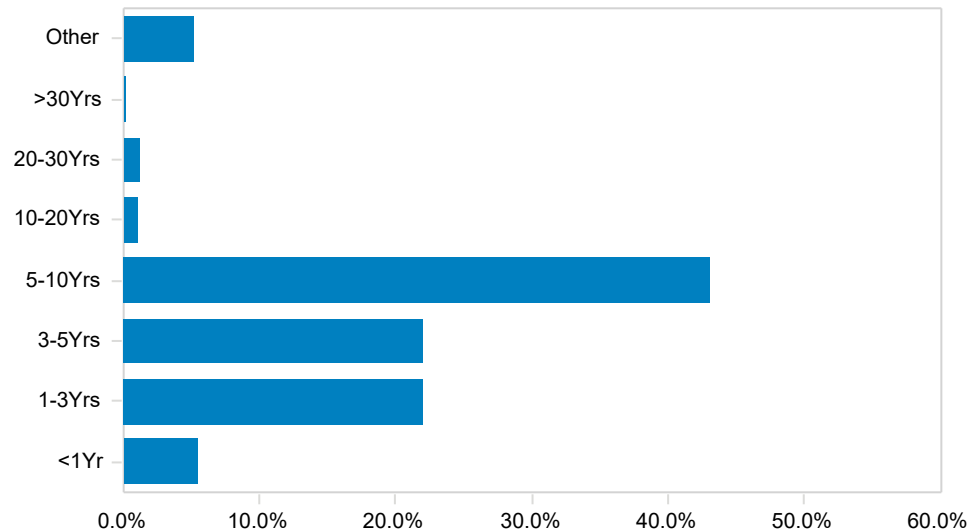
### Top Ten Securities As of 09/30/2023

Corporate Notes/Bonds	90.3 %
Government Agency Securities	2.2 %
Treasury Notes/Bonds	2.2 %
Fgn. Currency Denominated Bonds	0.1 %

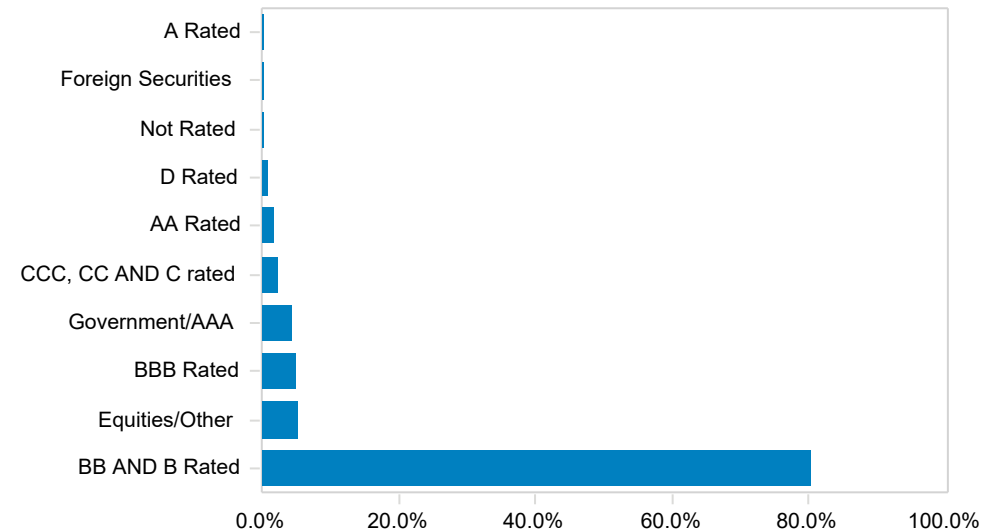
### Asset Allocation As of 09/30/2023



### Maturity Distribution As of 09/30/2023



### Sector/Quality Allocation As of 09/30/2023



As of December 31, 2023

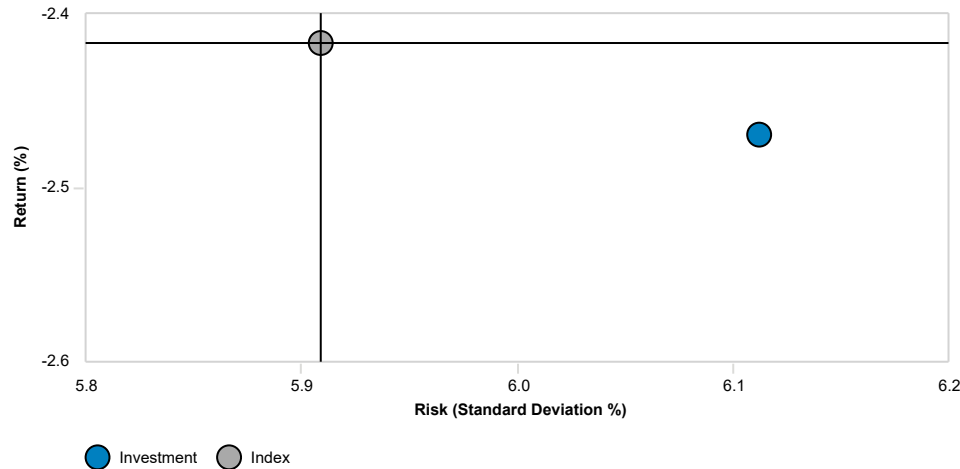
### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-2.47	6.11	-0.75	102.17	5	102.10	7
Index	-2.42	5.91	-0.77	100.00	5	100.00	7

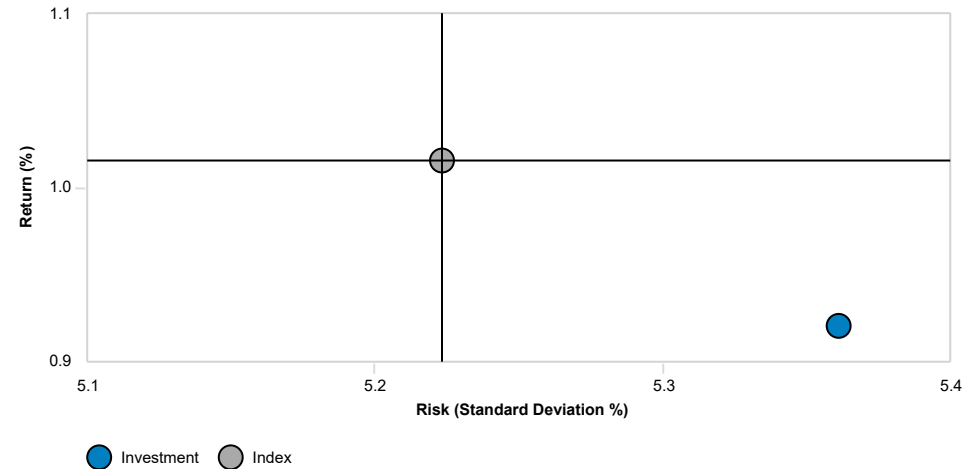
### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	0.92	5.36	-0.15	100.45	12	101.89	8
Index	1.02	5.22	-0.14	100.00	12	100.00	8

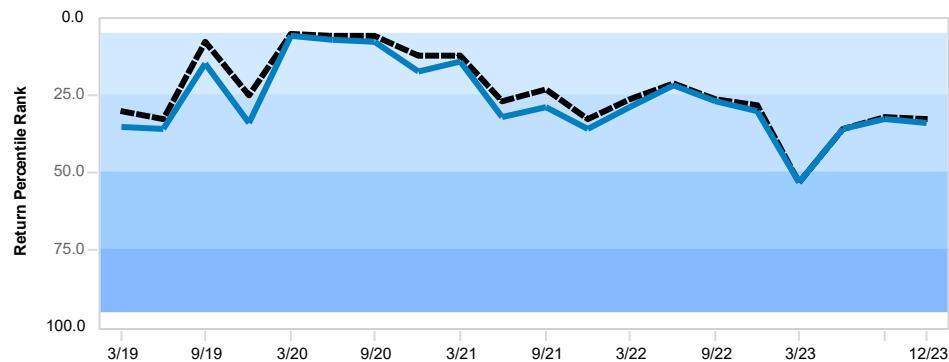
### Risk and Return 3 Years



### Risk and Return 5 Years

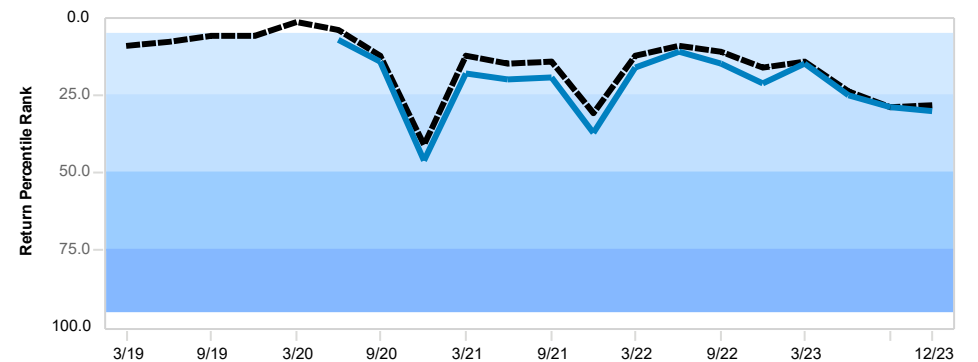


### 3 Year Rolling Percentile Rank IM International Fixed Income (MF)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	7 (35%)	12 (60%)	1 (5%)	0 (0%)
Index	20	9 (45%)	10 (50%)	1 (5%)	0 (0%)

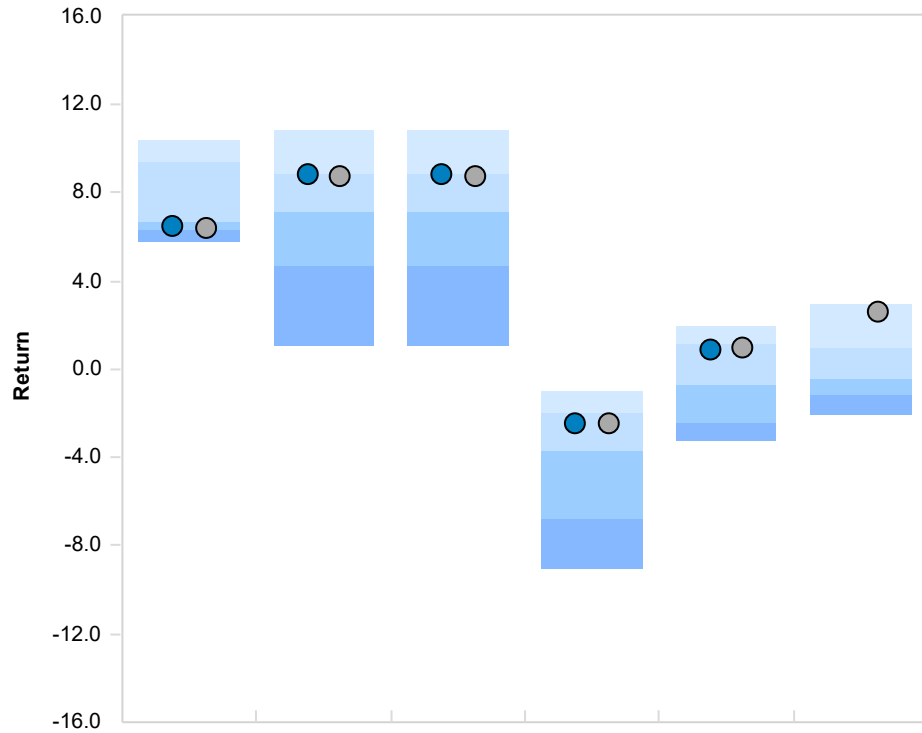
### 5 Year Rolling Percentile Rank IM International Fixed Income (MF)



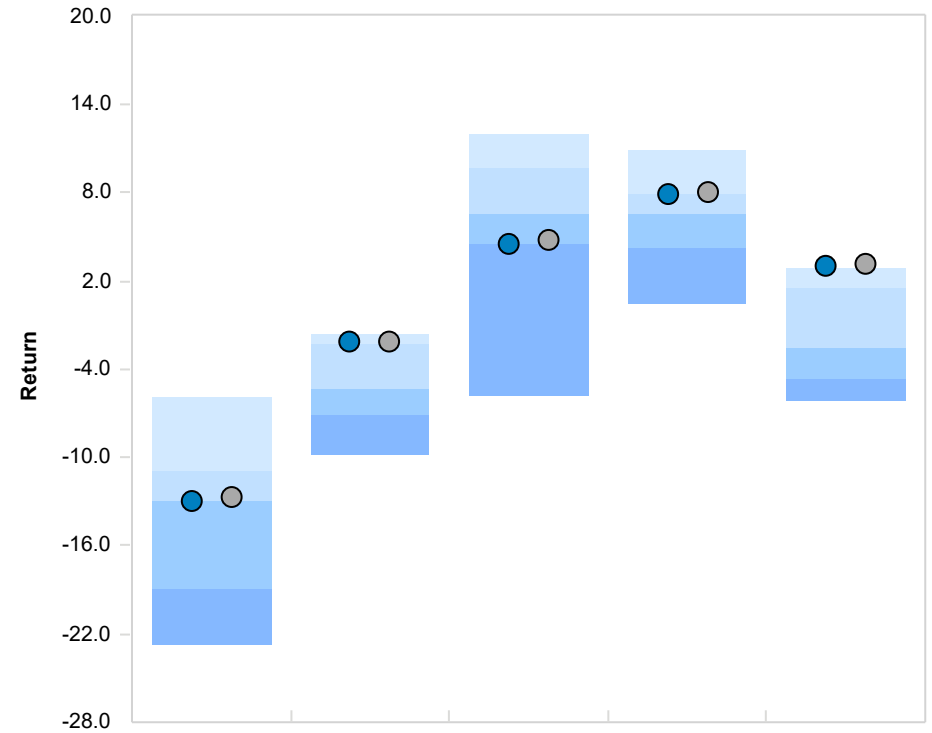
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	15	11 (73%)	4 (27%)	0 (0%)	0 (0%)
Index	20	16 (80%)	4 (20%)	0 (0%)	0 (0%)



**Peer Group Analysis - IM International Fixed Income (MF)**



**Peer Group Analysis - IM International Fixed Income (MF)**



**Financial Reconciliation Since Inception Ending December 31, 2023**

	Market Value 06/01/2015	Net Flows	Return On Investment	Market Value 12/31/2023
Investment	9,329,282	-2,425,000	1,587,472	8,491,754

**Comparative Performance**

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	-1.46	0.14	3.58	-0.05	-3.25	-5.19
Index	-1.29	0.37	3.18	0.08	-3.09	-5.23
Median	-1.29	0.37	3.18	0.08	-3.09	-5.23





### Fund Information

Fund Name : Vanguard Charlotte Funds: Vanguard Total International Bond Index Fund; Institutional Class Shares	Portfolio Assets : \$89,831 Million
Fund Family : Vanguard	Portfolio Manager : Barrickman/Talone
Ticker : VTIFX	PM Tenure : 2013--2022
Inception Date : 05/31/2013	Fund Style : IM International Fixed Income (MF)
Fund Assets : \$12,019 Million	Style Benchmark : FTSE Non-U.S. World Government Bond
Portfolio Turnover : 27%	

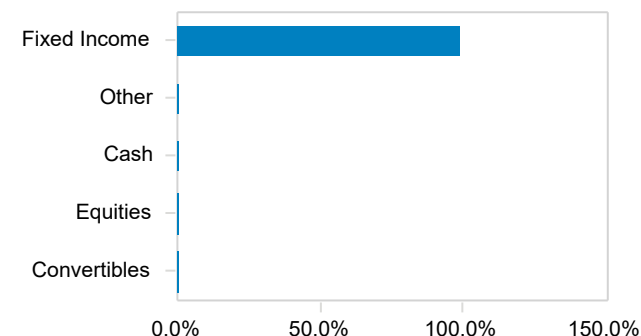
### Fund Characteristics As of 09/30/2023

Avg. Coupon	2.20 %
Nominal Maturity	N/A
Effective Maturity	8.70 Years
Duration	7.10 Years
SEC 30 Day Yield	N/A
Avg. Credit Quality	N/A

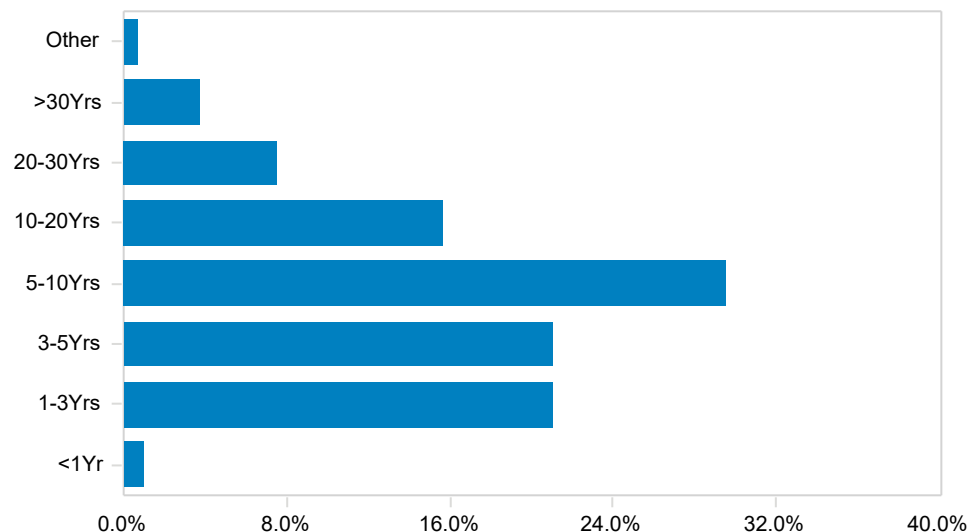
### Top Ten Securities As of 09/30/2023

Fgn. Currency Denominated Bonds	79.2 %
Corporate Notes/Bonds	14.7 %
Asset Backed Securities	5.4 %

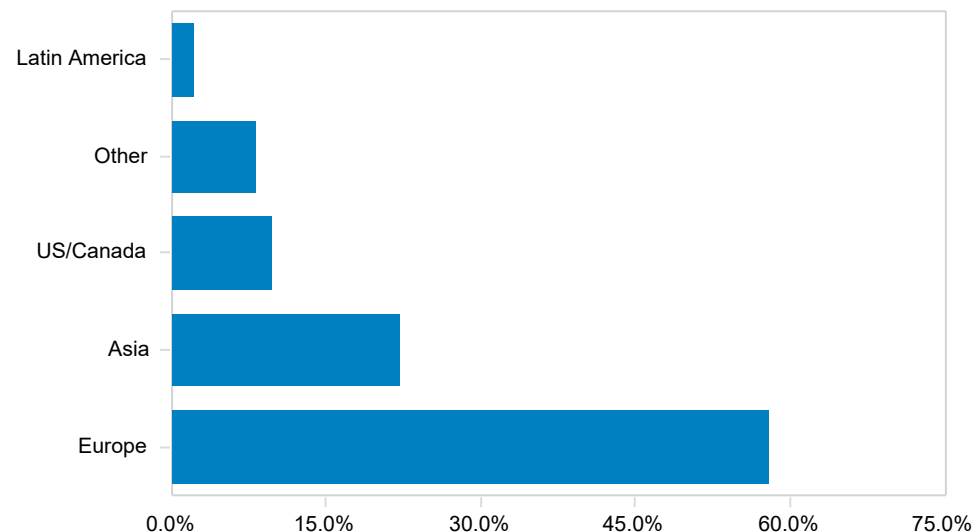
### Asset Allocation As of 09/30/2023



### Maturity Distribution As of 09/30/2023



### Sector/Quality Allocation As of 09/30/2023



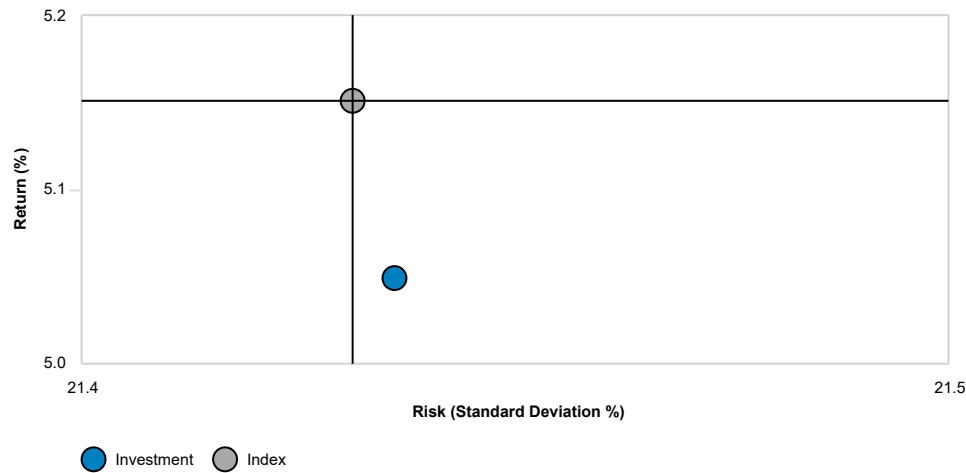
### Historical Statistics 3 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	5.05	21.44	0.24	99.86	8	100.16	4
Index	5.15	21.43	0.24	100.00	8	100.00	4

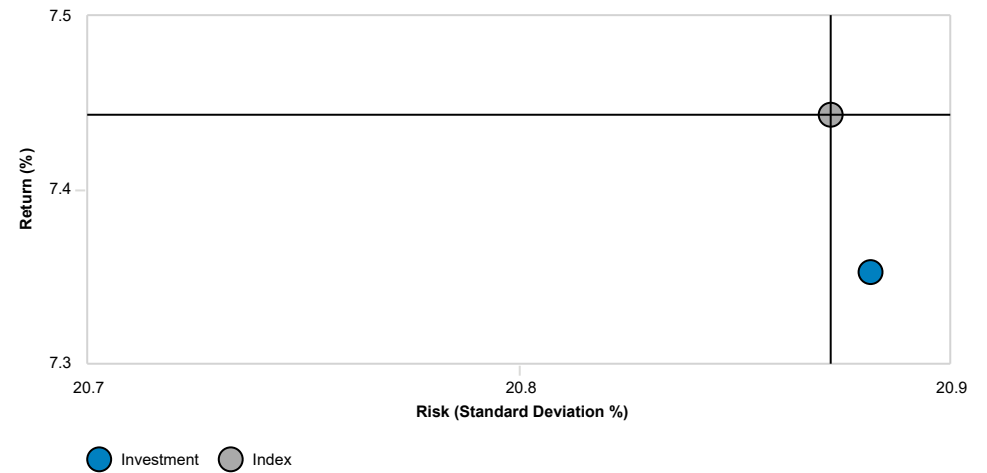
### Historical Statistics 5 Years

	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	7.35	20.88	0.36	99.85	15	100.13	5
Index	7.44	20.87	0.36	100.00	15	100.00	5

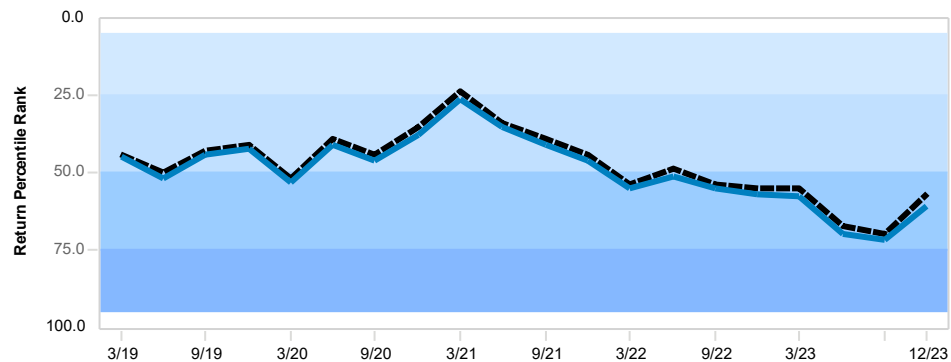
### Risk and Return 3 Years



### Risk and Return 5 Years

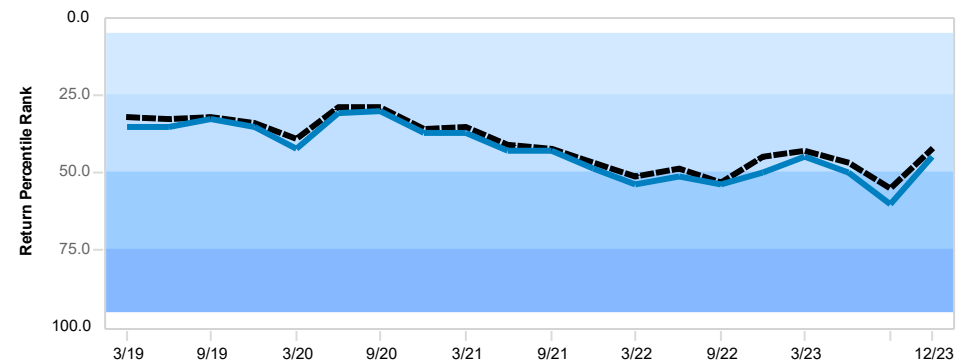


### 3 Year Rolling Percentile Rank IM Real Estate Sector (MF)



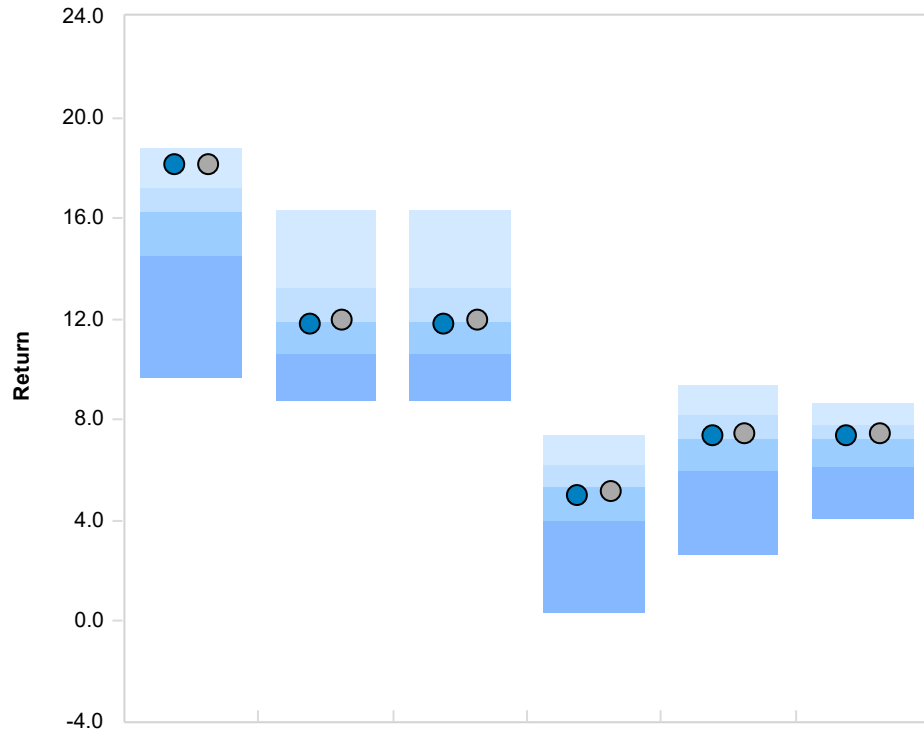
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	10 (50%)	10 (50%)	0 (0%)
Index	20	1 (5%)	11 (55%)	8 (40%)	0 (0%)

### 5 Year Rolling Percentile Rank IM Real Estate Sector (MF)

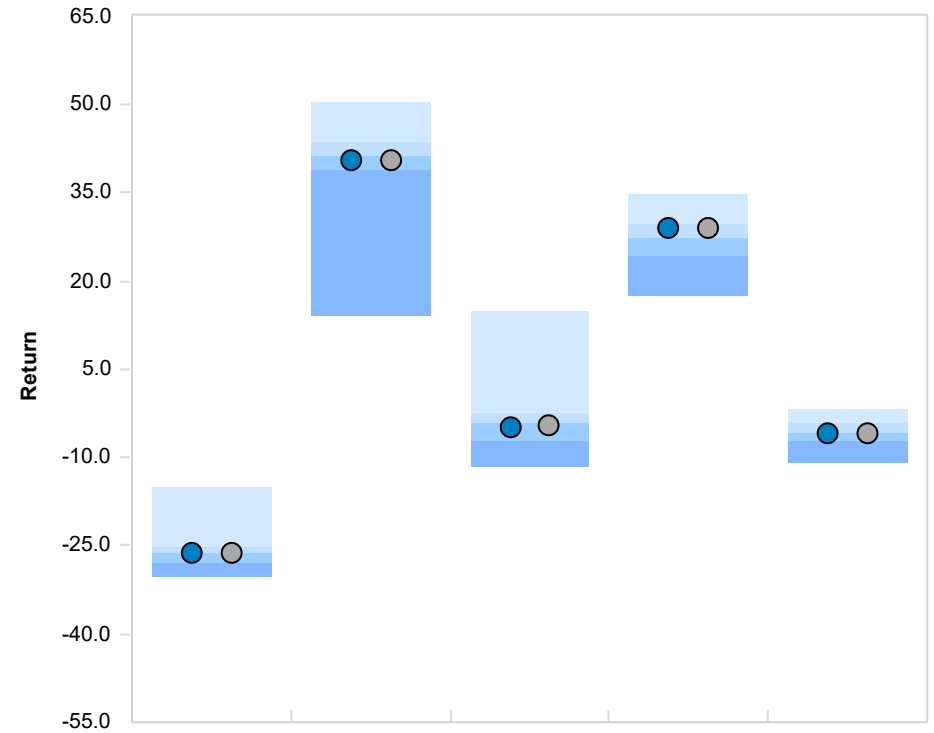


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	16 (80%)	4 (20%)	0 (0%)
Index	20	0 (0%)	17 (85%)	3 (15%)	0 (0%)

**Peer Group Analysis - IM Real Estate Sector (MF)**



**Peer Group Analysis - IM Real Estate Sector (MF)**



**Financial Reconciliation Since Inception Ending December 31, 2023**

	Market Value 10/01/2010	Net Flows	Return On Investment	Market Value 12/31/2023
Investment	4,801,552	-1,776,630	10,868,178	13,893,100

**Comparative Performance**

	1 Qtr Ending Sep-2023	1 Qtr Ending Jun-2023	1 Qtr Ending Mar-2023	1 Qtr Ending Dec-2022	1 Qtr Ending Sep-2022	1 Qtr Ending Jun-2022
Investment	-8.50 (79)	1.63 (54)	1.79 (82)	4.36 (25)	-11.01 (69)	-15.48 (42)
Index	-8.50 (79)	1.68 (51)	1.83 (81)	4.35 (27)	-10.98 (66)	-15.43 (38)
Median	-7.66	1.70	2.56	3.86	-10.73	-15.81



### Fund Information

Fund Name :	Vanguard Specialized Funds: Vanguard Real Estate Index Fund; Institutional Class Shares	Portfolio Assets :	\$64,084 Million
Fund Family :	Vanguard	Portfolio Manager :	O'Reilly/Nejman
Ticker :	VGSNX	PM Tenure :	2003--2016
Inception Date :	12/02/2003	Fund Style :	IM Real Estate Sector (MF)
Fund Assets :	\$9,412 Million	Style Benchmark :	Vanguard Spliced REIT Index
Portfolio Turnover :	7%		

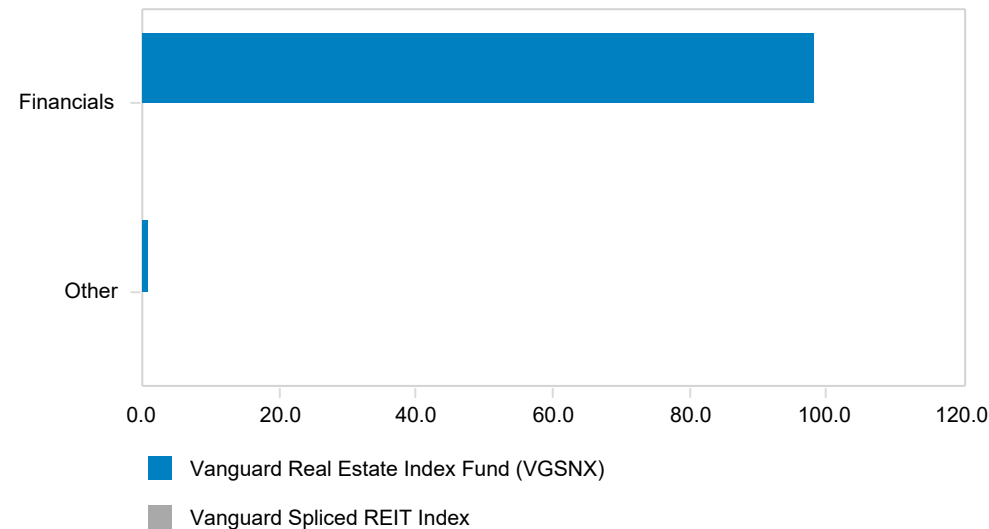
### Portfolio Characteristics As of 11/30/2023

	Portfolio	Benchmark
Total Securities	166	N/A
Avg. Market Cap	43,004,002,255	-
Price/Earnings (P/E)	45.34	N/A
Price/Book (P/B)	5.78	N/A
Dividend Yield	4.61	N/A
Annual EPS	18.04	N/A
5 Yr EPS	16.03	N/A
3 Yr EPS Growth	9.77	N/A
Beta (5 Years, Monthly)	1.00	1.00

### Top Ten Securities As of 11/30/2023

Vanguard Real Estate II Index Fund;Insti	13.1 %
Prologis Inc ORD	7.2 %
American Tower Corp ORD	6.6 %
Equinix Inc ORD	5.2 %
Crown Castle Inc ORD	3.4 %
Welltower Inc ORD	3.0 %
Public Storage ORD	2.8 %
Digital Realty Trust Inc ORD	2.7 %
Simon Property Group Inc ORD	2.7 %
Realty Income Corp ORD	2.6 %

### Sector Weights As of 11/30/2023



### Region (%)

No data found.

**Total Fund Policy**

Allocation Mandate	Weight (%)	Allocation Mandate	Weight (%)
<b>Jan-1979</b>		<b>Jul-2014</b>	
Russell 1000 Growth Index	20.00	CRSP U.S. Large Cap Value TR Index	8.00
Russell 1000 Value Index	20.00	CRSP U.S. Large Cap Growth TR Index	8.00
MSCI EAFE (Net) Index	10.00	CRSP U.S. Mid Cap TR Index	10.00
Bloomberg Intermediate US Govt/Credit Idx	40.00	CRSP U.S. Small Cap TR Index	5.00
Russell 2000 Index	10.00	Vanguard Spliced Emerging Markets Index (Net)	4.00
90 Day U.S. Treasury Bill	0.00	Vanguard Spliced Developed ex U.S. Index (Net)	9.00
<b>Jun-2010</b>		Blmbg. U.S. Gov/Credit: 5-10 Yr	7.50
Russell 1000 Value Index	15.00	Bloomberg U.S. TIPS Index	7.50
MSCI US Prime Market Growth	15.00	Bloomberg 1-5 Year Gov/Credit Idx	7.50
MSCI US Mid Cap 450 Index	10.00	Bloomberg US TIPS 0-5 Year Index	7.50
Russell 2000 Index	10.00	Vanguard Spliced REIT Index	10.00
MSCI EAFE (Net) Index	10.00	90 Day U.S. Treasury Bill	1.00
MSCI Emerging Markets (Net) Index	5.00	S&P 500 Index	15.00
Blmbg. U.S. Gov/Credit: 5-10 Yr	15.00	<b>Nov-2014</b>	
Bloomberg U.S. TIPS Index	15.00	CRSP U.S. Large Cap Value TR Index	8.00
Vanguard Spliced REIT Index	5.00	CRSP U.S. Large Cap Growth TR Index	8.00
<b>Jun-2013</b>		CRSP U.S. Mid Cap TR Index	10.00
CRSP U.S. Large Cap Value TR Index	15.00	CRSP U.S. Small Cap TR Index	5.00
CRSP U.S. Large Cap Growth TR Index	15.00	Vanguard Spliced Emerging Markets Index (Net)	4.00
CRSP U.S. Mid Cap TR Index	10.00	Vanguard Spliced Developed ex U.S. Index (Net)	9.00
CRSP U.S. Small Cap TR Index	10.00	Blmbg. U.S. Gov/Credit: 5-10 Yr	7.00
Vanguard Spliced Emerging Markets Index (Net)	5.00	Bloomberg U.S. TIPS Index	7.00
Vanguard Spliced Developed ex U.S. Index (Net)	10.00	Bloomberg 1-5 Year Gov/Credit Idx	7.00
Blmbg. U.S. Gov/Credit: 5-10 Yr	7.50	Bloomberg US TIPS 0-5 Year Index	7.00
Bloomberg U.S. TIPS Index	7.50	Vanguard Spliced REIT Index	5.00
Bloomberg 1-5 Year Gov/Credit Idx	7.50	90 Day U.S. Treasury Bill	1.00
Bloomberg US TIPS 0-5 Year Index	7.50	S&P 500 Index	15.00
Vanguard Spliced REIT Index	4.00	Blmbg. U.S. Corp High Yield	7.00
90 Day U.S. Treasury Bill	1.00		

**Benchmark History**  
**Investment Policy Benchmarks**  
As of December 31, 2023

Allocation Mandate	Weight (%)
<b>Jun-2015</b>	
CRSP U.S. Large Cap Value TR Index	5.00
CRSP U.S. Large Cap Growth TR Index	5.00
CRSP U.S. Mid Cap TR Index	10.00
CRSP U.S. Small Cap TR Index	5.00
Vanguard Spliced Emerging Markets Index (Net)	5.00
Vanguard Spliced Developed ex U.S. Index (Net)	10.00
Blmbg. U.S. Gov/Credit: 5-10 Yr	7.50
Bloomberg U.S. TIPS Index	5.00
Bloomberg 1-5 Year Gov/Credit Idx	7.50
Bloomberg US TIPS 0-5 Year Index	5.00
Vanguard Spliced REIT Index	5.00
90 Day U.S. Treasury Bill	2.50
S&P 500 Index	15.00
Blmbg. U.S. Corp High Yield	7.50
Blmbg. Global Agg ex-USD Flt Adj RIC Cpd (H)	5.00
<b>Dec-2018</b>	
CRSP U.S. Large Cap Value TR Index	5.00
CRSP U.S. Large Cap Growth TR Index	5.00
S&P MidCap 400 Index	10.00
S&P SmallCap 600 Index	5.00
Vanguard Spliced Emerging Markets Index (Net)	5.00
Vanguard Spliced Developed ex U.S. Index (Net)	10.00
Blmbg. U.S. Gov/Credit: 5-10 Yr	7.50
Bloomberg U.S. TIPS Index	5.00
Bloomberg 1-5 Year Gov/Credit Idx	7.50
Bloomberg US TIPS 0-5 Year Index	5.00
Vanguard Spliced REIT Index	5.00
90 Day U.S. Treasury Bill	2.50
S&P 500 Index	15.00
Blmbg. U.S. Corp High Yield	7.50
Blmbg. Global Agg ex-USD Flt Adj RIC Cpd (H)	5.00

Allocation Mandate	Weight (%)
<b>Oct-2019</b>	
S&P 500 Index	15.00
CRSP U.S. Large Cap Value TR Index	5.00
CRSP U.S. Large Cap Growth TR Index	5.00
S&P MidCap 400 Index	10.00
S&P SmallCap 600 Index	5.00
FTSE Developed All Cap ex-U.S. Index	10.00
FTSE Emerging Mkts All Cap China A Inclusion Index	5.00
Blmbg. U.S. Aggregate Index	20.00
Bloomberg 1-5 Year Gov/Credit Idx	2.50
Blmbg. U.S. Corp High Yield	10.00
Blmbg. Global Agg ex-USD Flt Adj RIC Cpd (H)	5.00
Vanguard Spliced REIT Index	5.00
90 Day U.S. Treasury Bill	2.50
<b>Mar-2020</b>	
S&P 500 Index	15.00
CRSP U.S. Large Cap Value TR Index	5.00
CRSP U.S. Large Cap Growth TR Index	5.00
S&P MidCap 400 Index	10.00
S&P SmallCap 600 Index	5.00
FTSE Developed All Cap ex-U.S. Index	7.50
FTSE Emerging Mkts All Cap China A Inclusion Index	5.00
FTSE Global ex U.S. Small Cap Index (Net)	2.50
Blmbg. U.S. Aggregate Index	20.00
Bloomberg 1-5 Year Gov/Credit Idx	2.50
Blmbg. U.S. Corp High Yield	10.00
Blmbg. Global Agg ex-USD Flt Adj RIC Cpd (H)	5.00
Vanguard Spliced REIT Index	5.00
90 Day U.S. Treasury Bill	2.50



<b>Mid Cap Index Policy</b>	
<b>Allocation Mandate</b>	<b>Weight (%)</b>
<b>Oct-2010</b>	
Vanguard Spliced Mid Cap Index	100.00
<b>Dec-2018</b>	
S&P MidCap 400 Index	100.00

<b>Small Cap Index Policy</b>	
<b>Allocation Mandate</b>	<b>Weight (%)</b>
<b>Jul-2009</b>	
Vanguard Spliced Small Cap Index	100.00
<b>Dec-2018</b>	
S&P SmallCap 600 Index	100.00

**Vanguard Spliced REIT Index History**

MSCI US REIT Index adjusted to include a 2% cash position (Lipper Money Market Average) through April 30, 2009

MSCI US REIT Index through February 1, 2018

MSCI US Investable Market Real Estate 25/50 Transition Index through July 24, 2018

MSCI US Investable Market Real Estate 25/50 Index thereafter



<b>Active Return</b>	- Arithmetic difference between the manager's performance and the designated benchmark return over a specified time period.
<b>Alpha</b>	- A measure of the difference between a portfolio's actual performance and its expected return based on its level of risk as determined by beta. It determines the portfolio's non-systemic return, or its historical performance not explained by movements of the market.
<b>Beta</b>	- A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of the portfolio's systematic risk.
<b>Consistency</b>	- The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. Higher consistency indicates the manager has contributed more to the product's performance.
<b>Distributed to Paid In (DPI)</b>	- The ratio of money distributed to Limited Partners by the fund, relative to contributions. It is calculated by dividing cumulative distributions by paid in capital. This multiple shows the investor how much money they got back. It is a good measure for evaluating a fund later in its life because there are more distributions to measure against.
<b>Down Market Capture</b>	- The ratio of average portfolio performance over the designated benchmark during periods of negative returns. A lower value indicates better product performance
<b>Downside Risk</b>	- A measure similar to standard deviation that utilizes only the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. A higher factor is indicative of a riskier product.
<b>Excess Return</b>	- Arithmetic difference between the manager's performance and the risk-free return over a specified time period.
<b>Excess Risk</b>	- A measure of the standard deviation of a portfolio's performance relative to the risk free return.
<b>Information Ratio</b>	- This calculates the value-added contribution of the manager and is derived by dividing the active rate of return of the portfolio by the tracking error. The higher the Information Ratio, the more the manager has added value to the portfolio.
<b>Public Market Equivalent (PME)</b>	- Designs a set of analyses used in the Private Equity Industry to evaluate the performance of a Private Equity Fund against a public benchmark or index.
<b>R-Squared</b>	- The percentage of a portfolio's performance that can be explained by the behavior of the appropriate benchmark. A high R-Squared means the portfolio's performance has historically moved in the same direction as the appropriate benchmark.
<b>Return</b>	- Compounded rate of return for the period.
<b>Sharpe Ratio</b>	- Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is an absolute rate of return per unit of risk. A higher value demonstrates better historical risk-adjusted performance.
<b>Standard Deviation</b>	- A statistical measure of the range of a portfolio's performance. It represents the variability of returns around the average return over a specified time period.
<b>Total Value to Paid In (TVPI)</b>	- The ratio of the current value of remaining investments within a fund, plus the total value of all distributions to date, relative to the total amount of capital paid into the fund to date. It is a good measure of performance before the end of a fund's life
<b>Tracking Error</b>	- This is a measure of the standard deviation of a portfolio's returns in relation to the performance of its designated market benchmark.
<b>Treynor Ratio</b>	- Similar to Sharpe ratio but utilizes beta rather than excess risk as determined by standard deviation. It is calculated by taking the excess rate of return above the risk free rate divided by beta to derive the absolute rate of return per unit of risk. A higher value indicates a product has achieved better historical risk-adjusted performance.
<b>Up Market Capture</b>	- The ratio of average portfolio performance over the designated benchmark during periods of positive returns. A higher value indicates better product performance.



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*Methodology for this Award: For the 2022 Greenwich Quality Award for Overall U.S. Investment Consulting – Midsize Consultants – Between February and November 2022, Coalition Greenwich conducted interviews with 727 individuals from 590 of the largest tax-exempt funds in the United States. These U.S.-based institutional investors are corporate and union funds, public funds, and endowment and foundation funds, with either pension or investment pool assets greater than \$150 million. Study participants were asked to provide quantitative and qualitative evaluations of their asset management and investment consulting providers, including qualitative assessments of those firms soliciting their business and detailed information on important market trends.*



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