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100 Campus Center ~~~ Seaside, CA ~~~ 93955-8001

## Memorandum

**TO:** Investment Committee

**VIA:** Gifford Lehman, Chair

**FROM:** Nancy S. Ayala

**DATE:** November 1, 2022

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**SUBJECT:** Agenda and Read-Ahead Materials

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Enclosed are the agenda and read-ahead materials for the Investment Committee meeting on Tuesday, November 8, 2022. The meeting will be held at the Alumni and Visitors Center's board room with a zoom option, beginning at 2 pm.

If you have any questions or concerns before the meeting, please feel free to contact me at [nayala@csumb.edu](mailto:nayala@csumb.edu).



100 Campus Center ~~~ Seaside, CA ~~~ 93955-8001

**Auxiliary Investment Committee Meeting**

Tuesday, November 8, 2022 ~~~ 2:00 p.m. – 4:00 p.m.

Alumni and Visitors Center-Board Room and Zoom

*Light refreshments will be served.*

**AGENDA**

- |             |   |           |
|-------------|---|-----------|
| <b>I.</b>   | <b>Call to Order</b>  | G. Lehman |
| <b>II.</b>  | <b>Approval of Minutes</b>  |           |
| 2 min.      | Approval of August 23, 2022 meeting minutes   | G. Lehman |
| <b>III.</b> | <b>Public Comment-</b>  | G. Lehman |
| <b>IV.</b>  | <b>Business-None</b>  |           |
| <b>V.</b>   | <b>Reports</b>  |           |
| 20 min.     | A. Environmental Sustainability in CSUMB’s Investments Presentation<br><i>Attachment V. A</i>                               | Verus     |
| 30 min..    | B. Review of the Environmental Sustainability Metrics outlined in the Investments<br>Presentation<br><i>Attachment V. B</i> | Verus     |
| 15 min.     | C. Quarterly Research Report<br><i>Attachment V. C</i>  | Verus     |
| 15 min.     | D. Performance Monitoring Report<br><i>Attachment V. D</i>  | Verus     |
| <b>VI.</b>  | <b>Closed Session</b>   |           |
| 10 min.     | Other Topics  | G. Lehman |
| <b>VII.</b> | <b>Adjournment</b>  | G. Lehman |

*Note: This agenda provides notice of the business to be transacted (i.e., topics for Committee discussion). Action may be taken on any item on the agenda. The italicized notations above are for guidance purposes only and the Committee may take action on any item listed on the agenda, whether action is specifically prescribed.*



100 Campus Center ~~~ Seaside, CA ~~~ 93955-8001

**Investment Committee Meeting**

Tuesday, August 23, 2022 ~~~ 9:03 a.m. – 10:50 a.m.  
Via Zoom

**Draft, Minutes**

<b><u>Committee Members Present:</u></b>		<b><u>Members Absent:</u></b>
Gifford Lehman, Chair	Bud Colligan	Brian Corley, CIMA & AIF
Barbara Zappas	Stephen Mackey	
<b><u>Staff Present:</u></b>		<b><u>Guests:</u></b>
Lawrence Samuels, Corporation Executive Director		Jason Taylor, Verus Investments (Verus)
Starr Lee, Corporation Associate Executive Director		John Crosbie, Verus Investments (Verus)
Sherry Baggett, Corporation Controller		Glen Nelson, AVP of Admin and Finance
Nancy Ayala, Gov. & Compliance Mgr.		

- I. **Call to Order:** A quorum being established, Chair Gifford Lehman called the meeting to order at 9:03 a.m.
- II. **Approval of Minutes:** Moved and seconded to approve the May 11, 2022 meeting minutes as presented. With no further discussion, the motion carried.  
*Member Bud Colligan arrived at 9:04 a.m.*
- III. **Public Comment:** The Committee did not receive a request for public comment.
- IV. **Business**  
Assessing the paths towards an environmentally sustainable portfolio: Verus presented material to assist the Committee in defining a goal before constructing a more environmentally sustainable portfolio. Regardless of the goal, the Committee must keep the fiduciary obligation towards scholarship beneficiaries and donors. Corporation Executive Director Lawrence Samuels noted that the Boards should define the goal, and the Committee should provide portfolio recommendation(s) based on that goal. Member Colligan noted that the goal should express the University's values; reflect the University's strong commitment to sustainability, with the understanding that fossil fuels are still the primary energy source worldwide. Any decision made should move the portfolio toward a more environmentally sustainable portfolio. Still, we are not in the position in the world or at CSUMB to completely cut off all involvement in fossil fuels because this is not a fossil fuel-free campus. Verus reviewed potential implementation strategies, ESG performance, fees, and the measuring of carbon exposure. Chair Lehman suggested a presentation to the Auxiliary Boards to seek guidance/approval on a statement supporting a more environmentally sustainable portfolio to include specific metrics and a timeline. Verus will work with the Committee on a presentation before the next board meetings. The Investment Policy Statement will be updated to reflect the goal of an environmentally sustainable portfolio when the Board approves the Committee's recommendation(s).
- V. **Reports:**
  - A. Quarterly Research Report: Verus provided a brief review of the market environment.

B. Performance Monitoring Report: At the period ending June 30, 2022, the Endowment held approximately \$32M. The Endowment portfolio had a 8.9% loss, overperforming the policy index by 0.5%. Over a five-year period, the endowment portfolio returned 5.3%, overperforming the policy index by 0.1%.

The Operating Fund had a 9.2% loss, overperforming the policy index by 0.5%. Over a five-year period, the operating fund returned 4.3%, meeting the policy index.

**VI. Closed Session:** The Committee did not enter into closed session.

**VII. Adjournment:** With no further business to discuss, the meeting adjourned at 10:50 a.m.

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Gifford Lehman, Committee Chair

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Date



SEPTEMBER 2022

# Environmental Sustainability in CSUMB's Investments



**California State University  
at Monterey Bay**

Attachment V. A

# CSUMB's current environmental sustainability statement

In 2007 President Harrison signed the Second Nature Climate Commitment with a **goal** of achieving Carbon Neutrality by 2030, this was reaffirmed in 2017 by President Ochoa.

The State and CSU **policy** is to achieve carbon neutrality by 2045.



**1**  
Reduce Greenhouse Gas Emissions and Achieve Carbon Neutrality by 2030

**2**  
Plant 2,030 trees

**3**  
Divert 90% of waste from landfill

CSUMB's broad approach to sustainability recognizes that the decisions we make today impact future generations. Through the lens of **justice and equity** we work in all areas of **operations and teaching** to respect, and respond to, the needs of our **natural environment**.

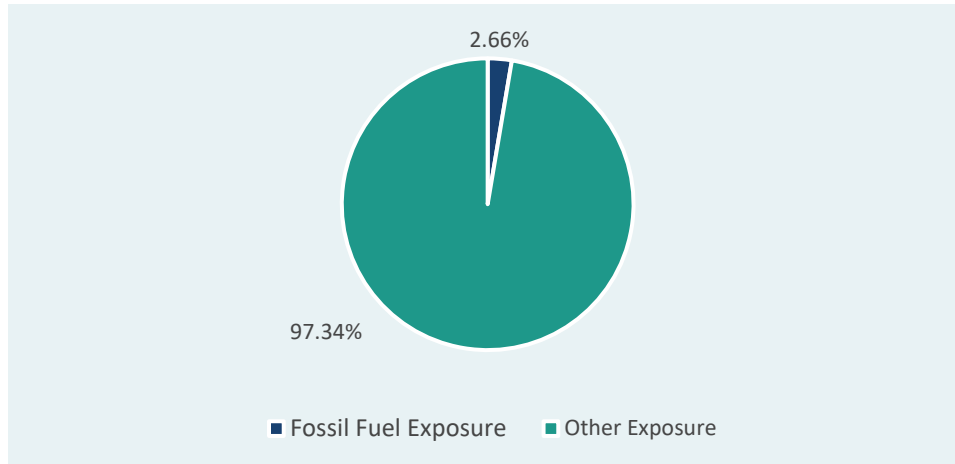
# Where are we?

- The investment committee has discussed the consideration of sustainable investing at each of the last 3 meetings.
- We have surveyed and discussed the broad policies on sustainability across the CSUMB campuses.
- In previous investment committee meetings, we have heard input and ideas from students, staff, and faculty regarding sustainable ways to invest our assets.
- Verus has provided insight as to how other universities have tackled issues of sustainable investing and ways we may do the same.

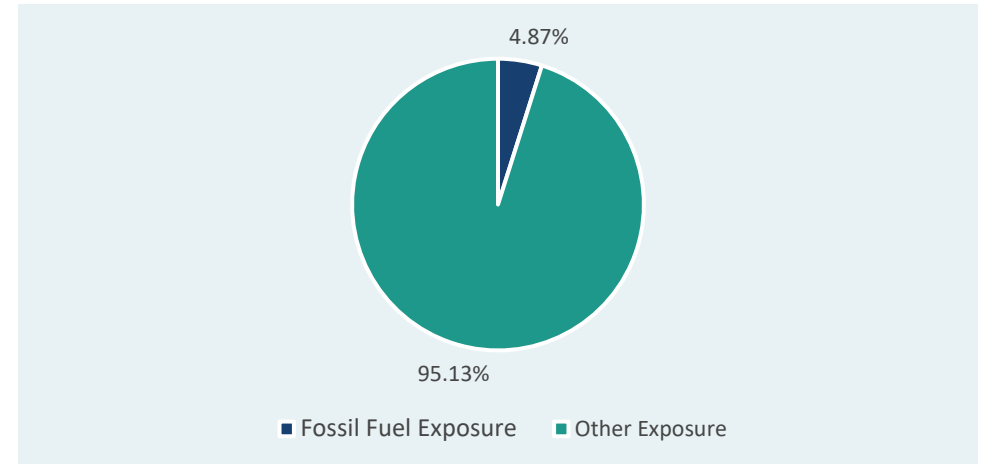
# Fossil fuel equity exposure - Foundation

	Portfolio Allocation (\$)	Fund Exposure to Fossil Fuels (%)	Exposure to Fossil Fuels (\$)	Total Portfolio Exposure (%)	Total Equity Exposure (%)
Vanguard S&P 500 Index	\$ 4,042,243	3.42%	\$ 138,300	0.43%	0.79%
Schwab US Fundamental Large Co. Index	\$ 4,195,857	7.73%	\$ 324,413	1.01%	1.85%
DFA US Micro Cap	\$ 1,596,059	2.09%	\$ 33,327	0.10%	0.19%
Schwab Fundamental Intl. Large Co. Index	\$ 2,171,926	7.03%	\$ 152,587	0.47%	0.87%
WCM Focused Growth International	\$ 1,146,788	0.00%	\$ -	0.00%	0.00%
Dodge & Cox International	\$ 1,306,285	3.61%	\$ 47,122	0.15%	0.27%
Baillie Gifford Emerging Markets	\$ 1,381,128	5.49%	\$ 75,871	0.24%	0.43%
DFA Emerging Markets Value	\$ 1,739,618	4.87%	\$ 84,715	0.26%	0.48%
	<b>\$ 17,579,904</b>		<b>\$ 856,335</b>	<b>2.66%</b>	<b>4.87%</b>

TOTAL PORTFOLIO FOSSIL FUEL EXPOSURE



EQUITY FOSSIL FUEL EXPOSURE



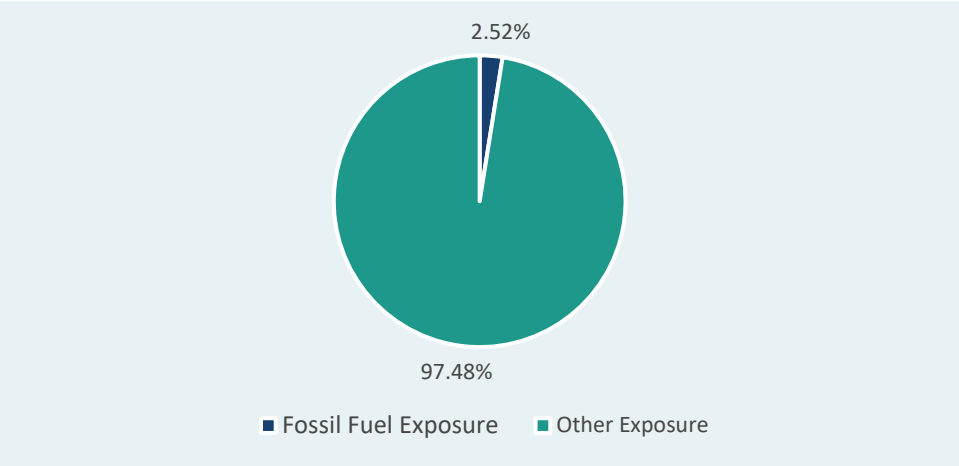
Fossil fuel exposure represents share of underlying holdings also held in the iShares MSCI Global Energy Producers ETF (FILL). Core fixed income, emerging market debt, real estate, and private credit not included.



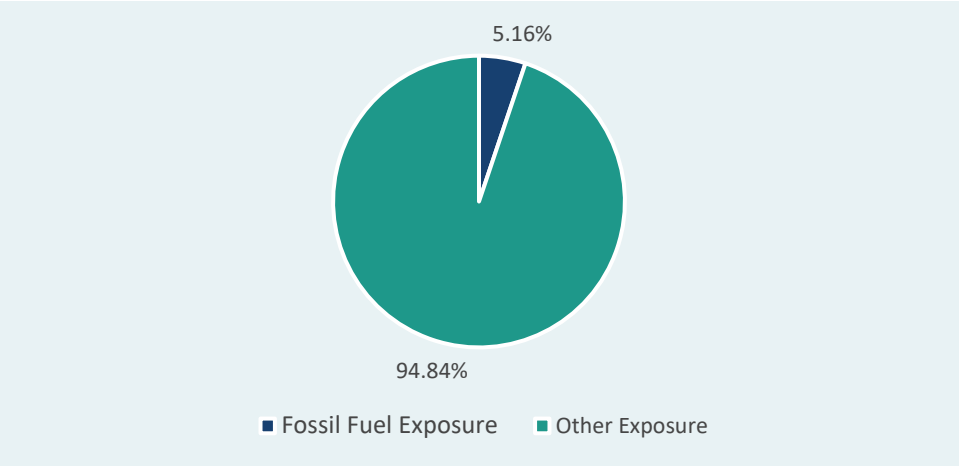
# Fossil fuel equity exposure - Corporation

	Portfolio Allocation (\$)	Exposure to Fossil Fuels (%)	Exposure to Fossil Fuels (\$)	Total Portfolio Exposure (%)	Total Equity Exposure (%)
Vanguard S&P 500 Index	\$ 7,104,328	3.42%	\$ 243,066	0.49%	1.01%
Schwab US Fundamental Large Co. Index	\$ 7,400,582	7.73%	\$ 572,194	1.16%	2.37%
Schwab Fundamental Intl. Large Co. Index	\$ 4,872,753	7.03%	\$ 342,331	0.69%	1.42%
WCM Focused Growth International	\$ 2,294,247	0.00%	\$ -	0.00%	0.00%
Dodge & Cox International	\$ 2,502,134	3.61%	\$ 90,260	0.18%	0.37%
	<b>\$ 24,174,044</b>		<b>\$ 1,247,851</b>	<b>2.52%</b>	<b>5.16%</b>

TOTAL PORTFOLIO FOSSIL FUEL EXPOSURE



EQUITY FOSSIL FUEL EXPOSURE



Fossil fuel exposure represents share of underlying holdings also held in the iShares MSCI Global Energy Producers ETF (FILL). Core fixed income, emerging market debt, real estate, and private credit not included.

# Narrow vs. broad assessment of sustainability



MSCI environmental ratings measure company activities relating to:

- Alternative Energy
- Energy Efficiency
- Green Building
- Sustainable Water
- Pollution Prevention
- Sustainable Agriculture
- Carbon Intensity
- Ownership of Fossil Fuel Reserves
- Impact of Fossil Fuel Reserves
- Exposure to High Water Risk

*Weighted average carbon intensity is an MSCI metric measured as tons of CO2 emitted/\$1mm revenue.*

*Exposure to fossil fuels will be measured using share of underlying fund holdings also held in the iShares Global Energy Producers ETF (FILL).*

# Standard vs. sustainable recent 3-year returns

Funds	Weighted Average Carbon Intensity	Fossil Fuel Exposure	MSCI Environmental Rating	3-Year Annualized Return	3-Year Annualized Standard Deviation	Fees
S&P 500 (Vanguard FTSE Social Index)	148.6 (51.0)	3.42% (0.00%)	6.1 (6.3)	10.60% (10.27%)	18.70% (19.88%)	0.03% (0.14%)
MSCI EAFE (iShares ESG Aware EAFE ETF)	120.6 (103.7)	3.03% (2.86%)	6.2 (6.5)	1.07% (1.68%)	18.06% (18.07%)	0.32% (0.20%)
MSCI Emerging Markets (iShares ESG Aware EM ETF)	362.5 (167.7)	1.93% (0.11%)	5.1 (5.8)	0.57% (0.50%)	18.25% (18.35%)	0.68% (0.25%)
Bloomberg Barclays Aggregate Index (iShares ESG Aware Aggregate ETF)	N/A	N/A	N/A	-0.97% (-1.04%)	4.55% (4.52%)	0.03% (0.10%)

Returns and standard deviation are as of the period 7/1/2019-6/30/2022

S&P 500 & MSCI index fund fees represent corresponding ETF fees. Tickers: VOO, EFA, EEM, AGG. ESG index funds are shown for illustrative purposes only, they are not recommendations.

3-year annualized return is a measurement of average return per year over the period. 3-year annualized standard deviation is a measurement of average volatility per year over the period.

# What are the tradeoffs?

## Higher Fees

In total, fees paid to investment managers will likely rise

Morningstar found the average fees for sustainable funds were 16bps higher than traditional funds at the end of 2021

## Fewer Investment Opportunities

There will be fewer investment funds that are available for use

Some asset classes may not have high quality options in sustainable funds e.g., emerging market debt

## Less Diversification

The portfolio is likely to become more concentrated in certain sectors/countries

A growth bias could develop due to positive environmental factors in the style

# The cost of higher fees

Morningstar's 2021 annual fund fee study showed that sustainable funds had an average fee 16bps higher than traditional funds.

With the foundation portfolio value of \$32,205,086 as of 6/30/22, the total portfolio fee would be \$51,530 higher than it is now.

As the industry matures, we expect the same fee compression in sustainable funds that we've witnessed across the investment management landscape. In fact, Morningstar's fee study has shown a more rapid decline in fees for sustainable funds than traditional funds.

# Performance differences

	S&P 500	Vanguard FTSE Social Index
YTD	-20.0%	-24.0%
1 Year	-10.6%	-15.1%
3 Years	10.6%	10.3%
5 Years	11.3%	11.5%
2021	28.7%	27.7%
2020	18.4%	22.7%
2019	31.5%	33.9%
2018	-4.4%	-3.4%

We do know that most sustainable funds seem to exhibit negative correlation to carbon-based energy prices.

Otherwise, predicting difference in performance moving forward is difficult.

It is important to note that sustainable funds will perform differently than their respective indices due to differences in sector and company allocations.

# A possible timeline for implementation



Large cap domestic equities (25% of Endowment, 30% of Operating)

International growth & value equities (13% Endowment, 20% Operating)

Emerging market equities (11% Endowment) & domestic small cap equities (6% Endowment)

Core fixed income (22% Endowment, 25% Operating)

*Endowment value as of 6/30/22 was \$32,205,086. Operating portfolio value as of 6/30/22 was \$49,515,623. Allocations to emerging market debt, real estate, and private credit not shown.*

# Input from foundation board

We are seeking input on the following:

1. The plan outlined today to move to an environmentally sustainable portfolio
2. The possible timeline proposed for implementing the changes to our investment portfolios.





# **PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS**



**NOVEMBER 2022**

Definition of sustainability metrics

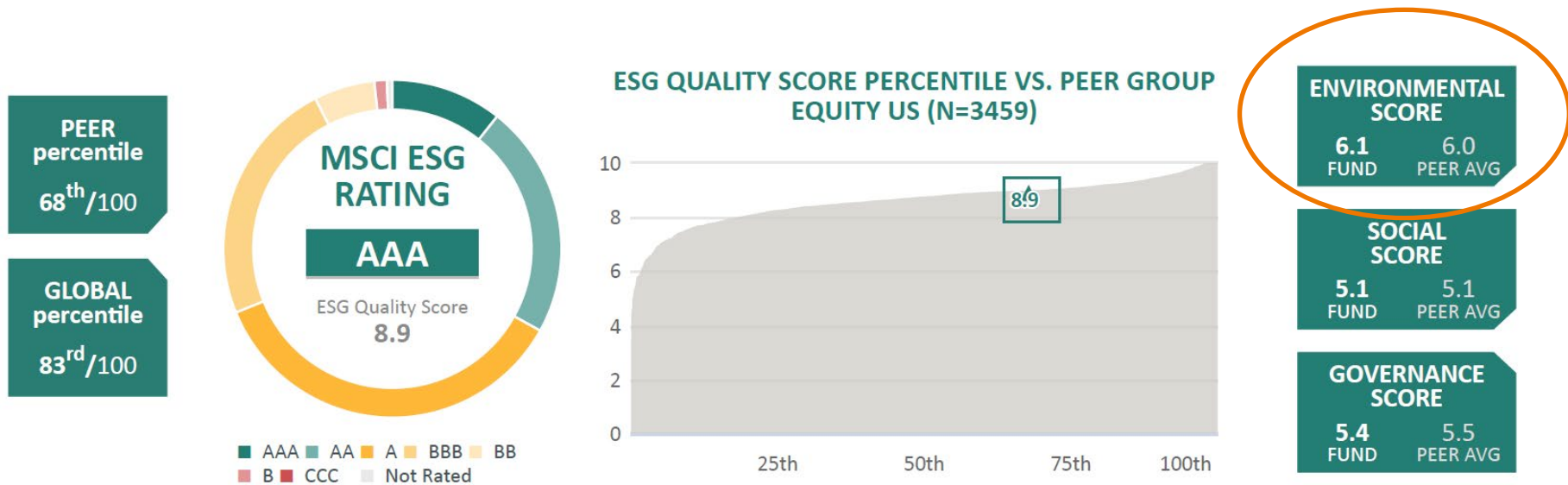
**California State University at Monterey Bay**

Attachment V. B

# MSCI environmental ratings

MSCI provides ESG ratings for all of the funds they cover. That rating is a weighted average of the environmental, social, and governance scores.

- CSUMB’s focus will be on the environmental score only, although we can monitor the social and governance scores when/if appropriate.
- The environmental score is a weighted average of 10 “key issues” ranging from alternative energy usage to impact of fossil fuel reserves.



Source: MSCI <https://www.msci.com/documents/1296102/21901542/ESG-Ratings-Methodology-Exec-Summary.pdf>

# MSCI environmental ratings

## PROS

- MSCI has very broad coverage over many funds in the investment manager universe.
- These ratings incorporate a wide range of metrics helping capture all around sustainability.
- The scores and reports that MSCI produces are very easy to access through the software Verus uses. Methodology for these ratings are transparent.

## CONS

- Not all the data is audited, and some information is self reported or estimated.
- Scores are relative to peers in the fund's asset class, not the total universe.
- Different rating agencies may have different criteria, this could cause conflicting scores when comparing against others.

*Source: MSCI*

# Weighted average carbon intensity

## WHAT IS IT?

Weighted average carbon intensity (WACI) measures the efficiency of fossil fuel energy use to generate revenue.

$$\frac{\text{Tons CO}_2\text{e}}{\text{million USD revenues}}$$

The data is sourced through public disclosures first. If data is unavailable, then estimates are used through the lens of 3 scopes.

1. Emissions from sources owned or controlled by the company.
2. Emissions caused by electricity purchased by the company.
3. Indirect emissions such as travel, distribution and downstream effects of a company's products.

Source: MSCI, <https://www.msci.com/index-carbon-footprint-metrics>

# Weighted average carbon intensity

## PROS

- This metric is attributable across most asset classes and sectors.
- This methodology also reflects carbon emissions regardless of industry, it is not constrained to producers of fossil fuels.
- It's an intuitive measurement of how efficient a company is using carbon-based fuels to operate their business.

## CONS

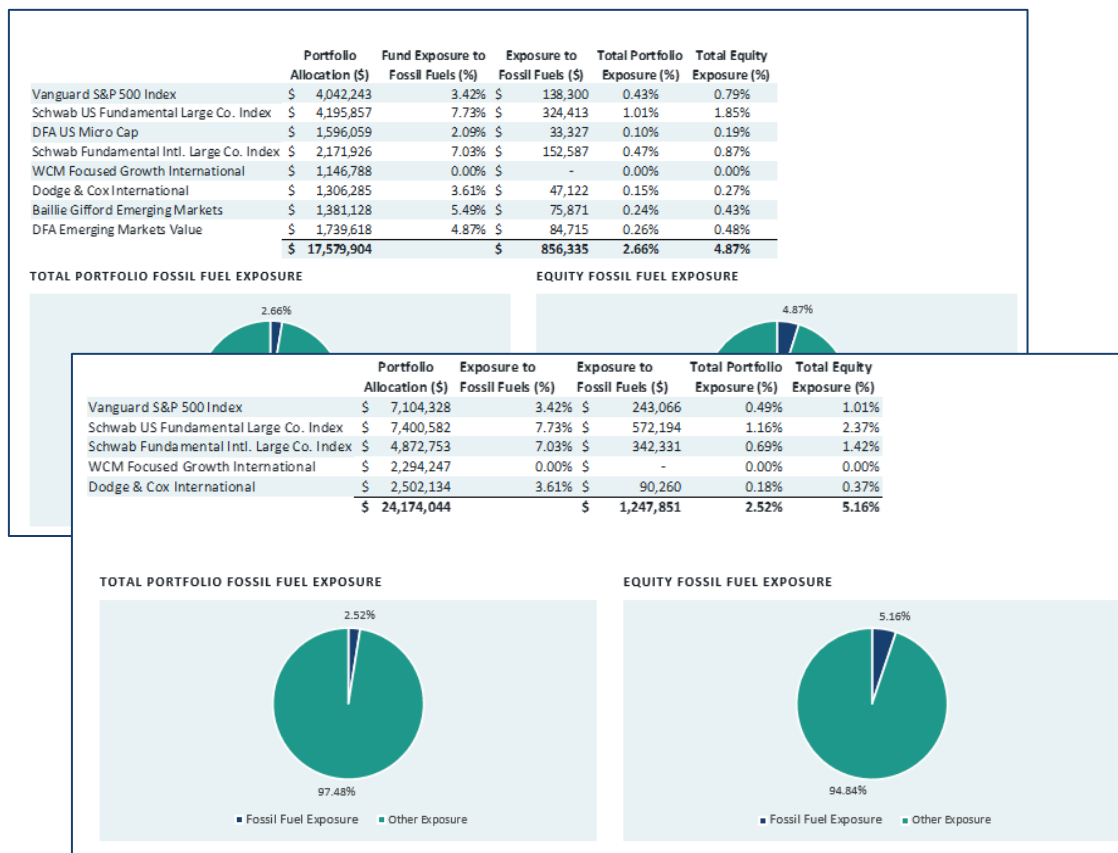
- There is no standard for reporting this data as of yet. While mandatory reporting may be in the pipeline, gaps in reporting are supplemented by estimates.
- This methodology is normalized for revenues, meaning that it does not account for total emissions.

Source: MSCI

# Fossil fuel holdings analysis

## PROCESS

- Some organizations use the Carbon Underground 200 to compare holdings, however the cost to license this list is substantial.
- We currently compare the portfolio holdings to the holdings in the iShares Global Energy Producers ETF (FILL).
- Once we cross reference common holdings in the portfolio, we can determine the exposure each fund has to these companies.
- This process can be adapted to different lists of holdings if desired.



# Fossil fuel holdings analysis

## PROS

- This process can determine how much of the portfolio is invested in companies that produce large amounts of carbon-based fuels.
- The data is very transparent as it is simply a list of holdings that we can easily access through multiple sources.
- This is a data point we have seen many universities use to determine their fossil fuel exposure, though not all use the same list of companies as reference.

## CONS

- The data for asset classes outside of equities is very limited. It is much more difficult to cross reference non-investment grade credit and real estate using this method.
- This provides a picture of money invested in energy producers but does not account for overall emissions.
- This method does not account for the consumers of fossil fuels.

# ESG evaluations are integrated into each factor of Verus manager research

	<b>ESG A</b> Fully Integrated	<b>ESG B</b> Some ESG Elements Observed	<b>ESG C</b> Minimal/No ESG Integration
<b>A</b> <i>Alignment</i>	Firm actively promotes ESG principles; Incentive comp is ESG aligned	Firm has an ESG policy; PRI neither necessary nor sufficient Incentive comp not ESG aligned	Firm does not have any type of ESG policy
<b>E</b> <i>Edge</i>	ESG features in product's stated objective; Product is differentiated from peers based on ESG approach; ESG-ness is obvious to a client	Stated objective emphasizes longer investment horizon; May be "unintentional ESG" due to philosophy emphasis on governance, quality, or sustainable returns	Stated objective has features inconsistent with ESG management due to sector emphasis, high turnover or momentum orientation
<b>I</b> <i>Implementation</i>	ESG principles explicitly incorporated in security analysis/valuation	ESG principles explicitly incorporated in security analysis/valuation (whether or not explicitly labeled as "ESG")	Manager may vote proxies, but no other ESG elements apparent in process; When prompted, may cite ESG as implicit in security analysis/valuation
<b>O</b> <i>Optimal Use of Risk</i>	ESG elements are critical to portfolio construction <u>and</u> risk management; Can cite multiple examples where ESG influences active risk taken	ESG elements may be influences in portfolio construction <u>or</u> risk management; Manager can cite an example of ESG influence on active risk	Portfolio construction and risk focuses exclusively on volatility, liquidity, default; Manager cannot cite examples of ESG influence on active risk
<b>U</b> <i>Understandable Performance</i>	Performance attribution reflects ESG elements <u>or</u> portfolio success is measured based on ESG elements	Performance is consistent with the manager's stated objective	Performance is consistent with the manager's stated objective



# Verus' ESG ratings

## PROS

- Verus rates every manager that we underwrite with an ESG rating.
- Strongly reflects the degree to which investment managers integrate ESG factors into their investment process, in the absence of any regulatory guidance (yet).
- Leverages Verus' research team. All Verus research and consulting staff must complete the CFA's education course in ESG Investing curriculum as part of their requirements.

## CONS

- Verus does not currently provide ESG ratings on passive index funds.
- This is a subjective rating of an investment manager's process and strength of internal controls around ESG.
- The ratings scale from A-C but does not necessarily specify if equally rated funds have similar focus or process.

Source: MSCI

# Notices & disclosures

**Past performance is no guarantee of future results.** This document is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and is not intended for retail investors. Nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security or pursue a particular investment vehicle or any trading strategy. This document may include or imply estimates, outlooks, projections and other “forward-looking statements.” No assurance can be given that future results described or implied by any forward looking information will be achieved. Investing entails risks, including possible loss of principal. Additional information about Verus Advisory, Inc. is available on the SEC’s website at [www.adviserinfo.sec.gov](http://www.adviserinfo.sec.gov).

Verus – also known as Verus Advisory™.



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: SEPTEMBER 30, 2022**

Investment Performance Review for

**University Corporation at Monterey Bay**

Attachment V. C and D

# Table of Contents



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Investment Landscape **TAB I**

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Endowment Fund **TAB II**

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Operating Fund **TAB III**



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**

4<sup>TH</sup> QUARTER 2022  
Investment Landscape

# Verus business update

## Since our last Investment Landscape webinar:

- *Chief Investment Officer* has nominated Verus for its **2022 Innovation Awards** in the Diversity category, recognizing Verus President, Shelly Heier's work to progress the [Institutional Investing Diversity Cooperative \(iidcoop.org\)](https://iidcoop.org) mission promote greater diversity in the institutional asset management industry.
- The firm continues to grow with two new clients, located on the West Coast and in the Midwest.
- Verus has hired several new employees. **Colleen Flannery**, Associate Director | Public Markets; **Jason Fajardo**, Performance Analyst; **Sam Geschickter**, Portfolio Management Associate; **Linda Wu, CFA**, Senior Consulting Associate; and **Amanda Schroeder**, Director of Marketing.
- Recent research, found at [verusinvestments.com/insights](https://verusinvestments.com/insights)
  - In August, we put out a short video on our *Perspectives on the recession and the economy*
  - In September, we released a whitepaper on *Opportunities in small caps*
  - *This month, we shared our 2022 Private Equity Outlook* and a paper called, *Minding the gap: Insights into actuarial assumed rate of return*

# Recent Verus research

Visit: <https://www.verusinvestments.com/insights/>

## Topics of interest papers

### OPPORTUNITIES IN SMALL CAPS

In this Topic of Interest white paper, we first briefly walk through the original small cap premium thesis and research that led to its industry-wide recognition. Forty years have passed since much of this analysis was conducted, so in this section we take a look at whether the small cap effect has remained statistically significant. Next, we discuss active management opportunities in small caps, as these businesses are smaller and less covered by analysts. Last, many U.S. companies are staying private for longer. We cover this trend and its implications for the small cap market, which is directly impacted by the private/public decisions of younger businesses.

### MINDING THE GAP: INSIGHTS INTO ACTUARIAL ASSUMED RATE OF RETURN

As consultants, we are often asked “how can we support a strategic asset allocation with an expected return (ER) that is different from the actuarial assumed rate of return (AARR)?” We believe Plan sponsors with a gap between these two metrics should work to bring the ER and AARR in line. Boards may face modest differences for three distinct reasons – each have countervailing reasons for closing the gap they cause. First, it might be argued that these forecasts are built for different purposes. Second, there is variability in ER forecasts as markets fluctuate year-to-year. Third, the timeframe over which the forecasts are used differs. In this paper, we further explain this reasoning and conclude by offering approaches for Plans to reduce any mismatch between ER and AARR to a reasonable level, which we generally believe to be less than 0.5%.

## Annual research

### 2022 PRIVATE EQUITY OUTLOOK

In the 2022 Private Equity Outlook, we focus attention on the rise of GP-led continuation funds and what investors should consider when evaluating such opportunities. The outlook also addresses the following observations:

- Late-stage venture valuations have increased, and involvement of nontraditional investors has shifted
- Private equity deal activity has slowed in the face of rising interest rates and falling public markets
- Venture capital activity has slowed while fundraising remains strong
- Direct lending continues to drive investor interest while distressed debt and special situations credit have received more attention
- As many factors continue to impact the public markets and create volatility, the secondary market continues to grow

# New Verus manager rating system

- Ratings are applied to products across all public and private market asset classes based on their distinguishing qualities around five key evaluation areas. 1) Alignment with client interests 2) Investment edge 3) Implementation approach 4) Optimal use of risk 5) Understandable performance
- Our “IQ Ratings” considers the institutional quality of the product plus the conviction of our research teams:
  - **Institutional Quality Rating:** Investment products are rated based on insight gained from using five evaluation criteria: Alignment, Investment Edge, Implementation, Optimal Use of Risk, and Understandable Performance. Products that meet or exceed standards of fiduciary care required by institutional investors are indicated with an IQ symbol.
  - **Conviction Rating:** This second component represents the conviction of our research teams in the distinguishing qualities of the product relative to its peers, with 1 as the highest rating and 5 the lowest.
- Importantly, our due diligence process has not changed, just how we communicate our relative conviction in products.

- The following table shows the ratings that may be assigned to an investment product, including their respective characteristics and Verus recommendations:

Rating	Institutional Quality?	Conviction Level	Defining Characteristics	Recommendations
IQ1	Yes	Very High	Earns Verus’ highest conviction. Above-average characteristics most likely to achieve the strategy’s desired investment results.	Recommended for use in client portfolios. May be used in Verus discretionary portfolios
IQ2	Yes	High	Maintains Verus’ high conviction. Above-average characteristics most likely to achieve strategy’s desired investment results.	Recommended for use in client portfolios. May be used in Verus discretionary portfolios
IQ3	Yes	Positive	Meets institutional quality standards that can achieve desired investment results. Strengths outweigh weaknesses.	While IQ1 or IQ2 rated products are generally preferable, certain client needs may be better addressed by a highly specialized IQ3 product
4	No	Low	Concerns with the product’s ability to meet institutional-quality standards.	Clients should re-evaluate retention or monitor closely
5	No	Very Low	Significant issues inhibit the product’s ability to meet institutional-quality standards.	Verus recommends termination, immediately

- Please reach out to your consultant for further details regarding your portfolio.



# Table of contents



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Economic environment 8

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Fixed income rates & credit 21

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Equity 28

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Other assets 37

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Appendix 40

# 3<sup>rd</sup> quarter summary

## THE ECONOMIC CLIMATE

- U.S. real GDP fell in Q2 for a second consecutive quarter, down -0.6% annualized (+1.6% over the past full year). Forecasts suggest a potential growth turnaround in the third quarter; the Atlanta Fed GDPNow forecast indicated a growth rate of 2.8% and economists expected 0.9% as of October 14<sup>th</sup>.
- The U.S. dollar delivered an impressive rally year-to-date, appreciating approximately 15% relative to major currencies. A stronger dollar may result in slowing U.S. exports as domestic goods become more expensive to foreign buyers, and lower inflation as American businesses and households are able to purchase foreign goods at cheaper prices.

## PORTFOLIO IMPACTS

- September inflation figures conveyed two stories: first, U.S. core CPI (excludes food & energy) remained elevated, rising 0.6% during the month to a new 40-year high of 6.6% year-over-year; second, headline inflation (includes all prices) continued to show another more moderate monthly print of 0.4% but remained high at 8.2% year-over-year.
- Credit performance was mixed during Q3, with lower duration exposures faring better than higher duration. Fears of a looming recession remained as the Fed's 75 basis point rate hikes in both July and September reinforced its intention to fight inflation until the "job is done."

## THE INVESTMENT CLIMATE

- The Russia Ukraine war may be taking a turn, as Ukraine's counteroffensive gains steam. In a rare admission, Russia's Defense Ministry spokesman Igor Konashenkov acknowledged recent defeats: "With numerically superior tank units in the direction of Zolota Balka and Oleksandrivka, the enemy managed to forge deep into our defenses."
- The broad market selloff increased in intensity as global central banks hiked interest rates, effectively withdrawing liquidity from the financial system. Higher interest rates and central bank balance sheet winddowns mark a major change from the liquidity-driven environment of the past decade.

## ASSET ALLOCATION ISSUES

- Markets year-to-date have delivered sharp losses across nearly every asset class, including double digit losses of core fixed income (Bloomberg US Aggregate Bond -10.8%). Historically speaking, these moves have been highly unusual and reflect an environment where diversification has not served investors well.
- Growth stocks outperformed value stocks during the quarter (Russell 1000 Growth -3.6% vs Russell 1000 Value -5.6%), and small capitalization stocks outperformed large capitalization stocks (Russell 2000 -2.2%, Russell 1000 -4.7%).

The broad market selloff has increased in severity, as central banks remove liquidity from the global financial system

# What drove the market in Q3?

## “U.S. Consumer Prices Rise Sharply Despite Fed Rate Increases”

### HEADLINE CONSUMER PRICE INFLATION (YEAR-OVER-YEAR)

Apr	May	Jun	Jul	Aug	Sep
8.3%	8.6%	9.1%	8.5%	8.3%	8.2%

Article Source: Financial Times, October 13<sup>th</sup>, 2022

## “U.S. Job Growth Eases, but Is Too Strong to Suit Investors”

### CHANGE IN NON-FARM PAYROLLS

Apr	May	Jun	Jul	Aug	Sep
+368k	+386k	+293k	+526k	+315k	+263k

Article Source: New York Times, October 7<sup>th</sup>, 2022

## “Dollar’s Rise Spells Trouble for Global Economies”

### U.S. DOLLAR INDEX PRICE LEVEL

Apr	May	Jun	Jul	Aug	Sep
103.0	101.8	104.7	105.9	108.8	112.1

Article Source: Wall Street Journal, September 19<sup>th</sup>, 2022

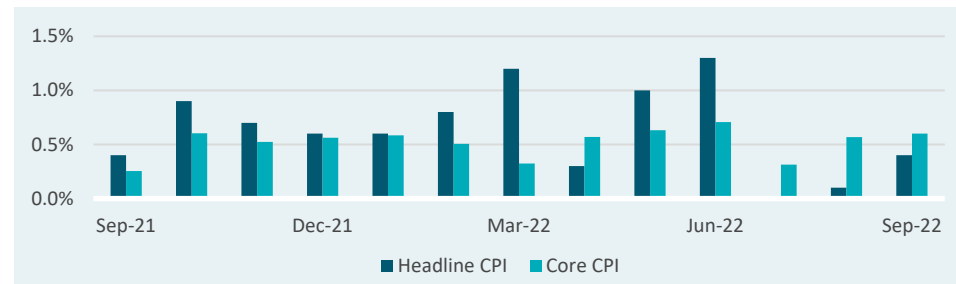
## “Mortgage Demand Drops as Rates Top 6%”

### FREDDIE MAC U.S. 30-YEAR FIXED RATE MORTGAGE RATE

Sep 2021	May	Jun	Jul	Aug	Sep
3.01%	5.10%	5.70%	5.30%	5.66%	6.70%

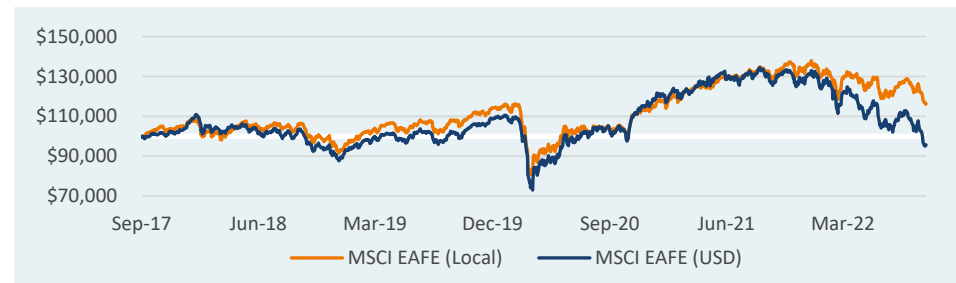
Article Source: CNBC, September 14<sup>th</sup>, 2022

## U.S. HEADLINE & CORE CPI (MONTH-OVER-MONTH)



Source: Bureau of Labor Statistics, as of 9/30/22

## MSCI EAFE LOCAL VS USD RETURNS, GROWTH OF \$100,000



Source: MSCI, Bloomberg, as of 9/30/22

## U.S. EXISTING HOME SALES (YEAR-OVER-YEAR % CHANGE)



Source: National Association of Realtors, as of 8/31/22

# Economic environment

# U.S. economics summary

- U.S. real GDP fell in Q2 for a second consecutive quarter, down -0.6% annualized (+1.6% over the past full year). Forecasts suggest a potential growth turnaround in the third quarter; the Atlanta Fed GDPNow forecast indicated a growth rate of 2.8% and economists expected 0.9% as of October 14th.
- U.S. core CPI remained elevated in September, rising 0.6% during the month to a new 40-year high of 6.6% year-over-year. Headline inflation continued to show another more moderate monthly print of 0.4% but remained high at 8.2% year-over-year.
- Unemployment fell slightly from 3.6% in June to 3.5% in September, which did not reflect an increase in employment but rather the departure of some Americans from the job market altogether. Weekly initial jobless claims—a measure of the number of workers who filed for unemployment during any given week—moved higher during Q2 to 244,000 in early July but has since fallen to 193,000 in late September.
- The U.S. dollar has appreciated roughly 15% relative to major currencies. A stronger dollar may result in slowing U.S. exports as domestic goods become more expensive to foreign buyers, and lower inflation as American businesses and households are able to purchase foreign goods at cheaper prices.
- Coverage of COVID-19 has tended to focus on the health impacts in a binary way: either the infected individual recovers (and lives) or does not recover (and is deceased). There is a growing body of research by medical experts that suggests a significant portion of survivors face longer-term, often severe, health problems. These issues are known as “long COVID” and may be the primary cause for a severe shrinking of the U.S. labor force.

	Most Recent	12 Months Prior
Real GDP (YoY)	1.6% 6/30/22	12.5% 6/30/21
Inflation (CPI YoY, Core)	6.6% 9/30/22	4.0% 9/30/21
Expected Inflation (5yr-5yr forward)	2.1% 9/30/22	2.2% 9/30/21
Fed Funds Target Range	3.00% – 3.25% 9/30/22	0.00% – 0.25% 9/30/21
10-Year Rate	3.83% 9/30/22	1.49% 9/30/21
U-3 Unemployment	3.5% 9/30/22	4.7% 9/30/21
U-6 Unemployment	6.7% 9/30/22	8.5% 9/30/21

# GDP growth

U.S. real GDP fell in Q2 for a second consecutive quarter, down -0.6% annualized (+1.6% over the past full year). Most aspects of economic activity showed decline, including private investment (-2.7%), government spending (-0.3%), and imports (-0.5%). Forecasts suggest a potential growth turnaround in the third quarter; the Atlanta Fed GDPNow forecast indicated a growth rate of 2.8% and economists expected 0.9% as of October 14th.

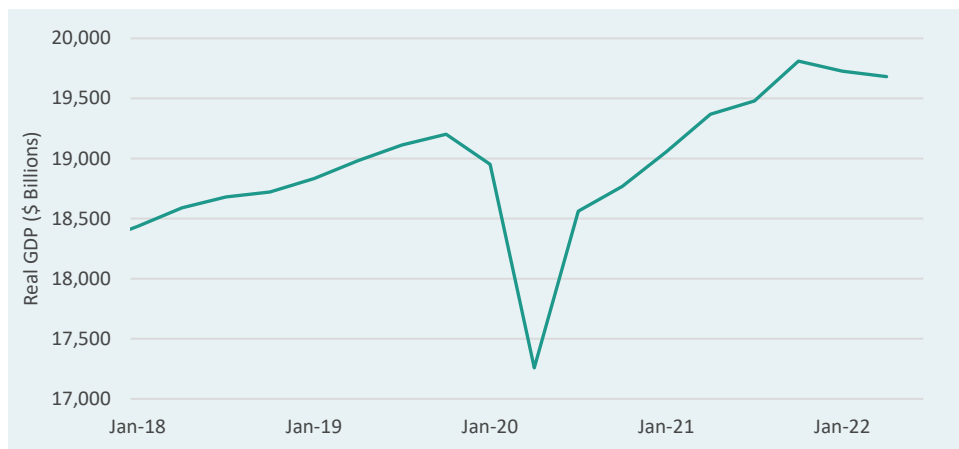
It is possible that the U.S. has avoided technical recession, for now, especially if third quarter GDP growth shows a positive figure. Pundits remain primarily focused on the relatively strong labor market to justify their claims that the U.S. is not in fact

experiencing recession, and slightly positive consumer spending growth during 2022 also adds to their argument.

The U.S. dollar has delivered an impressive rally year-to-date, appreciating approximately 15% relative to other major currencies. Two expected economic impacts of a rising U.S. dollar, all else equal, include: a slowdown in U.S. exports as domestic goods become more expensive to foreign buyers; and lower inflation as American businesses and households are able to purchase foreign goods at cheaper prices. Other countries such as the U.K. may be seeing the opposite of these effects as their domestic currencies fall in value.

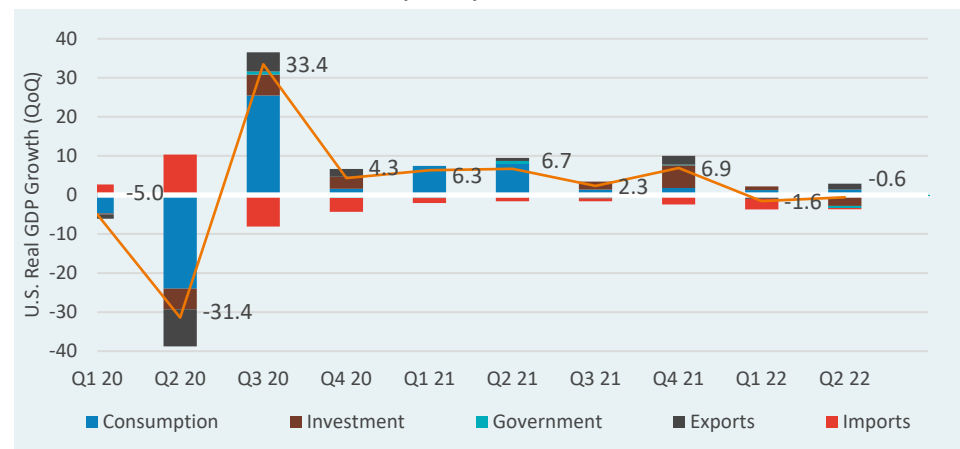
It remains unclear whether the U.S. has entered recession

**U.S. REAL GROSS DOMESTIC PRODUCT**



Source: FRED, as of 6/30/22

**U.S. REAL GDP COMPONENTS (QOQ)**



Source: FRED, as of 6/30/22

# Inflation

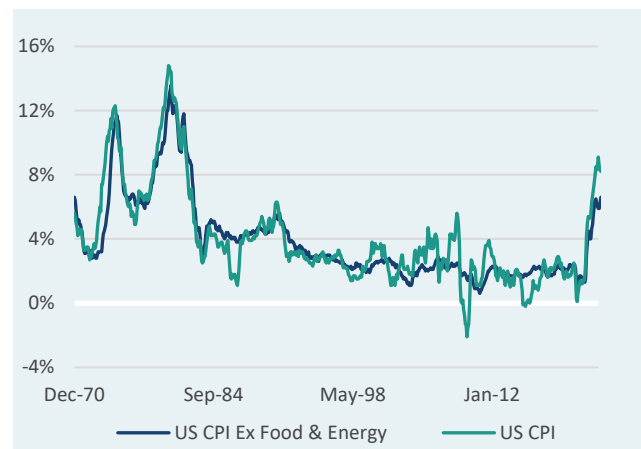
The September inflation print conveyed two separate stories: first, that U.S. core CPI (excludes food & energy) remained elevated, rising 0.6% during the month to a new 40-year high of 6.6% year-over-year; second, headline inflation (includes all prices) continued to show another more moderate monthly print of 0.4%, but remains high at 8.2% year-over-year.

We see a variety of economic developments that suggest inflation is abating, although the level of inflation may not fall to pre-pandemic levels due to the breadth of price movement. These developments include: lower commodity prices,

dramatically lower international shipping costs, and the general slowdown of economic activity on the back of Federal Reserve tightening.

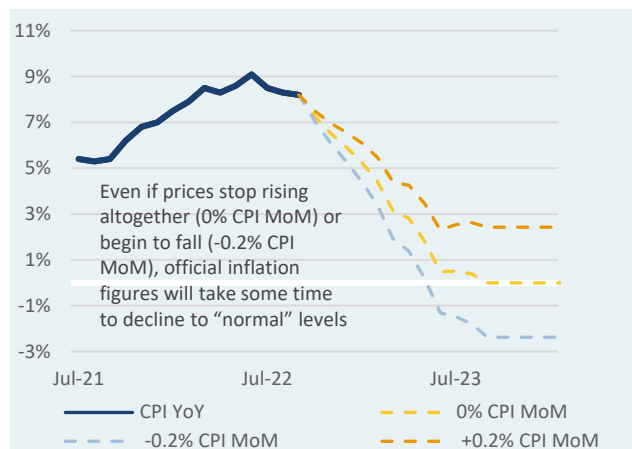
Inflation will take some time to fall back to normal levels, even if *monthly* inflation is 0% in the future. Below we illustrate a few scenarios of *monthly* future price movement. Even if prices stop rising completely (a monthly inflation rate of 0%), the U.S. inflation rate will still likely take until spring of 2023 to fall back to 2%.

## U.S. CPI (YOY)



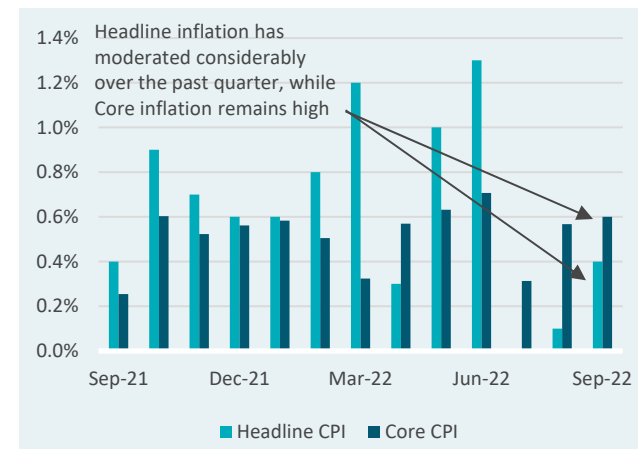
Source: BLS, as of 9/30/22

## INFLATION IS A SLOW-MOVING METRIC



Source: Verus, BLS, as of 9/30/22

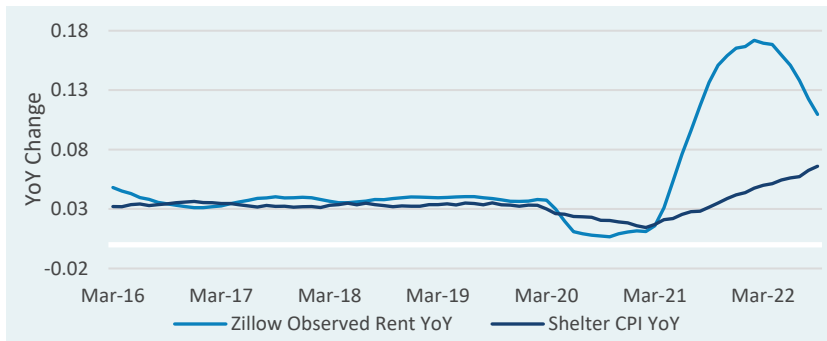
## MONTHLY PRICE MOVEMENT



Source: BLS, as of 9/30/22

# How are inflation conditions evolving?

## CPI SHELTER COSTS (YEAR-OVER-YEAR)



Shelter costs account for approx. 32% of the CPI gauge and have moved considerably higher along with the broader real estate boom. However, only a small portion of these costs have been captured in official data, so far. While there is evidence that home prices and rents have stopped rising, it is not yet clear whether/when the jump in costs of recent years will flow into official CPI data.

## BLOOMBERG COMMODITY SPOT INDEX



Fears of recession and its impact on commodity demand, as well as some potential easing of uncertainty around Ukraine, have likely contributed to a sharp drop in commodity prices. If weaker conditions persist, the reversal in commodity markets should have a deflationary impact on broader consumer prices, though this effect may take time to flow through to broader goods and services prices.

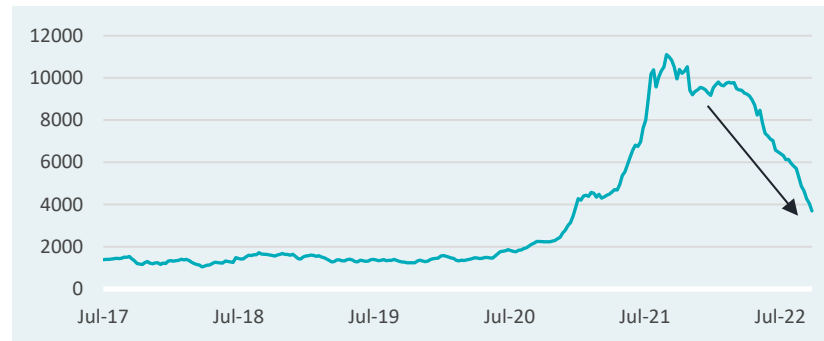
Source: Zillow, FRED, as of 9/30/22 (upper), Bloomberg, as of 9/30/22 (lower)

## CPI USED CAR & TRUCK PRICES



Used auto prices have been dropping materially according to the Mannheim Used Auto Value Index, down more than 13% from highs. If falling prices soon are reflected in official CPI statistics, this would place downward pressure on official inflation figures.

## FREIGHTOS SHIPPING CONTAINER COST INDEX



Pandemic-related supply and demand complexities initially contributed to many supply shortages and price spikes. These shipping costs are quickly falling back towards pre-pandemic levels. We would expect the mitigation of shipping problems to have a deflationary effect on prices, assuming businesses begin to pass these cost savings on to customers.

Source: FRED, as of 9/30/22 (upper), Freightos, as of 10/7/22 (lower)

Inflation dynamics are complex. This slide shows a few potentially *inflationary* forces and *deflationary* forces



# Labor market

The U.S. labor market continues to be strong, which is arguably the biggest factor empowering the Federal Reserve’s aggressive policy stance. However, while employment is strong, high inflation has eaten away at household purchasing power, as demonstrated by the consistent decline in inflation-adjusted weekly earnings since mid-2020.

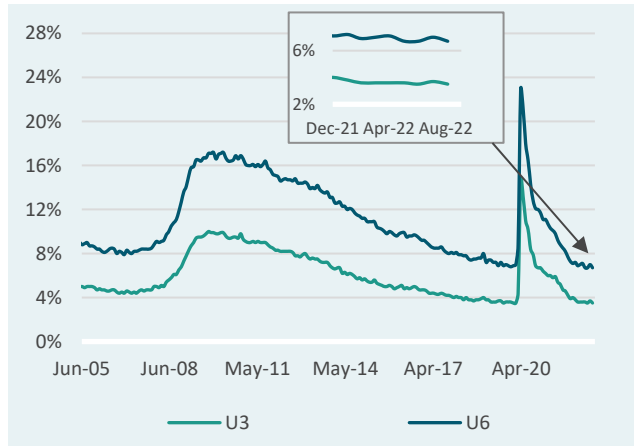
Unemployment fell slightly from 3.6% in June to 3.5% in September, which did not reflect an increase in employment but rather the departure of some Americans from the job market altogether. Weekly *initial jobless claims*—a measure of

the number of workers who filed for unemployment on any given week—moved higher during Q2 to 244,000 in early July but has since fallen to 193,000 in late September.

The gap in labor force participation rates across different age cohorts remains notable, with the age 55+ cohort failing to recover. Previously we had assumed that abnormally early retirements of older workers during the pandemic was likely the main cause for this effect. However, as we propose on the next page, the apparently very widespread health effects of “Long COVID” may be playing a role in this story.

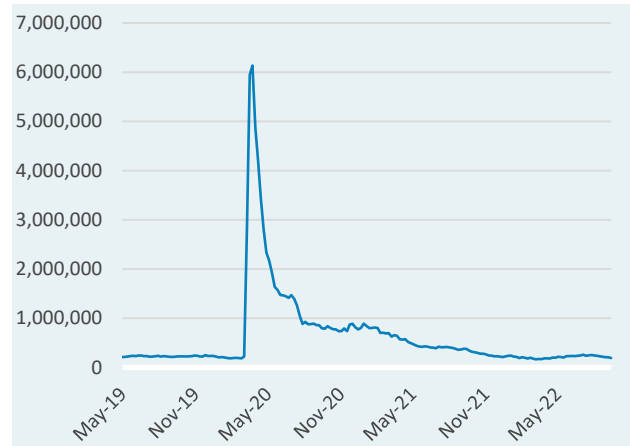
The labor market appears tight according to most metrics, but workers’ wages are falling on an inflation-adjusted basis

**U.S. UNEMPLOYMENT**



Source: FRED, as of 9/30/22

**INITIAL JOBLESS CLAIMS**



Source: FRED, as of 9/25/22

**U.S. AVERAGE WEEKLY REAL WAGES**

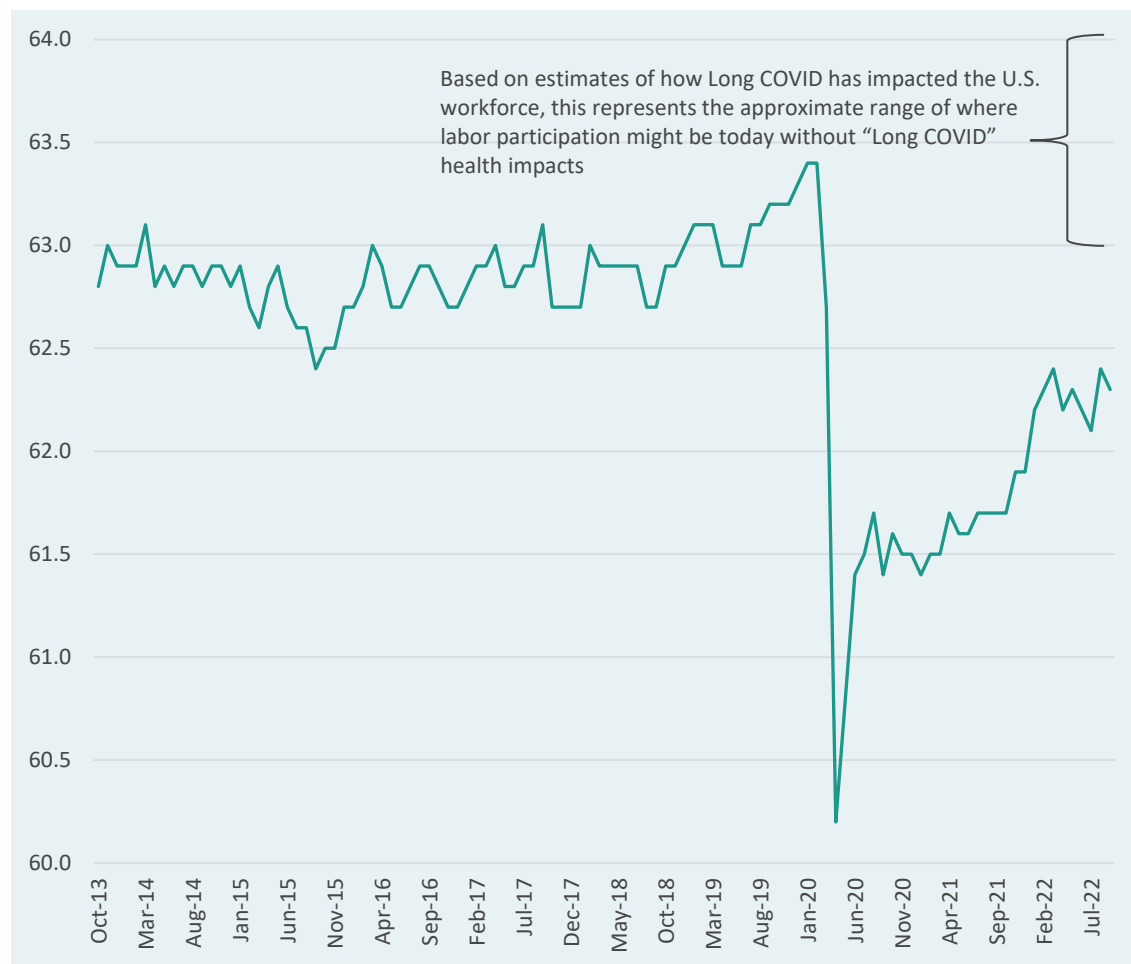


Source: FRED, as of 6/30/22

# Labor dynamics: Long COVID-19

- Most coverage of COVID-19 has focused on the health impacts of COVID-19 in a binary way: either the infected individual recovers (and lives) or they do not recover (and is deceased). There is a growing body of research by medical experts that suggests a significant portion of COVID-19 survivors face longer-term, often severe, health problems. These issues are known as “Long COVID”.
- COVID-19 is broadly thought of as a virus that affects the lungs. However, it can severely impact the brain and heart as well. Studies vary in their projections regarding the number of Americans who are unable to work due to Long COVID health issues. We have observed estimates between half a million and 4 million workers. This chart illustrates that Long COVID could in fact be the primary reason for a shrunken American workforce and the unusual number of unfilled job openings.
- This topic should be seen as important to investors, because: a) the size of the U.S. labor force determines the productive capacity of the country and therefore the rate of economic growth, the direction of wage pressures, and likely also the actions of the Federal Reserve (as decided by metrics such as labor market tightness and household income/spending).
- We are continuing to closely follow these dynamics. Depending on the persistence of Long COVID, future expectations could vary from *permanently reduced U.S. workforce and commensurately reduced U.S. growth prospects* to *continued inflow of previously ill workers back into the workforce*.

LABOR PARTICIPATION RATE (%)



Source: FRED, Verus, as of 9/30/22

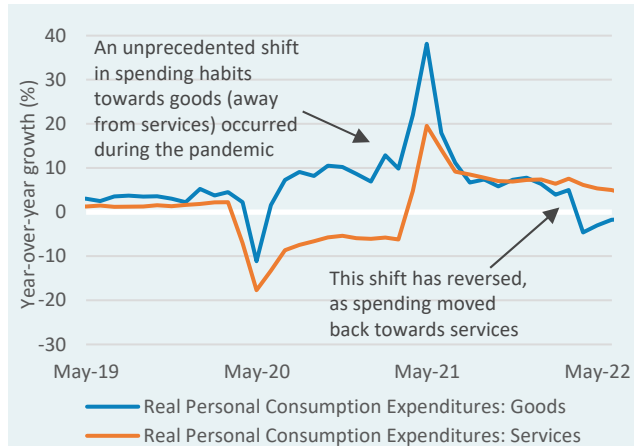
# The consumer

U.S. real (inflation-adjusted) personal consumption expenditures slowed further to 1.8% year-over-year in August. The purchases of goods have fallen as consumers move back towards pre-pandemic spending habits (sales of goods have been consistently falling year-to-date, after adjusting for inflation). A moderation of goods purchased means less shipping volume and has likely helped mitigate overburdened supply chains and high international shipping costs, which have been easing materially.

Spending has slowed while savings rates have dropped to 3.5%—a level not seen since 2008—which seems to imply that household budgets are being hit hard by inflation and higher living costs.

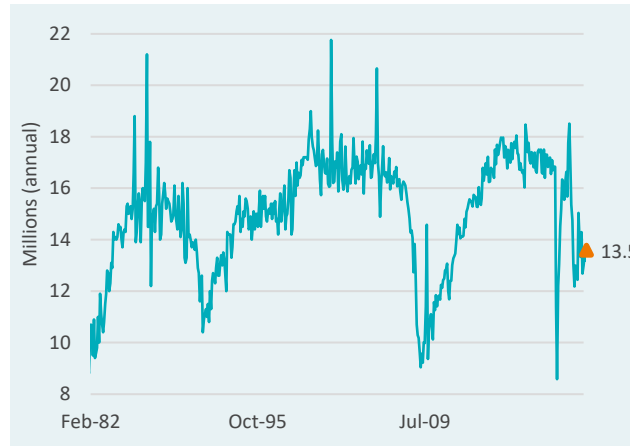
Auto sales activity remains very weak, although automakers have reported improvements in computer chip supplies that will allow production to rise. On the other hand, higher interest rates, diminished household budgets, and high car prices may constrain a recovery in auto sales activity despite new inventory coming online.

**REAL PERSONAL CONSUMPTION EXPENDITURES**



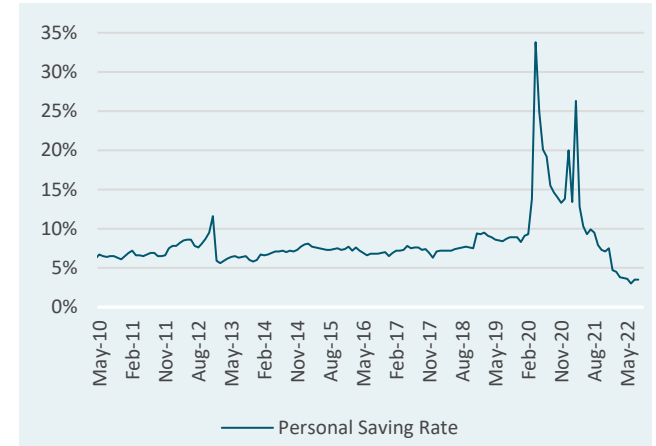
Source: FRED, as of 8/31/22

**AUTO SALES**



Source: Federal Reserve, as of 9/30/22

**PERSONAL SAVINGS RATE**



Source: FRED, as of 8/31/22

# Sentiment

Consumer sentiment improved slightly from extremely depressed levels, according to the University of Michigan survey. In this survey, respondents mentioned better buying conditions for durable goods and a more optimistic one-year outlook, though this brighter sentiment was generally offset by a deteriorating outlook for business conditions.

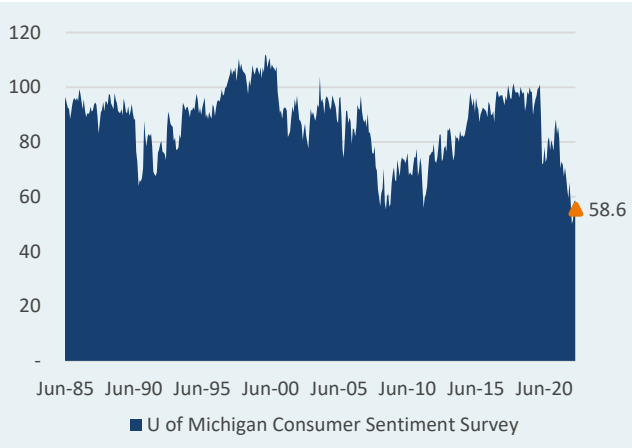
Consumer confidence measured by the Conference Board ticked up in the third quarter, as inflation expectations lessened, and more specifically as households saw prices at the pump materially contract. Consumers' assessments of current conditions and the short-term outlook improved, although

recession risks remain material. While improved confidence could bode well for spending in the fourth quarter of 2022, continued higher prices and global economic slowdowns will likely act as major headwinds.

The NFIB Small Business Optimism index improved slightly from very depressed levels. According to NFIB's Chief Economist Bill Dunkelberg, "Inflation and worker shortages continue to be the hardest challenges facing small business owners". Slightly more businesses expect healthier business conditions six months in the future (though overall sentiment is very negative on this topic), and more expect difficulties in filling open job postings.

Sentiment, by most measures, is extremely poor

**CONSUMER SENTIMENT**



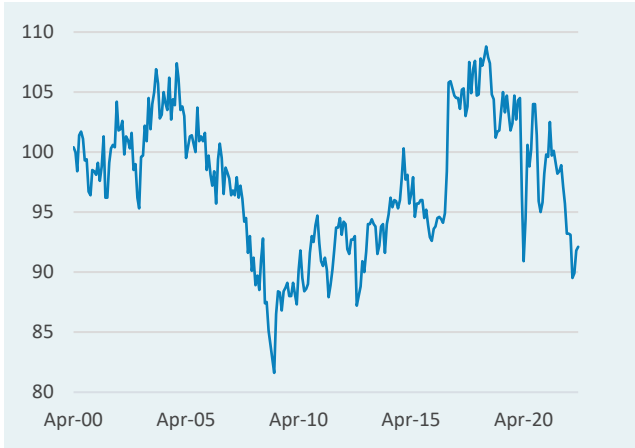
Source: University of Michigan, as of 9/30/22

**CONFERENCE BOARD CONSUMER CONFIDENCE**



Source: Conference Board, as of 9/30/22

**NFIB SMALL BUSINESS SENTIMENT**



Source: NFIB, as of 9/30/22

# Housing

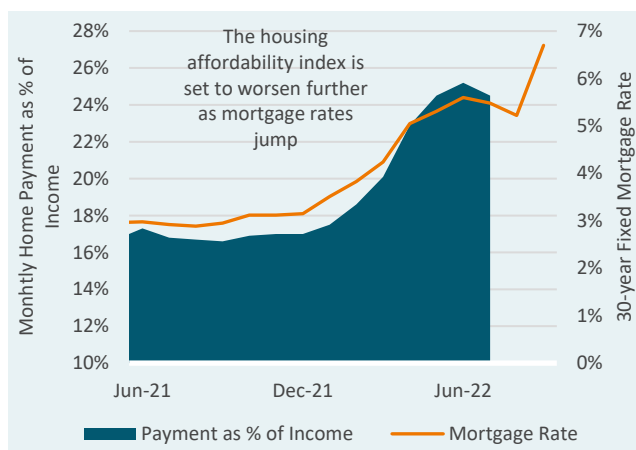
U.S. home prices fell -0.3% from June to July, according to the S&P CoreLogic Case-Shiller U.S. National Index, which might signal a reversal of the remarkable upward march in real estate values. The index suggested home prices were 15.8% higher over the past full year. Sales volumes have dropped precipitously since the beginning of 2022 which has coincided with a notable jump in monthly inventory levels.

Higher home prices and much higher mortgage interest rates have translated to the average monthly home payment rising from 16% of an average family's income to more than 24% in July, according to the National Association of Realtors. Further

increases in mortgage rates since July suggest that affordability has likely deteriorated further.

The housing market may be in the midst of a material slowdown as mortgage rates have more than doubled during 2022, from 3.1% at the beginning of the year to 6.7% at the end of the third quarter. Spiking mortgage rates in the past have coincided with a softening of the real estate market and placed downward pressure on home values. In recent years, low home inventories have been a support to markets, but this may be receding as inventories are now above average.

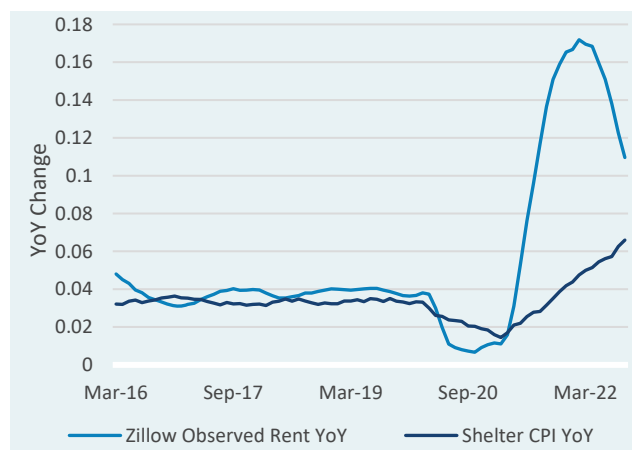
## CHANGE IN HOUSING AFFORDABILITY



Source: NAR, as of 7/31/22, FRED as of 9/30/22

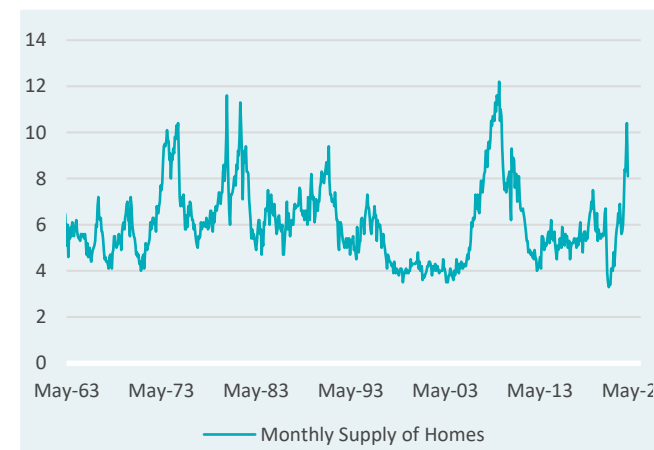
Census Bureau median family income is compared here to the monthly cost (principal + interest) of an average priced home

## HOUSING & RENT COSTS



Source: Zillow, FRED, as of 9/30/22

## SUPPLY OF HOMES



Source: FRED, as of 8/31/22

# International economics summary

- Economic growth expectations continue to weaken around the world, and recession appears possible in some developed countries. High inflation has placed central banks in a corner, requiring a choice between tightening (lower inflation with possible recession) or accommodation (stronger economic activity with possibly continued high inflation).
  - Multi-decade high inflation continues to spread across Europe, as consumer prices in September rose 10% from the prior year. Food and energy were major drivers, although the core inflation number is also elevated at 4.8%. Inflation remains a challenge in Europe and the U.S., as prices have been relatively stable in the Asia-pacific region.
  - Unemployment rates have been stable and tight in most markets, though this may now be seen as a problem as central bankers work to
- slow economies and weaken labor markets in order to fight inflation.
- The Russia Ukraine war may be taking a turn, as Ukraine’s counteroffensive gains steam. In a rare admission, Russia’s Defense Ministry spokesman Igor Konashenkov acknowledged recent defeats: “With numerically superior tank units in the direction of Zolata Balka and Oleksandrivka, the enemy managed to forge deep into our defenses.”
  - Still dealing with the highest inflation seen in four-decades, the U.K. economy continues to struggle, especially as the Bank of England tightens economic conditions in the face of a recession. The situation worsened following newly elected Prime Minister Liz Truss’ new growth plan announcement, which introduced a large tax cut initiatives without additional funding sources secured.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	1.8% 6/30/22	8.2% 9/30/22	3.5% 9/30/22
Eurozone	4.1% 6/30/22	10.0% 9/30/22	6.6% 8/31/22
Japan	1.6% 6/30/22	2.8% 9/30/22	2.5% 8/31/22
BRICS Nations	1.9% 6/30/22	4.5% 9/30/22	5.2% 12/31/21
Brazil	3.2% 6/30/22	7.2% 9/30/22	8.9% 8/31/22
Russia	(4.1)% 6/30/22	13.7% 9/30/22	3.8% 8/31/22
India	13.5% 6/30/22	7.4% 9/30/22	6.4% 9/30/22
China	0.4% 6/30/22	2.8% 9/30/22	5.3% 8/31/22

NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy. The Chinese unemployment rate represents the monthly surveyed urban unemployment rate in China.

# International economics

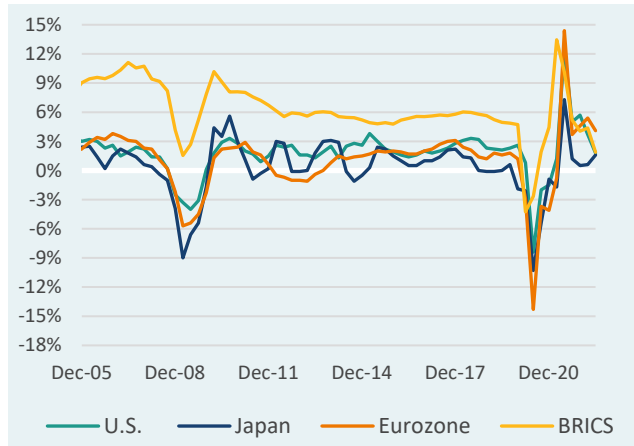
Growth expectations have further weakened around the world, and recession appears possible in some developed countries. Throughout 2022, headline inflation remained stubbornly high in many places such as the United States and Europe. Other areas, such as Japan, had avoided the initial wave of inflation but are now seeing larger price rises in recent months.

Many central banks are walking a tightrope in their fight against inflation since overly aggressive monetary policy could quickly send an economy into recession. Inflation has

become a lightning rod for political leaders, as rising prices squeeze household budgets and standards of living. This is perhaps evident most recently in the U.K., where Prime Minister Liz Truss came under harsh scrutiny for a proposal to cut tax rates and spend which seemed to conflict with Bank of England efforts to combat inflation.

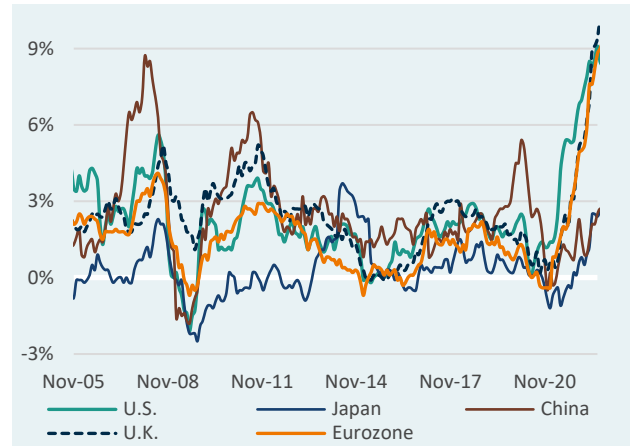
Unemployment rates are stable and tight in most markets, though central bankers may now see this as a problem standing in the way of efforts to slow economies and fight rising prices.

**REAL GDP GROWTH (YOY)**



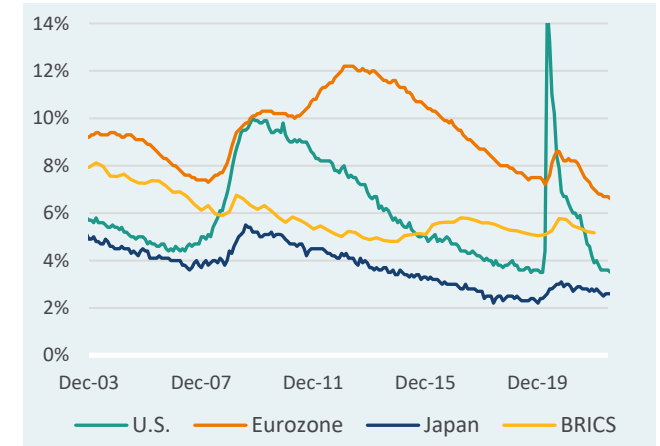
Source: Bloomberg, as of 6/30/22

**INFLATION (CPI YOY)**



Source: Bloomberg, as of 9/30/22 – or most recent release

**UNEMPLOYMENT**



Source: Bloomberg, as of 9/30/22 – or most recent release

# U.K. flash crash

Inflationary pressures have continued within the broader European complex, as a dependence on imported energy has pushed up local energy prices dramatically. Within the U.K., the Bank of England has been forced into a difficult position. The central bank increased rates at every meeting since December 2021, but headline inflation still sits at 9.9% year-over-year.

More recently, newly elected Prime Minister Liz Truss and the Chancellor of the Exchequer Kwasi Kwarteng unveiled a plan with to reignite growth and spur economic productivity through tax cuts, guarantees regarding household energy prices, and supply side reforms including infrastructure projects.

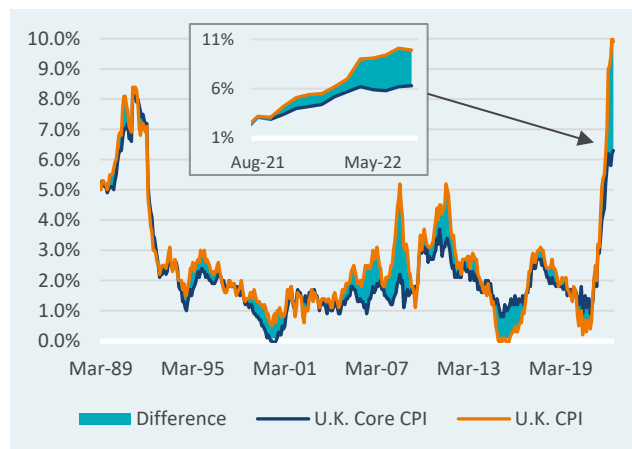
Markets reacted very poorly to the announcement. U.K. Gilt (U.K. treasury bond) yields soared, and the British pound sold off to its lowest level against the dollar in history. Markets stabilized following a commitment from the Bank of England to purchase long-dated bonds, given that many U.K. pension funds were facing margin calls on their liability-driven investment (LDI) derivative positions. The Bank of England also suspended its plans to reduce the balance sheet by selling Gilt holdings. The U.K. government then announced it would scrap its original plan to cut the top income tax rate, leading to increased volatility for the pound and U.K. sovereign debt.

**U.K. BASELOAD ELECTRICITY FORWARD PRICES**



Source: Bloomberg, as of 10/4/22

**U.K. INFLATION (CPI YOY)**



Source: U.K. Office for National Statistics, as of 8/31/22

**VALUE OF 1 GBP IN USD**



Source: Bloomberg, as of 9/30/22



# Fixed income rates & credit

# Fixed income environment

- The 10-year U.S. Treasury yield rose materially from 2.89% to 3.83% as the Federal Reserve reaffirmed its aggressive stance and markets questioned whether interest rates might be held at higher levels for longer than previously anticipated.
- Credit performance was mixed over Q3 with lower duration exposures faring better than higher duration exposures. Fears of a looming recession remained as the Fed’s 75 basis point rate hikes in July and September reinforced its intention to fight inflation until the “job is done.” Leveraged loans performed the best, returning 1.2%, followed by high yield credit and investment grade credit which returned -0.6% and -4.9%, respectively.
- Default activity continued to pick up in the third quarter with seven companies defaulting on loans and bonds totaling \$16.5 billion. This was the highest quarterly total seen since the second quarter of 2020.

Activity represented a significant jump from the \$1.6 billion and \$10.4 billion shown in Q1 and Q2, respectively.

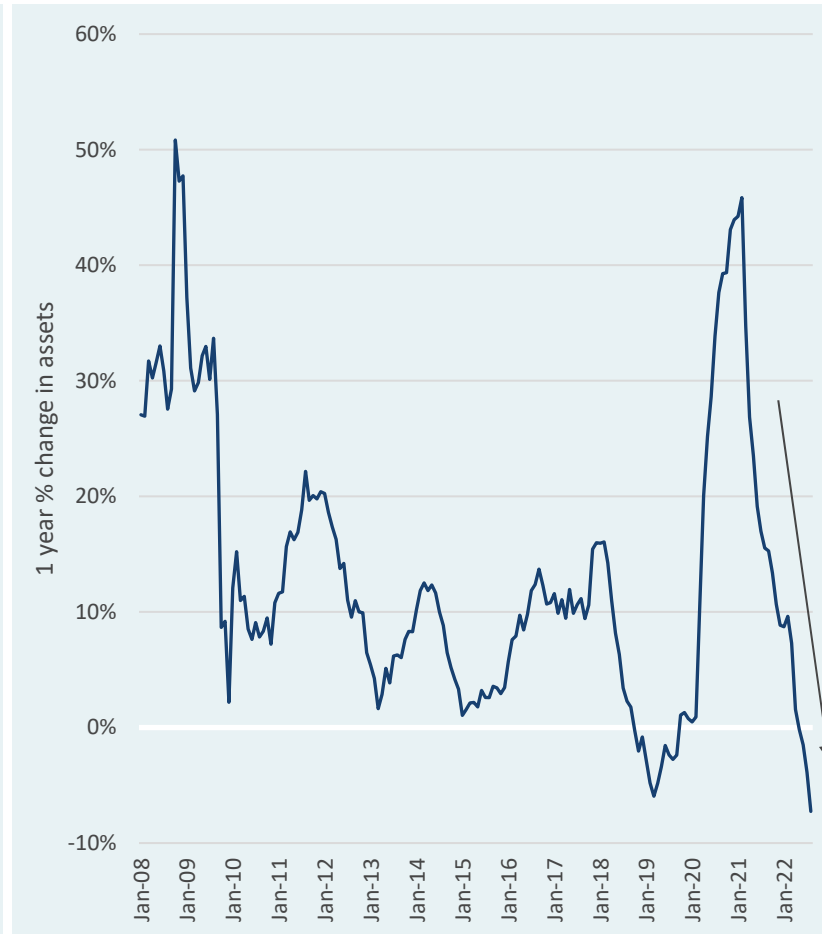
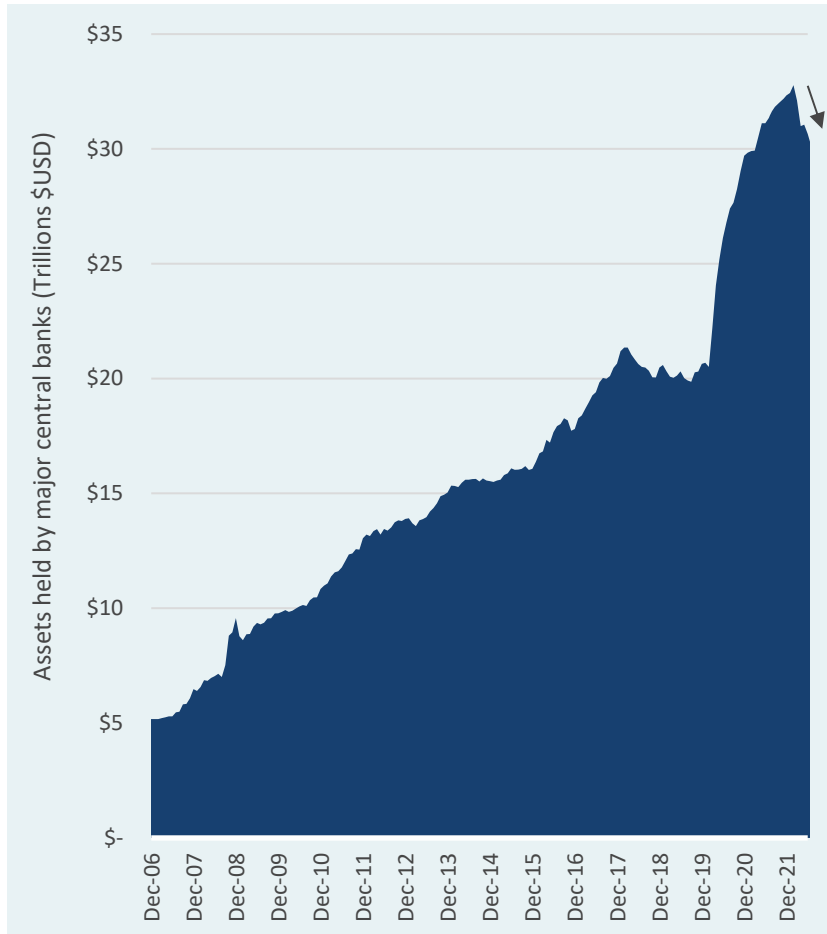
- The U.S. Yield Curve inverted during the quarter, with the 10-year 2-year spread falling from 0.1% to -0.4%. An inverted curve has historically suggested recession within two years or so.
- Throughout the third quarter, the Federal Reserve continued its path to reduce the balance sheet, beginning in June with the paced redemption of maturing securities. The initial June monthly redemption caps of \$30 billion for Treasuries and \$17.5 billion for agency MBS were increased to \$60 billion and \$35 billion in September. Markets have seemingly digested the reduction well, although the total drawdown has been relatively small so far, around \$200 billion against the peak size of \$8.97 trillion in April 2022.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	(4.8%)	(14.6%)
Core Plus Fixed Income (Bloomberg U.S. Universal)	(4.5%)	(14.9%)
U.S. Treasuries (Bloomberg U.S. Treasury)	(4.3%)	(12.9%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	(0.6%)	(14.1%)
Bank Loans (S&P/LSTA Leveraged Loan)	(1.4%)	(2.5%)
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(4.7%)	(20.6%)
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(4.6%)	(24.3%)
Mortgage-Backed Securities (Bloomberg MBS)	(5.3%)	(9.0%)

Source: Bloomberg, as of 9/30/22

# The great liquidity withdrawal

Central banks are planning to remove substantial liquidity from the global financial system



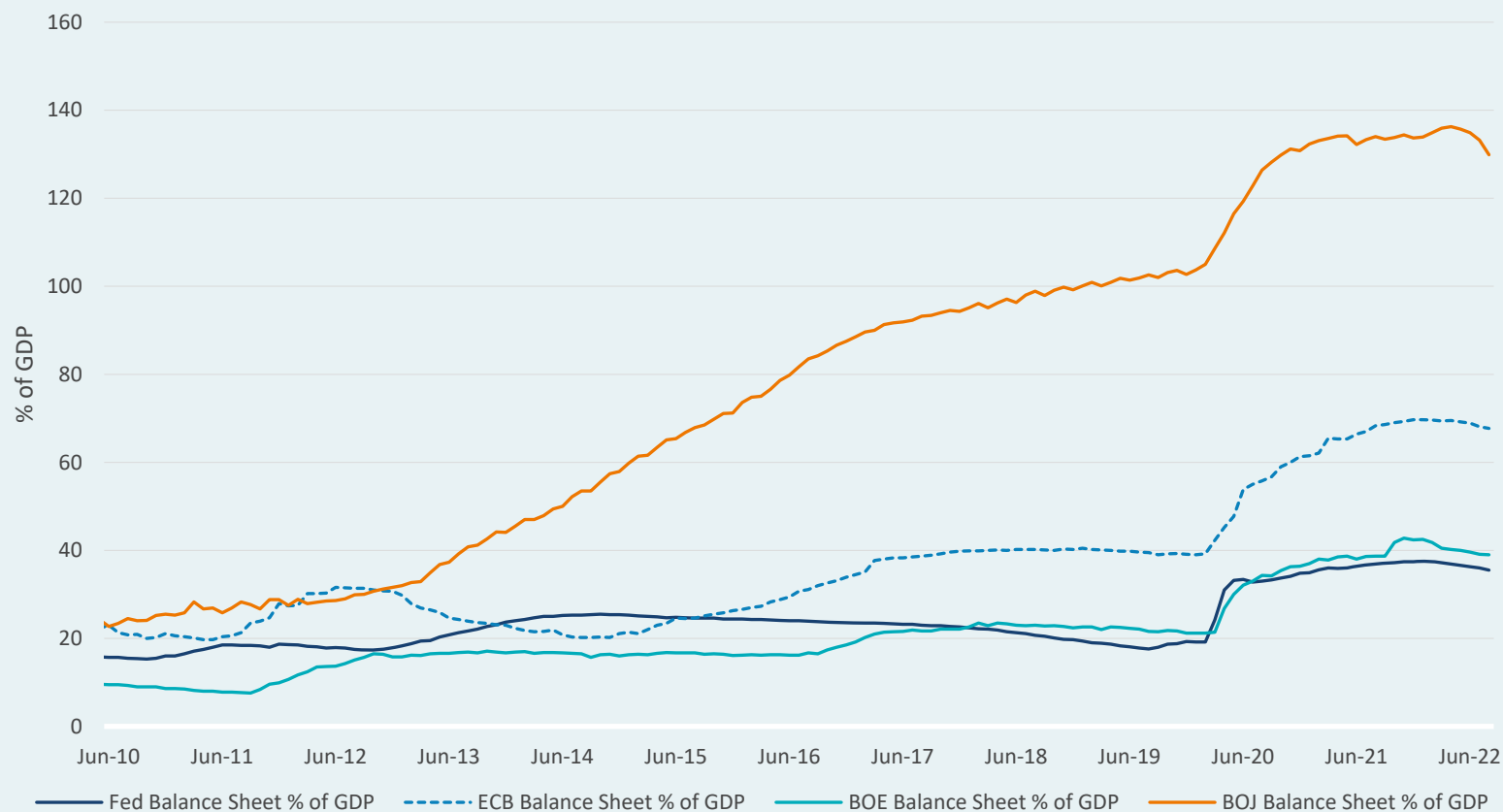
Markets are entering an unusual time of mass central bank asset roll-off

Source: Bloomberg, Verus, as of 9/30/22 – includes Fed, BOE, ECB, BoJ, PBOC

# The great liquidity withdrawal (continued)

## CENTRAL BANK ASSETS AS % OF GDP

### U.S. DOLLAR DENOMINATED



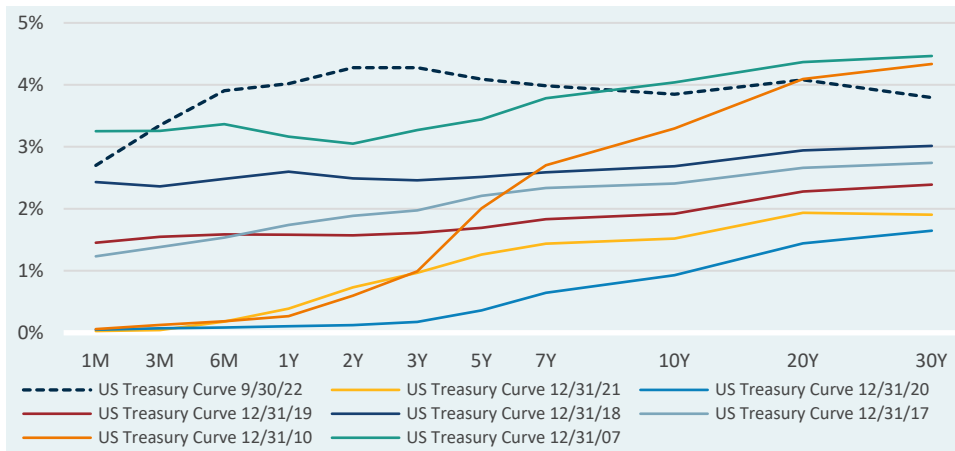
Central banks have accumulated very large balance sheets

Surprisingly, the U.S. Federal Reserve balance sheet is more moderate in size, relative to GDP

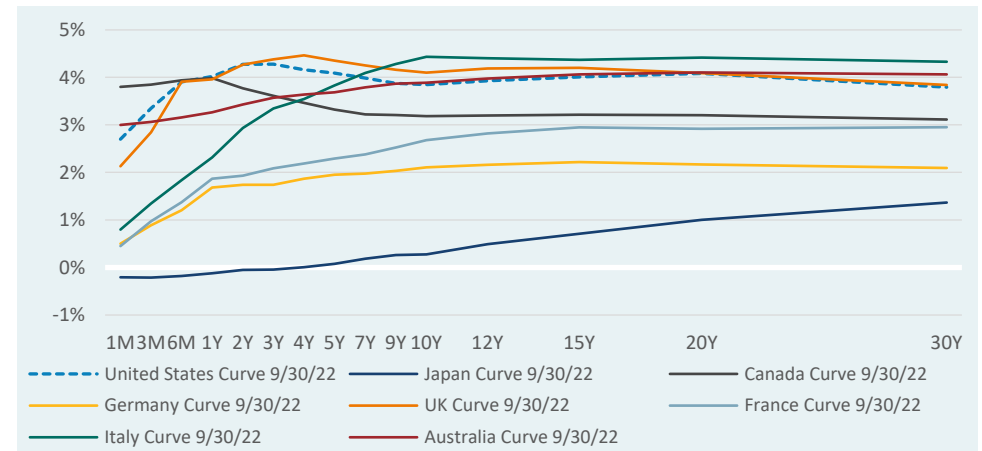
Source: Bloomberg, Verus, as of 9/30/22

# Yield environment

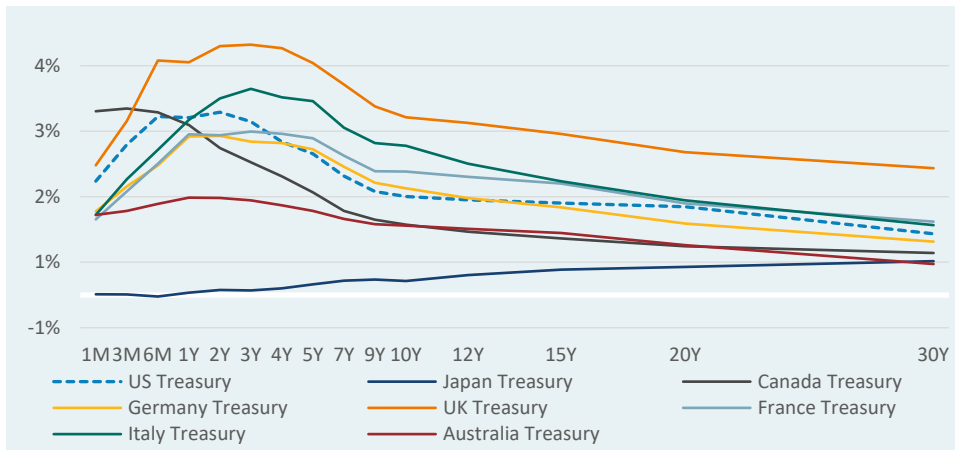
## U.S. YIELD CURVE



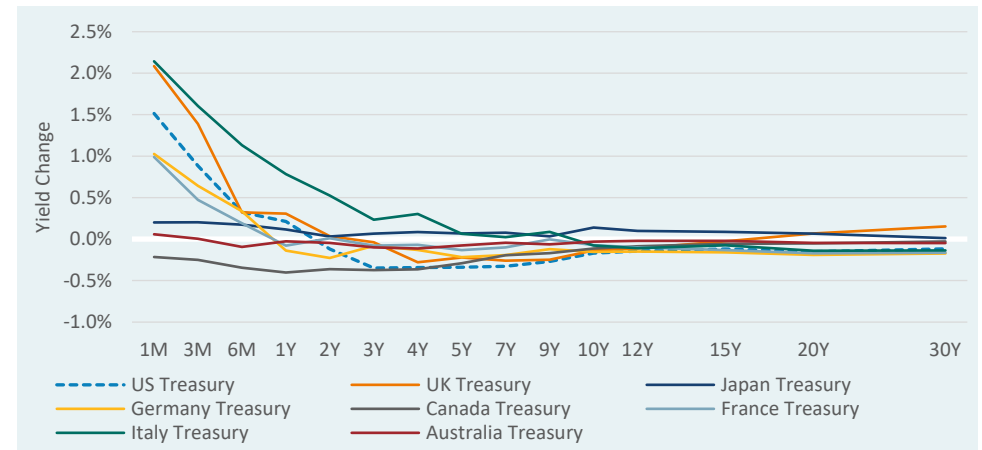
## GLOBAL GOVERNMENT YIELD CURVES



## YIELD CURVE CHANGES OVER LAST FIVE YEARS



## IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/22

# Credit environment

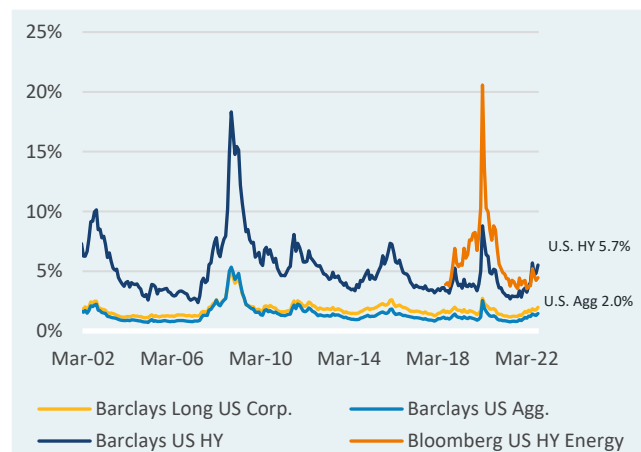
Credit market performance was mixed over the third quarter, with lower duration exposures faring better than higher duration exposures. Fears of a looming recession remained as the Fed's 75 basis point rate hikes in July and September reinforced its intention to fight inflation until the "job is done." Leveraged loans performed the best, returning 1.2%, followed by high yield corporate credit and investment grade credit which returned -0.6% and -4.9%, respectively.

Volatility and outflows contributed to investment grade credit spreads widening during the quarter. After reaching a 2022 high of 164 basis points in mid-September, investment grade credit spreads finished the third quarter at 159 basis points, an increase of 4 basis points from the

previous quarter's end. High yield spreads decreased by 17 basis points throughout the quarter to 552 basis points, though remaining above the long term non-recessionary average of 454 bps. Despite this recent decline, high yield spreads remain up 269 basis points year-to-date.

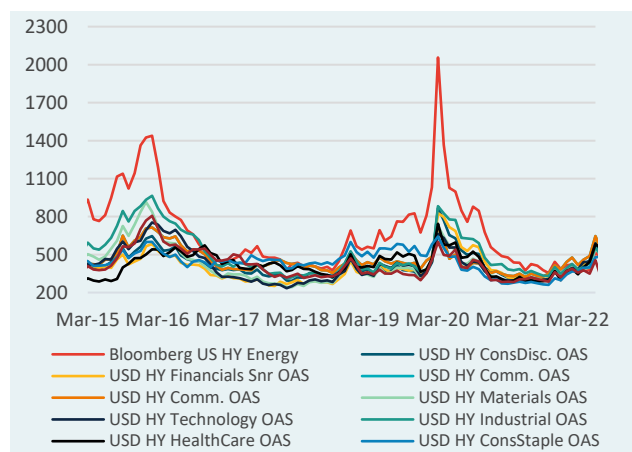
Over the course of the year, total yields have risen significantly within credit markets with the Bloomberg US High Yield Index now at 9.7%—almost double the levels of 4.9% seen at the start the year. Similarly, the yield of the Bloomberg US Corporate Investment Grade Index was 5.7%, up from 2.4% at the start of the year.

## SPREADS



Source: Barclays, Bloomberg, as of 9/30/22

## HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 9/30/22

Market	Credit Spread (OAS)	
	9/30/22	9/30/21
Long U.S. Corp	2.0%	1.2%
U.S. Inv Grade Corp	1.6%	0.8%
U.S. High Yield	5.5%	2.9%
U.S. Bank Loans*	6.0%	4.3%

Source: Barclays, Credit Suisse, Bloomberg, as of 9/30/22

\*Discount margin (4-year life)

# Default & issuance

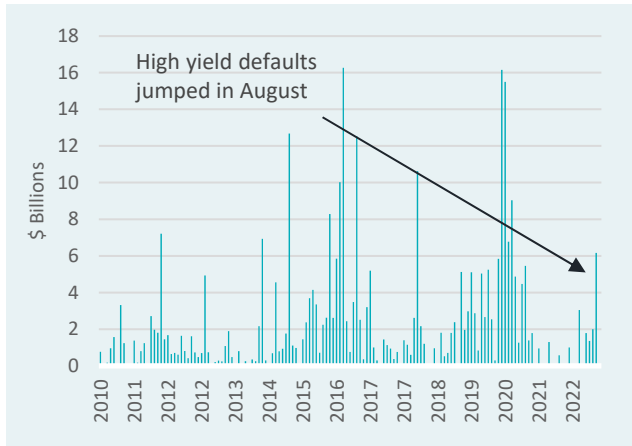
Default activity continued to pick up in the third quarter with seven companies defaulting on loans and bonds totaling \$16.5 billion. This was the highest quarterly total seen since the second quarter of 2020. Activity represented a significant jump from the \$1.6 billion and \$10.4 billion shown in Q1 and Q2, respectively.

Default rates for par-weighted US high yield and bank loans ended the quarter at 0.8% and 1.0%, respectively. While default rates reached a 15-month high, both values were well below the long-term historical averages of 3.2% and 3.1% for the high yield and loan markets. Given the prospects of tighter financial conditions and lower growth, default rates are expected to rise over the remainder of the year and into 2023 while

remaining well below the previously stated long-term historical averages.

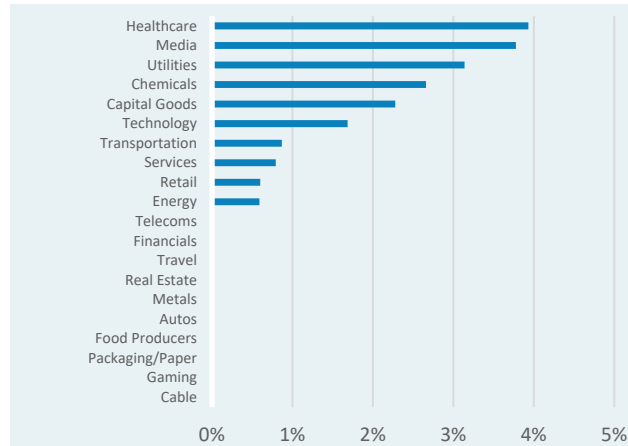
Leveraged credit issuance remained very light, which was consistent with the weaker trend of 2022. The third quarter total of \$18.9 billion issued in high yield bonds marked the lightest issuance since the first quarter of 2009. A similar effect was observed in the bank loans market, which totaled \$24 billion over the third quarter, down from \$120.5 billion and \$60.6 billion in the first and second quarters of this year. Additionally, the 2022 year-to-date loan issuance total of \$205.0 billion was down 69% on a year-over-year basis.

**U.S. HY MONTHLY DEFAULTS (PAR WEIGHTED)**



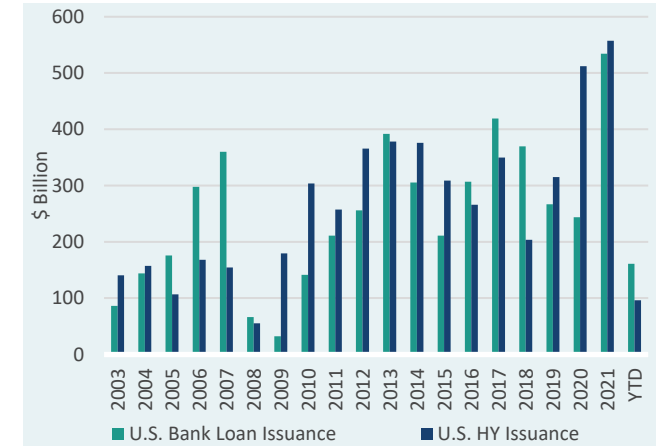
Source: BofA Merrill Lynch, as of 9/30/22

**U.S. HY SECTOR DEFAULTS (LAST 12 MONTHS)**



Source: BofA Merrill Lynch, as of 9/30/22 – par weighted

**U.S. ISSUANCE (\$ BILLIONS)**



Source: BofA Merrill Lynch, as of 9/30/22

# Equity



# Equity environment

— Equity markets saw further losses during Q3, extending the selloff deeper into bear market territory. Emerging market equities (MSCI Emerging Markets -11.6%) experienced the greatest drawdown, on an unhedged currency basis, followed by international developed (MSCI EAFE -9.4%) and domestic equities (S&P 500 -4.9%).

— Many markets now trade at valuation levels below their historical average. According to FactSet, the S&P 500 sat at a forward price/earnings of 15.4 as of September 30<sup>th</sup>, below the five-year average of 18.6 and 10-year average of 17.1. Interestingly, earnings expectations have been fairly resilient at 7.4% for calendar year 2022 and 7.9% for 2023.

— Investors with unhedged foreign currency exposure have seen extreme losses recently. A U.S. investor with an international developed equity investment

(MSCI EAFE) suffered a loss of -15.7% over the past year from currency movements. Investors in non-US equity (MSCI ACWI ex-US) saw a -12.0% loss. Currency risk is typically the second largest risk in institutional portfolios and is not expected to be compensated over the long term. We continue to believe that more forward-thinking currency solutions can materially improve portfolio outcomes.

— Value stocks underperformed growth stocks mildly during the quarter (Russell 1000 Value -5.6% vs Russell 1000 Growth -3.6%), and small capitalization stocks outperformed large capitalization stocks (Russell 2000 -2.2%, Russell 1000 -4.7%).

— Volatility remained elevated as the Cboe VIX Index rose further from 28.7% to 31.6%. Risk assets sold-off on concerns of Federal Reserve tightening and liquidity being broadly removed from the global financial system.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	(4.9%)		(15.5%)	
U.S. Small Cap (Russell 2000)	(2.2%)		(23.5%)	
U.S. Equity (Russell 3000)	(4.5%)		(17.6%)	
U.S. Large Value (Russell 1000 Value)	(5.6%)		(11.4%)	
US Large Growth (Russell 1000 Growth)	(3.6%)		(22.6%)	
Global Equity (MSCI ACWI)	(6.8%)	(4.6%)	(20.7%)	(15.9%)
International Large (MSCI EAFE)	(9.4%)	(2.8%)	(25.1%)	(9.4%)
Eurozone (Euro Stoxx 50)	(9.8%)	(3.1%)	(28.9%)	(14.1%)
U.K. (FTSE 100)	(10.6%)	(2.3%)	(16.5%)	1.8%
Japan (NIKKEI 225)	(7.2%)	0.2%	(31.0%)	(8.5%)
Emerging Markets (MSCI Emerging Markets)	(11.6%)	(8.2%)	(28.1%)	(22.5%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/22

# Domestic equity

U.S. equities experienced further losses during the quarter (S&P 500 -4.9%), while outperforming international (MSCI EAFE -9.4%) and emerging markets (MSCI Emerging Markets -11.6%).

Earnings expectations have been fairly resilient at 7.4% for calendar year 2022 and 7.9% for 2023, though these forecasts have been consistently revised lower for three consecutive quarters. The energy sector continues to lift the earnings growth of the S&P 500, as overall growth would have been negative in recent quarters if energy sector profits were excluded. According to corporate earnings calls, an increasing number of

businesses reported labor costs & shortages as a significant issue, followed by supply chain disruptions & costs, and FX movement. During Q2, businesses with more than 50% of revenues from outside of the U.S. generated 13.3% earnings growth, while those with less than 50% of revenues from outside the U.S. saw only a 2.1% growth rate.

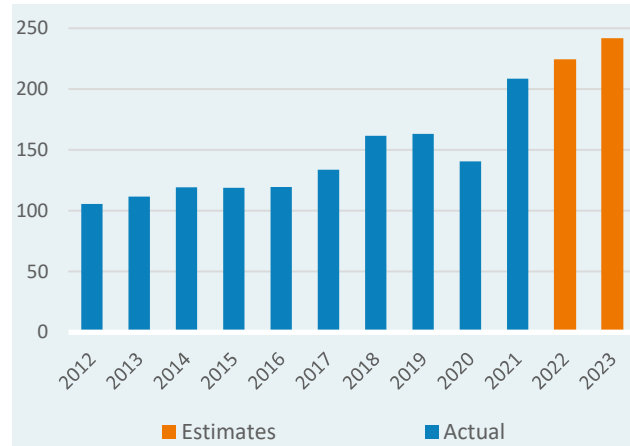
Sector performance during Q3 was disparate. Consumer discretionary (4.4%) and energy (2.3%) sectors lifted the overall index while all other sectors were in the red.

**S&P 500 PRICE INDEX**



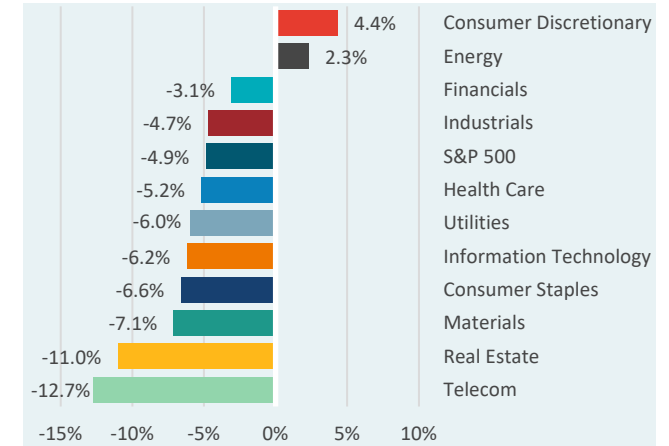
Source: Standard & Poor's, as of 9/30/22

**S&P BOTTOM-UP EARNINGS & ESTIMATES**



Source: FactSet, as of 9/30/22

**Q3 SECTOR PERFORMANCE**



Source: Morningstar, as of 9/30/22

# Domestic equity size & style

Reversing the trend from last quarter, growth stocks outperformed value stocks, although the divergence was relatively mild (Russell 1000 Growth -3.6% vs. Russell 1000 Value -5.6%). Growth outperformed despite struggles within the Telecommunications and Information Technology sectors (-12.7% and -6.2%), fueled by positive returns from Consumer Discretionary +4.4% (with Amazon and Tesla being the largest weights).

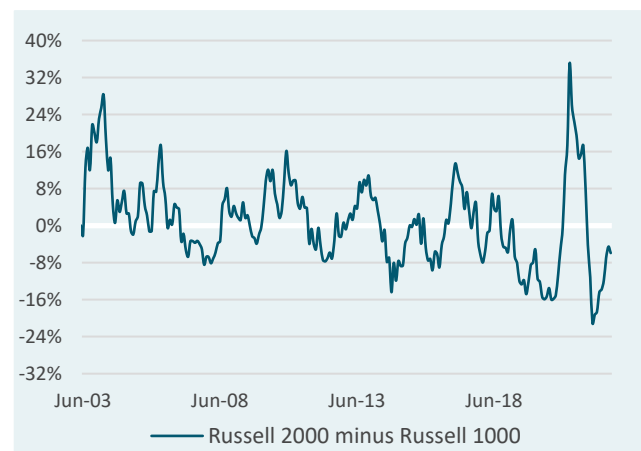
Despite this quarter, value has outperformed significantly over the past year. The Russell 1000 Value Index is down -17.8%, while the growth equivalent has lost -30.7%. With the Federal

Reserve continuing to tighten conditions and hike rates, companies with cash flows further out in the future (those with higher durations) have seen larger negative impacts to their multiples.

Looking at size, small capitalization stocks outperformed large capitalization stocks (Russell 2000 -2.2%, Russell 1000 -4.7%), diverging from the trend seen in the second quarter of 2022.

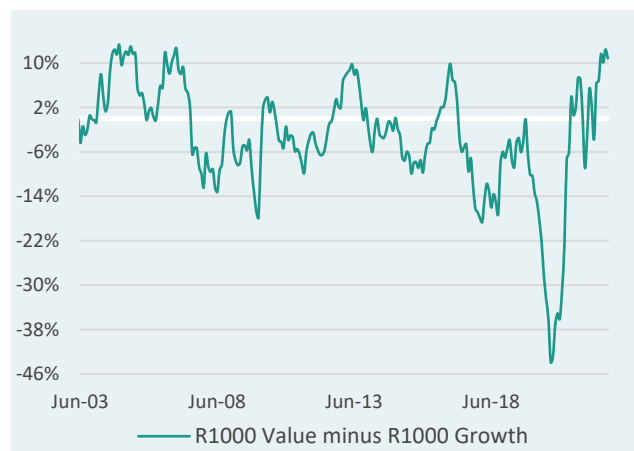
Domestic equities have continued to be challenged regardless of size and style, as investors weigh the impacts of a tighter economic environment on company earnings.

**SMALL CAP VS LARGE CAP (YOY)**



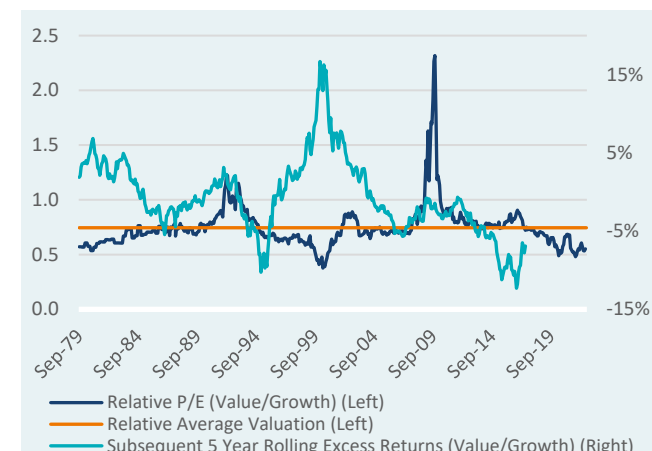
Source: FTSE, as of 9/30/22

**VALUE VS GROWTH (YOY)**



Source: FTSE, as of 9/30/22

**VALUE VS. GROWTH RELATIVE VALUATIONS**



Source: Standard & Poor's, as of 9/30/22

# International developed equity

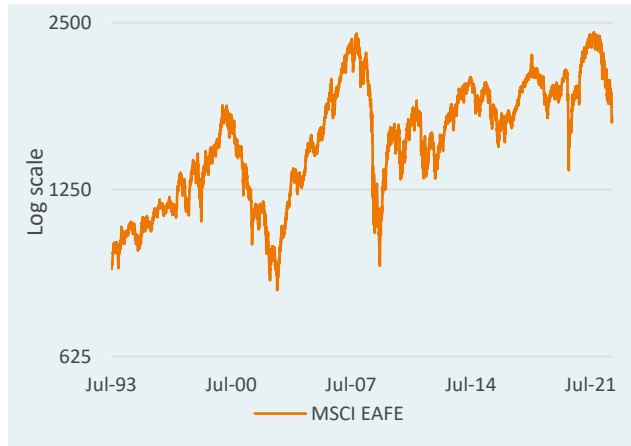
International developed equities fell alongside the global opportunity set in the third quarter. The MSCI EAFE Index dropped -9.4% in U.S. dollar terms, although most of those losses can be attributed to currency impacts, with hedged returns only experiencing a -2.8% loss. The Federal Reserve continues to set the tone for global central bank rate hikes, which has pushed the dollar higher.

Looking at sub-regional performance, Japanese equities were the best performing markets in local terms, being one of the few asset classes with positive Q3 return (+0.2%). Despite strong local returns, diverging rate policy between the BOJ

and Federal Reserve has crushed the Japanese yen, resulting in a seven percent spread between hedged and unhedged equity outcomes.

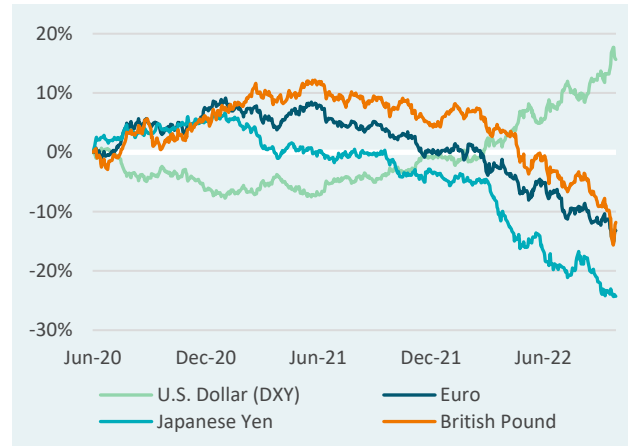
European equities also saw losses over the quarter, although local returns were strong relative to U.S. and Emerging market equities. The flash crash of the British pound had a material impact on FTSE 100 performance in U.S. dollar terms, with U.K. equities closing the quarter down -10.6%, lagging the broader European benchmark (Euro Stoxx 50 - 9.8%)

**INTERNATIONAL DEVELOPED EQUITY**



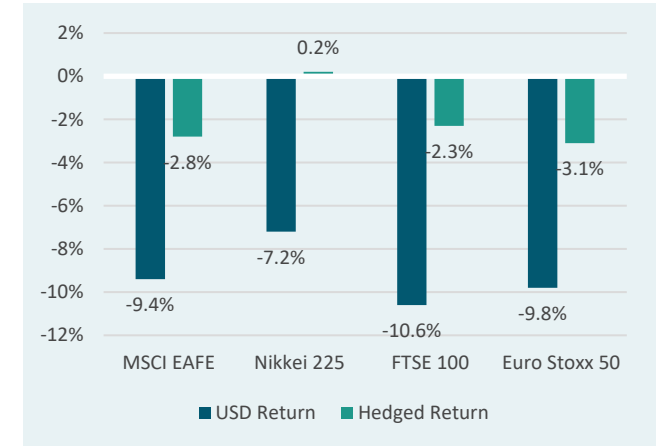
Source: MSCI, as of 9/30/22

**FX MOVEMENTS RELATIVE TO THE U.S. DOLLAR**



Source: Bloomberg, as of 9/30/22

**Q3 2022 SUBREGIONAL INDEX RETURNS**



Source: MSCI, STOXX, FTSE, Nikkei, as of 9/30/22

# Emerging market equity

Emerging market equities fell during the third quarter, dragged lower by a steep Chinese equity bear market (-22.5%). The MSCI EM index ended the quarter down -11.6% in U.S. dollar terms, bringing one-year total losses to -28.1%. A strong dollar had a -3.4% impact in the third quarter; significant, but not to the same extent seen in the International developed space.

Growing risks of a global recession hit equities across the board, though emerging markets have suffered more than their developed counterparts. China faces its own set of

unique problems, including the continuation of its zero-COVID policy, a property crisis, and geopolitical risks with Taiwan (though we view an invasion as highly unlikely). Despite these headwinds, the People's Bank of China is one of the few central banks implementing accommodative policy, which should provide a tailwind to the local economy.

Performance variability has significantly changed some country weights. China's weight in the index fell by 3.7%, while India moved up 2.6%, replacing Taiwan as the second largest weight.

## EMERGING MARKET EQUITY



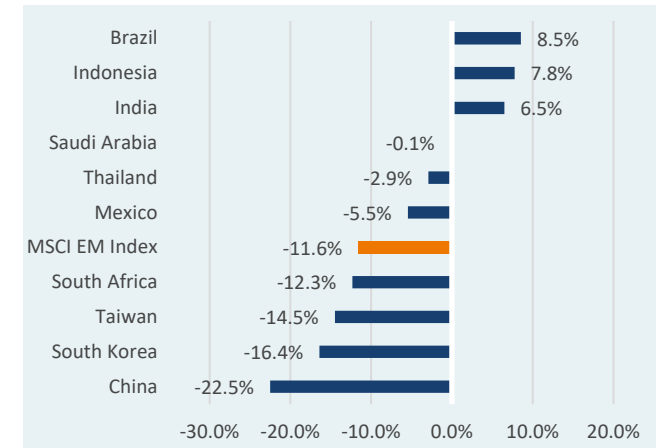
Source: MSCI, as of 9/30/22

## MSCI EM INDEX TOP 10 COUNTRY WEIGHTS

Country	9/30/2022	6/30/2022	Rank Change
1. China	29.5%	33.2%	
2. India	15.3%	12.7%	↑
3. Taiwan	13.7%	14.3%	↓
4. South Korea	10.6%	11.3%	
5. Brazil	5.8%	4.9%	
6. Saudi Arabia	4.8%	4.3%	
7. South Africa	3.4%	3.5%	
8. Mexico	2.2%	2.1%	
9. Indonesia	2.2%	1.8%	
10. Thailand	2.1%	1.9%	

Source: Bloomberg, MSCI as of 9/30/22

## Q3 2022 MSCI COUNTRY RETURNS (USD)



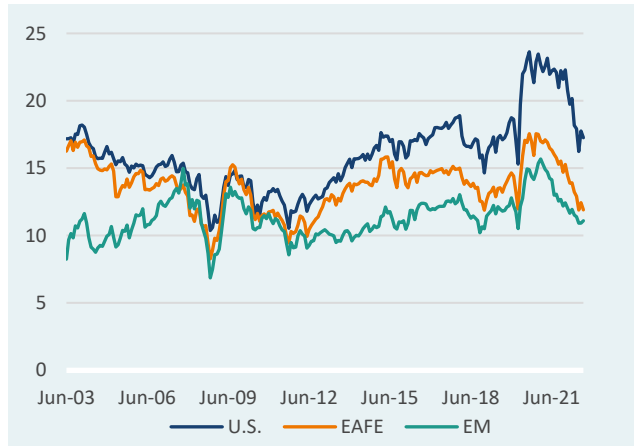
Source: Bloomberg, MSCI as of 9/30/22, performance in USD terms

# Equity valuations

Many markets now trade at valuation levels below their historical average as inflation and rising rate concerns have translated to more attractive pricing. According to FactSet, the S&P 500 traded at a forward price/earnings of 15.4 as of September 30th, which was below the five-year average of 18.6 and 10-year average of 17.1. Valuations have continued to drop within the International and Emerging market space as well, although we believe International developed equities may have further to fall, given more acute inflation and energy issues in Europe. Emerging market valuations have reached very low levels, which may act as a floor to further losses, assuming healthy earnings.

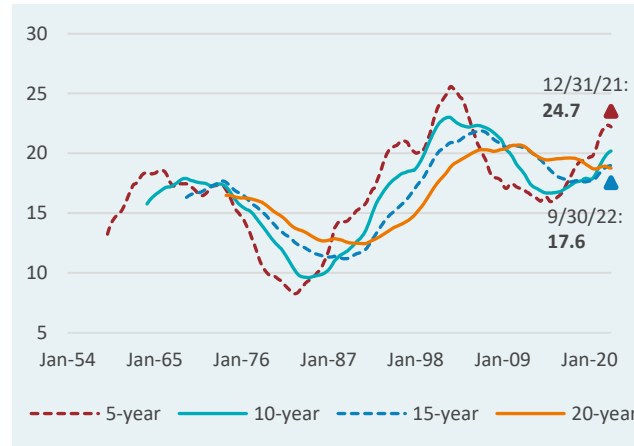
Domestic earnings were challenged in the second quarter. Businesses faced higher costs, large currency impacts, and a more budget-constrained consumer. While blended earnings grew at a 6.7% clip from the previous year, excluding the energy sector would bring that earnings figure down to -3.7%, per FactSet. While valuations have moved more in line with historical averages, all eyes are on third quarter earnings, which will likely help determine the market's direction from this point.

## FORWARD P/E RATIOS



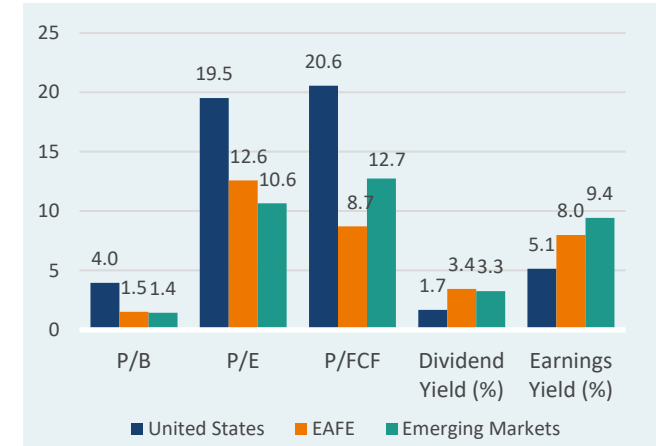
Source: MSCI, 12m forward P/E, as of 8/31/22

## S&P 500 AVERAGE TRAILING P/E RATIOS



Source: Bloomberg, as of 9/30/22

## VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 9/30/22 - trailing P/E

# Equity volatility

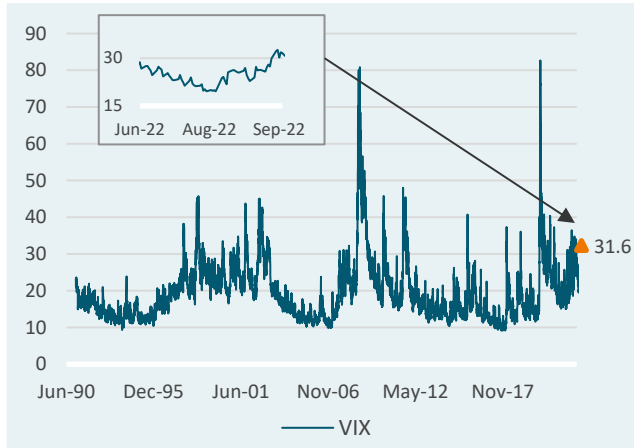
Volatility remained elevated through the quarter as the Cboe VIX Index rose further from 28.7% to 31.6%. Risk assets sold-off into a deeper bear market and concerns focused on Federal Reserve tightening and liquidity being removed from the global financial system. Inflation and Fed actions seem to exist as the greatest risk to markets, although potential for recession or a corporate earnings drawdown are also likely contributing to choppiness.

Realized volatility of equity markets over the past year has picked up from low levels. U.S. markets have shown

materially more volatility than developed or emerging markets, which has been rare historically.

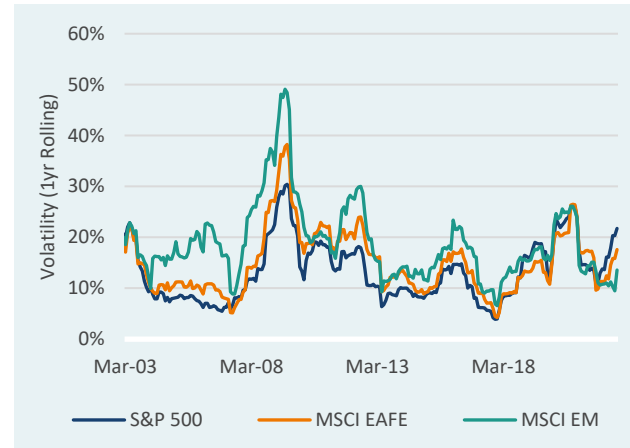
The current bear market has been particularly painful given the broadness of the selloff across equity fixed income, and real assets. Currency markets also moved against investors, with U.S. dollar appreciation delivering large losses for those with unhedged international asset exposure. Commodities remain a lone bright spot regarding 2022 year-to-date performance.

## U.S. IMPLIED VOLATILITY (VIX)



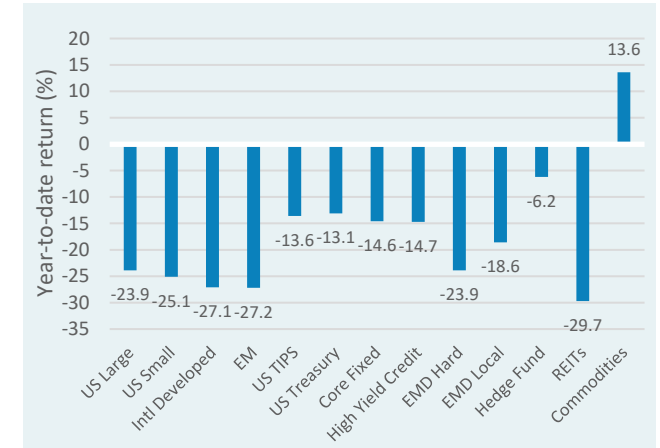
Source: Cboe, as of 9/30/22

## REALIZED VOLATILITY



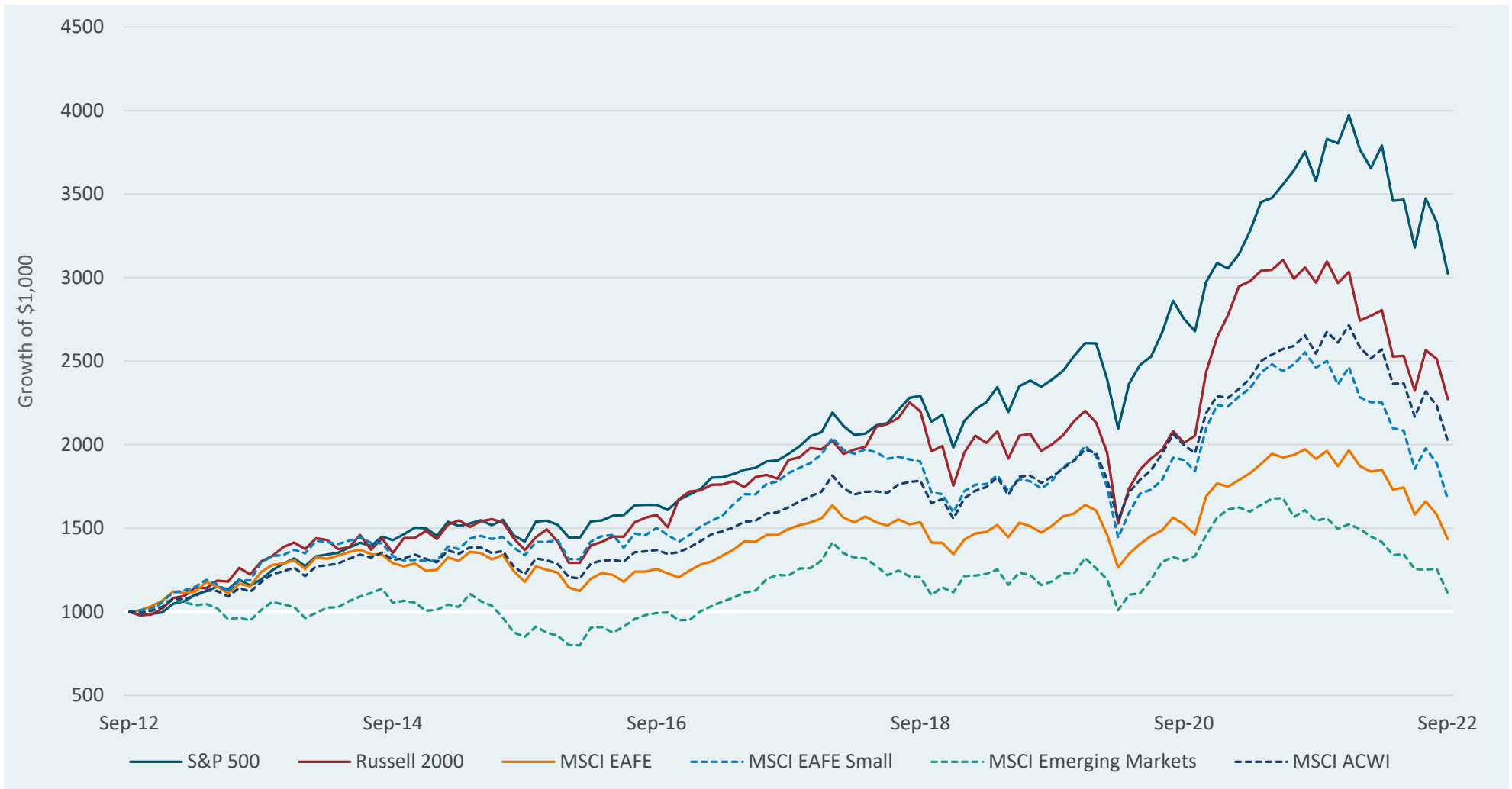
Source: Standard & Poor's, MSCI, as of 9/30/22

## BROAD SELLOFF



Source: MPI, as of 9/30/22

# Long-term equity performance



Source: Morningstar, as of 9/30/22



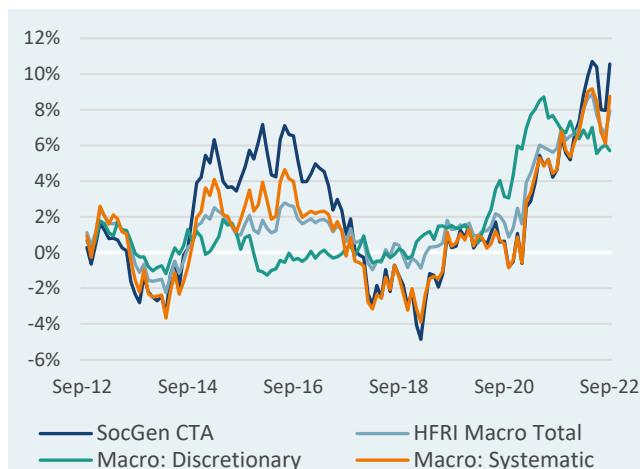
# Other assets

# Asymmetric macro strategies

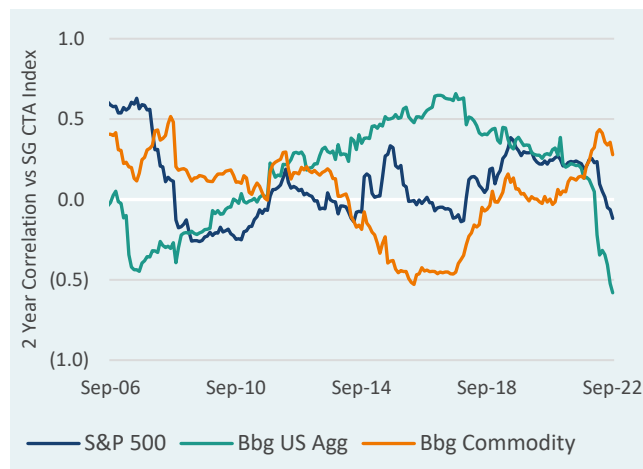
Macro strategies have been the top performing hedge fund strategy since 2021. Both parts of the Macro universe—Discretionary and Systematic—have done extremely well over the last 12-18 months. Systematic strategies have benefitted from strong trend following performance, which has returned to favor after a period of mediocre returns from 2016 to 2020. This periodicity is typical of trend following/CTA type strategies. Discretionary macro strategies have done well to capture the move in interest rates by shorting bonds as central banks reacted to high inflation by consistently hiking interest rates from ultra-low post-COVID levels.

Trend following funds can and have offered significant diversification from traditional asset classes due to their ability to go long or short markets depending on the current trends. As evidenced in the middle chart below, CTA funds had maintained long bond, short commodity positions for several years following the global financial crisis, though that changed significantly over the past year. Discretionary funds struggled when interest rates were zero-bound in the mid-2010s but have shown once again that they can perform well when central banks are taking action—either hiking or cutting rates—by taking positions based on fundamental economic data.

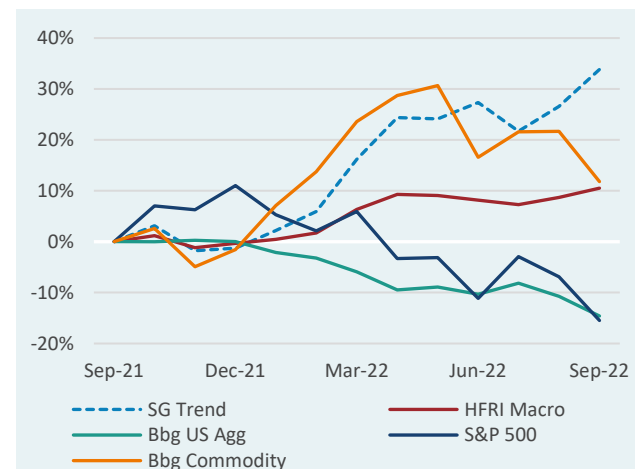
**3 YEAR ROLLING RETURN FOR MACRO FUNDS**



**CTA FUNDS CORRELATION TO MARKETS**



**CUMULATIVE RETURN LAST 12 MONTHS**



Source: HFR, MPI, Morningstar, SocGen, data as of 9/30/22

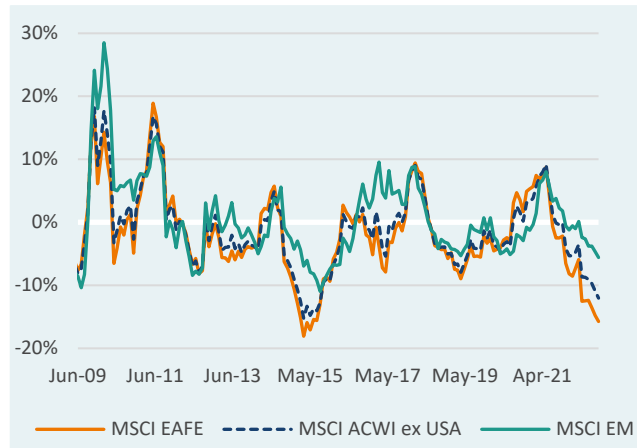
# Currency

Investors with unhedged foreign currency exposure have seen extreme losses over recent periods. For example, a U.S. investor with an international developed equity investment (MSCI EAFE) suffered a loss of -15.7% over the past year *just from currency movements*. An investor in non-US equity (MSCI ACWI ex-US) would have seen a -12.0% loss. Currency risk is typically the second largest risk in institutional portfolios, and is not expected to be compensated over the long term.

We continue to believe that forward-thinking currency solutions can materially improve portfolio outcomes. Specifically, a currency program may allow an investor to reduce their portfolio risk while also increasing the

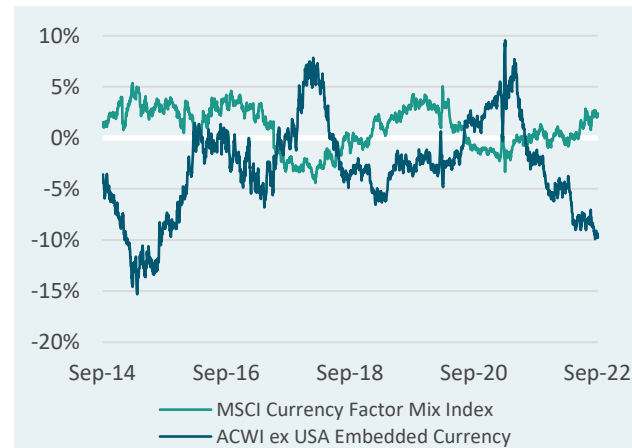
expected return of the portfolio. These characteristics are demonstrated below by comparing the unhedged currency exposure that most investors own (we refer to this as “embedded” currency) to the MSCI Currency Factor Mix Index which represents a passive investment in the currency market. This program aims to systematically capture the *return premia* within currency markets. Over the past 10 years, an unhedged exposure to foreign currencies has resulted in 5.8% portfolio volatility and a return of -4.4% per year. Meanwhile, a passive allocation the MSCI Currency Factor Mix Index has resulted in less than half of that volatility (2.5%) and with an average return of +1.2% per year.

**EFFECT OF CURRENCY (1-YEAR ROLLING)**



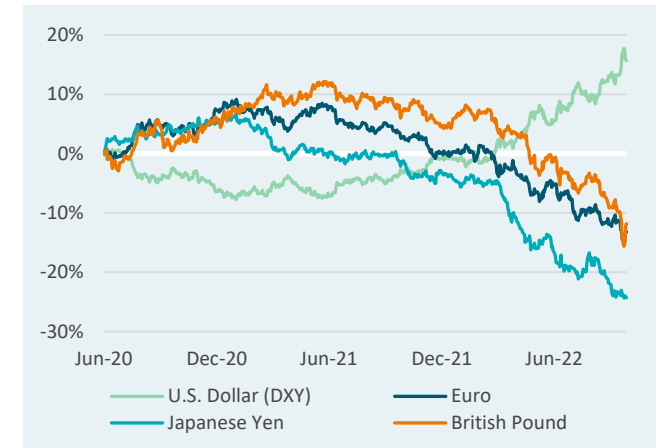
Source: MSCI, as of 9/30/22

**UNHEDGED CURRENCY VS CURRENCY FACTOR MIX**



Source: MSCI, as of 9/30/22

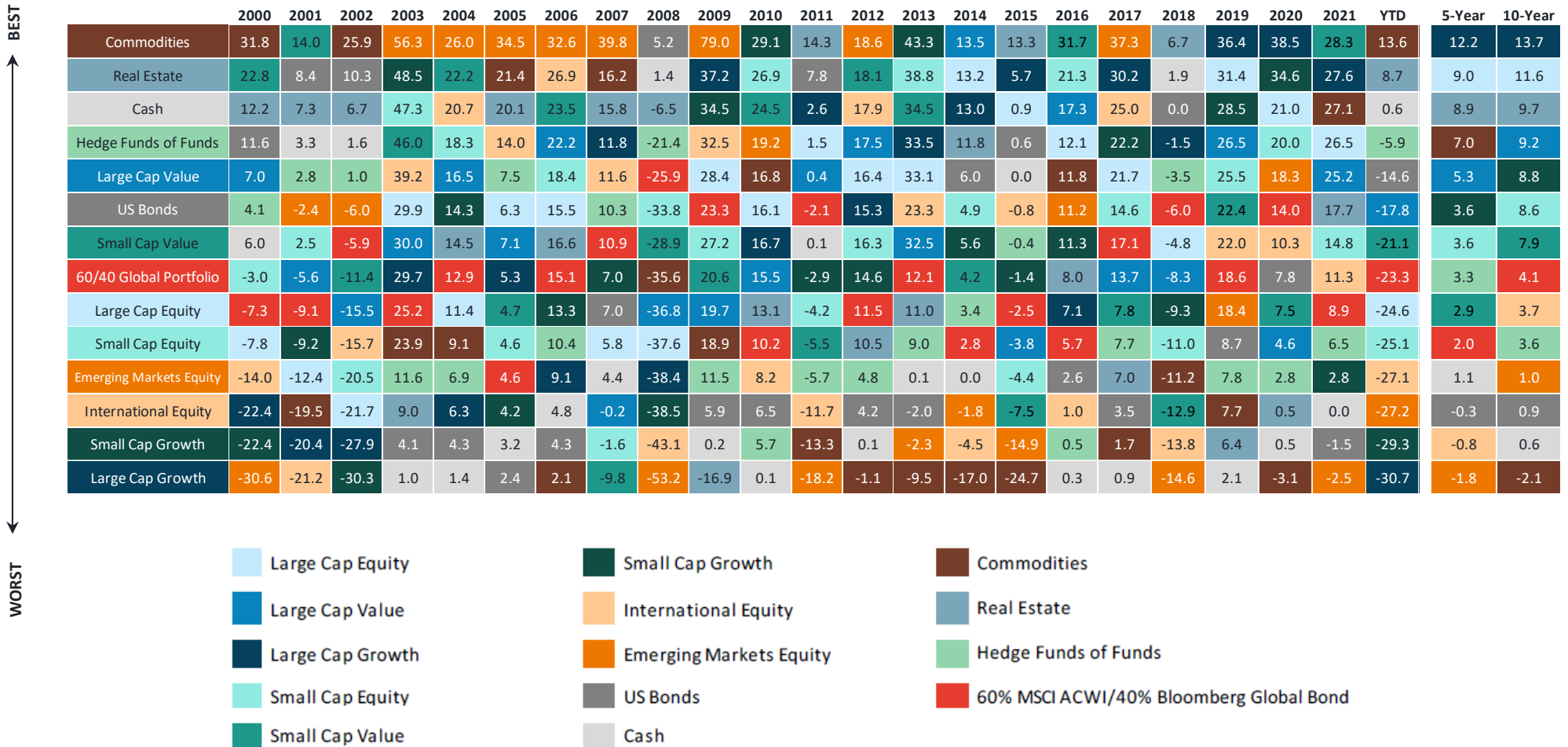
**FOREIGN CURRENCY MOVEMENT**



Source: Bloomberg, as of 9/30/22

# Appendix

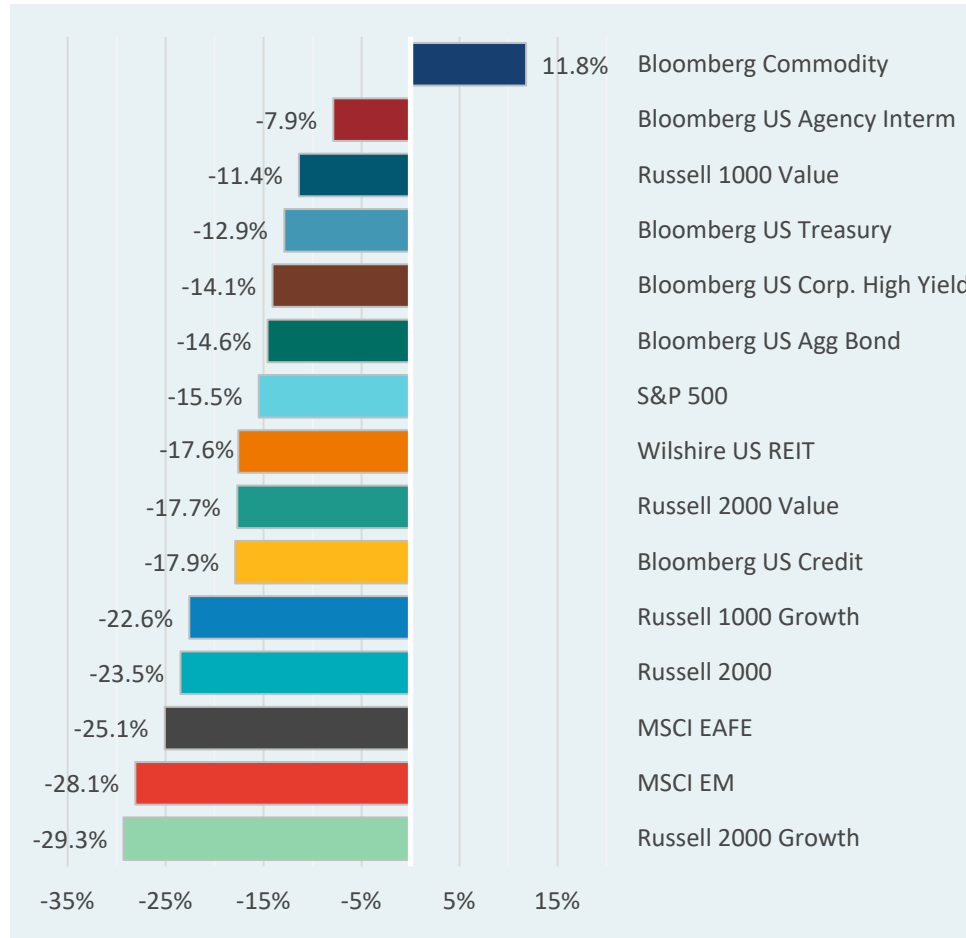
# Periodic table of returns



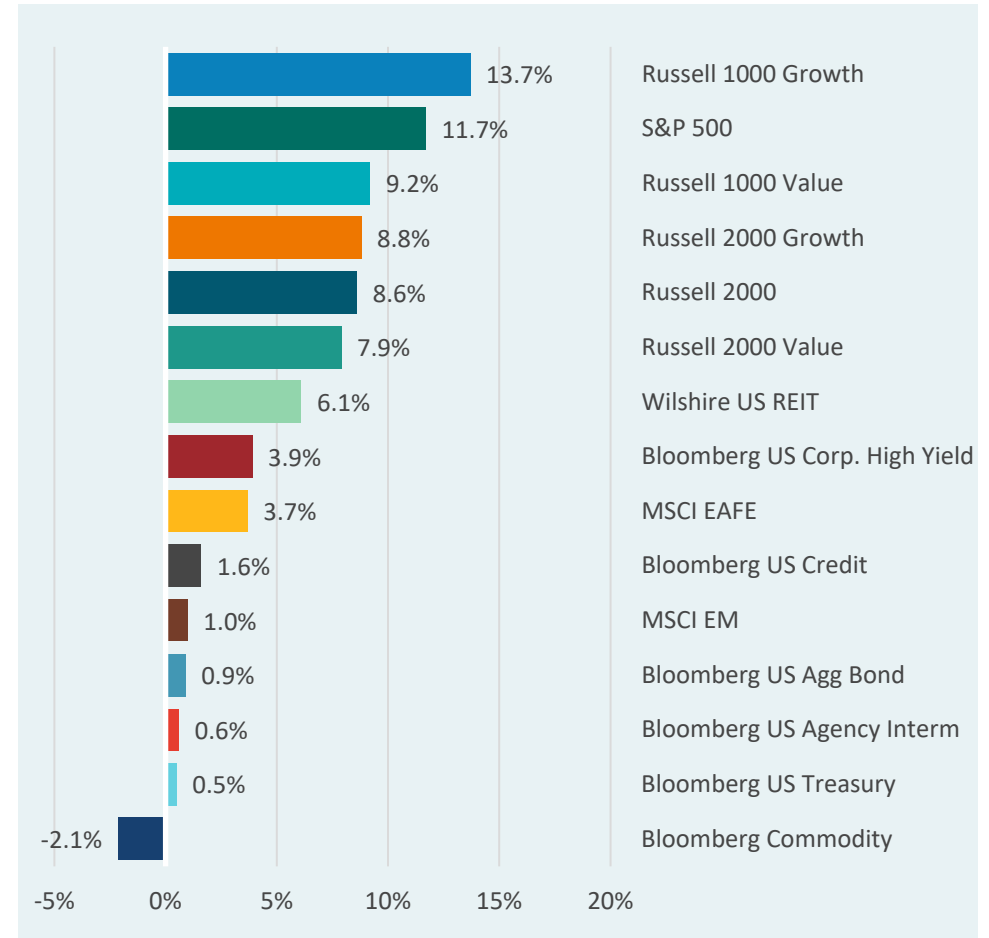
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 6/30/22.

# Major asset class returns

ONE YEAR ENDING SEPTEMBER



TEN YEARS ENDING SEPTEMBER



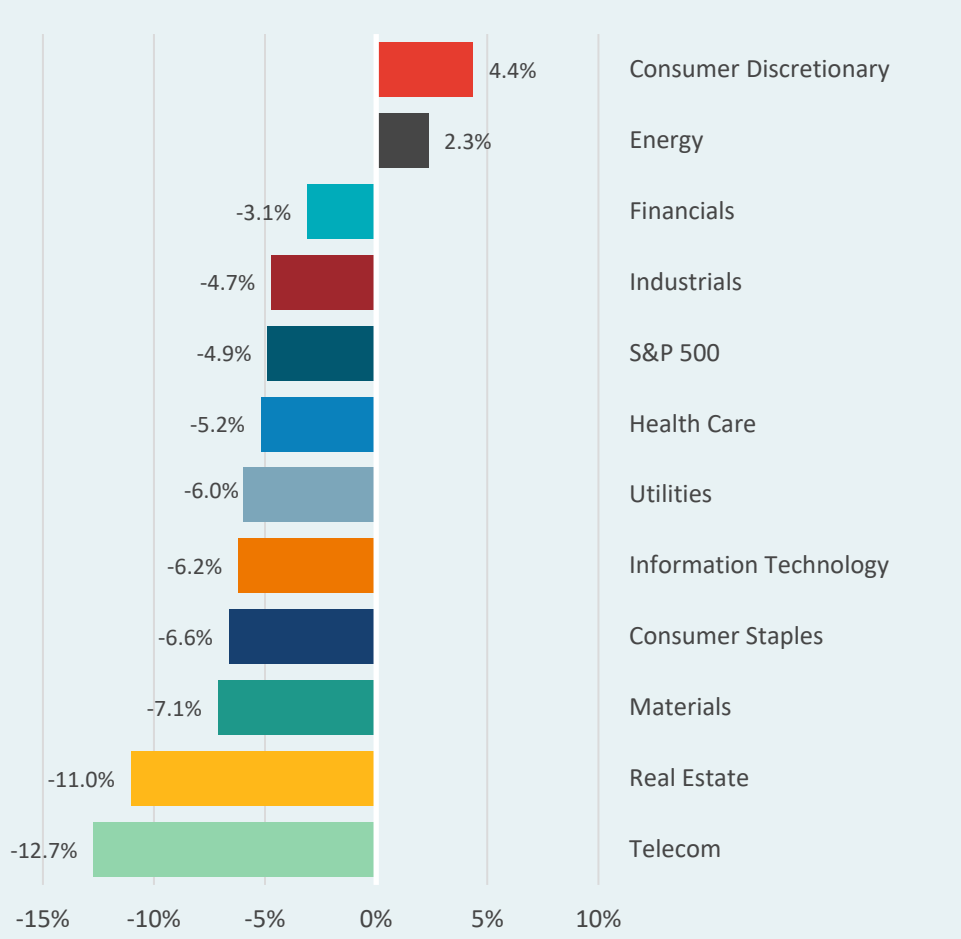
\*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 9/30/22

Source: Morningstar, as of 9/30/22

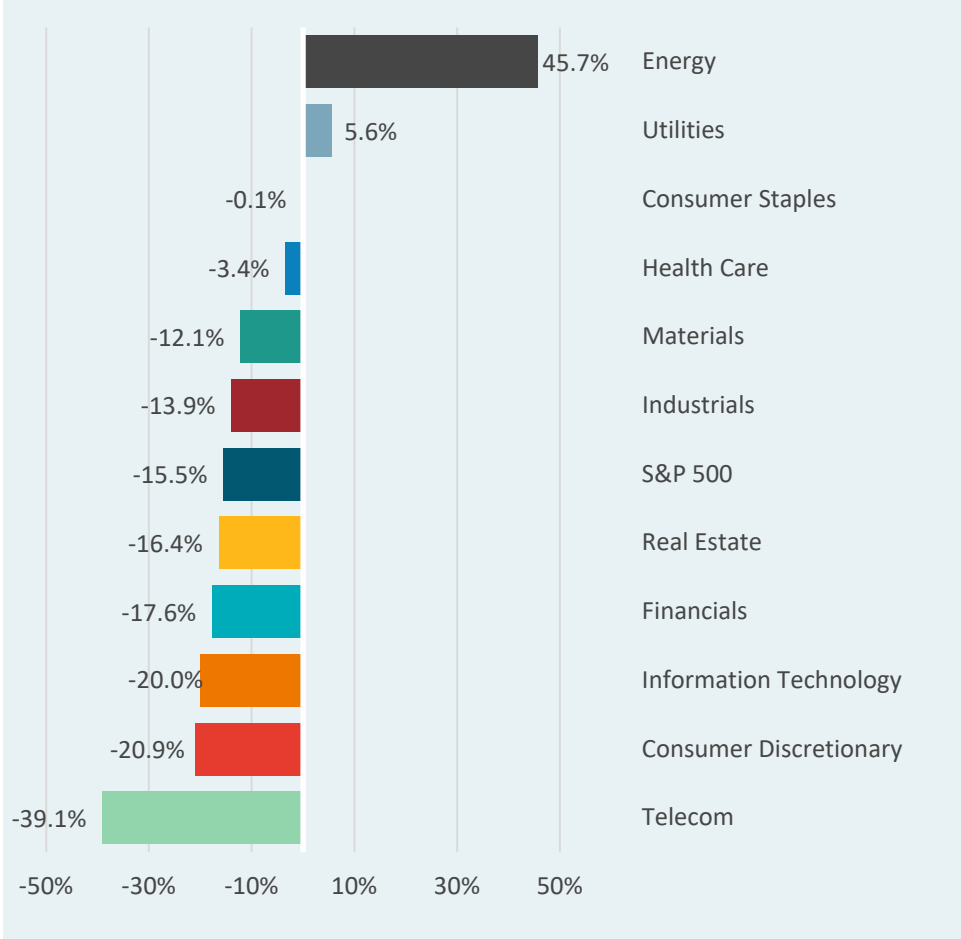
# S&P 500 sector returns

QTD



Source: Morningstar, as of 9/30/22

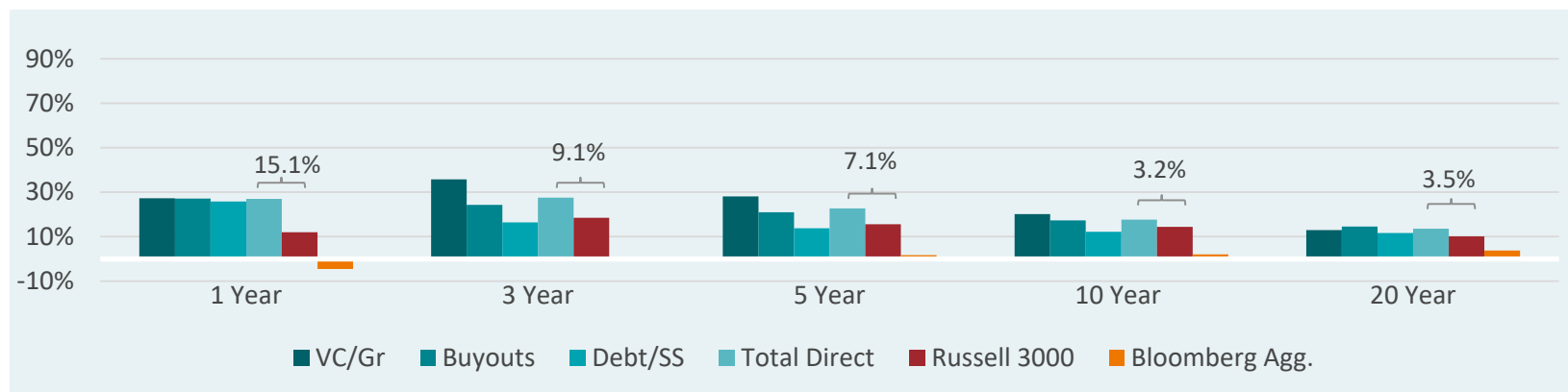
ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/22

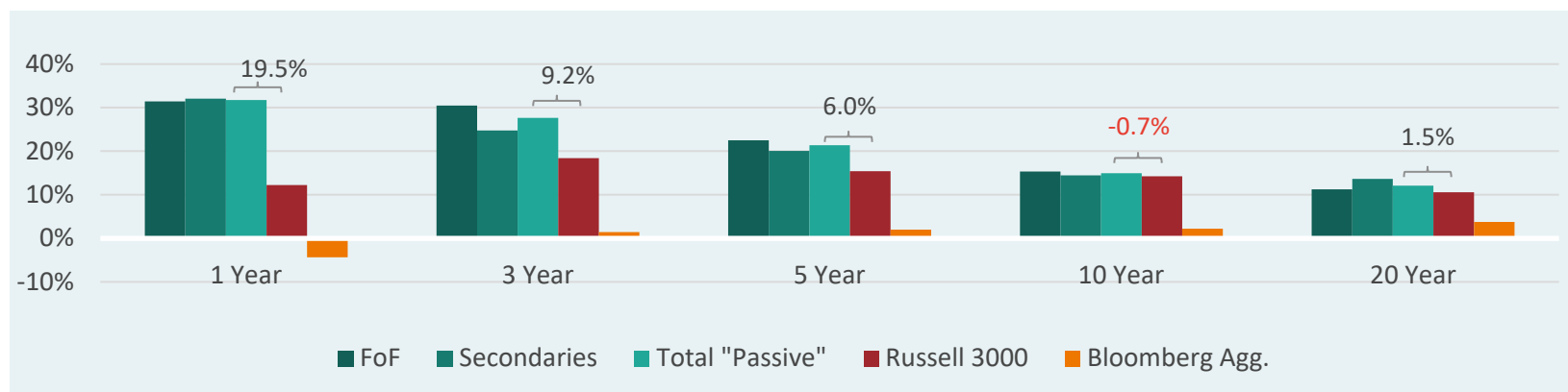
# Private equity vs. traditional assets performance

## DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct P.E Fund Investments outperformed comparable public equities across all time periods.

## “PASSIVE” STRATEGIES



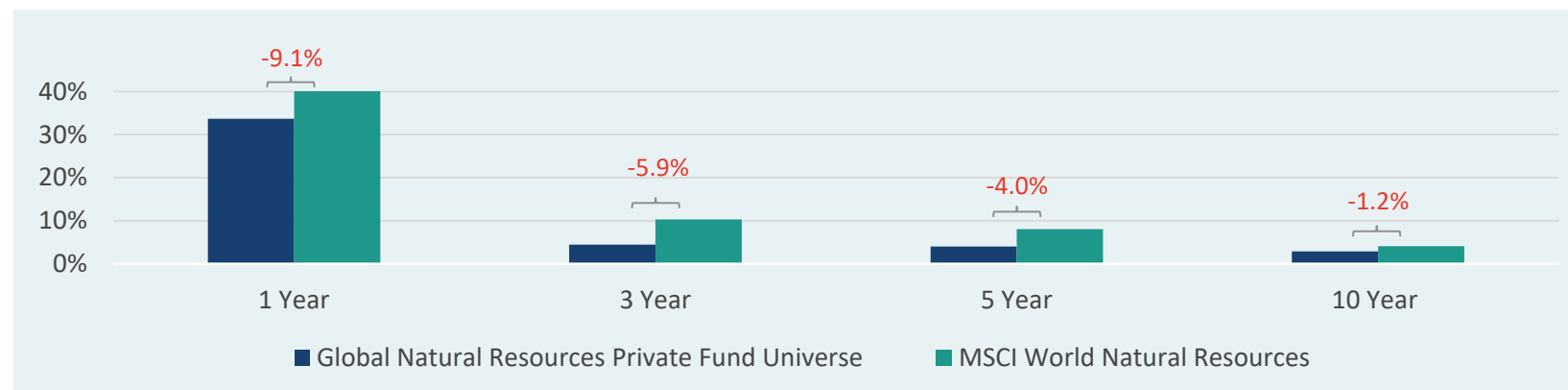
“Passive” strategies outperformed comparable public equities across all time periods, aside from the 10-year basis.

Sources: Refinitiv PME: U.S. Private Equity Funds sub asset classes as of March 31, 2022. Public Market Equivalent returns resulted from “Total Passive” and Total Direct’s identical cash flows invested into and distributed from respective traditional asset comparable.



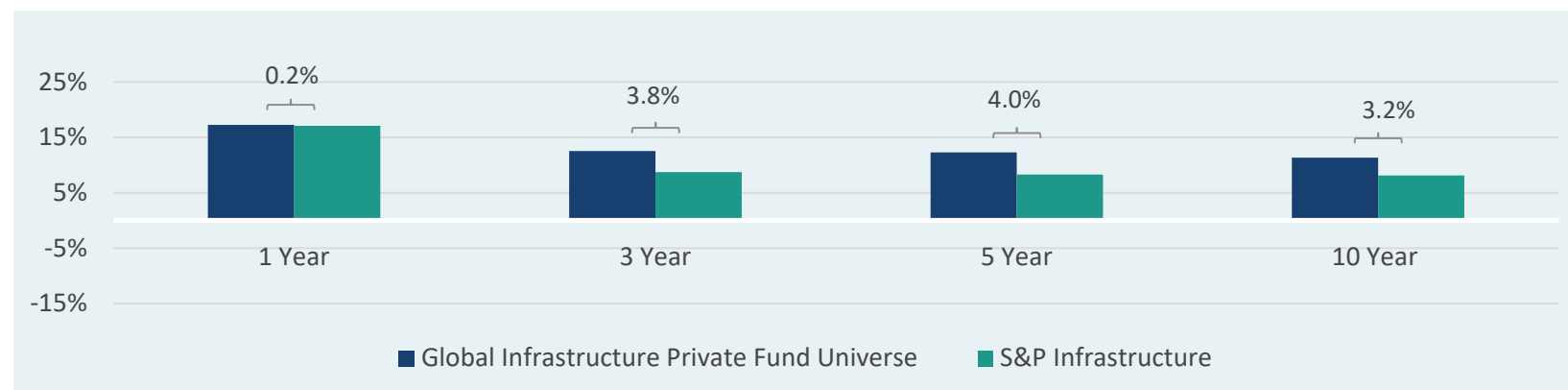
# Private vs. liquid real assets performance

## GLOBAL NATURAL RESOURCES FUNDS (N.R.)



N.R. funds underperformed the MSCI World Natural Resources benchmark across all time periods.

## GLOBAL INFRASTRUCTURE FUNDS

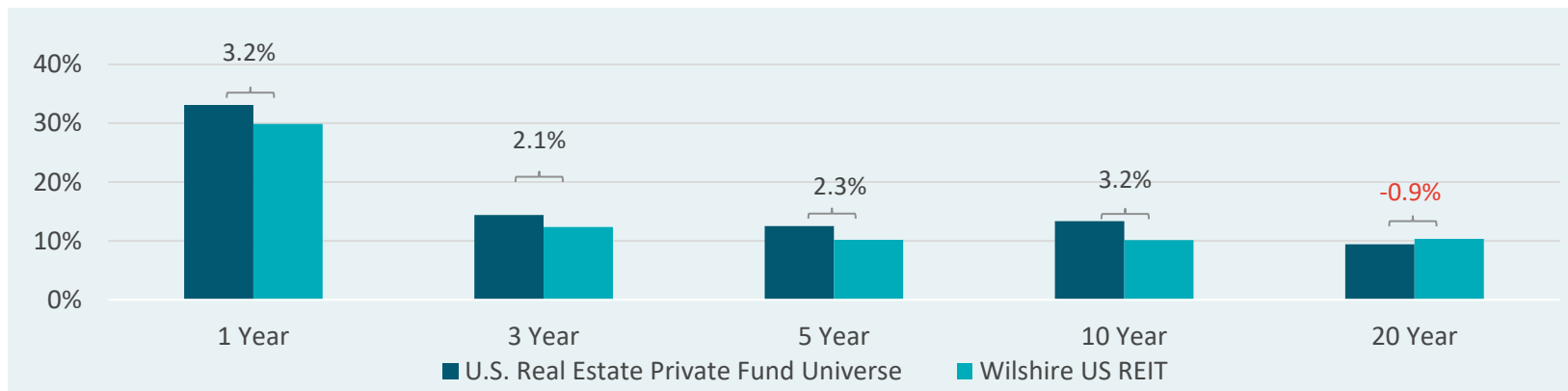


Infra. funds outperformed the S&P Infra. across all periods.

Sources: Refinitiv PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of March 31, 2022. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

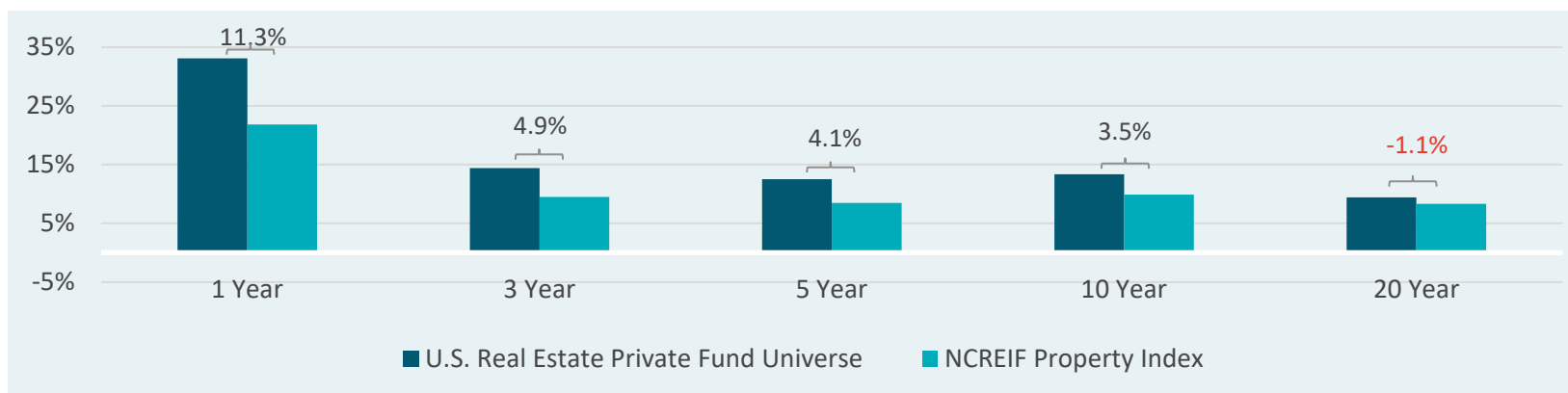
# Private vs. liquid and core real estate performance

## U.S. PRIVATE REAL ESTATE FUNDS VS. LIQUID UNIVERSE



U.S. Private R.E. funds underperformed the Wilshire U.S. REIT Index across all time periods, aside on a 20-year basis.

## U.S. PRIVATE REAL ESTATE FUNDS VS. CORE FUNDS



U.S. Private R.E. Funds outperformed the NCREIF Property Index across all time periods, aside a 20-year basis.

Sources: Refinitiv PME: U.S. Real Estate universes as of March 31, 2022. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

# Detailed index returns

## DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Core Index</b>							
S&P 500	(9.2)	(4.9)	(23.9)	(15.5)	8.2	9.2	11.7
S&P 500 Equal Weighted	(9.2)	(4.8)	(20.7)	(13.5)	7.7	8.0	11.5
DJ Industrial Average	(8.8)	(6.2)	(19.7)	(13.4)	4.4	7.4	10.5
Russell Top 200	(9.2)	(5.0)	(24.7)	(16.4)	9.0	10.0	12.1
Russell 1000	(9.3)	(4.6)	(24.6)	(17.2)	7.9	9.0	11.6
Russell 2000	(9.6)	(2.2)	(25.1)	(23.5)	4.3	3.6	8.6
Russell 3000	(9.3)	(4.5)	(24.6)	(17.6)	7.7	8.6	11.4
Russell Mid Cap	(9.3)	(3.4)	(24.3)	(19.4)	5.2	6.5	10.3
<b>Style Index</b>							
Russell 1000 Growth	(9.7)	(3.6)	(30.7)	(22.6)	10.7	12.2	13.7
Russell 1000 Value	(8.8)	(5.6)	(17.8)	(11.4)	4.4	5.3	9.2
Russell 2000 Growth	(9.0)	0.2	(29.3)	(29.3)	2.9	3.6	8.8
Russell 2000 Value	(10.2)	(4.6)	(21.1)	(17.7)	4.7	2.9	7.9

## INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
MSCI ACWI	(9.6)	(6.8)	(25.6)	(20.7)	3.7	4.4	7.3
MSCI ACWI ex US	(10.0)	(9.9)	(26.5)	(25.2)	(1.5)	(0.8)	3.0
MSCI EAFE	(9.4)	(9.4)	(27.1)	(25.1)	(1.8)	(0.8)	3.7
MSCI EM	(11.7)	(11.6)	(27.2)	(28.1)	(2.1)	(1.8)	1.0
MSCI EAFE Small Cap	(11.5)	(9.8)	(32.1)	(32.1)	(2.2)	(1.8)	5.3
<b>Style Index</b>							
MSCI EAFE Growth	(9.7)	(8.5)	(33.0)	(30.3)	(1.5)	0.7	4.7
MSCI EAFE Value	(9.0)	(10.2)	(21.1)	(20.2)	(2.8)	(2.7)	2.4
<b>Regional Index</b>							
MSCI UK	(8.8)	(10.8)	(18.7)	(14.1)	(1.7)	(1.1)	1.9
MSCI Japan	(10.4)	(7.7)	(26.4)	(29.3)	(2.6)	(0.6)	4.8
MSCI Euro	(8.4)	(10.0)	(32.7)	(30.0)	(3.8)	(3.2)	3.2
MSCI EM Asia	(13.2)	(14.0)	(28.8)	(29.5)	(0.8)	(1.1)	3.1
MSCI EM Latin American	(3.3)	3.6	3.0	0.2	(3.4)	(2.6)	(2.3)

## FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Broad Index</b>							
Bloomberg US TIPS	(6.6)	(5.1)	(13.6)	(11.6)	0.8	2.0	1.0
Bloomberg US Treasury Bills	0.2	0.4	0.4	0.4	0.6	1.1	0.7
Bloomberg US Agg Bond	(4.3)	(4.8)	(14.6)	(14.6)	(3.3)	(0.3)	0.9
Bloomberg US Universal	(4.3)	(4.5)	(14.9)	(14.9)	(3.1)	(0.2)	1.2
<b>Duration</b>							
Bloomberg US Treasury 1-3 Yr	(1.2)	(1.5)	(4.5)	(5.1)	(0.5)	0.5	0.6
Bloomberg US Treasury Long	(7.9)	(9.6)	(28.8)	(26.6)	(8.5)	(1.6)	0.6
Bloomberg US Treasury	(3.5)	(4.3)	(13.1)	(12.9)	(3.1)	(0.2)	0.5
<b>Issuer</b>							
Bloomberg US MBS	(5.1)	(5.3)	(13.7)	(14.0)	(3.7)	(0.9)	0.5
Bloomberg US Corp. High Yield	(4.0)	(0.6)	(14.7)	(14.1)	(0.5)	1.6	3.9
Bloomberg US Agency Interm	(1.8)	(2.4)	(7.2)	(7.9)	(1.4)	0.2	0.6
Bloomberg US Credit	(5.1)	(4.9)	(18.1)	(17.9)	(3.6)	(0.0)	1.6

## OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
<b>Index</b>							
Bloomberg Commodity	(8.1)	(4.1)	13.6	11.8	13.5	7.0	(2.1)
Wilshire US REIT	(12.3)	(10.2)	(29.7)	(17.6)	(2.2)	2.9	6.1
CS Leveraged Loans	(2.2)	1.2	(3.3)	(2.6)	2.1	3.0	3.7
S&P Global Infrastructure	(11.8)	(9.6)	(10.1)	(6.0)	(0.1)	2.1	5.7
Alerian MLP	(7.5)	8.4	19.0	20.0	3.1	1.2	1.7
<b>Regional Index</b>							
JPM EMBI Global Div	(6.4)	(4.6)	(23.9)	(24.3)	(7.2)	(2.6)	1.1
JPM GBI-EM Global Div	(4.9)	(4.7)	(18.6)	(20.6)	(7.1)	(3.9)	(2.4)
<b>Hedge Funds</b>							
HFRI Composite	(2.3)	(0.6)	(6.2)	(5.8)	6.2	4.5	4.6
HFRI FOF Composite	(0.6)	0.7	(5.9)	(5.5)	4.5	3.3	3.6
<b>Currency (Spot)</b>							
Euro	(2.6)	(3.9)	(13.9)	(15.5)	(3.5)	(3.7)	(2.7)
Pound Sterling	(4.1)	(8.3)	(17.6)	(17.2)	(3.2)	(3.6)	(3.6)
Yen	(4.2)	(7.7)	(20.4)	(22.9)	(9.3)	(4.9)	(6.0)

Source: Morningstar, HFRI, as of 9/30/22.

# Definitions

**Bloomberg US Weekly Consumer Comfort Index** - tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. ([www.lanqerresearch.com](http://www.lanqerresearch.com))

**University of Michigan Consumer Sentiment Index** - A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conditions conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. ([www.Bloomberg.com](http://www.Bloomberg.com))

**NFIB Small Business Outlook** - Small Business Economic Trends (SBET) is a monthly assessment of the U.S. small-business economy and its near-term prospects. Its data are collected through mail surveys to random samples of the National Federal of Independent Business (NFIB) membership. The survey contains three broad question types: recent performance, near-term forecasts, and demographics. The topics addressed include: outlook, sales, earnings, employment, employee compensation, investment, inventories, credit conditions, and single most important problem. (<http://www.nfib-sbet.org/about/>)

**NAHB Housing Market Index** - the housing market index is a weighted average of separate diffusion indices for three key single-family indices: market conditions for the sale of new homes at the present time, market conditions for the sale of new homes in the next six months, and the traffic of prospective buyers of new homes. The first two series are rated on a scale of Good, Fair, and Poor and the last is rated on a scale of High/Very High, Average, and Low/Very Low. A diffusion index is calculated for each series by applying the formula  $(\text{Good-Poor} + 100)/2$  to the present and future sales series and  $(\text{High/Very High-Low/Very Low} + 100)/2$  to the traffic series. Each resulting index is then seasonally adjusted and weighted to produce the HMI. Based on this calculation, the HMI can range between 0 and 100.

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# Foundation of CSUMB Endowment

Investment Performance Review

Period Ending: September 30, 2022



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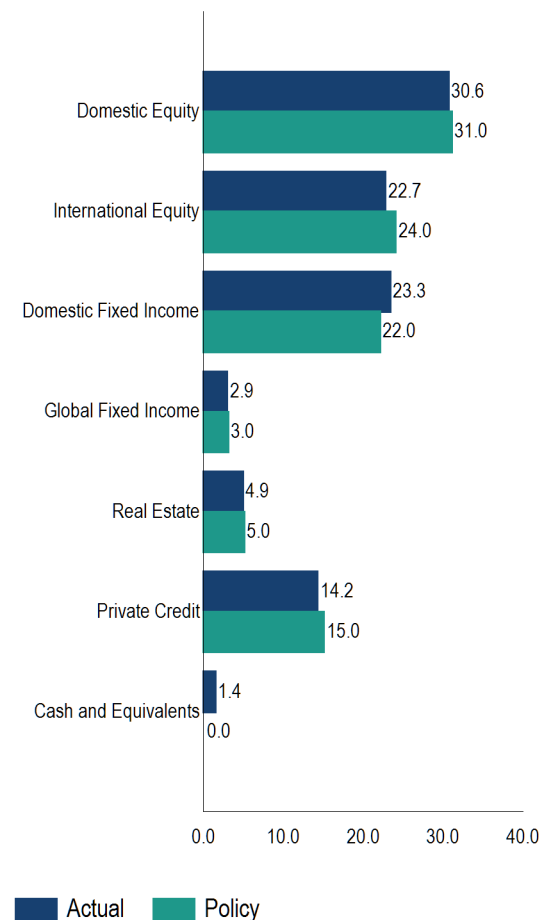
# Endowment Total Fund

## Executive Summary (Net of Fees)

Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	Inception	Inception Date
<b>Endowment Total Fund</b>	<b>30,541,494</b>	<b>100.0</b>	<b>-5.3</b>	<b>-16.7</b>	<b>-13.7</b>	<b>3.0</b>	<b>3.3</b>	<b>5.8</b>	<b>5.3</b>	<b>Mar-07</b>
<i>Endowment Policy Index</i>			-4.7	-17.9	-14.8	2.6	3.5	5.7	5.3	Mar-07
<i>InvMetrics All Endowment &lt; \$50mm Net Rank</i>			66	21	21	31	50	26		
<b>Total Domestic Equity</b>	<b>9,352,015</b>	<b>30.6</b>	<b>-4.9</b>	<b>-20.6</b>	<b>-12.9</b>	<b>8.8</b>	<b>8.4</b>	<b>10.5</b>	<b>7.9</b>	<b>Mar-07</b>
<i>Blended US Equity Benchmark</i>			-4.4	-24.1	-17.0	7.5	8.2	10.7	8.0	Mar-07
<i>InvMetrics Charity E&amp;F US Eq Net Rank</i>			77	2	1	3	30	43		
<b>Total Int'l Equity</b>	<b>6,933,055</b>	<b>22.7</b>	<b>-10.5</b>	<b>-26.1</b>	<b>-24.9</b>	<b>-2.8</b>	<b>-2.7</b>	<b>3.1</b>	<b>1.2</b>	<b>Mar-07</b>
<i>Blended International Equity Benchmark</i>			-10.3	-27.0	-26.4	-1.8	-1.2	3.4	1.7	Mar-07
<i>InvMetrics All E&amp;F ex-US Eq Net Rank</i>			74	17	15	83	92	53		
<b>Total Domestic Fixed Income</b>	<b>7,116,214</b>	<b>23.3</b>	<b>-4.6</b>	<b>-14.7</b>	<b>-15.0</b>	<b>-2.6</b>	<b>0.2</b>	<b>1.2</b>	<b>4.2</b>	<b>Mar-07</b>
<i>Bloomberg US Aggregate TR</i>			-4.8	-14.6	-14.6	-3.3	-0.3	0.5	2.8	Mar-07
<i>InvMetrics All E&amp;F US Fix Inc Net Rank</i>			87	81	85	72	65	53		
<b>Total Global Fixed Income</b>	<b>886,685</b>	<b>2.9</b>	<b>-5.8</b>	<b>-24.9</b>	<b>-24.6</b>	<b>-7.4</b>	<b>-3.1</b>	<b>0.4</b>	<b>0.4</b>	<b>Jan-15</b>
<i>JP Morgan EMBI Global TR</i>			-4.2	-22.2	-22.2	-6.1	-2.3	1.1	1.0	Jan-15
<b>Total Real Estate</b>	<b>1,488,381</b>	<b>4.9</b>	<b>0.0</b>	<b>12.2</b>	<b>16.4</b>	<b>9.2</b>	<b>7.5</b>	<b>7.6</b>	<b>5.7</b>	<b>Mar-07</b>
<i>NCREIF ODCE Net</i>			0.0	12.0	20.6	11.3	9.2	8.8	6.1	Mar-07
<i>InvMetrics All E&amp;F Real Estate Priv Net Rank</i>			50	49	87	93	93	84		
<b>Private Credit/Alternatives</b>	<b>4,340,878</b>	<b>14.2</b>	<b>-0.2</b>	<b>0.8</b>	<b>2.5</b>	<b>6.7</b>	<b>5.9</b>	<b>6.7</b>	<b>3.9</b>	<b>Mar-07</b>
<i>S&amp;P/LSTA Leveraged Loan Index+2%</i>			1.9	-1.8	-0.6	4.3	5.0	5.7	6.1	Mar-07
<i>CPI + 5%</i>			1.4	10.4	13.6	10.2	8.9	8.4	7.5	Mar-07
<i>InvMetrics All Endowment Alts Net Rank</i>			30	8	11	24	32	29		
<b>Total Cash</b>	<b>424,266</b>	<b>1.4</b>	<b>0.0</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.6</b>	<b>0.5</b>	<b>0.5</b>	<b>Mar-07</b>
<i>91 Day T-Bills</i>			0.5	0.6	0.6	0.5	1.1	0.9	0.7	Mar-07

Actual vs Target Allocation (%)



Endowment Fund Policy Index (as of 7/1/19): 25% S&P 500 Index, 6% Russell 2000 Index, 13% MSCI EAFE Index, 11% MSCI Emerging Markets Index, 22% Bloomberg US Aggregate Index, 5% NCREIF ODCE Index, 3% JP Morgan EMBI Global TR Index, 15% S&P/LSTA Leveraged Loan Index+2%. PIMCO Custom Benchmark is 45% Bloomberg US TIPS Index, 20% Bloomberg Commodity Index, 15% JPM ELMI + (Unhedged), 10% DJ U.S. Select REIT Index, 10% Bloomberg Gold Subindex. Blended US Equity Benchmark: 19.35% Russell 2000 Index, 80.65% S&P 500 Index. Blended International Equity Benchmark: 54.17% MSCI EAFE Index, 45.83% MSCI Emerging Markets Index. Total Alternatives changed to Private Credit with S&P/LSTA Leveraged Loan Index+2% as benchmark. Golub Capital funded 10/2/2017. Tennenbaum Capital Partners funded 12/21/17. PIMCO All Asset Ins liquidated 06/24/2019. Owl Rock funded 07/31/2019. PIMCO Inflation Response Multi-Asset Ins liquidated 03/17/2020. WCM Focused Intl Growth Ins funded on 06/01/2020. Baillie Gifford EM funded on 06/30/2021. TCP Lending Fund VIII-L is preliminary as of 9/30/2022. Owl Rock First Lien Fund, and Golub Capital Partners Intl 11, L.P. as of 6/30/2022 adjusted for cash flows. Fiscal year end: 6/30.

# Endowment Total Fund

## Executive Summary (Net of Fees)

Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
<b>Endowment Total Fund</b>	<b>30,541,494</b>	<b>100.0</b>	<b>-5.3</b>	<b>-16.7</b>	<b>-13.7</b>	<b>3.0</b>	<b>3.3</b>	<b>5.8</b>	<b>5.5</b>	<b>13.8</b>	<b>9.1</b>	<b>16.9</b>	<b>-5.8</b>	<b>15.1</b>	<b>5.3</b>	<b>Mar-07</b>
<i>Endowment Policy Index</i>			-4.7	-17.9	-14.8	2.6	3.5	5.7	5.6	10.7	12.2	18.4	-5.3	15.9	5.3	Mar-07
<i>InvMetrics All Endowment &lt; \$50mm Net Rank</i>			66	21	21	31	50	26	56	26	80	74	52	49		
<b>Total Domestic Equity</b>	<b>9,352,015</b>	<b>30.6</b>	<b>-4.9</b>	<b>-20.6</b>	<b>-12.9</b>	<b>8.8</b>	<b>8.4</b>	<b>10.5</b>	<b>11.0</b>	<b>31.0</b>	<b>13.6</b>	<b>28.5</b>	<b>-6.9</b>	<b>18.8</b>	<b>7.9</b>	<b>Mar-07</b>
<i>Blended US Equity Benchmark</i>			-4.4	-24.1	-17.0	7.5	8.2	10.7	11.2	26.0	18.9	30.4	-5.6	20.5	8.0	Mar-07
<i>InvMetrics Charity E&amp;F US Eq Net Rank</i>			77	2	1	3	30	43	38	2	95	89	77	83		
Schwab Fundamental US Large Company Index	3,962,290	13.0	-5.6	-17.2	-9.6	9.0	8.7	10.7	11.1	31.6	9.2	28.9	-7.3	17.1	11.4	Feb-10
<i>S&amp;P 500</i>			-4.9	-23.9	-15.5	8.2	9.2	11.4	11.7	28.7	18.4	31.5	-4.4	21.8	12.0	Feb-10
<i>Large Cap MStar MF Rank</i>			68	22	21	14	36	36	40	6	69	56	67	74		
Vanguard 500 Index Adm	3,844,473	12.6	-4.9	-23.9	-15.5	8.1	9.2	11.4	11.7	28.7	18.4	31.5	-4.4	21.8	8.3	Mar-07
<i>S&amp;P 500</i>			-4.9	-23.9	-15.5	8.2	9.2	11.4	11.7	28.7	18.4	31.5	-4.4	21.8	8.3	Mar-07
<i>Large Cap MStar MF Rank</i>			48	50	46	25	26	19	24	21	46	32	38	43		
DFA US Micro Cap Ins	1,545,252	5.1	-3.2	-20.4	-14.6	7.3	4.4	8.3	9.6	33.5	6.6	20.7	-11.6	11.2	5.6	Mar-17
<i>Russell 2000 Value</i>			-4.6	-21.1	-17.7	4.7	2.9	7.4	7.9	28.3	4.6	22.4	-12.9	7.8	3.7	Mar-17
<i>Small Value MStar MF Rank</i>			22	62	50	34	32	26	19	39	35	72	9	31		
<b>Total Int'l Equity</b>	<b>6,933,055</b>	<b>22.7</b>	<b>-10.5</b>	<b>-26.1</b>	<b>-24.9</b>	<b>-2.8</b>	<b>-2.7</b>	<b>3.1</b>	<b>2.5</b>	<b>10.1</b>	<b>3.6</b>	<b>17.3</b>	<b>-14.8</b>	<b>26.6</b>	<b>1.2</b>	<b>Mar-07</b>
<i>Blended International Equity Benchmark</i>			-10.3	-27.0	-26.4	-1.8	-1.2	3.4	2.6	4.9	12.8	20.4	-14.1	30.6	1.7	Mar-07
<i>InvMetrics All E&amp;F ex-US Eq Net Rank</i>			74	17	15	83	92	53	87	22	99	99	35	81		
Schwab Fundamental Intl Large Company Index	1,931,690	6.3	-11.1	-22.1	-20.6	0.0	-0.3	3.7	4.3	14.4	4.4	18.1	-13.9	23.9	2.3	May-11
<i>MSCI EAFE</i>			-9.4	-27.1	-25.1	-1.8	-0.8	2.8	3.7	11.3	7.8	22.0	-13.8	25.0	2.4	May-11
<i>MSCI EAFE Value</i>			-10.2	-21.1	-20.2	-2.8	-2.7	1.4	2.4	10.9	-2.6	16.1	-14.8	21.4		
<i>Foreign Large Value MStar MF Rank</i>			47	26	33	17	12	9	9	25	32	49	17	43		
Dodge & Cox Intl Stock	1,166,600	3.8	-10.7	-19.6	-17.7	0.2	-1.5	3.1	4.2	11.0	2.1	22.8	-18.0	23.9	1.9	Mar-07
<i>MSCI ACWI ex USA</i>			-9.9	-26.5	-25.2	-1.5	-0.8	3.3	3.0	7.8	10.7	21.5	-14.2	27.2	1.4	Mar-07
<i>MSCI ACWI ex USA Value</i>			-10.4	-21.0	-20.0	-2.1	-2.1	2.2	1.9	10.5	-0.8	15.7	-14.0	22.7		
<i>Foreign Large Value MStar MF Rank</i>			39	14	11	14	29	24	12	65	54	1	81	43		

Endowment Fund Policy Index (as of 7/1/19): 25% S&P 500 Index, 6% Russell 2000 Index, 13% MSCI EAFE Index, 11% MSCI Emerging Markets Index, 22% Bloomberg US Aggregate Index, 5% NCREIF ODCE Index, 3% JP Morgan EMBI Global TR Index, 15% S&P/LSTA Leveraged Loan Index+2%. PIMCO Custom Benchmark is 45% Bloomberg US TIPS Index, 20% Bloomberg Commodity Index, 15% JPM ELMI + (Unhedged), 10% DJ U.S. Select REIT Index, 10% Bloomberg Gold Subindex. Blended US Equity Benchmark: 19.35% Russell 2000 Index, 80.65% S&P 500 Index. Blended International Equity Benchmark: 54.17% MSCI EAFE Index, 45.83% MSCI Emerging Markets Index. Total Alternatives changed to Private Credit with S&P/LSTA Leveraged Loan Index+2% as benchmark. Golub Capital funded 10/2/2017. Tennenbaum Capital Partners funded 12/21/17. PIMCO All Asset Ins liquidated 06/24/2019. Owl Rock funded 07/31/2019. PIMCO Inflation Response Multi-Asset Ins liquidated 03/17/2020. WCM Focused Intl Growth Ins funded on 06/01/2020. Baillie Gifford EM funded on 06/30/2021. TCP Lending Fund VIII-L is preliminary as of 9/30/2022. Owl Rock First Lien Fund, and Golub Capital Partners Intl 11, L.P. as of 6/30/2022 adjusted for cash flows. Fiscal year end: 6/30.

# Endowment Total Fund

## Executive Summary (Net of Fees)

Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
WCM Focused Int Growth Ins	1,053,904	3.5	-8.1	-37.3	-33.8	2.2	5.1	8.0	8.1	17.0	32.8	35.2	-7.3	31.2	-0.3	Jun-20
MSCI ACWI ex USA			-9.9	-26.5	-25.2	-1.5	-0.8	3.3	3.0	7.8	10.7	21.5	-14.2	27.2	1.3	Jun-20
MSCI ACWI ex USA Growth			-9.4	-31.8	-30.2	-1.4	0.2	4.1	4.0	5.1	22.2	27.3	-14.4	32.0		
Foreign Growth MStar MF Rank			16	68	45	11	3	3	4	8	18	7	4	63		
DFA Emerging Markets Value I	1,569,081	5.1	-9.8	-19.0	-18.7	0.8	-0.5	5.3	1.5	12.4	2.7	9.6	-11.9	33.8	2.1	Mar-14
MSCI Emerging Markets			-11.6	-27.2	-28.1	-2.1	-1.8	3.9	1.0	-2.5	18.3	18.4	-14.6	37.3	1.6	Mar-14
MSCI Emerging Markets Value NR			-11.0	-23.3	-23.6	-2.6	-2.1	2.9	-0.4	4.0	5.5	12.0	-10.7	28.1		
eV Emg Mkts Large Cap Value Equity Net Rank			63	41	19	44	43	34	37	1	49	99	34	10		
Baillie Gifford Emerging Markets I	1,211,780	4.0	-12.3	-34.1	-35.4	-4.4	-2.0	5.1	2.5	-9.2	29.4	27.9	-15.0	52.9	-36.6	Jun-21
MSCI Emerging Markets			-11.6	-27.2	-28.1	-2.1	-1.8	3.9	1.0	-2.5	18.3	18.4	-14.6	37.3	-28.2	Jun-21
MSCI Emerging Markets Growth NR			-12.1	-30.6	-32.1	-1.7	-1.6	4.7	2.4	-8.4	31.3	25.1	-18.3	46.8		
eV Emg Mkts Large Cap Value Equity Net Rank			99	99	99	92	70	37	19	99	1	1	41	1		
<b>Total Domestic Fixed Income</b>	<b>7,116,214</b>	<b>23.3</b>	<b>-4.6</b>	<b>-14.7</b>	<b>-15.0</b>	<b>-2.6</b>	<b>0.2</b>	<b>1.2</b>	<b>1.4</b>	<b>-1.0</b>	<b>8.9</b>	<b>9.4</b>	<b>-0.1</b>	<b>3.9</b>	<b>4.2</b>	<b>Mar-07</b>
Bloomberg US Aggregate TR			-4.8	-14.6	-14.6	-3.3	-0.3	0.5	0.9	-1.5	7.5	8.7	0.0	3.5	2.8	Mar-07
InvMetrics All E&F US Fix Inc Net Rank			87	81	85	72	65	53	45	74	27	18	47	46		
Met West Total Return Bond I	3,463,852	11.3	-5.2	-16.2	-16.3	-3.3	-0.2	0.6	1.3	-1.1	9.1	9.1	0.2	3.4	0.7	Dec-14
Bloomberg US Aggregate TR			-4.8	-14.6	-14.6	-3.3	-0.3	0.5	0.9	-1.5	7.5	8.7	0.0	3.5	0.7	Dec-14
Intermediate Core Bond MStar MF Rank			89	93	92	66	46	58	21	33	26	29	26	70		
Dodge & Cox Income	3,652,363	12.0	-4.0	-13.3	-13.6	-1.7	0.7	1.8	1.9	-0.9	9.5	9.7	-0.3	4.4	1.5	Dec-14
Bloomberg US Aggregate TR			-4.8	-14.6	-14.6	-3.3	-0.3	0.5	0.9	-1.5	7.5	8.7	0.0	3.5	0.7	Dec-14
Intermediate Core Bond MStar MF Rank			10	14	15	5	4	1	4	20	14	13	51	34		
<b>Total Global Fixed Income</b>	<b>886,685</b>	<b>2.9</b>	<b>-5.8</b>	<b>-24.9</b>	<b>-24.6</b>	<b>-7.4</b>	<b>-3.1</b>	<b>0.4</b>	<b>--</b>	<b>-2.2</b>	<b>5.4</b>	<b>15.5</b>	<b>-5.5</b>	<b>10.3</b>	<b>0.4</b>	<b>Jan-15</b>
JP Morgan EMBI Global TR			-4.2	-22.2	-22.2	-6.1	-2.3	1.1	--	-1.5	5.9	14.4	-4.6	9.3	1.0	Jan-15
JP Morgan Emerging ETF	886,685	2.9	-5.8	-24.9	-24.6	-7.4	-3.1	0.4	0.3	-2.2	5.4	15.5	-5.5	10.3	0.1	Dec-14
JP Morgan EMBI Global TR			-4.2	-22.2	-22.2	-6.1	-2.3	1.1	1.0	-1.5	5.9	14.4	-4.6	9.3	0.7	Dec-14
Global Bond MStar MF Rank			39	84	78	78	61	22	17	25	89	1	91	26		

Endowment Fund Policy Index (as of 7/1/19): 25% S&P 500 Index, 6% Russell 2000 Index, 13% MSCI EAFE Index, 11% MSCI Emerging Markets Index, 22% Bloomberg US Aggregate Index, 5% NCREIF ODCE Index, 3% JP Morgan EMBI Global TR Index, 15% S&P/LSTA Leveraged Loan Index+2%. PIMCO Custom Benchmark is 45% Bloomberg US TIPS Index, 20% Bloomberg Commodity Index, 15% JPM ELMI + (Unhedged), 10% DJ U.S. Select REIT Index, 10% Bloomberg Gold Subindex. Blended US Equity Benchmark: 19.35% Russell 2000 Index, 80.65% S&P 500 Index. Blended International Equity Benchmark: 54.17% MSCI EAFE Index, 45.83% MSCI Emerging Markets Index. Total Alternatives changed to Private Credit with S&P/LSTA Leveraged Loan Index+2% as benchmark. Golub Capital funded 10/2/2017. Tennenbaum Capital Partners funded 12/21/17. PIMCO All Asset Ins liquidated 06/24/2019. Owl Rock funded 07/31/2019. PIMCO Inflation Response Multi-Asset Ins liquidated 03/17/2020. WCM Focused Intl Growth Ins funded on 06/01/2020. Baillie Gifford EM funded on 06/30/2021. TCP Lending Fund VIII-L is preliminary as of 9/30/2022. Owl Rock First Lien Fund, and Golub Capital Partners Intl 11, L.P. as of 6/30/2022 adjusted for cash flows. Fiscal year end: 6/30.



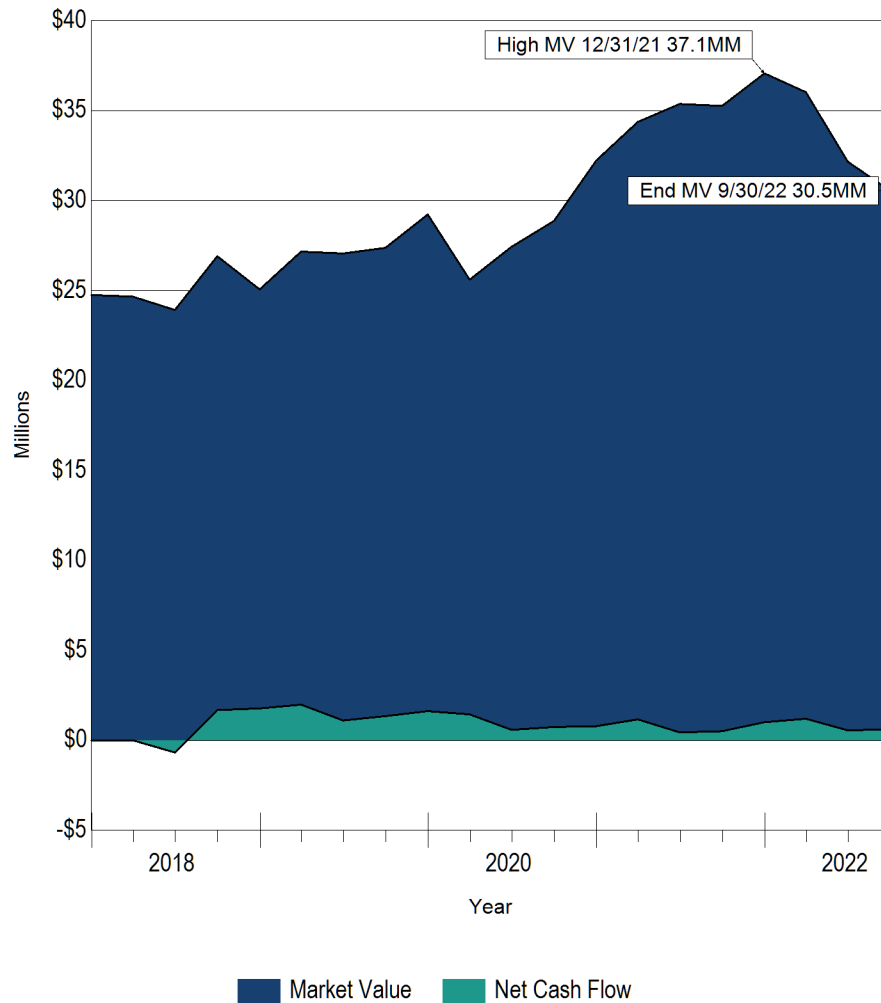
# Endowment Total Fund Executive Summary (Net of Fees)

Period Ending: September 30, 2022

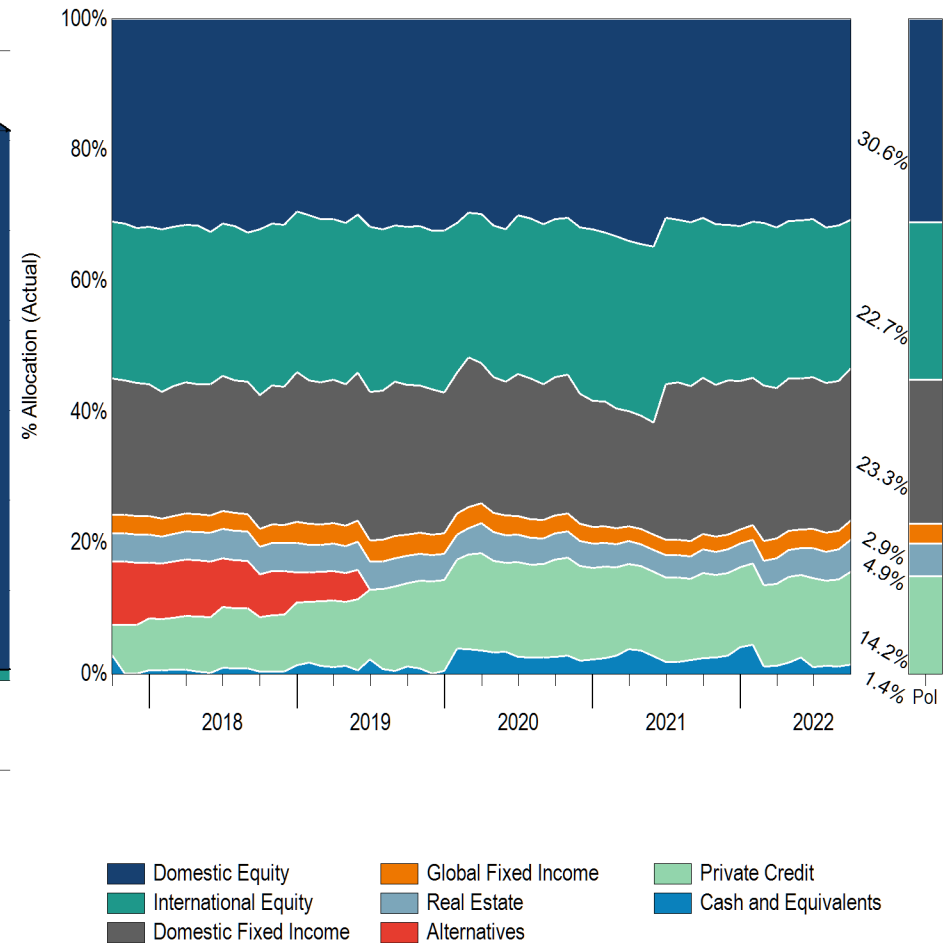
	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
<b>Total Real Estate</b>	<b>1,488,381</b>	<b>4.9</b>	<b>0.0</b>	<b>12.2</b>	<b>16.4</b>	<b>9.2</b>	<b>7.5</b>	<b>7.6</b>	<b>8.4</b>	<b>13.5</b>	<b>1.2</b>	<b>2.9</b>	<b>6.3</b>	<b>3.6</b>	<b>5.7</b>	<b>Mar-07</b>
NCREIF ODCE Net			0.0	12.0	20.6	11.3	9.2	8.8	9.9	21.0	0.3	4.4	7.4	6.7	6.1	Mar-07
InvMetrics All E&F Real Estate Priv Net Rank			50	49	87	93	93	84	92	89	41	94	82	98		
ASB Real Estate	1,488,381	4.9	0.0	12.2	16.4	9.2	7.5	--	--	13.5	1.2	2.9	6.3	3.6	6.6	Jul-16
NCREIF ODCE Net			0.0	12.0	20.6	11.3	9.2	--	--	21.0	0.3	4.4	7.4	6.7	8.7	Jul-16
eV Alt All Real Estate Rank			52	30	31	15	8	--	--	1	96	99	76	99		
<b>Private Credit/Alternatives</b>	<b>4,340,878</b>	<b>14.2</b>	<b>-0.2</b>	<b>0.8</b>	<b>2.5</b>	<b>6.7</b>	<b>5.9</b>	<b>6.7</b>	<b>3.1</b>	<b>11.4</b>	<b>5.5</b>	<b>10.2</b>	<b>-0.6</b>	<b>11.2</b>	<b>3.9</b>	<b>Mar-07</b>
S&P/LSTA Leveraged Loan Index+2%			1.9	-1.8	-0.6	4.3	5.0	5.7	5.6	7.3	5.2	10.8	2.4	6.2	6.1	Mar-07
CPI + 5%			1.4	10.4	13.6	10.2	8.9	8.4	7.6	12.4	6.4	7.4	7.0	7.2		
InvMetrics All Endowment Alts Net Rank			30	8	11	24	32	29	55	60	23	67	18	31		
Golub Capital Partners Intl 11, L.P.	2,011,588	6.6	0.0	3.2	6.0	7.8	8.9	--	--	13.0	5.3	9.9	13.2	--	8.9	Oct-17
Bloomberg US High Yield TR			-0.6	-14.7	-14.1	-0.5	1.6	--	--	5.3	7.1	14.3	-2.1	--	1.6	Oct-17
eV Alt All Credit Rank			37	14	11	17	5	--	--	20	52	22	3	--		
TCP Direct Lending Fund VIII-L	703,613	2.3	-1.4	1.3	1.3	5.8	--	--	--	6.2	7.8	7.4	7.1	--	6.3	Dec-17
Bloomberg US High Yield TR			-0.6	-14.7	-14.1	-0.5	--	--	--	5.3	7.1	14.3	-2.1	--	1.6	Dec-17
eV Alt All Credit Rank			54	19	19	27	--	--	--	51	36	45	16	--		
Owl Rock First Lien Fund, L.P.	1,625,677	5.3	0.0	-2.3	-1.2	5.9	--	--	--	12.1	4.5	--	--	--	4.6	Jul-19
S&P/LSTA Leveraged Loan Index+2%			1.9	-1.8	-0.6	4.3	--	--	--	7.3	5.2	--	--	--	4.2	Jul-19
eV Alt All Credit Rank			37	30	28	27	--	--	--	24	56	--	--	--		
<b>Total Cash</b>	<b>424,266</b>	<b>1.4</b>	<b>0.0</b>	<b>0.1</b>	<b>0.1</b>	<b>0.1</b>	<b>0.6</b>	<b>0.5</b>	<b>0.3</b>	<b>0.0</b>	<b>0.0</b>	<b>1.5</b>	<b>1.2</b>	<b>0.4</b>	<b>0.5</b>	<b>Mar-07</b>
91 Day T-Bills			0.5	0.6	0.6	0.5	1.1	0.9	0.6	0.0	0.5	2.1	1.9	0.9	0.7	Mar-07
Schwab Govt Money Fund	424,266	1.4	0.0	0.1	0.1	0.1	0.6	0.5	0.3	0.0	0.0	1.5	1.2	0.4	0.5	Jun-16
91 Day T-Bills			0.5	0.6	0.6	0.5	1.1	0.9	0.6	0.0	0.5	2.1	1.9	0.9	1.0	Jun-16

Endowment Fund Policy Index (as of 7/1/19): 25% S&P 500 Index, 6% Russell 2000 Index, 13% MSCI EAFE Index, 11% MSCI Emerging Markets Index, 22% Bloomberg US Aggregate Index, 5% NCREIF ODCE Index, 3% JP Morgan EMBI Global TR Index, 15% S&P/LSTA Leveraged Loan Index+2%. PIMCO Custom Benchmark is 45% Bloomberg US TIPS Index, 20% Bloomberg Commodity Index, 15% JPM ELMI + (Unhedged), 10% DJ U.S. Select REIT Index, 10% Bloomberg Gold Subindex. Blended US Equity Benchmark: 19.35% Russell 2000 Index, 80.65% S&P 500 Index. Blended International Equity Benchmark: 54.17% MSCI EAFE Index, 45.83% MSCI Emerging Markets Index. Total Alternatives changed to Private Credit with S&P/LSTA Leveraged Loan Index+2% as benchmark. Golub Capital funded 10/2/2017. Tennenbaum Capital Partners funded 12/21/17. PIMCO All Asset Ins liquidated 06/24/2019. Owl Rock funded 07/31/2019. PIMCO Inflation Response Multi-Asset Ins liquidated 03/17/2020. WCM Focused Intl Growth Ins funded on 06/01/2020. Baillie Gifford EM funded on 06/30/2021. TCP Lending Fund VIII-L is preliminary as of 9/30/2022. Owl Rock First Lien Fund, and Golub Capital Partners Intl 11, L.P. as of 6/30/2022 adjusted for cash flows. Fiscal year end: 6/30.

Market Value History



Asset Allocation History



Endowment Total Fund  
Risk Analysis - 5 Years (Net of Fees)

Period Ending: September 30, 2022

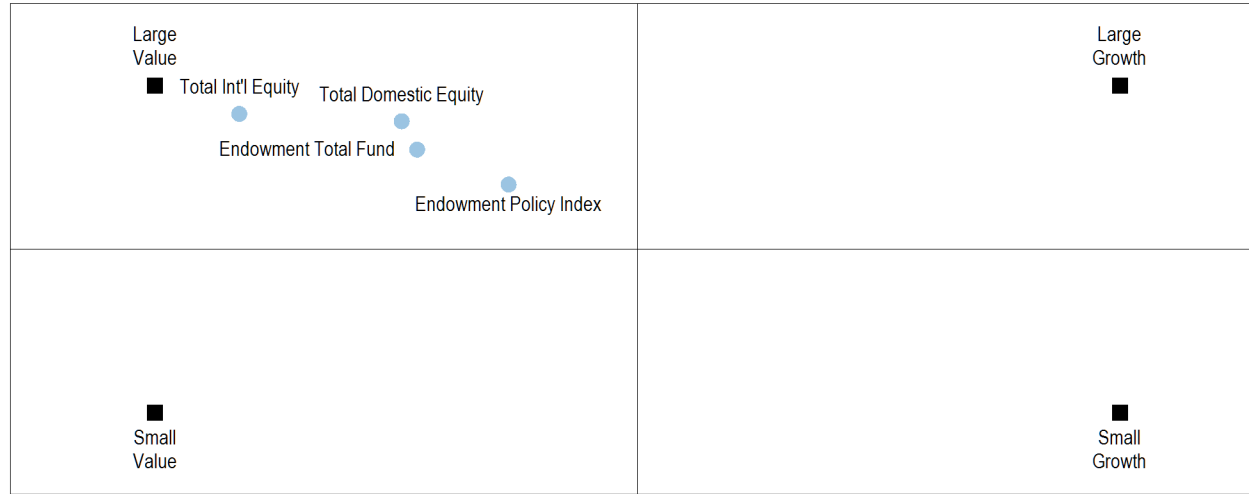
	Anlzd Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio	Sortino Ratio
Endowment Total Fund	3.32%	10.94%	-0.12%	0.99	0.97	98.42%	99.89%	-0.09	1.76%	0.20	0.40
Endowment Policy Index	3.48%	10.91%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.22	0.40
Total Domestic Equity	8.43%	18.63%	0.31%	0.99	0.98	100.17%	99.54%	0.08	2.68%	0.39	0.64
Blended US Equity Benchmark	8.21%	18.64%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.38	0.63
Total Int'l Equity	-2.67%	18.41%	-1.40%	1.10	0.95	109.54%	106.10%	-0.35	4.35%	-0.21	-0.20
Blended International Equity Benchmark	-1.16%	16.38%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	-0.14	-0.10
Total Domestic Fixed Income	0.17%	4.91%	0.44%	0.99	0.92	104.27%	96.81%	0.32	1.39%	-0.19	0.04
Bloomberg US Aggregate TR	-0.27%	4.77%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	-0.29	-0.07
Total Global Fixed Income	-3.09%	11.52%	-0.42%	1.16	0.98	126.35%	114.79%	-0.34	2.27%	-0.37	-0.29
JP Morgan EMBI Global TR	-2.31%	9.85%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	-0.35	-0.25
Total Real Estate	7.47%	5.00%	0.39%	0.77	0.87	76.84%	48.71%	-0.76	2.27%	1.27	5.73
NCREIF ODCE Net	9.20%	6.06%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	1.33	--
Private Credit/Alternatives	5.86%	6.22%	3.51%	0.47	0.29	67.67%	32.34%	0.13	6.50%	0.76	0.88
S&P/LSTA Leveraged Loan Index+2%	5.03%	7.18%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.54	0.43

Endowment Total Fund  
Risk Analysis - 10 Years (Net of Fees)

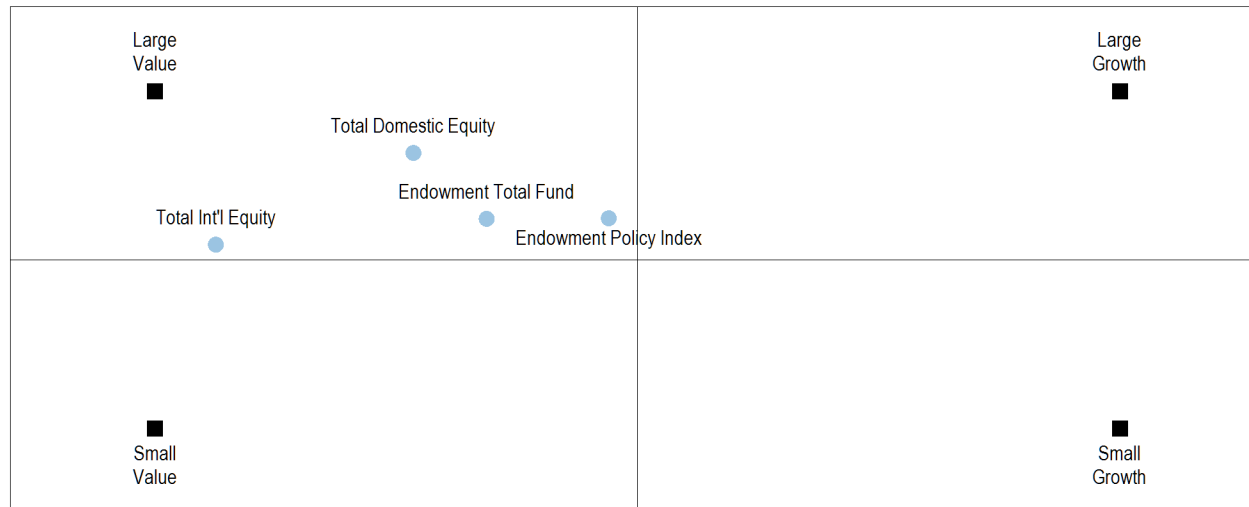
Period Ending: September 30, 2022

	Anlzd Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio	Sortino Ratio
Endowment Total Fund	5.45%	10.23%	-0.18%	1.00	0.97	100.79%	102.99%	-0.10	1.74%	0.47	0.59
Endowment Policy Index	5.62%	10.06%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.49	0.63
Total Domestic Equity	10.96%	16.28%	-0.12%	0.99	0.98	96.72%	99.19%	-0.08	2.55%	0.63	0.67
Blended US Equity Benchmark	11.16%	16.20%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.65	0.71
Total Int'l Equity	2.45%	17.89%	-0.35%	1.08	0.95	110.03%	104.01%	-0.03	4.13%	0.10	0.16
Blended International Equity Benchmark	2.58%	16.10%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.12	0.21
Total Domestic Fixed Income	1.35%	4.55%	0.50%	0.96	0.87	104.97%	90.80%	0.28	1.67%	0.15	0.33
Bloomberg US Aggregate TR	0.89%	4.42%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.05	0.22
Total Global Fixed Income	--	--	--	--	--	--	--	--	--	--	--
JP Morgan EMBI Global TR	0.95%	9.38%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.03	0.13
Total Real Estate	8.36%	7.94%	2.14%	0.63	0.08	77.63%	48.71%	-0.20	7.73%	0.97	1.32
NCREIF ODCE Net	9.88%	3.56%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	2.59	--
Private Credit/Alternatives	3.13%	6.47%	-0.79%	0.70	0.47	55.97%	86.41%	-0.49	5.09%	0.38	0.55
S&P/LSTA Leveraged Loan Index+2%	5.60%	6.32%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.78	0.61

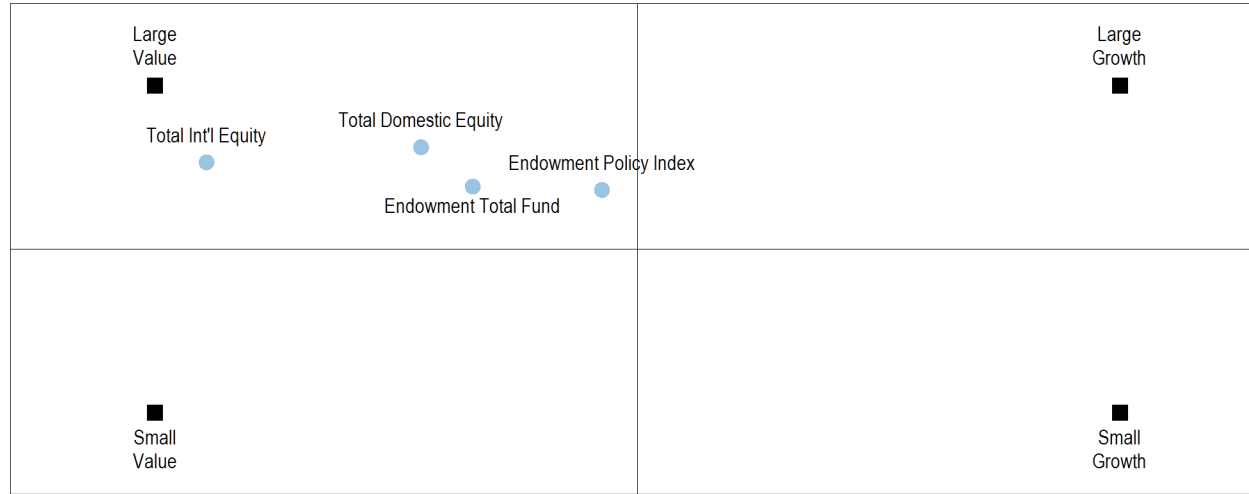
U.S. Effective Style Map  
1 Year



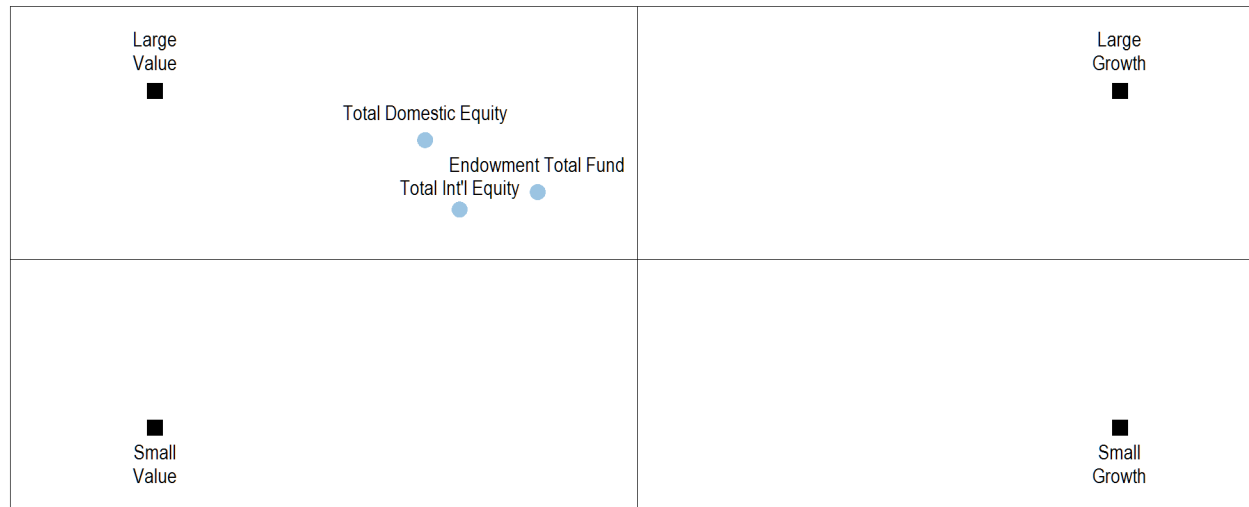
U.S. Effective Style Map  
3 Years



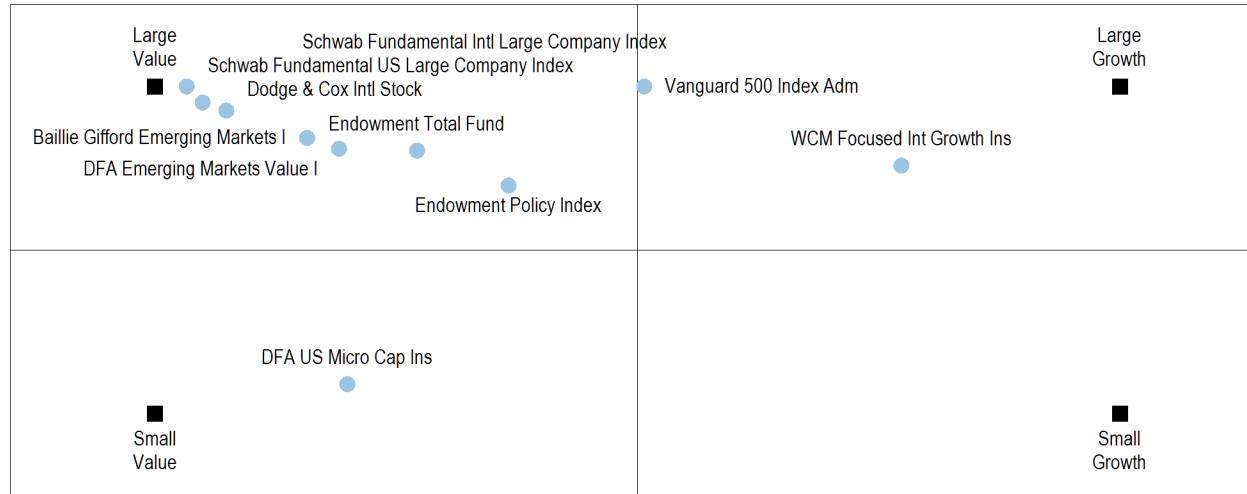
U.S. Effective Style Map  
5 Years



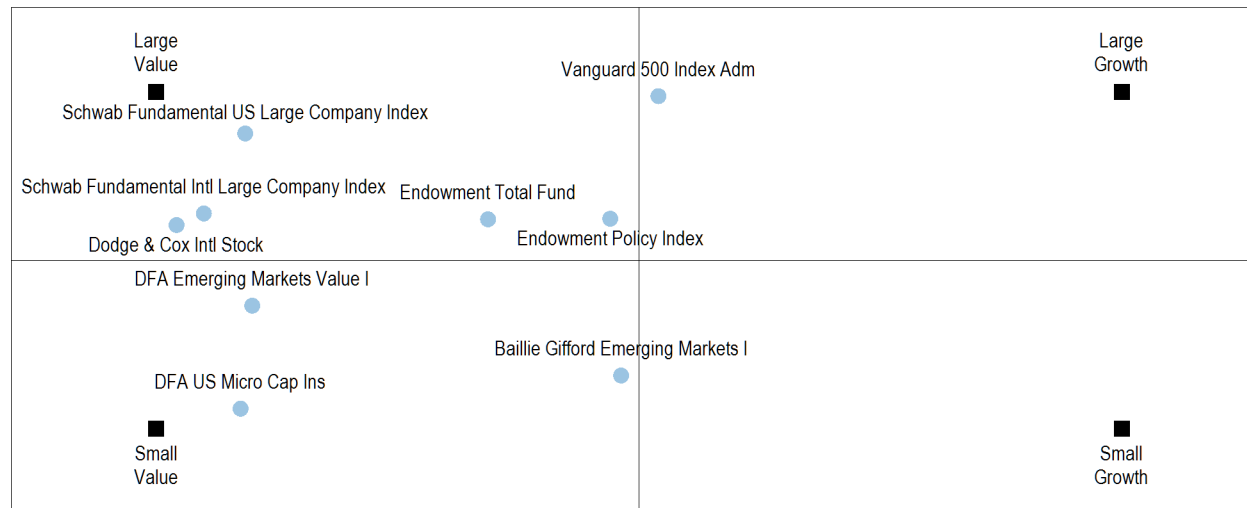
U.S. Effective Style Map  
10 Years



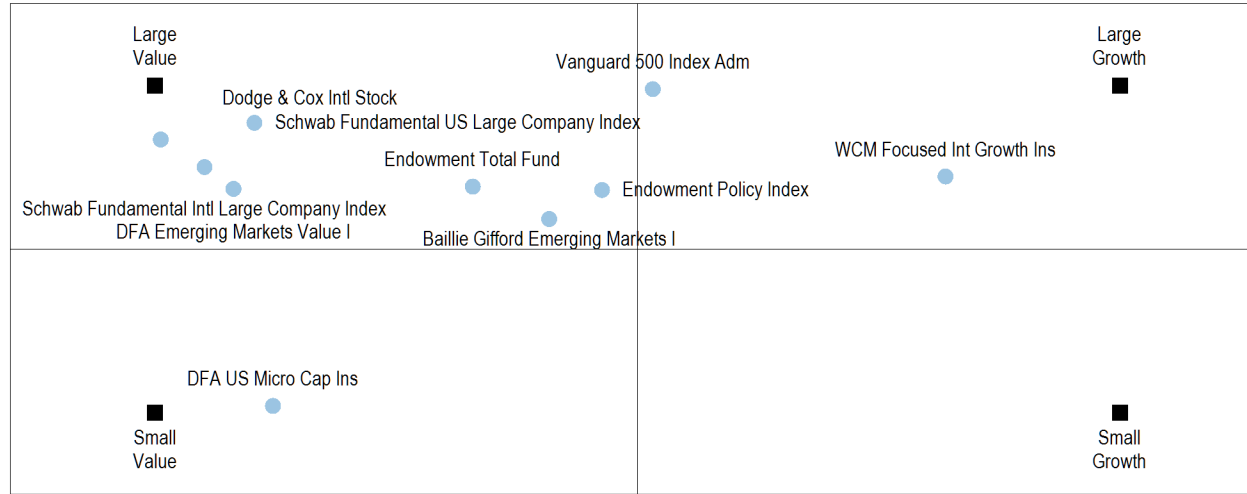
U.S. Effective Style Map  
1 Year



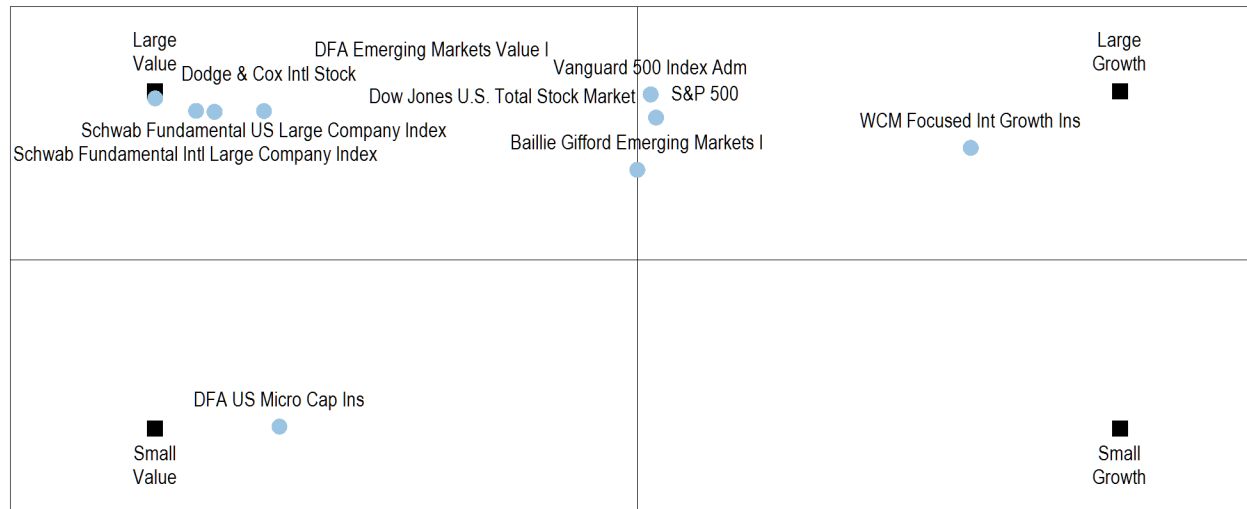
U.S. Effective Style Map  
3 Years



U.S. Effective Style Map  
5 Years



U.S. Effective Style Map  
10 Years





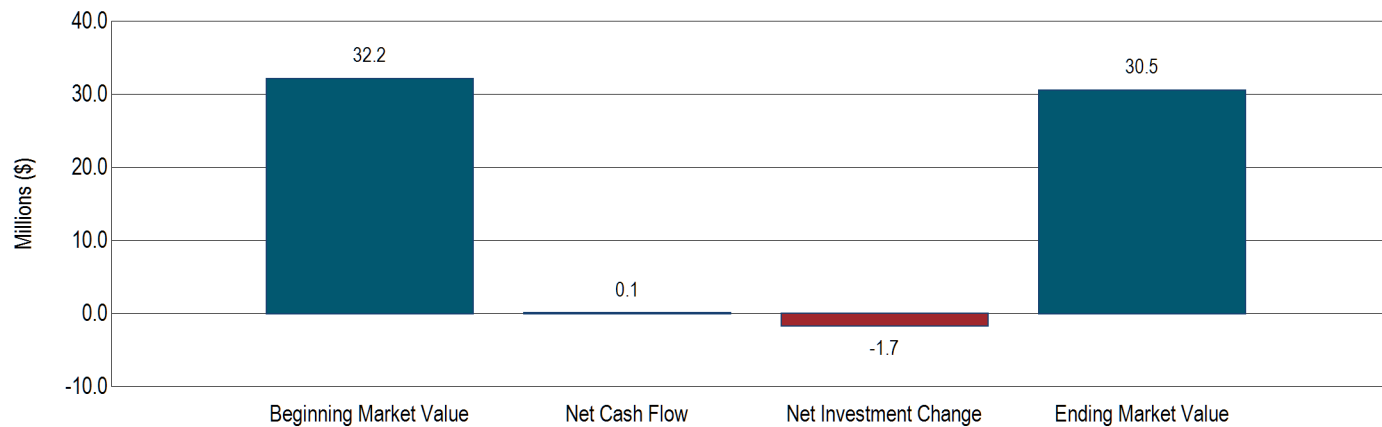
Endowment Total Fund  
Portfolio Reconciliation

Period Ending: September 30, 2022

Portfolio Reconciliation

	Last Three Months	Fiscal Year-To-Date	2021	2020	2019	2018	2017
Beginning Market Value	\$32,154,872	\$32,154,872	\$32,226,209	\$29,223,035	\$25,059,317	\$24,749,520	\$21,607,118
Net Cash Flow	\$87,220	\$87,220	\$358,831	\$267,959	-\$43,393	\$1,887,494	-\$118,429
Net Investment Change	-\$1,700,598	-\$1,700,598	\$4,479,323	\$2,735,215	\$4,207,110	-\$1,577,696	\$3,260,830
Ending Market Value	\$30,541,494	\$30,541,494	\$37,064,363	\$32,226,209	\$29,223,035	\$25,059,317	\$24,749,520

Change in Market Value  
Last Three Months



Contributions and withdrawals may include intra-account transfers between managers/funds.

Endowment Total Fund  
Cash Flow by Manager - YTD

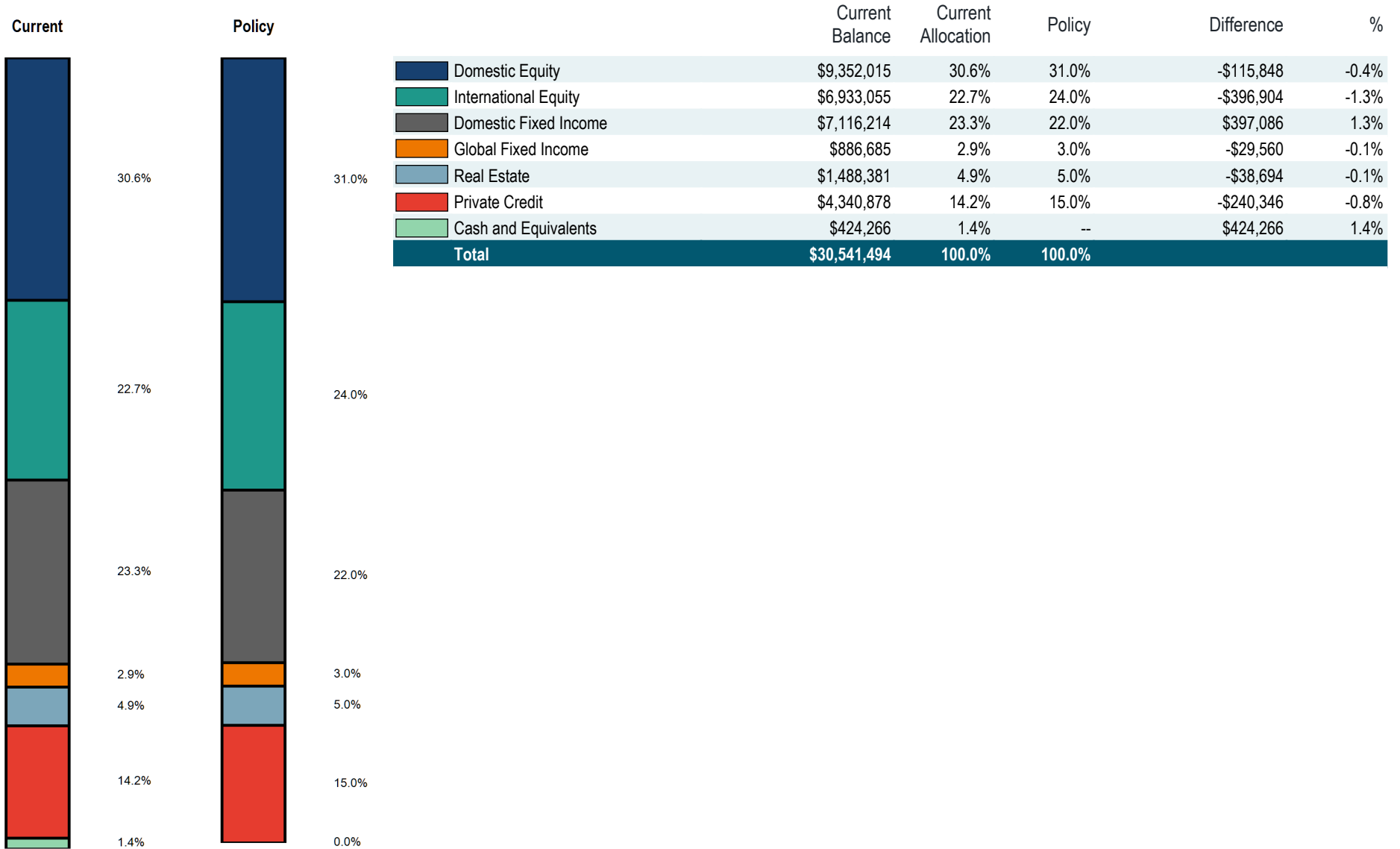
Period Ending: September 30, 2022

	Beginning Market Value	Contributions	Withdrawals	Net Investment Change	Ending Market Value
ASB Real Estate	\$1,326,344	\$0	\$0	\$162,037	\$1,488,381
Baillie Gifford Emerging Markets I	\$1,534,004	\$300,020	\$0	-\$622,244	\$1,211,780
Brandes Emerging Markets I	\$5,666	\$0	-\$4,472	-\$1,194	--
DFA Emerging Markets Value I	\$1,938,285	\$0	\$0	-\$369,203	\$1,569,081
DFA US Micro Cap Ins	\$1,886,824	\$50,020	\$0	-\$391,592	\$1,545,252
Dodge & Cox Income	\$4,228,465	\$200,020	-\$200,000	-\$576,122	\$3,652,363
Dodge & Cox Intl Stock	\$1,355,135	\$100,020	\$0	-\$288,555	\$1,166,600
Golub Capital Partners Intl 11, L.P.	\$2,068,753	\$0	-\$121,258	\$64,093	\$2,011,588
JP Morgan Emerging ETF	\$818,980	\$349,781	\$0	-\$282,076	\$886,685
Met West Total Return Bond I	\$4,157,803	\$200,020	-\$200,000	-\$693,972	\$3,463,852
Owl Rock First Lien Fund, L.P.	\$1,720,151	\$0	-\$51,898	-\$42,576	\$1,625,677
Schwab Fundamental Intl Large Company Index	\$2,382,738	\$100,000	\$0	-\$551,048	\$1,931,690
Schwab Fundamental US Large Company Index	\$4,786,030	\$0	\$0	-\$823,739	\$3,962,290
Schwab Govt Money Fund	\$1,514,058	\$1,474,903	-\$2,564,927	\$231	\$424,266
TCP Direct Lending Fund VIII-L	\$725,492	\$0	-\$31,620	\$9,741	\$703,613
Vanguard 500 Index Adm	\$5,051,423	\$0	\$0	-\$1,206,950	\$3,844,473
WCM Focused Int Growth Ins	\$1,564,213	\$100,020	\$0	-\$610,329	\$1,053,904
<b>Total</b>	<b>\$37,064,363</b>	<b>\$2,874,804</b>	<b>-\$3,174,175</b>	<b>-\$6,223,498</b>	<b>\$30,541,494</b>

Contributions and withdrawals may include intra-account transfers between managers/funds. PIMCO All Asset Ins liquidated 06/24/2019. Owl Rock funded 07/31/2019. PIMCO Inflation Response Multi-Asset Ins liquidated 03/17/2020. WCM Focused Int Growth Ins funded on 06/01/2020. Baillie Gifford Emerging Markets funded on 06/30/2021.

Endowment Total Fund  
Asset Allocation vs. Policy

Period Ending: September 30, 2022



Foundation of CSUMB Endowment  
Illiquid Alternative Investments

Period Ending: September 30, 2022

Vintage Year	Estimated Market Value as of 9/30/2022 <sup>6</sup>	Verus Internal Analysis							Manager Reported			
		Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Distrib./ Paid-In (DPI) <sup>1</sup>	Tot. Value/ Paid-In (TVPI) <sup>2</sup>	Market Value as of IRR date	Net IRR Since Inception <sup>5</sup>	IRR Date	
<b>Private Debt</b>												
2017	Golub Capital Partners Intl 11, L.P.	\$2,011,588	\$2,300,000	\$2,012,500	87.5%	\$287,500	\$582,683	29%	128.9%	\$2,011,588	9.4%	6/30/2022
2017	TCP Direct Lending Fund VIII-L	\$703,613	\$1,100,000	\$994,939	90.4%	\$105,061	\$548,688	55%	126.9%	\$713,394	7.7%	6/30/2022
2019	Owl Rock First Lien Fund, L.P.	\$1,625,677	\$2,000,000	\$1,611,883	80.6%	\$388,117	\$131,092	8%	109.0%	\$1,625,677	8.9%	6/30/2022
<b>Total Private Equity Investment - Illiquid</b>		<b>\$4,340,878</b>	\$5,400,000	\$4,619,322	85.5%	\$780,678	\$1,262,464	27.3%	121.5%	\$4,350,659		
<b>Percent of Total Plan Assets</b>		<b>14.2%</b>										

<sup>1</sup>(DPI) is equal to (capital returned / capital called)

<sup>2</sup>(TVPI) is equal to (market value + capital returned) / capital called

<sup>3</sup>Last known market value + capital calls - distributions

<sup>4</sup>IRR currently unavailable for this fund

<sup>5</sup>Net IRR is calculated on the cash flows of the underlying investments of the fund and is net of the underlying fund fees and carried interest

<sup>6</sup>Estimated market value is based on 06/30/2022 reported evaluation, adjusted for 3Q22 cash flows.

# Endowment Total Fund Watch List

Period Ending: September 30, 2022

Name	Allocation Group	Status	Performance Start Date	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7
Schwab Fundamental US Large Company Index	Domestic Equity	No Issues	02/25/2010	--	--	--	--	--	--	R
Vanguard 500 Index Adm	Domestic Equity	No Issues	03/29/2007	--	--	--	--	--	--	✓
DFA US Micro Cap Ins	Domestic Equity	No Issues	03/16/2017	✓	✓	✓	✓	✓	--	--
Schwab Fundamental Intl Large Company Index	International Equity	No Issues	05/31/2011	--	--	--	--	--	--	R
Dodge & Cox Intl Stock	International Equity	No Issues	03/29/2007	✓	✓	✓	R	✓	--	--
WCM Focused Int Growth Ins	International Equity	No Issues	06/01/2020	✓	✓	✓	✓	✓	--	--
DFA Emerging Markets Value I	International Equity	No Issues	03/18/2014	✓	✓	✓	✓	✓	--	--
Baillie Gifford Emerging Markets I	International Equity	No Issues	06/30/2021	R	R	R	R	✓	--	--
Met West Total Return Bond I	Domestic Fixed Income	No Issues	12/04/2014	R	R	✓	✓	✓	--	--
Dodge & Cox Income	Domestic Fixed Income	No Issues	12/05/2014	✓	✓	✓	✓	✓	--	--
JP Morgan Emerging ETF	Global Fixed Income	No Issues	12/05/2014	R	R	R	R	✓	--	--
ASB Real Estate	Real Estate	No Issues	07/01/2016	✓	✓	✓	R	✓	--	--
Golub Capital Partners Intl 11, L.P.	Private Credit	No Issues	10/01/2017	✓	✓	✓	✓	✓	--	--
TCP Direct Lending Fund VIII-L	Private Credit	No Issues	12/31/2017	✓	✓	--	--	--	--	--
Owl Rock First Lien Fund, L.P.	Private Credit	No Issues	07/31/2019	✓	✓	--	--	--	--	--

Rule 1 - Manager has underperformed the 75th percentile in the appropriate style universe for the one year period.

Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the three year period.

Rule 3 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.

Rule 4 - Manager has underperformed the benchmark index for the five year period.

Rule 5 - Manager's risk level, measured by the 5-year annualized standard deviation, is more than 25% above the benchmark index's standard deviation.

Rule 6 - Fund experiences non-performance related issues including personnel turnover, changes in investment philosophy or drift, excessive asset growth, change in ownership and any other reason that raises concern.

Rule 7 - Index Fund Tracking Error exceeds 0.25% of the appropriate benchmark over the one year period.

Endowment Total Fund  
Investment Fund Fee Analysis

Period Ending: September 30, 2022

Name	Asset Class	Identifier	Expense Ratio	Market Value	Estimated Expense
Schwab Fundamental US Large Company Index	Domestic Equity	SFLNX	0.25%	\$3,962,290	\$9,906
Vanguard 500 Index Adm	Domestic Equity	VFIAX	0.04%	\$3,844,473	\$1,538
DFA US Micro Cap Ins	Domestic Equity	DFSCX	0.41%	\$1,545,252	\$6,336
Schwab Fundamental Intl Large Company Index	International Equity	SFNNX	0.25%	\$1,931,690	\$4,829
Dodge & Cox Intl Stock	International Equity	DODFX	0.62%	\$1,166,600	\$7,233
WCM Focused Int Growth Ins	International Equity	WCMIX	1.05%	\$1,053,904	\$11,066
DFA Emerging Markets Value I	International Equity	DFEVX	0.45%	\$1,569,081	\$7,061
Baillie Gifford Emerging Markets I	International Equity	BGEGX	0.89%	\$1,211,780	\$10,785
Met West Total Return Bond I	Domestic Fixed Income	MWTIX	0.45%	\$3,463,852	\$15,587
Dodge & Cox Income	Domestic Fixed Income	DODIX	0.41%	\$3,652,363	\$14,975
JP Morgan Emerging ETF	Global Fixed Income	EMB	0.39%	\$886,685	\$3,458
ASB Real Estate	Real Estate		1.25%	\$1,488,381	\$18,605
Golub Capital Partners Intl 11, L.P.	Private Credit		1.25%	\$2,011,588	\$25,145
TCP Direct Lending Fund VIII-L	Private Credit		1.25%	\$703,613	\$8,795
Owl Rock First Lien Fund, L.P.	Private Credit		1.00%	\$1,625,677	\$16,257
Schwab Govt Money Fund	Cash and Equivalents	SWGXX	0.44%	\$424,266	\$1,867
<b>Total</b>			<b>0.54%</b>	<b>\$30,541,494</b>	<b>\$163,441</b>

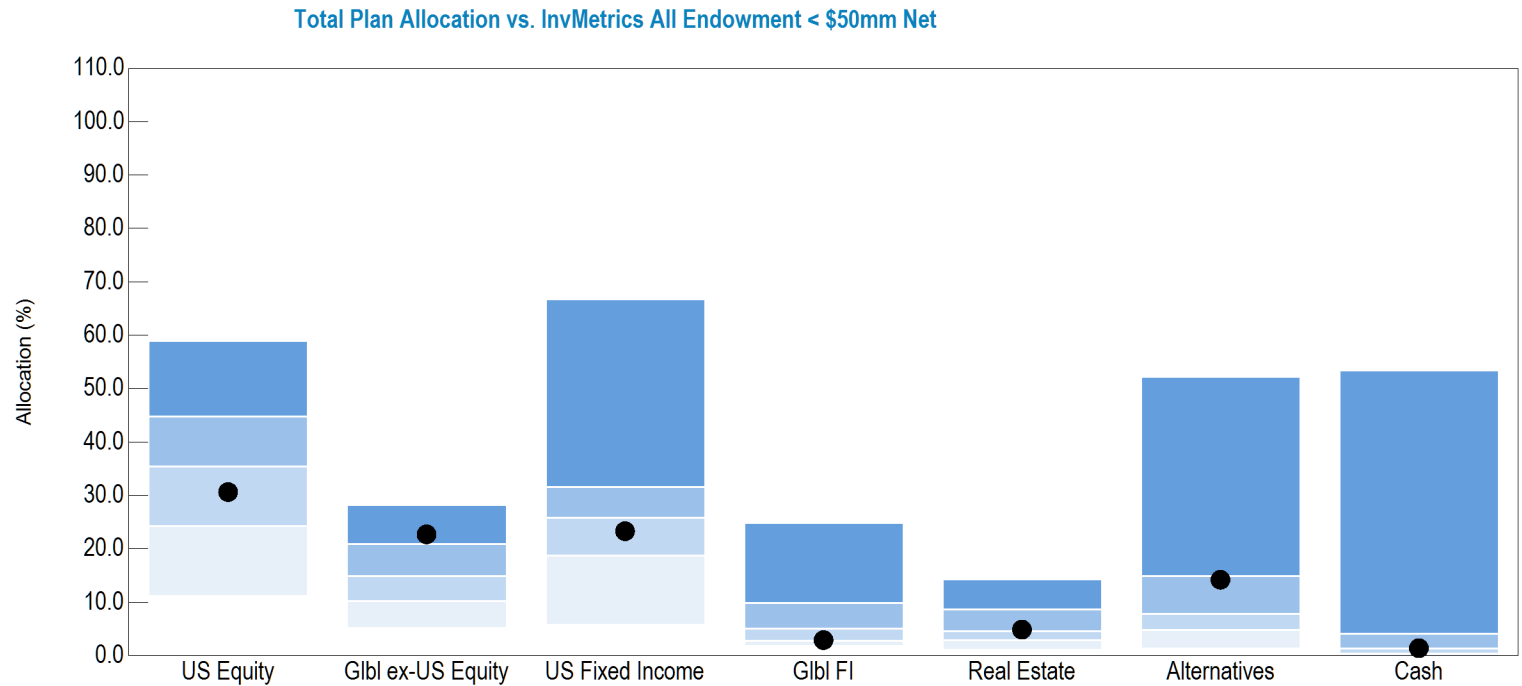
Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

Endowment Total Fund  
Risk Analysis - 5 Years (Net of Fees)

Period Ending: September 30, 2022

	Anlzd Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sortino Ratio
Schwab Fundamental US Large Company Index	8.74%	21.95%	-0.67%	1.02	0.91	99.93%	102.43%	-0.08	6.52%	0.47
Vanguard 500 Index Adm	9.20%	20.57%	-0.04%	1.00	1.00	99.86%	100.08%	-4.13	0.01%	0.61
DFA US Micro Cap Ins	4.42%	29.07%	1.59%	0.99	0.99	108.45%	98.73%	0.50	3.08%	0.18
Schwab Fundamental Intl Large Company Index	-0.34%	21.18%	0.56%	1.07	0.95	107.10%	100.91%	0.10	5.10%	-0.02
Dodge & Cox Intl Stock	-1.48%	23.12%	-0.57%	1.12	0.92	104.51%	104.67%	-0.10	6.93%	-0.08
WCM Focused Int Growth Ins	5.13%	23.37%	6.02%	1.09	0.85	159.00%	98.14%	0.65	9.10%	0.34
DFA Emerging Markets Value I	-0.52%	23.30%	1.33%	1.03	0.90	102.39%	96.35%	0.18	7.24%	-0.03
Baillie Gifford Emerging Markets I	-1.96%	26.74%	0.25%	1.23	0.98	135.70%	111.80%	-0.03	6.26%	-0.14
Met West Total Return Bond I	-0.18%	5.91%	0.11%	1.07	0.98	109.46%	105.24%	0.09	0.97%	-0.03
Dodge & Cox Income	0.67%	5.57%	0.91%	0.90	0.79	110.46%	87.57%	0.36	2.64%	0.16
JP Morgan Emerging ETF	-3.09%	13.61%	-0.38%	1.17	0.99	119.22%	114.69%	-0.33	2.37%	-0.32

Managers without five years of data are excluded from this analytic.



	Allocation (Rank)													
<b>5th Percentile</b>	58.9		28.2		66.7		24.8		14.3		52.3		53.4	
<b>25th Percentile</b>	44.8		21.0		31.7		9.9		8.7		15.0		4.2	
<b>Median</b>	35.5		15.0		26.0		5.1		4.7		7.9		1.4	
<b>75th Percentile</b>	24.3		10.3		18.9		2.9		3.0		4.9		0.5	
<b>95th Percentile</b>	11.3		5.3		5.9		2.0		1.3		1.4		0.0	
<b># of Portfolios</b>	111		116		108		22		45		62		132	
<b>● Endowment Total Fund</b>	30.6	(67)	22.7	(21)	23.3	(60)	2.9	(76)	4.9	(48)	14.2	(27)	1.4	(52)

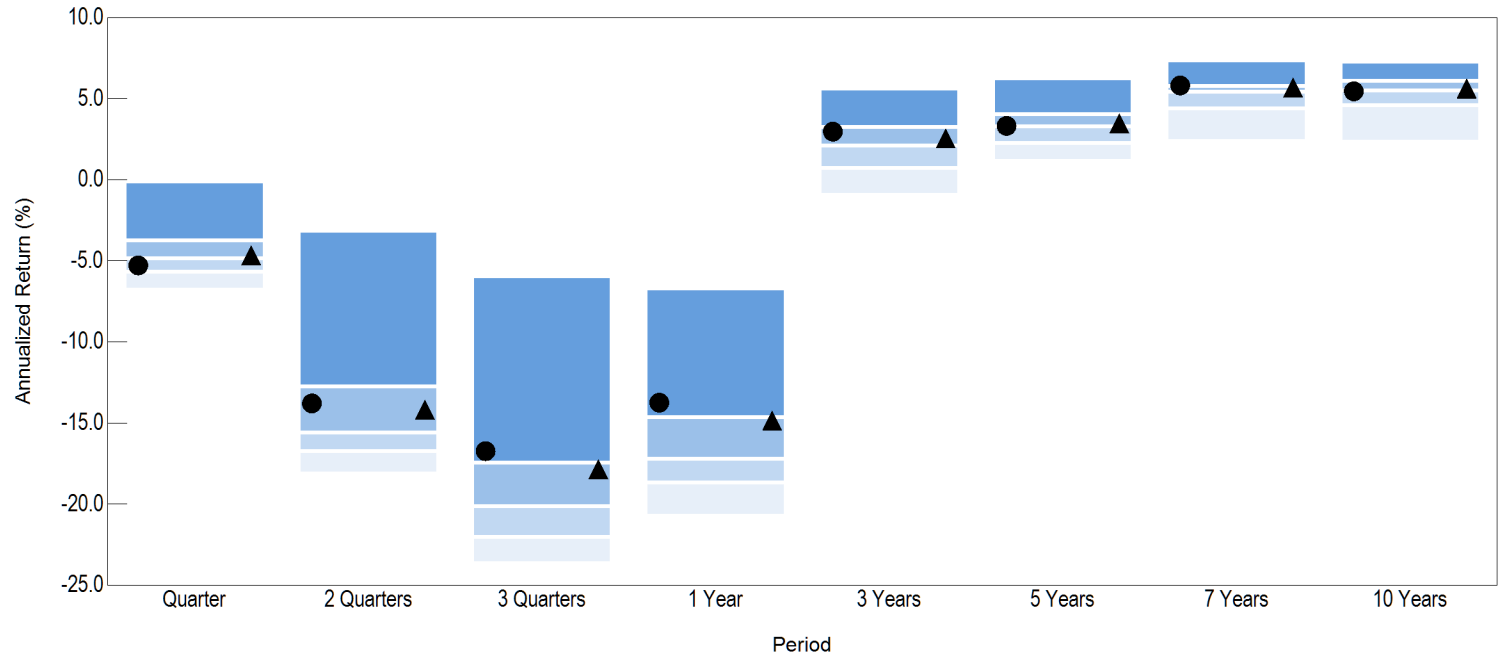


# Endowment Total Fund

## Peer Universe Comparison: Cumulative Performance (Net of Fees)

Period Ending: September 30, 2022

Total Fund Cumulative Performance vs. InvMetrics All Endowment < \$50mm Net



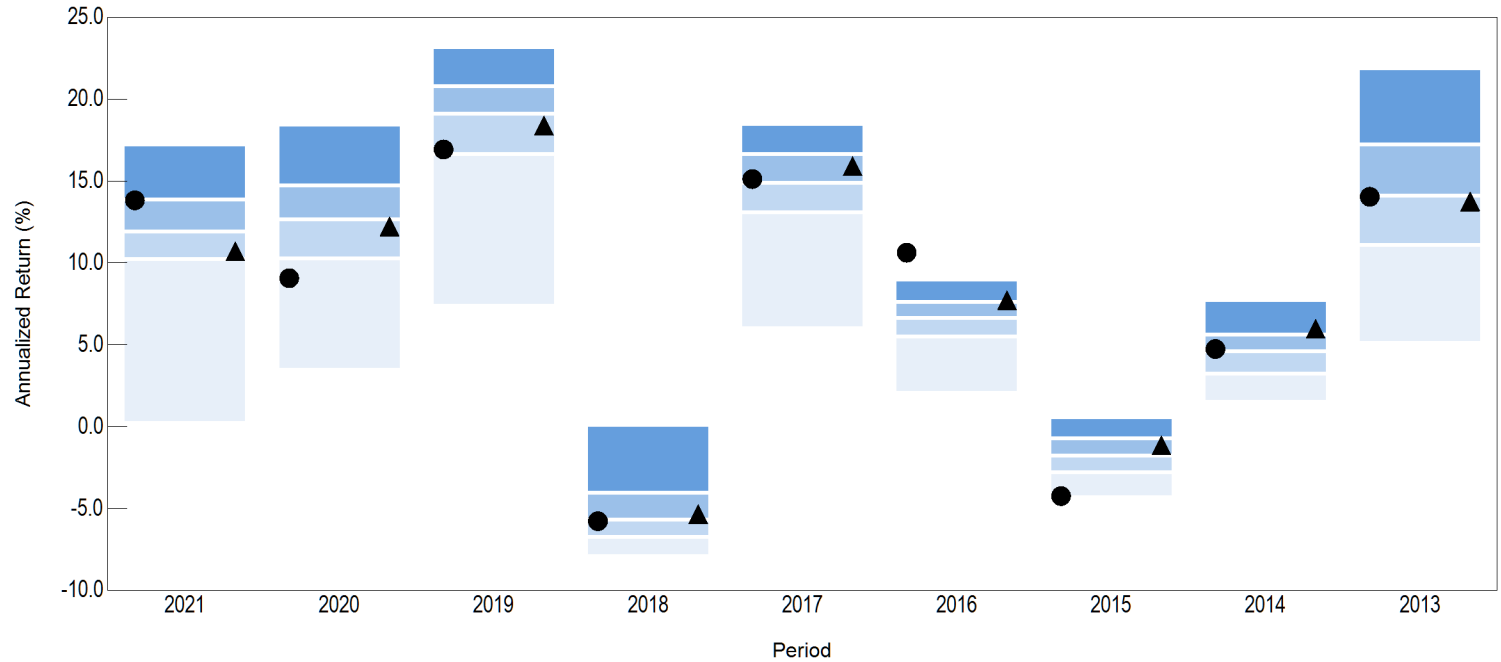
	Quarter		2 Quarters		3 Quarters		1 Year		3 Years		5 Years		7 Years		10 Years	
<b>Return (Rank)</b>																
5th Percentile	-0.1		-3.2		-6.0		-6.7		5.6		6.2		7.3		7.3	
25th Percentile	-3.7		-12.7		-17.4		-14.6		3.3		4.1		5.8		6.1	
Median	-4.8		-15.6		-20.1		-17.2		2.1		3.3		5.4		5.5	
75th Percentile	-5.7		-16.7		-22.0		-18.6		0.7		2.3		4.4		4.6	
95th Percentile	-6.7		-18.1		-23.6		-20.7		-0.9		1.2		2.4		2.4	
# of Portfolios	146		141		139		136		127		111		95		65	
● Endowment Total Fund	-5.3	(66)	-13.8	(31)	-16.7	(21)	-13.7	(21)	3.0	(31)	3.3	(50)	5.8	(26)	5.5	(56)
▲ Endowment Policy Index	-4.7	(43)	-14.2	(34)	-17.9	(26)	-14.8	(27)	2.6	(38)	3.5	(44)	5.7	(36)	5.6	(45)

# Endowment Total Fund

## Peer Universe Comparison: Consecutive Periods (Net of Fees)

Period Ending: September 30, 2022

Total Fund Consecutive Periods vs. InvMetrics All Endowment < \$50mm Net



	2021		2020		2019		2018		2017		2016		2015		2014		2013		
<b>Return (Rank)</b>																			
5th Percentile	17.2	18.4	23.1	0.1	18.4	9.0	0.6	7.7	21.9	13.8	(26)	9.1	(80)	16.9	(74)	-5.8	(52)	15.1	(49)
25th Percentile	13.9	14.7	20.8	-4.0	16.7	7.6	-0.7	5.6	17.3	10.7	(69)	12.2	(58)	18.4	(63)	-5.3	(44)	15.9	(35)
Median	11.9	12.7	19.1	-5.7	14.9	6.6	-1.7	4.6	14.1										
75th Percentile	10.2	10.3	16.7	-6.7	13.1	5.5	-2.8	3.2	11.1										
95th Percentile	0.3	3.5	7.4	-7.9	6.0	2.1	-4.3	1.6	5.1										
# of Portfolios	223	241	225	274	216	209	204	173	118										
● Endowment Total Fund	13.8	(26)	9.1	(80)	16.9	(74)	-5.8	(52)	15.1	(49)	10.6	(1)	-4.2	(95)	4.7	(47)	14.0	(51)	
▲ Endowment Policy Index	10.7	(69)	12.2	(58)	18.4	(63)	-5.3	(44)	15.9	(35)	7.7	(23)	-1.1	(33)	6.0	(15)	13.7	(52)	

**Performance Return Calculations**

Performance is calculated using Modified Dietz and for time periods with large cash flow (generally greater than 10% of portfolio value), Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

**Data Source**

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

**Illiquid Alternatives**

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

**Current Managers**

Manager	Fund Incepted	Data Source	Manager	Fund Incepted	Data Source
Schwab Fundamental US Large Company Index	2/25/2010	Charles Schwab	Met West Total Return Bond I	12/4/2014	Charles Schwab
Vanguard 500 Index Adm	3/29/2007	Charles Schwab	Dodge & Cox Income	12/5/2014	Charles Schwab
DFA US Micro Cap Ins	3/16/2017	Charles Schwab	JP Morgan Emerging ETF	12/5/2014	Charles Schwab
Schwab Fundamental Intl Large Company Index	5/31/2011	Charles Schwab	Schwab Govt Money Fund	6/14/2016	Charles Schwab
Dodge & Cox Intl Stock	3/29/2007	Charles Schwab	ASB Real Estate	6/30/2016	ASB
WCM Focused Int Growth Ins	6/1/2020	Charles Schwab	Golub Capital Partners International 11, L.P.	10/2/2017	Golub
Baillie Gifford Emerging Markets I	6/30/2021	Charles Schwab	Owl Rock First Lien Fund, L.P.	7/31/2019	Owl Rock
DFA Emerging Markets Value I	3/18/2014	Charles Schwab	Tennenbaum Capital Partners International 11, L.P.	10/2/2017	Tennenbaum

**Terminated Managers (since January, 2014)**

Manager	Fund Incepted	Fund Terminated	Comments
Vanguard Emerging Markets Stock ETF	3/29/2007	2/28/2014	DFA Emerging Markets Value and Brandes Emerging Markets replaced Vanguard Emerging Markets Stock ETF.
Vanguard Inflation Protected Securities	5/29/2007	8/31/2014	PIMCO Inflation Response Multi-Asset replaced Vanguard Inflation Protected Securities.
Credit Suisse Commodity Return Strategy	8/23/2011	8/31/2014	GMO WF Advantage Absolute Return replaced Credit Suisse Commodity Return Strategy.
PIMCO Total Return Ins	3/29/2007	12/4/2014	Met West Total Return Bond replaced PIMCO Total Return.
JP Morgan High Yield Sel	5/22/2009	12/4/2014	Dodge & Cox Income replaced JP Morgan High Yield.
Cohen & Steers Realty Shares	5/22/2009	6/9/2016	ASB Real Estate replaced Cohen & Steers Realty Shares.
Schwab Advance Cash Reserve Premier	--	6/14/2016	Schwab Govt Money Fund replaced Schwab Advance Cash Reserve Premier.
Ironbridge Frontegra Small/Mid Cap Ins	3/29/2007	3/15/2017	DFA US Micro Cap replaced Ironbridge Frontegra Small/Mid Cap.
GMO WF Advantage Absolute Return Ins	9/17/2014	12/13/2018	Fund was liquidated from plan.
PIMCO All Asset Ins	3/29/2007	6/24/2019	Fund was liquidated from plan.
PIMCO Inflation Response Multi-Asset Ins	9/17/2014	3/17/2020	Fund was liquidated from plan.
Brandes Emerging Markets I	3/18/2014	6/30/2021	Baillie Gifford Emerging Markets replaced Brandes Emerging Markets.

**Policy & Custom Index Composition**

Policy Index (07/01/2019-Present)	25% S&P 500, 6% Russell 2000, 13% MSCI EAFE, 11% MSCI Emerging Markets, 22% Bloomberg US Aggregate, 5% NCREIF ODCE, 3% JP Morgan EMBI Global TR, 15% S&P/LSTA Leveraged Loan Index+2%. PIMCO Custom Benchmark is 45% Bloomberg US TIPS, 20% Bloomberg Commodity, 15% JPM ELMI + (Unhedged), 10% DJ U.S. Select REIT, 10% Bloomberg Gold Subindex.
Policy Index (07/01/2016-6/30/2019)	25% S&P 500, 6% Russell 2000, 13% MSCI EAFE, 11% MSCI Emerging Markets, 22% Bloomberg US Aggregate, 5% NCREIF ODCE, 3% JP Morgan EMBI Global TR, 15% HFRI Fund of Funds. PIMCO Custom Benchmark is 45% Bloomberg US TIPS, 20% Bloomberg Commodity, 15% JPM ELMI + (Unhedged), 10% DJ U.S. Select REIT, 10% Bloomberg Gold Subindex.
Policy Index (12/01/2014-6/30/2016)	25% S&P 500, 6% Russell 2000, 13% MSCI EAFE, 11% MSCI Emerging Markets, 22% Bloomberg US Aggregate, 5% FTSE NAREIT All, 3% JP Morgan EMBI Global TR, 15% HFRI Fund of Funds. PIMCO Custom Benchmark is 45% Bloomberg US TIPS, 20% Bloomberg Commodity, 15% JPM ELMI + (Unhedged), 10% DJ U.S. Select REIT, 10% Bloomberg Gold Subindex.
Policy Index (09/01/2014-11/30/2014)	25% S&P 500, 6% Russell 2000, 13% MSCI EAFE, 11% MSCI Emerging Markets, 22% Bloomberg US Aggregate, 5% FTSE NAREIT All, 3% Bloomberg US High Yield, 15% HFRI Fund of Funds. PIMCO Custom Benchmark is 45% Bloomberg US TIPS, 20% Bloomberg Commodity, 15% JPM ELMI + (Unhedged), 10% DJ U.S. Select REIT, 10% Bloomberg Gold Subindex.
Policy Index (09/01/2011-8/31/2014)	28% S&P 500, 5% Russell 2000, 17% MSCI EAFE, 6% MSCI Emerging Markets, 18% Bloomberg US Aggregate, 5% Bloomberg US TIPS, 5% FTSE NAREIT All, 5% Bloomberg US High Yield, 6% HFRI Fund of Funds, 5% Bloomberg Commodity

**Other Notes**

Since inception returns for composites are as of the first full month.

## Glossary

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**Allocation Effect:** An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

**Alpha:** The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as:  $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$ .

**Benchmark R-squared:** Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

**Beta:** A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

**Book-to-Market:** The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

**Capture Ratio:** A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

**Correlation:** A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

**Excess Return:** A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

**Information Ratio:** A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

**Interaction Effect:** An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

**Portfolio Turnover:** The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

**Price-to-Earnings Ratio (P/E):** Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

**R-Squared:** Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

**Selection Effect:** An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

**Sharpe Ratio:** A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as:  $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$ .

**Sortino Ratio:** Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

**Standard Deviation:** A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

**Style Analysis:** A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

**Style Map:** A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

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# University Corporation at Monterey Bay - Operating

Investment Performance Review

Period Ending: September 30, 2022



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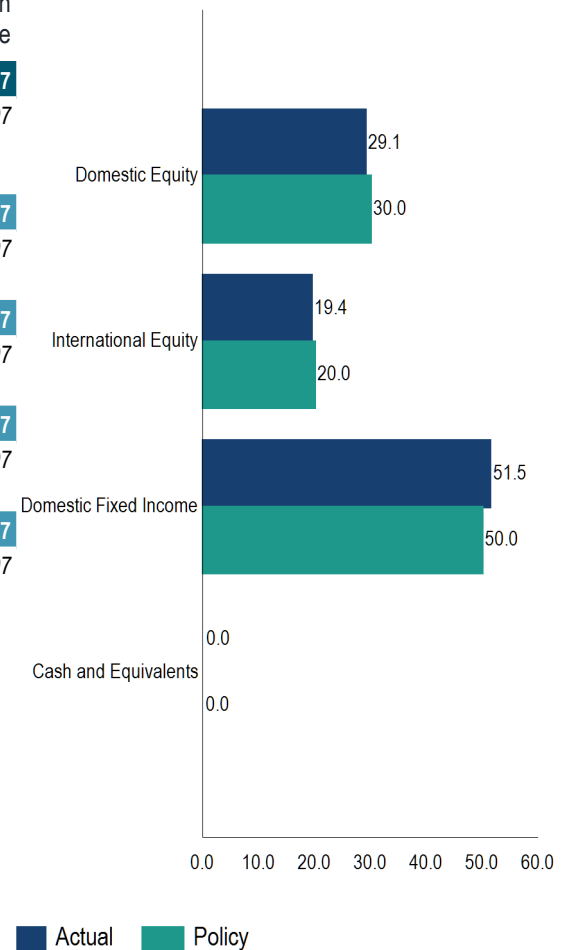
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# Operating Total Fund Executive Summary (Net of Fees)

Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	Inception	Inception Date
<b>Operating Total Fund</b>	<b>42,041,580</b>	<b>100.0</b>	<b>-5.7</b>	<b>-17.2</b>	<b>-14.0</b>	<b>1.8</b>	<b>2.6</b>	<b>3.9</b>	<b>4.4</b>	<b>Mar-07</b>
Operating Policy Index			-5.2	-18.4	-15.1	1.7	2.8	3.7	3.7	Mar-07
InvMetrics All Endowment < \$50mm Net Rank			78	25	21	57	66	89		
<b>Total Domestic Equity</b>	<b>12,243,583</b>	<b>29.1</b>	<b>-5.3</b>	<b>-20.7</b>	<b>-12.7</b>	<b>8.7</b>	<b>9.1</b>	<b>11.1</b>	<b>8.0</b>	<b>Mar-07</b>
S&P 500			-4.9	-23.9	-15.5	8.2	9.2	11.4	8.3	Mar-07
InvMetrics All E&F US Eq Net Rank			92	2	1	4	8	9		
<b>Total Int'l Equity</b>	<b>8,163,819</b>	<b>19.4</b>	<b>-10.3</b>	<b>-25.6</b>	<b>-23.4</b>	<b>0.3</b>	<b>-0.8</b>	<b>3.5</b>	<b>1.5</b>	<b>Mar-07</b>
MSCI EAFE			-9.4	-27.1	-25.1	-1.8	-0.8	2.8	1.1	Mar-07
InvMetrics All E&F ex-US Eq Net Rank			65	12	7	10	41	34		
<b>Total Domestic Fixed Income</b>	<b>21,632,030</b>	<b>51.5</b>	<b>-4.3</b>	<b>-12.7</b>	<b>-12.4</b>	<b>-1.5</b>	<b>0.5</b>	<b>1.0</b>	<b>3.1</b>	<b>Mar-07</b>
Blended Fixed Income Benchmark			-3.9	-11.4	-11.1	-1.7	0.3	0.8	2.5	Mar-07
InvMetrics All E&F US Fix Inc Net Rank			69	49	44	29	42	57		
<b>Total Cash</b>	<b>2,148</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.4</b>	<b>0.3</b>	<b>0.6</b>	<b>Mar-07</b>
91 Day T-Bills			0.5	0.6	0.6	0.5	1.1	0.9	0.7	Mar-07

Actual vs Target Allocation (%)



Operating Policy Index (as of 6/1/20): 30% S&P 500 Index, 20% MSCI EAFE Index, 25% Bloomberg US Aggregate Index, 15% ICE BofAML 1-3 YR Treasury Index, 10% Bloomberg US TIPS Index. Blended Fixed Income Benchmark: 50% Bloomberg US Aggregate Index, 20% Bloomberg US TIPS Index, 30% Bloomberg US 1-5 YR Credit Index. US Equity Benchmark changed to S&P 500 Index. International Equity Benchmark changed to MSCI EAFE Index. Vanguard Short Term Bond Adm Benchmark changed to ICE BofAML 1-3 YR Treasury Index. Schwab Govt Money Fund replaced Schwab Adv Cash Reserve Premier Pre on 6/14/16. Vanguard Short Term Investment Grade Adm and PIMCO All Asset Ins liquidated on 6/1/20. WCM Focused Intl Growth Ins funded on 6/1/20. Fiscal year end: 6/30.

# Operating Total Fund Executive Summary (Net of Fees)

Period Ending: September 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
<b>Operating Total Fund</b>	<b>42,041,580</b>	<b>100.0</b>	<b>-5.7</b>	<b>-17.2</b>	<b>-14.0</b>	<b>1.8</b>	<b>2.6</b>	<b>3.9</b>	<b>3.8</b>	<b>11.9</b>	<b>10.2</b>	<b>13.3</b>	<b>-3.6</b>	<b>9.1</b>	<b>4.4</b>	<b>Mar-07</b>
Operating Policy Index			-5.2	-18.4	-15.1	1.7	2.8	3.7	3.7	10.5	12.9	13.0	-2.5	8.8	3.7	Mar-07
InvMetrics All Endowment < \$50mm Net Rank			78	25	21	57	66	89	85	51	76	89	20	93		
<b>Total Domestic Equity</b>	<b>12,243,583</b>	<b>29.1</b>	<b>-5.3</b>	<b>-20.7</b>	<b>-12.7</b>	<b>8.7</b>	<b>9.1</b>	<b>11.1</b>	<b>11.4</b>	<b>30.2</b>	<b>14.3</b>	<b>30.2</b>	<b>-5.8</b>	<b>19.5</b>	<b>8.0</b>	<b>Mar-07</b>
S&P 500			-4.9	-23.9	-15.5	8.2	9.2	11.4	11.7	28.7	18.4	31.5	-4.4	21.8	8.3	Mar-07
InvMetrics All E&F US Eq Net Rank			92	2	1	4	8	9	12	2	92	56	47	78		
Schwab Fundamental US Large Company Index	6,104,489	14.5	-5.6	-17.2	-9.6	9.0	8.7	10.7	11.1	31.6	9.2	28.9	-7.3	17.1	11.4	Feb-10
S&P 500			-4.9	-23.9	-15.5	8.2	9.2	11.4	11.7	28.7	18.4	31.5	-4.4	21.8	12.0	Feb-10
Large Cap MStar MF Rank			68	22	21	14	36	36	40	6	69	56	67	74		
Vanguard 500 Index Adm	6,139,094	14.6	-4.9	-23.9	-15.5	8.1	9.2	11.4	11.7	28.7	18.4	31.5	-4.4	21.8	8.3	Mar-07
S&P 500			-4.9	-23.9	-15.5	8.2	9.2	11.4	11.7	28.7	18.4	31.5	-4.4	21.8	8.4	Mar-07
Large Cap MStar MF Rank			48	50	46	25	26	19	24	21	46	32	38	43		
<b>Total Int'l Equity</b>	<b>8,163,819</b>	<b>19.4</b>	<b>-10.3</b>	<b>-25.6</b>	<b>-23.4</b>	<b>0.3</b>	<b>-0.8</b>	<b>3.5</b>	<b>4.2</b>	<b>14.2</b>	<b>8.9</b>	<b>20.4</b>	<b>-15.9</b>	<b>23.8</b>	<b>1.5</b>	<b>Mar-07</b>
MSCI EAFE			-9.4	-27.1	-25.1	-1.8	-0.8	2.8	3.7	11.3	7.8	22.0	-13.8	25.0	1.1	Mar-07
InvMetrics All E&F ex-US Eq Net Rank			65	12	7	10	41	34	24	4	89	86	57	96		
Schwab Fundamental Intl Large Company Index	4,064,838	9.7	-11.1	-22.1	-20.6	0.0	-0.3	3.7	4.3	14.4	4.4	18.1	-13.9	23.9	2.5	Jul-11
MSCI EAFE			-9.4	-27.1	-25.1	-1.8	-0.8	2.8	3.7	11.3	7.8	22.0	-13.8	25.0	2.5	Jul-11
MSCI EAFE Value			-10.2	-21.1	-20.2	-2.8	-2.7	1.4	2.4	10.9	-2.6	16.1	-14.8	21.4		
Foreign MStar MF Rank			75	9	11	23	35	27	31	17	82	84	30	82		
Dodge & Cox Int'l Stock	2,077,679	4.9	-10.7	-19.6	-17.7	0.2	-1.5	3.1	4.2	11.0	2.1	22.8	-18.0	23.9	1.7	Mar-07
MSCI ACWI ex USA			-9.9	-26.5	-25.2	-1.5	-0.8	3.3	3.0	7.8	10.7	21.5	-14.2	27.2	1.6	Mar-07
MSCI ACWI ex USA Value			-10.4	-21.0	-20.0	-2.1	-2.1	2.2	1.9	10.5	-0.8	15.7	-14.0	22.7		
Foreign MStar MF Rank			63	5	4	21	61	46	33	49	89	50	76	81		
WCM Focused Intl Growth Ins	2,021,302	4.8	-8.1	-37.3	-33.8	2.2	5.1	8.0	8.1	17.0	32.8	35.2	-7.3	31.2	-0.3	Jun-20
MSCI ACWI ex USA			-9.9	-26.5	-25.2	-1.5	-0.8	3.3	3.0	7.8	10.7	21.5	-14.2	27.2	1.3	Jun-20
MSCI ACWI ex USA Growth			-9.4	-31.8	-30.2	-1.4	0.2	4.1	4.0	5.1	22.2	27.3	-14.4	32.0		
Foreign Growth MStar MF Rank			16	68	45	11	3	3	4	8	18	7	4	63		

Operating Policy Index (as of 6/1/20): 30% S&P 500 Index, 20% MSCI EAFE Index, 25% Bloomberg US Aggregate Index, 15% ICE BofAML 1-3 YR Treasury Index, 10% Bloomberg US TIPS Index. Blended Fixed Income Benchmark: 50% Bloomberg US Aggregate Index, 20% Bloomberg US TIPS Index, 30% Bloomberg US 1-5 YR Credit Index. US Equity Benchmark changed to S&P 500 Index. International Equity Benchmark changed to MSCI EAFE Index. Vanguard Short Term Bond Adm Benchmark changed to ICE BofAML 1-3 YR Treasury Index. Schwab Govt Money Fund replaced Schwab Adv Cash Reserve Premier Pre on 6/14/16. Vanguard Short Term Investment Grade Adm and PIMCO All Asset Ins liquidated on 6/1/20. WCM Focused Intl Growth Ins funded on 6/1/20. Fiscal year end: 6/30.



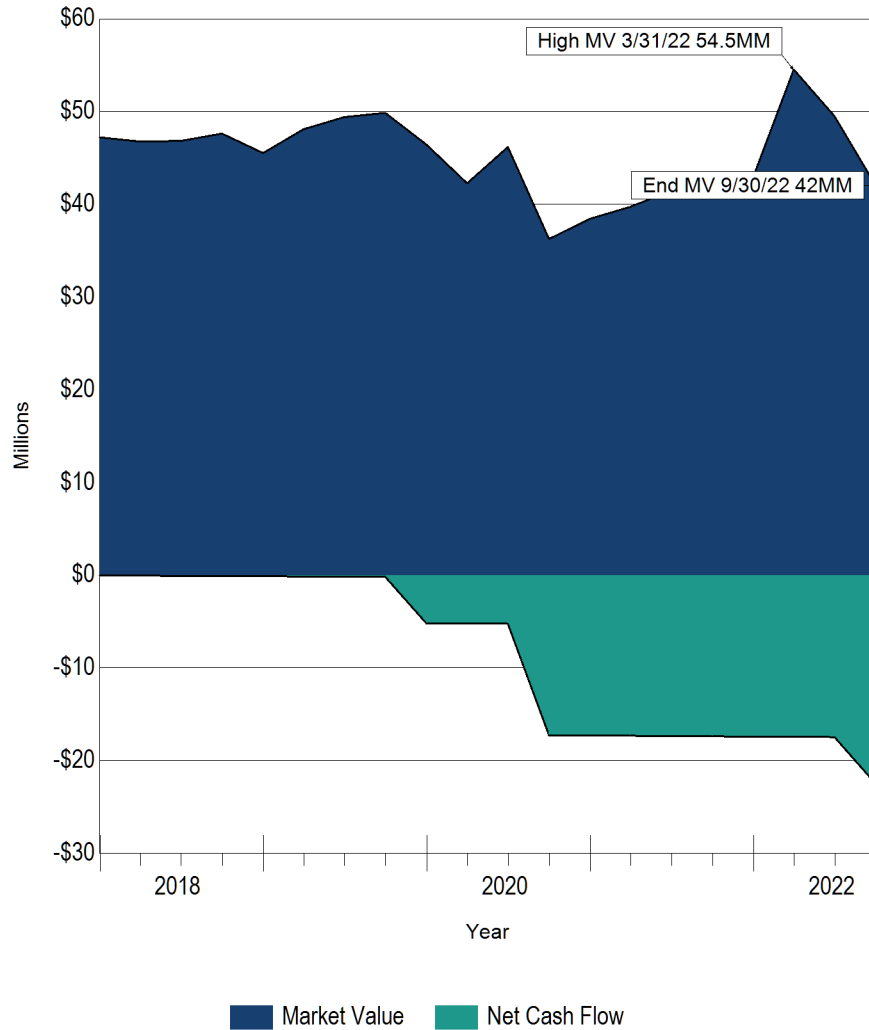
# Operating Total Fund Executive Summary (Net of Fees)

Period Ending: September 30, 2022

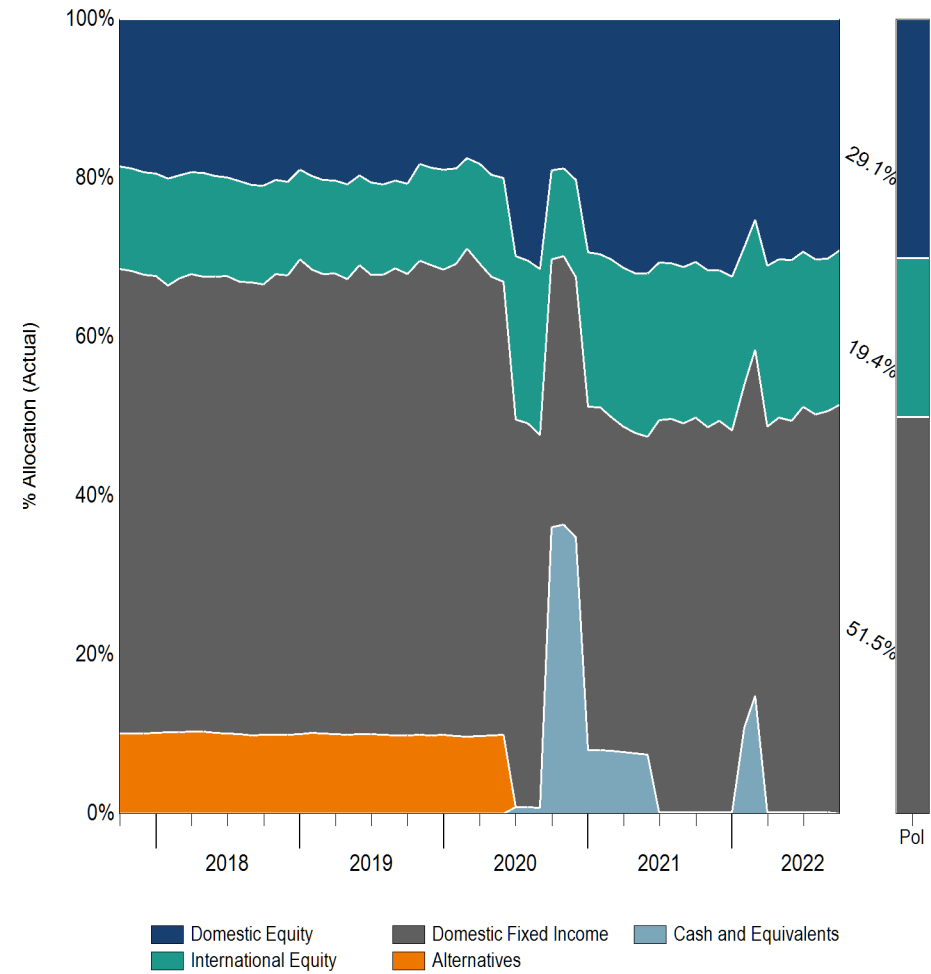
	Market Value	% of Portfolio	3 Mo	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
<b>Total Domestic Fixed Income</b>	<b>21,632,030</b>	<b>51.5</b>	<b>-4.3</b>	<b>-12.7</b>	<b>-12.4</b>	<b>-1.5</b>	<b>0.5</b>	<b>1.0</b>	<b>1.0</b>	<b>0.9</b>	<b>8.0</b>	<b>7.1</b>	<b>0.2</b>	<b>2.5</b>	<b>3.1</b>	<b>Mar-07</b>
<i>Blended Fixed Income Benchmark</i>			-3.9	-11.4	-11.1	-1.7	0.3	0.8	0.7	0.2	6.2	6.8	0.4	2.3	2.5	Mar-07
<i>InvMetrics All E&amp;F US Fix Inc Net Rank</i>			69	49	44	29	42	57	67	18	46	83	30	89		
Met West Total Return Bond I	5,397,298	12.8	-5.2	-16.2	-16.3	-3.2	-0.2	0.6	1.3	-1.1	9.2	9.1	0.2	3.4	0.7	Dec-14
<i>Bloomberg US Aggregate TR</i>			-4.8	-14.6	-14.6	-3.3	-0.3	0.5	0.9	-1.5	7.5	8.7	0.0	3.5	0.7	Dec-14
<i>Intermediate Core Bond MStar MF Rank</i>			89	93	92	62	44	57	20	33	21	29	26	70		
Dodge & Cox Income	5,429,225	12.9	-4.0	-13.2	-13.6	-1.7	0.7	1.8	1.9	-0.9	9.5	9.7	-0.3	4.4	1.5	Dec-14
<i>Bloomberg US Aggregate TR</i>			-4.8	-14.6	-14.6	-3.3	-0.3	0.5	0.9	-1.5	7.5	8.7	0.0	3.5	0.7	Dec-14
<i>Intermediate Core Bond MStar MF Rank</i>			10	14	15	5	4	1	4	20	14	13	51	34		
Vanguard Inflation-Protected Securities Adm	6,380,880	15.2	-5.3	-13.4	-11.5	0.7	1.8	2.1	0.9	5.7	11.0	8.2	-1.4	2.9	3.3	Mar-07
<i>Bloomberg US TIPS TR</i>			-5.1	-13.6	-11.6	0.8	2.0	2.2	1.0	6.0	11.0	8.4	-1.3	3.0	3.4	Mar-07
<i>Inflation-Protected Bond MStar MF Rank</i>			66	54	52	64	55	40	39	44	32	49	53	47		
Vanguard Short-Term Bond Adm	4,424,627	10.5	-2.1	-6.5	-7.3	-1.0	0.5	0.7	0.8	-1.1	4.7	4.9	1.3	1.2	0.8	Dec-14
<i>ICE BofA 1-3 Yrs US Treasuries TR</i>			-1.6	-4.4	-4.9	-0.5	0.6	0.6	0.6	-0.6	3.1	3.6	1.6	0.4	0.7	Dec-14
<i>Short-Term Bond MStar MF Rank</i>			92	70	77	83	79	87	83	92	25	48	41	88		
<b>Total Cash</b>	<b>2,148</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.4</b>	<b>0.3</b>	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.6</b>	<b>1.2</b>	<b>0.3</b>	<b>0.6</b>	<b>Mar-07</b>
<i>91 Day T-Bills</i>			0.5	0.6	0.6	0.5	1.1	0.9	0.6	0.0	0.5	2.1	1.9	0.9	0.7	Mar-07
Schwab Govt Money Fund	2,148	0.0	0.0	0.0	0.0	0.1	0.4	0.3	0.2	0.0	0.0	0.6	1.2	0.3	0.3	Jun-16
<i>91 Day T-Bills</i>			0.5	0.6	0.6	0.5	1.1	0.9	0.6	0.0	0.5	2.1	1.9	0.9	1.0	Jun-16

Operating Policy Index (as of 6/1/20): 30% S&P 500 Index, 20% MSCI EAFE Index, 25% Bloomberg US Aggregate Index, 15% ICE BofAML 1-3 YR Treasury Index, 10% Bloomberg US TIPS Index. Blended Fixed Income Benchmark: 50% Bloomberg US Aggregate Index, 20% Bloomberg US TIPS Index, 30% Bloomberg US 1-5 YR Credit Index. US Equity Benchmark changed to S&P 500 Index. International Equity Benchmark changed to MSCI EAFE Index. Vanguard Short Term Bond Adm Benchmark changed to ICE BofAML 1-3 YR Treasury Index. Schwab Govt Money Fund replaced Schwab Adv Cash Reserve Premier Pre on 6/14/16. Vanguard Short Term Investment Grade Adm and PIMCO All Asset Ins liquidated on 6/1/20. WCM Focused Intl Growth Ins funded on 6/1/20. Fiscal year end: 6/30.

Market Value History



Asset Allocation History



Operating Total Fund  
Risk Analysis - 5 Years (Net of Fees)

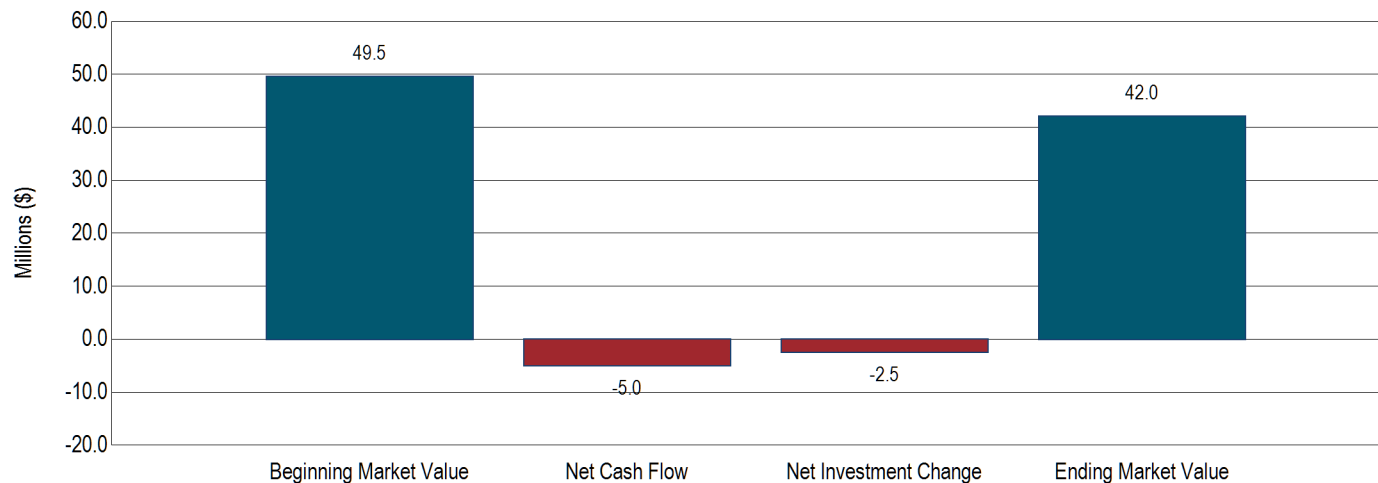
Period Ending: September 30, 2022

	Anlzd Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio	Sortino Ratio
Operating Total Fund	2.63%	8.58%	-0.11%	1.00	0.96	100.55%	101.37%	-0.07	1.79%	0.18	0.37
Operating Policy Index	2.76%	8.43%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.19	0.43
Total Domestic Equity	9.09%	18.10%	-0.06%	0.99	0.98	97.22%	99.20%	-0.06	2.63%	0.44	0.77
S&P 500	9.24%	18.07%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	0.45	0.79
Total Int'l Equity	-0.79%	18.20%	0.11%	1.07	0.96	115.40%	104.26%	0.01	3.79%	-0.11	-0.06
MSCI EAFE	-0.84%	16.65%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	-0.12	-0.07
Total Domestic Fixed Income	0.46%	4.24%	0.14%	1.13	0.97	114.46%	108.46%	0.21	0.85%	-0.16	0.12
Blended Fixed Income Benchmark	0.28%	3.69%	0.00%	1.00	1.00	100.00%	100.00%	--	0.00%	-0.23	0.09

Portfolio Reconciliation

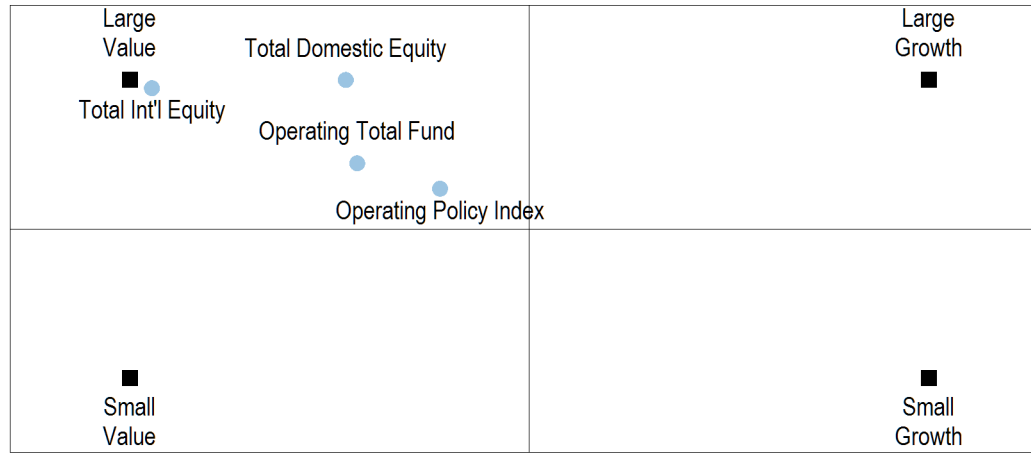
	Last Three Months	Fiscal Year-To-Date	2021	2020	2019	2018	2017
Beginning Market Value	\$49,515,623	\$49,515,623	\$38,451,184	\$46,441,541	\$45,533,130	\$47,224,063	\$37,441,739
Net Cash Flow	-\$5,000,025	-\$5,000,025	\$13	-\$12,000,176	-\$5,000,126	\$0	\$5,999,840
Net Investment Change	-\$2,474,018	-\$2,474,018	\$4,586,912	\$4,009,819	\$5,908,537	-\$1,690,933	\$3,782,484
Ending Market Value	\$42,041,580	\$42,041,580	\$43,038,109	\$38,451,184	\$46,441,541	\$45,533,130	\$47,224,063

Change in Market Value  
Last Three Months

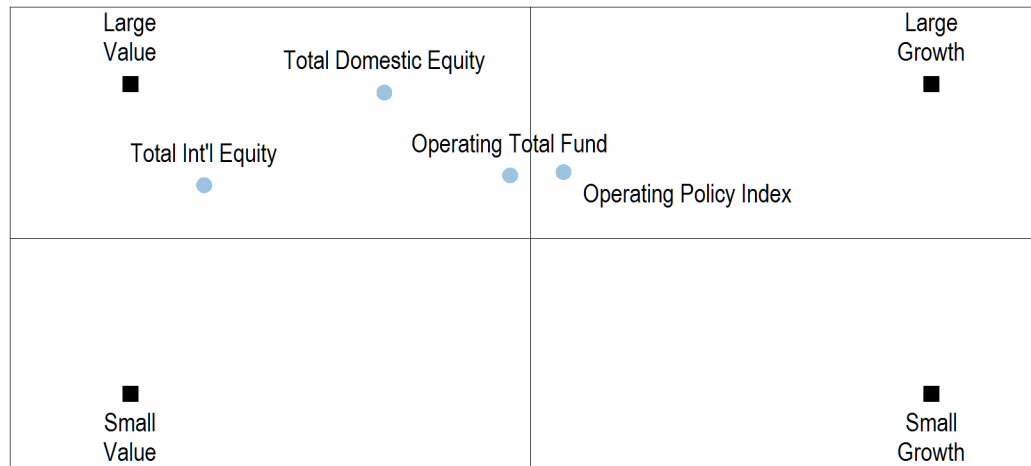


Contributions and withdrawals may include intra-account transfers between managers/funds.

U.S. Effective Style Map  
1 Year



U.S. Effective Style Map  
3 Years



Operating Total Fund  
Cash Flow by Manager -YTD

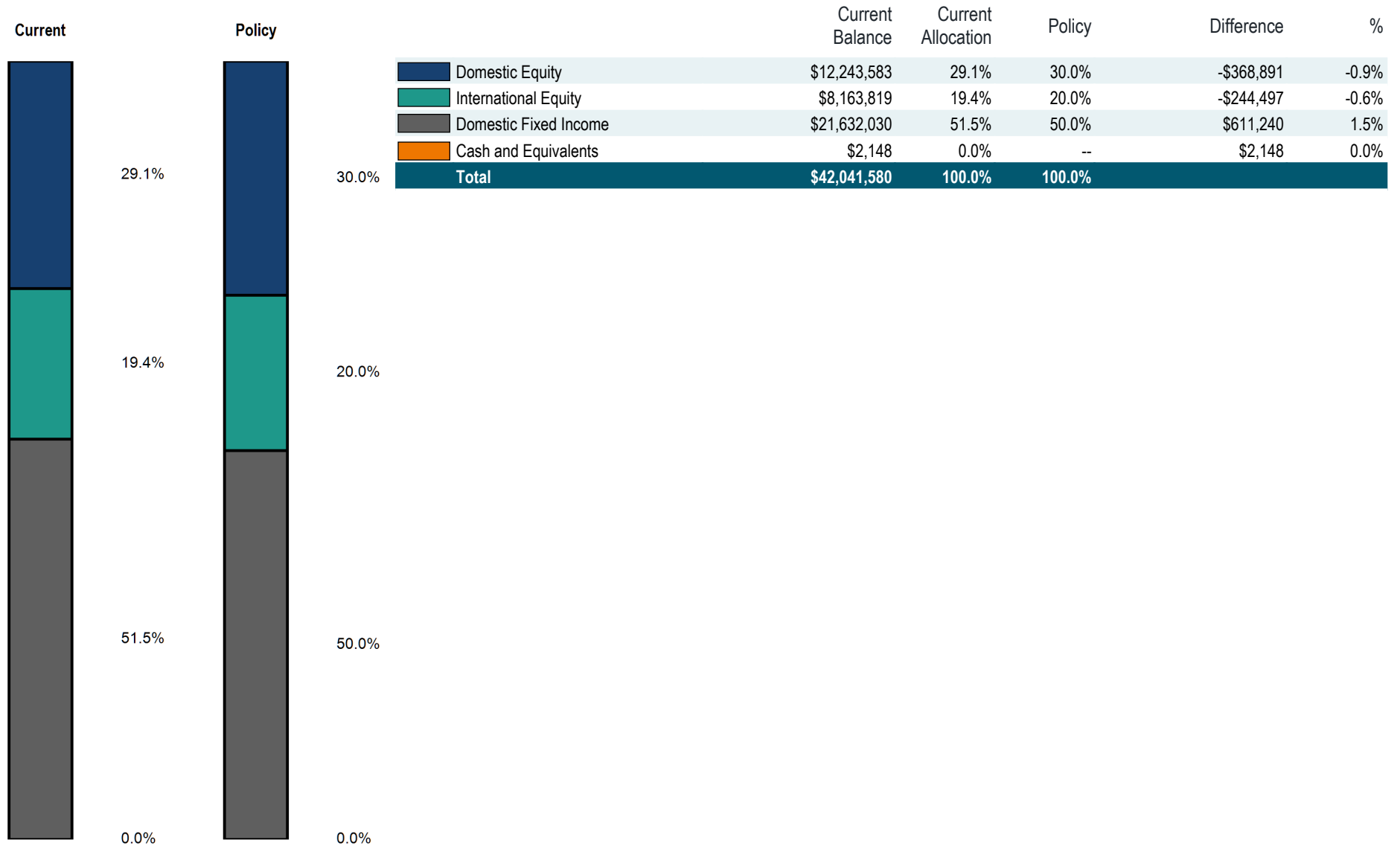
Period Ending: September 30, 2022

	Beginning Market Value	Contributions	Withdrawals	Net Investment Change	Ending Market Value
Dodge & Cox Income	\$5,129,336	\$1,800,040	-\$650,000	-\$850,151	\$5,429,225
Dodge & Cox Int'l Stock	\$2,033,396	\$700,040	-\$175,000	-\$480,757	\$2,077,679
Met West Total Return Bond I	\$5,057,562	\$1,900,040	-\$500,000	-\$1,060,304	\$5,397,298
Schwab Fundamental Intl Large Company Index	\$4,140,853	\$1,350,000	-\$300,000	-\$1,126,015	\$4,064,838
Schwab Fundamental US Large Company Index	\$6,870,916	\$1,500,000	-\$1,000,000	-\$1,266,427	\$6,104,489
Schwab Govt Money Fund	\$77,348	\$17,925,000	-\$18,000,285	\$85	\$2,148
Vanguard 500 Index Adm	\$7,087,809	\$1,600,040	-\$700,000	-\$1,848,755	\$6,139,094
Vanguard Inflation-Protected Securities Adm	\$6,317,734	\$1,850,020	-\$750,000	-\$1,036,874	\$6,380,880
Vanguard Short-Term Bond Adm	\$4,154,925	\$1,350,040	-\$750,000	-\$330,339	\$4,424,627
WCM Focused Intl Growth Ins	\$2,168,229	\$950,040	-\$100,000	-\$996,968	\$2,021,302
<b>Total</b>	<b>\$43,038,109</b>	<b>\$30,925,260</b>	<b>-\$22,925,285</b>	<b>-\$8,996,504</b>	<b>\$42,041,580</b>

Contributions and withdrawals may include intra-account transfers between managers/funds. Vanguard Short Term Investment Grade Adm and PIMCO All Asset Ins liquidated on 6/1/20. WCM Focused Intl Growth Ins funded on 6/1/20.

Operating Total Fund  
Asset Allocation vs. Policy

Period Ending: September 30, 2022



## Operating Total Fund Watch List (Net of Fees)

Period Ending: September 30, 2022

Name	Allocation Group	Status	Performance Start Date	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7
Schwab Fundamental US Large Company Index	Domestic Equity	No Issues	02/25/2010	--	--	--	--	--	--	R
Vanguard 500 Index Adm	Domestic Equity	No Issues	03/07/2007	--	--	--	--	--	--	✓
Schwab Fundamental Intl Large Company Index	International Equity	No Issues	07/11/2011	--	--	--	--	--	--	R
Dodge & Cox Int'l Stock	International Equity	No Issues	03/09/2007	✓	✓	R	R	✓	--	--
WCM Focused Intl Growth Ins	International Equity	No Issues	06/01/2020	✓	✓	✓	✓	✓	--	--
Met West Total Return Bond I	Domestic Fixed Income	No Issues	12/04/2014	R	R	✓	✓	✓	--	--
Dodge & Cox Income	Domestic Fixed Income	No Issues	12/05/2014	✓	✓	✓	✓	✓	--	--
Vanguard Inflation-Protected Securities Adm	Domestic Fixed Income	No Issues	03/07/2007	✓	R	R	R	✓	--	--
Vanguard Short-Term Bond Adm	Domestic Fixed Income	No Issues	12/05/2014	--	--	--	--	--	--	R
Schwab Govt Money Fund	Cash and Equivalents	No Issues	06/14/2016	--	--	--	R	✓	--	--

Rule 1 - Manager has underperformed the 75th percentile in the appropriate style universe for the one year period.

Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the three year period.

Rule 3 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.

Rule 4 - Manager has underperformed the benchmark index for the five year period.

Rule 5 - Manager's risk level, measured by the 5-year annualized standard deviation, is more than 25% above the benchmark index's standard deviation.

Rule 6 - Fund experiences non-performance related issues including personnel turnover, changes in investment philosophy or drift, excessive asset growth, change in ownership and any other reason that raises concern.

Rule 7 - Index Fund Tracking Error exceeds 0.25% of the appropriate benchmark over the one year period.



## Operating Total Fund Investment Fund Fee Analysis

Period Ending: September 30, 2022

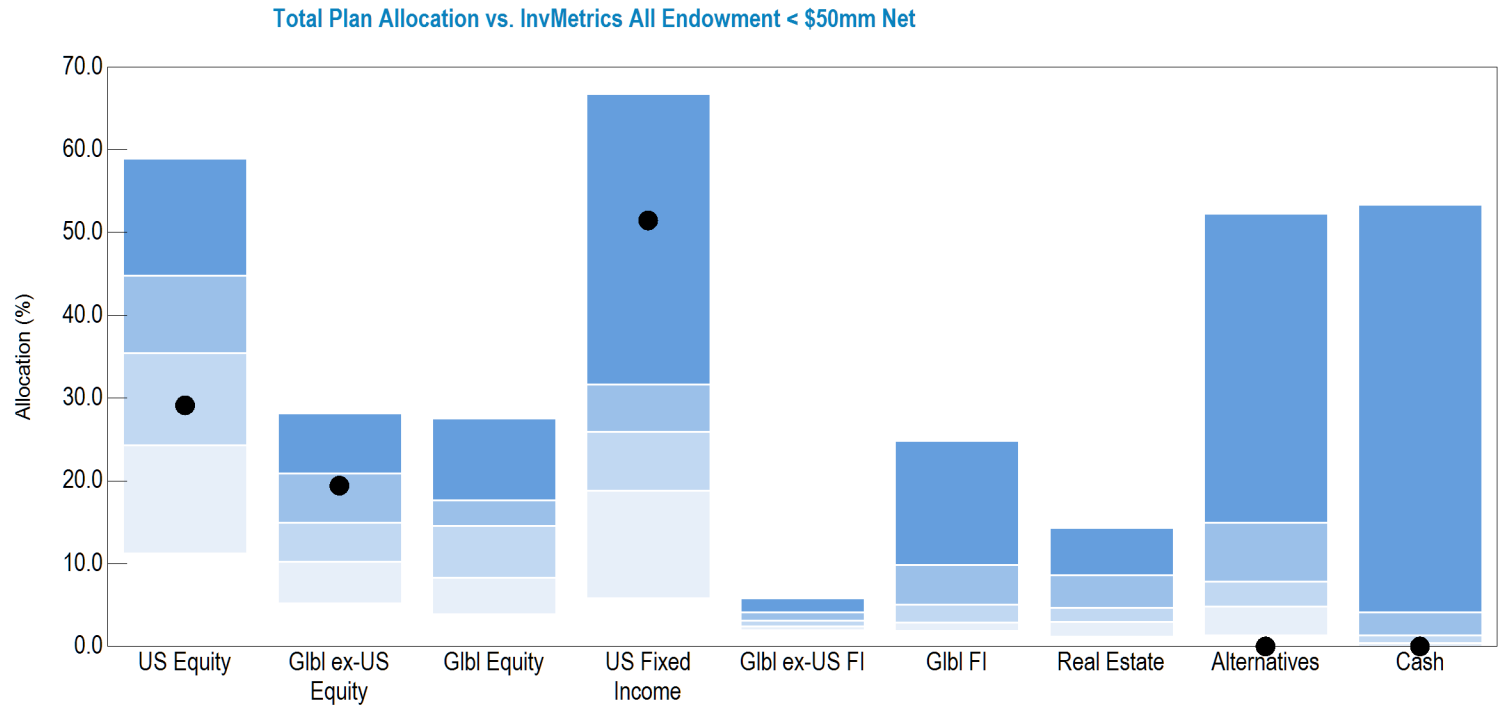
Name	Asset Class	Identifier	Expense Ratio	Market Value	Estimated Expense
Schwab Fundamental US Large Company Index	Domestic Equity	SFLNX	0.25%	\$6,104,489	\$15,261
Vanguard 500 Index Adm	Domestic Equity	VFIAX	0.04%	\$6,139,094	\$2,456
Schwab Fundamental Intl Large Company Index	International Equity	SFNNX	0.25%	\$4,064,838	\$10,162
Dodge & Cox Int'l Stock	International Equity	DODFX	0.62%	\$2,077,679	\$12,882
WCM Focused Intl Growth Ins	International Equity	WCMIX	1.06%	\$2,021,302	\$21,426
Met West Total Return Bond I	Domestic Fixed Income	MWTIX	0.44%	\$5,397,298	\$23,748
Dodge & Cox Income	Domestic Fixed Income	DODIX	0.41%	\$5,429,225	\$22,260
Vanguard Inflation-Protected Securities Adm	Domestic Fixed Income	VAIPX	0.10%	\$6,380,880	\$6,381
Vanguard Short-Term Bond Adm	Domestic Fixed Income	VBIRX	0.07%	\$4,424,627	\$3,097
Schwab Govt Money Fund	Cash and Equivalents	SWGXX	0.34%	\$2,148	\$7
<b>Total</b>			<b>0.28%</b>	<b>\$42,041,580</b>	<b>\$117,680</b>

Mutual fund fees shown are sourced from Morningstar and are as of the most current prospectus.

Operating Total Fund  
Risk Analysis - 5 Years (Net of Fees)

Period Ending: September 30, 2022

	Anlzd Return	Anlzd Standard Deviation	Anlzd Alpha	Beta	R-Squared	Up Mkt Capture Ratio	Down Mkt Capture Ratio	Information Ratio	Tracking Error	Sharpe Ratio	Sortino Ratio
Schwab Fundamental US Large Company Index	8.74%	18.74%	-0.43%	0.99	0.92	94.36%	98.81%	-0.09	5.44%	0.41	0.62
Vanguard 500 Index Adm	9.20%	18.08%	-0.04%	1.00	1.00	99.88%	100.04%	-3.84	0.01%	0.45	0.78
Schwab Fundamental Intl Large Company Index	-0.34%	18.41%	0.56%	1.07	0.93	109.99%	101.80%	0.10	4.95%	-0.08	-0.02
Dodge & Cox Int'l Stock	-1.48%	20.46%	-0.52%	1.18	0.89	128.09%	108.89%	-0.09	7.38%	-0.13	-0.11
WCM Focused Intl Growth Ins	5.13%	18.38%	5.93%	0.98	0.76	122.64%	92.12%	0.67	8.92%	0.22	0.36
Met West Total Return Bond I	-0.17%	5.17%	0.12%	1.07	0.98	106.89%	103.43%	0.13	0.76%	-0.24	-0.04
Dodge & Cox Income	0.67%	4.73%	0.91%	0.90	0.82	101.73%	87.95%	0.45	2.07%	-0.09	0.17
Vanguard Inflation-Protected Securities Adm	1.84%	5.55%	-0.04%	0.97	0.99	94.80%	96.64%	-0.23	0.48%	0.13	0.37
Vanguard Short-Term Bond Adm	0.50%	2.18%	-0.23%	1.26	0.79	145.15%	159.51%	-0.07	1.07%	-0.26	0.27



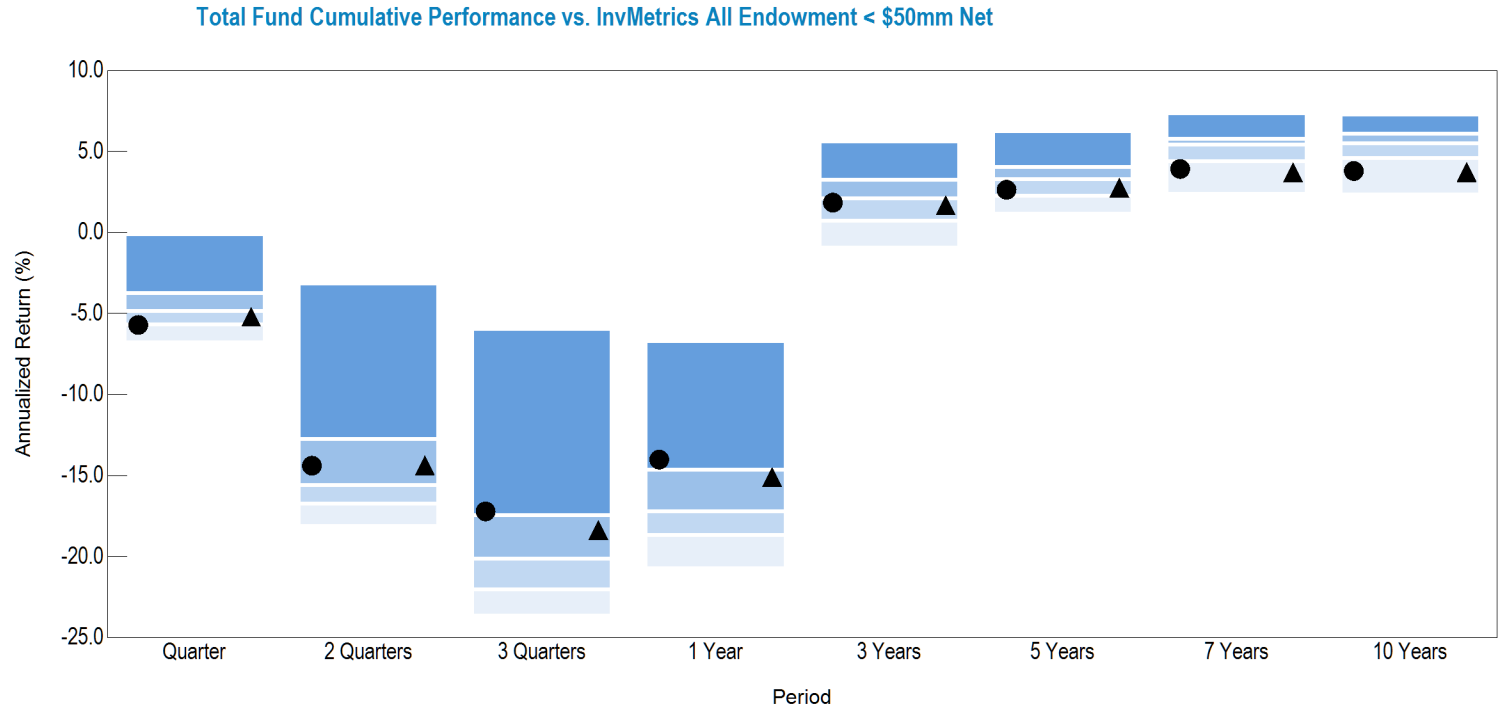
**Allocation (Rank)**

5th Percentile	58.9	28.2	27.5	66.7	5.9	24.8	14.3	52.3	53.4									
25th Percentile	44.8	21.0	17.8	31.7	4.2	9.9	8.7	15.0	4.2									
Median	35.5	15.0	14.6	26.0	3.2	5.1	4.7	7.9	1.4									
75th Percentile	24.3	10.3	8.4	18.9	2.5	2.9	3.0	4.9	0.5									
95th Percentile	11.3	5.3	4.0	5.9	2.0	2.0	1.3	1.4	0.0									
# of Portfolios	111	116	35	108	19	22	45	62	132									
● Operating Total Fund	29.1	(72)	19.4	(33)	--	--	51.5	(9)	--	--	--	--	--	--	0.0	(99)	0.0	(98)

# Operating Total Fund

## Peer Universe Comparison: Cumulative Performance (Net of Fees)

Period Ending: September 30, 2022

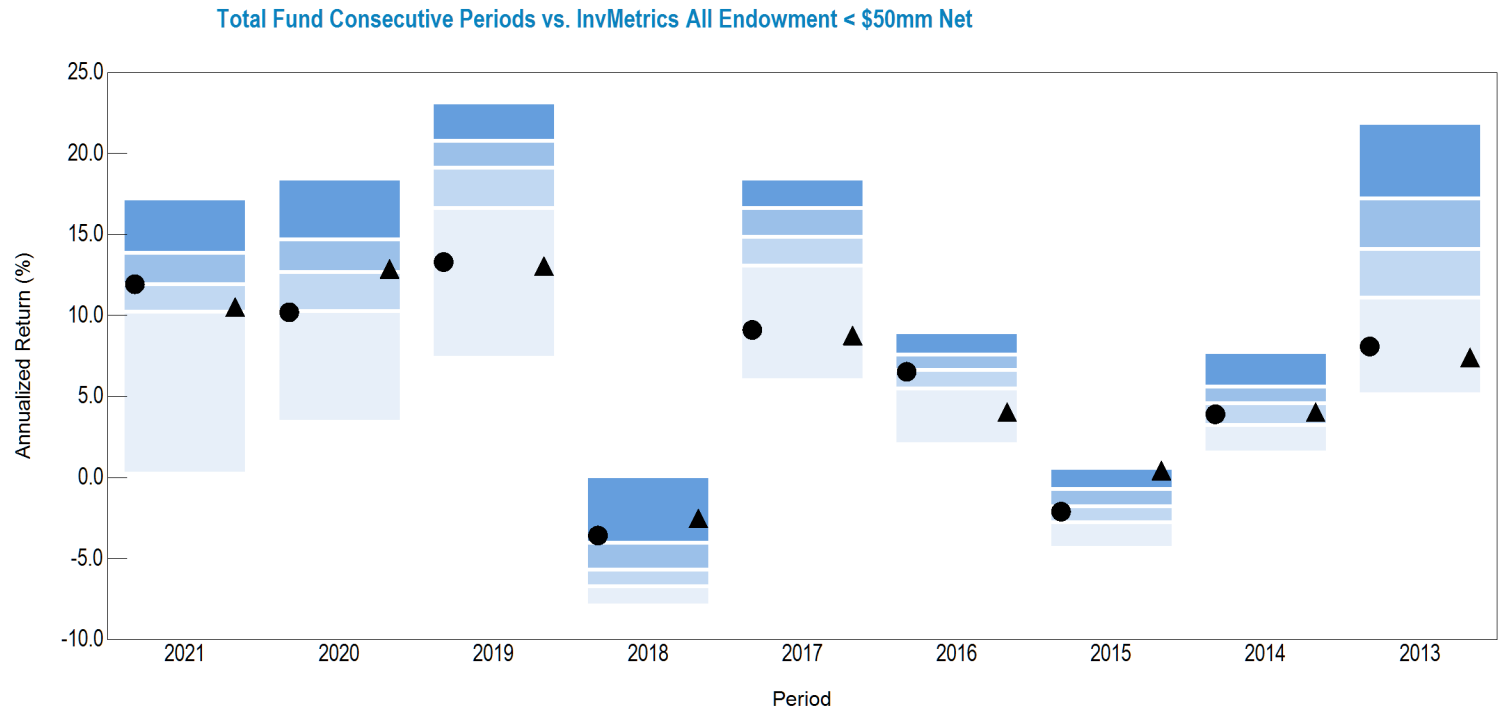


	Return (Rank)															
	Quarter		2 Quarters		3 Quarters		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	-0.1	-3.2	-6.0	-6.7	5.6	6.2	7.3	7.3								
25th Percentile	-3.7	-12.7	-17.4	-14.6	3.3	4.1	5.8	6.1								
Median	-4.8	-15.6	-20.1	-17.2	2.1	3.3	5.4	5.5								
75th Percentile	-5.7	-16.7	-22.0	-18.6	0.7	2.3	4.4	4.6								
95th Percentile	-6.7	-18.1	-23.6	-20.7	-0.9	1.2	2.4	2.4								
# of Portfolios	146	141	139	136	127	111	95	65								
● Operating Total Fund	-5.7	(78)	-14.4	(37)	-17.2	(25)	-14.0	(21)	1.8	(57)	2.6	(66)	3.9	(89)	3.8	(85)
▲ Operating Policy Index	-5.2	(63)	-14.4	(37)	-18.4	(29)	-15.1	(29)	1.7	(61)	2.8	(64)	3.7	(91)	3.7	(85)

# Operating Total Fund

## Peer Universe Comparison: Consecutive Periods (Net of Fees)

Period Ending: September 30, 2022



	2021		2020		2019		2018		2017		2016		2015		2014		2013	
<b>Return (Rank)</b>																		
5th Percentile	17.2	18.4	23.1	0.1	18.4	9.0	0.6	7.7	21.9	13.9	14.7	20.8	-4.0	16.7	7.6	-0.7	5.6	17.3
25th Percentile	11.9	12.7	19.1	-5.7	14.9	6.6	-1.7	4.6	14.1	11.9	10.2	16.7	-6.7	13.1	5.5	-2.8	3.2	11.1
Median	10.2	10.3	16.7	-6.7	13.1	5.5	-2.8	3.2	11.1	10.2	10.3	16.7	-6.7	13.1	5.5	-2.8	3.2	11.1
75th Percentile	0.3	3.5	7.4	-7.9	6.0	2.1	-4.3	1.6	5.1	0.3	3.5	7.4	-7.9	6.0	2.1	-4.3	1.6	5.1
95th Percentile	223	241	225	274	216	209	204	173	118	223	241	225	274	216	209	204	173	118
# of Portfolios																		
● Operating Total Fund	11.9	(51)	10.2	(76)	13.3	(89)	-3.6	(20)	9.1	(93)	6.5	(53)	-2.1	(59)	3.9	(62)	8.1	(89)
▲ Operating Policy Index	10.5	(71)	12.9	(49)	13.0	(90)	-2.5	(10)	8.8	(93)	4.0	(89)	0.4	(6)	4.0	(59)	7.4	(92)

**Performance Return Calculations**

Performance is calculated using Modified Dietz and for time periods with large cash flow (generally greater than 10% of portfolio value), Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

**Data Source**

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

**Illiquid Alternatives**

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

**Current Managers**

<u>Manager</u>	<u>Fund Incepted</u>	<u>Data Source</u>	<u>Manager</u>	<u>Fund Incepted</u>	<u>Data Source</u>
Vanguard Inflation-Protected Securities Adm	3/7/2007	Charles Schwab	Met West Total Return Bond I	12/4/2014	Charles Schwab
Vanguard 500 Index Adm	3/7/2007	Charles Schwab	Vanguard Short-Term Bond Adm	12/5/2014	Charles Schwab
Dodge & Cox Int'l Stock	3/9/2007	Charles Schwab	Dodge & Cox Income	12/5/2014	Charles Schwab
Schwab Fundamental US Large Company Index	2/25/2010	Charles Schwab	Schwab Govt Money Fund	6/14/2016	Charles Schwab
Schwab Fundamental Intl Large Company Index	7/11/2011	Charles Schwab	WCM Focused Intl Growth Ins	6/1/2020	Charles Schwab

**Terminated Managers (since January, 2014)**

<u>Manager</u>	<u>Fund Incepted</u>	<u>Fund Terminated</u>	<u>Comments</u>
PIMCO Total Return Ins	3/26/2007	12/4/2014	Met West Total Return Bond I replaced PIMCO Total Return Ins
PIMCO Low Duration Ins	3/26/2007	12/4/2014	Vanguard Short-Term Bond Adm replaced PIMCO Low Duration Ins
Schwab Advance Cash Reserve Premier	--	6/4/2016	Schwab Govt Money Fund replaced Schwab Advance Cash Reserve Premier
PIMCO All Asset Ins	3/29/2007	6/1/2020	
Vanguard Short Term Investment Grade Adm	8/23/2011	6/1/2020	

**Policy & Custom Index Composition**

Policy Index (06/01/2020-Present)	30% S&P 500 Index, 20% MSCI EAFE Index, 25% Bloomberg US Aggregate Index, 15% BofAML 1-3 YR Treasury Index, 10% Bloomberg US TIPS Index.
Policy Index (07/01/2011-05/31/2020)	18% S&P 500 Index, 12% MSCI EAFE Index, 15% Bloomberg US Aggregate Index, 15% BofAML 1-3 YR Treasury Index, 15% Bloomberg US TIPS Index, 10% HFRI Fund of Funds Index, 15% Bloomberg US 1-5 YR Credit Index.
Policy Index (04/01/2009-07/01/2011)	18% S&P 500 Index, 12% MSCI EAFE Index, 15% Bloomberg US Aggregate Index, 15% BofAML 1-3 YR Treasury Index, 15% Bloomberg US TIPS Index, 10% HFRI Fund of Funds Index, 15% 90-Day T-Bills Index

**Other Notes**

## Glossary

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**Allocation Effect:** An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

**Alpha:** The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as:  $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$ .

**Benchmark R-squared:** Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

**Beta:** A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

**Book-to-Market:** The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

**Capture Ratio:** A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

**Correlation:** A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

**Excess Return:** A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

**Information Ratio:** A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

**Interaction Effect:** An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

**Portfolio Turnover:** The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

**Price-to-Earnings Ratio (P/E):** Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

**R-Squared:** Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

**Selection Effect:** An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

**Sharpe Ratio:** A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as:  $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$ .

**Sortino Ratio:** Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

**Standard Deviation:** A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

**Style Analysis:** A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

**Style Map:** A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

## Disclaimer

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