MEKETA
INVESTMENT GROUP

City of Marlborough
Contributory Retirement System

Meeting Materials
October 25, 2022

Fund Evaluation Report

Agenda

1. Economic and Market Update Data as of September 30, 2022
2. Third Quarter 2022 Investment Review
   - Retirement System Summary
   - Retirement System Detail
   - Portfolio Reviews
3. Current Issues
   - High Yield RFP Respondent Review
   - Manager Due Diligence
4. Appendices
   - Meketa Investment Group Corporate Update
   - Disclaimer, Glossary, and Notes

Economic and Market Update

Data as of September 30, 2022

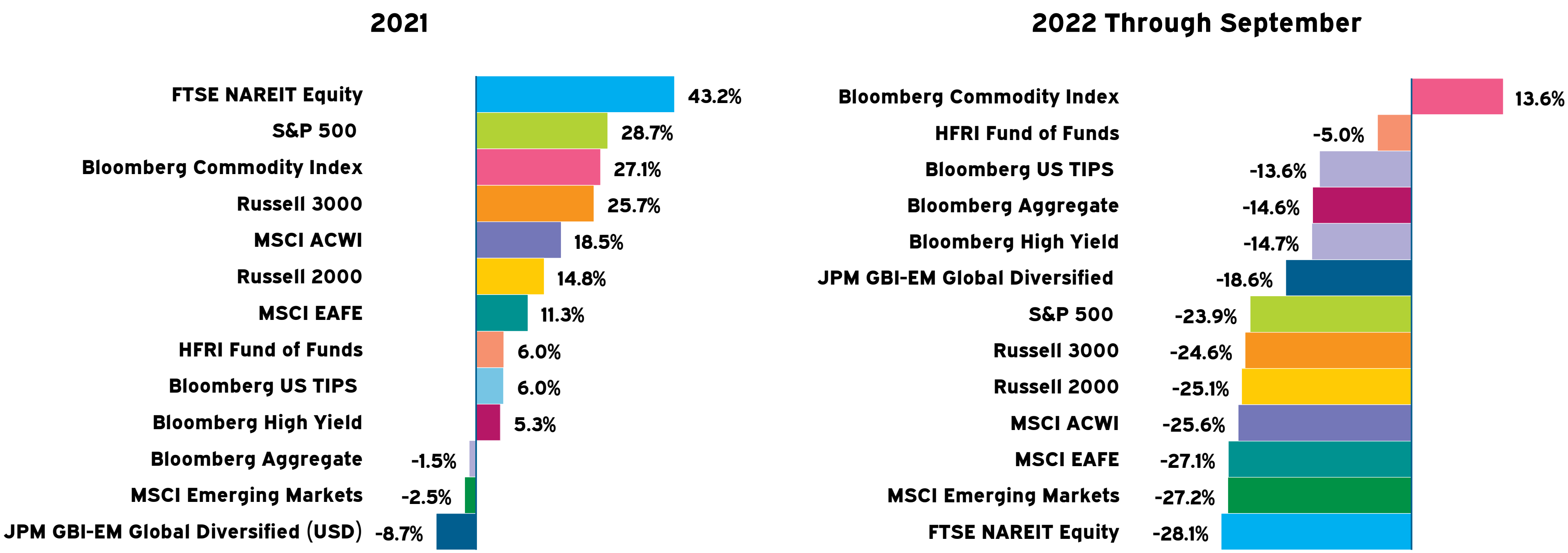
Commentary

→ After a strong July, global markets sold off in August and September, leading to quarterly declines as slower growth and higher inflation weighed on sentiment.

- The Federal Reserve maintained its aggressive tightening campaign with future hikes expected as US inflation continues to surprise to the upside and labor markets remain tight.
- In Europe, inflation hit a multi-decade high on energy prices. In the UK, Liz Truss became the new prime minister with her government quickly announcing a fiscal package in September. The proposal was poorly received by markets, as it undermined efforts of the central bank to lower inflation.
- Equity markets significantly declined for the month leading to quarterly losses with international markets declining the most. The war in Ukraine has elevated prices in Europe, while tight COVID-19 policies, slowing growth, and property market issues have weighed on China. Continued US dollar strength has been a further headwind.
- For the quarter, in a reversal of the prior trend, growth outpaced value across the capitalization spectrum but continued to trail year-to-date.
- Interest rates rose significantly across the US yield curve for the month and quarter with the curve remaining inverted (ten-year yield minus the two-year yield) by 44 basis points. This is by far the worst start to a calendar year for bond investors.

→ Persistently high inflation and the likely increased pace of the policy response, the war in Ukraine, lingering COVID-19 issues, and lockdowns in China will all have considerable consequences for the global economy.

Index Returns[1]



→ Except for emerging markets and the broad US investment grade bond market (Bloomberg Aggregate), most asset classes appreciated in 2021.

→ After a brief rally in July most asset classes declined significantly in August and September as it became clear further policy tightening would be taken to try to control inflation. Except for commodities, all major assets classes have experienced significant declines year-to-date.

[1] Source: Bloomberg and FactSet. Data is as of September 30, 2022.

Domestic Equity Returns[1]

Domestic Equity	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
S&P 500	-9.2	-4.9	-23.9	-15.5	8.2	9.2	11.7
Russell 3000	-9.3	-4.5	-24.6	-17.6	7.7	8.6	11.4
Russell 1000	-9.3	-4.6	-24.6	-17.2	7.9	9.0	11.6
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 MidCap	-9.3	-3.4	-24.3	-19.4	5.2	6.5	10.3
Russell MidCap Growth	-8.5	-0.7	-31.5	-29.5	4.3	7.6	10.8
Russell MidCap Value	-9.7	-4.9	-20.4	-13.6	4.5	4.7	9.4
Russell 2000	-9.6	-2.2	-25.1	-23.5	4.3	3.6	8.5
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

US Equities: Russell 3000 Index fell 9.3% for September and 4.5% for the quarter.

→ US stocks fell sharply during September and finished down for the third quarter.

→ Each of the 11 sectors declined in September with six sectors (Real Estate, Communication Services, Technology, Utilities, Materials, and Industrials) falling by 10% or more. Health Care stocks fared best and declined 3.1%. For the quarter all sectors were down except for consumer discretionary and energy.

→ For the second straight month, value stocks outperformed growth stocks in the large cap segment of the market, while the reverse was true in the small cap segment. The underperformance of technology stocks, which account for 43% of the large cap growth market, drove this dynamic.

[1] Source: Bloomberg. Data is as of September 30, 2022.

Foreign Equity Returns[1]

Foreign Equity	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
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 EAFE (Local Currency)	-6.2	-3.6	-14.5	-11.1	2.5	2.8	7.4
MSCI EAFE Small Cap	-11.5	-9.8	-32.1	-32.1	-2.2	-1.8	5.3
MSCI Emerging Markets	-11.7	-11.6	-27.2	-28.1	-2.1	-1.8	1.0
MSCI Emerging Markets (Local Currency)	-9.4	-8.2	-20.8	-21.5	1.1	1.1	4.5
MSCI China	-14.6	-22.5	-31.2	-35.4	-7.2	-5.5	2.4

International equities (MSCI EAFE) fell 9.4%, while emerging markets (MSCI EM) returned -11.7% in September leading to quarterly declines of similar amounts.

→ Non-US developed market stocks again broadly trailed the US for the month, leading to the steepest declines year-to-date. High inflation in Europe, particularly related to gas and electricity, the ongoing war in Ukraine, and relatively slower growth globally continue to weigh on sentiment.

→ Emerging market equities were deep in the red for the month, driven by China's (-14.6%) on-going property market issues and strict COVID-19 policies. The upcoming National Communist Party Congress in China in October is highly anticipated.

→ The strength of the US dollar continued as a headwind to international equities for the month and year-to-date, both in developed and emerging markets.

[1] Source: Bloomberg. Data is as of September 30, 2022.

Fixed Income Returns[1]

Fixed Income	September (%)	Q3 (%)	YTD (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)	Current Yield (%)	Duration (Years)
Bloomberg Universal	-4.3	-4.5	-14.9	-14.9	-3.1	-0.2	1.2	5.2	6.2
Bloomberg Aggregate	-4.3	-4.8	-14.6	-14.6	-3.3	-0.3	0.9	4.8	6.4
Bloomberg US TIPS	-6.6	-5.1	-13.6	-11.6	0.8	1.9	1.0	4.3	6.9
Bloomberg High Yield	-4.0	-0.6	-14.7	-14.1	-0.5	1.6	3.9	9.7	4.6
JPM GBI-EM Global Diversified (USD)	-4.9	-4.7	-18.6	-20.6	-7.1	-3.9	-2.4	7.6	4.8

Fixed Income: The Bloomberg Universal declined 4.3% in September and 4.5% for the quarter.

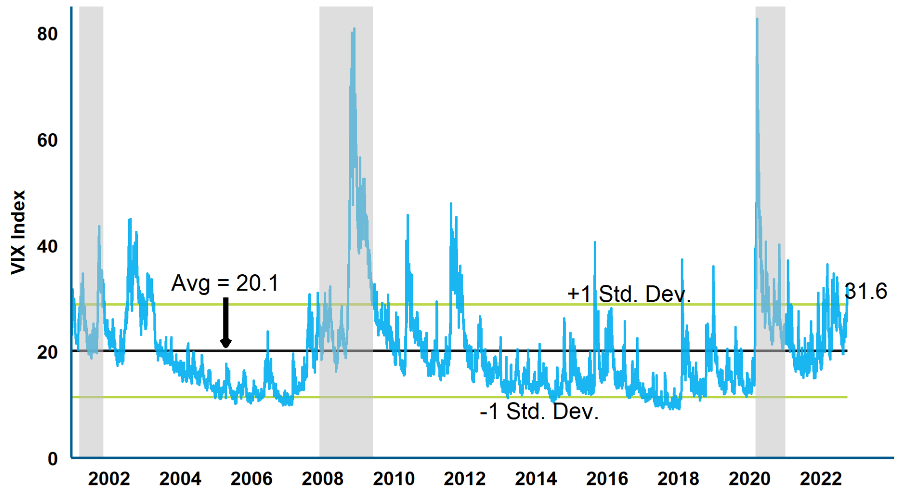
→ A sharp rise in bond yields driven by central banks confirming commitments to fight inflation weighed on fixed income in September leading to declines for the quarter as well. Year-to-date the US bond market is off by far to its worst calendar year start on record.

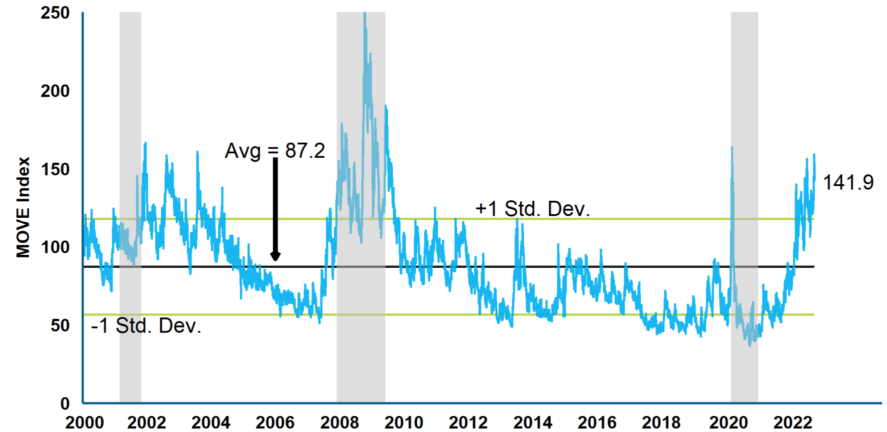
→ TIPS declined the most for the month and quarter as investors' confidence grew that tighter monetary policy would ultimately get inflation under control.

→ Riskier US bonds declined the least with the high yield index falling slightly less than the broad US bond market (-4.0% versus -4.3%). Emerging market bonds finished down close to 5% for the month with significant declines year-to-date.

[1] Source: Bloomberg. JPM GBI-EM is from InvestorForce. Data is as of September 30, 2022.

Equity and Fixed Income Volatility[1]



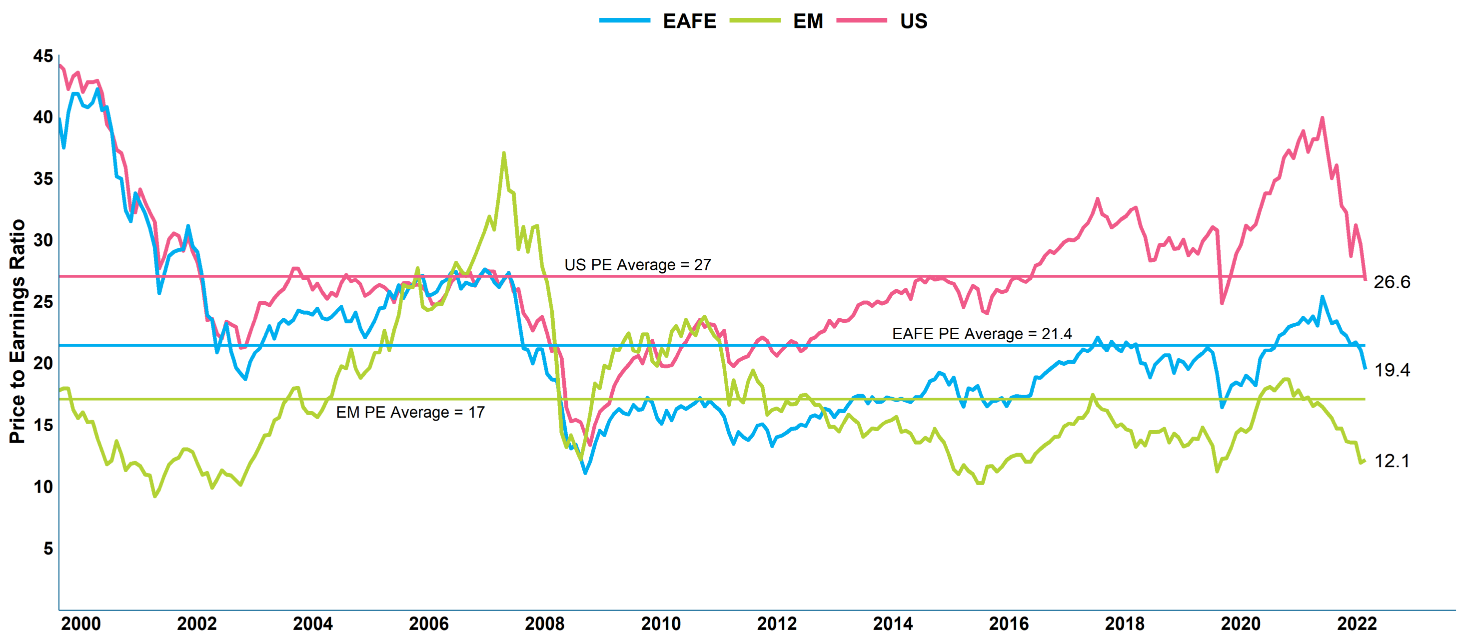


→ Volatility in equities (VIX) and fixed income (MOVE) rose in September and finished higher overall for the quarter as the Federal Reserve and other central banks made it clear that they were committed to aggressively tightening monetary policy to fight high inflation.

→ Fixed income volatility remains particularly high due to the uncertain path of short-term interest rates given stubbornly high inflation. Issues related to the UK's announcement to offer tax breaks despite the central bank's efforts to fight inflation also contributed to volatility in fixed income markets.

[1] Equity and Fixed Income Volatility – Source: Bloomberg. Implied volatility as measured using VIX Index for equity markets and the MOVE Index to measure interest rate volatility for fixed income markets. Data is as of September 2022. The average line indicated is the average of the VIX and MOVE values between January 2000 and the recent month-end respectively.

Equity Cyclically Adjusted P/E Ratios[1]

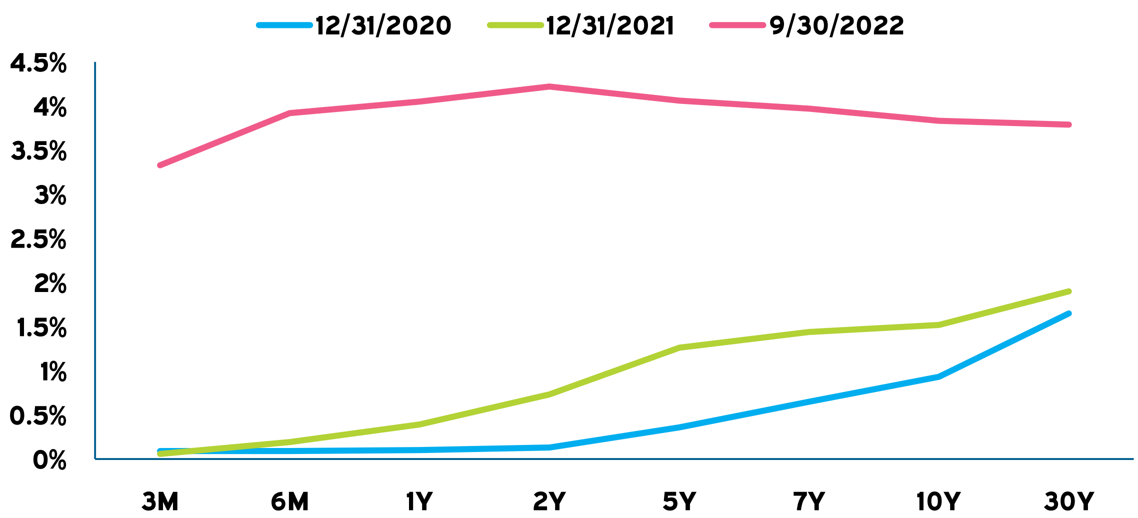


→ September price declines brought US equity price-to-earnings ratios slightly below the long-term (21st Century) average.

→ International developed market valuations remain below the US and are below their own long-term average, with those for emerging markets the lowest and well under the long-term average.

[1] US Equity Cyclically Adjusted P/E on S&P 500 Index. Source: Robert Shiller, Yale University, and Meketa Investment Group. Developed and Emerging Market Equity (MSCI EAFE and EM Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly "as reported" earnings over the previous ten years. Data is as of September 30, 2022. The average line is the long-term average of the US, EM, and EAFE PE values from December 1999 to the recent month-end respectively.

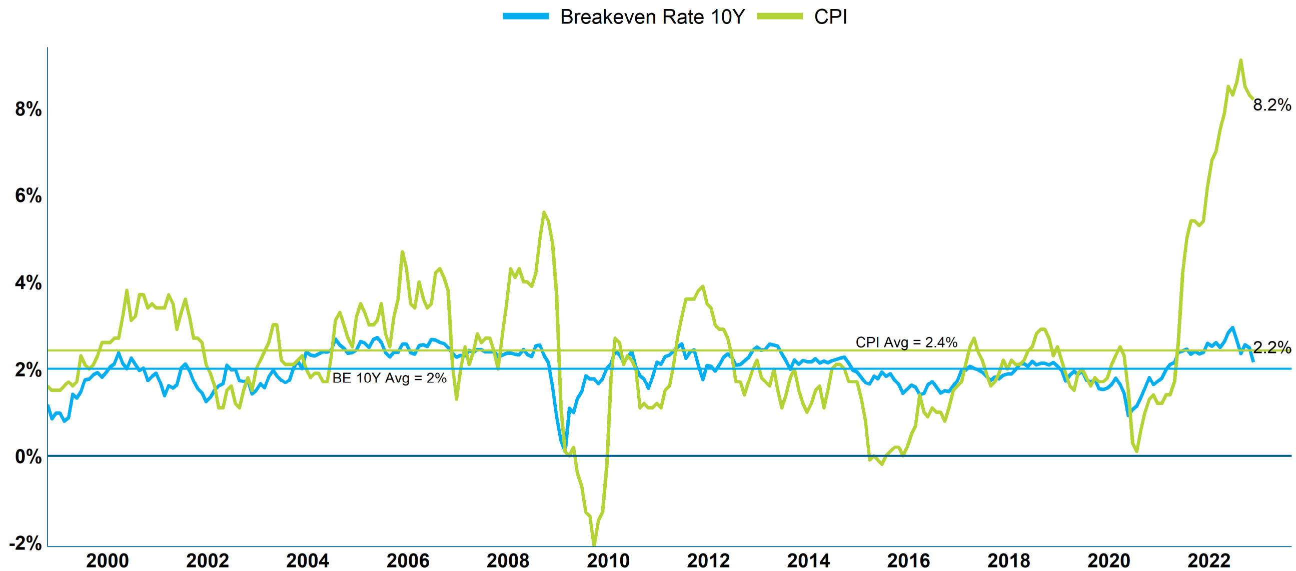
US Yield Curve[1]



- Rates across the yield curve remain far higher than at the start of the year.
- In September, rates rose across the yield curve, finishing the quarter significantly higher. Yields on two-year Treasuries increased 0.79% just in the month of September bring the quarterly increase to 1.32%, while ten-year Treasuries rose 0.64% for the month and 0.82% for the quarter.
- The Fed remains strongly committed to fighting inflation, as it increased rates another 75 basis points to a range of 3.0% and 3.25%. This was the fifth increase this year and the third consecutive increase of this amount.
- The yield spread between two-year and ten-year Treasuries remained negative, finishing September at -0.44%. Inversions in the yield curve have historically often preceded recessions.

[1] Source: Bloomberg. Data is as of September 30, 2022.

Ten-Year Breakeven Inflation and CPI[1]



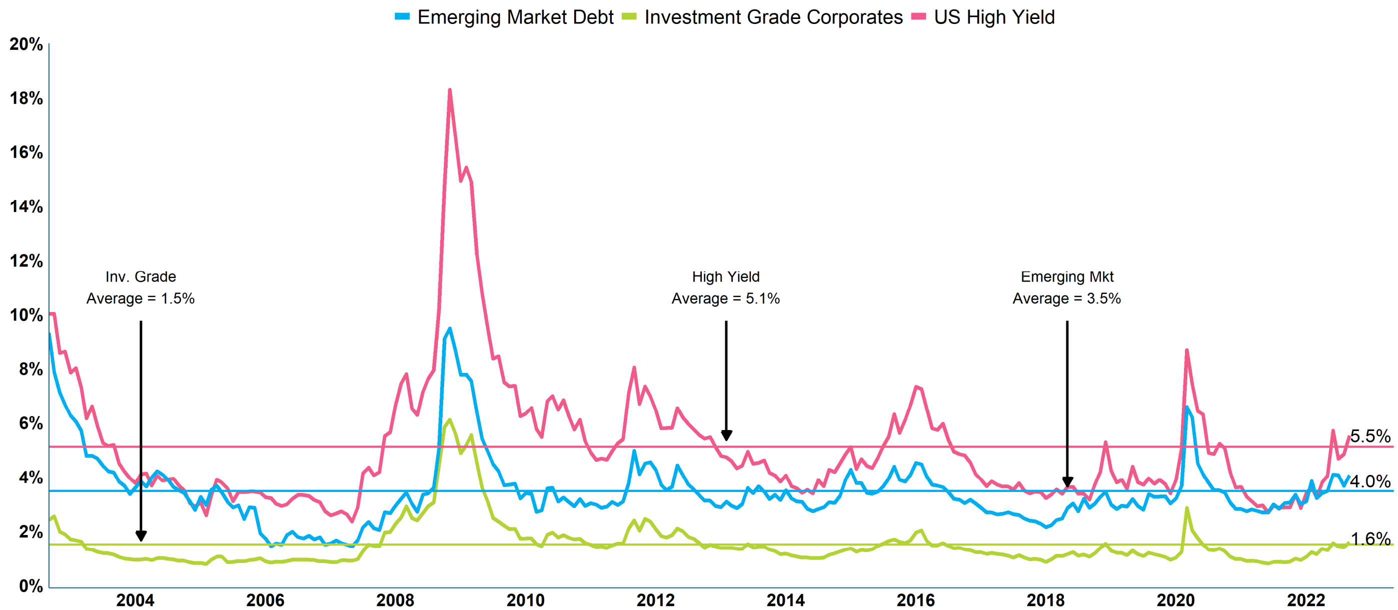
→ Inflation expectations (breakevens) declined for the month and finished the quarter slightly below the long-run average on the belief that tighter monetary policy would lower long-run inflation.

→ Trailing twelve-month CPI declined in September (8.2% versus 8.3%) but surprised markets by coming in above expectations.

→ Over the last year rising prices for energy (particularly oil), food, housing, and for new and used cars remain key drivers of inflation.

[1] Source: Bloomberg. Data is as of September 30, 2022. The CPI and 10 Year Breakeven average lines denote the average values from August 1998 to the present month-end respectively. Breakeven values represent month-end values for comparative purposes.

Credit Spreads vs. US Treasury Bonds[1]



- → Credit spreads (the spread above a comparable maturity Treasury) widened in September, finishing the quarter above long-term averages. Fears related to the impact of tighter monetary policy on economic growth was a key driver of wider spreads.
- → In the US, spreads for high yield increased sharply (5.5% versus 4.8%), with investment grade spreads rising more modestly (1.6% versus 1.4%). Emerging market spreads also increased (4.0% versus 3.6%).

[1] Sources: Bloomberg. Data is as of September 30, 2022. Average lines denote the average of the investment grade, high yield, and emerging market spread values from August 2000 to the recent month-end respectively.

Global Economic Outlook

In their October update, the IMF maintained lowered global growth forecasts, driven by the economic impacts of persistent inflation and corresponding tighter policy, as well as issues related to the war in Ukraine and the lingering pandemic.

→ The IMF forecasts global GDP growth to come in at 3.2% in 2022 (like the July estimate) and 2.7% in 2023 (0.2% below the prior estimate).

→ In advanced economies, GDP is projected to grow 2.4% in 2022 and 1.1% in 2023. The US saw another downgrade in the 2022 (1.6% versus 2.3%) forecast largely due to accelerated policy tightening, given persistently high inflation. The euro area saw an upgrade in expected growth (3.1% versus 2.6%) on substantial fiscal stimulus in 2022 but a downgrade in 2023 (0.5% versus 1.2%) as rising energy prices weigh on the region that is a net importer of energy. The Japanese economy is expected to grow 1.7% this year and 1.6% in 2023.

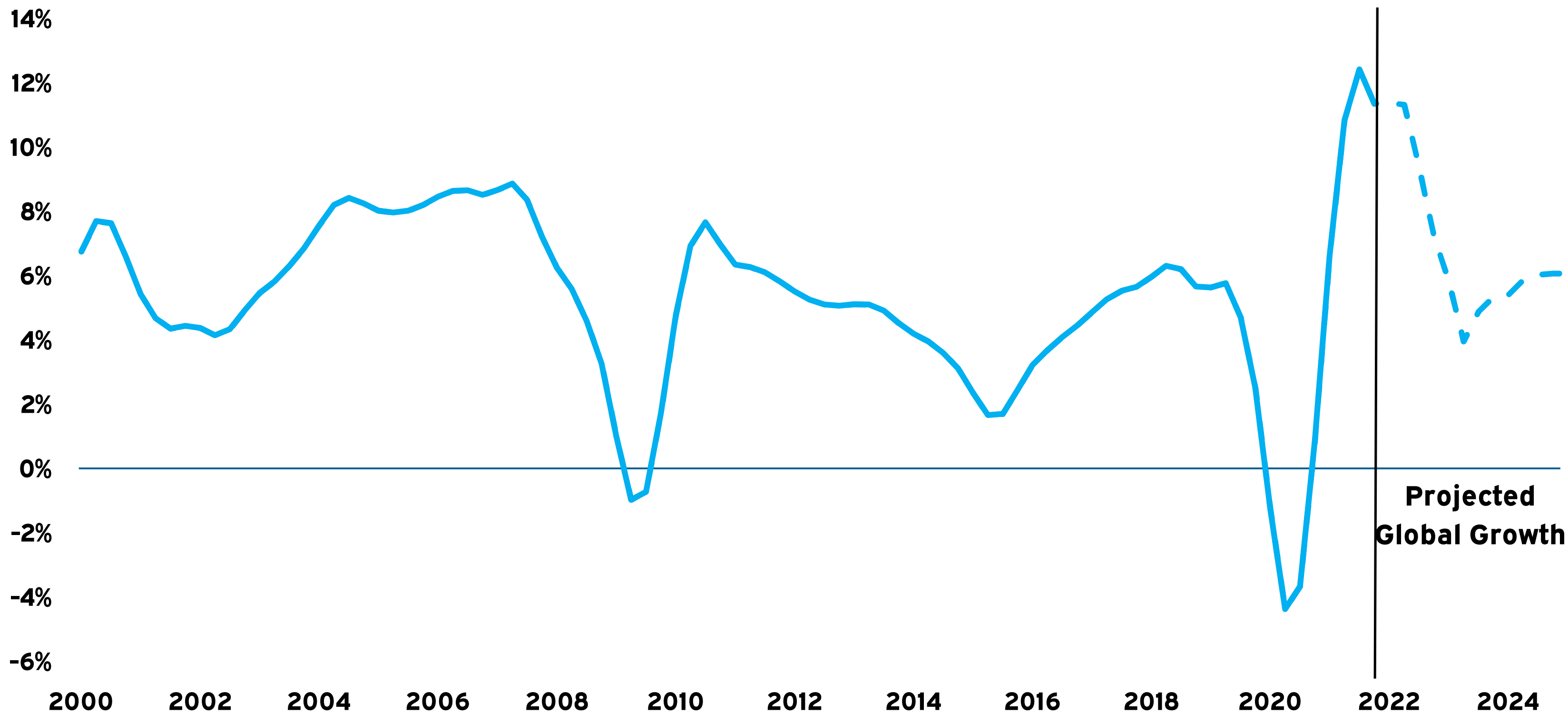
→ Growth projections for emerging markets are higher than developed markets, at 3.7% in 2022 and 2023. China's growth was downgraded for 2022 (3.2% versus 3.3%) and 2023 (4.4% versus 4.6%) given tight COVID-19 restrictions and continued property sector problems.

→ The global inflation forecast was significantly increased for 2022 (8.8% versus 7.4%).

	Real GDP (%)[1]			Inflation (%)[1]		
	IMF 2022 Forecast	IMF 2023 Forecast	Actual 10 Year Average	IMF 2022 Forecast	IMF 2023 Forecast	Actual 10 Year Average
World	3.2	2.7	3.2	8.8	6.5	3.6
Advanced Economies	2.4	1.1	1.6	7.2	4.3	1.6
US	1.6	1.0	2.1	8.1	3.5	2.0
Euro Area	3.1	0.5	1.0	8.3	5.7	1.3
Japan	1.7	1.6	0.8	2.0	1.4	0.4
Emerging Economies	3.7	3.7	4.4	9.9	8.1	5.3
China	3.2	4.4	7.3	2.2	2.2	2.4

[1] Source: IMF World Economic Outlook. Real GDP and Inflation forecasts from October 2022 Update. "Actual 10 Year Average" represents data from 2012 to 2021.

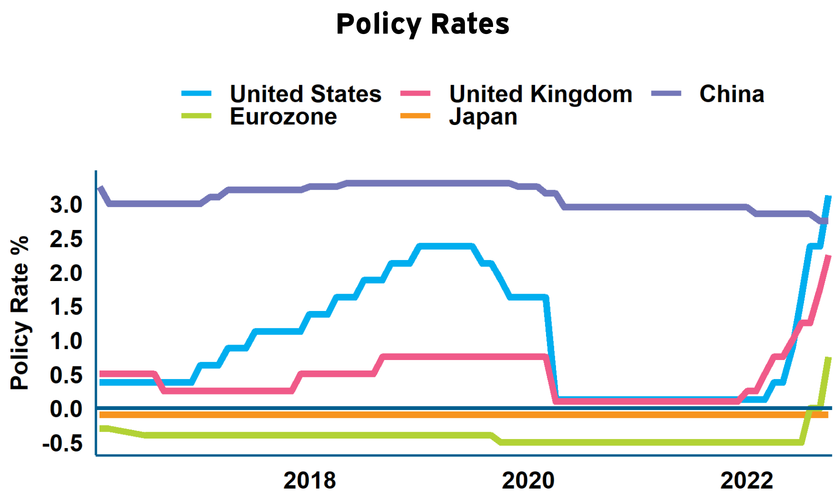
Global Nominal Gross Domestic Product (GDP) Growth[1]

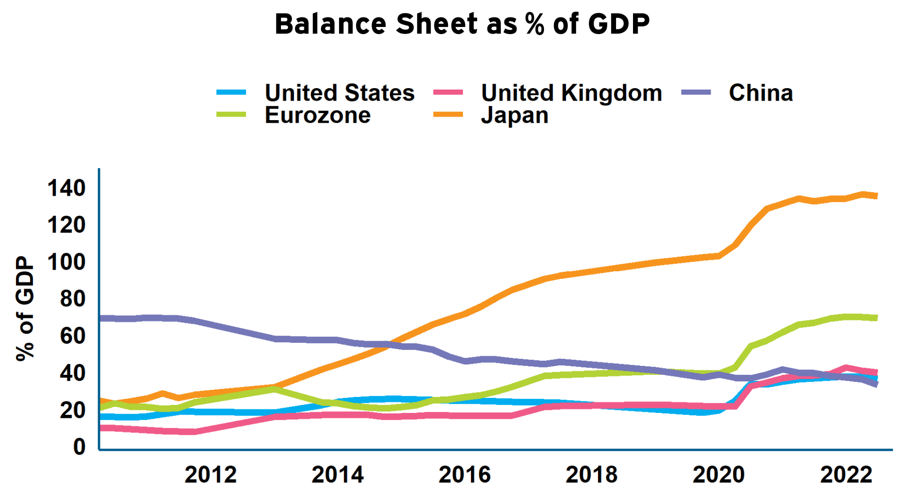


- → Global economies are expected to slow in 2022 compared to 2021, with risks of recession increasing given persistently high inflation and related tighter monetary policy.
- → The delicate balancing act of central banks trying to reduce inflation without dramatically impacting growth will remain key.

[1] Source: Oxford Economics (World GDP, US$ prices & PPP exchange rate, nominal, % change YoY). Updated September 2022. Nominal expectations for GDP remain much higher than real GDP expectations given the elevated inflation levels.

Central Bank Response[1]

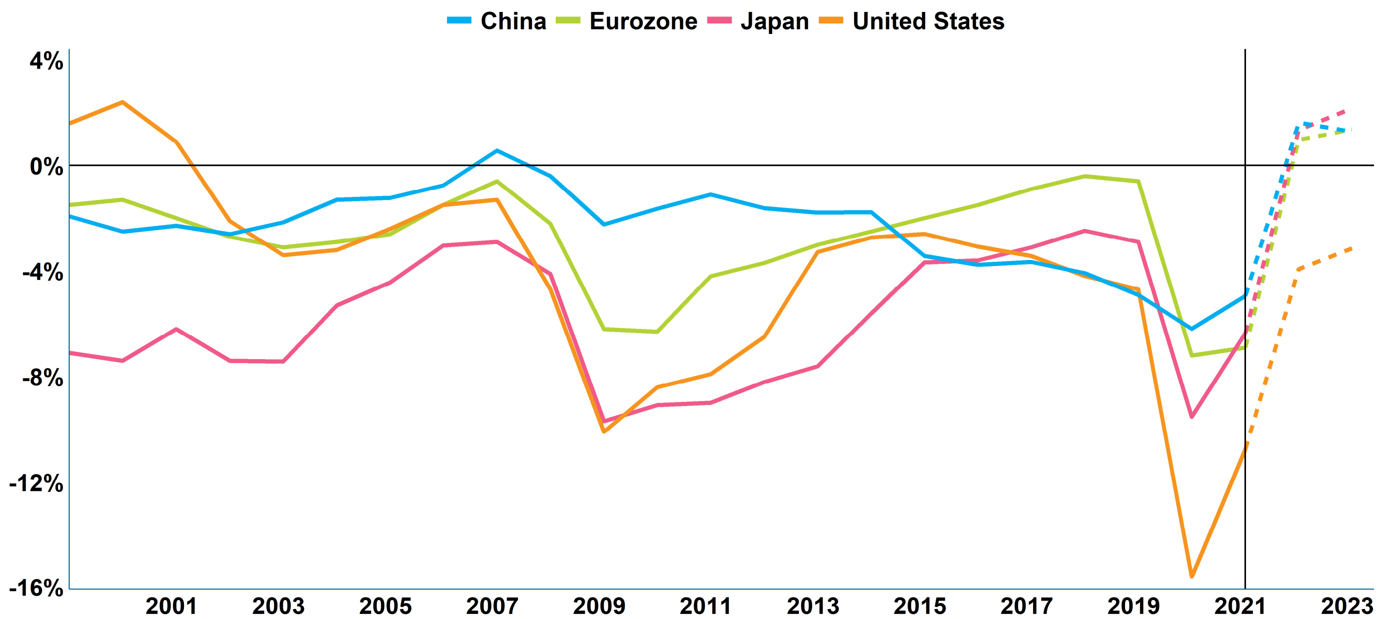




- → After global central banks took extraordinary action to support economies during the pandemic, including policy rate cuts and emergency stimulus through quantitative easing (QE), many are now aggressively reducing support in the face of high inflation.
- → The pace of withdrawing support varies across central banks with the US taking a more aggressive approach. The UK is also aggressively increasing rates, but recent talks of easing fiscal policy (this ultimately did not happen) created significant volatility that spilled over into other markets.
- → The one notable central bank outlier is China, where the central bank has lowered rates and reserve requirements in response to slowing growth.
- → The risk remains for a policy error, particularly overtightening, as record inflation, the war in Ukraine, and a tough COVID-19 policy in China could suppress global growth.

[1] Source: Bloomberg. Policy rate data is as of September 30, 2022. China policy rate is defined as the medium-term lending facility 1 year interest rate. Balance sheet as % of GDP is based on quarterly data and is as of June 30, 2022.

Budget Surplus / Deficit as a Percentage of GDP[1]



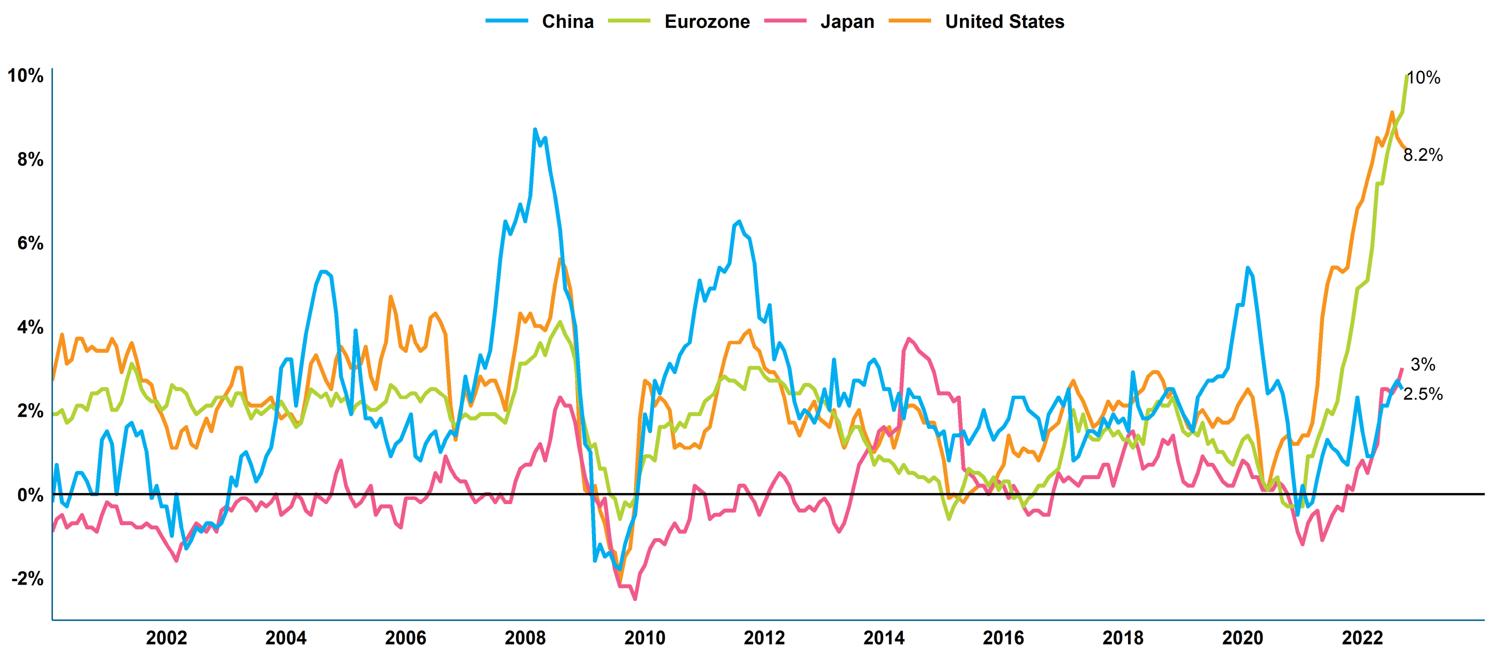
→ Budget deficits as a percentage of GDP drastically increased for major world economies, particularly the US, due to massive fiscal support and the severe economic contraction's effect on tax revenue in 2020 and 2021.

→ As fiscal stimulus programs end, and economic recoveries continue, deficits should improve.

→ Questions remain about how some countries will respond fiscally as inflation, particularly energy prices, weigh on consumers. Policies that undermine central banks' efforts to fight inflation could lead to additional market volatility like was seen in the UK.

[1] Source: Bloomberg. Data is as of September 30, 2022. Projections via IMF Forecasts from October 2022 Report. Dotted lines represent 2022 and 2023 forecasts.

Inflation (CPI Trailing Twelve Months)[1]

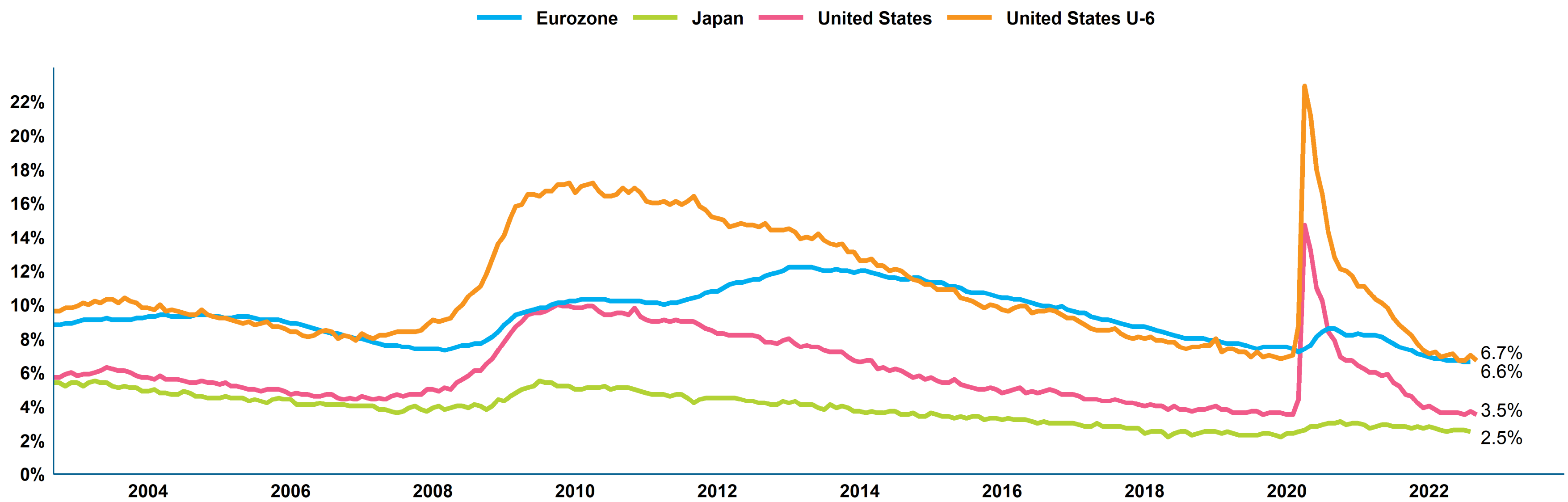


→ Inflation increased dramatically from the lows of the pandemic, particularly in the US and Eurozone where it has reached levels not seen in many decades.

→ Supply issues related to the pandemic, record monetary and fiscal stimulus, strict COVID-19 restrictions in China, and higher prices in many commodities driven by the war in Ukraine have been key global drivers of inflation.

[1] Source: Bloomberg. Data is as of September 2022. The most recent data for Japan and China is as of August 31, 2022.

Unemployment[1]



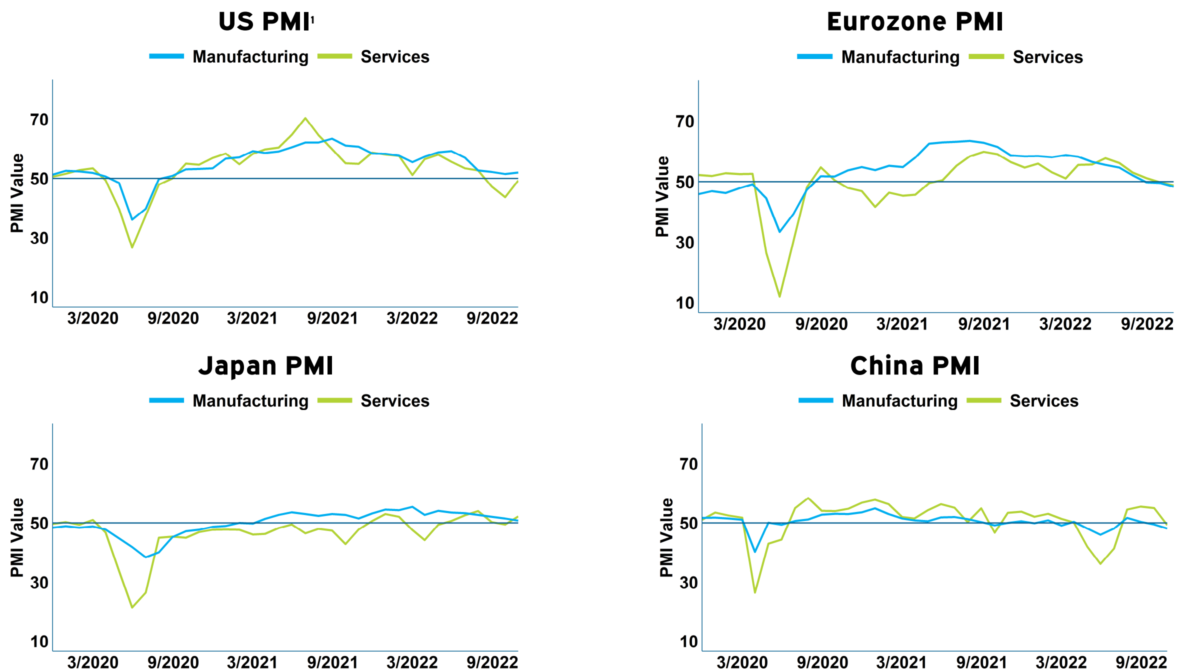
→ As economies have largely reopened, helped by vaccines for the virus, improvements have been seen in the labor market.

→ Despite slowing growth and high inflation the US labor market remains a bright spot. Unemployment in the US, which experienced the steepest rise from the pandemic, declined to pre-pandemic (3.5%) levels. The broader measure (U-6) that includes discouraged and underemployed workers declined but is much higher at 6.7%.

→ The strong labor market and higher wages, although beneficial for workers, motivates the Fed's efforts to fight inflation, likely leading to eventually higher unemployment.

[1] Source: Bloomberg. Data is as of September 2022, for the US. The most recent data for Eurozone and Japanese unemployment is as of August 31, 2022.

Global PMIs



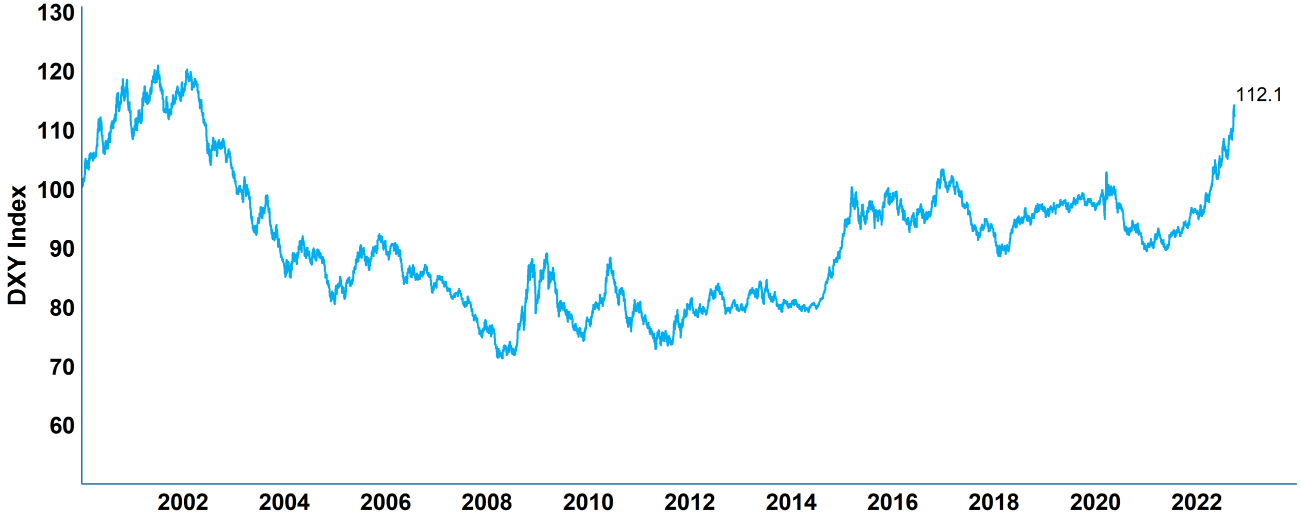
→ After improvements from the lows of the pandemic, Purchasing Managers Indices (PMI), based on surveys of private sector companies, have largely experienced downward pressure recently.

→ Service sector PMIs, except Japan, are all in contraction territory. The US service sector recovered somewhat but remains in negative territory due to weak demand, a sharp decline in new orders, and softening employment.

→ Manufacturing PMIs are also slowing across China and developed markets given declines in demand and inflationary pressures with the Eurozone and China in contraction territory.

[1] Source: Bloomberg. US Markit Services and Manufacturing PMI, Caixin Services and Manufacturing PMI, Eurozone Markit Services and Manufacturing PMI, Jibun Bank Services and Manufacturing PMI. Data is as of September 2022. Readings below 50 represent economic contractions.

US Dollar versus Broad Currencies[1]



- → The US dollar continued to strengthen in September, increasing 7.1% overall for the quarter and reaching levels not seen in two decades.
- → The increased pace of policy tightening, stronger relative growth, and safe-haven flows all contributed to the dollar's strength this year.
- → The euro, yen, pound, and yuan have all experienced significant declines versus the dollar this year, adding to inflation.

[1] Source: Bloomberg. Data as of September 30, 2022.

Summary

Key Trends in 2022:

→ The impacts of record high inflation will remain key, with market volatility likely to remain high.

→ The pace of monetary tightening globally will be faster than previously expected, with the risk of overtightening.

→ Expect growth to slow globally in 2022 and into 2023 to the long-term trend or below. Inflation, monetary policy, and the war will all be key.

→ In the US the end of many fiscal programs is expected to put the burden of continued growth on consumers. Higher energy and food prices will depress consumers' spending in other areas.

→ Valuations have significantly declined in the US to below long-term averages.

→ Outside the US, equity valuations remain lower in both emerging and developed markets, but major risks remain, including continued strength in the US dollar, higher inflation particularly weighing on Europe, and China maintaining its restrictive COVID-19 policies.

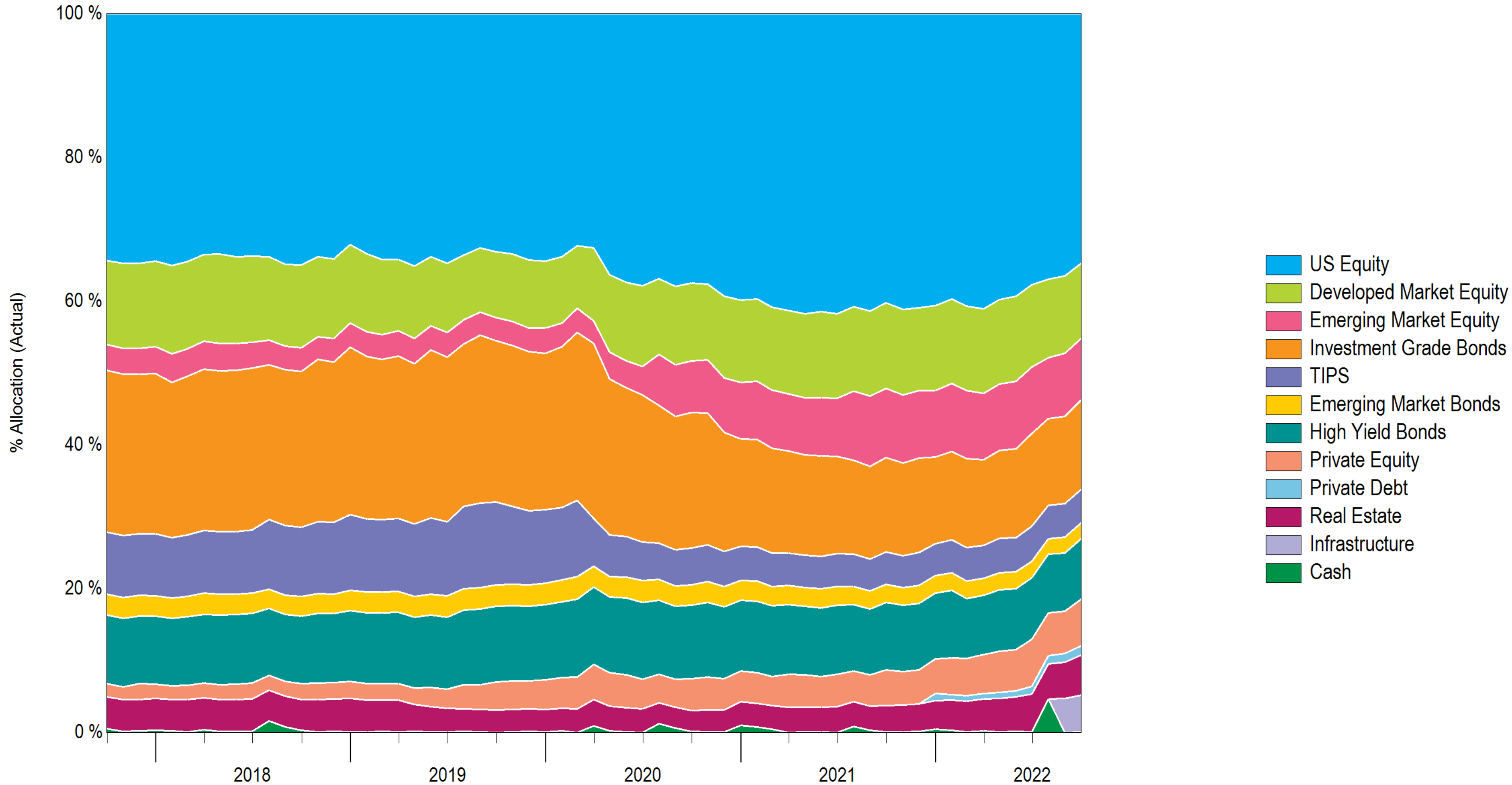
Third Quarter 2022 Investment Review

Retirement System Summary

Allocation vs. Targets and Policy

	Current Balance	Current Allocation	Policy	Policy Range
US Equity	$67,770,174	35%	17%	11% - 23%
Developed Market Equity	$20,516,281	11%	14%	6% - 18%
Emerging Market Equity	$16,624,606	9%	14%	3% - 16%
Investment Grade Bonds	$24,354,586	12%	5%	3% - 10%
TIPS	$9,143,407	5%	5%	3% - 10%
Emerging Market Bonds	$4,333,836	2%	2%	1% - 5%
High Yield Bonds	$16,356,348	8%	5%	2% - 8%
Private Equity	$12,692,147	6%	10%	5% - 15%
Private Debt	$2,542,621	1%	8%	0% - 12%
Real Estate	$10,882,468	6%	10%	3% - 13%
Infrastructure	$10,027,453	5%	10%	0% - 13%
Cash	$143,066	0%	0%	0% - 5%
Total	**$195,386,992**	**100%**	**100%**	

Asset Allocation History
5 Years Ending September 30, 2022



Asset Class Performance Summary

	Market Value ($)	% of Portfolio	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Retirement System (net)	**195,386,992**	**100.0**	**-4.1**	**-17.7**	**-13.8**	**3.7**	**4.3**	**6.1**	**6.9**	**7.3**	**Jul-88**
55% MSCI World & 45% Barclays Aggregate			*-5.5*	*-20.6*	*-17.2*	*1.4*	*3.1*	*5.0*	*6.1*	*6.5*	*Jul-88*
60% MSCI World & 40% Barclays Aggregate			*-5.6*	*-21.1*	*-17.4*	*1.7*	*3.4*	*5.4*	*6.4*	*6.6*	*Jul-88*
InvMetrics Public DB $50mm-$250mm Net Median			*-4.3*	*-17.9*	*-14.1*	*3.7*	*4.8*	*6.5*	*6.4*	*7.2*	*Jul-88*
Domestic Equity Assets (net)	**67,770,174**	**34.7**	**-4.6**	**-23.7**	**-16.1**	**5.2**	**6.2**	**10.1**	**9.0**	**7.5**	**Oct-06**
Russell 3000			*-4.5*	*-24.6*	*-17.6*	*7.7*	*8.6*	*11.4*	*9.9*	*8.4*	*Oct-06*
International Developed Markets Equity Assets (net)	**20,516,281**	**10.5**	**-9.3**	**-26.8**	**-24.8**	**-1.6**	**-0.6**	**3.2**	**--**	**1.7**	**Oct-06**
MSCI EAFE			*-9.4*	*-27.1*	*-25.1*	*-1.8*	*-0.8*	*3.7*	*5.9*	*2.0*	*Oct-06*
International Emerging Markets Equity Assets (net)	**16,624,606**	**8.5**	**-9.4**	**-24.7**	**-24.8**	**1.1**	**0.5**	**--**	**--**	**3.1**	**Jan-15**
MSCI Emerging Markets			*-11.6*	*-27.2*	*-28.1*	*-2.1*	*-1.8*	*1.0*	*8.7*	*1.3*	*Jan-15*
Investment Grade Bonds Assets (net)	**24,354,586**	**12.5**	**-4.8**	**-14.7**	**-14.7**	**-3.3**	**-0.3**	**0.9**	**3.1**	**5.3**	**Jul-88**
Bloomberg US Aggregate TR			*-4.8*	*-14.6*	*-14.6*	*-3.3*	*-0.3*	*0.9*	*3.1*	*5.3*	*Jul-88*
High Yield Bond Assets (net)	**16,356,348**	**8.4**	**-0.1**	**-12.1**	**-11.7**	**-0.2**	**1.7**	**3.6**	**--**	**5.6**	**Sep-03**
Bloomberg US High Yield TR			*-0.6*	*-14.7*	*-14.1*	*-0.5*	*1.6*	*3.9*	*7.4*	*6.5*	*Sep-03*
TIPS Assets (net)	**9,143,407**	**4.7**	**-5.1**	**-13.7**	**-11.6**	**0.7**	**1.9**	**0.9**	**--**	**3.2**	**Oct-05**
Bloomberg US TIPS TR			*-5.1*	*-13.6*	*-11.6*	*0.8*	*2.0*	*1.0*	*3.8*	*3.3*	*Oct-05*
Emerging Market Debt Assets (net)	**4,333,836**	**2.2**	**-5.1**	**-25.1**	**-26.2**	**-7.2**	**-3.1**	**--**	**--**	**0.5**	**Jan-15**
JP Morgan EMBI Global Diversified			*-4.6*	*-23.9*	*-24.3*	*-7.2*	*-2.6*	*1.1*	*6.3*	*0.8*	*Jan-15*
Open-Ended Real Estate (net)	**7,669,403**	**3.9**	**0.6**	**15.6**	**24.6**	**14.1**	**11.6**	**11.7**	**8.3**	**8.8**	**Oct-95**
NCREIF ODCE			*0.5*	*13.1*	*22.1*	*12.4*	*10.2*	*10.9*	*8.8*	*9.4*	*Oct-95*
Total Closed End Real Estate (net)	**3,213,065**	**1.6**	**1.4**	**8.9**	**15.0**	**9.2**	**-5.3**	**--**	**--**	**4.3**	**Jan-13**
Private Equity Assets (net)	**12,692,147**	**6.5**	**0.2**	**11.2**	**14.6**	**25.2**	**19.6**	**11.3**	**--**	**8.8**	**Oct-06**
Private Debt Assets (net)	**2,542,621**	**1.3**	**2.4**	**8.8**	**--**	**--**	**--**	**--**	**--**	**8.8**	**Dec-21**
Infrastructure (net)	**10,027,453**	**5.1**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**0.3**	**Aug-22**
Cash (net)	**143,066**	**0.1**									

Trailing Performance

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Retirement System	**195,386,992**	**100.0**	**--**	**-4.1**	**-17.7**	**-13.8**	**3.7**	**4.3**	**6.1**	**6.9**	**7.3**	**Jul-88**
55% MSCI World & 45% Barclays Aggregate				*-5.5*	*-20.6*	*-17.2*	*1.4*	*3.1*	*5.0*	*6.1*	*6.5*	*Jul-88*
60% MSCI World & 40% Barclays Aggregate				*-5.6*	*-21.1*	*-17.4*	*1.7*	*3.4*	*5.4*	*6.4*	*6.6*	*Jul-88*
InvMetrics Public DB $50mm-$250mm Net Median				*-4.3*	*-17.9*	*-14.1*	*3.7*	*4.8*	*6.5*	*6.4*	*7.2*	*Jul-88*
Domestic Equity Assets	**67,770,174**	**34.7**	**34.7**	**-4.6**	**-23.7**	**-16.1**	**5.2**	**6.2**	**10.1**	**9.0**	**7.5**	**Oct-06**
Russell 3000				*-4.5*	*-24.6*	*-17.6*	*7.7*	*8.6*	*11.4*	*9.9*	*8.4*	*Oct-06*
RhumbLine S&P 500 Index	21,264,911	10.9	31.4	-4.9	-23.9	-15.5	8.1	9.2	11.7	9.9	6.6	Mar-99
S&P 500				*-4.9*	*-23.9*	*-15.5*	*8.2*	*9.2*	*11.7*	*9.8*	*6.6*	*Mar-99*
eV US Passive S&P 500 Equity Net Median				*-4.9*	*-23.9*	*-15.5*	*8.0*	*9.2*	*11.6*	*9.8*	*6.5*	*Mar-99*
Frontier Capital Appreciation	19,545,028	10.0	28.8	-4.6	-26.2	-21.9	4.2	3.5	--	--	8.9	Feb-13
Russell 2500 Growth				*-0.1*	*-29.5*	*-29.4*	*4.8*	*6.3*	*10.3*	*10.8*	*9.7*	*Feb-13*
eV US Small-Mid Cap Growth Equity Net Median				*-1.0*	*-29.9*	*-28.0*	*6.7*	*8.6*	*10.5*	*11.2*	*9.9*	*Feb-13*
RhumbLine HEDI	26,960,235	13.8	39.8	-4.5	-21.8	-12.6	--	--	--	--	5.6	Nov-20
Russell 1000 HEDI Moderate GR USD				*-4.5*	*-21.8*	*-12.6*	*7.5*	*10.6*	*12.6*	*10.9*	*5.7*	*Nov-20*
eV US Large Cap Core Equity Gross Median				*-4.8*	*-22.8*	*-15.0*	*7.5*	*8.9*	*11.4*	*10.1*	*6.7*	*Nov-20*

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
International Developed Markets Equity Assets	**20,516,281**	**10.5**	**10.5**	**-9.3**	**-26.8**	**-24.8**	**-1.6**	**-0.6**	**3.2**	**--**	**1.7**	**Oct-06**
MSCI EAFE				*-9.4*	*-27.1*	*-25.1*	*-1.8*	*-0.8*	*3.7*	*5.9*	*2.0*	*Oct-06*
RhumbLine MSCI EAFE Index	20,516,281	10.5	100.0	-9.3	-26.8	-24.8	-1.6	-0.6	--	--	1.0	Aug-14
MSCI EAFE				*-9.4*	*-27.1*	*-25.1*	*-1.8*	*-0.8*	*3.7*	*5.9*	*0.8*	*Aug-14*
eV EAFE All Cap Equity Net Median				*-9.3*	*-27.2*	*-26.0*	*-1.6*	*-0.9*	*4.2*	*6.6*	*1.5*	*Aug-14*
International Emerging Markets Equity Assets	**16,624,606**	**8.5**	**8.5**	**-9.4**	**-24.7**	**-24.8**	**1.1**	**0.5**	**--**	**--**	**3.1**	**Jan-15**
MSCI Emerging Markets				*-11.6*	*-27.2*	*-28.1*	*-2.1*	*-1.8*	*1.0*	*8.7*	*1.3*	*Jan-15*
DFA Emerging Markets	8,497,021	4.3	51.1	-10.9	-24.4	-23.7	0.3	-0.7	--	--	2.1	Jan-15
MSCI Emerging Markets				*-11.6*	*-27.2*	*-28.1*	*-2.1*	*-1.8*	*1.0*	*8.7*	*1.3*	*Jan-15*
eV Emg Mkts All Cap Equity Net Median				*-10.7*	*-27.9*	*-29.2*	*-1.7*	*-1.5*	*1.6*	*8.8*	*1.5*	*Jan-15*
Driehaus Emerging Market Equity	8,127,585	4.2	48.9	-7.8	-25.1	-25.8	1.6	1.4	--	--	4.0	Jan-15
MSCI Emerging Markets				*-11.6*	*-27.2*	*-28.1*	*-2.1*	*-1.8*	*1.0*	*8.7*	*1.3*	*Jan-15*
eV Emg Mkts All Cap Equity Net Median				*-10.7*	*-27.9*	*-29.2*	*-1.7*	*-1.5*	*1.6*	*8.8*	*1.5*	*Jan-15*
Investment Grade Bonds Assets	**24,354,586**	**12.5**	**12.5**	**-4.8**	**-14.7**	**-14.7**	**-3.3**	**-0.3**	**0.9**	**3.1**	**5.3**	**Jul-88**
Bloomberg US Aggregate TR				*-4.8*	*-14.6*	*-14.6*	*-3.3*	*-0.3*	*0.9*	*3.1*	*5.3*	*Jul-88*
SSgA U.S. Aggregate Bond Index	24,354,586	12.5	100.0	-4.8	-14.7	-14.7	-3.3	-0.3	0.9	3.1	3.5	May-01
Bloomberg US Aggregate TR				*-4.8*	*-14.6*	*-14.6*	*-3.3*	*-0.3*	*0.9*	*3.1*	*3.5*	*May-01*
eV US Core Fixed Inc Net Median				*-4.6*	*-14.6*	*-14.6*	*-3.0*	*0.0*	*1.1*	*3.3*	*3.8*	*May-01*

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
High Yield Bond Assets	**16,356,348**	**8.4**	**8.4**	**-0.1**	**-12.1**	**-11.7**	**-0.2**	**1.7**	**3.6**	**--**	**5.6**	**Sep-03**
Bloomberg US High Yield TR				*-0.6*	*-14.7*	*-14.1*	*-0.5*	*1.6*	*3.9*	*7.4*	*6.5*	*Sep-03*
Shenkman Capital	16,356,348	8.4	100.0	-0.1	-12.0	-11.6	-0.2	1.8	3.7	--	5.5	Apr-06
Bloomberg US High Yield TR				*-0.6*	*-14.7*	*-14.1*	*-0.5*	*1.6*	*3.9*	*7.4*	*5.9*	*Apr-06*
eV US High Yield Fixed Inc Net Median				*-0.5*	*-13.6*	*-12.9*	*-0.3*	*1.6*	*3.6*	*6.7*	*5.4*	*Apr-06*
TIPS Assets	**9,143,407**	**4.7**	**4.7**	**-5.1**	**-13.7**	**-11.6**	**0.7**	**1.9**	**0.9**	**--**	**3.2**	**Oct-05**
Bloomberg US TIPS TR				*-5.1*	*-13.6*	*-11.6*	*0.8*	*2.0*	*1.0*	*3.8*	*3.3*	*Oct-05*
SSgA TIPS Index-NL	9,143,407	4.7	100.0	-5.1	-13.7	-11.6	0.7	1.9	0.9	--	3.2	Oct-05
Bloomberg US TIPS TR				*-5.1*	*-13.6*	*-11.6*	*0.8*	*2.0*	*1.0*	*3.8*	*3.3*	*Oct-05*
eV US TIPS / Inflation Fixed Inc Net Median				*-5.0*	*-13.4*	*-11.5*	*0.9*	*2.0*	*1.0*	*3.8*	*3.2*	*Oct-05*
Emerging Market Debt Assets	**4,333,836**	**2.2**	**2.2**	**-5.1**	**-25.1**	**-26.2**	**-7.2**	**-3.1**	**--**	**--**	**0.5**	**Jan-15**
JP Morgan EMBI Global Diversified				*-4.6*	*-23.9*	*-24.3*	*-7.2*	*-2.6*	*1.1*	*6.3*	*0.8*	*Jan-15*
Payden Emerging Market Bond	4,333,836	2.2	100.0	-5.1	-25.1	-26.2	-7.2	-3.1	--	--	0.5	Jan-15
JP Morgan EMBI Global Diversified				*-4.6*	*-23.9*	*-24.3*	*-7.2*	*-2.6*	*1.1*	*6.3*	*0.8*	*Jan-15*
Open-Ended Real Estate	**7,669,403**	**3.9**	**3.9**	**0.6**	**15.6**	**24.6**	**14.1**	**11.6**	**11.7**	**8.3**	**8.8**	**Oct-95**
NCREIF ODCE				*0.5*	*13.1*	*22.1*	*12.4*	*10.2*	*10.9*	*8.8*	*9.4*	*Oct-95*
Clarion Partners	7,669,403	3.9	100.0	0.6	15.6	24.6	14.1	11.6	11.7	8.3	8.3	Oct-02
NCREIF ODCE				*0.5*	*13.1*	*22.1*	*12.4*	*10.2*	*10.9*	*8.8*	*8.8*	*Oct-02*

	Market Value ($)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	20 Yrs (%)	Inception (%)	Inception Date
Total Closed End Real Estate	**3,213,065**	**1.6**	**1.6**	**1.4**	**8.9**	**15.0**	**9.2**	**-5.3**	**--**	**--**	**4.3**	**Jan-13**
Rockwood Capital Real Estate Partners Fund XI, L.P.	3,213,065	1.6	100.0	1.4	8.9	15.0	--	--	--	--	8.0	Dec-19
NCREIF-ODCE				*0.5*	*13.1*	*22.1*	*12.4*	*10.2*	*10.9*	*8.8*	*13.1*	*Dec-19*
Private Equity Assets	**12,692,147**	**6.5**	**6.5**	**0.2**	**11.2**	**14.6**	**25.2**	**19.6**	**11.3**	**--**	**8.8**	**Oct-06**
North American Strategic Partners 2006	18,450	0.0	0.1									
Ironsides Partnership Fund IV	2,564,225	1.3	20.2									
Ironsides Direct Investment Fund IV	2,097,102	1.1	16.5									
Ironsides Partnership Fund V, L.P.	1,599,350	0.8	12.6									
Ironsides Direct Investment Fund V, L.P.	3,145,527	1.6	24.8									
HarbourVest 2019 Global Fund	3,267,493	1.7	25.7									
Private Debt Assets	**2,542,621**	**1.3**	**1.3**	**2.4**	**8.8**	**--**	**--**	**--**	**--**	**--**	**8.8**	**Dec-21**
NB Private Debt Fund IV	2,542,621	1.3	100.0									
Infrastructure	**10,027,453**	**5.1**	**5.1**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**0.3**	**Aug-22**
IFM Global Infrastructure	10,027,453	5.1	100.0	--	--	--	--	--	--	--	0.3	Aug-22

Closed End Real Estate, Private Equity, and Private Debt market values are as of June 30, 2022 and adjusted for subsequent flows.

North American Strategic Partners market value is cash adjusted as of December 31, 2021. The fund is currently in the liquidation process and will only be reported on annually (as of December 31).

Calendar Year Performance

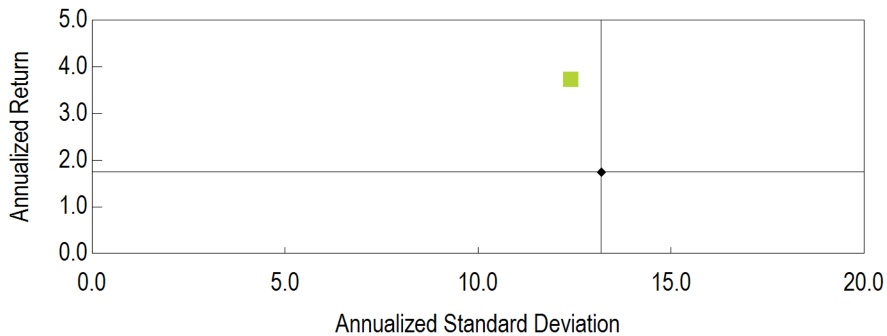
	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)
Total Retirement System	**13.8**	**14.2**	**17.5**	**-4.5**	**13.0**	**8.7**	**-0.2**	**6.3**	**14.0**	**10.9**
55% MSCI World & 45% Barclays Aggregate	*10.9*	*12.9*	*19.1*	*-4.6*	*13.6*	*5.5*	*0.0*	*5.5*	*13.0*	*10.7*
60% MSCI World & 40% Barclays Aggregate	*12.0*	*13.3*	*20.0*	*-5.1*	*14.5*	*5.7*	*-0.1*	*5.4*	*14.5*	*11.3*
Domestic Equity Assets	**24.8**	**13.4**	**27.6**	**-6.9**	**20.1**	**14.6**	**-1.6**	**13.1**	**33.1**	**15.3**
Russell 3000	*25.7*	*20.9*	*31.0*	*-5.2*	*21.1*	*12.7*	*0.5*	*12.6*	*33.6*	*16.4*
RhumbLine S&P 500 Index	28.6	18.3	31.4	-4.4	21.8	11.9	1.4	13.6	32.2	16.0
S&P 500	*28.7*	*18.4*	*31.5*	*-4.4*	*21.8*	*12.0*	*1.4*	*13.7*	*32.4*	*16.0*
Frontier Capital Appreciation	18.2	18.1	28.9	-13.9	19.1	20.5	-6.5	12.4	--	--
Russell 2500 Growth	*5.0*	*40.5*	*32.7*	*-7.5*	*24.5*	*9.7*	*-0.2*	*7.1*	*40.6*	*16.1*
RhumbLine HEDI	25.5	--	--	--	--	--	--	--	--	--
Russell 1000 HEDI Moderate GR USD	*25.5*	*18.5*	*32.7*	*-0.9*	*23.4*	*11.4*	*4.8*	*15.4*	*30.9*	*13.9*
International Developed Markets Equity Assets	**11.5**	**7.9**	**22.3**	**-13.5**	**24.9**	**1.4**	**-0.8**	**-8.7**	**21.2**	**15.0**
MSCI EAFE	*11.3*	*7.8*	*22.0*	*-13.8*	*25.0*	*1.0*	*-0.8*	*-4.9*	*22.8*	*17.3*
RhumbLine MSCI EAFE Index	11.5	7.9	22.3	-13.5	24.9	1.4	-0.8	--	--	--
MSCI EAFE	*11.3*	*7.8*	*22.0*	*-13.8*	*25.0*	*1.0*	*-0.8*	*-4.9*	*22.8*	*17.3*
International Emerging Markets Equity Assets	**2.3**	**21.1**	**20.7**	**-15.4**	**39.7**	**9.4**	**-12.7**	**--**	**--**	**--**
MSCI Emerging Markets	*-2.5*	*18.3*	*18.4*	*-14.6*	*37.3*	*11.2*	*-14.9*	*-2.2*	*-2.6*	*18.2*
DFA Emerging Markets	5.8	13.9	16.0	-15.2	36.6	12.4	-14.9	--	--	--
MSCI Emerging Markets	*-2.5*	*18.3*	*18.4*	*-14.6*	*37.3*	*11.2*	*-14.9*	*-2.2*	*-2.6*	*18.2*
Driehaus Emerging Market Equity	-1.5	28.0	25.3	-15.6	43.0	6.5	-10.6	--	--	--
MSCI Emerging Markets	*-2.5*	*18.3*	*18.4*	*-14.6*	*37.3*	*11.2*	*-14.9*	*-2.2*	*-2.6*	*18.2*

	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)
Investment Grade Bonds Assets	**-1.6**	**7.5**	**8.7**	**0.0**	**3.6**	**2.6**	**0.6**	**6.0**	**-2.0**	**4.3**
Bloomberg US Aggregate TR	*-1.5*	*7.5*	*8.7*	*0.0*	*3.5*	*2.6*	*0.5*	*6.0*	*-2.0*	*4.2*
SSgA U.S. Aggregate Bond Index	-1.6	7.5	8.7	0.0	3.6	2.6	0.6	6.0	-2.0	4.3
Bloomberg US Aggregate TR	*-1.5*	*7.5*	*8.7*	*0.0*	*3.5*	*2.6*	*0.5*	*6.0*	*-2.0*	*4.2*
High Yield Bond Assets	**4.0**	**6.3**	**14.0**	**-1.8**	**6.5**	**12.6**	**-2.3**	**2.9**	**6.4**	**12.4**
Bloomberg US High Yield TR	*5.3*	*7.1*	*14.3*	*-2.1*	*7.5*	*17.1*	*-4.5*	*2.5*	*7.4*	*15.8*
Shenkman Capital	4.0	6.3	14.0	-1.8	6.5	12.6	-2.3	2.9	6.4	12.4
Bloomberg US High Yield TR	*5.3*	*7.1*	*14.3*	*-2.1*	*7.5*	*17.1*	*-4.5*	*2.5*	*7.4*	*15.8*
TIPS Assets	**5.8**	**10.9**	**8.4**	**-1.4**	**3.0**	**4.7**	**-1.4**	**3.6**	**-8.6**	**6.9**
Bloomberg US TIPS TR	*6.0*	*11.0*	*8.4*	*-1.3*	*3.0*	*4.7*	*-1.4*	*3.6*	*-8.6*	*7.0*
SSgA TIPS Index-NL	5.8	10.9	8.4	-1.4	3.0	4.7	-1.4	3.6	-8.6	6.9
Bloomberg US TIPS TR	*6.0*	*11.0*	*8.4*	*-1.3*	*3.0*	*4.7*	*-1.4*	*3.6*	*-8.6*	*7.0*
Emerging Market Debt Assets	**-2.4**	**6.2**	**16.5**	**-7.0**	**12.0**	**11.5**	**-0.8**	**--**	**--**	**--**
JP Morgan EMBI Global Diversified	*-1.8*	*5.3*	*15.0*	*-4.3*	*10.3*	*10.2*	*1.2*	*7.4*	*-5.3*	*17.4*
Payden Emerging Market Bond	-2.4	6.2	16.5	-7.0	12.0	11.5	-0.8	--	--	--
JP Morgan EMBI Global Diversified	*-1.8*	*5.3*	*15.0*	*-4.3*	*10.3*	*10.2*	*1.2*	*7.4*	*-5.3*	*17.4*
Open-Ended Real Estate	**23.4**	**2.2**	**7.3**	**8.6**	**7.9**	**9.1**	**15.7**	**13.2**	**12.8**	**10.9**
NCREIF ODCE	*22.2*	*1.2*	*5.3*	*8.3*	*7.6*	*8.8*	*15.1*	*12.5*	*13.9*	*10.9*
Clarion Partners	23.4	2.2	7.3	8.6	7.9	9.1	15.7	13.2	12.8	10.9
NCREIF ODCE	*22.2*	*1.2*	*5.3*	*8.3*	*7.6*	*8.8*	*15.1*	*12.5*	*13.9*	*10.9*

	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)	2013 (%)	2012 (%)
Total Closed End Real Estate	**14.3**	**-5.3**	**-38.2**	**-1.8**	**15.1**	**9.5**	**23.8**	**13.3**	**18.8**	--
Rockwood Capital Real Estate Partners Fund XI, L.P.	14.3	0.0	--	--	--	--	--	--	--	--
NCREIF-ODCE	*22.2*	*1.2*	*5.3*	*8.3*	*7.6*	*8.8*	*15.0*	*12.5*	*13.9*	*10.9*
Private Equity Assets	**39.5**	**22.9**	**17.7**	**10.2**	**-5.3**	**-2.8**	**8.6**	**5.5**	**9.1**	**12.2**
North American Strategic Partners 2006										
Ironsides Partnership Fund IV										
Ironsides Direct Investment Fund IV										
Ironsides Partnership Fund V, L.P.										
Ironsides Direct Investment Fund V, L.P.										
HarbourVest 2019 Global Fund										
Private Debt Assets	--	--	--	--	--	--	--	--	--	--
NB Private Debt Fund IV										
Infrastructure	--	--	--	--	--	--	--	--	--	--
IFM Global Infrastructure	--	--	--	--	--	--	--	--	--	--
Cash										

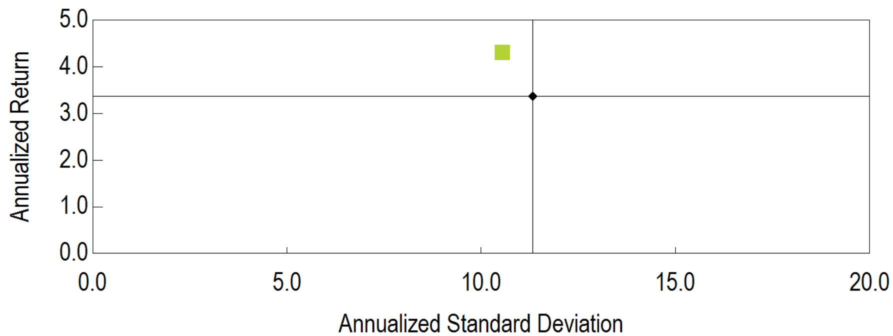
Private Debt and Infrastructure Aggregate returns will be shown after the first full year of performance.

Annualized Return vs. Annualized Standard Deviation
3 Years Ending September 30, 2022



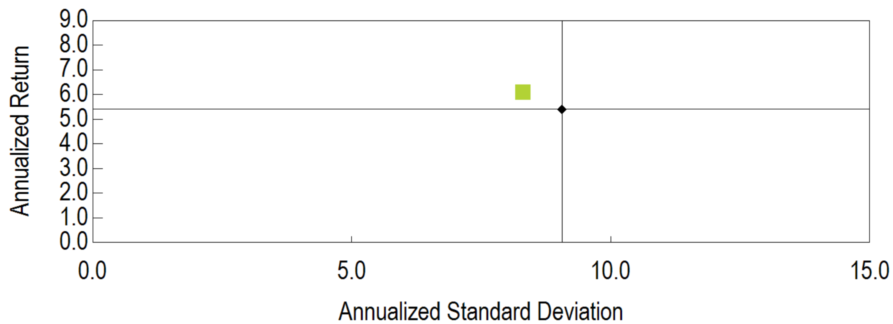
- Total Retirement System
- 60% MSCI World & 40% Barclays Aggregate

Annualized Return vs. Annualized Standard Deviation
5 Years Ending September 30, 2022



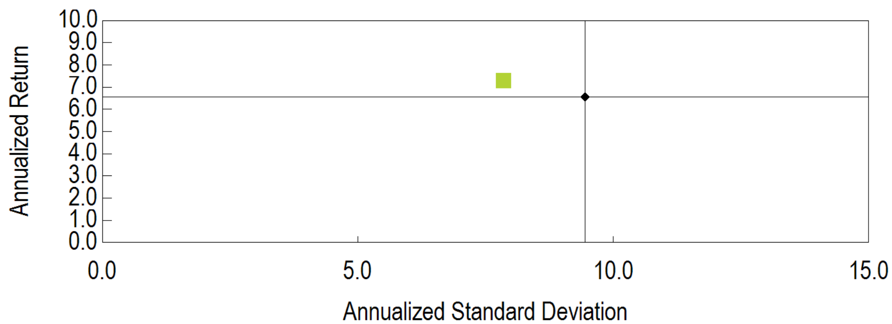
- Total Retirement System
- 60% MSCI World & 40% Barclays Aggregate

Annualized Return vs. Annualized Standard Deviation
10 Years Ending September 30, 2022



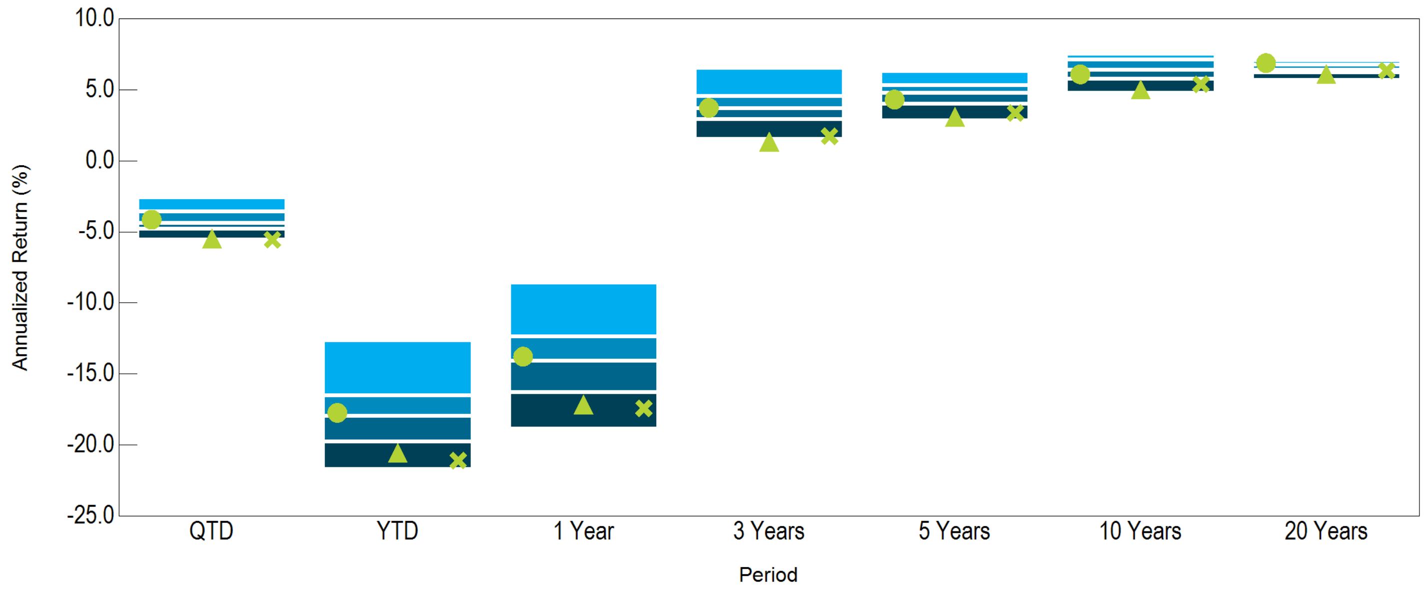
- Total Retirement System
- 60% MSCI World & 40% Barclays Aggregate

Annualized Return vs. Annualized Standard Deviation
Since Inception



- Total Retirement System
- 60% MSCI World & 40% Barclays Aggregate

InvMetrics Public DB $50mm-$250mm Net Return Comparison
Ending September 30, 2022



	Return (Rank)													
5th Percentile	-2.6		-12.7		-8.6		6.5		6.3		7.5		7.1	
25th Percentile	-3.5		-16.5		-12.3		4.6		5.3		7.2		6.8	
Median	-4.3		-17.9		-14.1		3.7		4.8		6.5		6.4	
75th Percentile	-4.7		-19.7		-16.3		3.0		4.1		5.8		6.2	
95th Percentile	-5.5		-21.7		-18.8		1.6		2.9		4.8		5.7	
# of Portfolios	67		67		67		65		63		48		20	
● Total Retirement System	-4.1	(41)	-17.7	(49)	-13.8	(47)	3.7	(50)	4.3	(68)	6.1	(66)	6.9	(16)
▲ 55% MSCI World & 45% Barclays Aggregate	-5.5	(95)	-20.6	(85)	-17.2	(89)	1.4	(97)	3.1	(92)	5.0	(90)	6.1	(82)
✕ 60% MSCI World & 40% Barclays Aggregate	-5.6	(96)	-21.1	(91)	-17.4	(89)	1.7	(95)	3.4	(90)	5.4	(86)	6.4	(58)

Statistics Summary

5 Years Ending September 30, 2022

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Retirement System	4.3%	10.5%	0.6	1.0	0.3	1.9%
55% MSCI World & 45% Barclays Aggregate	3.1%	10.6%	--	1.0	0.2	0.0%
Equity Assets	4.0%	17.7%	-1.4	0.9	0.2	3.3%
Russell 3000	8.6%	18.6%	--	1.0	0.4	0.0%
Domestic Equity Assets	6.2%	18.9%	-0.9	1.0	0.3	2.6%
Russell 3000	8.6%	18.6%	--	1.0	0.4	0.0%
RhumbLine S&P 500 Index	9.2%	18.0%	-1.2	1.0	0.4	0.0%
S&P 500	9.2%	18.1%	--	1.0	0.5	0.0%
Frontier Capital Appreciation	3.5%	25.1%	-0.3	1.0	0.1	8.9%
Russell 2500 Growth	6.3%	22.7%	--	1.0	0.2	0.0%
RhumbLine HEDI	--	--	--	--	--	--
Russell 1000 HEDI Moderate GR USD	10.6%	16.8%	--	1.0	0.6	0.0%
International Developed Markets Equity Assets	-0.6%	16.6%	0.7	1.0	-0.1	0.3%
MSCI EAFE	-0.8%	16.7%	--	1.0	-0.1	0.0%
RhumbLine MSCI EAFE Index	-0.6%	16.6%	0.7	1.0	-0.1	0.3%
MSCI EAFE	-0.8%	16.7%	--	1.0	-0.1	0.0%
International Emerging Markets Equity Assets	0.5%	17.2%	0.9	1.0	0.0	2.6%
MSCI Emerging Markets	-1.8%	17.7%	--	1.0	-0.2	0.0%

RhumbLine HEDI funded on 10/5/2020. Statistics will be reflected after first full five calendar years.

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
DFA Emerging Markets	-0.7%	18.4%	0.3	1.0	-0.1	3.9%
MSCI Emerging Markets	-1.8%	17.7%	--	1.0	-0.2	0.0%
Driehaus Emerging Market Equity	1.4%	16.7%	0.8	0.9	0.0	4.1%
MSCI Emerging Markets	-1.8%	17.7%	--	1.0	-0.2	0.0%
Investment Grade Bonds Assets	-0.3%	4.8%	-0.6	1.0	-0.3	0.1%
Bloomberg US Aggregate TR	-0.3%	4.8%	--	1.0	-0.3	0.0%
SSgA U.S. Aggregate Bond Index	-0.3%	4.8%	-0.6	1.0	-0.3	0.1%
Bloomberg US Aggregate TR	-0.3%	4.8%	--	1.0	-0.3	0.0%
High Yield Bond Assets	1.7%	8.0%	0.1	0.9	0.1	1.2%
Bloomberg US High Yield TR	1.6%	9.0%	--	1.0	0.1	0.0%
Shenkman Capital	1.8%	8.0%	0.2	0.9	0.1	1.2%
Bloomberg US High Yield TR	1.6%	9.0%	--	1.0	0.1	0.0%
TIPS Assets	1.9%	5.7%	-1.5	1.0	0.1	0.1%
Bloomberg US TIPS TR	2.0%	5.7%	--	1.0	0.2	0.0%
SSgA TIPS Index-NL	1.9%	5.7%	-1.5	1.0	0.1	0.1%
Bloomberg US TIPS TR	2.0%	5.7%	--	1.0	0.2	0.0%
Emerging Market Debt Assets	-3.1%	11.9%	-0.2	1.1	-0.4	2.4%
JP Morgan EMBI Global Diversified	-2.6%	10.6%	--	1.0	-0.3	0.0%
Payden Emerging Market Bond	-3.1%	11.9%	-0.2	1.1	-0.4	2.4%
JP Morgan EMBI Global Diversified	-2.6%	10.6%	--	1.0	-0.3	0.0%

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Open-Ended Real Estate	11.6%	6.8%	0.9	1.1	1.5	1.5%
NCREIF ODCE	10.2%	6.3%	--	1.0	1.5	0.0%
Clarion Partners	11.6%	6.8%	0.9	1.1	1.5	1.5%
NCREIF ODCE	10.2%	6.3%	--	1.0	1.5	0.0%
Total Closed End Real Estate	-5.3%	22.3%	-0.7	0.8	-0.3	21.8%
NCREIF ODCE	10.2%	6.3%	--	1.0	1.5	0.0%
Rockwood Capital Real Estate Partners Fund XI, L.P.	--	--	--	--	--	--
NCREIF-ODCE	10.2%	6.3%	--	1.0	1.5	0.0%
Comerica Short Term Fund	0.5%	0.4%	-1.2	0.4	-1.3	0.5%
91 Day T-Bills	1.1%	0.3%	--	1.0	0.0	0.0%

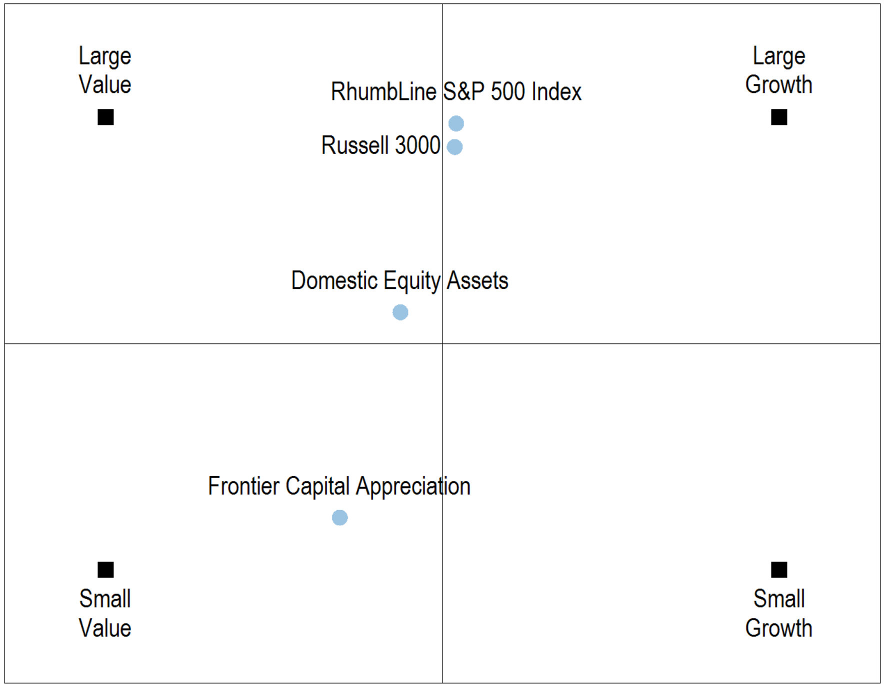
Rockwood Capital XI statistics will be reflected after first full five calendar years.

Retirement System Detail

Asset Allocation on September 30, 2022

	Actual	Actual
Frontier Capital Appreciation	$19,545,028	28.8%
RhumbLine HEDI	$26,960,235	39.8%
RhumbLine S&P 500 Index	$21,264,911	31.4%
Total	**$67,770,174**	**100.0%**

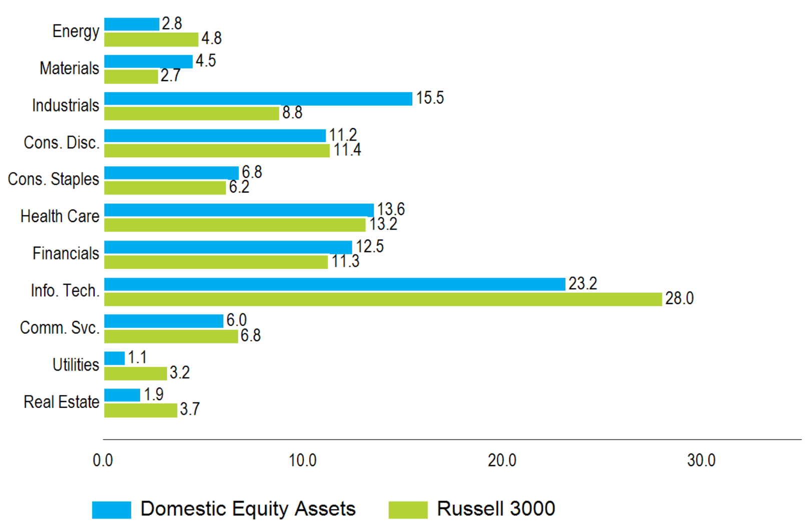
Domestic Equity Assets Style Map
3 Years Ending September 30, 2022



Domestic Equity Assets | As of September 30, 2022

Domestic Equity Assets Characteristics	Portfolio Q3-22	Index Q3-22	Portfolio Q2-22
Market Value			
Market Value ($M)	67.8	--	74.6
Number Of Holdings	665	2986	668
Characteristics			
Weighted Avg. Market Cap. ($B)	315.5	402.3	324.5
Median Market Cap ($B)	22.9	2.3	23.6
P/E Ratio	18.0	17.5	18.7
Yield	1.5	1.8	1.4
EPS Growth - 5 Yrs.	16.8	17.6	18.3
Price to Book	3.4	3.5	3.6

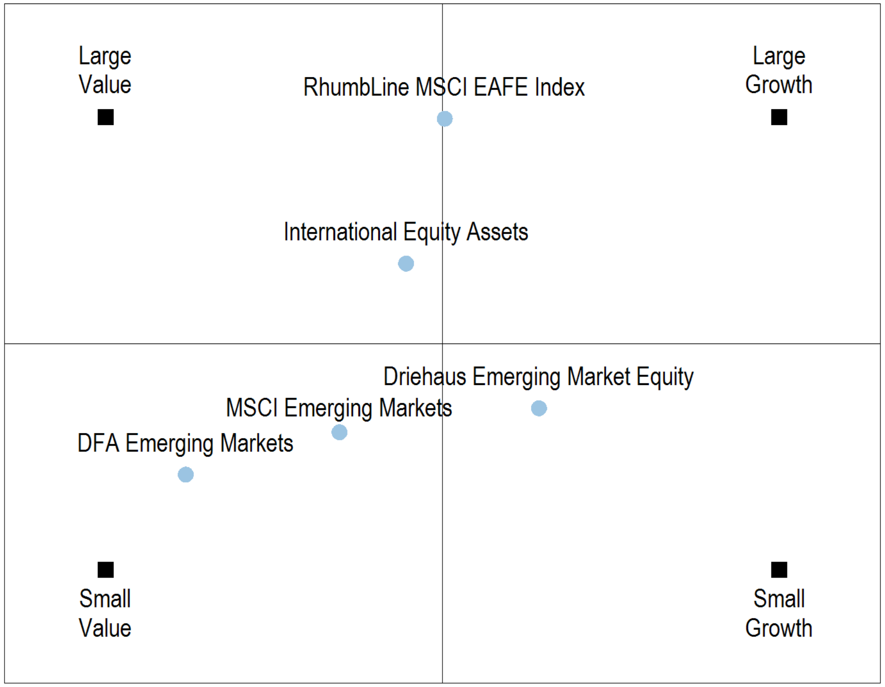
Sector Allocation (%) vs Russell 3000



Top 10 Holdings	
APPLE INC	4.5%
MICROSOFT CORP	4.0%
AMAZON.COM INC	1.9%
ALPHABET INC	1.4%
ALPHABET INC	1.4%
BERKSHIRE HATHAWAY INC	1.2%
UNITEDHEALTH GROUP INC	1.1%
JOHNSON & JOHNSON	1.1%
TESLA INC	1.0%
PROCTER & GAMBLE CO (THE)	0.8%
Total	**18.4%**

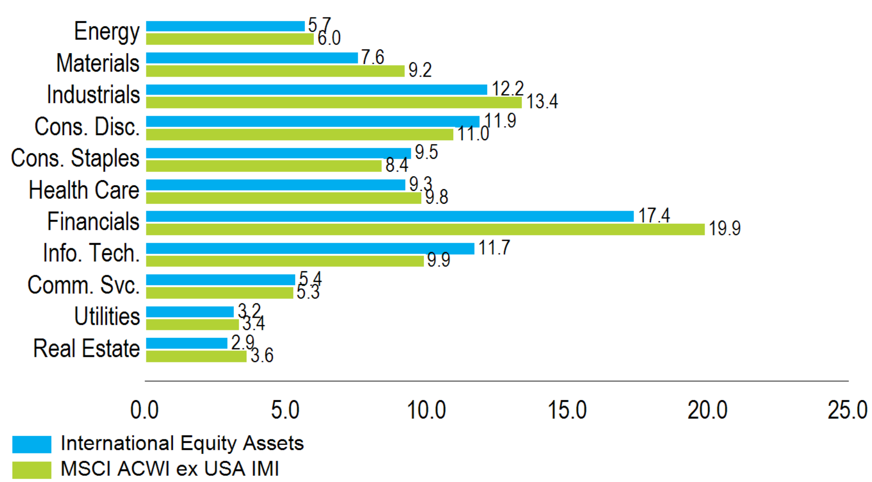
Asset Allocation on September 30, 2022	Actual	Actual
DFA Emerging Markets	$8,497,021	22.9%
Driehaus Emerging Market Equity	$8,127,585	21.9%
RhumbLine MSCI EAFE Index	$20,516,281	55.2%
Total	**$37,140,886**	**100.0%**

International Equity Assets Style Map
3 Years Ending September 30, 2022



International Equity Characteristics	Portfolio Q3-22	Index Q3-22	Portfolio Q2-22
Market Value			
Market Value ($M)	37.1	--	41.0
Number Of Holdings	7383	6650	7331
Characteristics			
Weighted Avg. Market Cap. ($B)	75.5	61.5	88.1
Median Market Cap ($B)	0.6	1.4	0.6
P/E Ratio	11.3	11.2	12.1
Yield	3.6	3.7	3.5
EPS Growth - 5 Yrs.	13.7	12.4	14.4
Price to Book	2.5	2.3	2.5

Sector Allocation (%) vs MSCI ACWI ex USA IMI



Top 10 Holdings	
NORTHERN INSTITUTIONAL U.S. GOVERNMENT SELECT PORTFOLIO	1.5%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.5%
SAMSUNG ELECTRONICS CO LTD	1.4%
NESTLE SA, CHAM UND VEVEY	1.4%
ROCHE HOLDING AG	1.0%
TENCENT HOLDINGS LTD	0.9%
AIA GROUP LTD	0.9%
SHELL PLC	0.8%
ASML HOLDING NV	0.8%
ASTRAZENECA PLC	0.8%
Total	**10.8%**

Country Allocation Report

As of 9/30/2022

Region	% of Total	% of Bench	% Diff
North America ex U.S.	0.6%	9.0%	-8.4%
United States	2.1%	0.0%	2.1%
Europe Ex U.K.	28.8%	28.2%	0.6%
United Kingdom	6.9%	8.8%	-1.9%
Pacific Basin Ex Japan	9.0%	7.7%	1.3%
Japan	12.6%	14.9%	-2.3%
Emerging Markets	38.9%	30.2%	8.7%
Other	1.2%	1.2%	0.0%
Total	**100.0%**	**100.0%**	**0.0%**

International Equity Country Allocation

vs MSCI ACWI ex USA IMI

Country	% of Total	% of Bench	% Diff
ARGENTINA	0.2%	0.0%	0.2%
AUSTRALIA	4.2%	4.8%	-0.6%
AUSTRIA	0.1%	0.2%	-0.1%
BAHRAIN	0.0%	0.0%	0.0%
BANGLADESH	0.0%	0.0%	0.0%
BELGIUM	0.4%	0.7%	-0.3%
BRAZIL	3.4%	1.7%	1.6%
CANADA	0.6%	9.0%	-8.4%
CHILE	0.2%	0.2%	0.1%
CHINA	8.6%	7.9%	0.6%
COLOMBIA	0.0%	0.0%	0.0%
CROATIA	0.0%	0.0%	0.0%
CZECH REPUBLIC	0.0%	0.0%	0.0%
DENMARK	1.5%	1.7%	-0.2%
EGYPT	0.0%	0.0%	0.0%
ESTONIA	0.0%	0.0%	0.0%
FINLAND	0.7%	0.7%	0.0%
FRANCE	5.8%	5.7%	0.1%
GERMANY	4.1%	4.2%	-0.1%
GREECE	0.1%	0.1%	0.1%
HONG KONG	3.8%	1.9%	1.9%
HUNGARY	0.0%	0.0%	0.0%
INDIA	8.1%	5.5%	2.6%
INDONESIA	1.4%	0.7%	0.6%

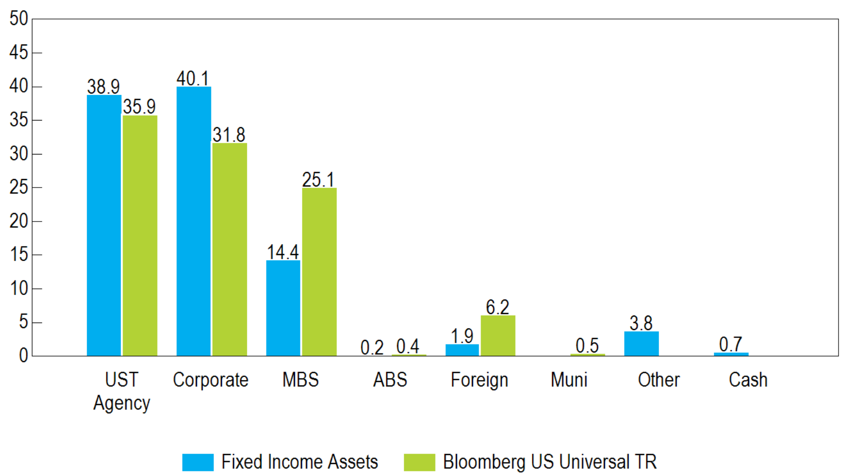
Country	% of Total	% of Bench	% Diff
IRELAND	0.5%	0.4%	0.1%
ISRAEL	0.7%	0.9%	-0.2%
ITALY	1.1%	1.4%	-0.4%
JAPAN	12.6%	14.9%	-2.3%
JORDAN	0.0%	0.0%	0.0%
KAZAKHSTAN	0.0%	0.0%	0.0%
KENYA	0.0%	0.0%	0.0%
KOREA	4.2%	3.5%	0.7%
KUWAIT	0.0%	0.3%	-0.3%
LEBANON	0.0%	0.0%	0.0%
LITHUANIA	0.0%	0.0%	0.0%
LUXEMBOURG	0.4%	0.0%	0.4%
MALAYSIA	0.4%	0.5%	-0.1%
MAURITIUS	0.0%	0.0%	0.0%
MEXICO	1.0%	0.7%	0.3%
MOROCCO	0.0%	0.0%	0.0%
NETHERLANDS	4.1%	1.8%	2.3%
NEW ZEALAND	0.1%	0.2%	-0.1%
NIGERIA	0.0%	0.0%	0.0%
NORWAY	0.5%	0.6%	-0.2%
OMAN	0.0%	0.0%	0.0%
OTHER	0.3%	0.0%	0.3%
PAKISTAN	0.0%	0.0%	0.0%
PERU	0.1%	0.1%	0.0%
PHILIPPINES	0.2%	0.2%	0.0%
POLAND	0.1%	0.2%	0.0%
PORTUGAL	0.1%	0.1%	0.0%

Country	% of Total	% of Bench	% Diff
QATAR	0.5%	0.4%	0.1%
ROMANIA	0.0%	0.0%	0.0%
SAUDI ARABIA	1.6%	1.6%	0.0%
SERBIA	0.0%	0.0%	0.0%
SINGAPORE	0.9%	0.9%	0.0%
SLOVENIA	0.0%	0.0%	0.0%
SOUTH AFRICA	1.3%	1.1%	0.1%
SPAIN	1.3%	1.5%	-0.2%
SRI LANKA	0.0%	0.0%	0.0%
SWEDEN	1.7%	2.0%	-0.3%
SWITZERLAND	6.3%	7.0%	-0.7%
TAIWAN	5.6%	4.4%	1.1%
THAILAND	1.2%	0.8%	0.5%
TUNISIA	0.0%	0.0%	0.0%
TURKEY	0.1%	0.2%	0.0%
UNITED ARAB EMIRATES	0.7%	0.5%	0.3%
UNITED KINGDOM	6.9%	8.8%	-1.9%
UNITED STATES	2.1%	0.0%	2.1%
VIETNAM	0.1%	0.0%	0.1%
Total	**100.0%**	**100.0%**	**0.0%**

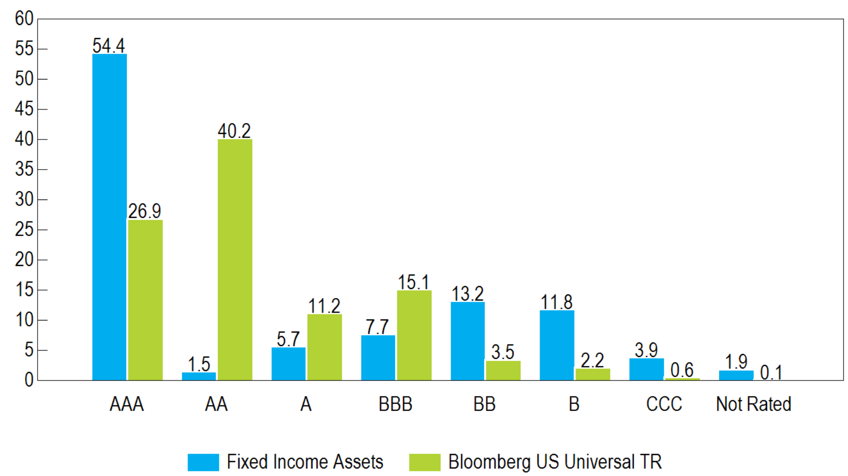
Asset Allocation on September 30, 2022	Actual	Actual
Payden Emerging Market Bond	$4,333,836	8.0%
Shenkman Capital	$16,356,348	30.2%
SSgA TIPS Index-NL	$9,143,407	16.9%
SSgA U.S. Aggregate Bond Index	$24,354,586	44.9%
Total	**$54,188,177**	**100.0%**

Fixed Income Characteristics vs. Bloomberg US Universal TR	Portfolio Q3-22	Index Q3-22	Portfolio Q2-22
Fixed Income Characteristics			
Yield to Maturity	6.3	5.1	5.6
Average Duration	5.4	6.2	5.5
Average Quality	A	AA	A
Weighted Average Maturity	7.6	8.3	7.8

Sector Allocation



Credit Quality Allocation



Portfolio Reviews

RhumbLine S&P 500 Index | As of September 30, 2022

Account Information

Account Name	**RhumbLine S&P 500 Index**
Account Structure	**Commingled Fund**
Investment Style	**Passive**
Inception Date	**3/01/99**
Account Type	**US Equity**
Benchmark	**S&P 500**
Universe	**eV US Passive S&P 500 Equity Net**

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RhumbLine S&P 500 Index	-4.9	-15.5	8.1	9.2	11.7	6.6	Mar-99
S&P 500	*-4.9*	*-15.5*	*8.2*	*9.2*	*11.7*	*6.6*	*Mar-99*

Top 10 Holdings

APPLE INC	6.9%
MICROSOFT CORP	5.7%
AMAZON.COM INC	3.3%
TESLA INC	2.3%
ALPHABET INC	1.9%
ALPHABET INC	1.7%
BERKSHIRE HATHAWAY INC	1.6%
UNITEDHEALTH GROUP INC	1.6%
JOHNSON & JOHNSON	1.4%
EXXON MOBIL CORP	1.2%
Total	**27.6%**

RhumbLine S&P 500 Index Equity Characteristics vs S&P 500

	Portfolio Q3-22	Index Q3-22	Portfolio Q2-22
Market Value			
Market Value ($M)	21.3	--	25.5
Number Of Holdings	507	503	505
Characteristics			
Weighted Avg. Market Cap. ($B)	463.5	468.4	476.8
Median Market Cap ($B)	27.1	27.1	28.0
P/E Ratio	18.4	18.6	18.8
Yield	1.8	1.8	1.7
EPS Growth - 5 Yrs.	17.1	17.0	18.3
Price to Book	3.8	3.8	4.0
Sector Distribution			
Energy	4.6	4.6	4.3
Materials	2.5	2.2	2.6
Industrials	7.8	8.0	7.7
Consumer Discretionary	11.6	13.0	10.4
Consumer Staples	6.8	5.8	6.9
Health Care	15.0	12.9	15.0
Financials	11.4	11.6	11.5
Information Technology	26.2	28.0	26.6
Communication Services	8.0	8.8	8.8
Utilities	3.0	3.1	3.0
Real Estate	2.8	2.0	2.9

Account Information

Account Name	**RhumbLine HEDI**
Account Structure	**Separate Account**
Investment Style	**Passive**
Inception Date	**11/01/20**
Account Type	**US Equity**
Benchmark	**Russell 1000 HEDI Moderate GR USD**
Universe	**eV US Large Cap Core Equity Gross**

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RhumbLine HEDI	-4.5	-12.6	--	--	--	5.6	Nov-20
Russell 1000 HEDI Moderate GR USD	*-4.5*	*-12.6*	*7.5*	*10.6*	*12.6*	*5.7*	*Nov-20*

Top 10 Holdings

APPLE INC	6.0%
MICROSOFT CORP	5.5%
AMAZON.COM INC	2.2%
ALPHABET INC	2.1%
ALPHABET INC	2.0%
JOHNSON & JOHNSON	1.7%
BERKSHIRE HATHAWAY INC	1.7%
UNITEDHEALTH GROUP INC	1.7%
PROCTER & GAMBLE CO (THE)	1.2%
VISA INC	1.1%
Total	**25.2%**

Rhumbline HEDI Characteristics

	Portfolio Q3-22	Portfolio Q2-22
Market Value		
Market Value ($M)	27.0	28.6
Number Of Holdings	229	226
Characteristics		
Weighted Avg. Market Cap. ($B)	402.6	397.2
Median Market Cap ($B)	32.1	34.0
P/E Ratio	21.0	21.5
Yield	1.7	1.5
EPS Growth - 5 Yrs.	16.1	17.1
Price to Book	4.5	4.8
Sector Distribution		
Energy	0.8	0.7
Materials	2.6	2.7
Industrials	16.3	15.5
Consumer Discretionary	9.9	8.6
Consumer Staples	11.7	14.2
Health Care	12.7	12.2
Financials	11.6	11.3
Information Technology	25.1	23.7
Communication Services	7.4	9.2
Utilities	0.3	0.3
Real Estate	1.5	1.5

Russell 1000 HEDI benchmark characteristic data is unavailable.

Account Information

Account Name	**Frontier Capital Appreciation**
Account Structure	**Commingled Fund**
Investment Style	**Active**
Inception Date	**2/01/13**
Account Type	**US Equity**
Benchmark	**Russell 2500 Growth**
Universe	**eV US Small-Mid Cap Growth Equity Net**

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Frontier Capital Appreciation	-4.6	-21.9	4.2	3.5	--	8.9	Feb-13
Russell 2500 Growth	*-0.1*	*-29.4*	*4.8*	*6.3*	*10.3*	*9.7*	*Feb-13*

Top 10 Holdings

BUILDERS FIRSTSOURCE INC	2.3%
WOLFSPEED INC	2.3%
MACOM TECHNOLOGY SOLUTIONS HOLDINGS INC	2.0%
LPL FINANCIAL HOLDINGS INC	1.8%
ARRAY TECHNOLOGIES INC	1.7%
ALBEMARLE CORP	1.7%
KBR INC	1.7%
INSULET CORPORATION	1.7%
ATI INC	1.6%
BERKLEY (W.R.) CORP	1.5%
Total	**18.3%**

Frontier Capital Appreciation Characteristics

	Portfolio Q3-22	Index Q3-22	Portfolio Q2-22
Market Value			
Market Value ($M)	19.5	--	20.5
Number Of Holdings	136	1355	143
Characteristics			
Weighted Avg. Market Cap. ($B)	7.1	5.6	7.0
Median Market Cap ($B)	3.7	1.6	3.8
P/E Ratio	13.9	17.0	14.6
Yield	0.8	0.9	0.8
EPS Growth - 5 Yrs.	18.4	21.7	20.4
Price to Book	2.4	4.0	2.4
Sector Distribution			
Energy	3.7	5.8	3.0
Materials	9.3	4.6	8.7
Industrials	22.8	18.7	21.8
Consumer Discretionary	12.3	11.4	13.1
Consumer Staples	0.0	3.7	0.0
Health Care	13.3	20.5	13.4
Financials	14.9	7.3	14.7
Information Technology	17.3	22.8	17.4
Communication Services	2.0	2.0	2.0
Utilities	0.0	0.8	0.0
Real Estate	1.4	2.4	2.0

Account Information

Account Name	**RhumbLine MSCI EAFE Index**
Account Structure	**Commingled Fund**
Investment Style	**Passive**
Inception Date	**8/01/14**
Account Type	**Non-US Stock Developed**
Benchmark	**MSCI EAFE**
Universe	**eV EAFE All Cap Equity Net**

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
RhumbLine MSCI EAFE Index	-9.3	-24.8	-1.6	-0.6	--	1.0	Aug-14
MSCI EAFE	*-9.4*	*-25.1*	*-1.8*	*-0.8*	*3.7*	*0.8*	*Aug-14*

Top 10 Holdings

NESTLE SA, CHAM UND VEVEY	2.5%
ROCHE HOLDING AG	1.8%
SHELL PLC	1.5%
ASML HOLDING NV	1.4%
ASTRAZENECA PLC	1.4%
NOVO NORDISK 'B'	1.4%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.3%
NOVARTIS AG	1.3%
TOYOTA MOTOR CORP	1.1%
BHP GROUP LTD	1.0%
Total	**14.7%**

Rhumbline MSCI EAFE Index Characteristics

	Portfolio Q3-22	Index Q3-22	Portfolio Q2-22
Market Value			
Market Value ($M)	20.5	--	22.6
Number Of Holdings	802	798	803
Characteristics			
Weighted Avg. Market Cap. ($B)	68.1	67.3	74.3
Median Market Cap ($B)	10.4	10.4	11.6
P/E Ratio	12.2	12.2	13.3
Yield	3.7	3.7	3.6
EPS Growth - 5 Yrs.	11.6	11.1	12.5
Price to Book	2.4	2.4	2.5
Sector Distribution			
Energy	4.9	5.8	4.6
Materials	7.3	8.7	7.3
Industrials	14.5	15.4	14.5
Consumer Discretionary	10.7	8.4	11.0
Consumer Staples	10.9	12.1	10.6
Health Care	13.5	14.2	13.6
Financials	17.3	18.1	17.2
Information Technology	7.7	7.5	7.6
Communication Services	4.6	4.2	4.9
Utilities	3.3	2.8	3.4
Real Estate	2.7	2.9	2.8

Account Information

Account Name	**DFA Emerging Markets**
Account Structure	**Mutual Fund**
Investment Style	**Active**
Inception Date	**1/01/15**
Account Type	**Non-US Stock Emerging**
Benchmark	**MSCI Emerging Markets**
Universe	**eV Emg Mkts All Cap Equity Net**

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
DFA Emerging Markets	-10.9	-23.7	0.3	-0.7	--	2.1	Jan-15
MSCI Emerging Markets	*-11.6*	*-28.1*	*-2.1*	*-1.8*	*1.0*	*1.3*	*Jan-15*

Top 10 Holdings

SAMSUNG ELECTRONICS CO LTD	2.7%
TENCENT HOLDINGS LTD	2.6%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	2.6%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.1%
CHINA CONSTRUCTION BANK CORP	1.0%
VALE SA	0.9%
ALIBABA GROUP HOLDING LTD	0.8%
RELIANCE INDUSTRIES LTD	0.7%
PING AN INSURANCE GROUP	0.7%
INFOSYS LTD	0.6%
Total	**13.7%**

DFA Emerging Markets Characteristics

	Portfolio Q3-22	Index Q3-22	Portfolio Q2-22
Market Value			
Market Value ($M)	8.5	--	9.5
Number Of Holdings	6563	1384	6504
Characteristics			
Weighted Avg. Market Cap. ($B)	52.5	86.9	63.3
Median Market Cap ($B)	0.4	5.5	0.4
P/E Ratio	8.6	10.1	9.2
Yield	4.7	3.8	4.1
EPS Growth - 5 Yrs.	15.0	14.3	15.3
Price to Book	2.2	2.5	2.2
Sector Distribution			
Energy	5.5	5.8	5.0
Materials	12.8	9.5	12.4
Industrials	9.3	5.9	9.4
Consumer Discretionary	11.0	15.0	11.3
Consumer Staples	6.7	6.3	6.4
Health Care	4.5	4.3	4.3
Financials	16.9	22.7	16.4
Information Technology	18.6	19.1	19.4
Communication Services	7.3	5.9	7.7
Utilities	3.5	3.4	3.4
Real Estate	3.4	2.2	3.8

Account Information

Account Name	**Driehaus Emerging Market Equity**
Account Structure	**Commingled Fund**
Investment Style	**Active**
Inception Date	**1/01/15**
Account Type	**Non-US Stock Emerging**
Benchmark	**MSCI Emerging Markets**
Universe	**eV Emg Mkts All Cap Equity Net**

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Driehaus Emerging Market Equity	-7.8	-25.8	1.6	1.4	--	4.0	Jan-15
MSCI Emerging Markets	*-11.6*	*-28.1*	*-2.1*	*-1.8*	*1.0*	*1.3*	*Jan-15*

Top 10 Holdings

NORTHERN INSTITUTIONAL U.S. GOVERNMENT SELECT PORTFOLIO	6.6%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	5.5%
SAMSUNG ELECTRONICS CO LTD	3.8%
KWEICHOW MOUTAI CO LTD	2.6%
MEITUAN DIANPING USD0.00001 A B CLASS ISIN KYG596691041	2.5%
GPO FINANCE BANORTE	2.2%
RELIANCE INDUSTRIES LTD	2.1%
ICICI BANK LTD	2.0%
AIA GROUP LTD	1.9%
SAUDI ARABIAN OIL COMPANY	1.7%
Total	**30.9%**

Driehaus Emerging Market Equity Characteristics

	Portfolio Q3-22	Index Q3-22	Portfolio Q2-22
Market Value			
Market Value ($M)	8.1	--	8.8
Number Of Holdings	99	1384	89
Characteristics			
Weighted Avg. Market Cap. ($B)	120.2	86.9	153.3
Median Market Cap ($B)	20.0	5.5	22.0
P/E Ratio	14.3	10.1	15.1
Yield	2.3	3.8	2.5
EPS Growth - 5 Yrs.	16.7	14.3	16.7
Price to Book	2.8	2.5	3.0
Sector Distribution			
Energy	7.9	5.8	6.9
Materials	2.9	9.5	6.8
Industrials	9.2	5.9	6.2
Consumer Discretionary	16.0	15.0	4.8
Consumer Staples	8.9	6.3	9.9
Health Care	3.6	4.3	6.4
Financials	18.2	22.7	21.4
Information Technology	14.6	19.1	17.5
Communication Services	5.2	5.9	8.7
Utilities	2.6	3.4	2.1
Real Estate	3.1	2.2	1.3

Account Information

Account Name	**SSgA U.S. Aggregate Bond Index**
Account Structure	**Commingled Fund**
Investment Style	**Passive**
Inception Date	**5/01/01**
Account Type	**US Fixed Income Investment Grade**
Benchmark	**Bloomberg US Aggregate TR**
Universe	**eV US Core Fixed Inc Net**

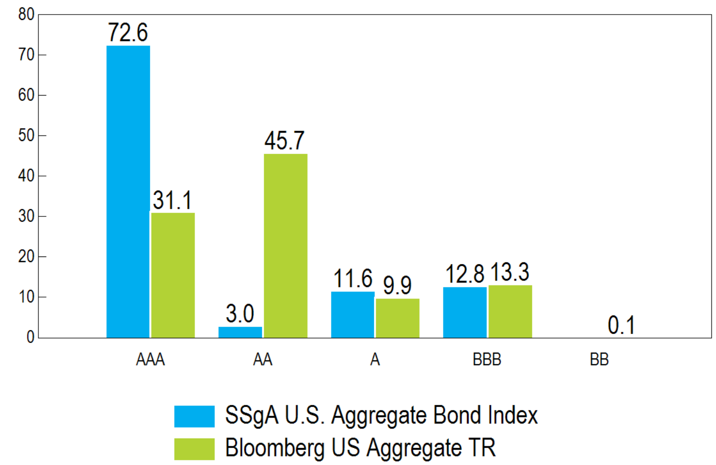
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA U.S. Aggregate Bond Index	-4.8	-14.7	-3.3	-0.3	0.9	3.5	May-01
Bloomberg US Aggregate TR	*-4.8*	*-14.6*	*-3.3*	*-0.3*	*0.9*	*3.5*	*May-01*

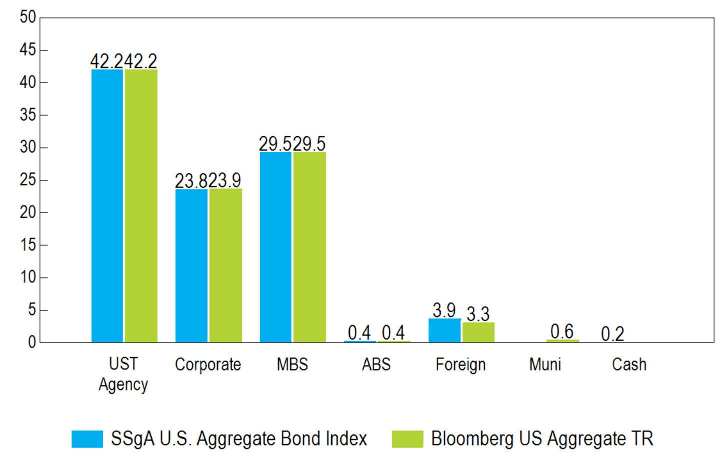
SSgA U.S. Aggregate Bond Index Characteristics vs. Bloomberg US Aggregate TR

	Portfolio Q3-22	Index Q3-22	Portfolio Q2-22
Fixed Income Characteristics			
Yield to Maturity	4.8	4.7	3.7
Average Duration	6.2	6.4	6.4
Average Quality	AA	AA	AA
Weighted Average Maturity	8.6	8.5	8.7

Credit Quality Allocation



Sector Allocation



Account Information

Account Name	**Shenkman Capital**
Account Structure	**Commingled Fund**
Investment Style	**Active**
Inception Date	**4/01/06**
Account Type	**US Fixed Income High Yield**
Benchmark	**Bloomberg US High Yield TR**
Universe	**eV US High Yield Fixed Inc Net**

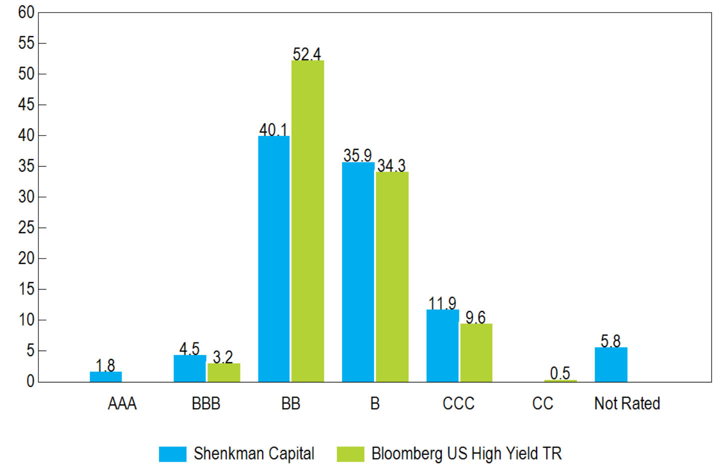
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Shenkman Capital	-0.1	-11.6	-0.2	1.8	3.7	5.5	Apr-06
Bloomberg US High Yield TR	*-0.6*	*-14.1*	*-0.5*	*1.6*	*3.9*	*5.9*	*Apr-06*

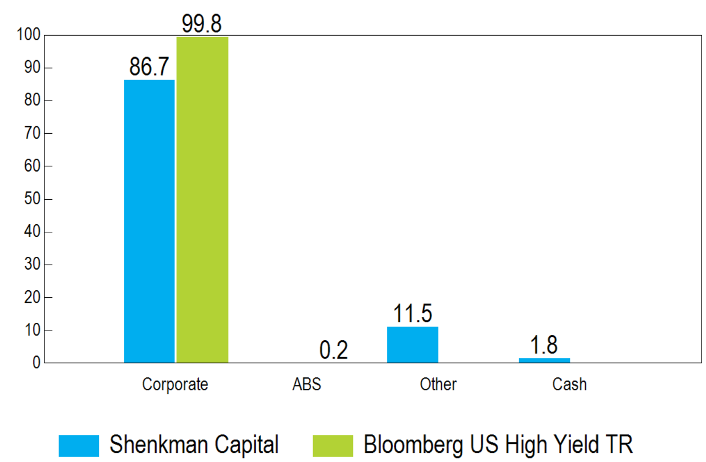
Shenkman Capital Characteristics vs. Bloomberg US High Yield TR

	Portfolio Q3-22	Index Q3-22	Portfolio Q2-22
Fixed Income Characteristics			
Yield to Maturity	9.0	9.4	8.5
Average Duration	3.7	4.4	4.0
Average Quality	BB	B	BB
Weighted Average Maturity	5.1	5.7	5.5

Credit Quality Allocation



Sector Allocation



Account Information

Account Name	**SSgA TIPS Index-NL**
Account Structure	**Commingled Fund**
Investment Style	**Passive**
Inception Date	**10/01/05**
Account Type	**US Inflation Protected Fixed**
Benchmark	**Bloomberg US TIPS TR**
Universe	**eV US TIPS / Inflation Fixed Inc Net**

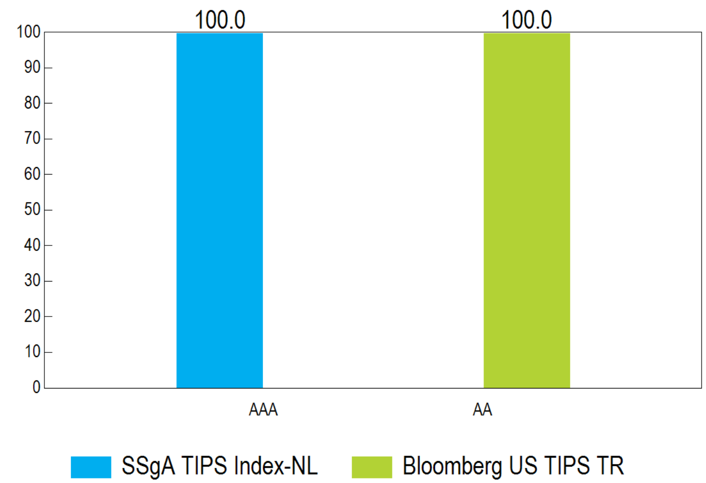
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
SSgA TIPS Index-NL	-5.1	-11.6	0.7	1.9	0.9	3.2	Oct-05
Bloomberg US TIPS TR	*-5.1*	*-11.6*	*0.8*	*2.0*	*1.0*	*3.3*	*Oct-05*

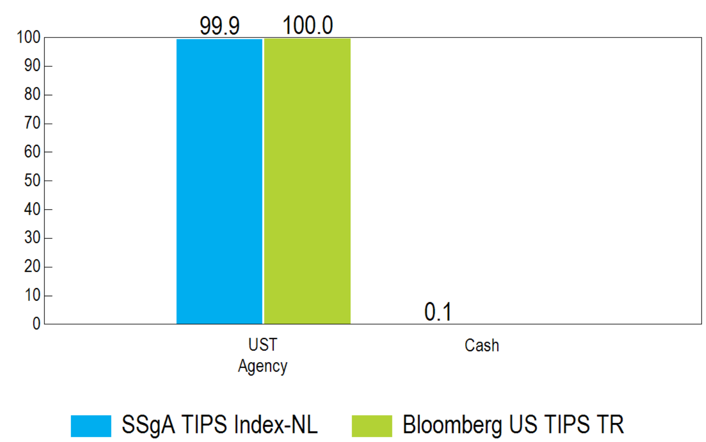
SSgA TIPS Index-NL Characteristics vs. Bloomberg US TIPS TR

	Portfolio Q3-22	Index Q3-22	Portfolio Q2-22
Fixed Income Characteristics			
Yield to Maturity	4.2	4.1	3.4
Average Duration	5.9	6.8	5.1
Average Quality	AAA	AA	AAA
Weighted Average Maturity	7.3	7.3	7.4

Credit Quality Allocation



Sector Allocation



Account Information

Account Name	**Payden Emerging Market Bond**
Account Structure	**Mutual Fund**
Investment Style	**Active**
Inception Date	**1/01/15**
Account Type	**International Emerging Market Debt**
Benchmark	**JP Morgan EMBI Global Diversified**
Universe	

Payden Emerging Market Bond Characteristics vs. JP Morgan EMBI Global Diversified

	Portfolio Q3-22	Index Q3-22	Portfolio Q2-22
Fixed Income Characteristics			
Yield to Maturity	8.5	8.7	10.4
Average Duration	6.7	6.6	6.7
Average Quality	BB	BBB	BB
Weighted Average Maturity	12.3	11.7	12.5

Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Payden Emerging Market Bond	-5.1	-26.2	-7.2	-3.1	--	0.5	Jan-15
JP Morgan EMBI Global Diversified	*-4.6*	*-24.3*	*-7.2*	*-2.6*	*1.1*	*0.8*	*Jan-15*

Fixed Income Sectors as of August 31, 2022

GOVERNMENT	63.1%
MUNICIPAL	0.0%
CORPORATE	10.8%
SECURITIZED	0.0%
CASH & EQUIVALENTS	6.4%
DERIVATIVE	19.7%

Fund Characteristics as of August 31, 2022
Versus JP Morgan EMBI Global Diversified

Sharpe Ratio (3 Year)	-0.4
Average Duration	6.7
Average Coupon	5.8%
Average Effective Maturity	12.1
R-Squared (3 Year)	1.0
Alpha (3 Year)	0.1%
Beta (3 Year)	1.1

Credit Quality as of September 30, 2022

AAA	4.0%
AA	3.0%
A	5.0%
BBB	28.0%
BB	25.0%
B	24.0%
Below B	8.0%
Not Rated	3.0%

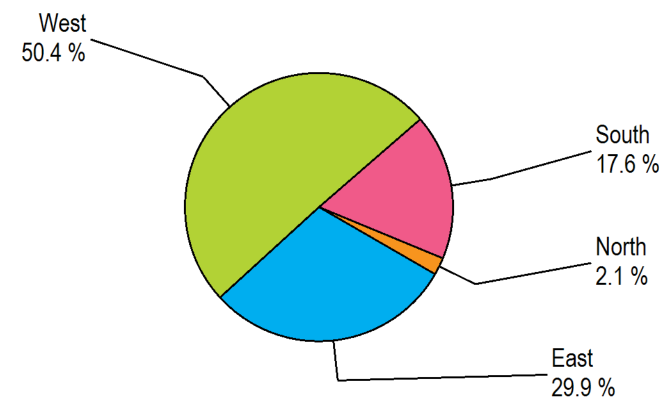
Account Information

Account Name	**Clarion Partners**
Account Structure	**Commingled Fund**
Investment Style	**Active**
Inception Date	**10/01/02**
Account Type	**Real Estate**
Benchmark	**NCREIF ODCE**
Universe	

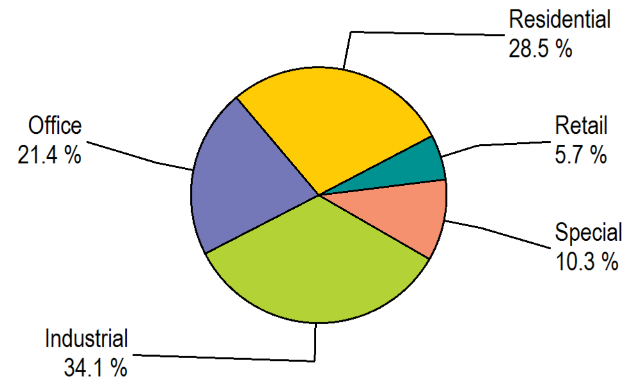
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Clarion Partners	0.6	24.6	14.1	11.6	11.7	8.3	Oct-02
NCREIF ODCE	*0.5*	*22.1*	*12.4*	*10.2*	*10.9*	*8.8*	*Oct-02*

Geographic Diversification



Property Type Allocation



Clarion Partners characteristics are as of 9/30/2022.

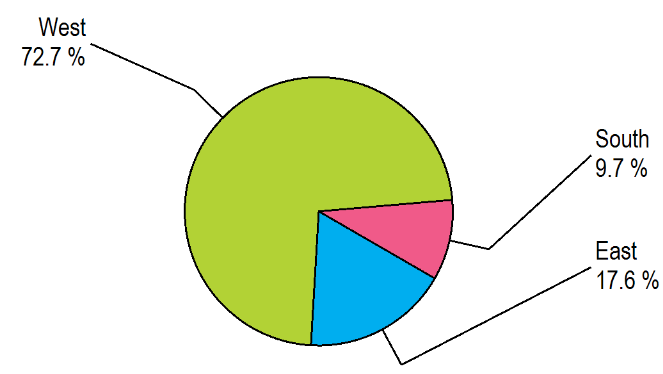
Account Information

Account Name	**Rockwood Capital Real Estate Partners Fund XI, L.P.**
Account Structure	**Other**
Investment Style	**Passive**
Inception Date	**12/01/19**
Account Type	**Real Estate**
Benchmark	**NCREIF-ODCE**
Universe	

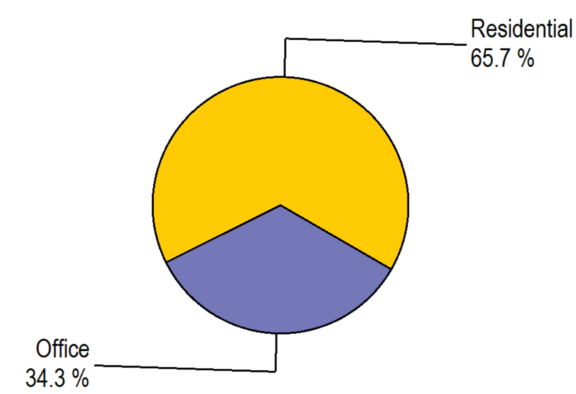
Portfolio Performance Summary

	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Rockwood Capital Real Estate Partners Fund XI, L.P.	1.4	15.0	--	--	--	8.0	Dec-19
NCREIF-ODCE	*0.5*	*22.1*	*12.4*	*10.2*	*10.9*	*13.1*	*Dec-19*

Geographic Diversification



Property Type Allocation



Rockwood Real Estate characteristics are as of 6/30/2022.

Non-Marketable Securities Overview
As of September 30, 2022

Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	IRR (%)
North American Strategic Partners 2006	2006	$4,539,998	$4,411,659	$2,094,251	$18,450	6.4
Ironsides Partnership Fund IV	2015	$2,500,000	$1,424,191	$1,453,469	$2,564,225	34.8
Ironsides Direct Investment Fund IV	2015	$2,500,000	$2,419,534	$2,669,241	$2,097,102	18.8
Ironsides Partnership Fund V, L.P.	2019	$2,000,000	$1,105,932	$0	$1,599,350	42.5
Ironsides Direct Investment Fund V, L.P.	2019	$2,000,000	$2,538,377	$436,888	$3,145,527	24.7
HarbourVest 2019 Global Fund	2019	$4,000,000	$2,400,000	$533,243	$3,267,493	41.7
Total Account		**$17,539,998**	**$14,299,693**	**$2,998,589**	**$12,692,147**	**$15,690,736**

IRRs are as of 6/30/2022. Exceptions include North American Strategic Partners 2006 which is as of 12/31/2021.

Non-Marketable Securities Overview

As of September 30, 2022

Account Type	Account	Vintage Year	Commitment	Cumulative Takedown	Cumulative Distributions	Value (RV)	IRR (%)
Private Debt	NB Private Debt Fund IV	2021	$5,000,000	$3,250,000	$877,558	$2,542,621	--
	Total Account		**$5,000,000**	**$3,250,000**	**$877,558**	**$2,542,621**	

IRRs for investments less than 2 years are not shown.

Annual Investment Expense Analysis
As Of September 30, 2022

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Equity Assets		**$104,911,060**		
Domestic Equity Assets		**$67,770,174**		
RhumbLine S&P 500 Index	0.07% of First 25.0 Mil, 0.05% of Next 25.0 Mil, 0.04% Thereafter	$21,264,911	$14,885	0.07%
Frontier Capital Appreciation	0.79% of Assets	$19,545,028	$154,406	0.79%
RhumbLine HEDI	0.05% of Assets	$26,960,235	$13,480	0.05%
International Equity Assets		**$37,140,886**		
International Developed Markets Equity Assets		**$20,516,281**		
RhumbLine MSCI EAFE Index	0.08% of First 25.0 Mil, 0.07% of Next 25.0 Mil, 0.05% Thereafter	$20,516,281	$16,413	0.08%
International Emerging Markets Equity Assets		**$16,624,606**		
DFA Emerging Markets	0.39% of Assets	$8,497,021	$33,138	0.39%
Driehaus Emerging Market Equity	0.90% of Assets	$8,127,585	$73,148	0.90%
Fixed Income Assets		**$54,188,177**		
Investment Grade Bonds Assets		**$24,354,586**		
SSgA U.S. Aggregate Bond Index	0.04% of Assets	$24,354,586	$9,742	0.04%
High Yield Bond Assets		**$16,356,348**		
Shenkman Capital	0.45% of Assets	$16,356,348	$73,604	0.45%
TIPS Assets		**$9,143,407**		
SSgA TIPS Index-NL	0.04% of Assets	$9,143,407	$3,657	0.04%
Emerging Market Debt Assets		**$4,333,836**		
Payden Emerging Market Bond	0.69% of Assets	$4,333,836	$29,903	0.69%
Real Estate Assets		**$10,882,468**		
Open-Ended Real Estate		**$7,669,403**		
Clarion Partners	1.10% of Assets	$7,669,403	$84,363	1.10%

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Total Closed End Real Estate		**$3,213,065**		
Rockwood Capital Real Estate Partners Fund XI, L.P.	1.4% of committed capital during investment period; 1.4% on invested equity thereafter	$3,213,065		
Private Equity Assets		**$12,692,147**		
North American Strategic Partners 2006	0.8% on drawn and undrawn capital less investments sold or written off | 5% carried interest, 8% preferred return	$18,450		
Ironsides Partnership Fund IV	0% Management fee, 8% Preferred Return, 5% Carried Interest	$2,564,225		
Ironsides Direct Investment Fund IV	0.5% Management fee, 8% Preferred Return, 15% Carried Interest	$2,097,102		
Ironsides Partnership Fund V, L.P.		$1,599,350		
Ironsides Direct Investment Fund V, L.P.	0.5% Management fee, 8% preferred return, 15% carried interest	$3,145,527		
HarbourVest 2019 Global Fund	0.69% average annual management fee; 8.0% preferred return on secondary and direct investments and with corresponding carried interest of 12.5% on secondary and direct investments	$3,267,493		
Private Debt Assets		**$2,542,621**		
NB Private Debt Fund IV	1.0% on invested capital	$2,542,621		
Infrastructure		**$10,027,453**		
IFM Global Infrastructure	0.77% Management fee, 8% Preferred Return, 10% Carried Interest	$10,027,453		
Cash		**$143,066**		
Comerica Short Term Fund		$143,066		
Total		**$195,386,992**	**$506,741**	**0.26%**

Meketa has negotiated a 50% discount on fees for NB Private Debt Fund IV through June 2022. After June 2022, depending on Meketa's aggregate investment, the fee will become 0.7% or return to 1%.

Current Issues

High Yield RFP Respondent Review

Background

→ In August 2022, Meketa Investment Group issued a high yield fixed income RFP on behalf of the Marlborough Retirement System.

→ Meketa Investment Group received twenty-eight responses from the managers.

→ The Board will review the responses described below and vote on which managers to interview at the next meeting.

→ As of September 2022, the System had $16.4 million invested in high yield bonds.

RFP Respondents – Opportunistic High Yield

Manager	Headquarters	Strategy Name	Overall Rating
Polen Capital (formerly DDJ)	Boca Raton, FL	Opportunistic High Yield	Highly Advantageous
Brigade Capital Management	New York, NY	Traditional High Yield	Highly Advantageous
Mesirow Financial	Chicago, IL	High Yield	Highly Advantageous
Artisan Partners	Milwaukee, WI	High Income	Advantageous
Beach Point Capital Management	Santa Monica, CA	Dynamic High Yield	Advantageous
KKR & Co.	New York, NY	Global Credit Opportunities	Advantageous
Post Advisory Group, LLC	Los Angeles, CA	Traditional High Yield	Advantageous
Guggenheim Investments	New York, NY	High Yield	Advantageous

RFP Respondents – Traditional High Yield

Manager	Headquarters	Strategy Name	Overall Rating
Nomura Asset Management	New York, NY	NCRAM High Yield Total Return	Highly Advantageous
PineBridge Investments	New York, NY	High Yield Bond	Highly Advantageous
Columbia Threadneedle Investments	Boston, MA	Institutional High Yield	Highly Advantageous
Insight Investment	New York, NY	U.S. High Yield Beta	Highly Advantageous
Shenkman Capital Management	New York, NY	Primus High Yield	Highly Advantageous
Brandywine Global Investment Management	Philadelphia, PA	High Yield	Advantageous
Wellington Management Company LLP	Boston, MA	Core High Yield	Advantageous
Ares Management	Los Angeles, CA	U.S. High Yield	Advantageous
Lord, Abbett & Co.	Jersey City, NJ	High Yield Core	Advantageous
Western Asset Management Company	Pasadena, CA	US High Yield	Advantageous
MacKay Shields LLC	New York, NY	High Yield	Advantageous
Federated Hermes, Inc.	Pittsburgh, PA	High Yield	Advantageous
PIMCO	Newport Beach, CA	High Yield	Advantageous
MetLife Investment Management	Whippany, NJ	High Yield	Advantageous
Neuberger Berman	New York, NY	High Income	Advantageous
Capital Group	Los Angeles, CA	U.S. High Yield	Advantageous
GMO	Boston, MA	High Yield Fund	Advantageous
Advent Capital	New York, NY	High Yield	Advantageous
Oaktree Capital Management	Los Angeles, CA	U.S. High Yield	Advantageous
Canyon Partners	Dallas, TX	River Canyon Total Return	Not Advantageous

Bank Loan Exposure (Opportunistic)

Manager	Strategy Name	Current Exposure	Max Exposure
Polen Capital (formerly DDJ)	Opportunistic High Yield	30%	35%
Brigade Capital Management	Traditional High Yield	18%	25%
Mesirow Financial	High Yield	20%	25%
Artisan Partners	High Income	17%	100%[1]
Beach Point Capital Management	Dynamic High Yield	13%	100%[2]
KKR & Co.	Global Credit Opportunities	40%	100%[3]
Post Advisory Group, LLC	Traditional High Yield	11%	25%
Guggenheim Investments	High Yield	18%	100%[4]

[1] Artisan High Income Fund has no formal min/max bank loan constraints. Historical average bank loan exposure has been approximately 25% since inception.
[2] Beach Point Dynamic Income Fund has no formal min/max bank loan constraints. Historical average bank loan exposure has been approximately 24% since inception.
[3] KKR's Global Credit Opportunities Fund has no formal min/max bank loan constraints. Historical average bank loan exposure has been approximately 48% since inception.
[4] Guggenheim High Yield Fund has no formal min/max bank loan constraints. Historical average bank loan exposure has been approximately 25% since inception.

Bank Loan Exposure (Traditional)

Manager	Strategy Name	Current Exposure
Nomura Asset Management	NCRAM High Yield Total Return	1%
PineBridge Investments	High Yield	0%
Columbia Threadneedle Investments	Institutional High Yield	2%
Insight Investment	U.S. High Yield Beta	0%
Shenkman Capital Management	Primus High Yield	4%
Brandywine Global Investment Management	High Yield	0%
Wellington Management Company LLP	Core High Yield	4%
Ares Management	U.S. High Yield	6%
Lord, Abbett & Co.	High Yield Core	0%
Western Asset Management Company	US High Yield	7%
MacKay Shields LLC	High Yield	0%
Federated Hermes, Inc.	High Yield	0%
PIMCO	High Yield	3%
MetLife Investment Management	High Yield	4%
Neuberger Berman	High Income	4%
Capital Group	U.S. High Yield	0%
GMO	High Yield	0%
Advent Capital	High Yield	4%
Oaktree Capital Management	U.S. High Yield	0%
Canyon Partners	River Canyon Total Return	6%

Opportunistic High Yield Respondents

Polen Capital (Formerly DDJ)

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Advantageous	→ Polen Capital Credit, the fixed income arm of Polen Capital Management and formerly DDJ Capital Management, is based out of Waltham, MA and was co-founded in 1998 by David Breazzano. Polen acquired 100% of DDJ in January 2022 and is expected to operate independently. → Polen employees own 72% of the equity but control 100% of the firm. The remaining equity interest has no voting rights and is owned by the iM Global (20%) and the Polen family (8%). Over time, management hopes to purchase the Polen family's remaining interest. → As of June 30, 2022, Polen Capital's total AUM was $61.4 billion. Polen Capital Credit AUM was $7.4 billion, which included $5.5 billion in their proposed DDJ US Opportunistic High Yield strategy. The remaining $1.9 billion is allocated to their Upper Tier US High Yield ($1.4 billion), Total Return Credit ($306 million), and their Credit Bank Loan ($142 million) strategies.
Team	Highly Advantageous	→ The team is led by David Breazzano (the former 1996 founder, President and CIO of DDJ). Benjamin Santonelli and John Sherman serve as co-portfolio managers, alongside Mr. Breazzano, for the Polen DDJ US Opportunistic High Yield strategy. Both Mr. Santonelli and Mr. Sherman have 15+ years of tenure at Polen. The Capital Credit team is located in Waltham, MA.
Investment Philosophy	Highly Advantageous	→ Polen's investment philosophy is based on the belief that lower-rated segments of the high yield market (rated B and below) are the most inefficient areas of the market and provide ample investment opportunities. Additionally, Polen Credit believes that middle market companies are more likely to be "mis-rated" by rating agencies, further driving inefficiencies. The team believes the broad high yield market neglects these issues and there is very little research available on them. They also believe in holding a relatively concentrated portfolio of this debt, with a typical portfolio containing 70-90 individual issues.
Investment Process	Highly Advantageous	→ Polen Credit's investment process attempts to exploit inefficiencies in the high yield credit markets by adhering to a disciplined, bottom-up, fundamentally oriented investment process with a strict adherence to downside protection. → They gain excess yield in two major ways: (1) a very large CCC overweight (and corresponding BB underweight), and (2) by focusing on the smallest issuers in the index that benefit from a small issue and/or illiquidity yield premium. → A more opportunistic strategy with a higher allocation to non-high yield positions, which in most cases will be bank loans (up to 35%) but can also be convertible and preferred positions as well as reorganized equity. Current bank loan exposure in the CIT is 30%.
Performance	Highly Advantageous	→ Polen outperformed the Bloomberg US High Yield Index over the one-, three-, five-, and ten-year trailing periods, with excess returns of +6.6%, +2.9%, +1.8%, and +1.8%, respectively.
Fees	Advantageous	→ Commingled Investment Trust (CIT) effective fee of 0.55%.

Brigade Capital Management

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Highly Advantageous	→ Founded in 2006, Brigade is headquartered in New York, with offices in London and Tokyo. The firm was founded when high yield portfolio manager Don Morgan and senior team members spun out of MacKay Shields. → The firm is majority employee-owned but sold a minority stake (~10%) to Asset Management Finance (AMF) in early 2011. → Brigade has $26.2 billion in assets under management as of 6/30/22 and manages multiple below-IG strategies across the following strategies[1]: $6.8bn Long Only High Yield, $1.1bn Long/Short Credit, $6mn EU High Yield, $3.6bn Opportunistic Credit, $4.5bn Structured Credit, and $8.4bn CLOs.
Team	Highly Advantageous	→ Brigade's investment team is led by CIO & Managing Partner, Donald Morgan, who has 29 years of leveraged finance experience and Doug Pardon, Head of Corporate Credit, who has 21 years' experience. They lead a global team of 118 employees, including 44 investment professionals who average 19 years of experience. → A five-person Investment Committee consisting of the most senior members of the team and Heads of teams that support Don and Doug. The global credit research team consists of 26 industry specialist analysts who are responsible for the entire capital structure (bonds and loans).
Investment Philosophy	Advantageous	→ The Strategy seeks to achieve long term capital growth by investing primarily in high yield corporate bonds and opportunistically in bank loans and other credit instruments.
Investment Process	Highly Advantageous	→ Brigade implements a bottom up, fundamental credit process across its strategies. A more opportunistic strategy that currently has 18% exposure to Bank Loans and 2% to equity. Most accounts have a hard cap at 25%, with historical average closer to 13% for loans. → The process includes idea generation, research, screening, relative value analysis, strategy selection, execution, and monitoring. Ideas that pass the investment screens are presented to the rest of the Investment Committee by the covering analysts. The Investment Committee is responsible for assisting the Portfolio Managers in investment decisions. Analysts will put forward any investment research or opinions that they have on the credit. The Investment Committee will debate the idea, question assumptions, review the risk/reward of the idea, and analyze the capital structure of the issuer. → The Investment Committee can seek or engage in other approaches due to market fluctuations and changes. Portfolio managers have the ultimate decision-making authority.
Performance	Advantageous	→ Brigade outperformed the Bloomberg US High Yield Index over the one-, three-, five-, and ten-year trailing periods, with excess returns of +4.1%, +2.9%, +1.4%, and +1.3%, respectively.
Fees	Advantageous	→ Commingled Fund effective fee of 0.50%

[1] Strategy AUM as of 6/30/22

Mesirow Financial

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Advantageous	→ Mesirow Financial is a privately-owned and majority 95% employee-owned holding company that owns several financial services units such as Institutional Investment Management, Capital Markets & Investment Banking, Wealth Advisory Services, etc. → The firm is based in Chicago with offices in NY, Boston, Miami, San Francisco, London, and Hong Kong. The high yield team came to Mesirow in October 2017 and operates out of Manhattan Beach, CA with one person in South Florida. → As of 6/30/22, Mesirow Financial Investment Management (MFIM) has $46.6 billion in assets with $1 billion in the HY fund.
Team	Highly Advantageous	→ The six-person high yield team is an autonomous separate team from the larger organization and is in Manhattan Beach, CA. The three PMs have been together for over 20 years and have an average of 30 years' experience. The PMs and three analysts divide coverage by industry specialty. → CIO Bob Sydow is the Head PM who makes final decisions when necessary. He has 33 years of experience and covers Energy, Healthcare, Financials, Metals & Mining, Services and Utility industries. PM Kevin Buckle has 30 years of experience and covers Aerospace, Building Products, Consumer Products, Chemical (Commodity), Capital Goods, Manufacturing, Retail, Transportation and Technology industries. Jim Lisko has 27 years' experience and covers Chemical (Specialty), Food & Beverage, Paper & Packaging, Gaming, Media Entertainment, Telecommunications, Cable Satellite and Service industries.
Investment Philosophy	Highly Advantageous	→ Mesirow's High Yield team believes the high yield and bank loan markets historically have offered substantial income to over-compensate for default risk and have offered the potential to produce capital gains when issuers have improved their credit quality. They believe industry selection is the single most important decision in high yield and bank loan investing and favor companies and industries whose sales, operating leverage, cash flow and maintenance capital expenditures in past recessions can be measured.
Investment Process	Highly Advantageous	→ The strategy is opportunistic with current bank loan exposure comprising 20% of the portfolio (max 25%). They focus on smaller issues in certain industries they believe are favorable. PMs conduct semi-annual industry reviews (or event driven reviews) and eliminate certain industries for investment. They favor industries they believe to be resilient enough to tolerate high financial leverage through a complete economic cycle. The target industries typically comprise 65% - 85% of Bloomberg Barclays US Corporate High Yield credit universe. Primary focus is on issue sizes less than $500mm, typically comprising 65% of target universe issuers. They fill out the rest of the portfolio with more liquid issues where they see value and total return potential. This is done for liquidity purposes. PMs/traders and analysts meet weekly to discuss credit selection and idea generation (including new issues) within respective industries. The PMs also do research according to their sector specialty. Two of the PMs, Kevin and Jim, do the trading for the strategy.
Performance	Highly Advantageous	→ Mesirow outperformed the Bloomberg US High Yield Index over the one-, three-, five-, and ten-year trailing periods, with excess returns of +4.9%, +4.1%, +2.7%, and +1.8%, respectively.
Fees	Advantageous	→ Commingled Investment Trust (CIT) effective fee of 0.55%.

Artisan Partners

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Highly Advantageous	→ Artisan Partners LP and Artisan Partners UK LLP are wholly owned operating subsidiaries of Artisan Partners Holdings LP, an intermediate holding company controlled by its general partner Artisan Partners Asset Management Inc., a publicly traded company. → Artisan Partners was founded in 1994 but went public in March 2013. → The firm's headquarters are in Milwaukee, WI and have 19 satellite offices (14 in U.S. & 5 worldwide) including Hong Kong, United Kingdom, Singapore, Australia and Ireland. → As of 6/30/2022, Firm AUM is $130.5 billion with the High Income Fund comprising $6.9 billion.
Team	Highly Advantageous	→ The Artisan Partners Credit Team is located in Denver, CO and manages both the Artisan High Income Fund and Artisan High Income Trust. → The team is headed by Bryan Krug (Lead PM) and supported by senior research analysts (7 generalists), a research associate, research coordinator, traders (2), Chief Operating Officer (COO), and a data scientist all dedicated to the same investment philosophy and process. → Bryan Krug brings 22 years of investment experience and is responsible for portfolio management and allocation. Final decisions are brought to him before implementation.
Investment Philosophy	Advantageous	→ The High Income strategy is a fundamental, value-based, below investment grade product that seeks to identify dislocation in inefficient markets while identifying strong business model companies with the best risk adjusted return opportunities, over the long term. Their investment philosophy and methodology reflect the cyclicality of the credit cycle and supports their fundamental credit research across the entire debt capital structure. The strategy is benchmark agnostic leaving a high degree of flexibility to capture idiosyncratic opportunities.
Investment Process	Highly Advantageous	→ The investment team collaborates as they make their way through their systematic investment process. They begin with idea generation that includes both quantitative screens and qualitative factors, which is integrated into their fundamental credit research. Fully understanding a credit, followed by a complete understanding of each respective deal structure, is the cornerstone of their investment process. Quantitative screens include characteristics such as yield and risk parameters, which may uncover relative value across and within sectors. Qualitative factors rely heavily on the tenured team and the depth of their credit market expertise as well as their extended access to key market participants and their understanding of the technical landscape driving valuations. The inclusion of the data scientist contributes to the fundamental research process by including external resources and data mining capabilities providing the team with a key competitive edge. An example is data pertaining to aircraft utilization on a real time basis. Data is reliably sourced and becomes input to Artisan's proprietary valuation models. → Once an idea has been vetted amongst the team, fundamental credit research is the next step in their process. Here they look at business quality, financial strength and flexibility, downside analysis, and value identification. → This is followed by portfolio construction with a broad guideline of performance expectations. The core strategy is expected to account for 20-60% of performance. Spread tightening anywhere from 10-50% of performance, and 0-10% of added value from opportunistic propositions.
Performance	Highly Advantageous	→ Artisan outperformed the Bloomberg US High Yield Index over the one-, three-, and five-year trailing periods, with excess returns of +4.0%, +3.6% and +2.6%, respectively.
Fees	Not Advantageous	→ Commingled Investment Trust (CIT) effective fee of 0.68%

Beach Point Capital Management

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Highly Advantageous	→ Beach Point is fully owned by its employees, including co-founders and Co-CEOs, Carl Goldsmith and Scott Klein. → In January of 2009, the Beach Point founders consummated a management buyback of the alternative investment business of Post Advisory Group, LLC. Together they served as Portfolio Managers responsible for its multi-billion-dollar alternative fixed income business. Other founding members included 30 professionals and 18 of them are still employed at Beach Point. → The firm's headquarters are in Santa Monica, CA and have 3 other offices in New York, London and Dublin, Ireland. → As of 6/30/2022, Firm AUM is $15.5 billion with the Dynamic High Yield strategy comprising $2.9 billion.
Team	Highly Advantageous	→ Beach Point's Investment Team is comprised of 62 investment professionals: 2 Co-CEOs, 10 Portfolio Managers, 2 Portfolio Strategists, 36 Research Analysts, 3 Portfolio Analysts, 2 Risk Analysts, 6 Traders, and 1 Trade Support Professional. → The investment professionals act as one team and cover every sector in the high yield market. Analysts are organized by industry and are considered experts in their respective sectors.
Investment Philosophy	Highly Advantageous	→ The goal is to outperform client expectations while actively managing risk. → Their investment philosophy follows three key principles. First, thorough analysis is needed to understand any risk they take on. Credit specialists approach each opportunity with risk being the focus, seeking a margin of safety on downside protection. Second, they believe securities are mispriced and that the due diligence by sector specialists enables them to uncover potential opportunity. Third, they believe that optimal performance can be achieved through the consistent identification of value driving catalysts. The team's experience and active approach to investment and risk management assist in capitalizing on those catalysts.
Investment Process	Advantageous	→ Beach point constructs portfolios with a bottom-up, research driven approach that also factors in top-down macro considerations. → The team will dynamically allocate to bank loans when the market warrants a more defensive approach. They believe senior secured loans are more resilient during periods of volatility. Loans are also used as duration and convexity tools to manage the Fund's interest rate exposure. → The investment process begins with idea generation and quantitative screening from credit research. Ideas will come from internal resources as well as industry contacts, business conventions, articles in trade magazines and high yield dealers. Analysts will then build models to be reviewed by investment team. Beach point builds each portfolio on a name-by-name basis, utilizing thorough due diligence, a rigorous credit analysis, and the team's experience. They overlay credit research with portfolio optimization, in preparation to take advantage of mispriced securities and volatility in the market. Portfolio construction is driven by evaluating both technical and fundamental factors that impact the credit and equity markets. → Final decision making comes from the CO-CEOs and Portfolio Managers. They work closely with research analysts, portfolio analysts, and traders prior to making any investment decisions.
Performance	Not Advantageous	→ Beach Point outperformed the Bloomberg US High Yield Index over the one-, three-, and five-year trailing periods, with excess returns of +0.8%, +0.3% and +0.6%, respectively.
Fees	Not Advantageous	→ Commingled Fund effective fee of 0.65%.

KKR & Co.

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ Henry Kravis and George Roberts (KKR & Co.) co-founded the Firm in 1976. Today, they are a global firm comprised of investment professionals positioned across private equity, real estate, infrastructure, capital markets, credit and energy real assets. As of June 30, 2022, KKR has over 2,000 employees, with over 1,300 executives located in New York, San Francisco, Menlo Park, Houston, and around the globe. → KKR & Co. Inc., an affiliate of KKR, is a publicly traded company on the New York Stock Exchange (ticker: KKR). Following a topside reorganization that occurred on May 31, 2022, current and former employees of KKR no longer beneficially own a portion of KKR through the ownership or control of units of KKR Holdings L.P, as such units were exchanged for shares of common stock of KKR & Co. Inc. → As of June 30, 2022, Firm AUM is $470.7 billion with the proposed KKR Global Opportunities Credit Fund comprising $3.8 billion.
Team	Highly Advantageous	→ Christopher Sheldon is head of KKR's leveraged credit business and oversees all credit strategies on the platform. Mr. Sheldon joined the Firm in 2004 and has over 24 total years of investment experience. The key senior investment professionals for this strategy are Christopher Sheldon, John Reed, Jeremiah Lane and Terry Ing. Mr. Sheldon serves as the primary portfolio manager for KKR Global Credit Opportunities Fund ("GCOF""). He is supported by the senior team of investment professionals shared above, in addition to the leveraged credit team. → The KKR Leveraged Credit Investment Team, which manages the Opportunistic Credit Strategy, has members located in San Francisco, Dublin, New York, and London.
Investment Philosophy	Highly Advantageous	→ KKR's credit strategies incorporate a fundamentally-driven investment philosophy which is based on deep credit underwriting and rigorous financial analysis. Their investment philosophy is based on: 1-Intensive Credit Analysis; 2-Capital Preservation; and 3-Active Portfolio management. → KKR's investment objective seeks to provide an attractive risk-adjusted return through investment in a diversified portfolio of fixed income securities and financial instruments. To achieve this, KKR utilizes a high conviction, "best ideas," long-only unlevered credit strategy, focused primarily on the corporate credit markets with the flexibility to toggle between various asset classes and thematic approaches. → One of KKR's fundamental philosophies is to align the interests of the Firm and their people with the interests of their investors, portfolio companies and other stakeholders. As of June 30, 2022, KKR had approximately $25 billion in capital that their balance sheet and their executives had together invested in or committed across all strategies.
Investment Process	Advantageous	→ A more opportunistic strategy that currently has 40.4% exposure to Bank Loans. For the proposed GCOF strategy and its investment process, the research agenda is set by the Portfolio Managers and the Co-Heads of Credit Research. As a team they determine which types of investments industry analysts should evaluate, and then ensure that the necessary research needs of KKR's strategies are met. Credit analysts report to the Co-Heads of Credit Research and are responsible for 1) buy/sell recommendations based on credit fundamentals and relative risk-adjusted returns across the capital structure, and 2) monitoring the universe of companies within their respective industry.
Performance	Advantageous	→ KKR outperformed the Bloomberg US High Yield Index over the one-, three-, and five-year trailing periods, with excess returns of +5.1%, +2.9%, and +2.2%, respectively.
Fees	Advantageous	→ Commingled Fund effective fee of 0.45%.

Post Advisory Group, LLC

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ Post Advisory Group was founded in April 1992 by Lawrence Post, as a value-oriented asset manager specializing in high yield bonds and senior loans. Post is located in Los Angeles, California, with offices also in New York City, New York. → As of December 31, 2021, Post is 76.0% owned by PGI (a wholly owned, indirect subsidiary of PFG), 19.0% owned by NLI US Investments, Inc. (wholly owned by Nippon Life Insurance Co.), and 5.0% owned by select senior investment professionals. → Upon Mr. Post's retirement in 2013, a series of senior leadership transitions and retirements followed. Henry Chyung was named CIO in 2014 and remained so until his retirement in December 2019. In January of 2020, Jeffrey Stroll was named CIO. → Total Post AUM was $16.7 billion, as of June 30, 2022. AUM for the proposed High Yield strategy was $2.7 billion, while other high yield strategies including their HY Plus, HY Limited, HY Intermediate products totaled $12.3 billion, their ESG HY was $294 million and their series of loan and structured product strategies was $2.5 billion, as of the same June ending time-period.
Team	Advantageous	→ Post's High Yield Strategy is co-managed by CIO - Jeffrey Stroll, Deputy CIO - David Kim, and four portfolio managers: Schuyler Hewes, Dan Ross, Iris Shin, and James Wolf. All investment activities are overseen by this portfolio management team. The investment team is specialized by industry. Portfolio managers are responsible for distinct industries and work closely with their team of 11 analysts to generate investment ideas, identify key value drivers, and develop research and due diligence for each investment. The analyst team is similarly organized.
Investment Philosophy	Advantageous	→ The foundation of Post's investment philosophy has remained consistent since the inception of the firm in 1992 and is based on extensive fundamental credit research. Investments are individually selected and require a comprehensive research and evaluation process. Post augments their bottom-up credit research with a top-down macro and technical overlay. → Non-benchmark securities are included in Posts investment universe and are regularly considered as alpha drivers. Posts' HY strategies are referenced as "index aware" but "index agnostic."
Investment Process	Advantageous	→ A more opportunistic strategy that currently has 10.5% exposure to Bank Loans. There are no bank loan constraints but target 5%- 25% of the Fund in senior loans. The allocation to senior loans has historically been approximately 10% of the portfolio. → Posts' investment process emphasizes capital preservation which is achieved through their strong fundamental credit selection expertise. Approximately 85% of alpha is generated by the bottom-up security analysis and the remaining 15% comes from tactical positioning expressed via their top-down, or macro and technical overlays. → PMs follow a systematic investment process that includes: (1) idea generation; (2) industry, issuer, and opportunity analysis; (3) a team-oriented credit review; (4) trade execution and allocation reviews; and (5) portfolio and risk management reviews.
Performance	Not Advantageous	→ Post outperformed the Bloomberg US High Yield Index over the one-, three-, five-, and ten-year trailing periods, with excess returns of +1.7%, +0.4%, +0.2%, and +0.3%, respectively.
Fees	Not Advantageous	→ Commingled Fund effective fee of 0.78%.

Guggenheim Investments

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Not Advantageous	→ Guggenheim Investments is the global asset management division of Guggenheim Partners, LLC ("Guggenheim Partners") which is the principal subsidiary of Guggenheim Capital, LLC ("Guggenheim Capital"), which was established in 1999. Guggenheim Investments includes Security Investors, LLC, the SEC registered investment adviser that serves as the manager to the Guggenheim High Yield Fund. → The firm is privately held and headquartered in New York and Chicago, with investment advisement from additional offices around the world. → The firm invests on behalf of insurance companies, corporate and public pension funds, sovereign wealth funds, endowments and foundations, wealth managers and high net worth investors. → As of June 30, 3022, Firm AUM is $271.7 billion with the proposed Guggenheim High Yield Mutual Fund (SHYIX) comprising $4.5 billion in AUM.
Team	Advantageous	→ Portfolio managers for the Fund are B. Scott Minerd and Thomas Hauser. Mr. Minerd joined Guggenheim in 1998, and is Chairman of Guggenheim Investments, Guggenheim Partners' Global Chief Investment Officer and Managing Partner, and Chief Investment Officer of the Sub-Adviser. Thomas. Hauser is Co-Head of Guggenheim's Corp Credit Group and has been with the Firm since 2002. Working closely with Mr. Minerd is Anne. Walsh. Ms. Walsh has 35 years of industry experience and serves as Chief Investment Officer for Fixed Income at Guggenheim Investments, the global asset management business of Guggenheim Partners. → Guggenheim's dedicated team of 65+ fundamental credit research analysts are organized by industry across the capital structure.
Investment Philosophy	Advantageous	→ The Firms core belief centers around capturing attractive yields, while remaining focused on the preservation of capital. → Guggenheim's investment philosophy entails rigorous, bottom-up fundamental research strategy, with a macro-overlay in tandem with a proactive risk-management process. Core beliefs that drive investment action include: 1) fixed income markets are inefficient; 2) indices are investable but not designed to maximize risk-adjusted return; 3) investment decisions can be detrimentally influenced by behavioral biases; 4) buy-to-own investing can help portfolios outperform; 5) consistent investment income generates long-term benefits; 6) and that over the long-term, capital preservation can be achieved without sacrificing income.
Investment Process	Advantageous	→ .A more opportunistic strategy that currently has 18.3% exposure to Bank Loans. → The research expertise at Guggenheim employs a rigorous process to assess the relative value amongst credit to derive investment decisions. The investment process includes both a macro-overlay and fundamental credit research. Guggenheim employs an extensive process to assess fundamental and relative value amongst credits which involves two key steps: 1) Initial Screening and 2) Extensive Fundamental Due Diligence. → Included in their fundamental analysis, Guggenheim also utilizes their Legal Credit Research team to review covenants and deal structures. They also involve the Investment Committee where their overall objective is to unanimously produce a list of securities eligible to be bought and sold for portfolio construction by the portfolio managers. And lastly, Portfolio Construction where the portfolio managers make informed relative value buy/sell decisions by selecting from the Investment Committee's approved buy/sell lists.
Performance	Advantageous	→ Guggenheim outperformed the Bloomberg US High Yield Index over the one-, three, five-, and ten-year trailing periods, with excess returns of +3.3%, +0.9%, +0.5%, and 1.3%, respectively.
Fees	Not Advantageous	→ Mutual Fund net expense ratio of 0.85%.

Traditional High Yield Respondents

Nomura Asset Management

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Advantageous	→ Nomura Corporate Research and Asset Management (NCRAM) is a credit investment boutique established as a subsidiary of Nomura Holding America Inc which is 100% owned by Nomura Holdings, Inc. a publicly traded Japanese company. → As of 6/30/22, NCRAM has $26.2 billion in total assets under management. All AUM is in High Yield Fixed Income strategies. In the NCRAM High Yield Total Return Strategy, NCRAM has $20.5 billion. High Yield Total Return is the flagship strategy (inception 1991). The ACI High Income fund has less than $1.0 billion in assets as of June 30, 2022. Approximately 72% of AUM is in separately managed accounts, 15% in UCITS, and 13% in other pooled vehicles.
Team	Highly Advantageous	→ The team is stable and has been together for a long time. The four most senior PMs have worked together for over 20 years. David Crall (CEO/CIO) has been there 30 years. The research analysts are dedicated and not shared with any other parts of the firm. There are six PMs, 13 credit analysts (11 industry specialist high yield and 2 EMD). → There two dedicated traders and all PMs trade for their respective strategies. Steve Kotsen is the lead PM of the High Yield Total Return strategy. Mr. Kotsen has 29 years of experience in HY credit and 24 years at NCRAM. He is supported by Assistant PM Chris Parham who is also one of the credit analysts.
Investment Philosophy	Advantageous	→ Nomura believes that a total return strategy driven by credit research and a team effort is the best way to generate alpha in high yield. The core of the strategy is their “Strong Horse” investment philosophy. These companies can carry their debt loads through the economic cycle and still be able to generate strong cash flows that enable them to de-lever their balance sheets and improve their ratings. As credit quality improves, bond income is supplemented by capital appreciation.
Investment Process	Highly Advantageous	→ A more traditional strategy that allows for 20% off-benchmark exposure that includes IG, distressed, bank loans, trust preferred, floaters, PIKs, etc. Max loan exposure for the HYTRIC strategy is 10% with current exposure at 0.6%. → The Investment process follows 3 basic steps which are idea generation, credit research and portfolio construction. Idea generation comes from analysts, portfolio managers, or the CIO. They seek to identify trends in the market or situations where bond prices differ from fundamental risk. The team works in open-seating environment to collaborate. Credit research is founded on a diligent fundamental analysis. → As PMs build the portfolios, they consider the top-down attributes of the portfolios. On a monthly basis, the CIO leads the PMs in a discussion of macro factors. Various scenarios are discussed to cover market prices, risk/reward outlook for sectors and segments of the high yield market. → This is characterized as a fundamental, bottom-up approach with a top-down overlay (70% bottom-up / 30% top-down).
Performance	Highly Advantageous	→ Nomura outperformed the Bloomberg US High Yield Index over the one-, three-, five-, and ten-year trailing periods, with excess returns of +0.5%, +1.5%, +0.9%, and +1.6%, respectively.
Fees	Advantageous	→ Mutual Fund net expense ratio fee of 0.53%.

PineBridge Investments

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Advantageous	→ PineBridge is independently owned and was formed in 2010 when AIG divested itself of its third-party asset management business. The assets were purchased by Pacific Century Group, an Asia-based private equity firm that is now the majority owner. PineBridge employees and directors have an approximate 29% interest, which has not changed significantly since purchase. The original team has stayed together and their track records remained intact. → PineBridge has a total of $141.0 billion in assets under management as of June 30, 2022 and is distributed across (1) Fixed Income with $85.8 billion, with the High Yield strategy representing $7.0 billion; (2) Multi-Asset strategies with $15.9 billion; (3) Equities strategies with $36.0 billion; and (4) Alternatives strategies with $11.6 billion.
Team	Highly Advantageous	→ Steven Oh and John Lapham co-lead the Leveraged Finance group and run the loan strategies. They are supported by seven portfolio managers across high yield, bank loans, and CLOs. The seven PMs have 15-20 years' of experience, with many having worked together for over 20 years. → Located in Houston, the high yield team is led by John Yovanovic who is Head of High Yield and the Lead PM on all high yield strategies including High Yield, High Yield BB-Rated, Global High Yield, and Co-PM on Opportunistic Credit with Steven Oh. Mr. Yovanovic has been with the team for 21 years and has 30+ years of investment management experience. → The high yield team has 16 industry credit analysts who cover below investment grade credit across the capital structure (both high yield and loans) and they work collaboratively across all various high yield and loan strategies.
Investment Philosophy	Advantageous	→ PineBridge is a value-oriented investor believing that credit markets have areas of inefficiency. They follow a consistent investment process to independently price credit risk relative to the market. The team uses an in-depth research process focused on both upside and downside fundamental risks. It identifies and monitors issuer-specific metrics for early warning of changes in fundamental trends. The team invests in a counter-cyclical manner and looks to capitalize on periods of volatility.
Investment Process	Highly Advantageous	→ Considered a more traditional strategy that maintains the flexibility to invest in loans and investment grade/crossover names that are trading at high-yield like levels. Allocations are typically less than 5% of the portfolio. → The core of PineBridge's investment process is its' bottom-up credit analysis and security selection, driven by their proprietary credit rating process which specifically focuses on three steps: (1) evaluation of credit risk, (2) appropriately pricing credit risk, (3) and identifying and monitoring issuer specific metrics for early warning of changes in credit risk. → Bond issues are selected on an individual basis with the goal of being compensated for their view of the assumed credit risk. They believe that their differentiated process produces superior results over a credit cycle and mitigates default losses.
Performance	Advantageous	→ PineBridge outperformed the Bloomberg US High Yield Index over the one-, three-, five-, and ten-year trailing periods, with excess returns of +0.1%, +0.6%, +0.6%, and +0.9%, respectively.
Fees	Advantageous	→ Commingled Investment Trust (CIT) effective fee of 0.45%.

Columbia Threadneedle Investments

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Advantageous	→ Columbia Threadneedle Investments is a large, publicly traded global asset management firm headquartered in Boston, MA, with several other offices globally. The high yield team is based in Minneapolis, MN. → The firm manages a broad range of strategies, ranging from equity and fixed income to alternatives. As of June 30, 2022, the firm had $599.1 billion in AUM of which $15.7 billion are in high yield.
Team	Highly Advantageous	→ The investment team consists of three portfolio managers and 12 research analysts. The team is very seasoned as the portfolio managers and senior analysts have been working together for over 12 years. The Institutional High Yield strategy is led on a day-to-day basis by Portfolio Managers Mark Van Holland (retiring Q1 of 2023), Brett Kaufman and Kris Keller. → Brian Lavin, former Senior Portfolio Manager and Head of US High Yield will continue in his leadership role for U.S High Yield team, although no longer serves as a portfolio manager since June of 2022. → The Investment Committee makes portfolio allocation decisions on a weekly basis. While final decision-making authority lies with the head strategy portfolio manager, the entire team contributes to the investment analysis and research process.
Investment Philosophy	Highly Advantageous	→ The team follows three tenets of investment philosophy: strong fundamental credit selection, tactical portfolio management, and disciplined downside risk management. → Columbia believes that high yield strategies cannot rely solely on credit selection, if the team intends to outperform over various market environments, so it will tactically allocate portfolio-level risk based on its assessment of the credit and economic cycles. This will result in rotating portfolio-level beta, typically between 0.8x and 1.0x.
Investment Process	Highly Advantageous	→ The credit analysts' bottom-up fundamental research follows a proactive approach that includes rigorous due diligence, proprietary modeling and forecasting, field research, and covenant analysis. The analysts assess quality using forward-looking analysis throughout a full business cycle without relying on rating agencies. The portfolio managers incorporate analysts' recommendations into their tactical outlooks in an effort to optimize portfolio construction. → As a starting point, analysts filter out (1) issues of less than $100 million, (2) non-US issuers for which they cannot get an information advantage. → The portfolio tends to be well-diversified, averaging 350-400 bond issues. This allows portfolio managers to more efficiently adjust portfolio positioning as their outlook or the market environment changes. → Through their process, over a full market cycle, they expect to generate two-thirds of their alpha through credit selection and one-third through tactical management.
Performance	Advantageous	→ Columbia outperformed the Bloomberg US High Yield Index over the one-, three-, five- and ten-year trailing periods, with excess returns of +1.0%, +0.5%, +0.3% and +0.3%, respectively.
Fees	Highly Advantageous	→ Commingled Investment Trust (CIT) effective fee of 0.41%.

Insight Investment

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Advantageous	→ Insight was originally founded in 2002, and over the course of several years, has gone through many ownership and leadership transitions. IIML (Insight Investment Management Limited) was part of BNY Mellon and operating several other entities all of which collectively form the Insight brand, each of which provides asset management services. → Over much of 2021, the Mellon Fixed Income teams transitioned to Insight Investments, which was announced earlier in the same year as part of the broader BNY Mellon strategy to realign investment functions across subsidiaries. → Insight remains 100% owned by parent, BNY Mellon. Insight operates with an independent management structure and boards, which include a number of non-executive directors. As part of BNY Mellon's multi-boutique structure, Insight has the backing of a sound global financial institution. → As of June 30, 2022, total firm AUM was $880.6 billion across strategies, and total AUM in the proposed High Yield Bond strategy assets was $2.7 billion.
Team	Highly Advantageous	→ The Fixed Income Efficient Beta team is led by Paul Benson. Mr. Benson Paul joined Insight in September 2021 following the transition of Mellon Investments' fixed income strategies to Insight. He has been in the investment industry since 1994. He is supported by two Senior Portfolio Managers, Manuel Hayes (18 years) and Stephanie Sue (25 years), a Senior Product Specialist, Syed Zami (35 years), and Deepack Agraw (20 years), Head of Fixed Income Quantitative Research. The team is further supported by 11 traders and 21 corporate credit analysts.
Investment Philosophy	Highly Advantageous	→ The Efficient Beta team believes high yield strategies face major implementation challenges - high trading costs, low liquidity and difficulty in sourcing high yield bonds, that can erode returns. Insight's high yield beta strategy addresses these challenges through innovative implementation and active risk management drawing on their implementation expertise as a manager of multiple fixed income index strategies. → The team describes their investment style as a core high yield beta manager. Their beta 1.0 approach capitalizes on the strong performance of the Bloomberg US Corporate High Yield index relative to the broad high yield universe and aims to exploit the higher liquidity and lower trading costs of broader bond 'baskets' relative to individual bonds.
Investment Process	Highly Advantageous	→ A more traditional strategy that primarily invests in US High Yield corporate bonds (99%). Bank loan exposure is 0%. → Insight utilizes a proprietary credit model, consisting of quality, momentum and value factors, enhance security selection and reduce downside exposure. Quality and momentum signals are used to identify and limit exposure to lower quality issuers who potentially will have trouble servicing their debt, while the value signal is used to identify and limit exposure to expensive bonds. → Their credit model assists the portfolio managers in the sampling to screen out or avoid overweighting corporate bonds with weaker financials that have a higher probability of downgrades.
Performance	Advantageous	→ Insight was neutral relative to the Bloomberg US High Yield Index over the one-year trailing period. However, the strategy outperformed over the five- and ten-year trailing period, with excess returns of +0.1%, and +0.2% respectively.
Fees	Highly Advantageous	→ Commingled Fund effective fee of 0.21%.

Shenkman Capital Management

Rating Criteria	Rating	Rationale
Overall	Highly Advantageous	
Organization	Highly Advantageous	→ The Firm was founded in 1985 by Mark R. Shenkman, who remains President and controlling shareholder. Ownership is shared by 15 other senior team members, one former team member and one outside director (and/or trusts controlled by them). Mark and family trusts own 78% while the 15 current and former employee and outside own the remaining 22%. → As of June 30, 2022, total firm assets were $28.3 billion across strategies, and total AUM in the proposed High Yield Bond strategy assets were $8.5 billion. Vehicles include separately managed accounts ($7.2 billion), a commingled fund ($1.0 billion), with the remaining held in a mutual fund.
Team	Advantageous	→ The 45-member investment team is led by Mr. Shenkman and Vice Chairman Adam Kurzer. Justin Slatky is the CIO and has been at Shenkman 13 years. Mr. Slatky had been Co-CIO with Mr. Shenkman since 2016 until 2020 when Mr. Shenkman stepped back to oversee the non-investment aspects of the business. → Mr. Slatky is supported by eight PMs and 22 credit research analyst team members of various levels of experience. There are seven members of the trading team and six members of the risk and analytics team.
Investment Philosophy	Highly Advantageous	→ Shenkman follows a conservative, income-oriented, fundamental research-driven investment style in its High Yield Bond strategy that aims to preserve capital and generate strong risk-adjusted returns over multiple market cycles. → The team looks to mitigate credit risk and avoid defaults through bottom-up, proprietary credit analysis focused higher quality bonds of lower rated companies with strong and/or improving financial characteristics. Their philosophy seeks above benchmark returns with significantly less volatility. This strategy is benchmark agnostic.
Investment Process	Advantageous	→ A more traditional strategy that primarily invests in US High Yield corporate bonds (90%), but also in convertible bonds (4%) and bank loans (4%). There is no limit on the percentage that bank loans can be of the fund but historically average 4%. → The firm utilizes a structured, disciplined process that features their proprietary C-Scope score that they believe is a more accurate measure of a company's credit worthiness. → The team follows a thorough multi-step process that includes the Credit Analyst conducting their proprietary C-Scope score, followed by a detailed credit report and a risk assessment. All investment ideas are presented to the Credit Committee for debate. Decisions are made by 2/3 approval via a blind-ballot process. Once approved, buy/sell decisions are determined with risk management reports closely monitored.
Performance	Advantageous	→ Shenkman outperformed the Bloomberg US High Yield Index over the one-, three-, and five-year trailing periods, with excess returns of +2.3%, +0.8%, and +0.6%, respectively. However, the strategy underperformed over the ten-year trailing period, with excess returns of -0.1%.
Fees	Advantageous	→ Commingled Investment Trust (CIT) effective fee of 0.45%.

Brandywine Global Investment Management

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ Brandywine Global was founded in 1986 and operates as an indirect, wholly owned subsidiary of Franklin Resources, Inc (Franklin Templeton) retaining complete investment autonomy to make decisions. In 2001, Brandywine announced they acquired the business of Diamond Hill's high yield focused, corporate credit mutual funds. → Firm headquarters are in Philadelphia, PA and other offices in Toronto, Montreal, London, and Singapore. → As of June 30, 2022 the firm had a total of 60.7 billion in assets under management with $1.0 billion in the proposed High Yield strategy.
Team	Advantageous	→ John McClain and Bill Zox head the portfolio management team for high yield. The two of them receive support from research analyst, Jack Parker, as well as the other credit-oriented analysts and portfolio managers. → The team that managers the strategy, is part of the broader Global Fixed Income Investment team. → The investment team consists of 36 professionals located primarily in the Philadelphia headquarters.
Investment Philosophy	Advantageous	→ Standing out by not fitting in—that is their approach to delivering excellent outcomes for clients. When they know a bond well and like its price, they take a meaningful position. If they don't know a bond well or don't like its price, they won't own it, regardless of its weight in the benchmark. They manage their fixed income strategies independent of a benchmark with an active, value-driven investment philosophy.
Investment Process	Highly Advantageous	→ The Brandywine High Yield strategy is a traditional bottom-up strategy with duration managed to +/-1.5 yrs versus the benchmark. At times historically they have had small allocations to asset-backed securities as a result of relative value opportunities. → Portfolio managers Bill Zox and John McClain are responsible for investment decision making, including asset allocation, portfolio construction, security selection, trading and portfolio risk management. → They have a deep team of career analysts who are industry specialists complemented by generalist portfolio managers and dedicated fixed income analysts. The overlap between equity and fixed income research coverage is typically greater than 65%, illustrating the integration of the research process. They start with the investable universe of all U.S. dollar-denominated corporate bonds and then narrow that universe down through both qualitative and quantitative assessment. → In addition to the analysis by the portfolio managers and credit research analysts, they leverage the analysis conducted by their equity analysts to identify attractive high yield bonds. Their company analysis focuses on the fundamental economic drivers of the business. Research analysts also help to assess whether there is adequate financial strength and flexibility to meet ongoing commitments and consider debt instruments as part of their analysis.
Performance	Highly Advantageous	→ Brandywine has outperformed the Bloomberg US High Yield Index over the one-, three-, and five-year trailing periods, with excess returns of +1.1%, +3.2%, and +3.2%, respectively.
Fees	Advantageous	→ Mutual Fund (Class IS) net expense ratio of 0.56%

Wellington Management Company

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Highly Advantageous	→ Wellington Management Company LLP is a limited liability partnership, privately held by 195 partners who are all fully active in the business of the firm with no external entities with ownership interest. Wellington Management is headquartered in Boston, MA and traces its history back to the founding of the Wellington Fund in 1928. → Total firm assets under management for Wellington were $1.2 trillion as of June 30, 2022, of which $2.6 billion were in their proposed Core High Yield strategy.
Team	Highly Advantageous	→ Wellington has 34 professionals dedicated to Core High Yield investment management, including 4 high yield PMs, 2 bank loan PM's, 16 high yield credit analysts, 1 fixed income quantitative analyst, 3 portfolio analysts, and 7 traders. → Chris Jones is the lead portfolio manager for the Core High Yield approach and is based in their Boston, Massachusetts global headquarters. Mr. Jones has been the lead portfolio manager for their Core High Yield approach since April 2002 and is the final decision maker with respect to investment decisions and is ultimately responsible for performance, positioning, and risk. → The Core High Yield portfolio managers benefit from the recommendations of the 16 high yield credit analysts. High yield analysts also work closely with their team of 14 investment-grade and 52 global industry (equity) analysts covering the same industry. They believe this representation across the capital structure ensures a thorough and robust research process.
Investment Philosophy	Advantageous	→ Wellington believes that high yield is an inefficient asset class where fundamental research can add value in all market environments, and that over the long term, the high yield market misprices default risk. They seek to exploit this inefficiency by focusing on downside protection and maintaining a slightly defensive bias. PMs feel they can generate excess returns over a business cycle by: (1) dynamically adjusting risk positioning throughout the cycle; (2) exploiting inefficiencies in the pricing of default risk; and (3) incorporating investment ideas from multiple research sources.
Investment Process	Advantageous	→ A more traditional, conservative approach that is benchmark aware. There is Investment Grade bond exposure (6%) and a small allocation to bank loans (4%). HY portfolio caps out of benchmark exposure at 10% and that's inclusive of bank loans, IG corporates, hybrids, and equity linked securities. → The investment process seeks to add value by integrating top-down and bottom-up research ideas. The investment process is a dynamic interaction of four components: 1) broad strategy, 2) research "best ideas", 3) portfolio construction, and 4) risk management. → Wellington does not have a chief investment officer. Investment capabilities are organized as a community of teams — each functioning as an entrepreneurial entity within an established organization. Each team: (1) manages in a specific, predetermined style or discipline; (2) conducts research and manages portfolios; (3) has full access to research and other resources within the firm; (4) is collaborative; and (5) has investment decision-making discretion within its approach.
Performance	Not Advantageous	→ Wellington outperformed the Bloomberg US High Yield Index over the one-, three-, five-, and ten-year trailing periods, with excess returns of +0.7%, +0.6%, +.0.6%, and +0.1%, respectively.
Fees	Advantageous	→ Commingled Investment Trust (CIT) effective fee of 0.44%.

Ares Management

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ Ares is based out of Los Angeles, CA and was founded in 1997 with a primary focus on leveraged loans, high yield bonds, private debt, private equity and other types of instruments. Ares is owned approximately 45.6% by members of its senior management team, 48.7% by public ownership and 5.7% by SMBC as of June 30, 2022. → As of June 30, 2022, total firm assets were $334.3 billion across strategies, and total AUM in the proposed High Yield Bond strategy assets were $3.2 billion.
Team	Highly Advantageous	→ Seth Brufsky has oversight of all U.S. Liquid credit strategies as the Chairman of Global Liquid Credit. Chris Mathewson and Kapil Singh are co-heads of the US High Yield strategy. → The investment team was first established in 1997 as the capital markets arm of Apollo and spun out to become an independent firm in 2002. Ares' Global Liquid Credit Investment team is a large team of portfolio managers, research analysts and traders based out of their Los Angeles office, with employees including portfolio managers and analysts additionally located in our London and New York offices
Investment Philosophy	Advantageous	→ Ares believes that outperformance is driven by insightful credit selection and vigilant risk management. They employ a philosophy that focuses on capital preservation, predicated on bottom-up fundamental research and a goal of minimizing default risk by identifying and avoiding marginal quality credit.
Investment Process	Highly Advantageous	→ Ares runs a traditional bottoms-up high yield strategy with minimal opportunistic exposure in Bank Loans (~6% as of 6/30). The portfolio is very much benchmark aware relative to average price, credit quality and duration. → The investment committee plays a prominent role in the investment process by ensuring that investment analyses, documentation, and decision making adheres to the firm's investment philosophy and strategy. The committee governs the credit review process and is responsible for approving new issuers recommended by the investment team for inclusion in portfolios → Their research team members complete an internally developed checklist of criteria based on their past experience that have been drivers of credit performance, including, among others, assessments of competitive positioning, credit metrics such as leverage and free cash flow, growth profile, earnings quality, and management capabilities. Members of the research team present their recommendations and investment theses at investment committee meetings. An interactive dialogue regarding the absolute and relative merits of the credit ensues. → Following investment committee approval, ultimate decision-making authority, including sale decisions, lies with the portfolio managers. If approved, the portfolio managers are responsible for the day-to-day execution of the portfolio strategy, including portfolio construction and security selection within the universe of issuers approved by the investment committee.
Performance	Advantageous	→ Ares outperformed the Bloomberg US High Yield Index over the one-, three-, five- and ten-year trailing periods, with excess returns of +1.3%, +1.1%, +1.0% and +0.3%, respectively.
Fees	Highly Advantageous	→ Commingled Investment Trust (CIT) effective fee of 0.35%.

Lord, Abbett & Co.

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ Lord Abbett is a privately held partnership owned by its Managing Partners and some retired partners and their family. → The firm was founded in 1929 by Andrew James Lord and is based out of Jersey City, NJ. The firm became an independent partnership in 1948 and was subsequently transitioned from a general partnership to a limited liability company in 2002. → Firm assets as of 6/30/22 were $255.3 billion with $4.9 billion in the High Yield Core strategy.
Team	Advantageous	→ The leveraged credit team managing the High Yield strategies is led by Steven Rocco, co-head of Taxable Fixed Income. The 3 other named portfolio managers are Jeffery Lapin and Kearney Posner, covering bank loans, as well as Christopher Gizzo who covers High Yield. → The team is supported by 6 members of their portfolio management team and 4 dedicated traders covering high yield credit and leveraged loans. There are an additional 26 members of their Global Credit Research team that are industry specific and support PMs across strategies. The team also receives input from the Global Equity Research team.
Investment Philosophy	Advantageous	→ Use a bottom-up fundamental credit research guided by top-down macro views. They believe a flexible, dynamic, and opportunistic strategy can deliver consistent results in various market environments when risk management is applied. They believe diversification and the flexibility to rotate among credit qualities, sectors and industries will lead to greater excess returns per unit of volatility over a full credit cycle.
Investment Process	Advantageous	→ A more traditional strategy that primarily invests in higher yielding, non-investment grade corporate debt securities. There is currently no bank loan exposure in the portfolio but allow up to a 10% limit. → The investment process begins with an assessment of economic and capital market conditions to develop an outlook for the overall high yield market and each industry within that universe. This analysis incorporates global market conditions and a view of the relative health of various global markets and regions. A top-down view guides the portfolio's credit quality distribution, industry positioning, and overall risk profile. → There is ongoing collaboration between the equity and fixed income teams to improve their market insight. These teams hold formal strategy meetings to discuss and debate key issues. Due to the wide dispersion of returns among various credit qualities and industries in different market environments, getting the top-down call right is critical in the investment process and has allowed them to perform well in both up and down markets.
Performance	Advantageous	→ Lord Abbett outperformed the Bloomberg US High Yield Index over the three-, five- and ten-year trailing periods, with excess returns of +0.4%, +0.4% and +0.8%, respectively. However, the strategy underperformed over the one-trailing period, with excess returns of -0.2%
Fees	Advantageous	→ Commingled Investment Trust (CIT) effective fee of 0.44%.

Western Asset Management Company

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ Western Asset operates as a group of coordinated sister companies located in various jurisdictions, and the Firm is headquartered in Pasadena, California. Each Western Asset entity ultimately is a wholly owned subsidiary of Franklin Resources, Inc. [NYSE: BEN], which is a global investment management organization with subsidiaries operating as Franklin Templeton in over 165 countries. → In February 2020, Franklin Templeton and Legg Mason, Inc. entered into an agreement under which Franklin Templeton would acquire Legg Mason and its affiliates, which included Western Asset. The transaction closed on July 31, 2020, and Western Asset continues to maintain its organizational autonomy and investment independence. → As of June 30, 2022, Western Asset had $407 billion in total firm assets and $7.1 billion in its proposed US High Yield strategy.
Team	Highly Advantageous	→ Western Asset utilizes a team approach in managing every portfolio with one portfolio manager assigned overall responsibility. The primary PM for the US HY strategy is Walter Kilcullen. He is backed up by Michael Buchanan, who also serves as the Firm's Deputy CIO. Ian Edmonds manages the Firm's European HY and Euro Bank Loan portfolios, and. Christopher Kilpatrick manages Global HY portfolios. → Mr. Kilcullen is supported by six portfolio managers, nine dedicated high-yield credit analysts, three traders, and one portfolio analyst.
Investment Philosophy	Advantageous	→ Western Asset's investment philosophy references the ability to integrate superior fundamental credit research with accurate relative value analysis and can generate relative outperformance over a market cycle. The Firm believes inefficiencies exist in the high-yield bond market and attempts to add incremental value by exploiting these inefficiencies, while also adhering to a disciplined risk control process. They believe this approach can add value over time while also reducing volatility. → Key sources of diversification for their mandate, as well as their main sources of alpha for the strategy, include subsector/industry allocation, credit quality positioning and issue selection.
Investment Process	Advantageous	→ A more traditional strategy without an explicit cap on bank loan exposure. The highest allocation to bank loans has never exceeded 10% (highwater mark was 9.3%). The five-year average bank loan exposure was 5.3% and as of the most recent month-end (July) the exposure stood at 6.4%. Western Asset's high yield portfolios are constructed using top-down economic and industry knowledge integrated with bottom-up fundamental credit research. PMs combine the Firm's economic assessment along with industry sector insights from its dedicated research staff to derive the general framework for portfolio construction. → Western then integrates a bottom-up process which provides the basis for targeted industry weightings through individual credit selection. Western Asset adheres to a rigorous sell discipline defined by specific valuation criteria, along with risk management fully integrated into the investment process.
Performance	Not Advantageous	→ Western Asset outperformed the Bloomberg US High Yield Index over the three-, five-, and ten-year trailing periods, with excess returns of +0.1%, +0.4%, and +0.1%, respectively. However, the strategy underperformed over the one-year trailing period, with excess returns of -0.9%.
Fees	Advantageous	→ Commingled Investment Trust (CIT) effective fee of 0.53%.

MacKay Shields

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ Since 1984, MacKay Shields has been a wholly owned subsidiary of New York Life, allowed to operate independently. → As of 6/30/2022, total firm assets were $132 billion with the High Yield Fixed Income strategy comprising $25.8 billion.
Team	Advantageous	→ The High Yield Team has been managing high yield portfolios since 1991. Steve Tananbaum was the founder of the team and has promoted collaboration of all members since the strategies inception. → Andrew Susser, who joined the firm in 2006, has been the lead portfolio manager with final decision-making authority since 2014. → There are 18 professionals on the team with senior leadership averaging 26 years of investment experience.
Investment Philosophy	Advantageous	→ The High Yield Team's strategy is a bottom-up, value-oriented approach to investing in the high yield market. → It is a pure-play, diversified portfolio that invests primarily invests in US high yield corporate debt. → MacKay's objective is to outperform the high yield market over the long term through credit selection, while mitigating downside risks. Their approach to this objective involves maximizing the default adjusted yield and spread of a diversified portfolio.
Investment Process	Highly Advantageous	→ A more traditional strategy with 11% Investment Grade bond exposure and 0% in Bank Loans. Standard HY guidelines allow typically for a max of 10% but over the last 10 years they have averaged around 3% in bank loans. → The investment process begins with the bottom-up investment approach. There is over 1,000+ issuers in the US high yield market. The initial screening process eliminates issues with insufficient spreads (less than 200 basis points over the comparable US Treasury bond) and those that are too illiquid (smaller than $150 million in size). → The most important part of their investment process is "margin-of-safety" analysis. Every bond or loan invested in must have a large margin-of-safety through asset coverage and free cash flow. Asset coverage is the ratio of their estimate of a company's value to the amount of its debt (the inverse of asset coverage is loan-to-value). Every high yield security invested in has a minimum of 1.5x asset coverage, which they believe builds in a significant margin-of-safety and downside protection. → Every credit must generate free cash flow to pay down the debt.
Performance	Highly Advantageous	→ MacKay Shields outperformed the Bloomberg US High Yield Index over the one-, three-, five-, and ten-year trailing periods, with excess returns of +3.4%, +1.6%, +1.4%, and +0.9%, respectively.
Fees	Advantageous	→ Commingled Investment Trust (CIT) effective fee of 0.45%

Federated Hermes, Inc.

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ Federated Hermes, Inc was founded in 1955 in Pittsburgh, Pennsylvania. The firm provides customized investment strategies and solutions to institutional public pension and retirement plans, state and local governments, endowments, foundations, as well as corporate defined benefit and contribution plans. → In February of 2020, Federated Hermes, Inc's. stock began trading on the New York Stock Exchange under the "FHI" ticker symbol, and serves as the parent company for 13 advisory subsidiaries, including Federated Advisory Services Company. John Fisher is the President and CEO of Federated Advisory Services Company, with the Global Fixed Income Investment Management subsidiary falling under his leadership. Robert Ostrowski is the CIO for Global Fixed Income Investment Management. → As June 30, 2022, total firm AUM was $631.9 billion across strategies, and total AUM in the High Yield Bond strategy assets was $12.3 billion.
Team	Advantageous	→ The High Yield Team is led by Mark Durbiano and has been part of the High Yield Team since 1982 and has served as the lead portfolio manager since 1987. Mr. Durbiano is a Senior Portfolio Manager and Head of Domestic High Yield and is also Head of the Firms Bond Sector Pod/Committee. He is joined by Steven Wagner, also a Senior Portfolio Manager and Senior Investment Analyst. Mr. Wagner is responsible for portfolio management and research concentrating in the U.S. high yield and leveraged loan sectors. → Portfolio managers are supported by ten dedicated research analysts that average 20 years of experience, and two dedicated traders, on focusing on high yield and bank loan assets. Traders average 25 years of trading experience. → The team's low turnover and extensive industry experience is considered a hallmark of Federated Hermes.
Investment Philosophy	Advantageous	→ The Firm believes in bottom-up, fundamental analysis of the underlying quality of an issuer's business, investing in strong operating companies that can deliver stable, predictable free cash flow. → The strategy seeks to perform well in favorable market environments while seeking competitive resiliency versus peers during more difficult market environments. The team looks to identify qualitative and quantitative factors that enable a company to outperform its industry peers, despite having an aggressive capital structure. There is no attempt to add alpha through duration or yield curve positioning.
Investment Process	Advantageous	→ A more traditional strategy that primarily invests in US High Yield corporate bonds (87%), and developed corporate bonds (9%). → Federated's methodology is defined by intense proprietary research conducted for each specific issuer. Their investable universe is defined as all high-yield bonds rated between BB and CCC with at least $200 million of issuance. → Fundamental analysis is split between qualitative and quantitative arenas. Qualitative analysis reviews a company's underlying business focusing on products and underlying franchise value. Quantitative analysis uncovers a company's ability to generate cash flow through its operating cycle and identifies relevant calls on that cash flow. PM's and analysts then evaluate the company's debt securities for relative value opportunities.
Performance	Advantageous	→ Federated Hermes outperformed the Bloomberg US High Yield Index over the one-, three-, five-, and ten-year trailing periods, with excess returns of +0.7%, +0.3%, +0.2%, and +0.3%, respectively.
Fees	Advantageous	→ Commingled Fund effective fee of 045%.

PIMCO

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ PIMCO was established in the early 1970's in Newport Beach, CA, and has since expanded world-wide. → PIMCO is a majority owned subsidiary of Allianz Asset Management of America L.P., a wholly owned subsidiary of Allianz SE. Some of Allianz Asset Management of America L.P affiliates have minority interest in PIMCO as well as former and current officers at PIMCO. In addition, PIMCO distributes 30% of profits to eligible employees under a profit-sharing plan. → As of June 30, 2022, total firm AUM was $1.7 trillion across strategies, and total AUM in the High Yield Bond strategy assets was $49.0 billion.
Team	Advantageous	→ The High Yield strategies are managed in a team-based approach, with input from both the Leveraged Finance Portfolio Management Team and the Global Credit Research Team, consisting of over 75 analysts. However, each account is assigned a lead high yield portfolio manager who is ultimately responsible for all investment decisions respective to their account. → Amit Agrawal, joined the High Yield team in 2021 as a new Portfolio Manager. He joins Lead PM Andrew Jessup (33 years' experience) and PM Sonali Pier (19 years' experience) on the high yield PM team. Mr. Jessup has been a lead portfolio manager for PIMCO's High Yield portfolios since January 2010. Mr. Agrawal's focus is on high yield and macro credit strategies and brings 15 years of investment experience to the team. → The Leveraged Finance Portfolio Management Team is made up of 14 members who work from various locations. The teams collaborate as a single unit and are responsible for analyzing economic developments, conducting research, evaluating quantitative models, structuring portfolios, and trade execution.
Investment Philosophy	Advantageous	→ The PIMCO High Yield strategy is founded on five key tenants including bottom-up fundamental research, a total return orientation, focus on the best risk adjusted returns, diversified exposure and expertise in various regions and credit sectors. Even though PIMCO is known for its top-down approach, security selection is the major driver of value for the strategy. → The primary driver of value is intended to be security selection (60%-85% of alpha) followed by industry allocation (10%-25% of alpha), regional selection (0%-20% of alpha), non-high yield tactical opportunities (0-10% of alpha), market inefficiencies (0%-10% of alpha) and duration and yield curve management (0%-10% of alpha).
Investment Process	Advantageous	→ A more traditional strategy that predominately invests in US High Yield corporate bonds (80%), IG (6%), developed corporates (7%) and also in convertible bonds (3%). → The High Yield strategy is managed in consideration of the macroeconomic overlay provided by the Investment Committee. However, portfolio managers have latitude to make relative value decisions and to work alongside analysts to identify the best investment opportunities. → The Global Credit Research Team is made up of more than 75 credit analysts. Analysts cover the entire quality spectrum within their industries.
Performance	Not Advantageous	→ PIMCO outperformed the Bloomberg US High Yield Index over the one-year trailing period, with excess returns of +0.6%. However the strategy underperformed over the trailing three-year period, with excess returns of -0.3%. The strategy was neutral to the benchmark over the five- and ten- year trailing periods.
Fees	Advantageous	→ Mutual Fund net expense ratio of 0.56%.

MetLife Investment Management

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ MetLife Investment Management ("MIM") is the institutional asset management business of MetLife, Inc., a publicly traded company (NYSE: MET) that was founded in 1868 and is one of the world's leading financial services companies with operations in more than 40 markets. → In 2017, MetLife, Inc. acquired Logan Circle Partners, L.P. ("LCP") to increase scale with MIM's existing fixed income platform. → As of June 30, 2022, total firm assets were $669.0 billion across strategies, and total AUM in the proposed High Yield Bond strategy assets were $780.7 million.
Team	Advantageous	→ MIM's Public Fixed Income team is led by Jude Driscoll, Head of Public Fixed Income (PFI), and consists of 150 investment professionals, globally. → They High Yield and Bank Loan teams are headed by Timothy Rabe. He is joined by Jeffrey Tapper who focuses on High Yield. On the Bank Loan side, Steven Bruno, Shae O'Driscoll, and Mathew McInerny round out the team. → The PFI team focuses on a team approach of portfolio managers, research analysts, and traders. Their process is primarily bottom-up and research-driven and aims to identify securities with the most attractive relative value. Their intention is for portfolios to generate alpha from security selection and not macro events that may move the high yield markets.
Investment Philosophy	Advantageous	→ MIM believes the high yield market offers premium return potential that can only be captured through superior credit research. In seeking to generate consistent excess returns without incurring undue risk, they focus on proprietary in-depth fundamental research, bottom-up portfolio construction, security-specific risk over sector risk and risk control. → MIM's High Yield strategy typically leans towards the aggressive side of the spectrum. Their bottom-up approach to investing and focus on security selection could produce a higher beta portfolio, but they feel that their investment style is methodical and time-tested. For this Investment strategy, they seek to invest across the entire high yield universe without a predetermined risk or style bias.
Investment Process	Advantageous	→ A more traditional strategy that primarily invests in US High Yield corporate bonds (89%), but also bank loans (4%) and emerging market corporates (5%). → MIM's investment process seeks to exploit mispriced credit risk in the high yield market. To do this, they leverage their extensive resources in credit research, along with an active trading desk in relative value focused portfolios because they believe that security selection is the most consistent way to produce excess returns over a full market cycle (three to five years). → MIM follows a systematic investment process that includes the following: Step 1 - Idea Generation; Step 2 - Proprietary Research; and Step 3 – Security Selection. Once the research department endorses a security, the investment team reviews the security to ensure it meets relative value, total return potential and horizon analysis requirements.
Performance	Not Advantageous	→ MetLife outperformed the Bloomberg US High Yield Index over three- year trailing periods with excess returns of +0.6% However, the strategy outperformed over the one- and ten-year trailing period, with excess returns of -0.3%, and -0.1% respectively. The strategy was neutral to the benchmark over the five-year trailing period.
Fees	Highly Advantageous	→ Separately management account effective fee of 0.40%. → Commingled Investment Trust (CIT) effective fee 0.40%. MIM is seeking seed investors at more favorable pricing.

Neuberger Berman

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ Neuberger Berman was founded in 1939 by Roy Neuberger and Robert Berman and is headquartered in New York, NY. In 1977 they launched their institutional business and established their Trust Company in 1994. In 1999, NB filed for an IPO and was traded publicly until 2009 when it was then taken private through a management buyout. Today, NB is a private, independent, employee—owned investment manager with approximately 660 current employee owners. → As of June 30, 2022, total firm AUM was $460.5 billion across strategies, and total AUM in the proposed High Yield Bond strategy assets was $10.9 billion.
Team	Advantageous	→ The High Yield strategy is co-managed by Christopher Kocinski and Joseph Lind. Mr. Kocinski joined the firm in 2006 and was previously the Co-Director of Non-Investment Grade Credit Research and a Senior Research Analyst with a specific focus on the healthcare and gaming sectors. Mr. Lind joined the firm in 2018 as a Senior Portfolio Manager, bringing over 17 years of investment experience to the team. Mr. Kocinski and Mr. Lind were elevated in preparation for recent June 2022 retirements of Russ Covode and Dan Doyle, both named PMs on the strategy. The strategy is further supported by a dedicated 28-person Global Non-Investment Grade Credit Research team whose senior members have an average of 13 years of industry experience. → Portfolio Managers for the proposed strategy are located in Neuberger's Chicago office. The Global Non-Investment Grade Fixed Income platform have team members located in multiple locations including Chicago, New York and London.
Investment Philosophy	Advantageous	→ Neuberger's fixed income investment teams' overarching philosophy includes a deep commitment to fundamental research and a belief that security selection is repeatable through market cycles. → The team believes that favorable high yield investment results can be achieved across all market cycles using a proactive investment process that incorporates comprehensive credit analysis with a risk management overlay and fully integrated ESG framework. → The team's philosophy in managing U.S. non-investment grade assets is further driven by a strict discipline that seeks to: avoid credit deterioration, select securities in which the spread is attractive on a relative value basis, and rotate across credit tiers and industry sectors.
Investment Process	Advantageous	→ A more traditional strategy that primarily invests in US High Yield corporate bonds (83%), a modest allocation to developed and emerging market corporates, (9.6%), and small allocation to bank loans (4%). → The strategy seeks to capitalize on market opportunities and generate added value through three principal sources: 1) avoiding deteriorating credits; 2) identifying attractive yield and total return opportunities; and 3) industry and credit quality rotation. → The team's credit research is fundamental and focuses on understanding a company's financial strength. Analysts model company financials across three scenarios: base case, upside case and downside case.
Performance	Not Advantageous	→ Neuberger Berman underperformed the Bloomberg US High Yield Index over the one-, three-, five- and ten-year trailing periods, with excess returns of -0.6%, -0.3%, -0.3%, and -0.3%, respectively.
Fees	Advantageous	→ Commingled Investment Trust (CIT) effective fee of 0.55%.

Capital Group

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ Capital Group was founded in 1931 and is a very large, Los Angeles based, privately held asset manager with $2.2 trillion assets under management as of June 30, 2022. The Capital Group Companies, Inc. is the parent company of a number of organizational entities that provide investment management and related services globally. The company is owned by a broad group of more than 400 key investment professionals, senior business leaders and recent retirees, with no individual owning more than 2.5%. → While majority of their assets are equity, Capital Group manages $457.9 billion in Fixed Income. Capital Group is primarily a retail-based asset manager. There are roughly 92% retail assets and 8% institutional.
Team	Advantageous	→ The American High-Income Trust (AHIT) is managed by a team of four portfolio managers: Tom Chow, David Daigle, Tara Torrens and Shannon Ward. They have an average of 28 years investment experience and 13 years with Capital Group. → The PMs are supported by 69 fixed income investment analysts and macro/quantitative analysts. Capital portfolios are constructed through a team approach., with PMs making investment decisions from ideas presented by analysts.
Investment Philosophy	Advantageous	→ The investment philosophy's primary objective is to provide a high level of current income compared to investment grade bonds. The secondary investment objective is to seek capital appreciation. → They invest in a diversified portfolio of lower rated, higher yielding bonds. Their approach to investing combines in-depth, bottom-up research on individual securities and issuers with top-down analyses of macroeconomics and country-specific considerations.
Investment Process	Not Advantageous	→ The investment process follows 3 steps: Integrated research, Team discussion and PM decisions, and Portfolio implementation and monitoring. → They believe that proprietary research is the cornerstone of their investment process. They have dedicated macro analysts analyzing global macro, rates and sectors as well as dedicated economists. There are also dedicated sector specific research analysts that produce Research Portfolios. The Research Portfolios are a key differentiator in their process that they believe help their process by providing analyst true dollars behind their conviction levels. → Effective communication and sharing of insights are critical to the process. Investment analysts, portfolio managers and traders all play an important role. → The top-down investment process, which they call the Portfolio Strategy Group (PSG) process, is guided by the fundamental research of their analyst teams. Distilling the research, the PSG establishes and communicates broad, strategic parameters that guide fixed income portfolio construction over a six to twelve-month horizon. These parameters include duration, yield curve, sector allocation, volatility, inflation, and currency. → The Principal Investment Officer, David Daigle, has overall responsibility for the investment objectives of the strategy.
Performance	Advantageous	→ Capital Group outperformed the Bloomberg US High Yield Index over the one-, three-, five- and ten-year trailing periods, with excess returns of +2.5%, +1.7%, +1.2% and +0.2%, respectively.
Fees	Highly Advantageous	→ Mutual Fund net expense ratio of 0.30%.

GMO

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ Grantham, Mayo, Van Otterloo & Co. LLC ("GMO") was founded in 1977 and provides investment advisory services, predominantly to institutional clients. GMO is a Massachusetts limited liability company that is controlled by active employee-members. → The Firm is a global investment management firm that offers a broad range of investment strategies, including equity and fixed income strategies across global developed and emerging markets, asset allocation strategies, and alternative strategies. → At the forefront, in 1982, GMO developed and implemented quantitative investment tools to augment our existing value-based fundamental investment style, becoming an early adopter of quantitative investing. → As of June 30, 2022, total firm AUM was $59 billion across strategies, and total AUM in the proposed High Yield Bond strategy assets was $719 million.
Team	Advantageous	→ GMO operates under its' Board of Directors and its' Chief Executive Officer, Scott Howard, who joined the Firm in 2017. There are three investment verticles: 1) equity, 2) fixed income, and 3) alternative assets. Under the fixed income umbrella is Structured Products, which is where the proposed high yield strategy resides. Jo Auth is Head of the Firms Structured Products and High Yield strategies and is a portfolio manager and partner at the Firm. Mr. Auth joined the Firm in 2014. → Under the Developed Rates and FX team, Mr. Auth is supported by one quantitative research analyst that joined GMO in 2008. There are two relatively new research analysts, also under the Developed Rates and FX team. One recently joined GMO in 2021 with 5 years of industry experience, and the seconded join GMO in 2017, having been previously at MFS Investment Management. There are also two traders supporting the strategy. The lead trader joined GMO in 2008, and the other trader joined GMO in 2006.
Investment Philosophy	Advantageous	→ The GMO High Yield Strategy aims to deliver alpha by employing a quantitative, factor-based approach to portfolio construction. It is designed to capture alpha from top-down sources of risk premia, taking advantage of structural market inefficiencies, while maintaining a liquid portfolio. → GMO's approach to bond selection, which is based on bond risk characteristics and alpha potential, as opposed to a specific issuer covered by a fundamental analyst, lends itself to a higher degree of substitutability in the portfolio construction process. → GMO utilizes a wide range of HY instruments, including CDX HY, Total Return Swaps, and HY bonds, which aids optimization of transaction costs, while delivering a scalable strategy, with the ability to generate consistent alpha over a market cycle.
Investment Process	Advantageous	→ A more traditional strategy that predominately invests in US High Yield corporate bonds (99%) with 0% exposure to bank loans. → The strategy is managed as a collection of discrete factor sleeves, one each for Carry, Quality, Short Duration Low Quality (SDLQ), Fallen Angels (FA), and Benchmark Replication, in addition to a Short Volatility sleeve, which is a pure overlay. → The strategy is always fully invested and all derivative exposures (except Short Volatility) are fully funded with cash or cash equivalent securities.
Performance	Advantageous	→ GMO outperformed the Bloomberg US High Yield Index over the one-, three-, and five-year trailing periods, with excess returns of +2.0%, +0.5%, and +0.9%, respectively.
Fees	Advantageous	→ Mutual Fund net expense ratio of 0.46%.

Advent Capital

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Advantageous	→ Advent Capital was founded in 1995 by Tracy Maitland. He serves as the President and CIO, overseeing all firm investment activities. The firm is independently owned, with 80% being day-to-day employees and the other 20% being silent, non-voting shareholders. → As of 6/30/2022, the firm currently manages $8.6 billion in assets under management. The majority of these assets are long only convertibles. AUM is around $500 million in HY assets. → The Headquarters is in New York, NY and satellite office is in London, UK. Over 50% of the firm is comprised of diverse or women employees.
Team	Advantageous	→ Mark Aylett runs the HY strategy. He's been at the firm since January of 2015. He spent the bulk of his career in HY business on both buy (Barclays) and sell side (Lehman Brothers). There are 57 employees in New York and London with 24 of those being investment professionals. 6 are in London (trader, research analyst, operations, 2 marketing, admin.) → Research Team - 8 capital structure analysts, 6 focused on sectors and 2 that are regional generalists (1 sits in London covering Europe/other sits in NY covering Asia. Each analyst has 22 years of experience covering their respective sectors/regions.
Investment Philosophy	Advantageous	→ Advent seeks to achieve risk-adjusted returns in the HY market by utilizing an alpha-focused relative value investment strategy. They employ deep fundamental credit research, thorough scenario analysis, and sophisticated analytic models to provide real-time valuation and risk metrics to help with decision making and trading.
Investment Process	Advantageous	→ Advent's investment process relies on fundamental analysis with an emphasis on scenario analysis. Their proprietary valuation models incorporate scenario-based fundamental research with real time market and price data to instantaneously evaluate opportunities in both good and bad markets. Risk is managed when the security is purchased by sizing the position based on a risk budget and their worst-case loss scenario. The team sets a max downside at the time the trade is put on, each name is assigned 25bps to 50bps risk budget. Securities will only be included in portfolio if it offers attractive relative value as measured by expected alpha and the skew and dispersion of potential returns, as well as traditional credit metrics. The team will sell holdings when they achieve or exceed full value based on the metrics. All trades are directed by Mark Aylett, who sits on the trading desk and works closely with the traders throughout each day. → The teams excel-based credit models are created for each company. Analysts gather their research and house it within these templates. Detailed analysis on covenants are housed separately. On average analysts will cover between 50 to 75 names. There are about 110 to 120 names in the portfolio across 120 to 150 issues.
Performance	Advantageous	→ Advent outperformed the Bloomberg US High Yield Index over the one-, three-, five-, and ten-year trailing periods, with excess returns of +2.2%, +1.0%, +0.8% and +0.5%, respectively.
Fees	Highly Advantageous	→ Separately managed account effective fee of 0.40%.

Oaktree Capital Management

Rating Criteria	Rating	Rationale
Overall	Advantageous	
Organization	Not Advantageous	→ Oaktree's founders first joined together in the mid-1980s to manage what would become Oaktree's oldest investment strategies: high yield bonds, opportunistic credit, convertible securities, principal investments and real estate. Oaktree was officially formed in 1995. → In September 2019, Brookfield Asset Management Inc., a publicly traded company listed on the New York Stock Exchange [BAM] and the Toronto Stock Exchange [BAM.A], acquired an approximate 61.2% interest in Oaktree. Oaktree continues to operate as an independent business within the Brookfield family. As part of the deal, Brookfield agreed to purchase the remaining Oaktree's business over a number of years from the current and former Oaktree employees. → Today, Oaktree consists of more than 1,100 employees with offices in 20 cities worldwide, including their Los Angeles headquarters. → As of June 30, 2022, total firm AUM was $165.7 billion across strategies, and total AUM in the proposed U.S. High Yield Bond strategy assets were $14.5 billion.
Team	Advantageous	→ Sheldon Stone is a Co-Founding Principal at Oaktree and leads the US, Global, and European High Yield teams. He is a Co-Portfolio Manager for both the US and Global High Yield strategies and is joined by David Rosenberg, Madelaine Jones, and Anthony Shackleton as Co-Portfolio Managers. Mr. Rosenberg also Co-Manages the US High Yield Bond strategy with Alap Shah along with one additional US and Global High Yield Portfolio Manager, Alan Adler. → Oaktree has a US High Yield Research team that includes eleven analysts, and four research associates. Their European Research team includes eight research analysts and one associate. There are three dedicated traders, three risk management professionals, and one product manager.
Investment Philosophy	Advantageous	→ Oaktree is a risk-controlled manager, focusing their credit underwriting efforts. Managing credit risk, loss resistance and preserving profits in periods of market turmoil are hallmarks of Oaktree. Their philosophy is a highly disciplined, credit-intensive research approach to construct a well-diversified portfolio of creditworthy bonds of North American corporations. Portfolio managers do not select investments based on anticipated interest rate movements and resulting price fluctuations.
Investment Process	Advantageous	→ A more traditional strategy that primarily invests in US High Yield corporate bonds (89%), as well as convertible bonds (5%) and bank loans (4%). → Oaktree follows a systematic process to ensure each company is thoroughly reviewed. The research process involves: 1) a bond issue is assigned to an analyst for review; 2) a meeting is scheduled with senior management; 3) the analyst conducts independent research; 4) Oaktree's Credit Scoring Matrix is completed and stress tested for downside risk; 5) analysts meets with PMs to determine if issue meets their credit standards.
Performance	Not Advantageous	→ Oaktree outperformed the Bloomberg US High Yield Index over the one- and three-year trailing periods, with excess returns of +1.6%, and +0.6%, respectively. The strategy underperformed over the ten-year trailing period, with excess returns of -0.4%. and was neutral over the five-year trailing period.
Fees	Advantageous	→ Commingled Fund effective fee of 0.59%.

Canyon Partners

Rating Criteria	Rating	Rationale
Overall	Not Advantageous	
Organization	Advantageous	→ Canyon was founded in 1990 by Joshua Friedman and Mitchell Julis, who both control 50% of the firm. In 2012 the firm set up an equity plan in which its Partners participate in the economics of the firm. Currently Canyon has 15 equity partners that split 35% of the firms net profits. The firm is headquartered in Dallas, TX. → As of June 30, 2022, total firm assets were $25.4 billion across strategies, and total AUM in the proposed High Yield Bond strategy that incepted in 2014 were $622 million.
Team	Not Advantageous	→ Canyon's Co-founders, Mr. Friedman and Mr. Julis are involved in the management of the investment portfolios by Canyon's CIO, Todd Lemkin, is directly responsible for the day-to-day management of the investment team. The named portfolio managers are Todd Lemkin and Sam Reid. → The investment team is comprised of nine Investment Partners, 20 Corporate and Structured Product Analysts, eight Trading and Portfolio Finance professionals, and dedicated ESG and Risk Management professionals. → The investment team is organized by sector rather than by asset class. Therefore, rather than having loan analysts, bond analysts, equity analysts, etc., Canyon has 19 industry analysts who look across the capital structures of the companies in their industries.
Investment Philosophy	Not Advantageous	→ Canyon utilizes a value-oriented, bottom-up fundamental credit framework analysis (rather than more rapid/high-volume trading strategies). Their approach to investing is a combination of extensive research, scenario analysis, and margin of safety considerations while targeting securities with asymmetric upside optionality with a strong emphasis on downside protection.
Investment Process	Not Advantageous	→ The strategy is typically benchmarked against the US Aggregate and has a significant allocation structured credit compared to peers and the proposed High Yield benchmark. The strategy held a 53% exposure to structured credit as of 7/31/2022 with 41% in unrated securities. → The strategy is an opportunistic total return mutual fund driven by individual security selection and they specifically target securities that are not levered to or dependent on specific outcomes of Fed policies or rates. Security selection has been the primary driver of the fund's performance since inception. → The sector weights and top down decisions are made by the Co-Founders, CIO and Investment Partners across all strategies based on input from the investment team. They target sectors where they see the best relative value, focusing on building a portfolio of individual securities that exhibit certain risk factors consistent with their outlook, but they do not target portfolio sector buckets from the top down. They do not set target ranges to our sector allocations. They are conscious of the fund's duration and curve exposure, but they are not used as key portfolio management strategies. Within structured products they start with a proprietary screening tool followed by further stress resting and scenario analysis on compelling securities identified through screening.
Performance	Not Advantageous	→ Canyon outperformed the Bloomberg US High Yield Index over the one-, three-, and five-year trailing periods, with excess returns of +8.7%, +2.4%, and +2.3%, respectively.
Fees	Not Advantageous	→ Mutual Fund net expense ratio of 0.65%.

Manager Trailing Performance (Opportunistic) (Gross of Fees)
(As of June 30, 2022)

Manager	Inception Date	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)
Polen Capital	Apr-98	-6.2	3.1	3.9	6.2
Brigade Capital Management	Apr-09	-8.7	3.1	3.5	5.8
Mesirow Financial	Mar-99	-7.9	4.3	4.8	6.2
Artisan Partners	Apr-14	-8.8	3.8	4.8	-
Beach Point Capital Management	Feb-13	-12.0	0.5	2.8	-
KKR, Inc.	Jan-15	-7.7	3.1	4.3	-
Post Advisory Group	Jan-09	-11.1	0.6	2.3	4.8
Guggenheim Investments	July-08	-9.6	1.1	2.6	5.8

Manager Trailing Performance (Traditional) (Gross of Fees)
(As of June 30, 2022)

Manager	Inception Date	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)
Nomura Asset Management	Oct-91	-12.3	1.7	3.0	6.1
PineBridge Investments	Sept-00	-12.7	0.8	2.8	5.3
Columbia Threadneedle Investments	May-11	-11.8	0.7	2.5	4.8
Insight Investment	Oct-12	-12.9	0.3	2.3	-
Shenkman Capital Management	Sept-86	-10.5	1.0	2.7	4.3
Brandywine Global Investment Management	Jan-15	-11.7	3.4	5.3	-
Wellington Management Company	Jul-97	-12.1	0.8	2.7	4.6
Ares Management	May-07	-11.5	1.3	3.1	4.8
Lord, Abbett & Co.	Oct-04	-13.0	0.6	2.5	5.3
Western Asset Management	Nov-07	-13.7	0.3	2.5	4.6
MacKay Shields	Jan-96	-9.4	1.8	3.5	5.4
Federated Hermes, Inc.	Jan-78	-12.1	0.5	2.3	4.8
PIMCO	Dec-92	-12.2	-0.1	2.1	4.5
MetLife Investment Management	Oct-00	-13.1	0.8	2.1	4.4
Neuberger Berman	Dec-97	-13.5	-0.1	1.8	4.2
Capital Group	Mar-84	-10.3	1.9	3.3	4.7
GMO	Dec-17	-10.8	0.7	3.0	-
Advent Capital	Jan-11	-10.6	1.2	2.9	4.9
Oaktree Capital Management	Jan-86	-11.2	0.8	2.1	4.0
Canyon Partners	Jan-15	-4.1	2.6	4.5	-

Proposed Fees (Opportunistic)

Manager	Strategy Name	Fee Rating	Proposed Vehicle	Stated Fee (%)[1]	Other Expenses (%)	Minimum Investment
Polen Capital	Opportunistic High Yield	Advantageous	CIT Mutual Fund	0.55 0.79	- -	$5 million $5 million
Brigade Capital Management	Traditional High Yield	Advantageous	Commingled Fund	0.50	-	$5 million
Mesirow Financial	High Yield	Advantageous	CIT	0.55	-	$5 million
Artisan Partners	High Income	Not Advantageous	CIT Mutual Fund	0.68 0.71	- -	- $1 million
Beach Point Capital Management	Dynamic Income Fund	Not Advantageous	Commingled Fund	0.65	-	$5 million
KKR & Co.	Global Credit Opportunities Fund	Advantageous	Commingled Fund	0.30	0.15	-
Post Advisory Group	Traditional High Yield Fund	Not Advantageous	Commingled Fund	0.65	0.13	$3 million
Guggenheim Investments	High Yield	Not Advantageous	Mutual Fund	0.85	-	$2 million

[1] Assumes a mandate size of $20 million. In certain cases, operating expenses for commingled fund/collective investment trust vehicles were included in the stated fee. Otherwise, the other operating expenses are listed separately and not included in the "Stated Fee."

Proposed Fees (Traditional)

Manager	Strategy Name	Fee Rating	Proposed Vehicle	Stated Fee (%)[1]	Other Expenses (%)	Minimum Investment
Nomura Asset Management	NCRAM High Yield Total Return	Advantageous	Mutual Fund	0.53	-	-
PineBridge Investments	High Yield Bond	Advantageous	CIT	0.45	-	-
Columbia Threadneedle Investments	Institutional High Yield	Highly Advantageous	CIT	0.40	0.01	$5 million
Insight Investment	U.S. High Yield Beta	Highly Advantageous	Commingled Fund	0.19	0.02	-
Shenkman Capital Management	Primus High Yield Bond	Advantageous	Commingled Fund	0.45	-	$1 million
Brandywine Global Investment Management	High Yield	Advantageous	Commingled Fund Mutual Fund	0.50 0.56	- -	- -
Wellington Management Company	Core High Yield	Advantageous	Commingled Fund	0.40	0.04	-
Ares Management	U.S. High Yield	Highly Advantageous	Commingled Fund	0.35	-	$5 million
Lord, Abbett & Co.	High Yield Core	Advantageous	CIT	0.36	0.08	-
Western Asset Management	US High Yield	Advantageous	Commingled Fund	0.40	0.13	$1 million
MacKay Shields	High Yield	Advantageous	CIT Mutual Fund	0.45 0.56	- -	- -

[1] Assumes a mandate size of $20 million. In certain cases, operating expenses for commingled fund/collective investment trust vehicles were included in the stated fee. Otherwise, the other operating expenses are listed separately and not included in the "Stated Fee". For commingled fund/collective investment trust vehicles the effective fee is the sum of the stated fee and other expenses. Mutual fund fees listed are reflective of their net expense ratio.

Proposed Fees (Traditional) Cont.

Manager	Strategy Name	Fee Rating	Proposed Vehicle	Stated Fee (%)[1]	Other Expenses (%)	Minimum Investment
Federated Hermes, Inc.	High Yield	Advantageous	Commingled Fund	0.37	0.08	$2 million
PIMCO	High Yield	Advantageous	Mutual Fund	0.56	-	$1 million
MetLife Investment Management	High Yield	Highly Advantageous	SMA	0.40	-	$15 million
			CIT	0.40	-	-
Neuberger Berman	High Income Bond	Advantageous	CIT	0.55	-	$10 million
Capital Group	US High Yield	Highly Advantageous	Mutual Fund	0.30	-	-
GMO	High Yield	Advantageous	Mutual Fund	0.46	-	$5 million
Advent Capital	High Yield	Highly Advantageous	SMA	0.40	-	$25 million
Oaktree Capital Management	U.S. High Yield	Advantageous	Commingled Fund	0.50	0.09	$2 million
Canyon Partners	River Canyon Total Return	Not Advantageous	Mutual Fund	0.65	-	$1 million

[1] Assumes a mandate size of $20 million. In certain cases, operating expenses for commingled fund/collective investment trust vehicles were included in the stated fee. Otherwise, the other operating expenses are listed separately and not included in the "Stated Fee". For commingled fund/collective investment trust vehicles the effective fee is the sum of the stated fee and other expenses. Mutual fund fees listed are reflective of their net expense ratio.

Fee Ranking Summary

→ The median fee for proposed size and vehicle for the high yield universe is 50 bps. The average proposed effective fees (including other expenses) for the 28-candidate group is also 50 bps.

- The average fee proposed for the 8-candidate opportunistic mandates was 63 bps.
- The average fee proposed for the 20-candidate traditional mandates was 46 bps

→ Six managers were ranked Highly Advantageous with total fees (including expenses) well below the median. Seventeen managers were ranked Advantageous with fee schedules near the median. Five managers ranged Not Advantageous with schedules that ranked well above the group median.

Overall Summary

→ A total of 28 managers submitted responses to this search. Based upon our review and evaluation of each respondent, Meketa Investment Group has rated eight as “Highly Advantageous.” Nineteen managers were ranked as “Advantageous,” and one manager was ranked as “Not Advantageous.”

→ The document was split up between Opportunistic High Yield Managers, meaning the strategies proposed have higher exposure to bank loans, verses Traditional High Yield Managers, meaning the strategies proposed have minimal or no bank loan exposure.

→ We recommend the Board interviews a subset of the “Highly Advantageous” managers at a subsequent meeting.

MEKETA
INVESTMENT GROUP

80 University Ave
Westwood, MA 02090

781.471.3500
Meketa.com

MARLBOROUGH RETIREMENT SYSTEM

Manager Due Diligence Meetings
Tuesday, October 25, 2022

Dial: (646) 558-8656
Meeting ID: 973 1087 8762
Passcode: 493997

I. Manager Due Diligence Presentations 8:45 a.m.

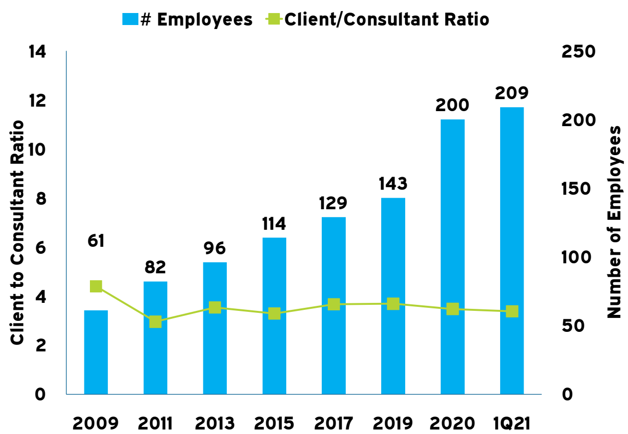
Manager/Product	Asset Class	Time
Rhumbline	Passive Index	8:45
S&P 500 Index		
Russell 1000 HEDI Index		
MSCI EAFE Index		
SSGA	Passive Index	8:55
US Aggregate Bond Index		
US TIPS Index		
Payden & Rygel	Emerging Markets Debt	9:05
Emerging Market Bond		

Appendices

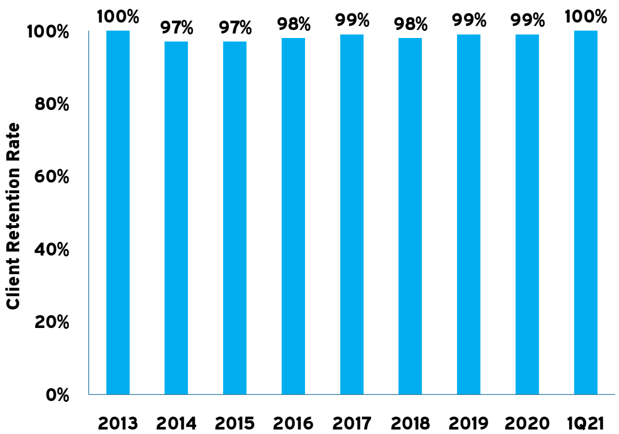
Meketa Investment Group
Corporate Update

- Staff of 215, including 142 investment professionals and 43 CFA Charterholders
- 220 clients, with over 350 funds throughout the United States
- Significant investment in staff and resources
- Offices in Boston, Chicago, Miami, New York, Portland (OR), San Diego, and London
- We advise on $1.6 trillion in client assets
  - Over $125 billion in assets committed to alternative investments
    - Private Equity
    - Infrastructure
    - Natural Resources
    - Real Estate
    - Hedge Funds
    - Commodities

Client to Consultant Ratio[1]



Client Retention Rate[2]



Meketa Investment Group is proud to work for over 5 million American families everyday.

[1] On March 15, 2019, 31 employees joined the firm as part of the merger of Meketa Investment Group and Pension Consulting Alliance.
[2] Client Retention Rate is one minus the number of clients lost divided by the number of clients at prior year-end.

Asset Classes Followed Intensively by Meketa Investment Group

Domestic Equities	International Equities	Private Equity	Real Assets	Fixed Income	Hedge Funds
- Passive	- Large Cap Developed	- Buyouts	- Public REITs	- Short-Term	- Long/Short Equity
- Enhanced Index	- Small Cap Developed	- Venture Capital	- Core Real Estate	- Core	- Event Driven
- Large Cap	- Emerging Markets	- Private Debt	- Value Added Real Estate	- Core Plus	- Relative Value
- Midcap	- Frontier Markets	- Special Situations	- Opportunistic Real Estate	- TIPS	- Fixed Income Arbitrage
- Small Cap		- Secondaries	- Infrastructure	- High Yield	- Multi Strategy
- Microcap		- Fund of Funds	- Timber	- Bank Loans	- Market Neutral
- 130/30			- Natural Resources	- Distressed	- Global Macro
			- Commodities	- Global	- Fund of Funds
				- Emerging Markets	- Portable Alpha

Disclaimer, Glossary, and Notes

WE HAVE PREPARED THIS REPORT (THIS "REPORT") FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

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CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM", "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Credit Risk: Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security).

Duration: Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. Portfolio Return- [Risk Free Rate+Beta*(market return-Risk Free Rate)].

Market Capitalization: For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

Market Weighted: Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

Maturity: The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

Prepayment Risk: The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

Price-Book Value (P/B) Ratio: The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

Price-Earnings (P/E) Ratio: A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about is future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

Quality Rating: The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

STIF Account: Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

Style: The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

Tracking Error: A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.

Yield to Maturity: The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a "basis book." For example, a 5% bond pays $5 a year interest on each $100 par value. To figure its current yield, divide $5 by $95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay $100 for the bond that can be bought now for $95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{\text{5\% (discount)}}{\text{5 (yrs. to maturity)}} = \begin{array}{l}\text{1\% pro rata, plus} \\ \text{5.26\% (current yield)}\end{array} = \text{6.26\% (yield to maturity)}$$

Yield to Worst: The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

NCREIF Property Index (NPI): Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE): Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

Sources: Investment Terminology, International Foundation of Employee Benefit Plans, 1999.
The Handbook of Fixed Income Securities, Fabozzi, Frank J., 1991

Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.