

NORTH CAROLINA
DEPARTMENT OF STATE TREASURER



Dale R. Folwell, CPA
STATE TREASURER OF NORTH CAROLINA
DALE R. FOLWELL, CPA

INVESTMENT MANAGEMENT DIVISION

Public Equity – IAC Presentation

Presented by:

Rhonda Smith, Director

Greg Taylor, Portfolio Manager

Tina Kapoor, Investment Analyst

August 24, 2022



Public Equity Team

Rhonda M Smith

Director

20 years with IMD

28+ Years Industry Experience

Greg Taylor
Portfolio Manager
Trader

6+ years with IMD

9+ Years Industry Experience

VACANT
Portfolio Manager
Trader

Tina Kapoor
Investment Analyst

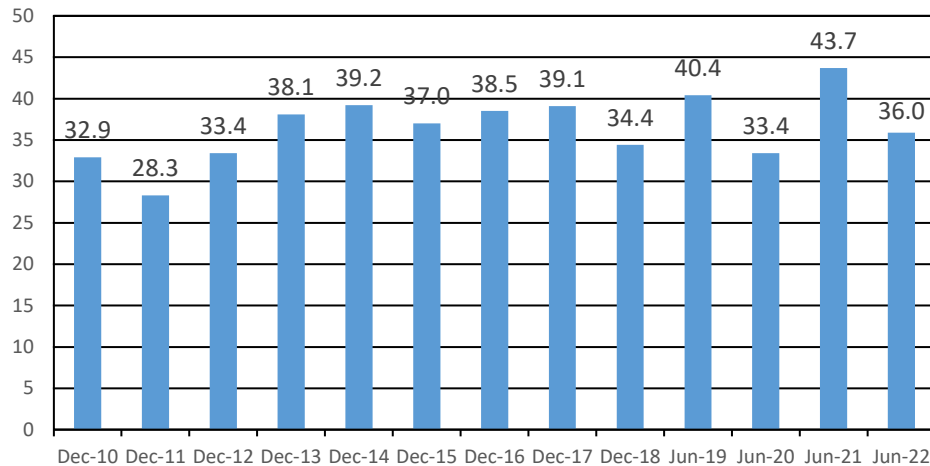
1 year with IMD

10+ Years Industry Experience

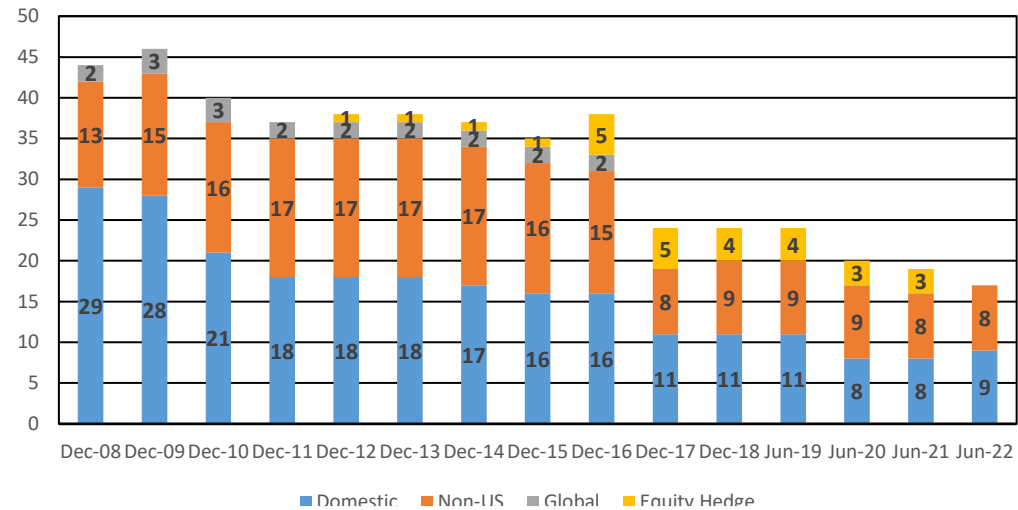


Snapshot of Total Public Equity

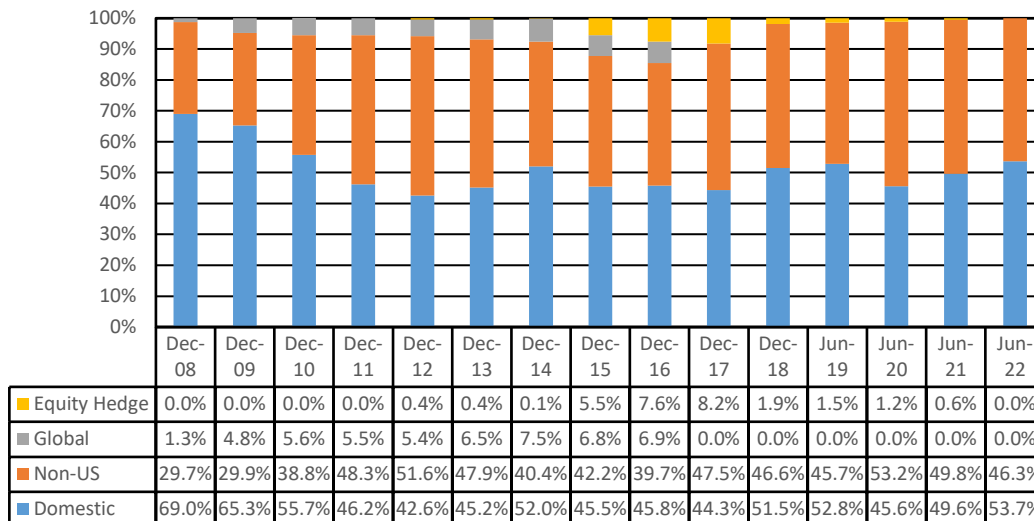
Equity Assets (\$B)



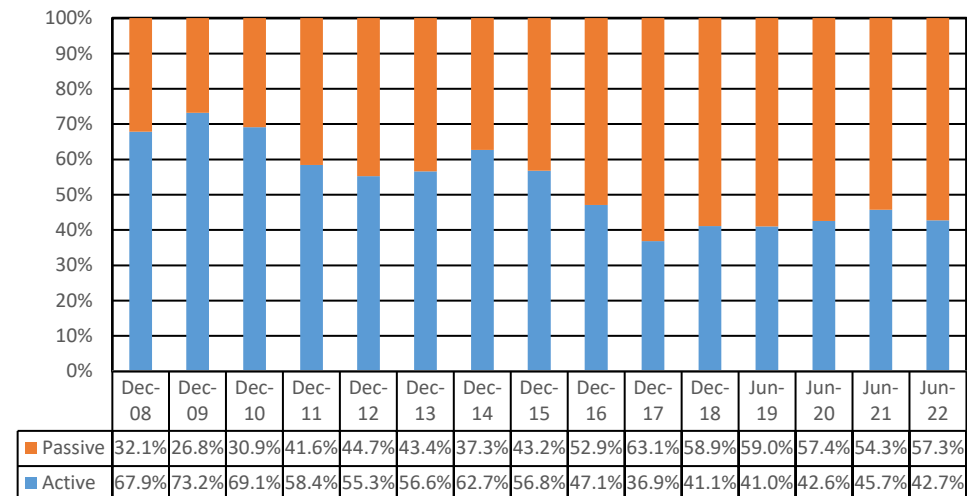
Number of Mandates



Asset Allocation



Active vs Passive





NCRS Public Equity Net Performance – June 30, 2022

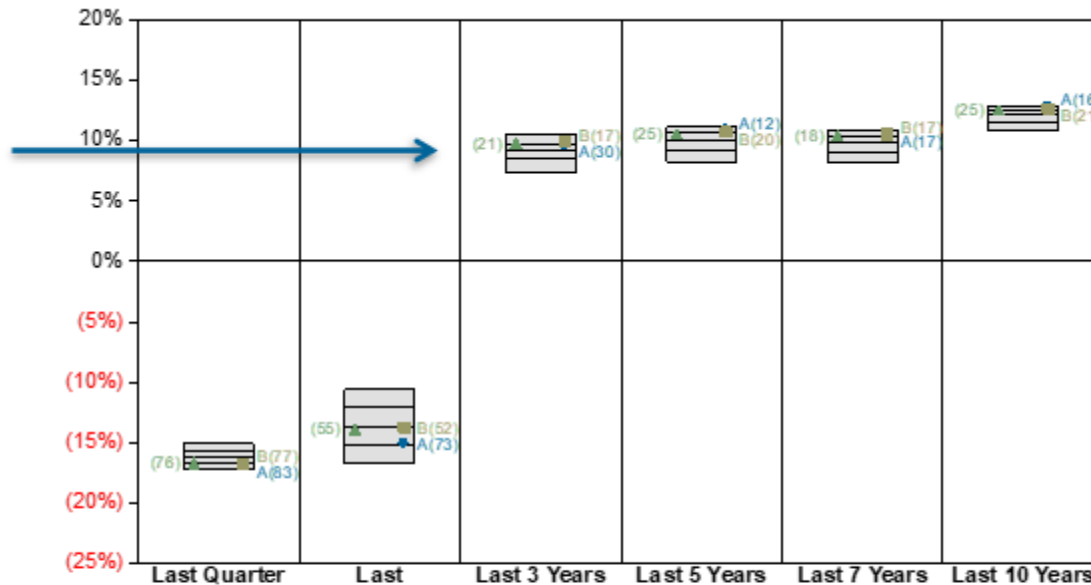
(As of June 30, 2022)	June 30, 2022 Market Value (\$M)	3 Month	1 Year	3 Years	5 Years	10 Years	15 Years
Public Equity	35,678.80	-15.79	-20.20	5.91	7.04	9.19	5.35
Benchmark		-15.83	-16.53	5.91	6.52	8.52	4.70
Domestic Portfolio	18,861.13	-16.87	-15.06	9.65	10.86	12.69	8.47
Russell 3000		-16.70	-13.87	9.77	10.60	12.57	8.36
Non-US Portfolio	16,248.65	-14.46	-25.36	1.98	3.43	5.94	2.13
Custom Benchmark		-14.28	-19.86	1.55	2.50	5.01	1.22



NCRS Domestic Equity Portfolio – Public Fund Universe Comparison

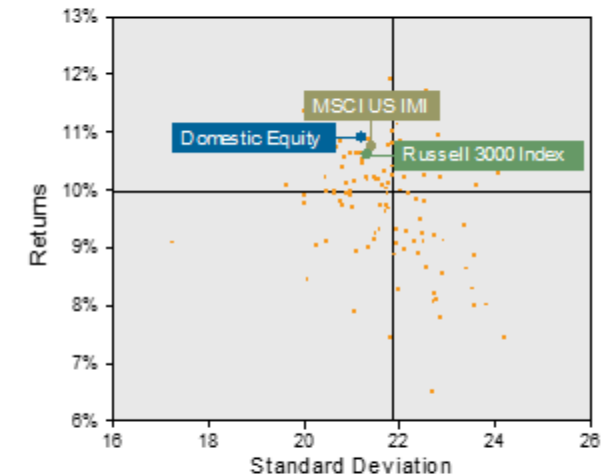
Performance vs Public Fund - Domestic Equity (Gross)

Performance of domestic equity ranks in the top quartile across 5-, 7-, and 10-year time frames.



10th Percentile	(15.10)	(10.58)	10.59	11.12	10.91	12.93
25th Percentile	(15.78)	(12.00)	9.69	10.63	10.37	12.58
Median	(16.24)	(13.67)	9.16	9.98	9.83	12.24
75th Percentile	(16.69)	(15.13)	8.59	9.13	9.09	11.59
90th Percentile	(17.24)	(16.71)	7.34	8.28	8.21	10.88
Domestic Equity	▲A (16.92)	(15.09)	9.65	10.90	10.49	12.84
MSCI US IMI	■B (16.75)	(13.74)	9.97	10.74	10.54	12.65
Russell 3000 Index	▲ (16.70)	(13.87)	9.77	10.60	10.43	12.57

Public Fund - Domestic Equity (Gross)
Annualized Five Year Risk vs Return



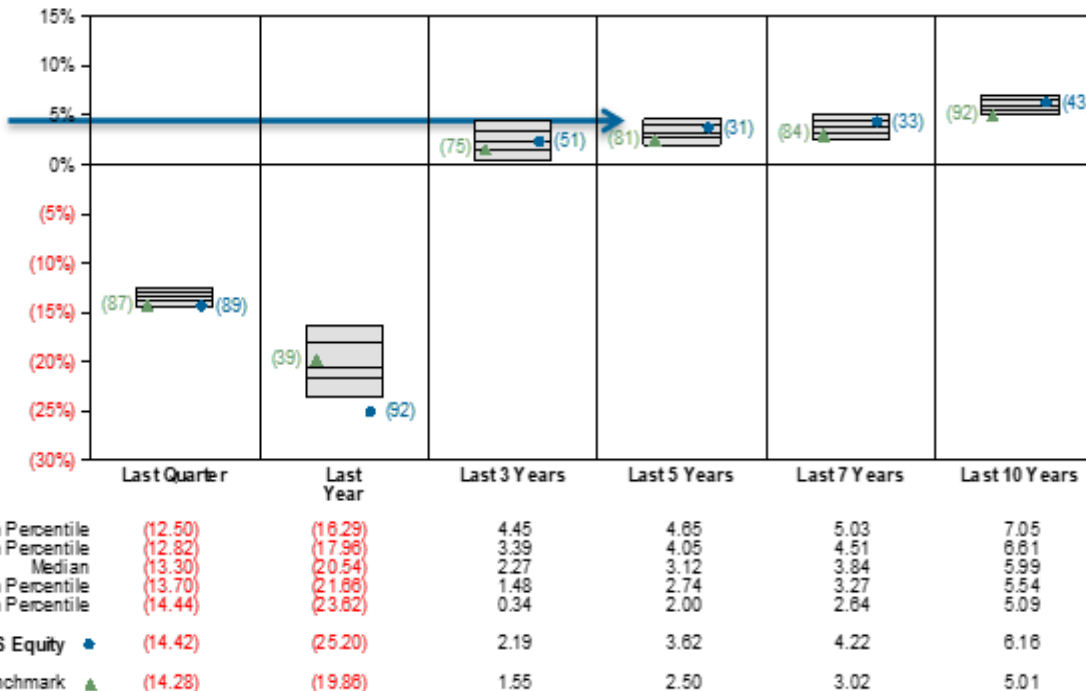
Peers represent the domestic equity composites of approximately 160 public funds ranging from approximately \$10million to \$32 billion



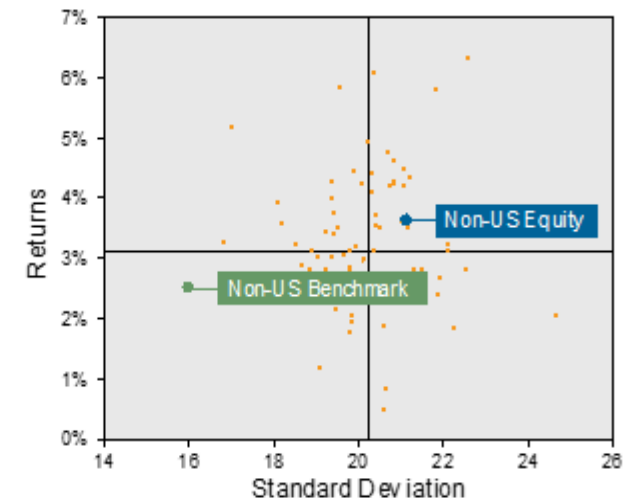
NCRS International Equity Portfolio – Public Fund Universe Comparison

Performance vs Public Fund - International Equity (Gross)

Performance of international equity is above median across 5-, 7-, and 10-year time frames.



Public Fund - International Equity (Gross)
Annualized Five Year Risk vs Return



Non-US benchmark is MSCI ACWI ex US IMI Net Index. Prior to October 2010, the non-US benchmark was a blend of MSCI EAFE and MSCI Emerging Markets at policy weights. Peers represent the international equity composites of approximately 150 public funds ranging from approximately \$10million to \$24 billion



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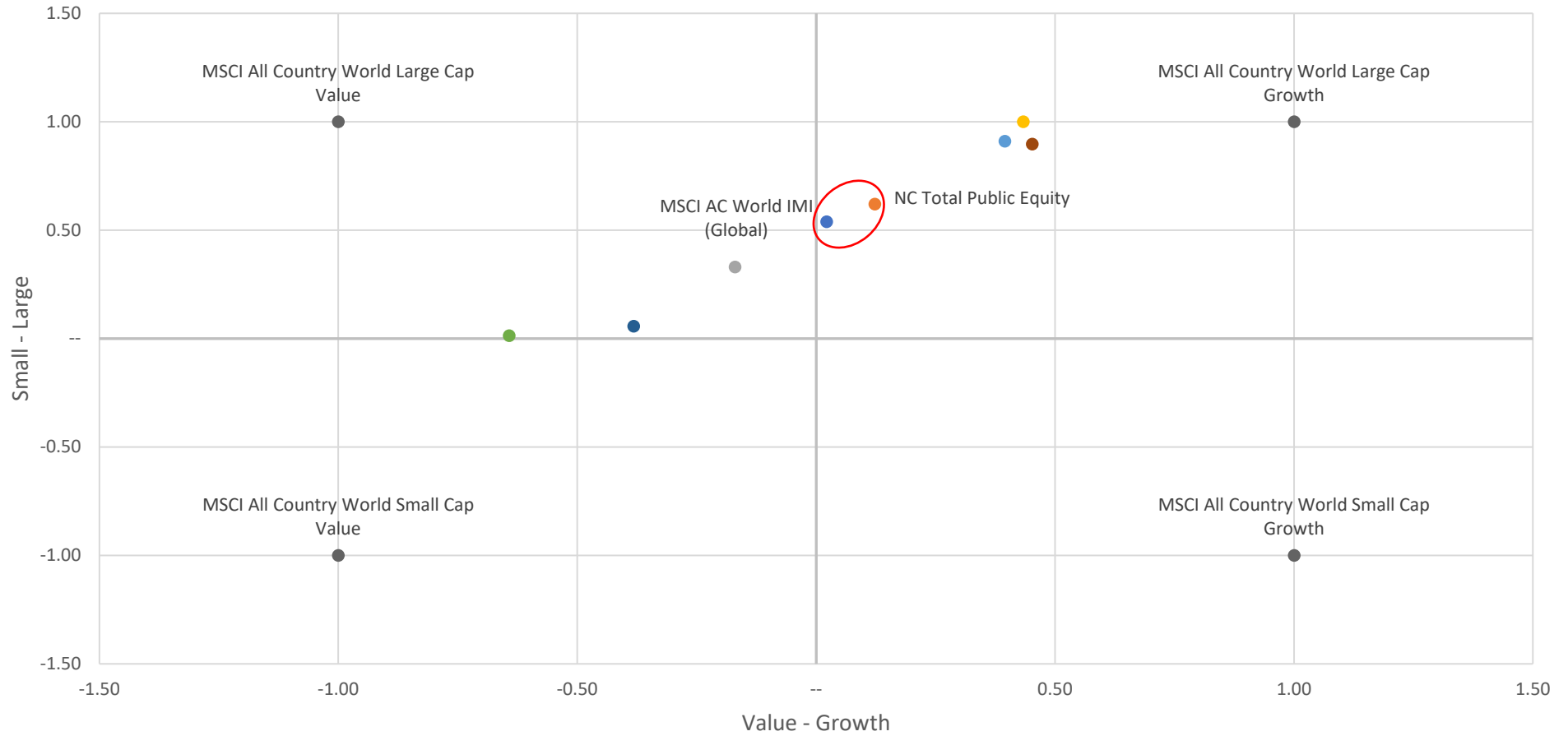
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PUBLIC EQUITY - PORTFOLIO STRUCTURE ANALYSIS



Style Summary: 1-year Trailing (as of 6/30/2022)



- NC Domestic Equity
- NC Total Public Equity
- NC International Equity
- S&P 500
- MSCI AC World IMI (Global)
- MSCI AC World ex USA IMI (Int'l)
- MSCI EAFE (Int'l Dev)
- Russell 3000 (Domestic)



Portfolio Exposures

Public Equity vs. MSCI AC World IMI	Portfolio Exposure	Benchmark Exposure	Active Exposure	Tracking Error
Equity - Style				0.46
Market Sensitivity (Beta)	0.06	-0.02	0.09	0.26
Growth	0.04	-0.02	0.06	0.03
Profitability	0.02	0.02	0.00	-0.00
Size	0.06	0.07	-0.01	-0.02
Earnings Yield	-0.03	0.01	-0.04	0.01
Value	-0.05	-0.01	-0.04	0.02
Dividend Yield	-0.09	0.02	-0.11	0.02
Equity - Country				0.40
United States	0.56	0.59	-0.04	0.11
Japan	0.07	0.06	0.01	0.03
China	0.05	0.04	0.01	0.10
Canada	0.02	0.03	-0.01	0.00
Netherlands	0.02	0.01	0.01	0.04
United Kingdom	0.05	0.04	0.01	0.03
Italy	0.01	0.01	0.01	0.04
Total				1.13

- Equity portfolio is currently overweight International, Growth & higher beta stocks
- Underweight US, Value & high earning/dividend stocks



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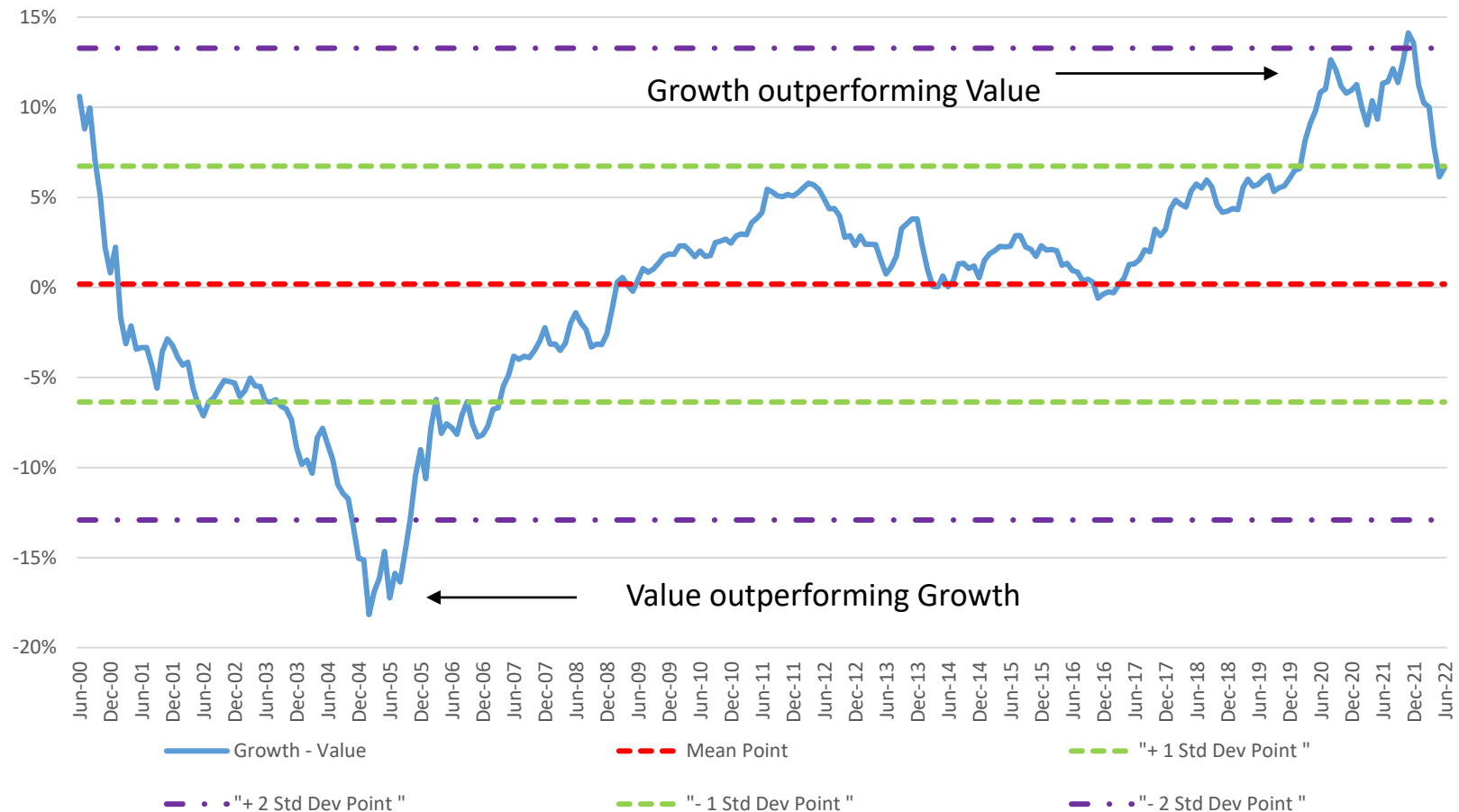
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PUBLIC EQUITY – RETURN & FACTOR DISPERSION ANALYSIS



Equity Return Dispersion

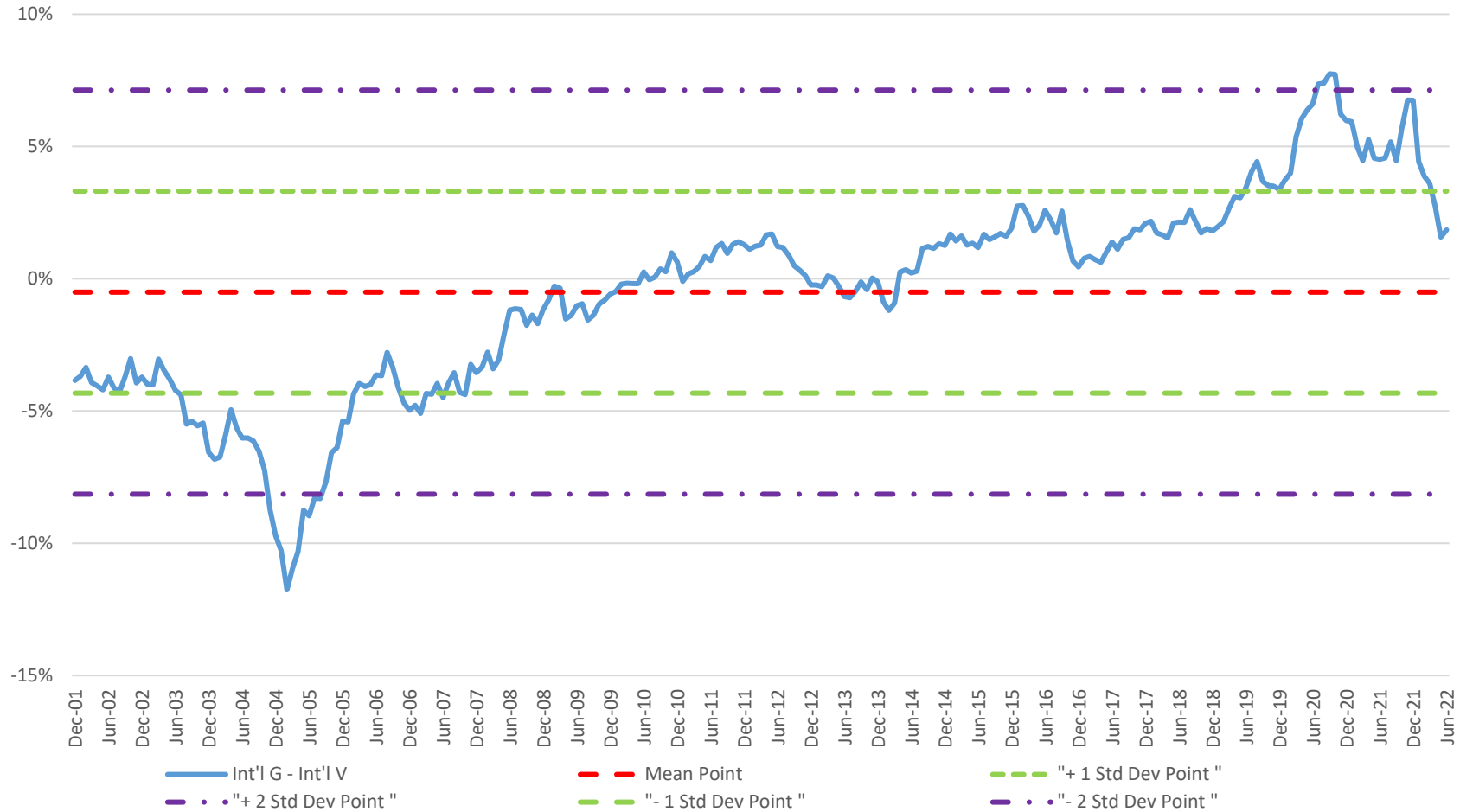
US Growth vs US Value Trailing 5 Year Returns





Equity Return Dispersion

International Growth vs International Value





US Stock Market Concentration

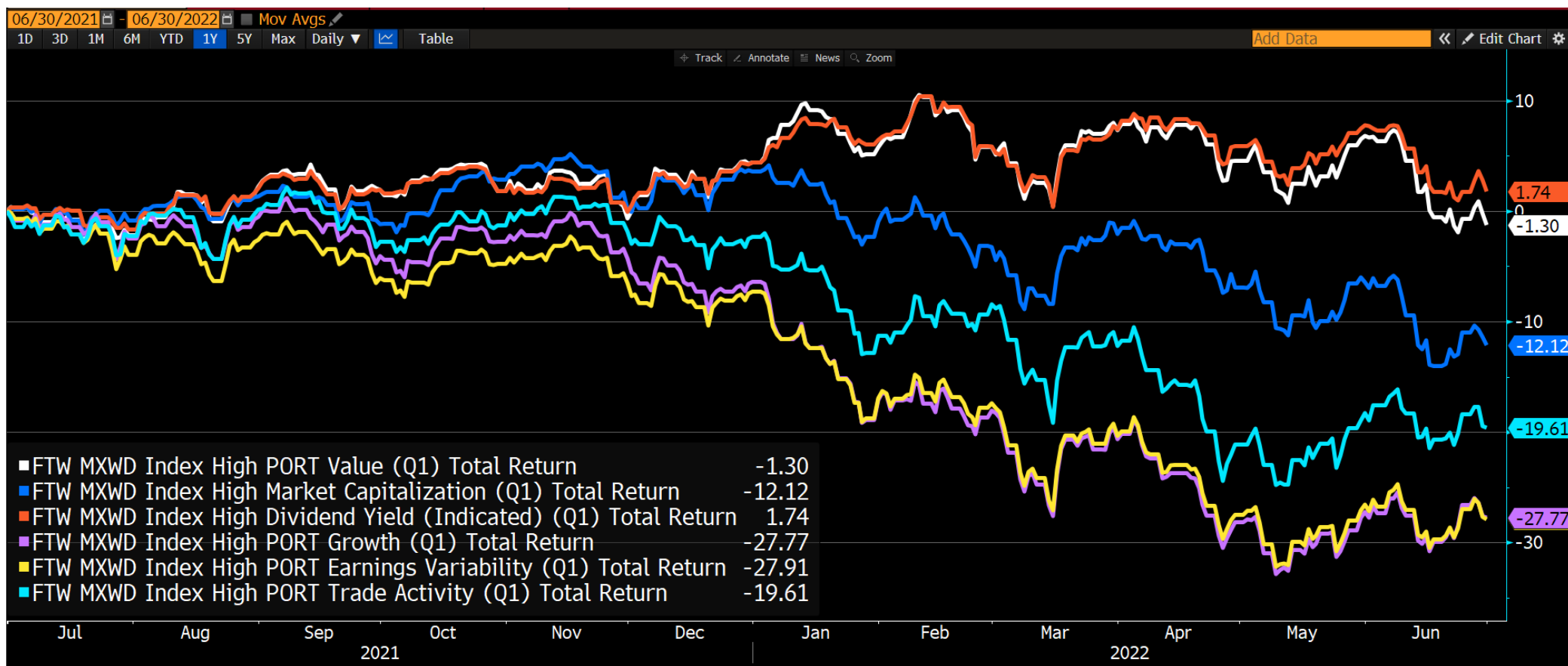
Herfindahl-Hirschman Index



- Since 2014 market has seen significant increase in concentration of market cap weights.
- Some reversal recently but remains highly concentrated versus history.



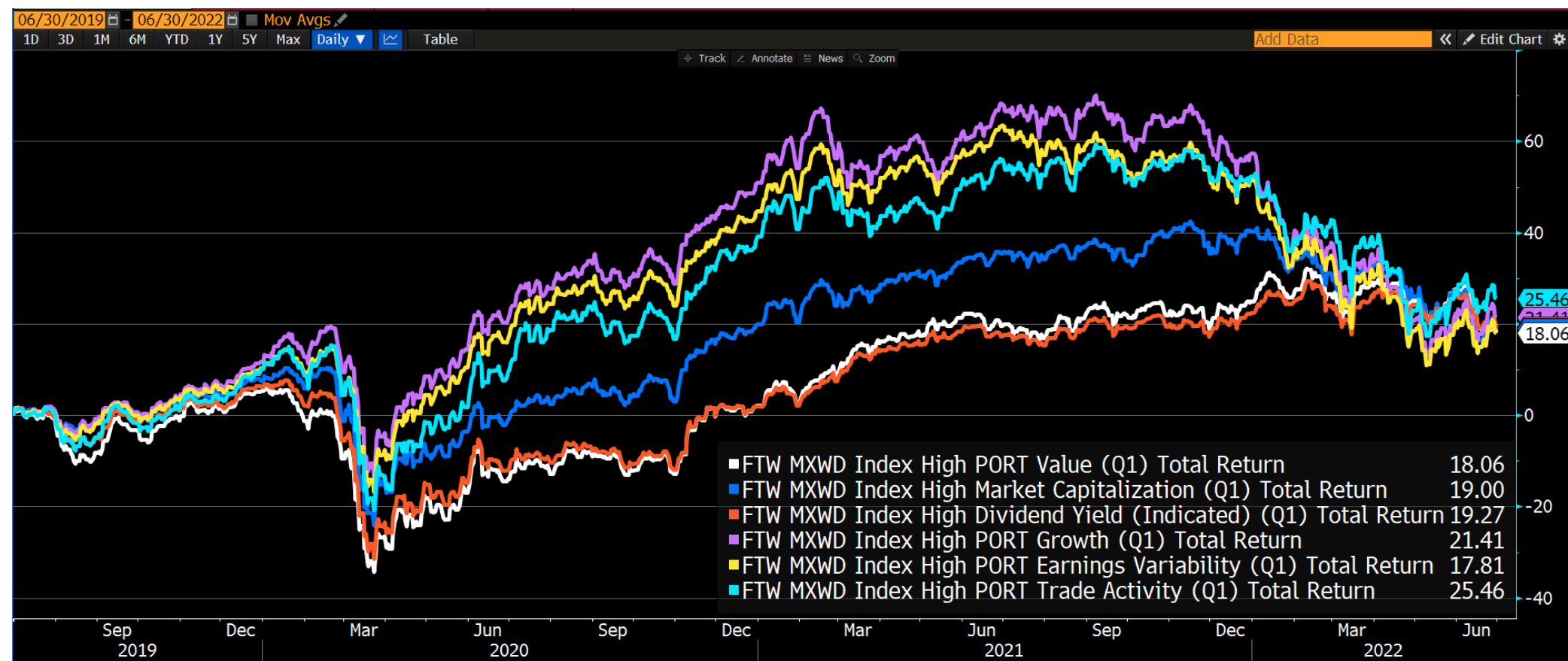
Global Market Factor View: 1 Year



- Value & High Dividend Yield stocks have outperformed the past year
- Growth, high earning variability & most actively traded stocks have underperformed
- A reversal in the trend of recent years.



Global Market Factor View: 3 Year



- Past year has seen reversal of trend of previous 2 years.
- 2019-2021 growth and highly variable earnings stock outperformed



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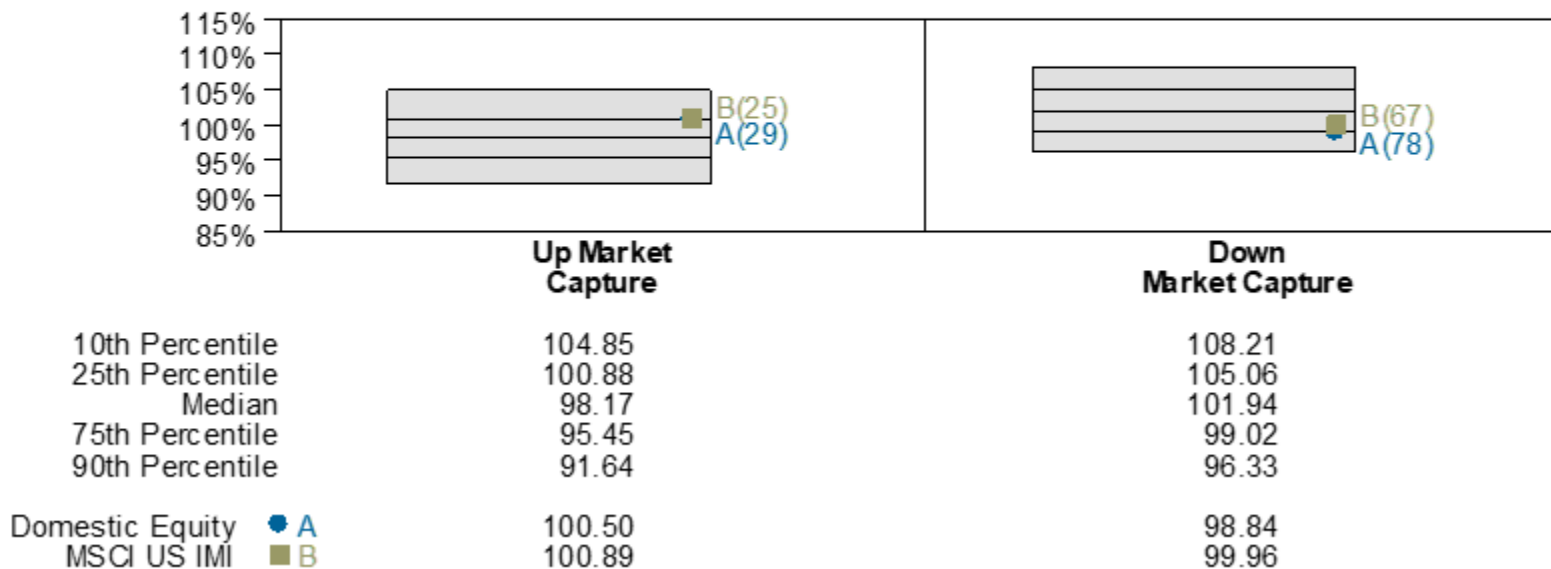
PUBLIC EQUITY— RISK/RETURN ANALYSIS



NCRS Domestic Equity Portfolio – Up/Down Market Capture

Up Market Capture vs. Down Market Capture

Market Capture vs Russell 3000 Index
Rankings Against Public Fund - Domestic Equity (Gross)
Five Years Ended June 30, 2022

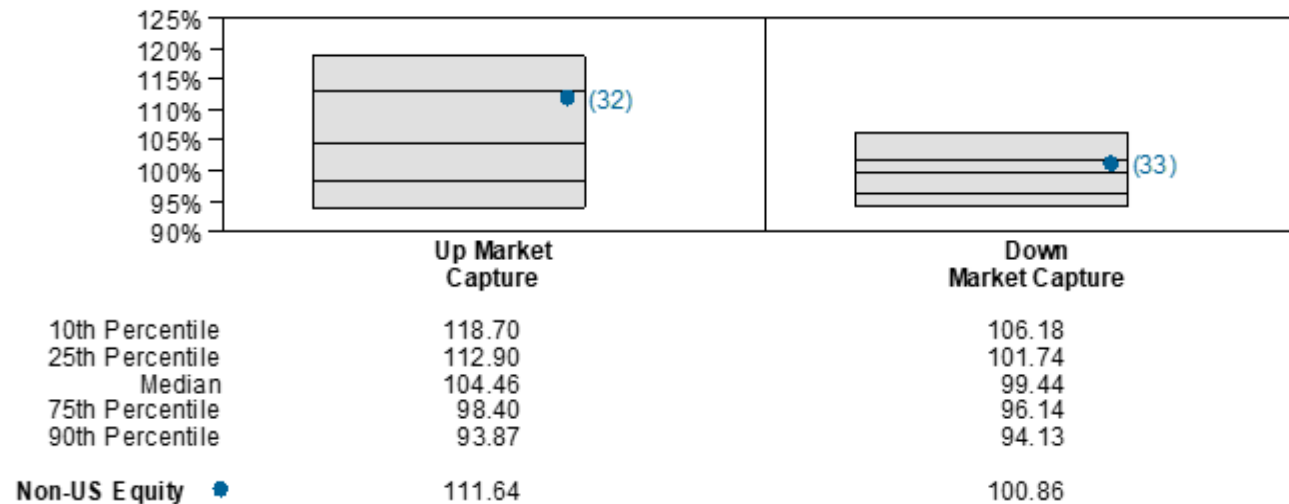




NCRS International Equity Portfolio – Up/Down Market Capture

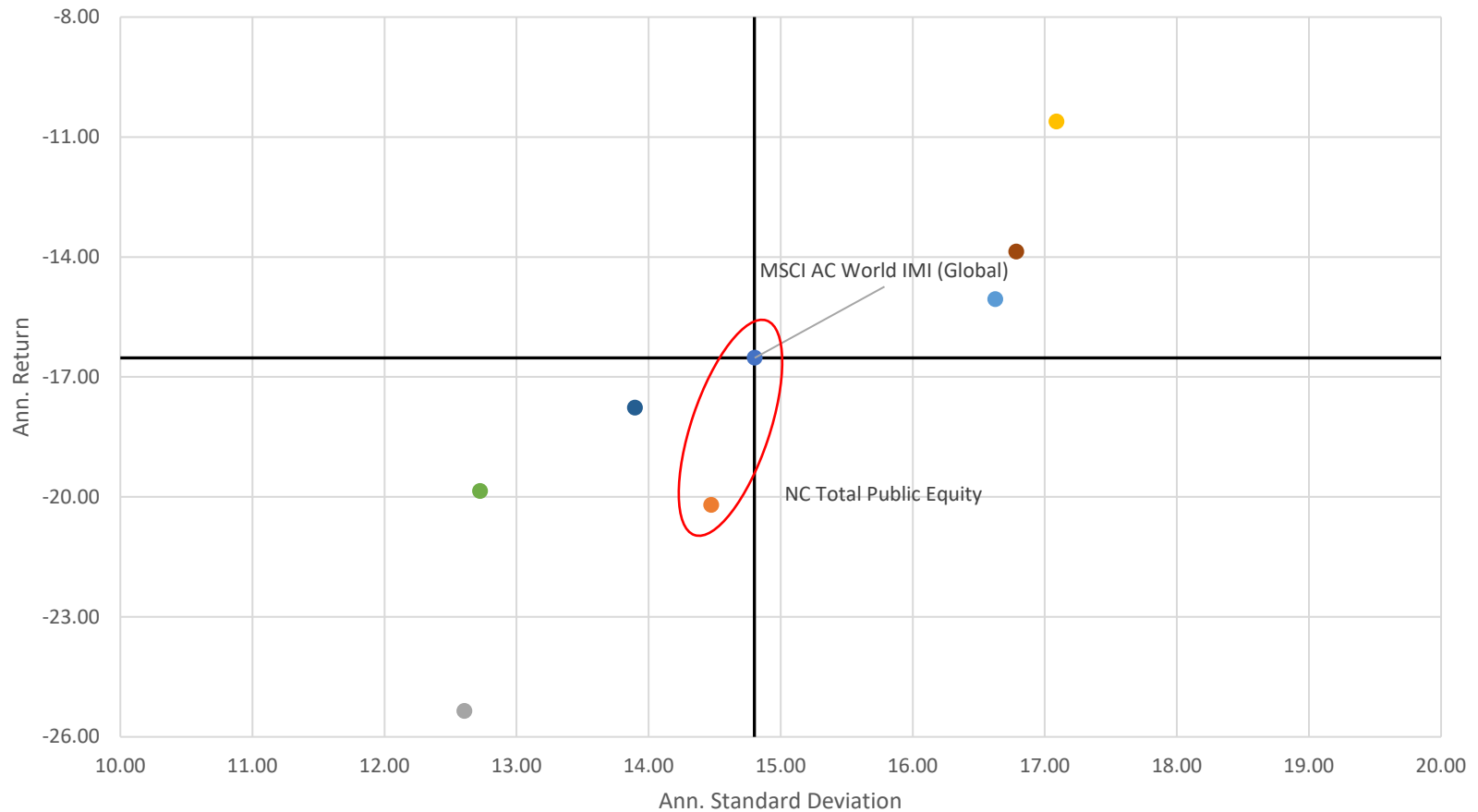
Up Market Capture vs. Down Market Capture

Market Capture vs Non-US Benchmark
Rankings Against Public Fund - International Equity (Gross)
Five Years Ended June 30, 2022

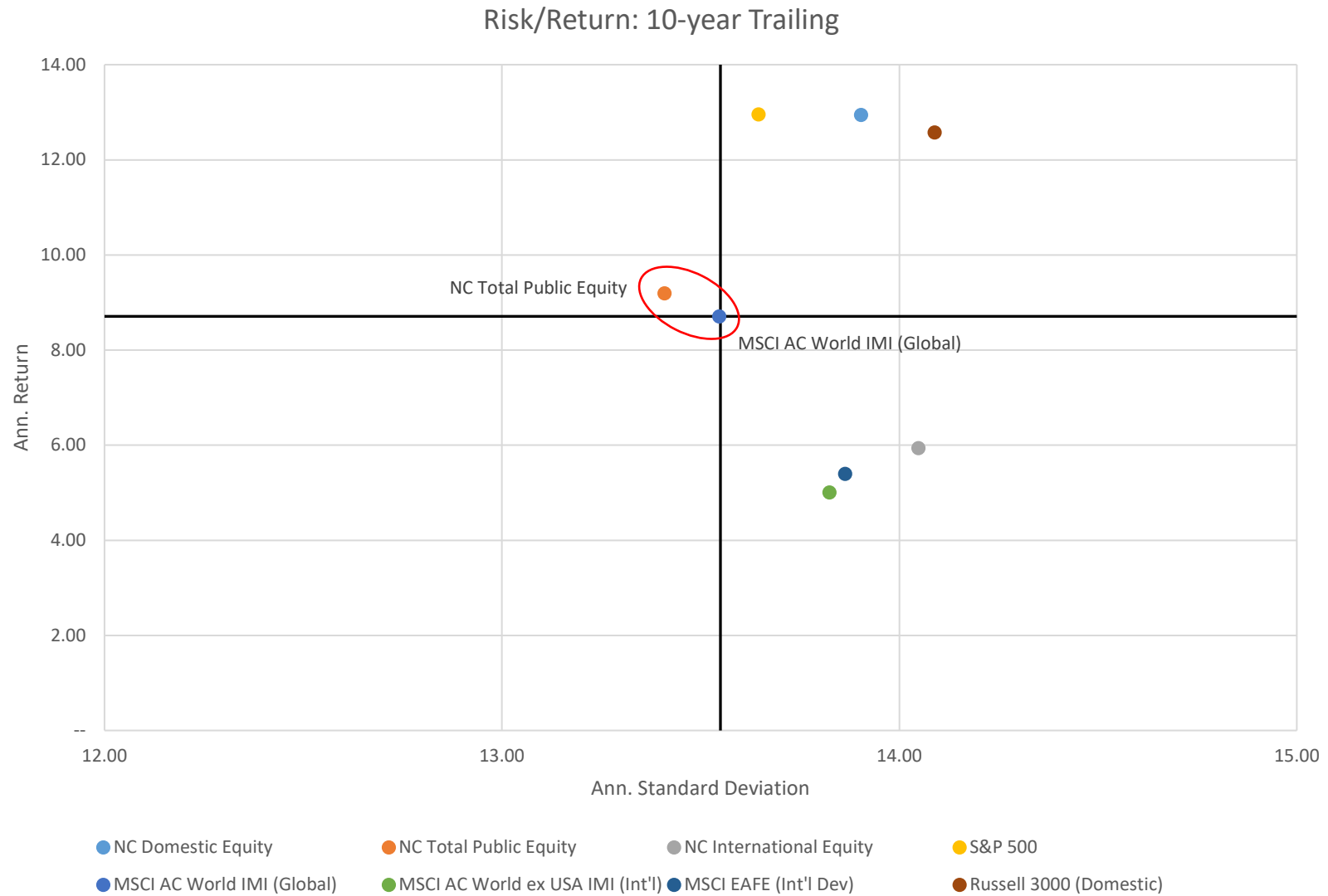




Risk/Return: 1-year Trailing



- NC Domestic Equity
- NC Total Public Equity
- NC International Equity
- S&P 500
- MSCI AC World IMI (Global)
- MSCI AC World ex USA IMI (Int'l)
- MSCI EAFE (Int'l Dev)
- Russell 3000 (Domestic)





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PUBLIC EQUITY— INTERNALLY MANAGED EQUITY PORTFOLIOS



Overview

- Launched new internally managed US Core Factor Portfolio in February;
- Consolidated Russell 200 & Midcap portfolios into a Russell 1000 (effective July 1st);
- Added additional \$585MM to Midcap account.

Performance

Internal Equity Portfolios	1 year	Since Inception	Inception Date
Russell MidCap Internal	-17.24%	7.46%	November 2017
Russell MidCap Benchmark	-17.30%	7.38%	
Excess Return	0.06%	0.08%	
Russell 200 Internal	-11.45%	11.30%	November 2017
Russell 200 Benchmark	-11.46%	11.33%	
Excess Return	0.01%	-0.03%	
Internal TOBAM Max Div US*	-19.96%	4.55%	September 2018
TOBAM US Benchmark	-19.98%	4.43%	
Excess Return	0.02%	0.11%	
Internal US Core Factor		-11.95%	February 2022
Russell 1000 Benchmark		-16.22%	
Excess Return		4.27%	

*Gross of 10bps license fee



Core Factor Portfolio Exposures

US Core Factor vs Russell 1000	Portfolio Exposure	Benchmark Exposure	Active Exposure	Tracking Error
Equity - Style				1.15
Profit	0.33	0.06	0.26	0.20
Earnings Yield	0.19	0.02	0.17	0.15
Momentum	0.15	0.03	0.12	0.20
Growth	0.08	-0.02	0.10	-0.02
Value	0.03	-0.01	0.04	0.02
Dividend Yield	0.05	0.03	0.02	0.00
Beta	-0.13	-0.04	-0.09	0.35
Size	0.02	0.14	-0.12	0.05
Leverage	-0.16	-0.01	-0.15	0.00
Equity - Industry				0.25
Total				2.08

- Portfolio is overweight higher profit, earnings yield and momentum stocks.
- Underweight highly leveraged, high beta and largest weighted stocks.
- Risk exposures to industries and sectors are constrained.



Fiscal Year Trading & Portfolio Activity

NCRS Account	No of Shares Traded	Gross Value Traded	No of orders
Russell 200	10,394,856	\$ 1,419,206,653	4,823
Russell Mid Cap	29,915,763	\$ 1,928,971,301	27,836
TOBAM US	8,045,010	\$ 552,209,830	4,649
CORE Factor	5,232,974	\$ 385,403,727	2,266
Total	53,588,603	\$ 4,285,791,511	39,574

- **54MM** shares traded across 4 accounts
- Gross value of **\$4.3B** across **40k** orders



Russell Indices Annual Reconstitution (June 2022)

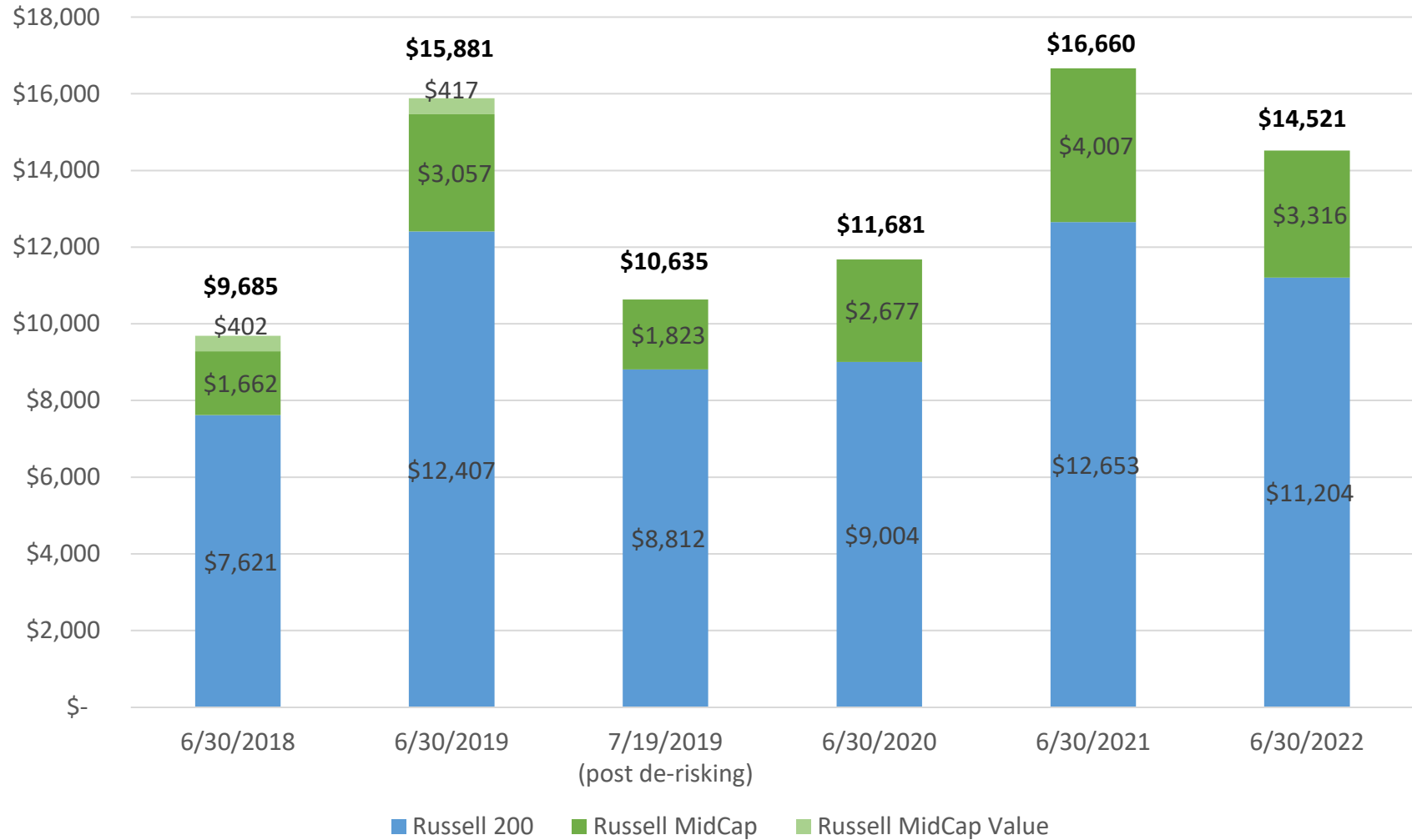
NCRS Account	No of shares Held	No of shares Traded	Turnover (%)
Russell 200	93,980,351	5,503,293	5.82%
Russell Mid Cap*	59,981,810	21,424,516	19.16%
Total	153,962,161	26,927,809	10.91%

* Including **\$585MM** addition to the Mid Cap portfolio.

- **+1,000** names traded; gross market value of **\$1,668MM**.
- Negotiated very competitive broker commission rates < **0.15c** per share.



Internal Passive Equity AUM (MM's)





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WRAP-UP



2022-2023 STRATEGIC GOALS

- Rebalance total Public Equity portfolio
- Grow Public Equity's internal management capabilities



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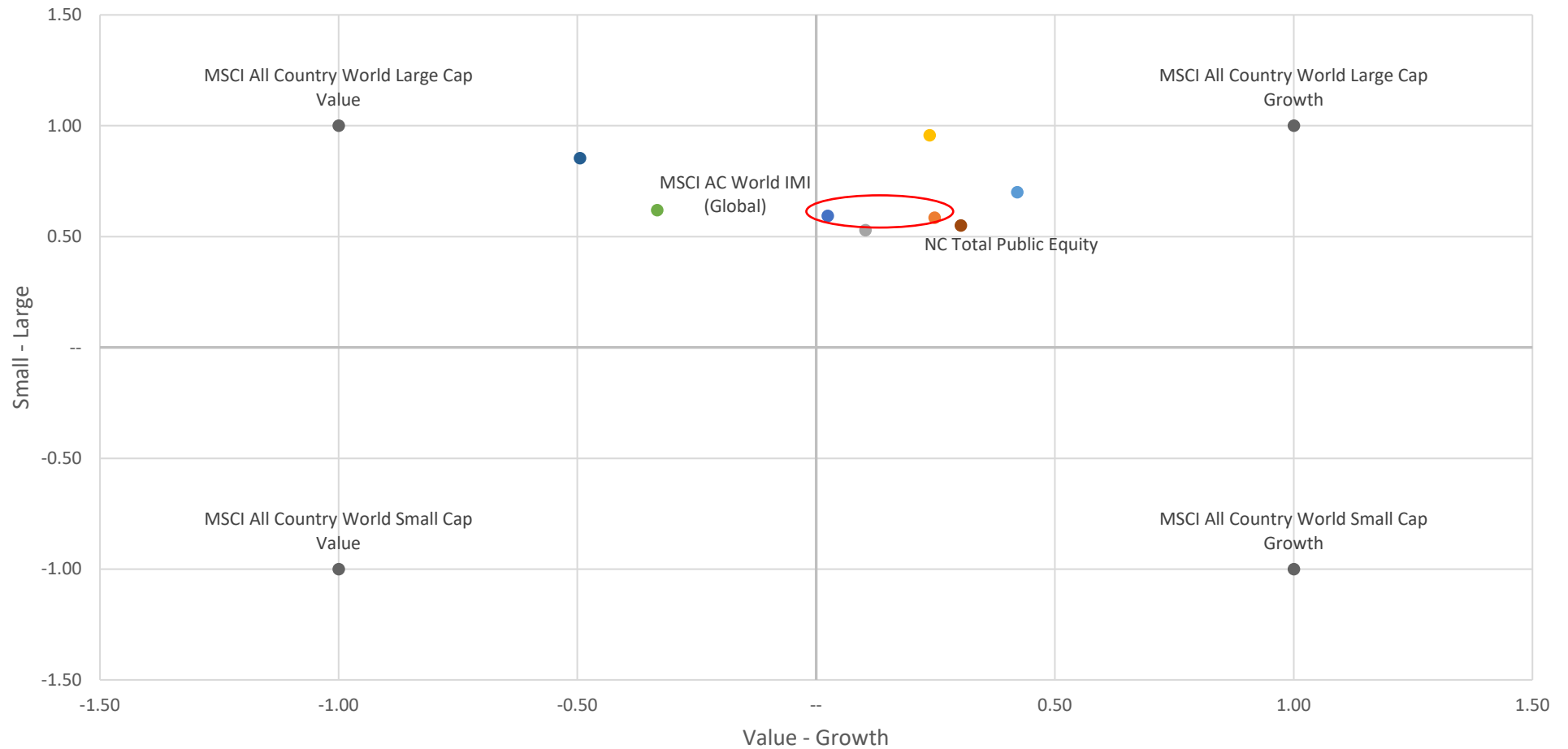
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APPENDIX



Style Summary: 5-year Trailing (as of 6/30/2022)

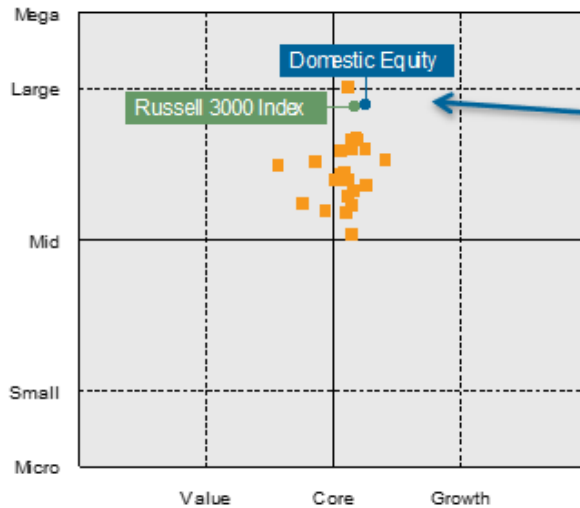


- NC Domestic Equity
- NC Total Public Equity
- NC International Equity
- S&P 500
- MSCI AC World IMI (Global)
- MSCI AC World ex USA IMI (Int'l)
- MSCI EAFE (Int'l Dev)
- Russell 3000 (Domestic)



NCRS Domestic Equity Portfolio

Style Map vs Pub Pln- Dom Equity
Holdings as of June 30, 2022



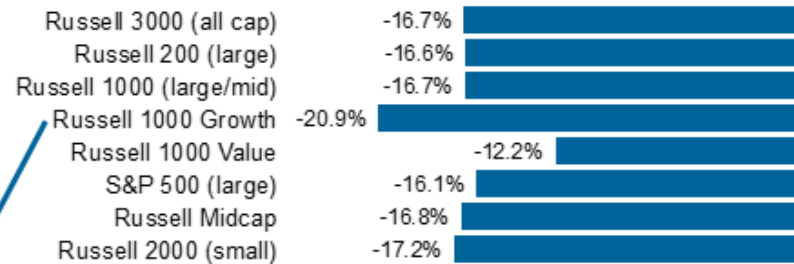
Domestic equity is similar to index capitalization, but larger cap relative to peers.

Style Exposure Matrix
Holdings as of June 30, 2022

Large	21.5% (113)	17.2% (82)	39.5% (108)	78.2% (303)
	22.4% (112)	17.8% (81)	37.9% (104)	78.0% (297)
Mid	4.6% (189)	5.1% (202)	6.4% (194)	16.0% (585)
	5.0% (173)	5.1% (208)	5.2% (213)	15.3% (594)
Small	1.0% (86)	2.5% (113)	2.1% (103)	5.6% (281)
	1.6% (303)	2.4% (519)	1.9% (367)	5.9% (1189)
Micro	0.0% (1)	0.0% (8)	0.1% (3)	0.1% (10)
	0.2% (281)	0.4% (467)	0.2% (164)	0.8% (892)
Total	27.0% (348)	24.9% (403)	48.1% (408)	100.0% (1159)
	29.2% (849)	25.6% (1275)	45.2% (848)	100.0% (2972)
	Value	Core	Growth	Total

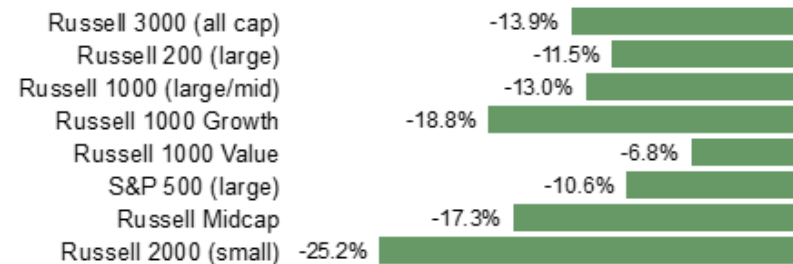
Longer duration growth companies being re-priced with expectations of higher inflation and interest rates.

U.S. Equity: Quarterly Returns



Trend reversal; large cap growth giving back gains from 2021

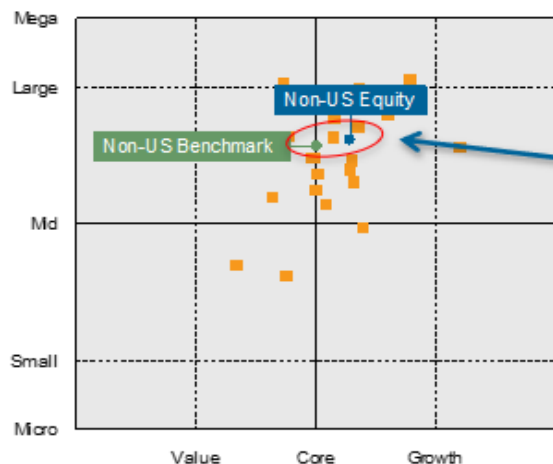
U.S. Equity: One-Year Returns





NCRS International Equity Portfolio

Style Map vs Pub Pln - Intl Equity
Holdings as of June 30, 2022



Non-US equity has modestly higher capitalization to index, and a modest growth tilt

Style Exposure Matrix
Holdings as of June 30, 2022

Europe/ Mid East	11.5% (498)	11.1% (538)	19.0% (510)	41.5% (1566)
	11.8% (492)	11.8% (553)	15.3% (506)	38.9% (1551)
N. America	1.5% (91)	1.7% (147)	3.2% (107)	6.3% (345)
	2.3% (89)	3.2% (142)	2.7% (103)	8.1% (334)
Pacific	6.7% (526)	6.3% (539)	10.1% (509)	23.1% (1574)
	8.3% (526)	7.2% (537)	8.4% (508)	23.9% (1571)
Emerging	6.3% (1000)	9.2% (1134)	13.6% (984)	29.1% (3118)
	7.7% (993)	10.6% (1126)	10.8% (977)	29.2% (3096)
Total	25.9% (2115)	28.3% (2378)	45.8% (2110)	100.0% (6603)
	30.1% (2100)	32.7% (2358)	37.2% (2094)	100.0% (6552)
	Value	Core	Growth	Total

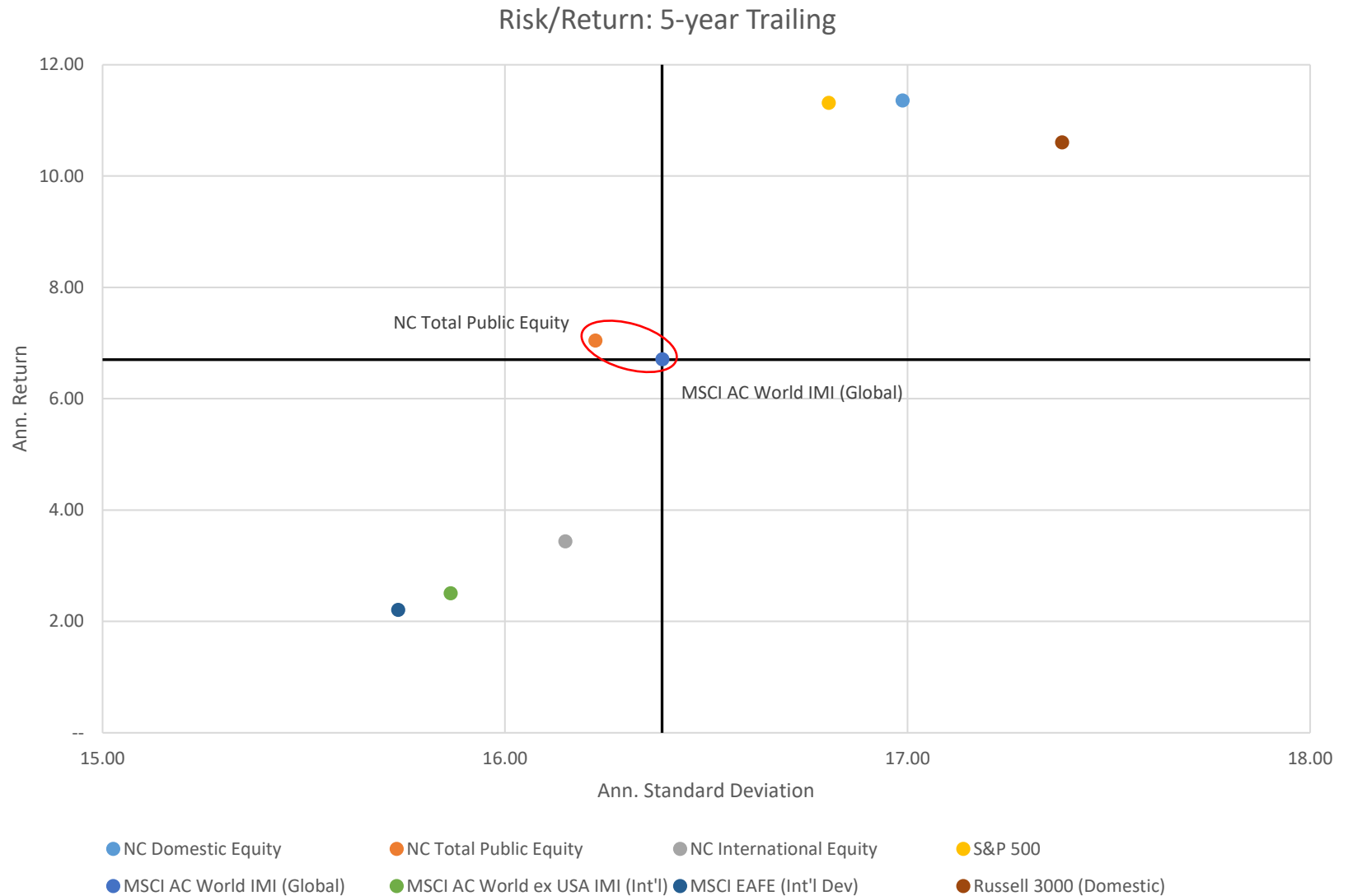
Global Equity: Quarterly Returns

MSCI ACWI ex USA IMI (DM+EM)	-14.3%
MSCI World (Dev) ex USA	-14.7%
MSCI ACWI ex US Small Cap	17.5%
MSCI Emerging Markets	-11.4%
MSCI Frontier Markets	-13.8%
MSCI:ACWI ex US IMI Value	-12.4%
MSCI:ACWI ex US IMI Growth	-16.3%

Non-US Equity: Annual Returns

MSCI ACWI ex USA IMI (DM+EM)	-19.9%
MSCI World (Dev) ex USA	-16.8%
MSCI ACWI ex US Small Cap	-22.4%
MSCI Emerging Markets	-25.3%
MSCI Frontier Markets	-17.3%
MSCI:ACWI ex US IMI Value	-13.5%
MSCI:ACWI ex US IMI Growth	-26.0%

- NCRS international equity portfolio has an overweight to growth and underweight value relative to the benchmark.

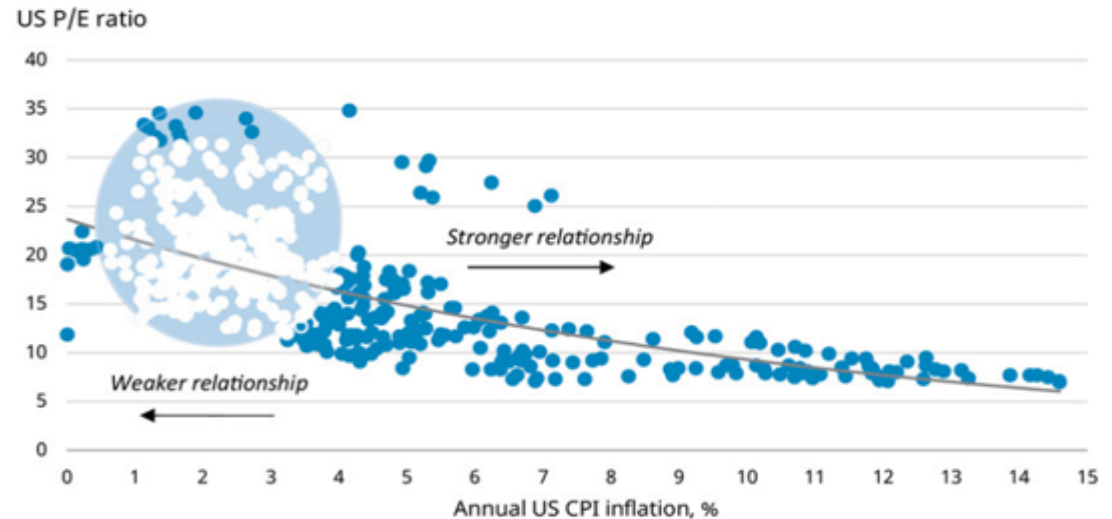




U.S. Equity Overview

- Macroeconomic headlines and data releases will continue to impact equity markets.
- Inflation, rising interest rates, and supply-chain disruptions are all headwinds for equity markets going forward.
- Active large cap growth managers have underperformed the Russell 1000 Growth Index meaningfully recently.
- Large tech firms that have sold-off (e.g., Meta) have become an increasingly large proportion of the value index.
- Federal Reserve interest rate hikes may derail the economy, resulting in lower corporate earnings in the near to intermediate term.

High Inflation Has Typically Resulted in Lower U.S. P/E Ratios (1973-2021)



Source: The Hartford

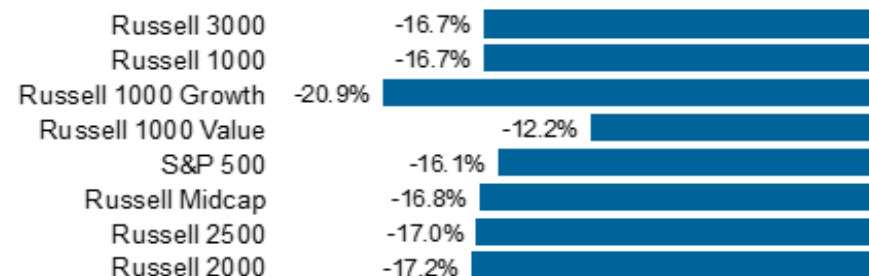


U.S. Equity Performance: 2Q22

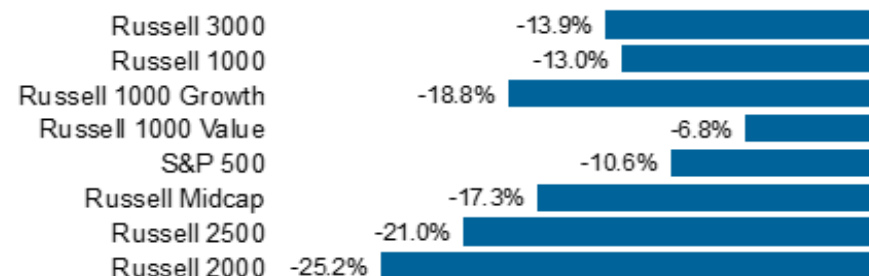
Worst first half since 1970

- The S&P 500 dropped by 16.1% in 2Q22; all major U.S. indices across styles and market cap ranges were negative in the quarter.
- All sectors posted negative returns over the quarter. Energy continues to be the best-performing sector, and it is the only sector that has posted positive returns YTD 2022.
- Large cap stocks nominally outpaced smaller cap stocks in the quarter. The performance spread between the Russell 1000 and the Russell 2000 Index was around 50 basis points.
- Value stocks have outperformed growth stocks across the market capitalization spectrum.
- Consumer Discretionary (-26%), Communication Services (-21%), and Information Technology (-20%) were the worst-performing sectors.
- Rising interest rates and inflation along with geopolitical headlines all contributed to a volatile and risk-averse environment.

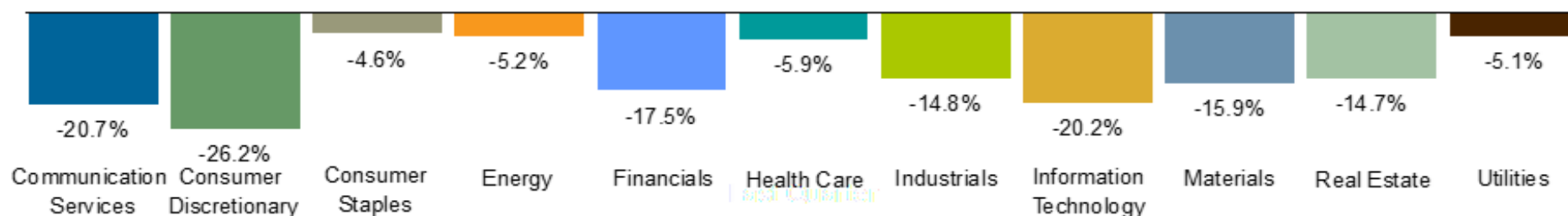
U.S. Equity: Quarterly Returns



U.S. Equity: One-Year Returns



Industry Sector Quarterly Performance (S&P 500)



Sources: FTSE Russell, S&P Dow Jones Indices

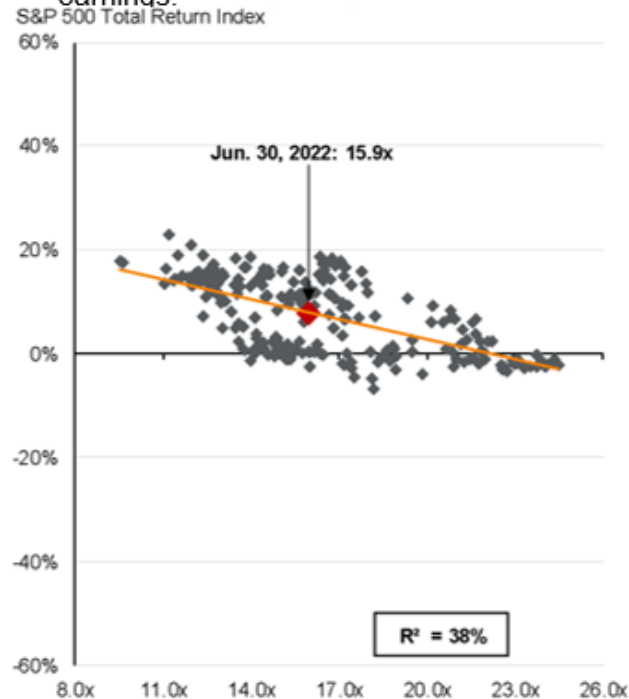


U.S. Equity Key Theme

Market valuations

- Against the backdrop of a potential economic slow-down, sell side analysts have been revising corporate earnings lower.
- Longer-duration growth assets, such as growth stocks, are vulnerable during periods of high inflation because of higher interest rates discounting way-out future earnings.

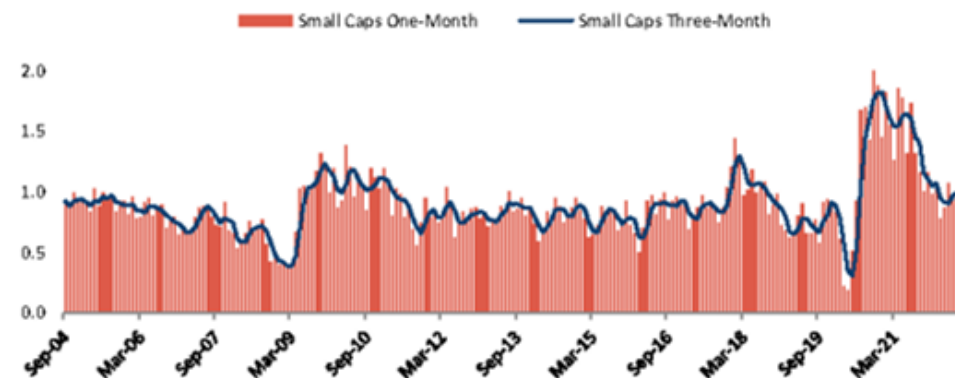
Forward P/E and subsequent 5-year annualized returns



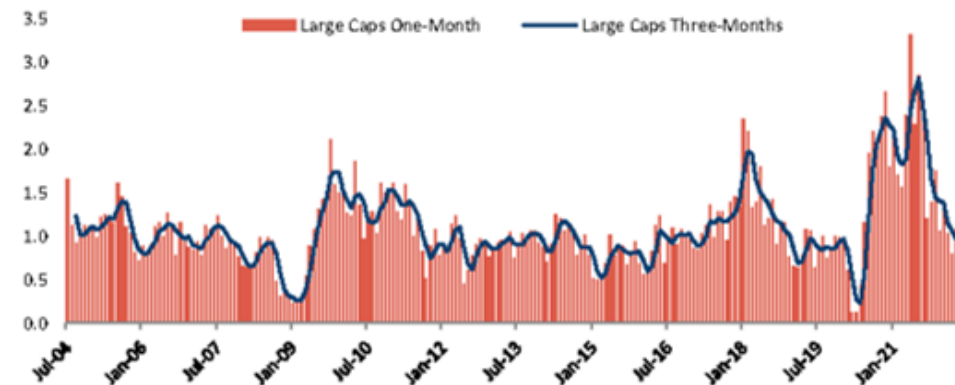
Source: Jefferies and J.P. Morgan

Earnings Revisions Have Drifted Lower For Both Small and Large Caps

Small cap earnings revision ratio



Large cap earnings revision ratio



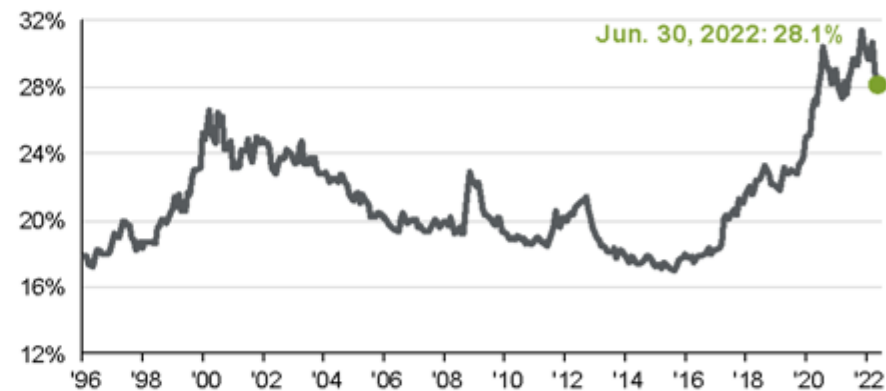


U.S. Equity Key Theme

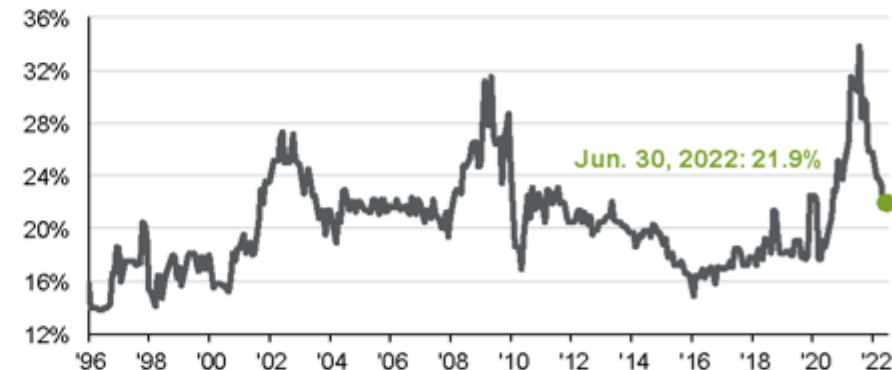
Index concentration

- Index concentration persists despite negative YTD 2022 index returns and falling earnings contribution.
- Earnings from the top mega cap companies have fallen faster than the broader market in the last year.
- Index concentration continues to cause active managers significant headwinds in the large cap growth space: the Russell 1000 Growth Index has over 45% of portfolio capital in just the top 10 names (Apple and Microsoft are greater than 10% weights).

Weight of the top 10 stocks in the S&P 500
% of market capitalization of the S&P 500



Earnings contribution of the top 10 in the S&P 500
Based on last 12 months' earnings



Source: J.P. Morgan



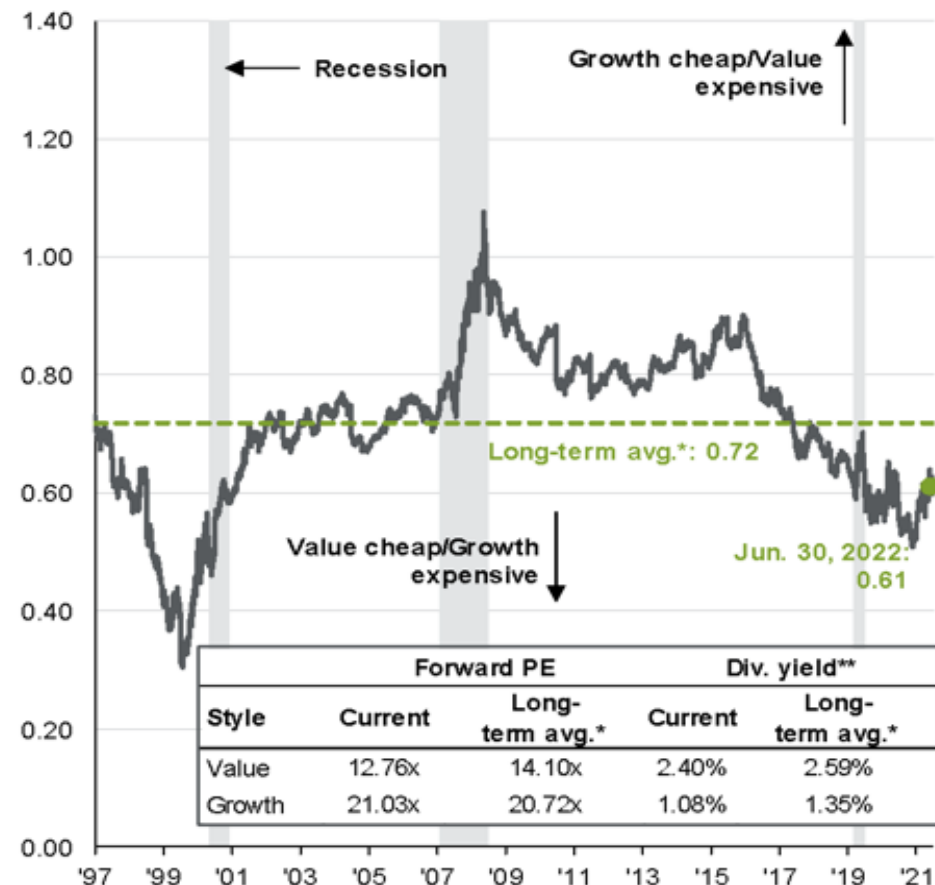
U.S. Equity Key Theme

Value stocks are still cheap but the gap has tightened

- In 2Q, value stocks meaningfully outperformed growth stocks across the market capitalization spectrum. The performance dispersion between large growth, mid growth, and small growth was minimal.
- Value P/E ratios relative to growth stocks still indicate that value is cheap. However, the valuation gap has narrowed.
- Historically, value stocks have performed better in rising rate and inflationary environments.

Value vs. Growth Relative Valuations

Relative forward P/E ratio of Value vs. Growth (1997-2Q22)



Source: J.P. Morgan



Global/Global ex-U.S. Equity Overview

Inverse relationship between the dollar and global ex-U.S. equity

The rise of the dollar

- The dollar drives approximately 90% of all foreign exchange transactions.
- The dollar is at a 20-year high after gaining around 10% YTD.
- The dollar has hit parity with the euro; first time since 2002.
- The yen has dipped to a 24-year low against the dollar.

The Fed stokes the dollar

- Sparked by inflation fears, the Fed tightening policy has been more aggressive relative to other central banks.
- Geopolitical risk, global economic uncertainty, and market volatility has stoked the dollar given its status as a haven.

Dollar may burden global ex-U.S. markets

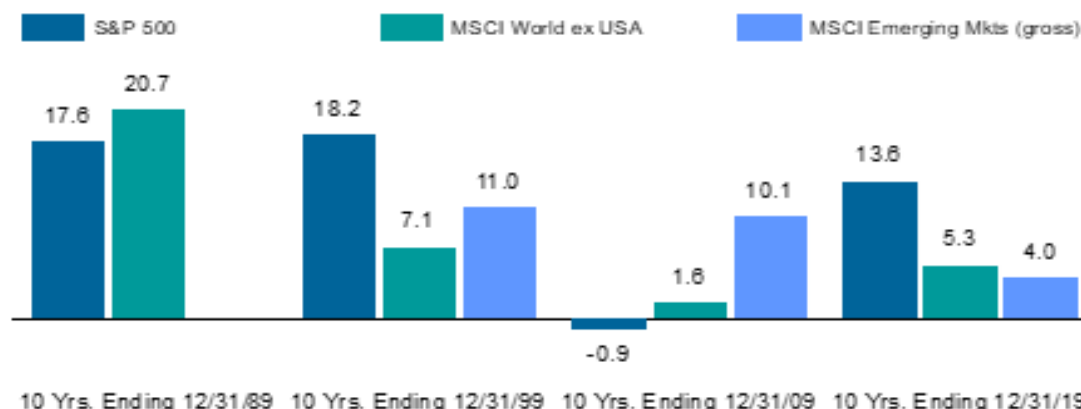
- Strong currency yields purchasing power
- Dollar-denominated debt compounded by depreciating local currencies weighs on economies.
- The dollar and global ex-U.S. equity have exhibited negative correlation over the past four decades .

Source: FactSet, MSCI. The index comprises the euro, Japanese yen, British pound, Canadian dollar, Swedish krona and Swiss franc weighted against the U.S. dollar.

U.S. Dollar Index



Regional Performance





Global/Global ex-U.S. Equity Performance: 1Q22

Fears of recession

- The war in Ukraine pushed an already fragile supply chain, energy demand/supply imbalances, and inflationary environment into fears of a recession.
- Slowing global growth and recession risk became clearer toward quarter-end, leading investors toward higher-quality and lower-volatility areas of the market to offer protection.

Wide divergence in country returns

- Optimism that the worst is behind China's COVID-19 lockdown buoyed the country to the only positive return in the quarter.
- Meanwhile Japan suffered from a weak yen, slowing growth, and continued supply chain disruptions.

Growth vs. value

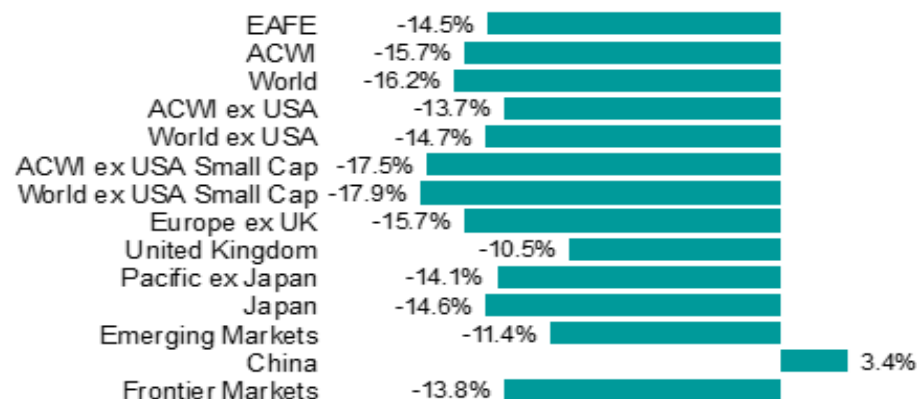
- Value continues to outperform growth as most monetary policies focus on tightening.
 - *Energy was the only sector with positive year-to-date results.*
- Information Technology had the worst sector return as interest rate increases dampened long duration growth attractiveness.

U.S. dollar vs. other currencies

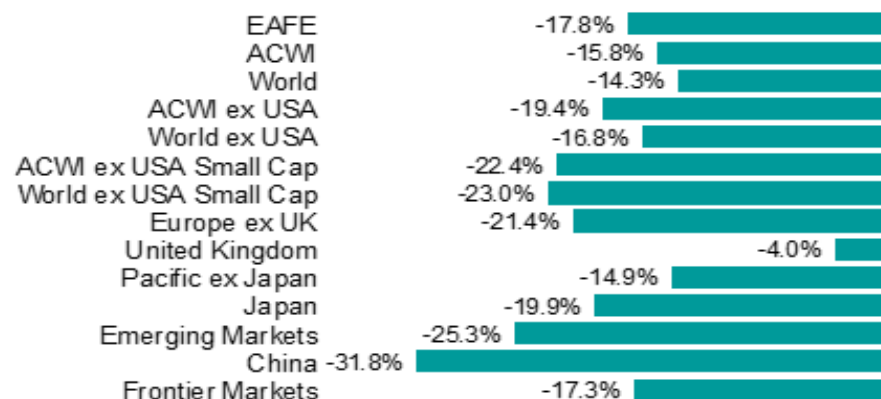
- The U.S. dollar strengthened further against other major currencies given its global dominance and perceived safety.

Source: MSCI

Global Equity: Quarterly Returns



Global Equity: One-Year Returns





Global/Global ex-U.S. Equity Key Theme

Emerging markets buck the trend

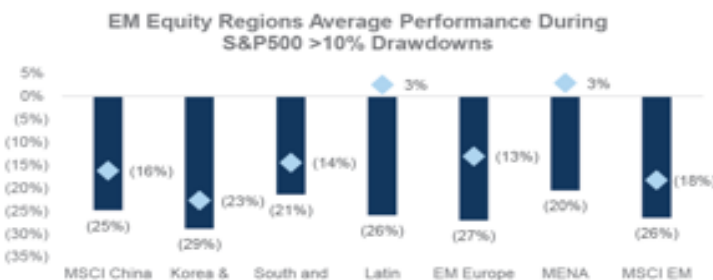
EM has fared better relative to prior downturns

- EM historically declined 26% during prior S&P 500 drawdowns greater than 10%
 - As of 2Q22, EM has corrected by 18% year-to-date
- EM's exposure to commodities within Latin America and Middle East/North Africa mitigated downside during 1Q22, and China's resurgence as COVID and regulatory concerns dissipated helped boost 2Q22 results.

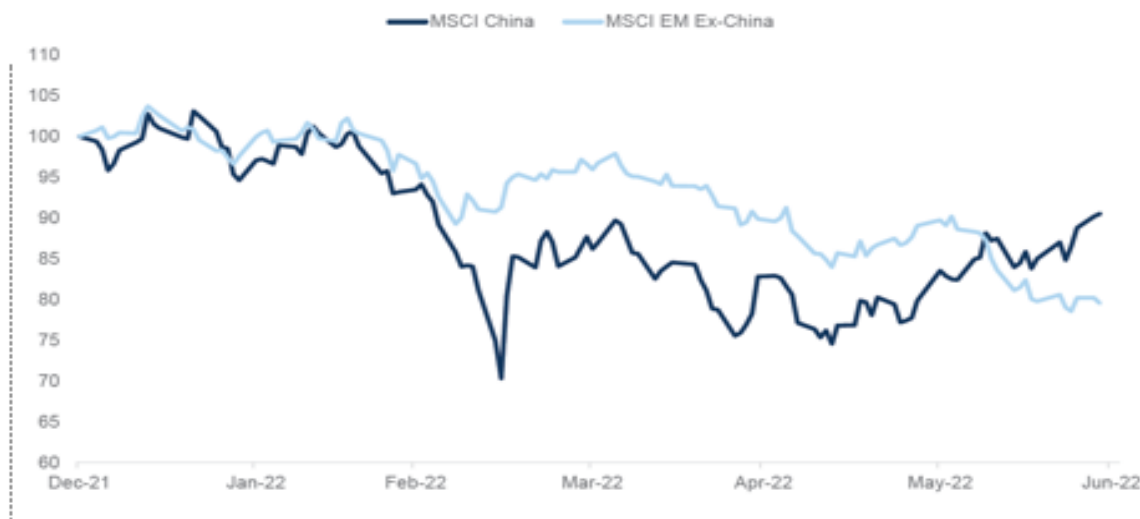
China presents upside opportunity

- Although divergence of China and EM ex-China is notable, China may support EM should fears of U.S. recession fuel further drawdown.
- China's growth is driven by domestic activity and uncorrelated with other developing markets.
- China offers favorable growth and valuation relative to other emerging markets

	Peak	Trough	Drawdown
1	3/24/2000	12/20/2000	(17%)
2	1/30/2001	9/21/2001	(30%)
3	1/4/2002	10/9/2002	(34%)
4	11/27/2002	3/11/2003	(15%)
5	10/9/2007	3/9/2009	(57%)
6	4/23/2010	7/2/2010	(16%)
7	4/29/2011	10/3/2011	(19%)
8	5/21/2015	2/11/2016	(14%)
9	9/20/2018	12/24/2018	(20%)
#	2/19/2020	3/23/2020	(34%)
#	1/3/2022	6/16/2022	(24%)
Average			(25%)



MSCI China vs EM ex-China YTD Performance



Sources: FactSet, Goldman Sachs Global Investment Research