**Q**4

Quarterly Market Review

Fourth Quarter 2022



# **Quarterly Market Review**

Fourth quarter 2022





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Market Summary

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Commodities

**Fixed Income** 

Global Fixed Income

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Annual Topic: Model and Fund Performance

Review

# **Quarterly Market Summary**



Index returns

	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
Q4 2022		STO	CKS		ВО	NDS
	7.18%	16.18%	9.70%	6.88%	1.87%	0.18%
Since Jan. 2001						
Average Quarterly Return	2.1%	1.5%	2.5%	2.2%	0.9%	0.9%
Best	22.0%	25.9%	34.7%	32.3%	4.6%	4.6%
Quarter	2020 Q2	2009 Q2	2009 Q2	2009 Q3	2001 Q3	2008 Q4
Worst	-22.8%	-23.3%	-27.6%	-36.1%	-5.9%	-4.1%
Quarter	2008 Q4	2020 Q1	2008 Q4	2008 Q4	2022 Q1	2022 Q1

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio.

Market segment (index representation) as follows: US Stock Market (Russell 3000 Index), International Developed Stocks (MSCI World ex USA Index [net dividends]), Emerging Markets (MSCI Emerging Markets Index [net dividends]), Global Real Estate (S&P Global REIT Index [net dividends]), US Bond Market (Bloomberg US Aggregate Bond Index), and Global Bond Market ex US (Bloomberg Global Aggregate ex-USD Bond Index [hedged to USD]). S&P data © 2023 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes. MSCI data © MSCI 2023, all rights reserved. Bloomberg data provided by Bloomberg.



# Quarterly Market Summary – PRIOR QUARTER

Index returns

	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
Q3 2022		STO	CKS		ВО	NDS
	-4.46%	-9.20%	-11.57%	-11.12%	-4.75%	-2.21%
						+
Average Quarterly Return	2.1%	1.3%	2.4%	2.2%	0.9%	0.9%
Best	22.0%	25.9%	34.7%	32.3%	4.6%	4.6%
Quarter	2020 Q2	2009 Q2	2009 Q2	2009 Q3	2001 Q3	2008 Q4
Worst	-22.8%	-23.3%	-27.6%	-36.1%	-5.9%	-4.1%
Quarter	2008 Q4	2020 Q1	2008 Q4	2008 Q4	2022 Q1	2022 Q1

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# **Long-Term Market Summary**

Index returns as of December 31, 2022

	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
1 Year		STO	CKS		ВОІ	NDS
	-19.21%	-14.29%	-20.09%	-24.36%	-13.01%	-9.76%
5 Years						
	8.79%	1.79%	-1.40%	0.92%	0.02%	0.52%
10 Years						
	12.13%	4.59%	1.44%	3.88%	1.06%	2.10%

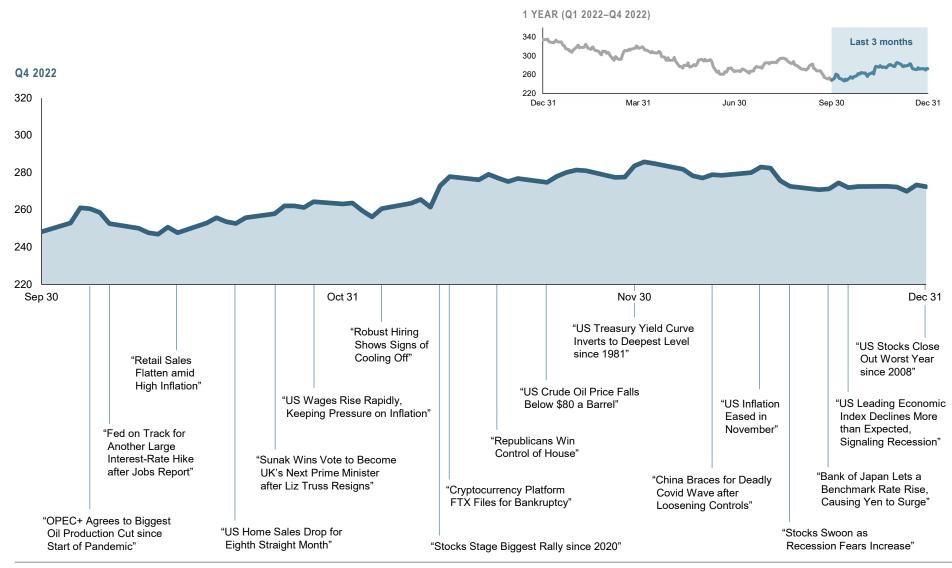
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### World Stock Market Performance

MSCI All Country World Index with selected headlines from Q4 2022

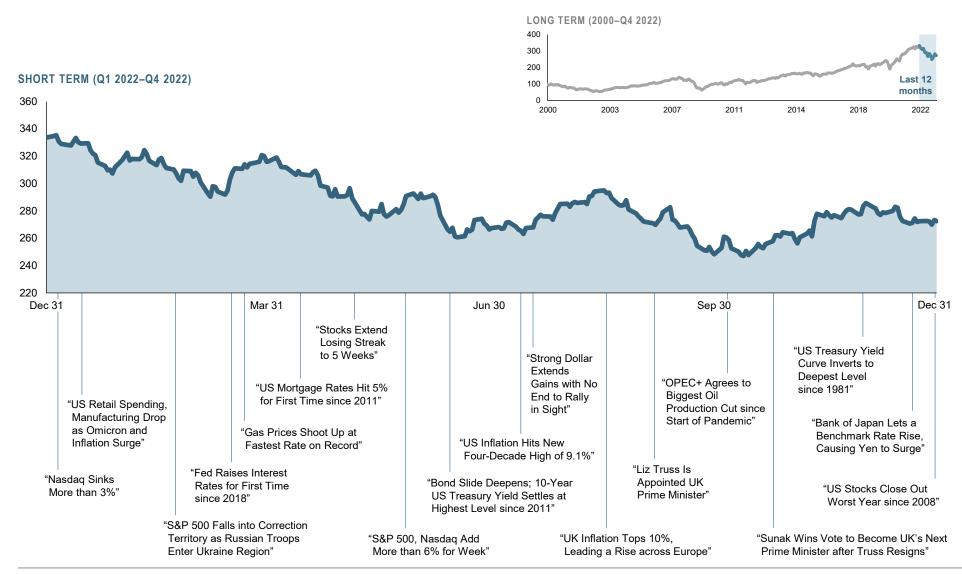


These headlines are not offered to explain market returns. Instead, they serve as a reminder that investors should view daily events from a long-term perspective and avoid making investment decisions based solely on the news.



### World Stock Market Performance

MSCI All Country World Index with selected headlines from past 12 months



These headlines are not offered to explain market returns. Instead, they serve as a reminder that investors should view daily events from a long-term perspective and avoid making investment decisions based solely on the news.

# **US Stocks**

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### Fourth quarter 2022 index returns

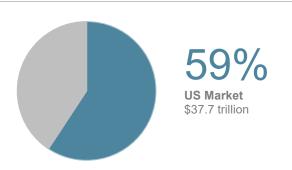
The US equity market posted positive returns for the quarter and underperformed both non-US developed and emerging markets.

Value outperformed growth.

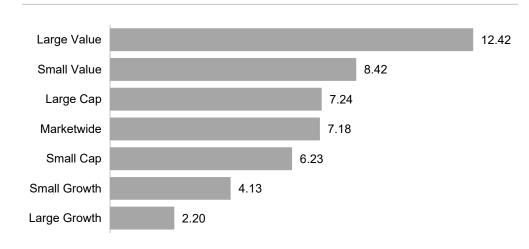
Small caps underperformed large caps.

REIT indices underperformed equity market indices.

### **World Market Capitalization—US**



#### Ranked Returns (%)



### Period Returns (%)

				Annualized	
Asset Class	QTR	1 Year	3 Years	5 Years	10 Years
Large Value	12.42	-7.54	5.96	6.67	10.29
Small Value	8.42	-14.48	4.70	4.13	8.48
Large Cap	7.24	-19.13	7.35	9.13	12.37
Marketwide	7.18	-19.21	7.07	8.79	12.13
Small Cap	6.23	-20.44	3.10	4.13	9.01
Small Growth	4.13	-26.36	0.65	3.51	9.20
Large Growth	2.20	-29.14	7.79	10.96	14.10

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Market segment (index representation) as follows: Marketwide (Russell 3000 Index), Large Cap (Russell 1000 Index), Large Value (Russell 1000 Value Index), Large Growth (Russell 1000 Growth Index), Small Cap (Russell 2000 Index), Small Value (Russell 2000 Value Index), and Small Growth (Russell 2000 Growth Index). World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. Russell 3000 Index is used as the proxy for the US market. Dow Jones US Select REIT Index used as proxy for the US REIT market. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes. MSCI data © MSCI 2023, all rights reserved.

# **International Developed Stocks**



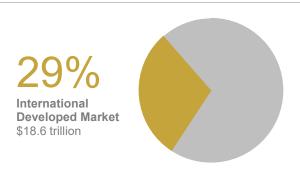
Fourth quarter 2022 index returns

Developed markets outside of the US posted positive returns for the quarter and outperformed both US and emerging markets.

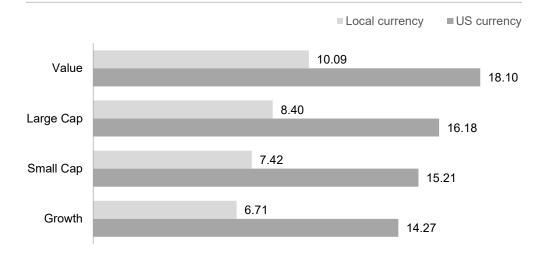
Value outperformed growth.

Small caps underperformed large caps.

### **World Market Capitalization—International Developed**



#### Ranked Returns (%)



#### Period Returns (%)

				Annualized	
Asset Class	QTR	1 Year	3 Years	5 Years	10 Years
Value	18.10	-5.64	1.13	0.56	3.55
Large Cap	16.18	-14.29	1.27	1.79	4.59
Small Cap	15.21	-20.59	-0.15	0.45	5.77
Growth	14.27	-22.68	0.71	2.56	5.35

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Market segment (index representation) as follows: Large Cap (MSCI World ex USA Index), Small Cap (MSCI World ex USA Small Cap Index), Value (MSCI World ex USA Value Index), and Growth (MSCI World ex USA Growth Index). All index returns are net of withholding tax on dividends. World Market Cap represented by Russell 3000 Index, MSCI World ex USA IMI Index, and MSCI Emerging Markets IMI Index. MSCI World ex USA IMI Index is used as the proxy for the International Developed market. MSCI data © MSCI 2023, all rights reserved. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes.

# **Emerging Markets Stocks**



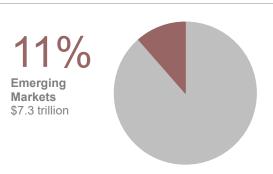


Emerging markets posted positive returns for the quarter and outperformed the US market, but underperformed non-US developed markets.

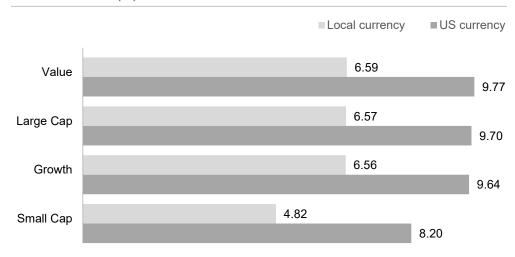
Value outperformed growth.

Small caps underperformed large caps.

### **World Market Capitalization—Emerging Markets**



#### Ranked Returns (%)



#### Period Returns (%)

				Annualized	
Asset Class	QTR	1 Year	3 Years	5 Years	10 Years
Value	9.77	-15.83	-2.62	-1.59	0.06
Large Cap	9.70	-20.09	-2.69	-1.40	1.44
Growth	9.64	-23.96	-2.93	-1.33	2.68
Small Cap	8.20	-18.02	5.11	1.06	3.21

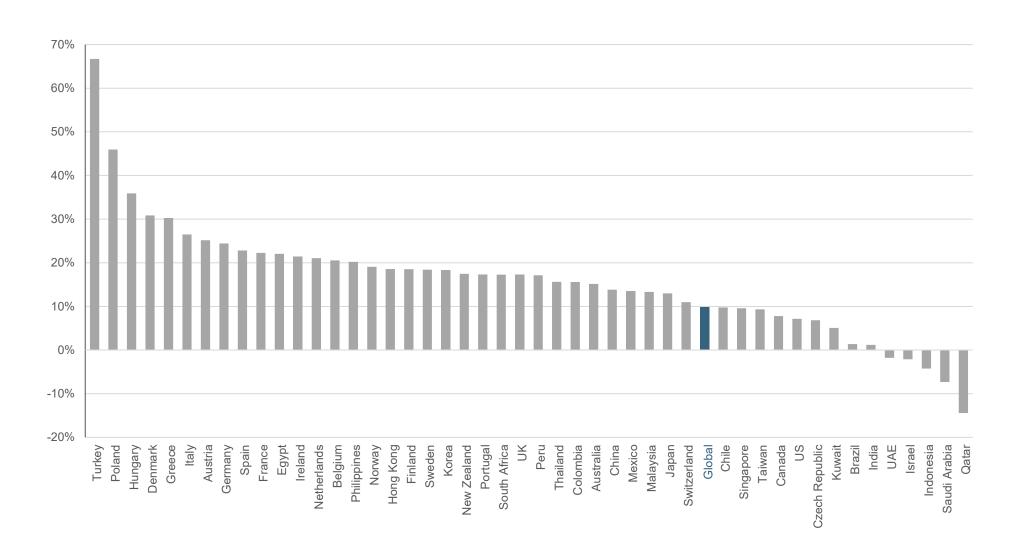
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# **Country Returns**

Fourth quarter 2022 index returns



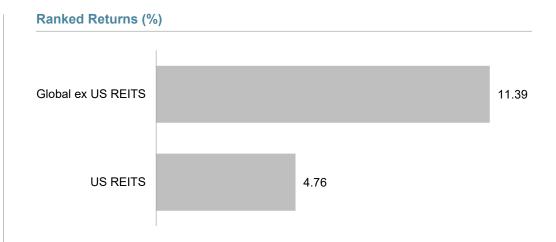
#### Past performance is no guarantee of future results.



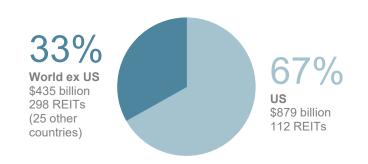
# Real Estate Investment Trusts (REITs)

Fourth quarter 2022 index returns

US real estate investment trusts underperformed non-US REITs during the quarter.



#### **Total Value of REIT Stocks**



#### Period Returns (%)

			Annualized				
Asset Class	QTR	1 Year	3 Years	5 Years	10 Years		
Global ex US REITS	11.39	-22.56	-7.77	-2.13	1.61		
US REITS	4.76	-25.96	-1.37	2.50	5.74		

Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio.

Number of REIT stocks and total value based on the two indices. All index returns are net of withholding tax on dividends. Total value of REIT stocks represented by Dow Jones US Select REIT Index and the S&P Global ex US REIT Index. Dow Jones US Select REIT Index used as proxy for the US market, and S&P Global ex US REIT Index used as proxy for the World ex US market. Dow Jones and S&P data © 2023 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved.

## Commodities

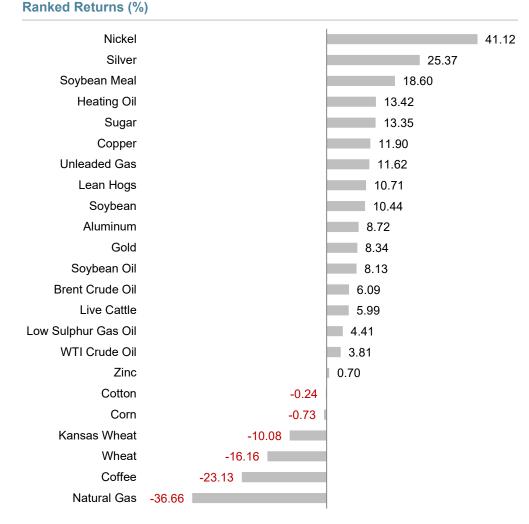


The Bloomberg Commodity Total Return Index returned +2.22% for the fourth quarter of 2022.

Nickel and Silver were the best performers, returning +41.12% and +25.37% during the quarter, respectively. Natural Gas and Coffee were the worst performers, returning -36.66% and -23.13% during the quarter, respectively.

### Period Returns (%)

				Annualized	
Asset Class	QTR	1 Year	3 Years	5 Years	10 Years
Commodities	2.22	16.09	12.65	6.44	-1.28





### Fixed Income

### Fourth quarter 2022 index returns

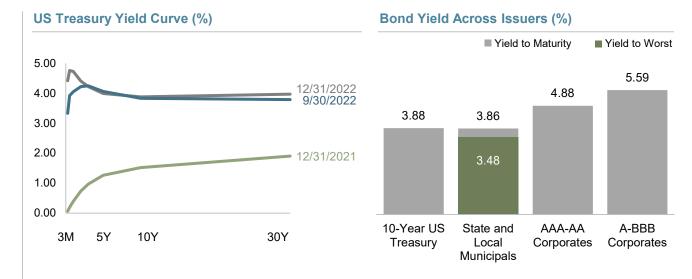
Interest rates changes were mixed in the US Treasury market for the quarter.

On the short end of the yield curve, the 1-Month US Treasury Bill yield increased 133 basis points (bps) to 4.12%, while the 1-Year US Treasury Bill yield increased 68 bps to 4.73%. The yield on the 2-Year US Treasury Note increased 19 bps to 4.41%.

The yield on the 5-Year US Treasury Note decreased 7 bps to 3.99%. The yield on the 10-Year US Treasury Note increased 5 bps to 3.88%. The yield on the 30-Year US Treasury Bond increased 18 bps to 3.97%.

In terms of total returns, short-term US treasury bonds returned +0.94% while intermediate-term US treasury bonds returned +1.02%. Short-term corporate bonds returned +1.95% and intermediate-term corporate bonds returned +2.72%.

The total return for short-term municipal bonds was +2.00% and +3.81% for intermediate-term municipal bonds. Within the municipal fixed income market, general obligation performed in line with revenue bonds, returning +4.19% vs. +4.21%, respectively.<sup>2</sup>



### Period Returns (%)

				Annualized	
Asset Class	QTR	1 Year	3 Years	5 Years	10 Years
Bloomberg U.S. High Yield Corporate Bond Index	4.17	-11.19	0.05	2.31	4.03
Bloomberg Municipal Bond Index	4.10	-8.53	-0.77	1.25	2.13
FTSE World Government Bond Index 1-5 Years	3.83	-8.73	-2.44	-1.15	-1.20
Bloomberg U.S. TIPS Index	2.04	-11.85	1.21	2.11	1.12
Bloomberg U.S. Aggregate Bond Index	1.87	-13.01	-2.71	0.02	1.06
ICE BofA US 3-Month Treasury Bill Index	0.84	1.46	0.72	1.26	0.76
ICE BofA 1-Year US Treasury Note Index	0.76	-1.02	0.23	1.09	0.74
FTSE World Government Bond Index 1-5 Years (hedged to USD)	0.57	-4.49	-0.75	0.73	0.98
Bloomberg U.S. Government Bond Index Long	-0.59	-29.19	-7.39	-2.19	0.61

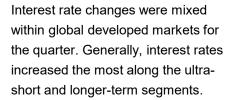
<sup>1.</sup> Bloomberg US Treasury and US Corporate Bond Indices

<sup>2.</sup> Bloomberg Municipal Bond Index

One basis point (bps) equals 0.01%. Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Yield curve data from Federal Reserve. State and local bonds, and the Yield to Worst are from the S&P National AMT-Free Municipal Bond Index. AAA-AA Corporates represent the ICE BofA US Corporates, AA-AAA rated. A-BBB Corporates represent the ICE BofA Corporates, BBB-A rated. Bloomberg data provided by Bloomberg. US long-term bonds, bills, inflation, and fixed income factor data © Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook TM, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefield). FTSE fixed income indices © 2023 FTSE Fixed Income LLC, all rights reserved. ICE BofA index data © 2023 ICE Data Indices, LLC. S&P data © 2023 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved. Bloomberg data provided by Bloomberg.



### Fourth quarter 2022 yield curves

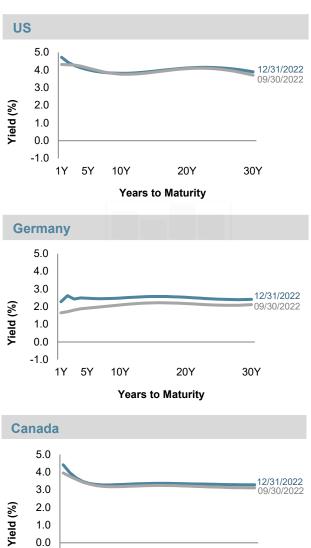


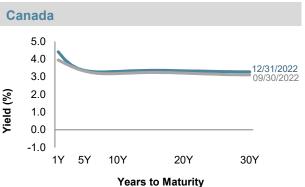
Realized term premiums were mixed within global developed markets. Intermediate-term bonds were generally the best performers and long-term bonds were generally the worst performers.

In Japan, except for ultra-short term interest rates, interest rates were generally positive. In Canada, the short-term maturity segment of the yield curve remained inverted.

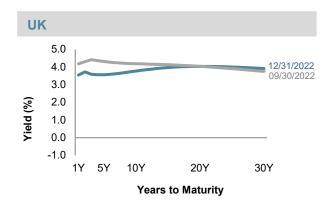
### Changes in Yields (bps) since 9/30/2022

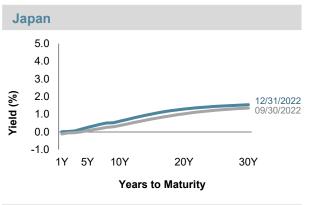
	1Y	5Y	10Y	20Y	30Y
US	41.0	-10.2	4.8	3.6	19.4
UK	-63.7	-74.6	-41.2	-0.5	16.1
Germany	63.1	55.9	39.1	35.3	30.3
Japan	13.1	17.9	24.4	27.1	19.2
Canada	46.9	4.0	12.0	13.0	17.1
Australia	4.2	2.3	14.4	23.7	24.1

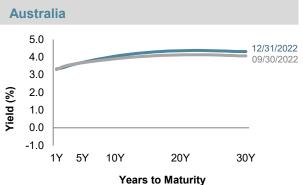












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### Time the Market at Your Peril

Fourth quarter 2022

David Booth, Executive Chairman and Founder, Dimensional Fund Advisors

Technology enables immediate access to everything wherever and whenever we want it. In many cases, such as staying in touch with friends and family, or learning about world events, that's a good thing. However, when it comes to investing and money management, my fear is that faster and easier ways of investing will allow people to lose more money faster and easier.

As access to investing expands, it becomes even more important to adopt an investment plan that doesn't try to actively pick stocks or time the market. The purpose of having an investment plan is so you can relax. So you don't look at the market every day, stressing out and asking, "How'm I doing?" Investors actively trading are not just potentially missing out on the expected return of the market—they're stressed out, worrying about how the news alert they just received will impact their long-term financial health, and whether they can or should do anything about it.

I don't blame people for this. The financial services industry has not done a good enough job educating investors that the best approach for their long-term financial well-being is to make a plan, implement it, and stick with it.

But it has done a great job selling index funds. Over the past decade, the percentage of the stock market that is passively held has grown considerably, with equity index funds representing 52% of the US equity fund market at the end of 2021. And yet some investors appear to be

using index funds to pursue an active investment approach. For example, the largest S&P 500 ETF had the highest average daily trade volume of US-listed securities in 2021, at \$31 billion.<sup>2</sup> So instead of picking individual stocks, people seem to be acting like stock pickers when buying and selling index funds and ETFs.

Despite the overwhelming evidence and compelling story to the contrary. When economist Michael Jensen published his landmark 1968 paper, which showed that active stock pickers added no consistent value, other academics soon confirmed his insights. More than five decades and 50 years of data later, the theory still holds up. There are some stock pickers who experience success, but we don't know how to identify them before the fact. We can't separate skill from luck. Picking stocks is more like gambling than investing.

This academic research inspired the invention of the index fund, which allowed investors not only to buy the broad stock market, but also to track the performance of the manager and compare costs. I worked on one of the first index funds. When I co-founded Dimensional, we built strategies that were informed by indices but weren't limited by the same mechanical constraints. So I accepted this research early on and built a company based on it. I still believe it 50 years later. My colleagues and I weren't sure at the beginning that it would appeal to a lot of people, but it did.

2. US dollars.

<sup>1.</sup> Data sourced from Morningstar; funds of funds are excluded.

### Time the Market at Your Peril

(continued from page 15)



I'm proud of the fact that we have always viewed marketing as a way to educate financial professionals and investors. In fact, we started by working with institutions and only expanded to individual investors by working with financial advisors who could help teach their clients how to think about the market and invest for the long term. We wanted to prevent people from making the mistake I still see too many people making.

But I fear it will only get worse. ETFs make it easier to trade. So do free platforms that allow people to trade on their phones. There seem to be as many ETFs as there are stocks that make up those ETFs. I really like ETFs. They are another chapter in this 50-year story of creating safer and better financial products for investors. Our firm has been using them to give financial professionals and investors more choice in how they access Dimensional Investing. But they are tools, and they have to be used effectively.

Which is why you may need an advisor more than ever—to help keep you from jumping from one thing to another. Our approach is to get you out of the game of worrying and guessing by having a plan that can provide peace of mind. It's a sensible approach you can live with. Trust the financial advisor who trusts the market.

The financial industry has made great strides improving the investment options available, but we have more work to do helping investors with those options. There are great solutions right in front of people. As an industry, we need to do a better job of educating current and potential clients. How the bulk of our society lives out their later years depends on it.

Investments involve risks. The investment return and principal value of an investment may fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original value. Past performance is not a guarantee of future results. There is no guarantee strategies will be successful. Diversification does not eliminate the risk of market loss.

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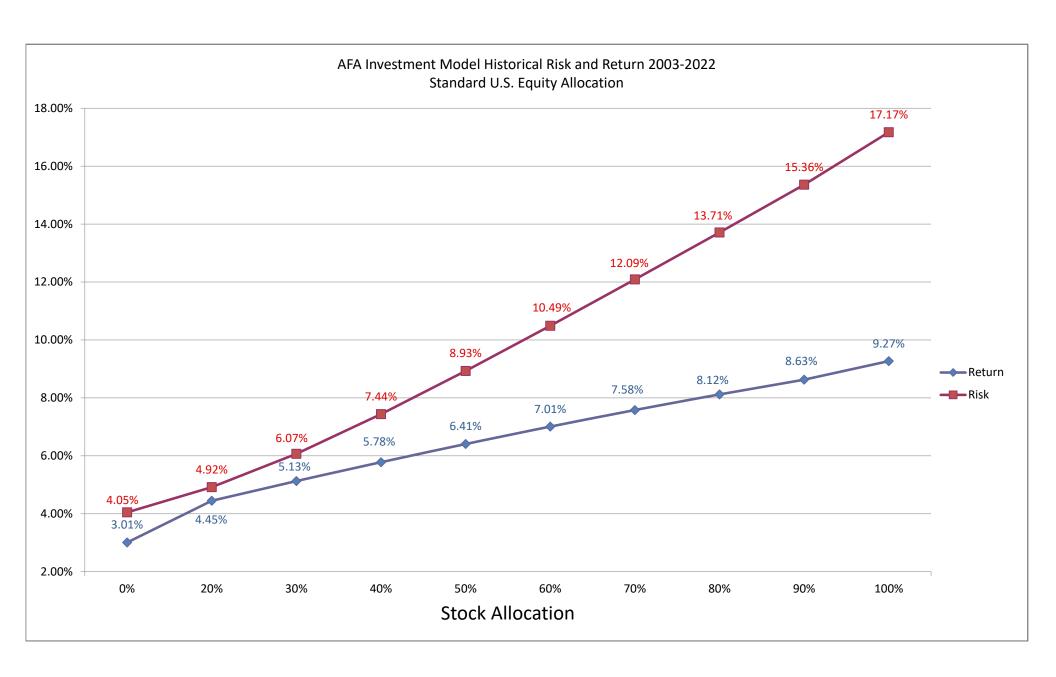
Investment products: • Not FDIC Insured • Not Bank Guaranteed • May Lose Value • Dimensional Fund Advisors does not have any bank affiliates.

It is AFA's philosophy that passive is a more prudent way to invest assets. Based on numerous studies, we hypothesize that 70% of active managers fail to beat their respective benchmark. As such, we would expect the passive, asset class funds we use to fall somewhere around the 33rd percentile of their peer rankings. Each quarter, we compile this spreadsheet in an attempt to validate our theories. Our "goal" is for the longer-term figures to fall solidly around the 30% delineation expected. We tend not to focus to greatly on the one year figure as almost anything can happen over such a short time frame. However, we feel that truths are borne out over the long haul.

We also utilize outside, third-party research pieces to verify the data. We frequently use the "S&P INDICES VERSUS ACTIVE FUNDS (SPIVA) SCORECARD" created on a semi-annual basis by Standard & Poor's. This document can be found at https://www.spindices.com/documents/spiva/spiva-us-year-end-2018.pdf

Investment Category Rank					
As of 12.31.22*	1 Year	3 Year	5 Year	10 Year	15 Years
DFA Emerging Markets	26%	32%	35%	36%	23%
DFA 5 Year Global	6%	17%	55%	68%	75%
DFA Inflation Protected	70%	47%	41%	38%	10%
DFA Intermediate Government	92%	48%	31%	25%	15%
DFA World Ex US Government	97%	99%	97%	56%	na
DFA International Core Equity	20%	17%	46%	13%	18%
DFA International Small Company	22%	23%	28%	32%	19%
DFA International Value	10%	8%	26%	15%	36%
DFA Real Estate	28%	33%	19%	16%	25%
DFA US Core Equity	30%	23%	51%	33%	9%
DFA US Large Value	51%	64%	80%	32%	23%
DFA US Small Cap	23%	15%	32%	21%	11%
AVERAGE	40%	36%	45%	32%	24%

<sup>\*</sup> Source: Morningstar Advisor Workstation 2.0. The lower the number, the better the rank.



<sup>&</sup>quot;Returns are not guarantees and do not reflect actual client experience. Returns shown do not include advisory fees. Past performance does not indicate future returns.

Actual returns may be higher or lower than those shown here."



## Performance Summary Statistics

Monthly: 1/1/2003 - 12/31/2022

Rates of Return (%)								
	AFA 0.5	AFA 20.5	AFA 30.5	AFA 40.5	AFA 50.5	AFA 60.5	AFA 70.5	
1-Year Total Return	-12.75	-12.65	-12.63	-12.64	-12.66	-12.71	-12.77	
3-Year Annualized Return	-2.50	-0.79	0.02	0.79	1.52	2.21	2.86	
5-Year Annualized Return	0.07	1.17	1.67	2.14	2.58	2.98	3.34	
10-Year Annualized Return	0.87	2.47	3.24	4.00	4.73	5.45	6.14	
20-Year Annualized Return	3.01	4.45	5.13	5.78	6.41	7.01	7.58	
Annualized Return	3.01	4.45	5.13	5.78	6.41	7.01	7.58	
Annualized Standard Deviation*	4.05	4.92	6.07	7.44	8.93	10.49	12.09	
Growth of Wealth	1.81	2.39	2.72	3.08	3.47	3.88	4.31	
Highest 1-Year Return	10.71	18.08	23.91	29.95	36.22	42.70	49.42	
	(11/08-10/09)	(3/09-2/10)	(3/09-2/10)	(3/09-2/10)	(3/09-2/10)	(3/09-2/10)	(3/09-2/10)	
Lowest 1-Year Return	-13.47	-14.48	-16.80	-22.26	-27.45	-32.36	-37.02	
	(10/21-9/22)	(10/21-9/22)	(3/08-2/09)	(3/08-2/09)	(3/08-2/09)	(3/08-2/09)	(3/08-2/09)	
Highest 3-Year Annualized Return	7.68	11.19	13.41	15.63	17.83	20.01	22.17	
	(11/08-10/11)	(3/09-2/12)	(3/09-2/12)	(3/09-2/12)	(3/09-2/12)	(3/09-2/12)	(3/09-2/12)	
Lowest 3-Year Annualized Return	-3.06	-1.54	-1.74	-3.99	-6.23	-8.47	-10.69	
	(10/19-9/22)	(10/19-9/22)	(3/06-2/09)	(3/06-2/09)	(3/06-2/09)	(3/06-2/09)	(3/06-2/09)	

<sup>\*</sup>Annualized number is presented as an approximation by multiplying the monthly number by the square root of the number of periods in a year. Please note that the number computed from annual data may differ materially from this estimate.

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## Performance Summary Statistics

Monthly: 1/1/2003 - 12/31/2022

Rates of Return (%)			
	AFA 80.5	AFA 90.5	AFA 100.5
1-Year Total Return	-12.86	-12.97	-13.15
3-Year Annualized Return	3.48	4.04	4.44
5-Year Annualized Return	3.67	3.96	4.02
10-Year Annualized Return	6.81	7.46	7.85
20-Year Annualized Return	8.12	8.63	9.27
Annualized Return	8.12	8.63	9.27
Annualized Standard Deviation*	13.71	15.36	17.17
Growth of Wealth	4.76	5.23	5.89
Highest 1-Year Return	56.38	63.57	73.02
	(3/09-2/10)	(3/09-2/10)	(3/09-2/10)
Lowest 1-Year Return	-41.44	-45.61	-49.66
	(3/08-2/09)	(3/08-2/09)	(3/08-2/09)
Highest 3-Year Annualized Return	24.75	27.67	31.90
	(4/03-3/06)	(4/03-3/06)	(4/03-3/06)
Lowest 3-Year Annualized Return	-12.91	-15.12	-17.19
	(3/06-2/09)	(3/06-2/09)	(3/06-2/09)

<sup>\*</sup>Annualized number is presented as an approximation by multiplying the monthly number by the square root of the number of periods in a year. Please note that the number computed from annual data may differ materially from this estimate.

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### Periodic Performance

Monthly: 1/1/2003 - 12/31/2022

Rates of Return (%)									
	1 Year	3 Years	5 Years	10 Years	Report Date Range	Since First Full Month	St.Dev Report Range	First Full Month	Currency
AFA 0.5	-12.75	-2.50	0.07	0.87	3.01	4.09	4.05	3/1997	USD
AFA 20.5	-12.65	-0.79	1.17	2.47	4.45	5.00	4.92	3/1997	USD
AFA 30.5	-12.63	0.02	1.67	3.24	5.13	5.41	6.07	3/1997	USD
AFA 40.5	-12.64	0.79	2.14	4.00	5.78	5.79	7.44	3/1997	USD
AFA 50.5	-12.66	1.52	2.58	4.73	6.41	6.14	8.93	3/1997	USD
AFA 60.5	-12.71	2.21	2.98	5.45	7.01	6.46	10.49	3/1997	USD

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### Periodic Performance

Monthly: 1/1/2003 - 12/31/2022

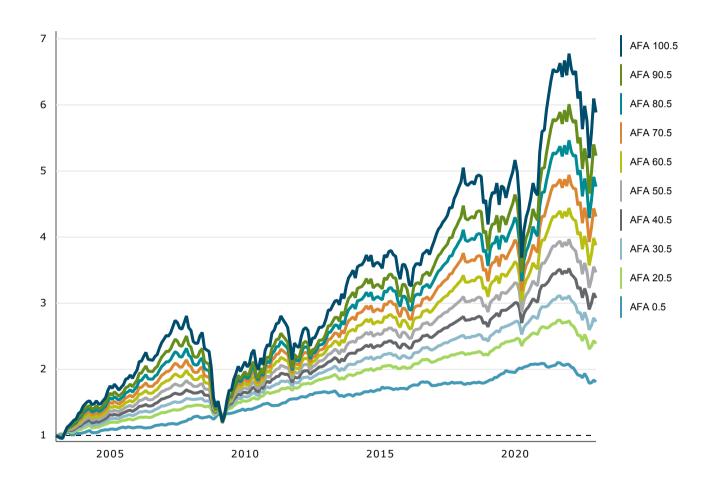
Rates of Return (%)									
	1 Year	3 Years	5 Years	10 Years	Report Date Range	Since First Full Month	St.Dev Report Range	First Full Month	Currency
AFA 70.5	-12.77	2.86	3.34	6.14	7.58	6.74	12.09	3/1997	USD
AFA 80.5	-12.86	3.48	3.67	6.81	8.12	7.00	13.71	3/1997	USD
AFA 90.5	-12.97	4.04	3.96	7.46	8.63	7.22	15.36	3/1997	USD
AFA 100.5	-13.15	4.44	4.02	7.85	9.27	7.67	17.17	10/1996	USD

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### **Growth Of Wealth**

Monthly: 1/1/2003 - 12/31/2022

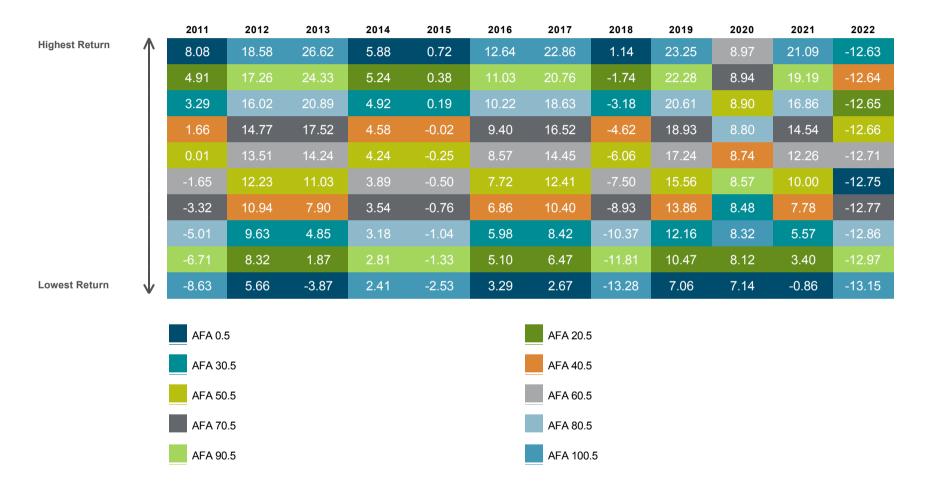


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### Randomness of Returns

Calendar Year: 1998 - 2022

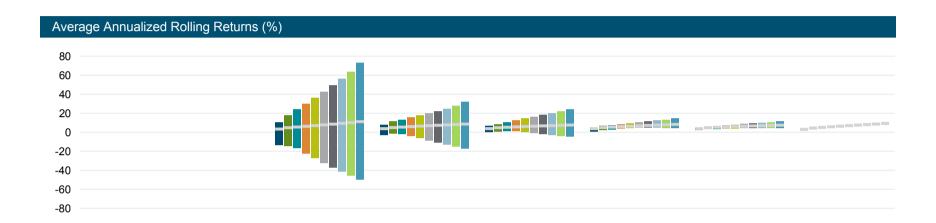


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### **Best and Worst**

Monthly: 1/1/2003 - 12/31/2022



		1 Year	:	3 Years		5 Years		10 Years		15 Years		20 Years	
	AFA 0.5	3.37		3.79		3.85		3.78		3.84		3.01	
Bes	t Return (start date)	10.71	(11/2008)	7.68	(11/2008)	6.72	(6/2007)	5.18	(1/2003)	4.24	(8/2005)	3.01	(1/2003)
Wors	t Return (start date)	-13.47	(10/2021)	-3.06	(10/2019)	-0.01	(10/2017)	0.83	(10/2012)	2.50	(1/2008)	3.01	(1/2003)
	AFA 20.5	4.79		4.91		4.81		4.91		4.80		4.45	
Bes	t Return (start date)	18.08	(3/2009)	11.19	(3/2009)	8.48	(3/2009)	6.59	(4/2003)	5.58	(2/2003)	4.45	(1/2003)
Wors	t Return (start date)	-14.48	(10/2021)	-1.54	(10/2019)	0.80	(10/2017)	2.26	(10/2012)	3.30	(10/2007)	4.45	(1/2003)

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### **Best and Worst**

Monthly: 1/1/2003 - 12/31/2022

	1 Year		3 Years		5 Years		10 Years		15 Years		20 Years	
AFA 30.5	5.52		5.44		5.25		5.43		5.23		5.13	
Best Return (start date)	23.91	(3/2009)	13.41	(3/2009)	10.45	(3/2009)	7.33	(4/2003)	6.39	(2/2003)	5.13	(1/2003
Worst Return (start date)	-16.80	(3/2008)	-1.74	(3/2006)	1.15	(10/2017)	2.95	(10/2012)	3.57	(10/2007)	5.13	(1/2003
AFA 40.5	6.26		5.94		5.66		5.92		5.64		5.78	
Best Return (start date)	29.95	(3/2009)	15.63	(3/2009)	12.42	(3/2009)	8.09	(3/2009)	7.17	(2/2003)	5.78	(1/2003
Worst Return (start date)	-22.26	(3/2008)	-3.99	(3/2006)	0.92	(3/2004)	3.62	(10/2012)	3.81	(10/2007)	5.78	(1/2003
AFA 50.5	7.01		6.43		6.04		6.38		6.01		6.41	
Best Return (start date)	36.22	(3/2009)	17.83	(3/2009)	14.38	(3/2009)	9.20	(3/2009)	7.92	(2/2003)	6.41	(1/2003
Worst Return (start date)	-27.45	(3/2008)	-6.23	(3/2006)	0.03	(3/2004)	4.27	(10/2012)	4.01	(10/2007)	6.41	(1/2003
AFA 60.5	7.78		6.89		6.39		6.81		6.35		7.01	
Best Return (start date)	42.70	(3/2009)	20.01	(3/2009)	16.33	(3/2009)	10.29	(3/2009)	8.65	(2/2003)	7.01	(1/2003
Worst Return (start date)	-32.36	(3/2008)	-8.47	(3/2006)	-0.88	(3/2004)	4.86	(6/2007)	4.17	(10/2007)	7.01	(1/2003

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See Standard respect of the cost of the cost

time periods presented chosen by advisor. Indices are not available for direct investment and performance does not reflect expenses of an actual portfolio. This report and the information contained herein are subject to the terms of the End User License Agreement for Returns Program.



### **Best and Worst**

Monthly: 1/1/2003 - 12/31/2022

	1 Year		3 Years		5 Years		10 Years		15 Years		20 Years	
AFA 70.5	8.56		7.32		6.72		7.21		6.65		7.58	
Best Return (start date)	49.42	(3/2009)	22.17	(3/2009)	18.27	(3/2009)	11.37	(3/2009)	9.36	(2/2003)	7.58	(1/2003)
Worst Return (start date)	-37.02	(3/2008)	-10.69	(3/2006)	-1.81	(3/2004)	4.80	(3/2006)	4.30	(10/2007)	7.58	(1/2003)
AFA 80.5	9.35		7.73		7.01		7.57		6.93		8.12	
Best Return (start date)	56.38	(3/2009)	24.75	(4/2003)	20.20	(3/2009)	12.42	(3/2009)	10.03	(2/2003)	8.12	(1/2003)
Worst Return (start date)	-41.44	(3/2008)	-12.91	(3/2006)	-2.78	(3/2004)	4.69	(3/2006)	4.39	(10/2007)	8.12	(1/2003)
AFA 90.5	10.16		8.12		7.28		7.91		7.16		8.63	
Best Return (start date)	63.57	(3/2009)	27.67	(4/2003)	22.11	(3/2009)	13.46	(3/2009)	10.68	(2/2003)	8.63	(1/2003)
Worst Return (start date)	-45.61	(3/2008)	-15.12	(3/2006)	-3.76	(3/2004)	4.54	(3/2006)	4.44	(10/2007)	8.63	(1/2003)
AFA 100.5	11.16		8.60		7.60		8.25		7.47		9.27	
Best Return (start date)	73.02	(3/2009)	31.90	(4/2003)	24.12	(3/2009)	14.52	(3/2009)	11.58	(2/2003)	9.27	(1/2003)
Worst Return (start date)	-49.66	(3/2008)	-17.19	(3/2006)	-4.42	(3/2004)	4.40	(3/2006)	4.45	(10/2007)	9.27	(1/2003)

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### Periodic Returns

Annual: 12/1998 - 12/2022

Rates of Ref	turn (%)							
	AFA 0.5	AFA 20.5	AFA 30.5	AFA 40.5	AFA 50.5	AFA 60.5	AFA 70.5	AFA 80.5
12/1998	8.57	9.72	10.23	10.69	11.10	11.46	11.76	12.00
12/1999	1.33	5.33	7.37	9.43	11.52	13.63	15.76	17.92
12/2000	10.73	7.64	6.10	4.57	3.05	1.53	0.02	-1.49
12/2001	7.05	3.92	2.32	0.72	-0.90	-2.53	-4.17	-5.82
12/2002	12.17	6.84	4.20	1.57	-1.03	-3.62	-6.18	-8.72
12/2003	3.95	10.82	14.38	18.02	21.76	25.57	29.48	33.47
12/2004	5.21	8.23	9.76	11.29	12.84	14.40	15.97	17.55
12/2005	2.97	5.00	6.01	7.01	8.02	9.03	10.03	11.03
12/2006	2.74	6.68	8.69	10.73	12.78	14.87	16.97	19.10
12/2007	7.85	7.29	6.99	6.67	6.34	5.99	5.63	5.25
12/2008	5.91	-5.06	-10.23	-15.20	-19.97	-24.55	-28.95	-33.15
12/2009	4.19	10.78	14.09	17.42	20.74	24.07	27.40	30.71
12/2010	5.39	8.57	10.10	11.60	13.06	14.47	15.85	17.18
12/2011	8.08	4.91	3.29	1.66	0.01	-1.65	-3.32	-5.01
12/2012	5.66	8.32	9.63	10.94	12.23	13.51	14.77	16.02
12/2013	-3.87	1.87	4.85	7.90	11.03	14.24	17.52	20.89

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### Periodic Returns

Annual: 12/1998 - 12/2022

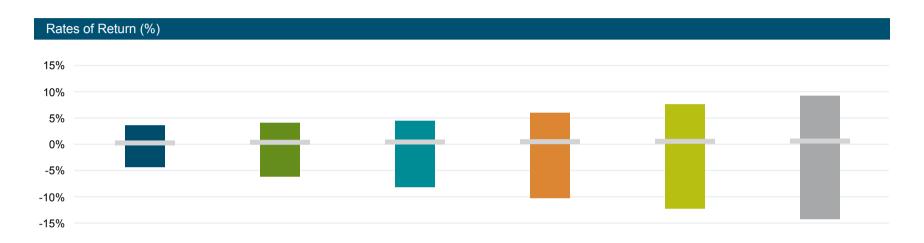
Rates of Re	turn (%)							
	AFA 0.5	AFA 20.5	AFA 30.5	AFA 40.5	AFA 50.5	AFA 60.5	AFA 70.5	AFA 80.5
12/2014	5.88	5.24	4.92	4.58	4.24	3.89	3.54	3.18
12/2015	0.72	0.38	0.19	-0.02	-0.25	-0.50	-0.76	-1.04
12/2016	3.29	5.10	5.98	6.86	7.72	8.57	9.40	10.22
12/2017	2.67	6.47	8.42	10.40	12.41	14.45	16.52	18.63
12/2018	1.14	-1.74	-3.18	-4.62	-6.06	-7.50	-8.93	-10.37
12/2019	7.06	10.47	12.16	13.86	15.56	17.24	18.93	20.61
12/2020	7.14	8.12	8.48	8.74	8.90	8.97	8.94	8.80
12/2021	-0.86	3.40	5.57	7.78	10.00	12.26	14.54	16.86
12/2022	-12.75	-12.65	-12.63	-12.64	-12.66	-12.71	-12.77	-12.86

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# Range of Returns

Monthly: 1/1/2003 - 12/31/2022



	Highest	Lowest	Avg.	Std. Dev.
AFA 0.5	3.59	-4.39	0.25	1.17
AFA 20.5	4.08	-6.15	0.37	1.42
AFA 30.5	4.47	-8.18	0.43	1.75
AFA 40.5	6.02	-10.20	0.49	2.15
AFA 50.5	7.64	-12.23	0.55	2.58
AFA 60.5	9.26	-14.26	0.61	3.03

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# Range of Returns

Monthly: 1/1/2003 - 12/31/2022

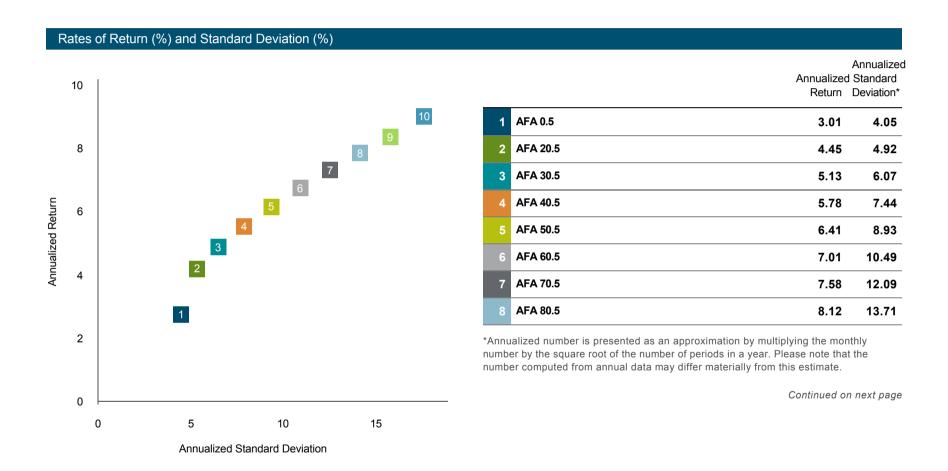


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### **Return-Standard Deviation Chart**

Monthly: 1/1/2003 - 12/31/2022

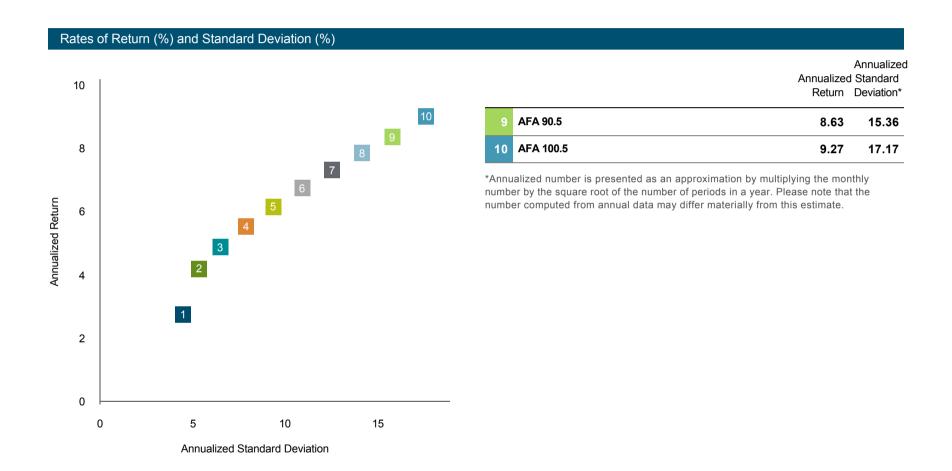


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### Return-Standard Deviation Chart

Monthly: 1/1/2003 - 12/31/2022



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As of: December 31, 2022

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Performance for periods greater than one year are annualized unless marked with an asterisk (\*). Selection of funds, indices and time periods presented chosen by advisor. Indices are not available for direct investment and performance does not reflect expenses of an actual portfolio.

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Prior to April 1, 2002, the following reimbursement fees may have been charged to purchasers of the respective portfolios: International Small Company Portfolio 0.675%; Continental Small Company Portfolio 1.00%; Japanese Small Company Portfolio 0.50%; Pacific Rim Small Company Portfolio 1.00%; International Small Cap Value Portfolio 0.675%; Emerging Markets Small Cap Portfolio 1.00%; Emerging Markets Value Portfolio 0.50%; Emerging Markets Portfolio 0.50%. Prior to April 1998, the reimbursement fee for the International Small Cap Value Portfolio was 0.70% and the reimbursement fees were as follows: International Small Cap Value Portfolio 1.00%; Continental Small Company Portfolio 1.50%; Japanese Small Company Portfolio 1.00%; Pacific Rim Small Company Portfolio 1.50%; UK Small Company Portfolio 1.50%; Emerging Markets Portfolio 1.50%. Returns for these portfolios are presented net of these reimbursement fees.

All reimbursement fees are based on the net asset value of the shares purchased. The standardized returns presented reflect deduction, where applicable, of the reimbursement fees for the portfolios. Non-standardized performance data reported by Dimensional Fund Advisors LP. does not reflect deduction of the reimbursement fee. If reflected, the fee would reduce the performance quoted.

#### **Model Constructions**

Model portfolios are constructed in the Returns Program using past data of funds or indices as of a specific date, assigning weights to those funds or indices to equal 100%. The model portfolios constructed are hypothetical and are not representative of actual portfolios. Their performance is hypothetical, for illustrative purposes only and is subject to limitations. Unless otherwise specified by the user, the hypothetical performance is gross of fees and is rebalanced monthly. The performance presented does not replace an advisor's actual model portfolio performance. Past and hypothetical results are no quarantee of future results.



As of: December 31, 2022

The model performance is based on model/back tested asset allocations. The performance was achieved with the retroactive application of a model designed with the benefit of hindsight; it does not represent actual investment performance. Back-tested model performance is hypothetical (does not reflect trading in actual portfolios) and may not reflect the impact that economic and market factors may have had on advisor's decision-making if the advisor were actually managing client money. Material is not to be considered a recommendation or investment advice to buy or sell any security.

#### **Dimensional Wealth Models**

Performance shown is hypothetical and for illustrative purposes only. The performance is based on model asset allocations using actual, historical underlying fund data and is based on net asset value returns for underlying mutual funds and exchange-traded funds. The performance was achieved with the retroactive application of a model designed with the benefit of hindsight; it does not represent actual investment performance and it does not take into account any individual investor circumstances. Hypothetical model performance does note reflect trading in actual portfolios and may not reflect the impact that economic and market factors may have had on decision-making if managing actual client money. Actual performance of any fund or strategy may vary significantly from the hypothetical performance presented due to assumptions regarding fees, transactions costs, liquidity or other market factors. Actual historical allocations could have differed, perhaps significantly. Advisory fees paid to underlying component funds are reflected in the performance results. Advisory fees to a financial advisor, custodian fees, trading costs and transaction costs that may be applicable in the management of an overall portfolio are not reflected.

Hypothetical performance for Dimensional Wealth Models reflects changes in the underlying fund allocations, if any, since the model's inception. Performance results prior to the Dimensional Model's inception are computed using the inception fund weights and component fund performance back to the inception of the youngest component fund. The Dimensional Models do not include an allocation to cash or cash equivalents, except indirectly through a Dimensional Fund.

#### **Dimensional Indices**

These indices have been retrospectively calculated by Dimensional Fund Advisors LP and did not exist prior to their index inceptions dates. Accordingly, results shown during the periods prior to each index's index inception date do not represent actual returns of the index. Other periods selected may have different results, including losses. Backtested index performance is hypothetical and is provided for informational purposes only to indicate historical performance had the index been calculated over the relevant time periods. Back-tested performance results assume the reinvestment of dividends and capital gains.

#### **Principal Risks**

The principal risks of investing in the Dimensional funds may include one or more of the following: market risk, small companies risk, risk of concentrating in the real estate industry, foreign securities and currencies risk, emerging markets risk, banking concentration risk, foreign government debt risk, interest rate risk, risk of investing for inflation protection, credit risk, risk of municipal securities, derivatives risk, securities lending risk call risk, liquidity risk, income risk, value investment risk, investment strategy risk, and/or funds risk. To more fully understand the risks related to an investment in the funds, investors should carefully read each fund's prospectus.



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Investments in foreign issuers are subject to certain considerations that are not associated with investments in US public companies. Investments of the International Equity, Emerging Markets Equity and the Global Fixed Income Portfolios will be denominated in foreign currencies. Changes in the relative values of these foreign currencies and the US dollar, therefore, will affect the value of investments in the Portfolios. However, the Global Fixed Income Portfolios may utilize forward currency contracts to attempt to protect against uncertainty in the level of future foreign currency rates (if applicable), to hedge against fluctuations in currency exchange rates or to transfer balances from one currency to another.

Foreign securities prices may decline or fluctuate because of: (a) economic or political actions of foreign governments, and/or (b) less regulated or liquid securities markets.

#### Additionally

The DFA Real Estate Securities Portfolio, DFA International Real Estate Securities Portfolio, and the DFA Global Real Estate Securities Portfolio (collectively, the "Real Estate Securities Portfolios") are each concentrated in the real estate industry. The exclusive focus by Real Estate Securities Portfolios on the real estate industry will cause the Real Estate Securities Portfolios to be exposed to the general risks of direct real estate ownership. The value of securities in the real estate industry can be affected by changes in real estate values and rental income, property taxes, and tax and regulatory requirements.

Also, the value of securities in the real estate industry may decline with changes in interest rates. Investing in REITs and REIT-like entities involves certain unique risks in addition to those risks associated with investing in the real estate industry in general. REITs and REIT-like entities are dependent upon management skill, may not be diversified, and are subject to heavy cash flow dependency and self-liquidation.REITs and REIT-like entities also are subject to the possibility of failing to qualify for tax free pass-through of income. Also, many foreign REIT-like entities are deemed for tax purposes as passive foreign investment companies (PFICs), which could result in the receipt of taxable dividends to shareholders at an unfavorable tax rate. Also, because REITs and REIT-like entities typically are invested in a limited number of projects or in a particular market segment, these entities are more susceptible to adverse developments affecting a single project or market segment than more broadly diversified investments. The performance of Real Estate Securities Portfolis may be materially different from the broad equity market.

#### **Fixed Income Portfolios**

The net asset value of a fund that invests in fixed income securities will fluctuate when interest rates rise. An investor can lose principal value investing in a fixed income fund during a rising interest rate environment.

#### **Commodity Portfolio**

Commodities investments include increased risks, such as political, economic, and currency instability, and may not be suitable for all investors. The Portfolio may be more volatile than a diversified fund because the Portfolio invests its assets in a smaller number of issuers and commodity sectors. The Portfolio's investment in commodity-linked derivative instruments may subject it to greater volatility than investments in traditional securities, particularly if the instruments involve leverage. There can be no assurance that the Portfolio's use of leverage will be successful.

#### Tax-managed Portfolios



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Tax-managed strategies consider tax implications of investment decisions, which may affect fund holdings when compared to non-tax-managed strategies, and they may perform differently than non-tax-managed strategies.

#### **Sustainability and Social Portfolios**

Sustainability and Social portfolios are subject to risks that environmental and social screens, respectively, may limit investment opportunities for the fund.

#### **Risk of Banking Concentration**

Focus on the banking industry would link the performance of the DFA One-Year Fixed Income and/or the Two-Year Global Fixed Income Portfolios to changes in performance of the banking industry generally. For example, a change in the market's perception of the riskiness of banks compared to non-banks would cause the Portfolio's values to fluctuate.

#### Inflation Protected Securities Portfolio

Inflation—protected securities are expected to be protected from long-term inflationary trends, short-term increases in inflation may lead to a decline in the Portfolio's value. If interest rates rise due to reasons other than inflation, the Portfolio's investment in these securities may not be protected to the extent that the increase is not reflected in the securities' inflation measures. The Portfolio may also suffer a loss during periods of sustained deflation.

#### **Short Term Muni Bond Portfolio**

Municipal Bonds may be subject to income risk, which is the risk that falling interest rates will cause the Portfolio's income to decline, and interest rate risk, which is the risk that bond prices overall will decline over short or even long periods because of rising interest rates. The Portfolio may also be affected by: call risk, which is the risk that during periods of falling interest rates, a bond issuer will call or repay a higher-yielding bond before its maturity date; credit risk, which is the risk that a bond issuer will fail to pay interest and principal in a timely manner; and tax liability risk, which is the risk of noncompliant conduct by a bond issuer, resulting in distributions by the Portfolio being taxable to share-holders as ordinary income. Finally, there is legislative or regulatory risk, which is the risk that new federal or state legislation may adversely affect the tax-exempt status of securities held by the Portfolio, or that there could be an adverse interpretation by the Internal Revenue Service or by state tax authorities.

#### Global Equity, Global 60/40, Global 25/75 Portfolios

#### **Fund of Funds Risk**

The investment performance of each Portfolio is affected by the investment performance of the Underlying Funds in which the Portfolio invests. The ability of a Portfolio to achieve its investment objective depends on the ability of the Underlying Funds to meet their investment objectives and on the Advisor's decisions regarding the allocation of the Portfolio's assets among the Underlying Funds. There can be no assurance that the investment objective of any Portfolio or Underlying Funds will be achieved. Through their investments in the Underlying Funds, the Portfolios are subject to the risks of the Underlying Funds investments. The risks of the Underlying Funds may include Market Risk, Small Company Risk, Risks of Concentrating in the Real Estate Industry, Emerging Markets Risk, Interest Rate Risk, Credit Risk, and Risks of Banking Concentration.



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#### **Definitions of Statistical Terms**

Average Returns (arithmetic mean) is a measure of the "middle performance" of the fund, computed by adding up all the returns and dividing by the number of periods.

**Standard Deviation** measures how different the actual fund returns are from its average performance (see above). The closer the actual returns are to the average, the smaller the standard deviation. Standard deviation is a measure of volatility, generally associated with the risk of investments.

**Correlation** measures the degree to which the performance of two funds moves in tandem, and the direction of their association (one goes up, the other goes up as well – positive correlation). Correlation plays an important part in diversification.

**Auto-correlation** is a specific application of correlation (see above). In this case, the comparison is not between two different funds, but rather returns of the same fund between different periods. For example, an auto-correlation of two periods would show the correlation in returns two periods apart (March-January, April-February, May-March, etc).

**Covariance** measures the trend of common movement in returns between two funds. A positive covariance shows the fund's returns moving in the same direction, whereas a negative covariance shows the funds moving in opposite direction (when one goes up, the other one goes down). Covariance plays a role in determining portfolio volatility.

**Regression** analysis examines the statistical connection between a variable of interest and one or more factors used to explain its variation. For example, if the variable of interest is student test scores, regression could be used to show the connection to factors such as time spent studying or IQ.

**R-squared** is used in regression analysis to determine to what degree the variation in the changing series of interest is explained by the factors used to explain it. R-squared ranges from 0 (no explanatory power), to 1 (virtually all variation is explained by the analysis). In the example above, if test scores is the variable of interest, while IQ and study time are the factors used to explain it, then an R-squared of .9 would indicate that 90% of the variation in test scores can be explained by these two factors.

Standard Error is a measure of precision when calculating various statistical terms. Generally, the higher the standard error, the lower the statistical strength of that estimation.

**T-statistic** examines the statistical precision of various estimations by comparing the value of the calculation to the standard error (see above). Generally, a t-stat value of 2 or higher shows enough statistical precision to have confidence in the estimate being different from zero.

**Turnover** is a measure of the fund's trading activity, and loosely represents the portion of a fund's holdings that have changed over a year. A lower turnover ratio indicates a more passive strategy.

**Tracking Error** shows how different are each period's returns of a given fund from the returns of a reference "benchmark" (generally commercial indexes). For example, if fund A's returns in two subsequent periods are 10% and 20%, while the benchmark's returns are 5% and 25% for the same periods, the average is the same (15%), but there is tracking error since there was a difference in period by period returns (period 1: 10% versus 5%, period 2: 20% versus 25%).

Alpha measures the difference between the fund's average performance and what would be expected based its compensating risk level, such as beta (see below). For example, if the fund's average return was 10%, but the expectation based on its beta was 9%, then the alpha would show as 1%.



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**Beta** measures the degree to which the returns of a fund change with the market movements. Generally, the higher the scale of fund movements (up or down) relative to the market, the greater the beta. This is considered to be compensating risk for investors, i.e. the more risk (higher beta), the higher the investors' expected returns versus the market.

Three Factor Model explains the source of performance variation among investment portfolios, and it is an extension of previous Nobel Prize winning work. The model specifies that differences in portfolio returns can be attributed to (1) stocks/fixed income mix – riskier stocks have a higher potential return, (2) market capitalization of portfolio – smaller capitalization stocks are riskier and therefore have higher expected returns, and (3) market price relative to accounting measures of the firm, such as book value – stocks with higher book value to market ratios are riskier and have higher expected returns. This model was first published in major academic journals but has gained wide spread acceptance among investment professionals.

**SMB** stands for Small Minus Big, and shows the difference in performance between the returns of small cap stocks and large cap stocks, and it is one of the factors used in the model described above. When used in regression analysis its computed coefficient (s) illustrates to what degree the portfolio captures the returns of small cap or large cap stocks.

HML stands for High Book-to-Market(BtM) Minus Low Book-to-Market (BtM), and shows the difference in performance between the stocks with high BtM ratios (value stocks) and stocks with low BtM ratios (growth stocks), and it is one of the factors used in the model described above. When used in regression analysis its computed coefficient (h) illustrates to what degree the portfolio captures the returns value or growth stocks.