



QUARTERLY MARKET REVIEW

THIRD QUARTER 2022

Quarterly Market Review

Third Quarter 2022

Well, for a brief period of time in the third quarter, it looked as though the market decline had reached its bottom, with most equity markets posting very strong returns in July. However, the selling resumed in mid-August, taking us to lower lows as the quarter ended.

Negative sentiment returned when Fed Chairman Powell commented at the Jackson Hole conference that the Fed's interest rate moves will "bring some pain to households and businesses." He seems determined to bring inflation down as fast as possible, with little regard to market reaction. We think that their current projection for rate increases into 2024 serve the purpose of setting a worst case scenario, and set the table for a positive surprise or two along the way if inflation can be tamed before that.

It's also important to remember that the current very high rate of inflation is not just a U.S. problem. As can be seen in the table on the following page, the war in Ukraine and supply chain issues have contributed to historically high inflation rates in many countries around the globe.

What has made this year particularly difficult for most investors is how the fixed income (bond) markets have performed in conjunction with the equity markets.

Historically, equity investors have been able to use the fixed income component of their portfolios as ballast during rocky times. And while it's not surprising that bonds have declined in

Overview:

Market Summary

World Stock Market Performance

US Stocks

International Developed Stocks

Emerging Markets Stocks

Real Estate Investment Trusts (REITs)

Commodities

Fixed Income

Quarterly Topic: What Drives Investment Returns? Start with Ingenuity.

Quarterly Market Review

Second Quarter 2022

the face of rising rates, it's the magnitude of their decline which has made 2022, thus far, one for the investing record books.

Going back to 1928, there have been only five years that the S&P 500 and the 10-year Treasury bond were both down, but 2022 is the only year where both are down by more than 10%.

As awful as that is, by taking a longer-term view, we see this as an anomaly, and something to take advantage of. In the context of the nearly 100 years represented in this table, there is reason to believe that powerful returns can be had on the other side of this slide. No one knows when the slide will end, and there is certainly no assurance of positive returns in the future, but we do feel that investing in established, time-tested markets during times of extreme turmoil will be viewed as having been a smart decision when looking back in the years to come.

As this is our last formal communication before the holiday season is upon us, we wish you and yours the very best of times, for the love of friends and family members is what truly makes the pursuit of financial gains worthwhile.

Warm regards,



Tony Reed, CPA, CFP
President



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
Q3 2022	STOCKS				BONDS	
	-4.46%	-9.20%	-11.57%	-11.12%	-4.75%	-2.21%
Since Jan. 2001						
Average Quarterly Return	2.1%	1.3%	2.4%	2.2%	0.9%	0.9%
Best Quarter	22.0%	25.9%	34.7%	32.3%	4.6%	4.6%
	2020 Q2	2009 Q2	2009 Q2	2009 Q3	2001 Q3	2008 Q4
Worst Quarter	-22.8%	-23.3%	-27.6%	-36.1%	-5.9%	-4.1%
	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 © 2022 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 2022, all rights reserved. Bloomberg data provided by Bloomberg.

Long-Term Market Summary

Index returns as of September 30, 2022

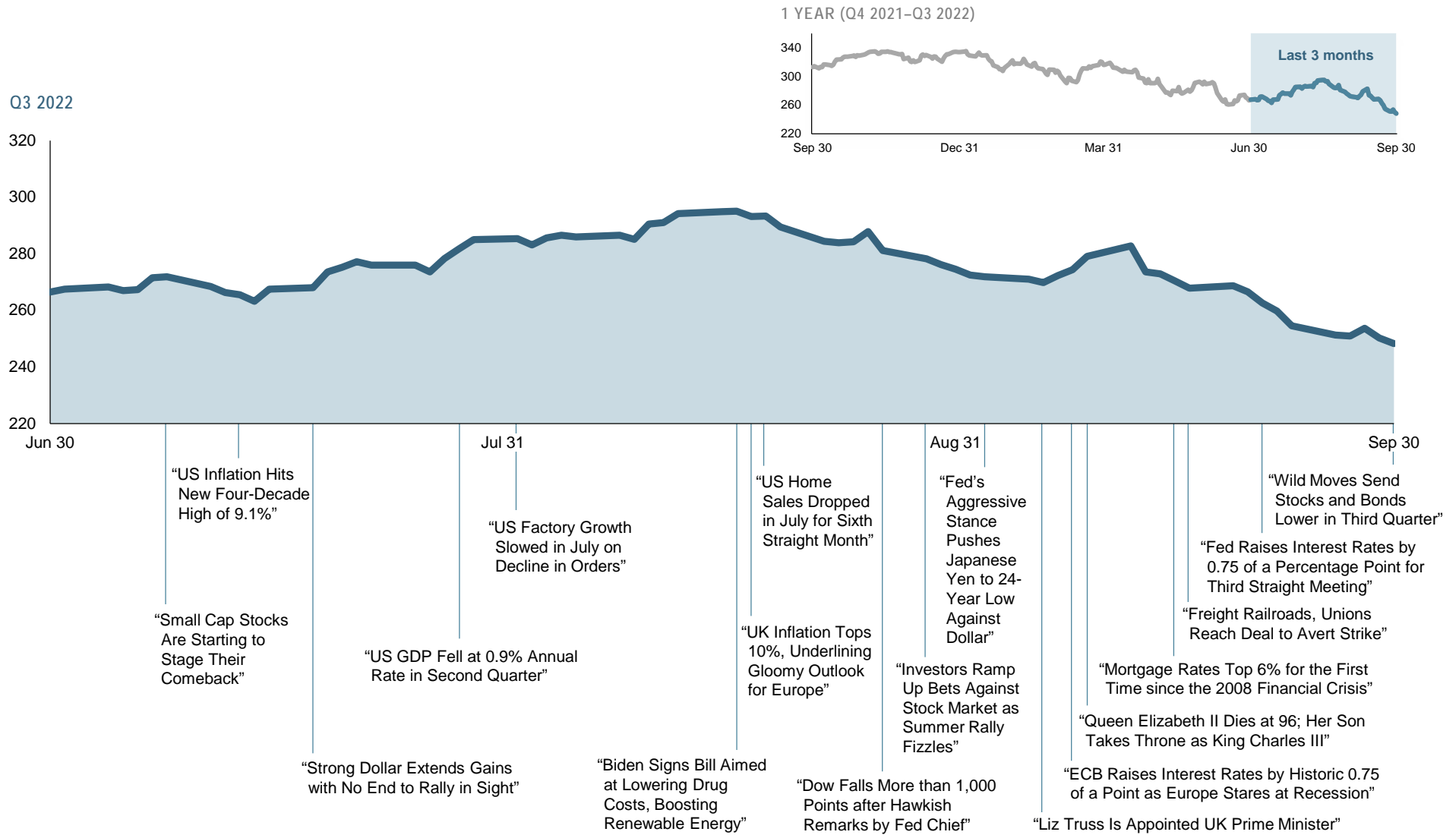


	US Stock Market	International Developed Stocks	Emerging Markets Stocks	Global Real Estate	US Bond Market	Global Bond Market ex US
1 Year	STOCKS				BONDS	
	-17.63%	-23.91%	-28.11%	-20.49%	-14.60%	-9.86%
5 Years						
	8.62%	-0.39%	-1.81%	0.17%	-0.27%	0.71%
10 Years						
	11.39%	3.62%	1.05%	3.58%	0.89%	2.21%

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 © 2022 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 2022, all rights reserved. Bloomberg data provided by Bloomberg.

World Stock Market Performance

MSCI All Country World Index with selected headlines from Q3 2022



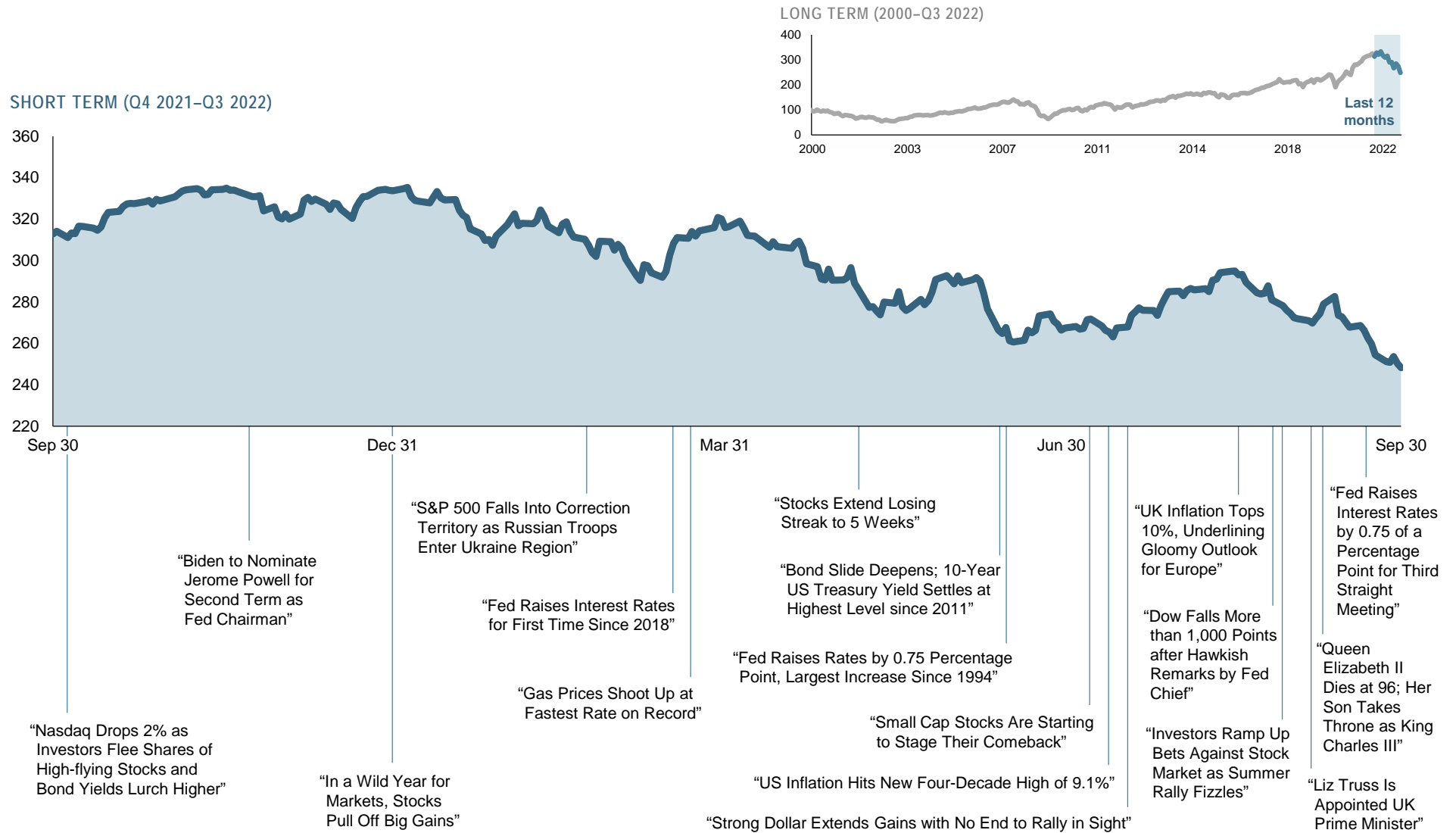
These headlines are not offered to explain market returns. Instead, they serve as a reminder that investors should view daily events from a long-term perspective and avoid making investment decisions based solely on the news.

Graph Source: MSCI ACWI Index (net dividends). MSCI data © MSCI 2022, all rights reserved.

It is not possible to invest directly in an index. Performance does not reflect the expenses associated with management of an actual portfolio. Past performance is not a guarantee of future results.

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.

Graph Source: MSCI ACWI Index (net dividends). MSCI data © MSCI 2022, all rights reserved.

It is not possible to invest directly in an index. Performance does not reflect the expenses associated with management of an actual portfolio. Past performance is not a guarantee of future results.

US Stocks

Third quarter 2022 index returns

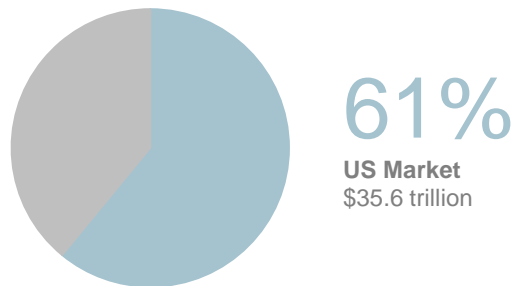
The US equity market posted negative returns for the quarter and outperformed both non-US developed and emerging markets.

Value underperformed growth.

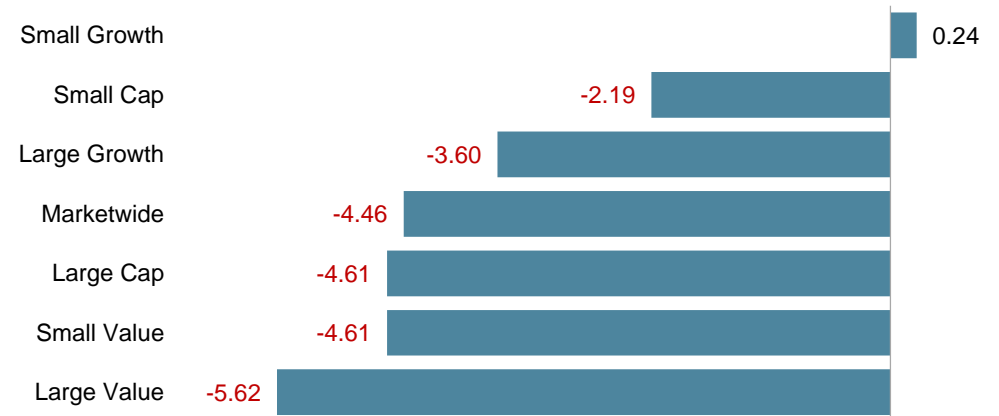
Small caps outperformed large caps.

REIT indices underperformed equity market indices.

World Market Capitalization—US



Ranked Returns (%)



Period Returns (%)

Asset Class	* Annualized					
	QTR	YTD	1 Year	3 Years*	5 Years*	10 Years*
Small Growth	0.24	-29.28	-29.27	2.94	3.60	8.81
Small Cap	-2.19	-25.10	-23.50	4.29	3.55	8.55
Large Growth	-3.60	-30.66	-22.59	10.67	12.17	13.70
Marketwide	-4.46	-24.62	-17.63	7.70	8.62	11.39
Large Cap	-4.61	-24.59	-17.22	7.95	9.00	11.60
Small Value	-4.61	-21.12	-17.69	4.72	2.87	7.94
Large Value	-5.62	-17.75	-11.36	4.36	5.29	9.17

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: 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 2022, all rights reserved.

International Developed Stocks

Third quarter 2022 index returns

Developed markets outside of the US posted negative returns for the quarter and underperformed the US market, but outperformed emerging markets.

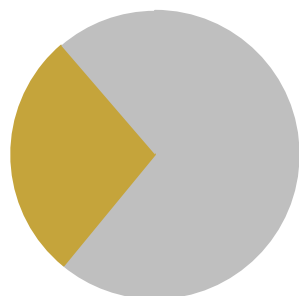
Value underperformed growth.

Small caps underperformed large caps.

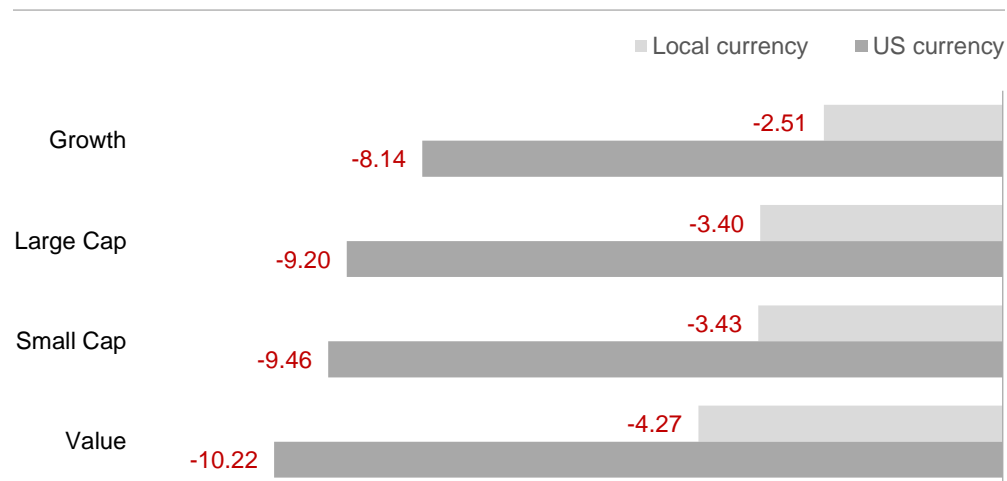
World Market Capitalization—International Developed

28%

International Developed Market
\$16.2 trillion



Ranked Returns (%)



Period Returns (%)

Asset Class	QTR	YTD	1 Year	* Annualized		
				3 Years*	5 Years*	10 Years*
Growth	-8.14	-32.33	-29.44	-1.14	0.85	4.46
Large Cap	-9.20	-26.23	-23.91	-1.21	-0.39	3.62
Small Cap	-9.46	-31.07	-30.80	-1.27	-1.24	4.78
Value	-10.22	-20.10	-18.58	-1.97	-2.08	2.53

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: 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 2022, 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

Third quarter 2022 index returns

Emerging markets posted negative returns for the quarter and underperformed both US and non-US developed markets.

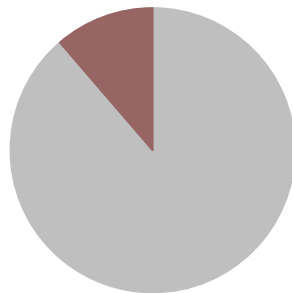
Value outperformed growth.

Small caps outperformed large caps.

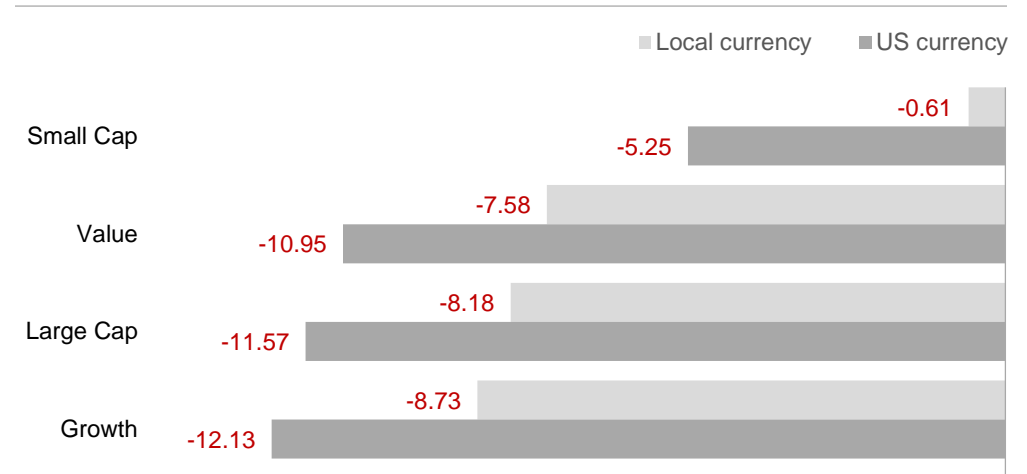
World Market Capitalization—Emerging Markets

11%

Emerging Markets
\$6.6 trillion



Ranked Returns (%)



Period Returns (%)

Asset Class	QTR	YTD	1 Year	3 Years*	5 Years*	10 Years*
Small Cap	-5.25	-24.23	-23.23	5.54	1.25	2.91
Value	-10.95	-23.32	-23.63	-2.57	-2.13	-0.41
Large Cap	-11.57	-27.16	-28.11	-2.07	-1.81	1.05
Growth	-12.13	-30.65	-32.09	-1.75	-1.64	2.38

* Annualized

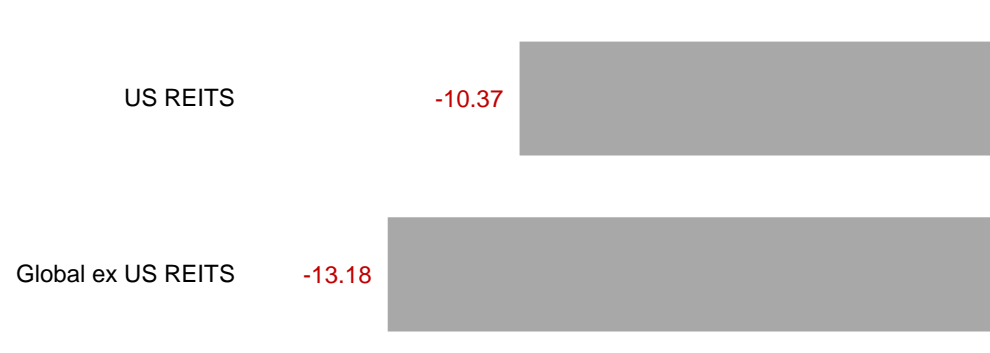
Past performance is not a guarantee of future results. Indices are not available for direct investment. Index performance does not reflect the expenses associated with the management of an actual portfolio. Market segment (index representation) as follows: Large Cap (MSCI Emerging Markets Index), Small Cap (MSCI Emerging Markets Small Cap Index), Value (MSCI Emerging Markets Value Index), and Growth (MSCI Emerging Markets 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 Emerging Markets IMI Index used as the proxy for the emerging market portion of the market. MSCI data © MSCI 2022, all rights reserved. Frank Russell Company is the source and owner of the trademarks, service marks, and copyrights related to the Russell Indexes.

Real Estate Investment Trusts (REITs)

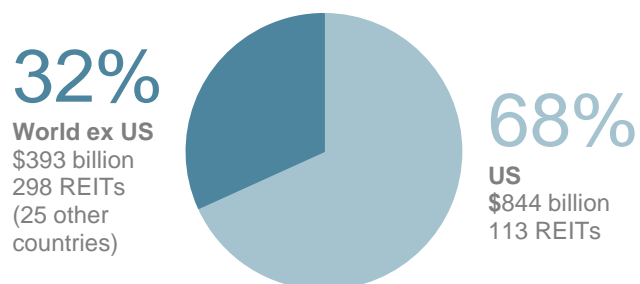
Third quarter 2022 index returns

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

Ranked Returns (%)



Total Value of REIT Stocks



Period Returns (%)

Asset Class	QTR	YTD	1 Year	* Annualized		
				3 Years*	5 Years*	10 Years*
US REITS	-10.37	-29.32	-17.15	-3.29	1.95	5.49
Global ex US REITS	-13.18	-30.48	-27.32	-9.72	-3.01	1.12

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 © 2022 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved.

Commodities

Third quarter 2022 index returns

The Bloomberg Commodity Total Return Index returned -4.11% for the third quarter of 2022.

WTI Crude Oil and Unleaded Gas were the worst performers, returning -21.51% and -20.53% during the quarter, respectively.

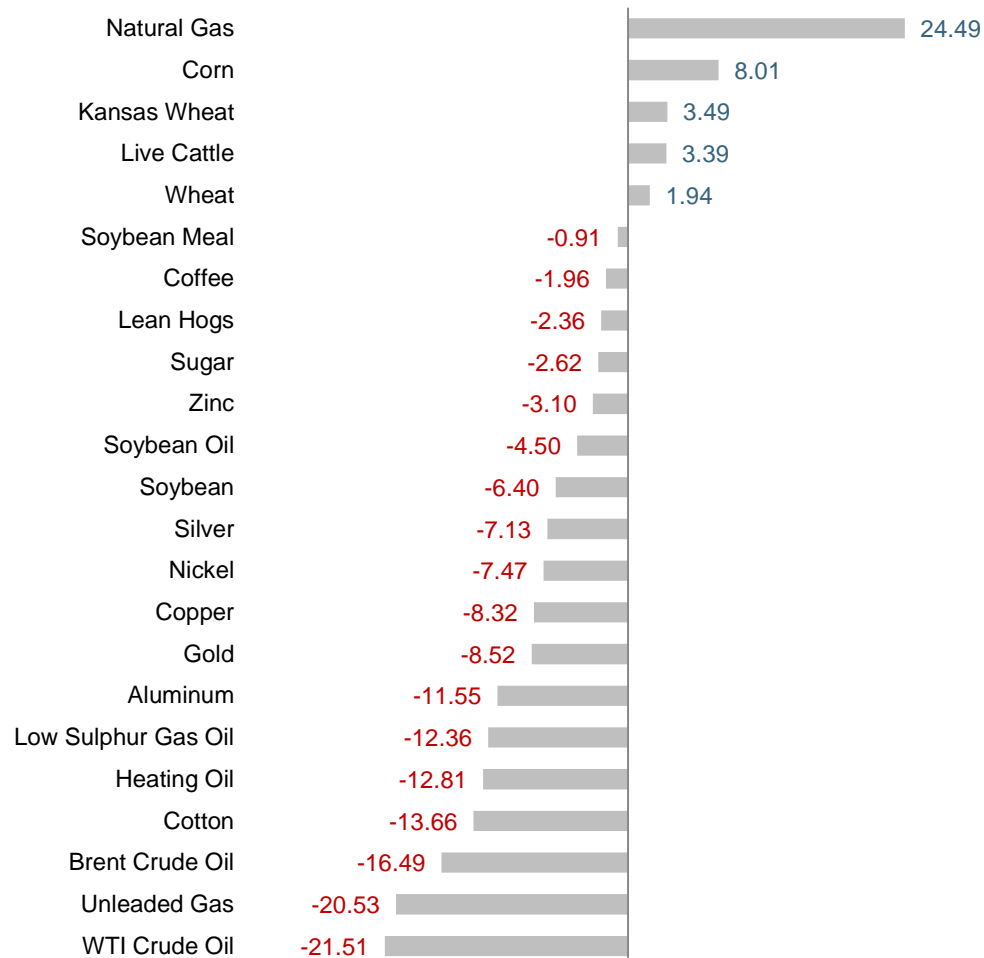
Natural Gas and Corn were the best performers, returning +24.49% and +8.01% during the quarter, respectively.

Period Returns (%)

* Annualized

Asset Class	QTR	YTD	1 Year	3 Years*	5 Years*	10 Years*
Commodities	-4.11	13.57	11.80	13.45	6.96	-2.14

Ranked Returns (%)



Fixed Income

Third quarter 2022 index returns

Interest rates increased across all bond maturities in the US Treasury market for the quarter.

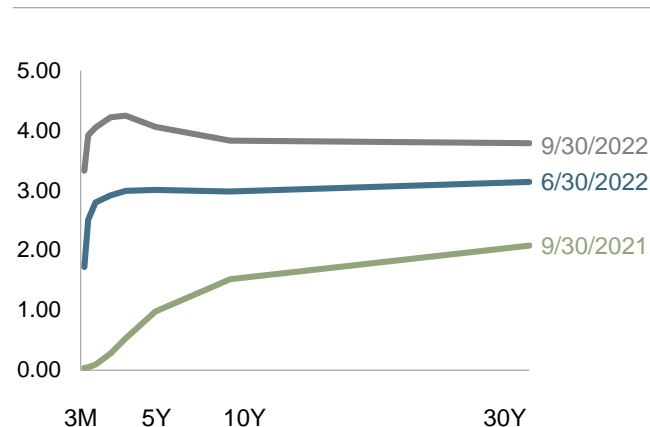
The yield on the 5-Year US Treasury Note increased 105 basis points (bps) to 4.06%. The yield on the 10-Year US Treasury Note increased 85 bps to 3.83%. The yield on the 30-Year US Treasury Bond increased 65 bps to 3.79%.

On the short end of the yield curve, the 1-Month US Treasury Bill yield increased 151 bps to 2.79%, while the 1-Year US Treasury Bill yield increased 125 bps to 4.05%. The yield on the 2-Year US Treasury Note increased 130 bps to 4.22%.

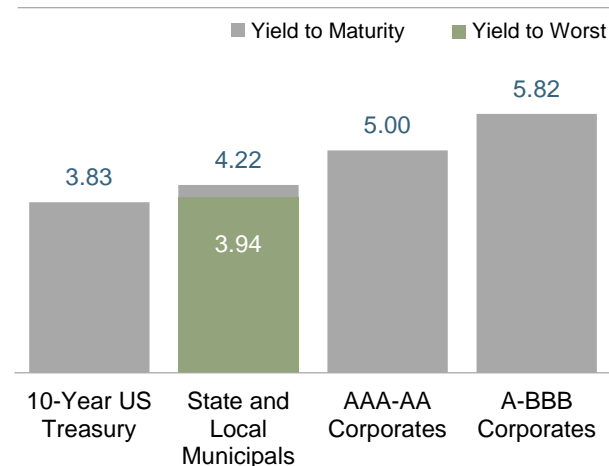
In terms of total returns, short-term corporate bonds returned -1.94% and intermediate-term corporate bonds returned -3.11%.¹

The total return for short-term municipal bonds was -1.88% and -2.65% for intermediate-term municipal bonds. Within the municipal fixed income market, general obligation bonds outperformed revenue bonds, returning -3.30% vs. -3.62%, respectively.²

US Treasury Yield Curve (%)



Bond Yield Across Issuers (%)



Period Returns (%)

Asset Class	*Annualized					
	QTR	YTD	1 Year	3 Years*	5 Years*	10 Years*
ICE BofA US 3-Month Treasury Bill Index	0.46	0.61	0.62	0.59	1.15	0.68
ICE BofA 1-Year US Treasury Note Index	-0.50	-1.77	-1.95	0.18	0.94	0.67
Bloomberg U.S. High Yield Corporate Bond Index	-0.65	-14.74	-14.14	-0.45	1.57	3.94
FTSE World Government Bond Index 1-5 Years (hedged to USD)	-1.79	-5.03	-5.53	-0.87	0.63	0.96
Bloomberg Municipal Bond Index	-3.46	-12.13	-11.50	-1.85	0.59	1.79
Bloomberg U.S. Aggregate Bond Index	-4.75	-14.61	-14.60	-3.26	-0.27	0.89
FTSE World Government Bond Index 1-5 Years	-4.77	-12.10	-13.34	-3.33	-1.83	-1.74
Bloomberg U.S. TIPS Index	-5.14	-13.61	-11.57	0.79	1.95	0.98
Bloomberg U.S. Government Bond Index Long	-9.60	-28.77	-26.60	-8.48	-1.62	0.60

1. Bloomberg US Corporate Bond Index.

2. 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 (S&BBI) Yearbook™, Ibbotson Associates, Chicago (annually updated work by Roger G. Ibbotson and Rex A. Sinquefeld). FTSE fixed income indices © 2022 FTSE Fixed Income LLC, all rights reserved. ICE BofA index data © 2022 ICE Data Indices, LLC. S&P data © 2022 S&P Dow Jones Indices LLC, a division of S&P Global. All rights reserved. Bloomberg data provided by Bloomberg.

What Drives Investment Returns? Start with Ingenuity.

Third quarter 2022

Weston Wellington, Vice President, Dimensional Fund Advisors

A recent news item reported that Frederick Smith intended to step down as Chairman and Chief Executive Officer of FedEx Corp., the largest air freight firm in the world.

As a Yale undergraduate in 1965, Smith wrote a term paper for his economics course outlining an overnight air delivery service for urgently needed items such as medicines or computer parts. His professor was not much impressed with the paper, but after a stint in the Air Force, Smith sought to put his classroom idea into practice. He founded Federal Express (now FedEx) in 1971, and one evening in April 1973, 14 Dassault Falcon jets took off from Memphis airport with 186 packages destined for 25 cities.

In retrospect, it was not an auspicious time to launch a new venture requiring expensive aircraft consuming large quantities of jet fuel. Oil prices rose sharply later that year following the Arab states' oil embargo, and the US economy fell into a deep recession. Most airlines struggled during the 1970s, and Federal Express was no exception.

But Smith's idea found favor with customers, and 49 years after its initial deliveries, the firm is a global colossus with over 650 aircraft, including 42 Boeing 777s—each of which can fly more cargo than 100 Falcons. Although it took over two years to turn its first profit, FedEx became the first start-up in American history to generate over \$1 billion in revenue in

less than 10 years without relying on mergers or acquisitions. The journey has proved rewarding for investors as well—100 shares purchased at the initial offering price of \$24 in 1978 has mushroomed to 3,200 shares worth over \$718,000 as of May 31, 2022.¹

Fred Smith's idea is just one example of ingenuity that humans have exhibited for centuries. Sticks and stones led to hammers and spears, the wheel and axle, the steam engine, and eventually semiconductors and jet aircraft. The invention of writing made it possible to store and hand down information from one generation to the next, enabling ingenuity to compound into an ever-increasing body of knowledge. Although we often associate innovation with clever new technology, some remarkable developments have required little more than astute powers of observation. The curse of smallpox, for example, has afflicted humans with death or disfigurement for thousands of years. English doctor Edward Jenner noticed that milkmaids who had previously experienced cowpox did not catch smallpox, and in 1796, he took material from a milkmaid's cowpox sore and inoculated James Phipps, the nine-year-old son of his gardener. Later exposed to the virus, Phipps never developed smallpox, and Jenner published a treatise on vaccination in 1801. Smallpox vaccines gradually eliminated the disease in countries around the world, and the last known case was reported in Somalia in 1977.

1. Stock split information sourced from FedEx investor relations website. Stock price information provided by Bloomberg. This is not taking into account cash dividends or any reinvestment.

What Drives Investment Returns? Start with Ingenuity.

(continued from page 14)

One innovation often paves the way for others:

- Charles Lindbergh took off from Long Island for his historic transatlantic flight to Paris on May 20, 1927. That same day, J. Willard Marriott opened a nine-stool lunch counter serving cold A&W root beer in Washington, D.C. Ten years later he began to supply box lunches to airlines flying from nearby Hoover airport and 20 years later opened the world's first motor hotel in Arlington, Virginia. Today, Marriott is the world's leading travel firm, with over 8,000 hotel properties in 139 countries.
 - The now-ubiquitous microwave oven can trace its roots to a happy accident. While working on radar equipment in 1945 for Massachusetts-based Raytheon, electronics engineer Percy Spencer noticed that the chocolate bar in his pocket had suddenly melted. His curiosity led to the introduction of commercial-grade water-cooled microwave ovens in 1947 costing thousands and ultimately to countertop units available today for \$99.
 - Frustrated by lengthy delays associated with loading and unloading cargo ships, trucking firm owner Malcolm McLean launched a shipping service in 1956 using standardized steel containers of his own design. Met with great skepticism when first introduced, his idea for theftproof stackable cargo boxes eventually transformed the global shipping industry—and world trade—by slashing dockside loading costs over 90%.
 - On June 26, 1974, cashier Sharon Buchanan inaugurated the era of barcode inventory tracking when she scanned a pack of Juicy Fruit gum bearing a Universal Product Code at Marsh Supermarket in Troy, Ohio. Barcode scanners eliminated the drudgery and inevitable mistakes associated with manual entry by checkout clerks and provided store managers with powerful tools to track sales trends. As retailers such as Home Depot, Ross Stores, and Walmart expanded throughout the country in recent decades, barcode technology played a key role in matching inventory with local preferences at each location.
 - In March 2022, a 20-year-old woman born with a small and misshapen right ear received a 3D-printed ear implant made from her own cells and shaped to precisely match her other ear. Although experimental, the procedure represented a significant advance in tissue engineering and could eventually lead to artificial organs such as lungs or kidneys.
- The benefits of innovation are widely dispersed throughout the economy, often in unpredictable ways. Apple Inc. became one of the world's most valuable companies based on its clever marriage of the computer and the telephone; both iPhone users and Apple shareholders reaped substantial rewards.
- On the other hand, suppose your fairy godmother had told you in 1935, at the dawn of commercial air travel, that this tiny sector of the

What Drives Investment Returns? Start with Ingenuity.

(continued from page 15)

economy would eventually become a gigantic industry with millions of passengers flying every year—including some flying from breakfast in New York to Los Angeles for dinner. What would your prediction be for industry pioneers such as TWA or Pan American? Most likely, bountiful prosperity and rewarding stock market performance. The millions of passengers materialized. The profits did not. Both firms went bankrupt. So innovation itself does not ensure prosperity in every case.

That's why it makes sense to diversify. Investors are often tempted to focus their attention on firms that appear poised to benefit from innovation. But it's difficult to predict which ideas will prove successful, and even if we could, it's unclear which firms will benefit and to what extent. Software giant Microsoft has been a big winner for investors, with the share value soaring more than 100-fold over the 30-year period

ending May 31, 2022. Discount retailer Ross Stores proved even more rewarding, as the stock price multiplied over 189 times during the same period. One firm developed powerful computer technology and the other applied it.

Civilization is a history of innovation—curious minds seeking to improve upon existing ways of meeting mankind's wants and needs. Public securities markets are just one example of such creativity, and they have a history of rewarding investors for the capital they supply to fund such innovation. But a significant fraction of the wealth created in public equity markets typically comes from only a small number of firms; therefore, we believe owning a broad universe of stocks is the most effective way to participate in the rewards of ingenuity and innovation, wherever and whenever it takes place.

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.

Named securities may be held in accounts managed by Dimensional. This information should not be considered a recommendation to buy or sell a particular security. The information in this material is intended for the recipient's background information and use only. It is provided in good faith and without any warranty or representation as to accuracy or completeness. Information and opinions presented in this material have been obtained or derived from sources believed by Dimensional to be reliable, and Dimensional has reasonable grounds to believe that all factual information herein is true as at the date of this material. It does not constitute investment advice, a recommendation, or an offer of any services or products for sale and is not intended to provide a sufficient basis on which to make an investment decision. Before acting on any information in this document, you should consider whether it is appropriate for your particular circumstances and, if appropriate, seek professional advice. It is the responsibility of any persons wishing to make a purchase to inform themselves of and observe all applicable laws and regulations. Unauthorized reproduction or transmission of this material is strictly prohibited. Dimensional accepts no responsibility for loss arising from the use of the information contained herein. This material is not directed at any person in any jurisdiction where the availability of this material is prohibited or would subject Dimensional or its products or services to any registration, licensing, or other such legal requirements within the jurisdiction. "Dimensional" refers to the Dimensional separate but affiliated entities generally, rather than to one particular entity. These entities are Dimensional Fund Advisors LP, Dimensional Fund Advisors Ltd., Dimensional Ireland Limited, DFA Australia Limited, Dimensional Fund Advisors Canada ULC, Dimensional Fund Advisors Pte. Ltd., Dimensional Japan Ltd. and Dimensional Hong Kong Limited. Dimensional Hong Kong Limited is licensed by the Securities and Futures Commission to conduct Type 1 (dealing in securities) regulated activities only and does not provide asset management services. Dimensional Fund Advisors LP is an investment advisor registered with the Securities and Exchange Commission.

Investment products: • Not FDIC Insured • Not Bank Guaranteed • May Lose Value

Dimensional Fund Advisors does not have any bank affiliates.

The information in this document is provided in good faith without any warranty and is intended for the recipient's background information only. It does not constitute investment advice, recommendation, or an offer of any services or products for sale and is not intended to provide a sufficient basis on which to make an investment decision. It is the responsibility of any persons wishing to make a purchase to inform themselves of and observe all applicable laws and regulations. Unauthorized copying, reproducing, duplicating, or transmitting of this document are strictly prohibited. Dimensional accepts no responsibility for loss arising from the use of the information contained herein.

"Dimensional" refers to the Dimensional separate but affiliated entities generally, rather than to one particular entity. These entities are Dimensional Fund Advisors LP, Dimensional Fund Advisors Ltd., Dimensional Ireland Limited, DFA Australia Limited, Dimensional Fund Advisors Canada ULC, Dimensional Fund Advisors Pte. Ltd, Dimensional Japan Ltd., and Dimensional Hong Kong Limited. Dimensional Hong Kong Limited is licensed by the Securities and Futures Commission to conduct Type 1 (dealing in securities) regulated activities only and does not provide asset management services. Dimensional Fund Advisors LP is an investment advisor registered with the Securities and Exchange Commission.

Past performance is no guarantee of future results. The information provided herein reflects Millennium's views as of the date of this newsletter. Such views are subject to change at any point without notice. Millennium obtained the information provided herein from third party sources believed to be reliable but we do not warrant or guarantee the accuracy or completeness of the information. This newsletter is being provided for informational purposes only and should not be considered a recommendation to buy or sell any securities. Nothing presented herein is or is intended to constitute investment advice, and no investment decision should be made based solely on any information provided herein. Millennium has not taken into account the investment objectives, financial situation or particular needs of any individual investor. There is a risk of loss from an investment in securities, including the risk of loss of principal. Different types of investments involve varying degrees of risk, and there can be no assurance that any specific investment will be profitable or suitable for a particular investor's financial situation or risk tolerance. Asset allocation and portfolio diversification cannot assure or guarantee better performance and cannot eliminate the risk of investment losses.

Any forward looking statements or forecasts are based on assumptions and actual results are expected to vary from any such statements or forecasts. No reliance should be placed on any such statements or forecasts when making any investment decision. The assumptions and projections displayed are estimates, hypothetical in nature, and meant to serve solely as our opinion.

The performance of each index mentioned in this newsletter is shown for illustrative purposes only and should not be considered benchmarks for any Millennium strategies, unless otherwise noted. Indexes are unmanaged so the performance shown does not reflect deduction of advisory fees. Indexes are not available for direct investment.

Millennium is an SEC registered investment adviser. However, such registration does not imply a certain level of skill or training and no inference to the contrary should be made. Advisory services are only offered to clients or prospective clients where Millennium and its representatives are properly licensed or exempt from licensing requirements.