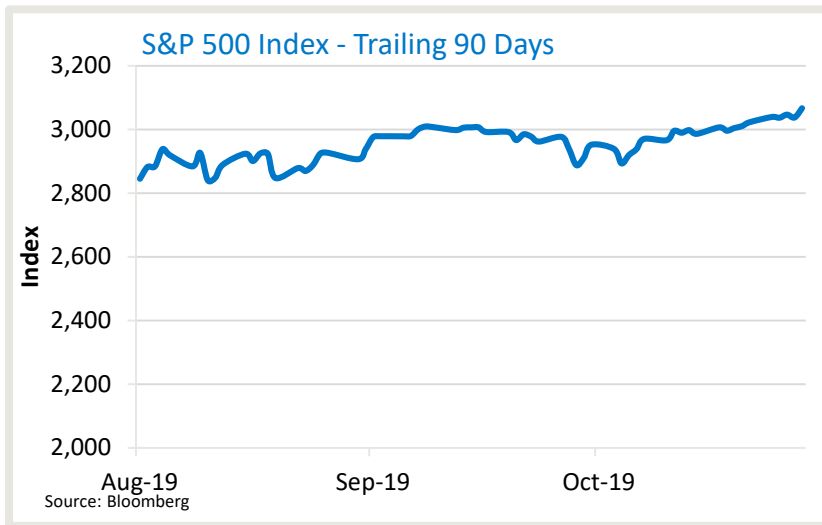


# Weekly Market Review

November 4, 2019

## Chart of the Week



## Weekly Highlights

- **As expected, the Federal Open Market Committee reduced its target federal funds rate** by 25 basis points to a range of 1.50% to 1.75%. In his public statements, Chair Jerome Powell signaled a possible pause on future rate adjustments, as the Committee continues to monitor economic data in its effort to sustain the economic expansion in such a complicated geopolitical environment.
- **Labor markets showed some strength**, as nonfarm payrolls increased by 128,000 for the month of October. Much of the job growth came from food services and financial activities, offsetting the job losses from General Motors' unsettled strike. Overall, unemployment ticked up slightly to 3.60% from 3.50%.
- **Tensions in Hong Kong continue to escalate**, as protesters, seeking universal suffrage, plan a large weekend rally, and China warns it will not tolerate any challenge to Hong Kong's governing system. The two sides appear to be at a stalemate, as violence continues to be more common.

## Talking Points

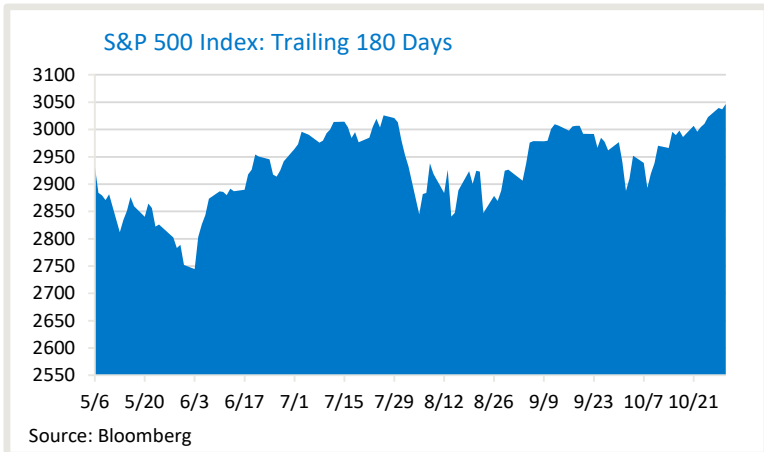
- **Domestic equities rose for the week**, with small cap stocks appreciating the most and growth stocks outpacing value. International equities and emerging markets stocks also ended the week in positive territory but failed to keep pace with their domestic counterparts.
- **Treasury yields across the curve were down** through end-of-day Thursday, with shorter-term yields falling more than longer-term yields.
- **The US dollar weakened** against a basket of major trade partners' currencies during the week, as the Federal Reserve cut rates by 25 basis points.
- **Commodities declined for the week**, as lower energy prices outweighed the upward move for gold.
- **In other economic news, US gross domestic product (GDP) grew** at a rate of 1.90% for the third quarter on continued expenditures from the government and the consumer. Despite the contracting business investment, the US economy grew at a faster rate than most economists expected.

## Market Dashboard

	Last Price	Change	% Chg.	YTD %
<b>S&amp;P 500</b>	3,066.91	44.36	1.47%	22.3%
<b>Dow Industrials</b>	27,347.36	389.30	1.44%	17.2%
<b>Nasdaq</b>	8,386.40	143.28	1.74%	26.4%
<b>Russell 2000</b>	1,589.33	30.62	1.96%	17.9%
<b>Euro Stoxx Index</b>	399.43	1.42	0.36%	18.3%
<b>Shanghai Composite</b>	2,958.20	3.27	0.11%	18.6%
<b>MSCI ACWI</b>	534.41	2.64	0.50%	17.3%

Source: Bloomberg; Index % change is based on price.

	Last Price	Change	% Chg.	YTD %
<b>MSCI EM</b>	1,041.98	6.14	0.59%	7.9%
<b>10-Year US Treas.</b>	1.73	-7 bps	NM	NM
<b>Bloomberg Cmdts. Idx.</b>	80.26	0.76	0.96%	4.6%
<b>Gold</b>	\$1,513.89	\$8.54	0.57%	18.0%
<b>Crude Oil</b>	\$56.14	-\$0.60	-1.06%	15.9%
<b>Dollar Index</b>	97.22	-0.60	-0.62%	1.1%
<b>VIX Index</b>	12.30	-0.35	-2.77%	-51.6%



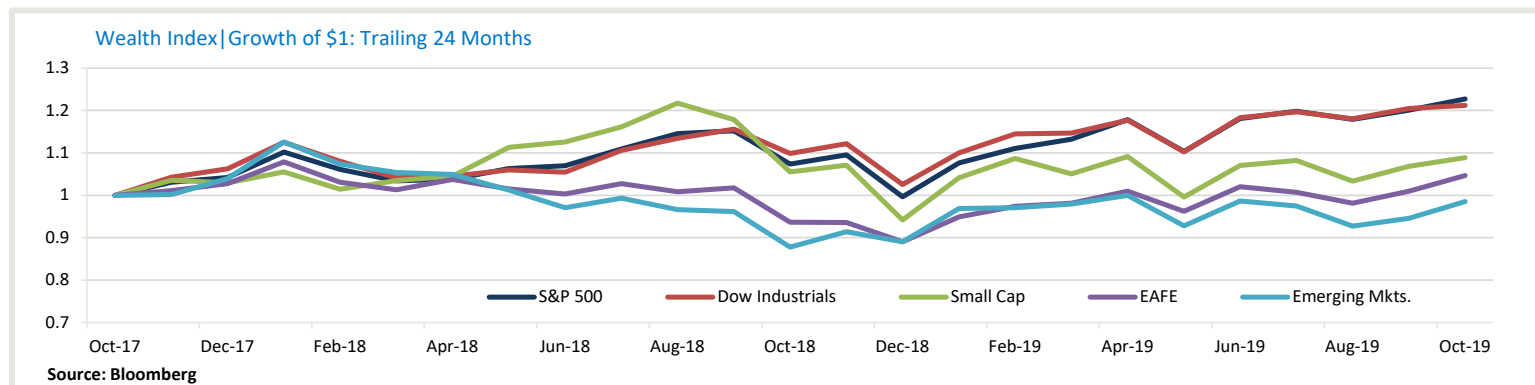
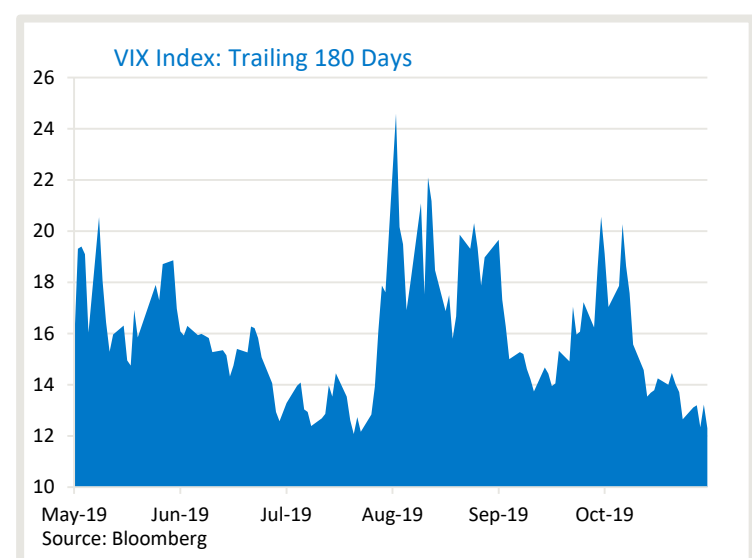
	One Week			YTD		
	Value	Growth		Value	Growth	
<b>L</b>	1.34%	1.58%	1.78%	17.73%	22.14%	26.05%
	1.12%	1.13%	1.16%	19.43%	22.94%	27.88%
<b>S</b>	1.48%	1.96%	2.45%	15.44%	17.85%	20.05%

Source: Bloomberg

**Sector Performance:**  
**S&P/Global Industry Classification Sectors (GICS)**

	% Wgt in S&P 500	Week % Chg.	YTD % Chg.
<b>Consumer Discretionary</b>	10.0	0.57%	22.3%
<b>Consumer Staples</b>	7.3	0.03%	20.2%
<b>Energy</b>	4.4	-0.34%	3.1%
<b>Financials</b>	13.0	1.51%	21.9%
<b>Health Care</b>	13.9	3.04%	9.6%
<b>Industrials</b>	9.4	2.04%	24.7%
<b>Information Technology</b>	22.4	2.05%	36.5%
<b>Materials</b>	2.7	1.29%	16.9%
<b>Real Estate</b>	3.1	-0.72%	26.1%
<b>Communication Services</b>	10.4	1.51%	24.8%
<b>Utilities</b>	3.4	-0.10%	21.1%

Source: Bloomberg



## The Economy and Markets

### A Macro View: The Fundamentals of Bitcoin Investing

Last Friday, October 25, was a big day for bitcoin, rallying as high as 42% and closing out the day up almost 30%. This was the third-largest, single-day run-up in bitcoin's history! The strong price appreciation came on the back of comments from Xi Jinping, president of the People's Republic of China, on the potential of blockchain technology, stating that China needs to "seize the opportunity... and accelerate the development of blockchain technology..."<sup>1</sup>

In light of the recent price movement and renewed interest in the blockchain technology, assessing the Bitcoin network's health may be useful. Around 720,000 daily active addresses now transact on the network, marking a 30% increase since the beginning of the year. And each address paid a small fee when it sent bitcoin to ensure that the transaction was included in the blockchain. As of this week, bitcoin users pay an average of \$330,000 dollars a day in fees, and cumulatively, since the network's inception, they have paid more than \$1 billion. This all suggests a growing use of the Bitcoin network.

Hash rate, a measure of the total processing power of the Bitcoin network, is another important indicator of network health. The processing power is used to secure the Bitcoin network and is a proxy for measuring its overall security. Hash rate has more than doubled this year, as miners continue to add computing power, making the network the most secure it has ever been.

As the market infrastructure around the Bitcoin network continues to be developed, more and more investors are evaluating the prospects of adding bitcoin to their portfolio. In considering such a move, it is helpful to contrast and compare the fundamentals of an equity investment to that of a bitcoin investment.

A share of equity is a portion of corporate ownership. This principle is the foundation for equity investing analysis. To quote Benjamin Graham, the father of financial analysis, "A stock is not just a ticker symbol or an electronic blip; it is an ownership interest in an actual business, with an underlying value that does not depend on its share price."<sup>2</sup> If a business is profitable, the owners have a claim on its profits, and the value of their equity increases; conversely, if the company is unprofitable, the owners' equity value decreases. For this reason, successful equity investors go to great lengths to analyze and understand the drivers of corporate profitability before investing. If during the research and due diligence process investors find a peculiarly profitable company, they would have an incentive to acquire more shares to have a larger claim on the profits.

Bitcoin, on the other hand, is not a company. It does not have profits or losses, cash flows, or a management team, so analyzing it requires different approaches. Bitcoin is many things to many people, but central to its design is an open source network, letting participants interact in new ways. In short, Bitcoin is a network that allows its participants to interact with one another by storing and communicating value over the internet.

According to Metcalfe's law, a network's value is derived from the number of its participants and is proportional to the square of that number. As the size of the Bitcoin network grows, bitcoin's value, or market cap, increases—the healthier the Bitcoin network, the higher the value the market ascribes to bitcoin.

Although it might be appropriate for an equity investor to buy 25% of an individual company to maximize portfolio value, the same action in bitcoin may reduce or limit the total number of network participants, lessening the health of the network and leading to a lower market cap for bitcoin.

In our view, there comes a point for Bitcoin investors when the overall purchasing power of the position will increase more by investing additional capital in the growth and development of the network than by simply buying more bitcoin. As investors begin to embrace the Bitcoin network, they would do well to remember this and avoid applying an equity investing mindset to bitcoin. Failure to do so may weaken the network and reduce the purchasing power of their bitcoin positions in the long term.

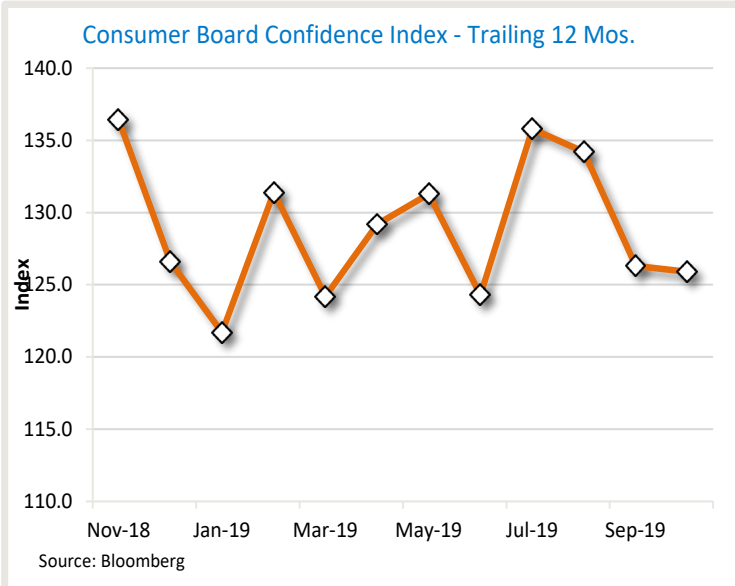
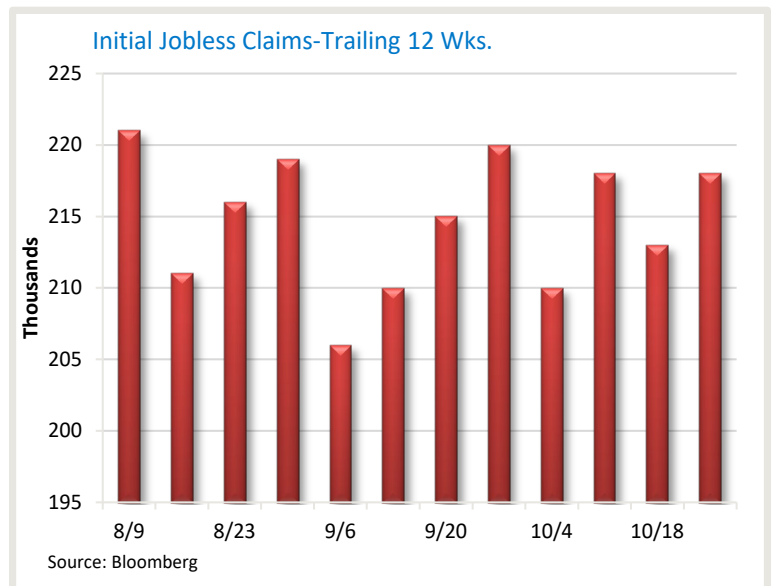
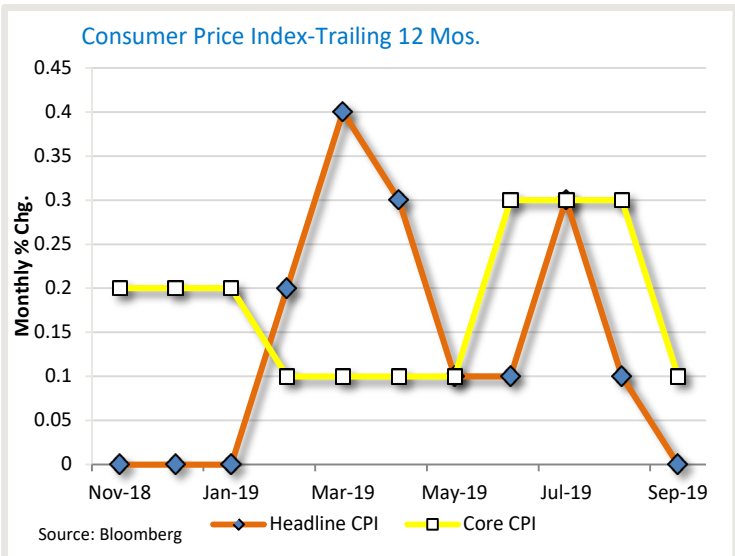
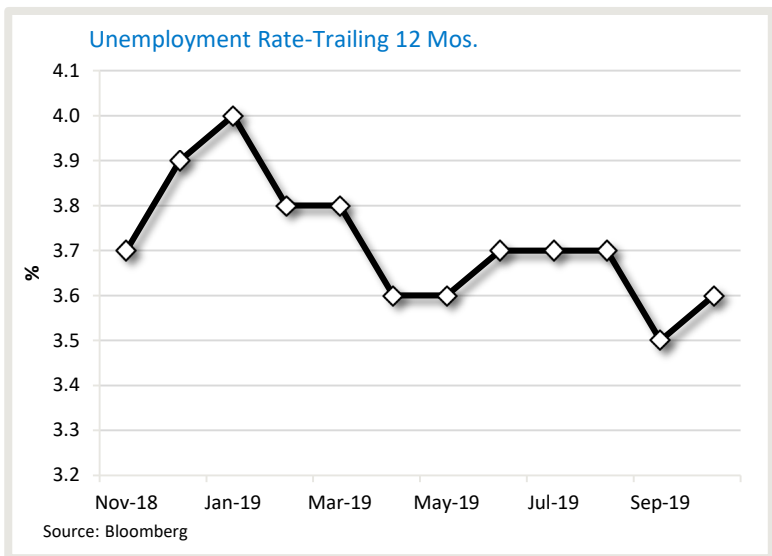
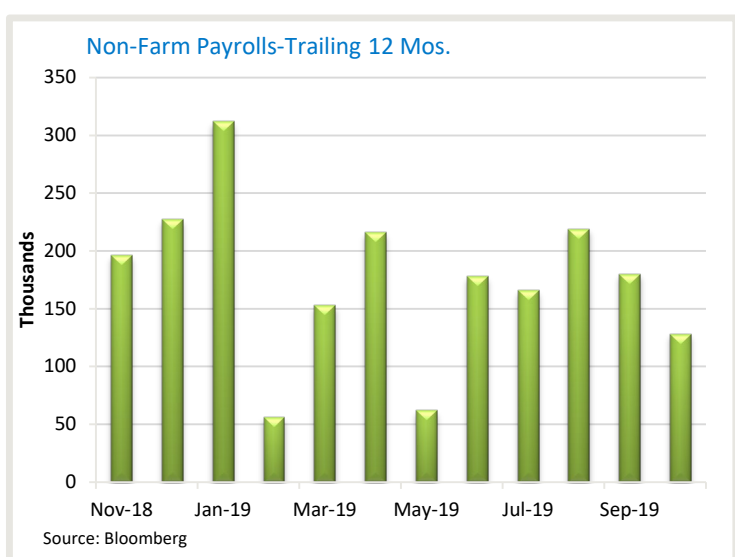
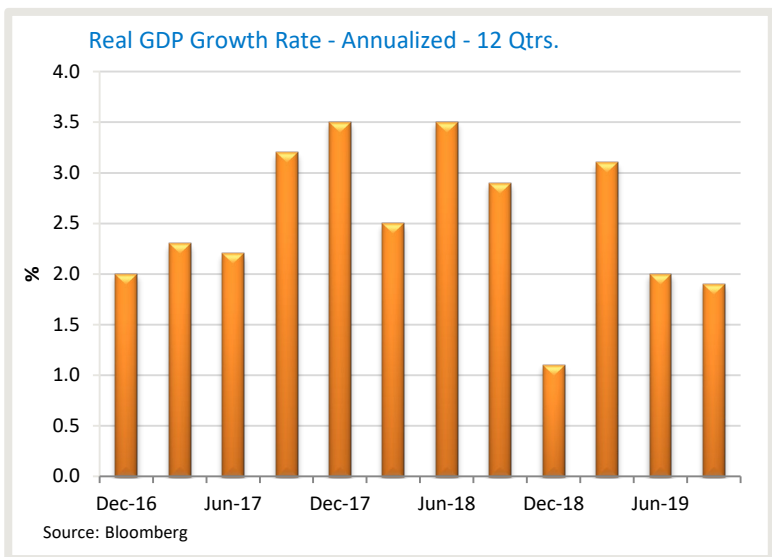
Scott Keller

Portfolio Manager

<sup>1</sup>Foxley, William, Coindesk, October 25, 2019.

<sup>2</sup>Graham, Benjamin. *The Intelligent Investor*, Harper Collins, New York, 1949.

## Economic Data



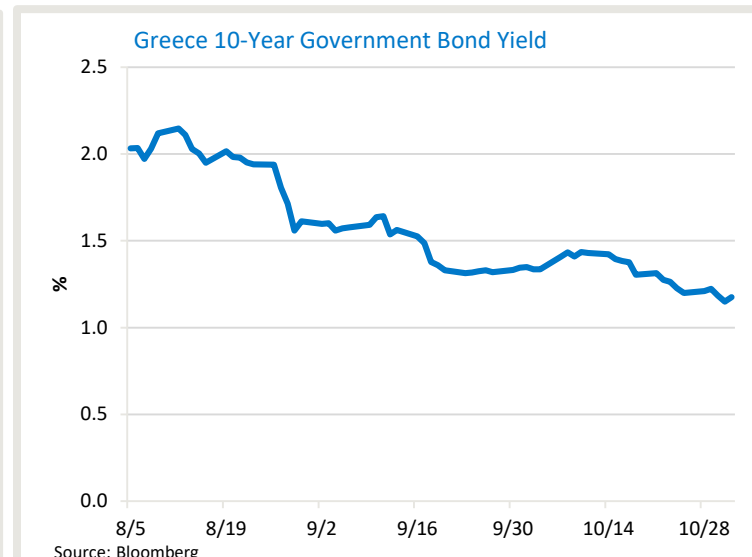
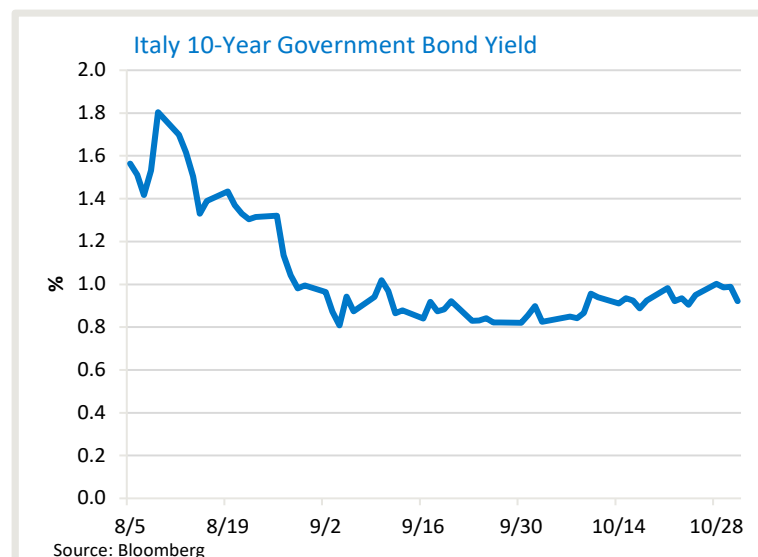
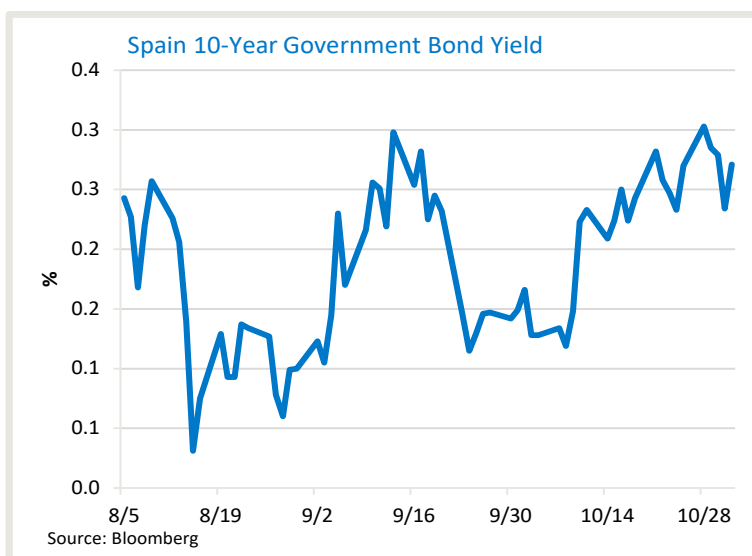
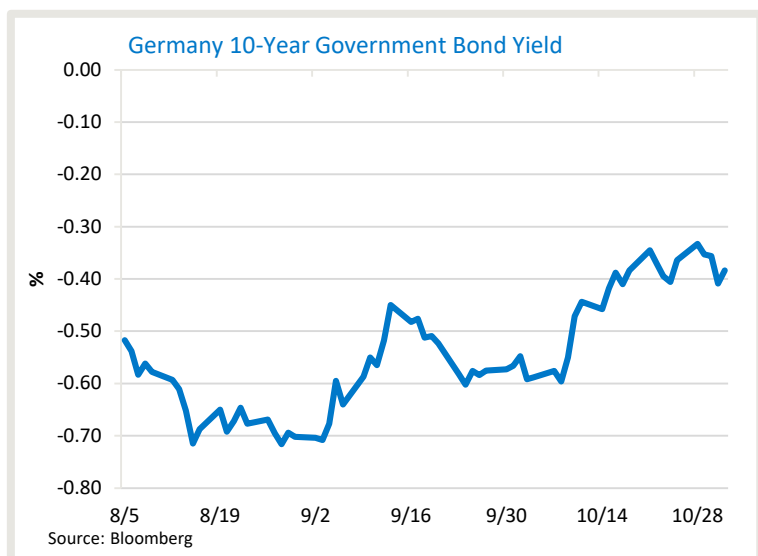
## Eurozone

### SELECTED EUROPEAN SOVEREIGN YIELD PERFORMANCE

	Last	Change	% Chg.	YTD %
Germany 10-Yr. Govt.	-0.38	2 bps	NM	NM
Greece 10-Yr. Govt.	1.18	2 bps	NM	NM
Italy 10-Yr. Govt.	0.99	-4 bps	NM	NM
Spain 10-Yr. Govt.	0.27	0 bps	NM	NM
Belgium 10-Yr. Govt.	-0.07	-1 bps	NM	NM

Source: Bloomberg  
Basis points (bps)

	Last	Change	% Chg.	YTD %
France 10-Yr. Govt.	-0.07	1 bps	NM	NM
Ireland 10-Yr. Govt.	0.03	2 bps	NM	NM
Portugal 10-Yr. Govt.	0.20	2 bps	NM	NM
Netherlands 10-Yr. Govt.	-0.25	2 bps	NM	NM
U.K. 10-Yr. Govt.	0.66	2 bps	NM	NM

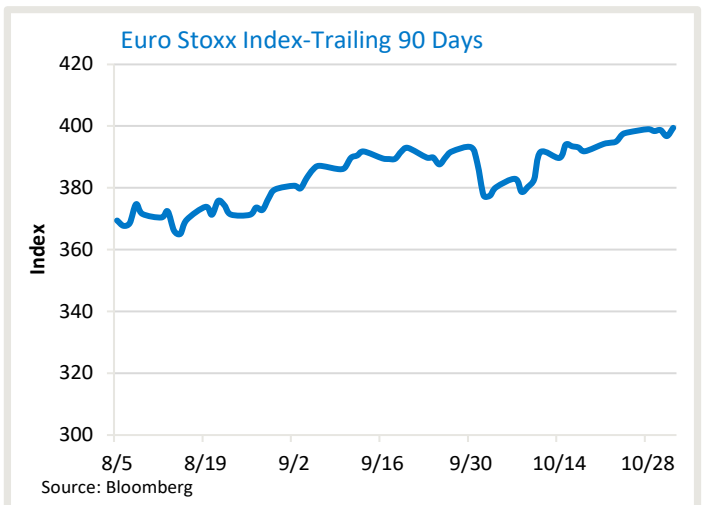
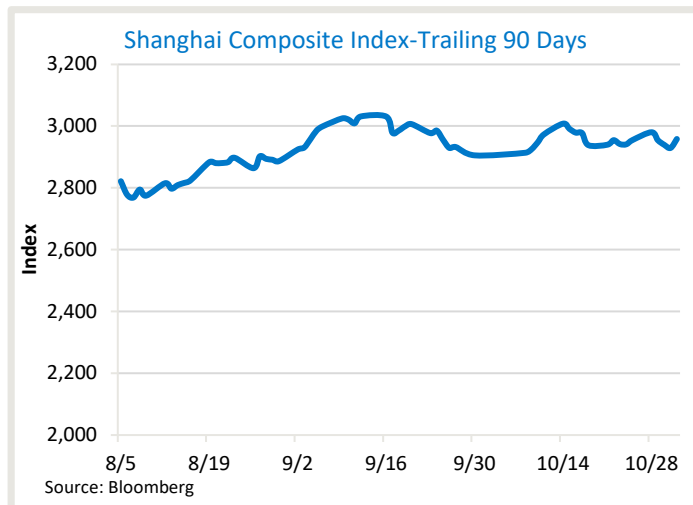
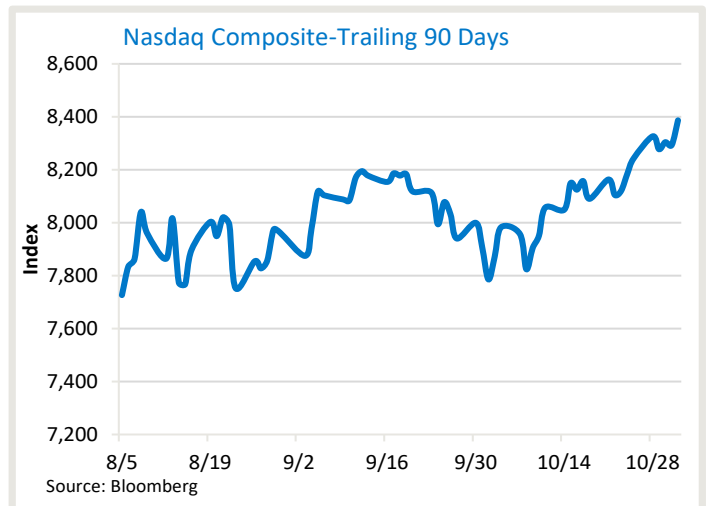
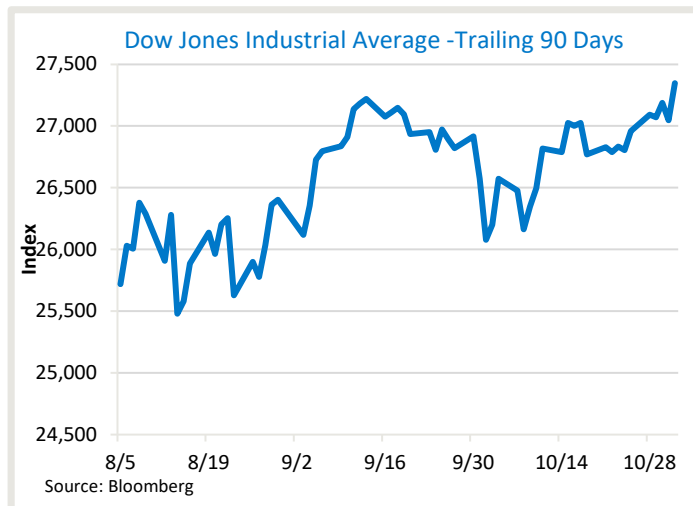


## Equities

### WORLD MARKET PERFORMANCE

	Last	Change	% Chg.	YTD %		Last	Change	% Chg.	YTD %
<b>S&amp;P 500</b>	<b>3,066.91</b>	<b>44.36</b>	<b>1.47%</b>	<b>22.34%</b>	<b>Swiss Market Index</b>	<b>10,252.24</b>	<b>55.15</b>	<b>0.54%</b>	<b>21.63%</b>
<b>Dow Industrials</b>	<b>27,347.36</b>	<b>389.30</b>	<b>1.44%</b>	<b>17.23%</b>	<b>CAC 40 Index (France)</b>	<b>5,761.89</b>	<b>39.74</b>	<b>0.69%</b>	<b>21.80%</b>
<b>Nasdaq Composite</b>	<b>8,386.40</b>	<b>143.28</b>	<b>1.74%</b>	<b>26.39%</b>	<b>DAX Index (Germany)</b>	<b>12,961.05</b>	<b>66.54</b>	<b>0.52%</b>	<b>22.75%</b>
<b>MSCI ACWI</b>	<b>534.41</b>	<b>2.64</b>	<b>0.50%</b>	<b>17.3%</b>	<b>Irish Overall Index</b>	<b>6,636.71</b>	<b>78.14</b>	<b>1.19%</b>	<b>21.11%</b>
<b>MSCI EM</b>	<b>1,041.98</b>	<b>6.14</b>	<b>0.59%</b>	<b>7.9%</b>	<b>Nikkei 225</b>	<b>22,850.77</b>	<b>50.96</b>	<b>0.22%</b>	<b>14.17%</b>
<b>S&amp;P/TSX (Canada)</b>	<b>16,594.07</b>	<b>189.58</b>	<b>1.16%</b>	<b>15.86%</b>	<b>Hang Seng Index</b>	<b>27,100.76</b>	<b>433.37</b>	<b>1.63%</b>	<b>4.86%</b>
<b>Mexico IPC</b>	<b>43,814.55</b>	<b>376.76</b>	<b>0.87%</b>	<b>5.10%</b>	<b>Shanghai Composite</b>	<b>2,958.20</b>	<b>3.27</b>	<b>0.11%</b>	<b>18.62%</b>
<b>Brazil Bovespa</b>	<b>108,195.60</b>	<b>831.80</b>	<b>0.77%</b>	<b>23.11%</b>	<b>Kospi Index (S. Korea)</b>	<b>2,100.20</b>	<b>12.31</b>	<b>0.59%</b>	<b>2.90%</b>
<b>Euro Stoxx 600</b>	<b>399.43</b>	<b>1.42</b>	<b>0.36%</b>	<b>18.30%</b>	<b>Taiwan Taiex Index</b>	<b>11,399.53</b>	<b>103.41</b>	<b>0.92%</b>	<b>17.19%</b>
<b>FTSE 100</b>	<b>7,302.42</b>	<b>-22.05</b>	<b>-0.30%</b>	<b>8.54%</b>	<b>Tel Aviv 25 Index</b>	<b>1,654.13</b>	<b>0.95</b>	<b>0.06%</b>	<b>13.00%</b>
<b>IBEX 35 (Spain)</b>	<b>9,328.00</b>	<b>-102.20</b>	<b>-1.08%</b>	<b>9.23%</b>	<b>MOEX Index (Russia)</b>	<b>2,930.40</b>	<b>56.99</b>	<b>1.98%</b>	<b>23.68%</b>

Source: Bloomberg; Index % change is based on price.



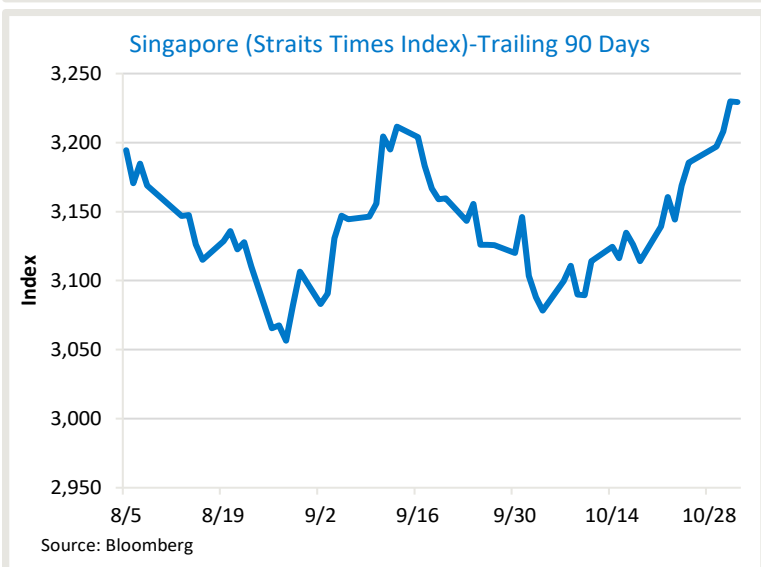
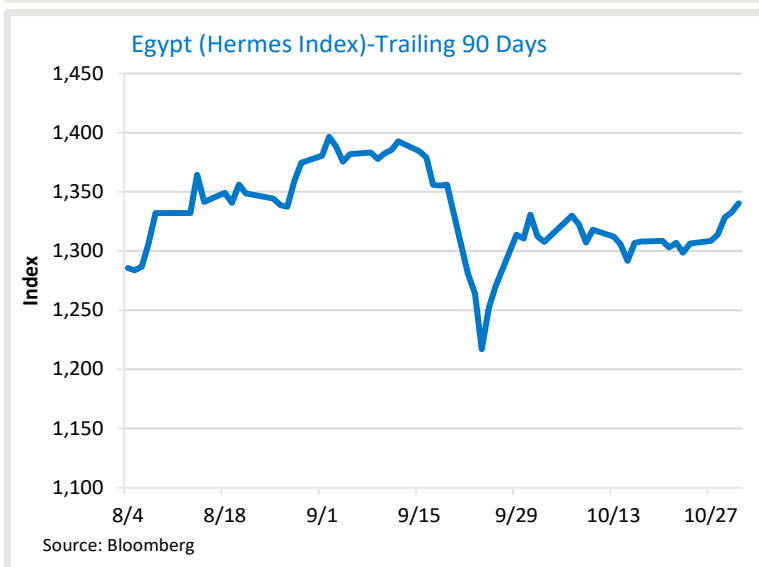
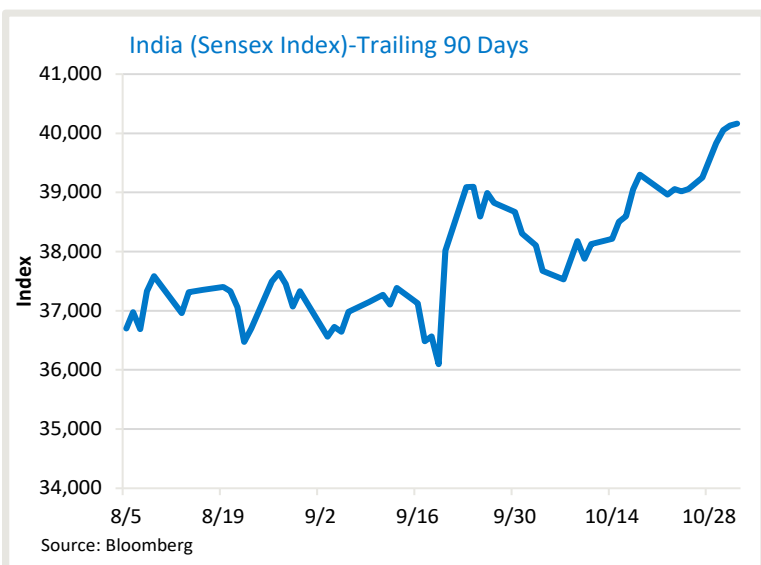
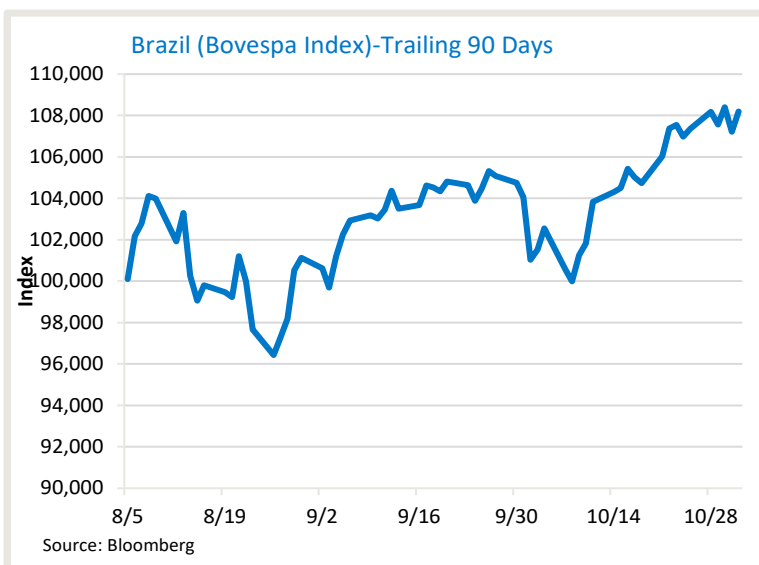
## Equities – Emerging and Frontier Markets

### EMERGING AND FRONTIER MARKET PERFORMANCE

	Last	Change	% Chg.	YTD %
Mexico IPC	43,814.55	376.76	0.9%	5.1%
Brazil (Bovespa Index)	108,195.60	831.80	0.8%	23.1%
MOEX Index (Russia)	2,930.40	56.99	2.0%	23.7%
Czech Republic (Prague)	1,061.83	0.29	0.0%	7.6%
Turkey (Istanbul)	98,462.73	-1753.27	-1.7%	7.9%
Egypt (Hermes Index)	1,340.29	34.05	2.6%	4.9%
Kenya (Nairobi 20 Index)	2,733.75	243.80	9.8%	-3.5%
Saudi Arabia (TASI Index)	7,744.08	-169.20	-2.1%	-1.1%
Lebanon (Beirut BLOM Index)	763.81	0.00	0.0%	-21.8%
Palestine	519.51	-3.57	-0.7%	-1.9%

Source: Bloomberg; Index % change is based on price.

	Last	Change	% Chg.	YTD %
Hang Seng Index	27,100.76	433.37	1.6%	4.9%
India (Sensex 30)	40,165.03	0.00	0.0%	11.4%
Malaysia (KLCI Index)	1,593.34	22.23	1.4%	-5.8%
Singapore (Straits Times Index)	3,229.43	60.56	1.9%	5.2%
Thailand (SET Index)	1,592.52	-0.76	0.0%	1.8%
Indonesia (Jakarta)	6,207.19	-45.15	-0.7%	0.2%
Pakistan (Karachi KSE 100)	34,377.61	720.15	2.1%	-7.3%
Vietnam (Ho Chi Minh)	1,015.59	19.02	1.9%	13.8%
Sri Lanka (Colombo)	6,032.08	96.82	1.6%	-0.3%
Cambodia (Laos)	693.25	4.48	0.7%	-17.1%

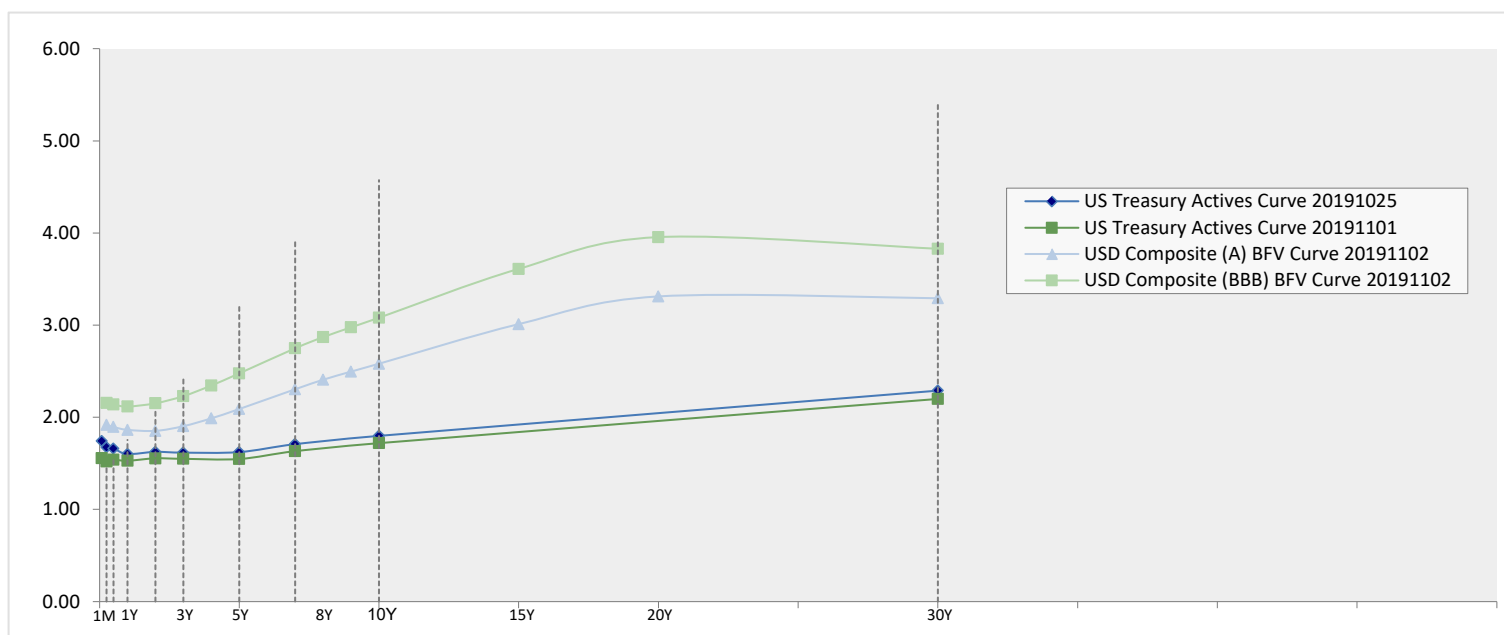


## Interest Rates

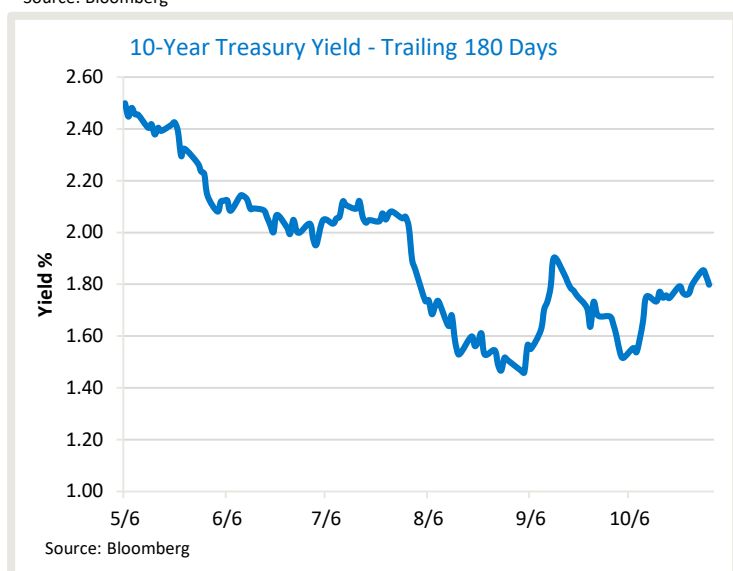
SELECTED INTEREST RATES

	Last	Change	% Chg.	YTD %		Last	Change	% Chg.	YTD %
2-Yr. U.S. Treasury	1.56%	1 bps	NM	NM	Prime Rate	4.75%	-0.25	NM	NM
5-Yr. U.S. Treasury	1.55%	-7 bps	NM	NM	Fed Funds Rate	1.75%	-0.25	NM	NM
10-Yr. U.S. Treasury	1.73%	-7 bps	NM	NM	Discount Rate	2.25%	-0.25	NM	NM
30-Yr. U.S. Treasury	2.21%	-8 bps	NM	NM	LIBOR (3 Mo.)	1.90%	-3 bps	NM	NM
German 10-Yr. Govt.	-0.38%	2 bps	NM	NM	Bond Buyer 40 Muni	2.72%	-4 bps	NM	NM
France 10-Yr.	-0.07%	1 bps	NM	NM	Bond Buyer 40 G.O.	2.79%	NA	NM	NM
Italy 10-Yr.	0.99%	-4 bps	NM	NM	Bond Buyer 40 Rev.	3.27%	NA	NM	NM
Fed 5-Yr Fwd BE Inf.	1.68%	5 bps	NM	NM					

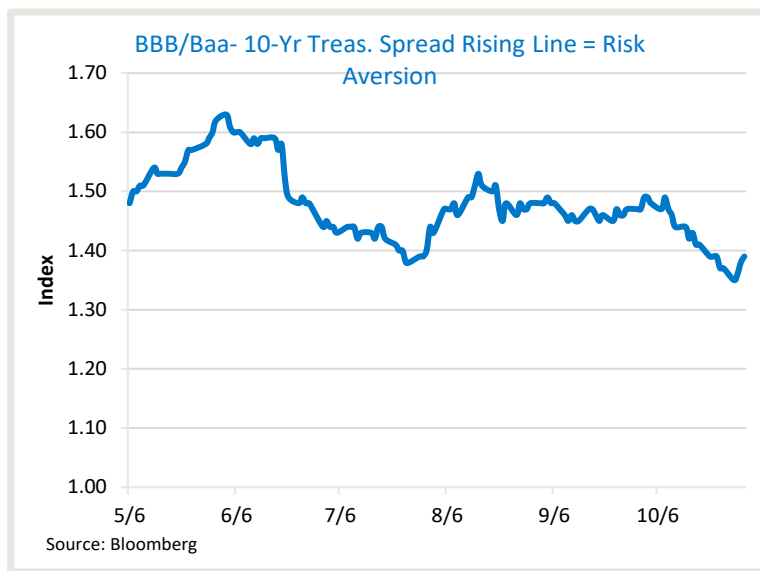
Source: Bloomberg



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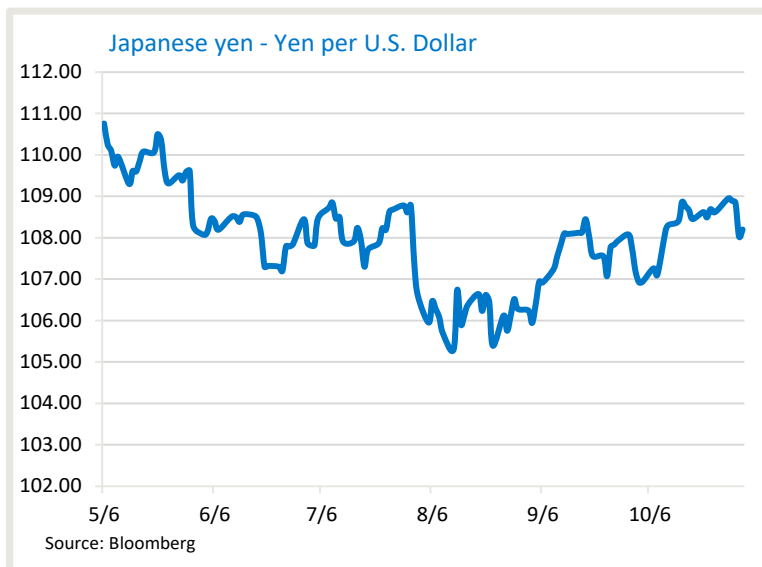
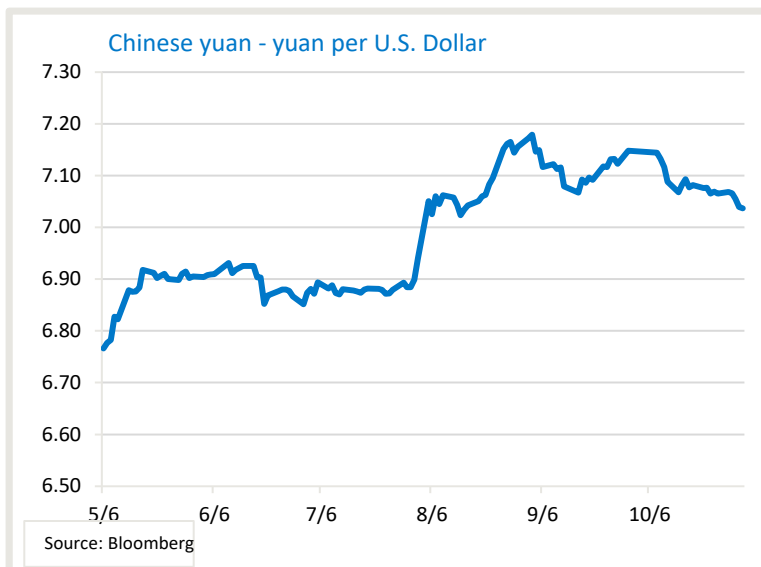
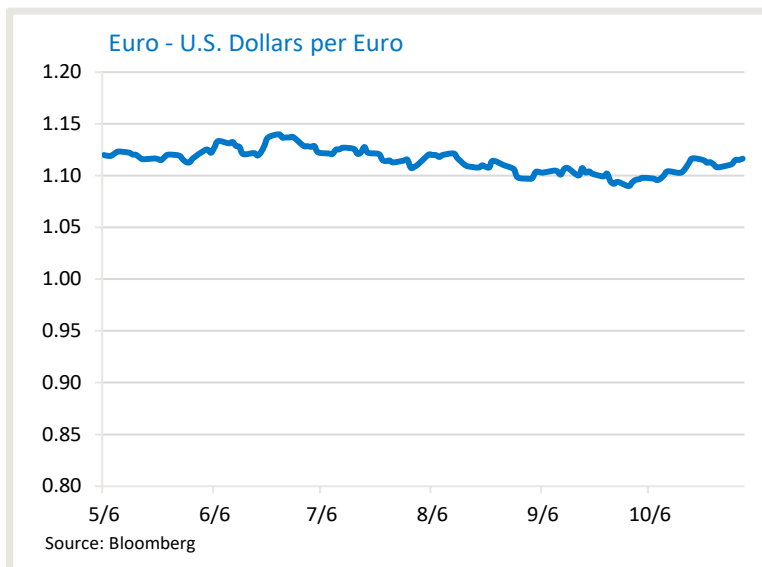
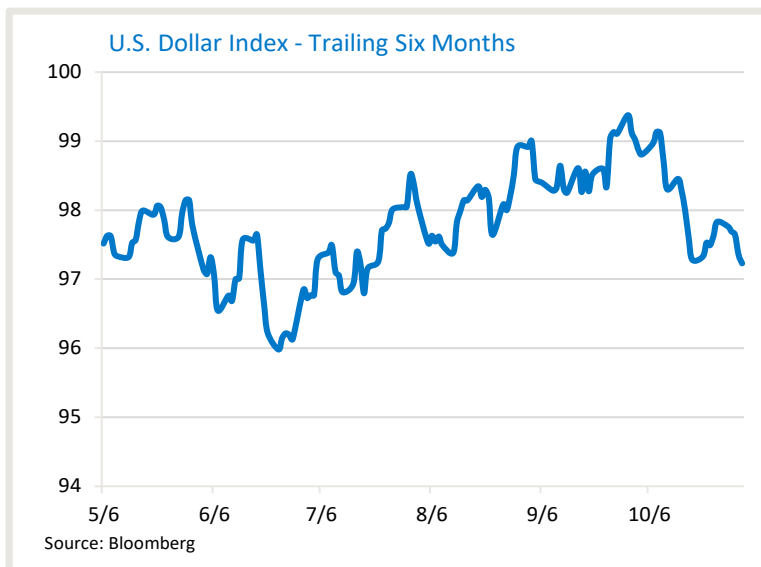
## Currencies

### SELECTED CURRENCY PERFORMANCE

	Last	Change	% Chg.	YTD %
<b>Dollar Index</b>	<b>97.22</b>	<b>-0.602</b>	<b>-0.62%</b>	<b>1.10%</b>
<b>Euro</b>	<b>1.12</b>	<b>0.008</b>	<b>0.76%</b>	<b>-2.64%</b>
<b>Japanese Yen</b>	<b>108.17</b>	<b>-0.470</b>	<b>0.43%</b>	<b>1.38%</b>
<b>British Pound</b>	<b>1.29</b>	<b>0.011</b>	<b>0.87%</b>	<b>1.45%</b>
<b>Canadian Dollar</b>	<b>1.31</b>	<b>0.009</b>	<b>-0.65%</b>	<b>3.75%</b>

	Last	Change	% Chg.	YTD %
<b>Chinese Yuan</b>	<b>7.04</b>	<b>-0.028</b>	<b>0.40%</b>	<b>-2.25%</b>
<b>Swiss Franc</b>	<b>0.99</b>	<b>-0.009</b>	<b>0.92%</b>	<b>-0.36%</b>
<b>New Zealand Dollar</b>	<b>0.64</b>	<b>0.009</b>	<b>1.34%</b>	<b>-4.24%</b>
<b>Brazilian Real</b>	<b>3.99</b>	<b>-0.010</b>	<b>0.26%</b>	<b>-2.96%</b>
<b>Mexican Peso</b>	<b>19.11</b>	<b>0.045</b>	<b>-0.23%</b>	<b>2.84%</b>

Source: Bloomberg

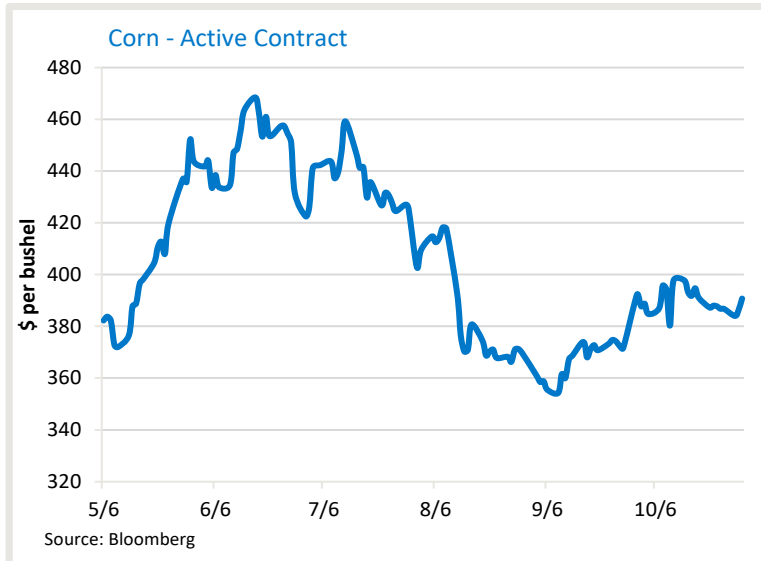
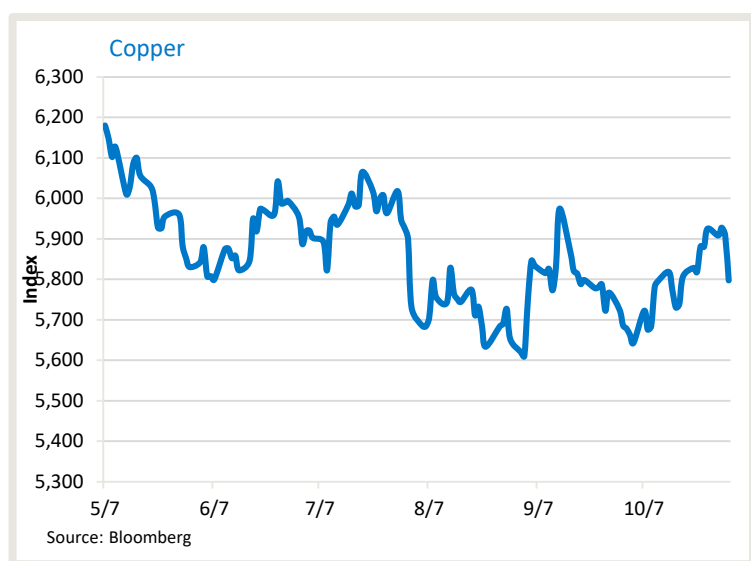
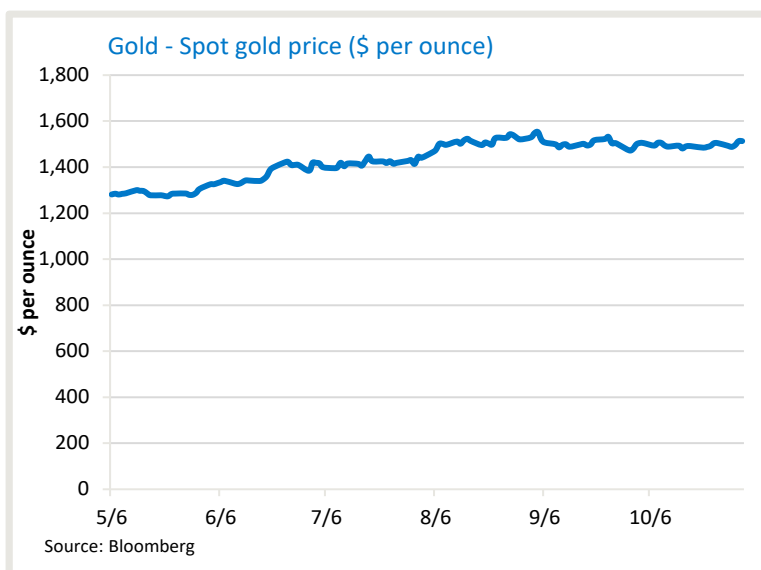
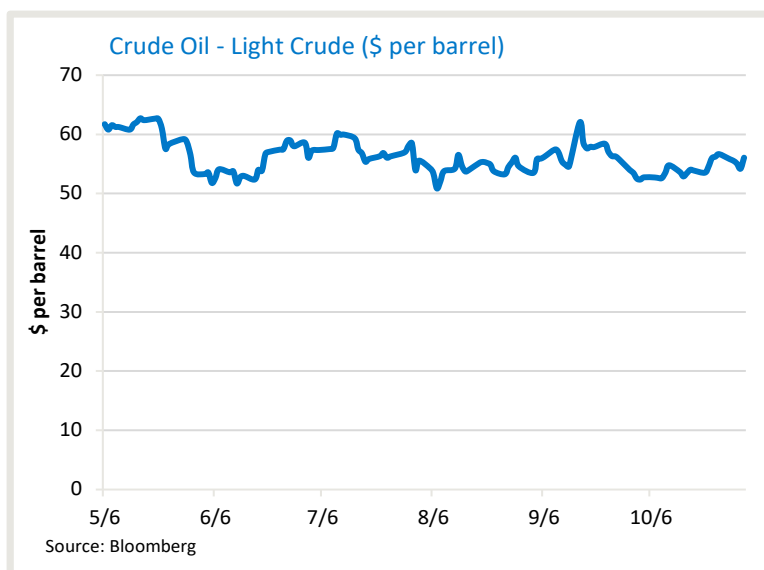


## Commodities

### SELECTED COMMODITY MARKET PERFORMANCE

	Last	Change	% Chg.	YTD %		Last	Change	% Chg.	YTD %
Bloomberg Comm. Idx.	80.26	0.76	0.96%	4.62%	Platinum Spot	\$949.92	\$23.22	2.51%	19.28%
Crude Oil	\$56.14	-\$0.60	-1.06%	15.87%	Corn	389.25	2.50	0.65%	-2.08%
Natural Gas	\$2.70	\$0.24	9.84%	-8.32%	Wheat	516.00	-1.75	-0.34%	-4.88%
Gasoline (\$/Gal.)	\$2.61	\$0.01	0.19%	15.82%	Soybeans	936.75	2.25	0.24%	-0.95%
Heating Oil	193.01	-4.27	-2.17%	11.61%	Sugar	12.48	0.13	1.05%	-5.10%
Gold Spot	\$1,513.80	\$8.54	0.57%	17.99%	Orange Juice	99.10	-2.10	-2.08%	-24.90%
Silver Spot	\$18.11	\$0.07	0.39%	16.87%	Aluminum	1,755.00	27.00	1.56%	-4.93%
					Copper	5,797.00	-128.00	-2.16%	-2.82%

Source: Bloomberg; % change is based on price.

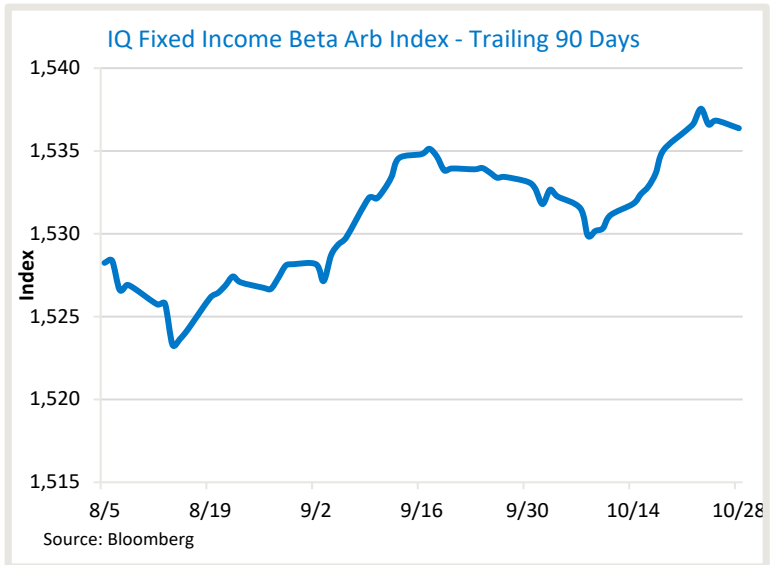
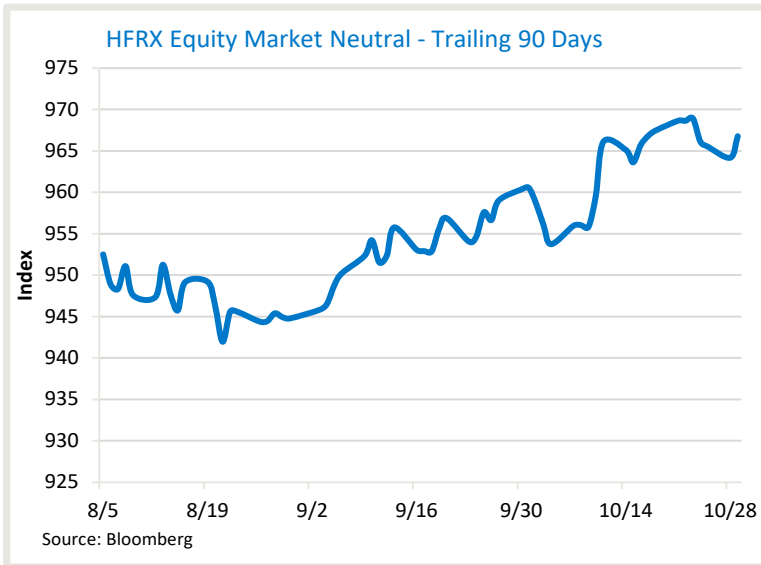
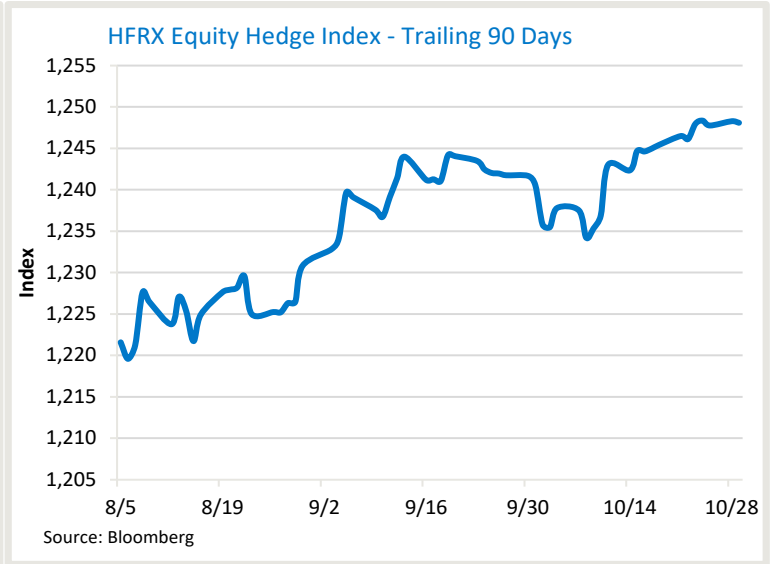
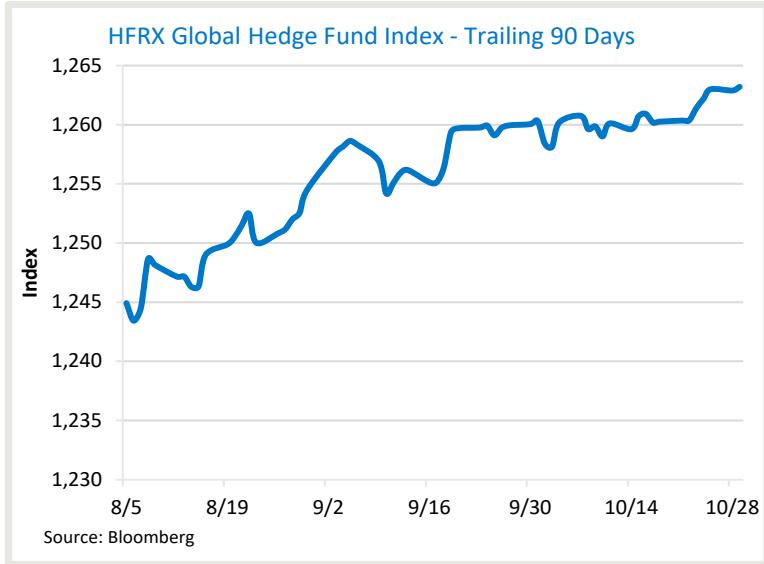


## Alternative Investments

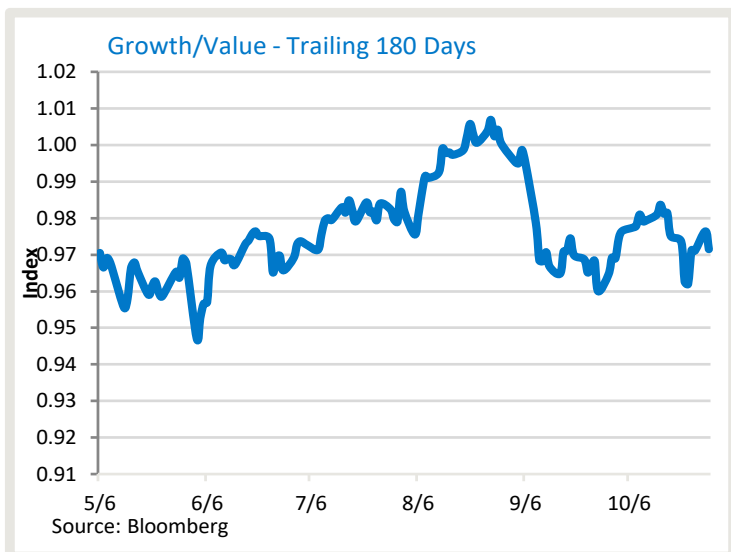
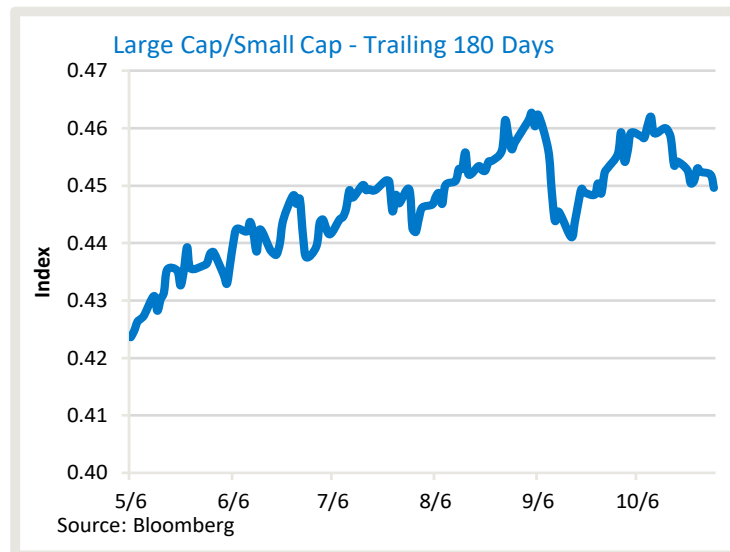
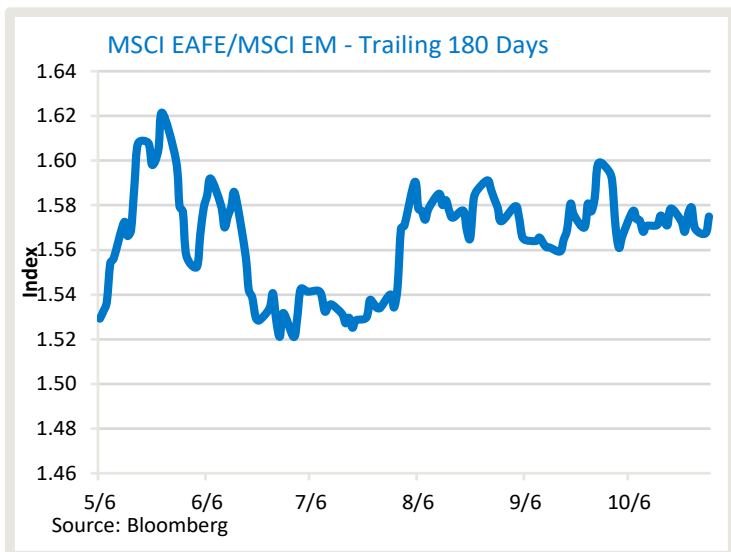
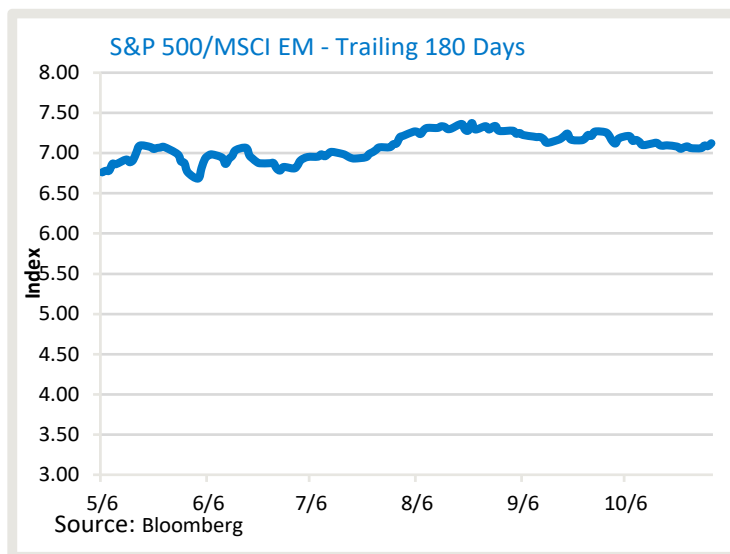
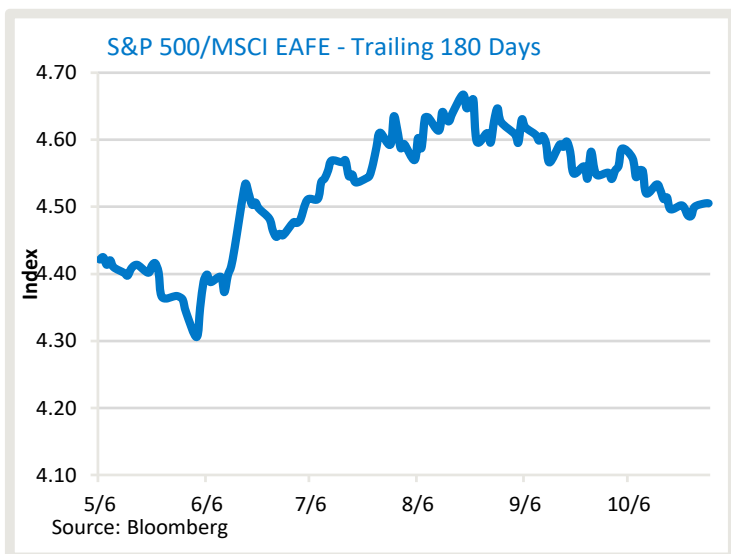
### SELECTED ALTERNATIVE INVESTMENT INDEX PERFORMANCE

	Last	Change	% Chg.	YTD %		Last	Change	% Chg.	YTD %
HFRX Global Hedge Fund Index	1263.10	0.10	0.01%	6.16%	HFRX Special Situation Index	1255.88	3.20	0.26%	4.39%
HFRX Equity Market Neutral	964.13	-1.38	-0.14%	-0.88%	HFRX Merger Arbitrage Index	1799.41	-0.53	-0.03%	-1.00%
HFRX Equity Hedge Index	1246.92	-0.84	-0.07%	8.32%	HFRX Convertible Arbitrage Index	817.80	1.32	0.16%	3.83%
HFRX Event-Driven Index	1552.95	3.72	0.24%	5.55%	HFRX Macro CTA Index	1165.03	-2.44	-0.21%	3.46%
HFRX Absolute Return Index	1092.49	0.16	0.01%	3.25%	IQ Fixed Income Beta Arb Index	1537.33	0.50	0.03%	5.11%

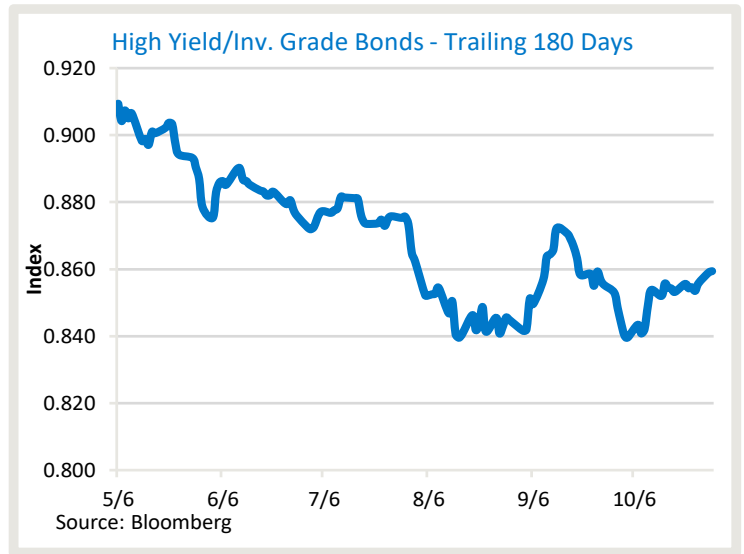
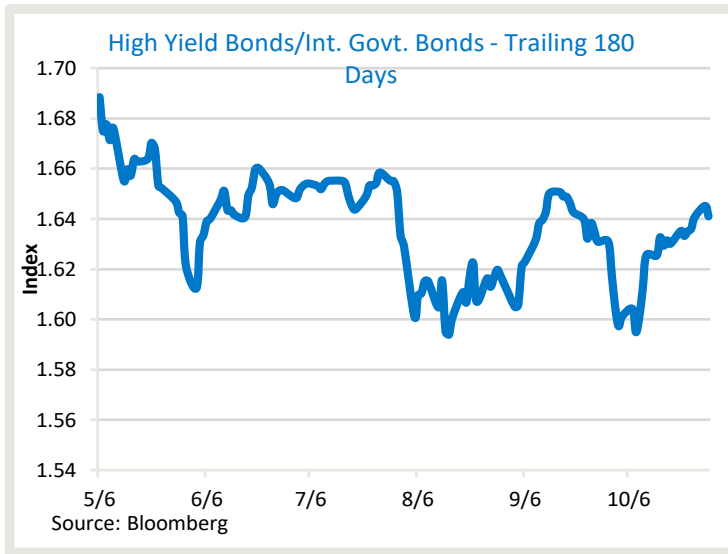
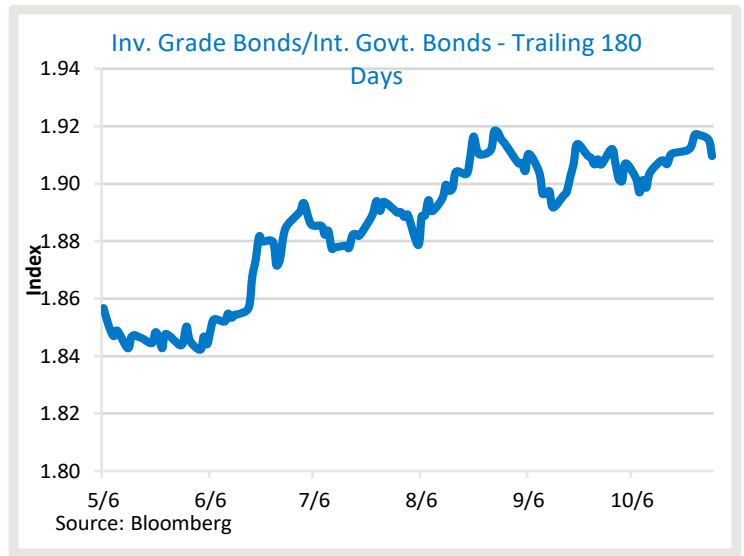
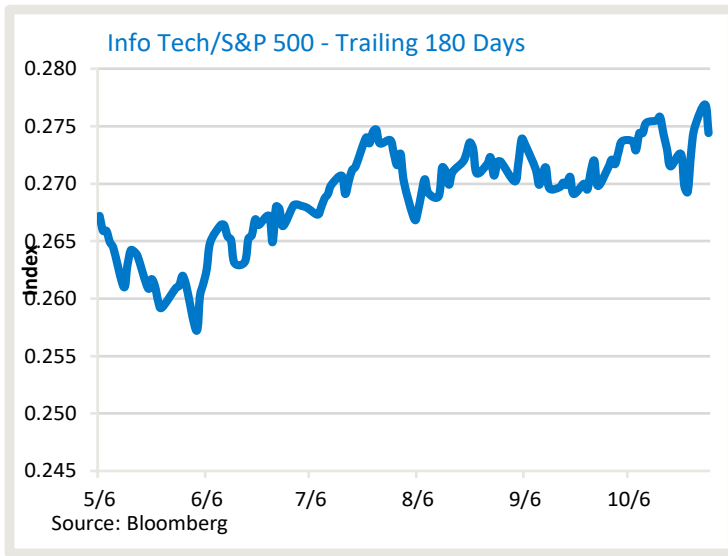
Source: Bloomberg; Index % change is based on price.



## Portfolio Construction



## Portfolio Construction (continued)



WEEKLY ASSET CLASS PERFORMANCE (Prior 12 weeks ending Thursday)

			8/15	8/22	8/29	9/5	9/12	9/19	9/26	10/3	10/10	10/17	10/24	10/31
Equity	Domestic Equity	Large Cap (R200)	-2.98%	2.63%	0.07%	1.73%	1.03%	-0.07%	-1.09%	-2.16%	1.10%	2.01%	0.29%	1.16%
		Small Cap (R2000)	-4.60%	3.03%	-0.62%	0.94%	4.26%	-0.86%	-1.80%	-3.06%	-0.07%	3.80%	0.54%	0.79%
	Int'l. Equity	MSCI EAFE	-2.66%	1.78%	0.11%	2.32%	1.68%	0.44%	-0.94%	-2.60%	0.86%	3.22%	1.02%	0.70%
		MSCI Em. Mkts.	-2.11%	1.26%	-0.57%	3.39%	1.93%	-0.56%	-0.72%	-1.69%	0.43%	3.20%	0.88%	0.44%
Fixed Income	BarCap Agg. (AGG)	0.86%	-0.39%	0.63%	-0.42%	-1.00%	0.08%	0.44%	0.57%	-0.48%	-0.34%	0.05%	0.33%	
	High Yield (JNK)	-0.53%	1.33%	0.33%	-0.27%	0.28%	0.07%	-0.17%	-1.37%	0.33%	0.72%	0.27%	-0.51%	
Commodities	Bloomberg Commodity Index	-0.44%	-0.37%	1.40%	0.70%	0.69%	1.06%	-0.96%	-1.14%	0.26%	0.82%	0.98%	-0.14%	
Alternatives	Hedge Funds (HFRX Global)	-0.19%	0.49%	0.01%	0.49%	-0.22%	0.27%	0.03%	-0.13%	0.07%	0.09%	0.16%	0.07%	
Asset Allocation	60/40*	-1.58%	1.35%	0.18%	0.97%	0.75%	-0.04%	-0.54%	-1.30%	0.32%	1.54%	0.37%	0.64%	
	48/32/20 (w/Alts.)**	-1.30%	1.18%	0.15%	0.87%	0.55%	0.03%	-0.43%	-1.06%	0.27%	1.25%	0.33%	0.53%	

Source: Bloomberg; \*60/40 portfolio = 30% Large Cap/10% Small Cap/15% EAFE/5% Emerging Markets/35% BarCap Agg./5% High Yield.

\*\*48/32/20 portfolio = 24% Large Cap/8% Small Cap/12% EAFE/4% Emerging Markets/28% BarCap Agg./4% High Yield/20% HFRX Global Index.

RELATIVE STRENGTH MATRIX (BASED ON 30-DAY RSI)

	Large Cap Core	Large Cap Growth	Large Cap Value	Mid Cap Core	Mid Cap Growth	Mid Cap Value	Small Cap Core	Small Cap Growth	Small Cap Value	Int'l. Developed	Emerging Markets	REITs	Comm.	Int. Bond	High Yield
Large Cap Core	1.00	1.01	1.00	1.06	1.08	1.05	1.05	1.07	1.03	0.91	0.96	1.00	1.07	1.06	1.18
Large Cap Growth	0.99	1.00	0.99	1.05	1.07	1.04	1.04	1.06	1.02	0.90	0.95	0.99	1.06	1.05	1.16
Large Cap Value	1.00	1.01	1.00	1.06	1.08	1.05	1.05	1.07	1.03	0.91	0.96	1.00	1.07	1.06	1.18
Mid Cap Core	0.94	0.96	0.94	1.00	1.02	0.99	0.99	1.01	0.97	0.86	0.91	0.94	1.01	1.00	1.11
Mid Cap Growth	0.92	0.93	0.92	0.98	1.00	0.97	0.97	0.99	0.95	0.84	0.89	0.92	0.99	0.98	1.09
Mid Cap Value	0.95	0.96	0.95	1.01	1.03	1.00	1.00	1.02	0.98	0.87	0.92	0.95	1.02	1.01	1.12
Small Cap Core	0.95	0.97	0.95	1.01	1.03	1.00	1.00	1.02	0.98	0.87	0.92	0.95	1.02	1.01	1.12
Small Cap Growth	0.93	0.94	0.93	0.99	1.01	0.98	0.98	1.00	0.96	0.85	0.90	0.93	1.00	0.99	1.09
Small Cap Value	0.97	0.98	0.97	1.03	1.05	1.02	1.02	1.04	1.00	0.88	0.93	0.97	1.04	1.03	1.14
Int'l. Developed	1.10	1.11	1.10	1.17	1.19	1.15	1.15	1.18	1.13	1.00	1.06	1.10	1.18	1.17	1.29
Emerging Markets	1.04	1.05	1.04	1.10	1.13	1.09	1.09	1.12	1.07	0.95	1.00	1.04	1.11	1.10	1.22
REITs	1.00	1.01	1.00	1.06	1.08	1.05	1.05	1.07	1.03	0.91	0.96	1.00	1.07	1.06	1.18
Commodities	0.94	0.95	0.93	0.99	1.01	0.98	0.98	1.00	0.96	0.85	0.90	0.93	1.00	0.99	1.10
Int. Bond	0.94	0.96	0.94	1.00	1.02	0.99	0.99	1.01	0.97	0.86	0.91	0.94	1.01	1.00	1.11
High Yield	0.85	0.86	0.85	0.90	0.92	0.89	0.89	0.91	0.88	0.77	0.82	0.85	0.91	0.90	1.00

Source: Bloomberg

The Relative Strength Matrix provides an indication of how the various asset classes have performed relative to one another over the past 30 days. A number greater than 1.0 indicates that the asset class in the far left column has outperformed the corresponding asset class in the top row over the past 30 days. A number below 1.0 means the asset class on the left has underperformed the asset class at the top. The green shading indicates outperformance, and the red shading indicates underperformance.

### Index Overview & Key Definitions

**Fed, The Fed or FED** refers to the Federal Reserve System, the central bank of the United States. The **Federal Open Market Committee** (FOMC) is the monetary policymaking body of the Federal Reserve System. **Fed Funds Rate**, the interest rate at which a depository institution lends funds maintained at the Federal Reserve to another depository institution overnight. The **European Central Bank** (ECB) is the central bank for Europe's single currency, the euro. The ECB's main task is to maintain the euro's purchasing power and thus price stability in the euro area. The euro area comprises the 19 European Union countries that have introduced the euro since 1999. The **Gross Domestic Product** (GDP) rate is a measurement of the output of goods and services produced by labor and property located in the United States. **Basis Point(s)** is a unit that is equal to 1/100th of 1%, and is used to denote the change in a financial instrument. The basis point is commonly used for calculating changes in interest rates, equity indexes and the yield of a fixed-income security. A **separately managed account** (SMA) is an individual managed investment account offered typically by a brokerage firm through one of their brokers or financial consultants and managed by independent investment management firms (often called money managers for short) and have varying fee structures. The **Consumer Price Index** (CPI) measures the change in the cost of a fixed basket of products and services. The **Producer Price Index** (PPI) program measures the average change over time in the selling prices received by domestic producers for their output. The prices included in the PPI are from the first commercial transaction for many products and some services. **Core CPI** is an additional CPI Index, excludes energy and food item price changes, and measures the "core" or "underlying" rate of inflation. The PCE (Personal Consumption Expenditure) Index of Prices is a US-wide indicator of the average increase in prices for all domestic personal consumption. Using a variety of data including U.S. Consumer Price Index and Producer Price Index prices, it is derived from personal consumption expenditures; essentially a measure of goods and services targeted towards individuals and consumed by individuals. The **Purchasing Managers' Index** (PMI) is an indicator of the economic health of the manufacturing sector. The PMI is based on five major indicators: new orders, inventory levels, production, supplier deliveries and the employment environment. **Brexit** is a commonly used term for the United Kingdom's withdrawal from the European Union. The **Kansas City Fed Manufacturing Survey** monitors manufacturing plants selected according to geographic distribution, industry mix and size in the Tenth Federal Reserve District. **West Texas Intermediate** (WTI), also known as Texas light sweet, is a grade of crude oil used as a benchmark in oil pricing. **Risk Premium** is the return in excess of the risk-free rate of return an investment is expected to yield. **LIBOR or ICE LIBOR** (previously BBA LIBOR) is a benchmark rate, which some of the world's leading banks charge each other for short-term loans. It stands for Intercontinental Exchange London Interbank Offered Rate and serves as the first step to calculating interest rates on various loans throughout the world.

The **Dow Jones Industrial Average** (DOW or DJIA) is an unmanaged index of 30 common stocks comprised of 30 actively traded blue chip stocks, primarily industrials and assumes reinvestment of dividends. The **S&P 500 Index** is an unmanaged index comprised of 500 widely held securities considered to be representative of the stock market in general. The **S&P/Case-Shiller Home Price Indices** measure the residential housing market, tracking changes in the value of the residential real estate market in 20 metropolitan regions across the United States. The **Nasdaq Composite Index** is a stock market index of the common stocks and similar securities listed on the NASDAQ stock market. The **US Dollar Index** is a measure of the value of the United States dollar relative to a basket of foreign currencies. It is a weighted geometric mean of the dollar's value relative to other select currencies (Euro, Japanese yen, Pound sterling, Canadian dollar, Swedish krona (SEK) & Swiss franc). The **FTSE 100 Index** (FTSE 100) is a share index of the 100 companies listed on the London Stock Exchange (LSE) with the highest market capitalization. The **Bloomberg Commodity Index** (formerly the **Dow Jones-UBS Commodity Index**) tracks prices of futures contracts on physical commodities on the commodity markets and is designed to minimize concentration in any one commodity or sector (currently 22 commodity futures in seven sectors). The **Barclays Capital US Credit Index** is an unmanaged index considered representative of publicly issued, SEC-registered US corporate and specified foreign debentures and secured notes. The **Barclays Capital US Aggregate Bond Index** is a market capitalization-weighted index of investment-grade, fixed-rate debt issues, including government, corporate, asset-backed, and mortgage-backed securities, with maturities of at least one year. The **Barclays Capital US Corporate High Yield Index** covers the USD-denominated, non-investment grade, fixed-rate, taxable corporate bond market. Securities are classified as high-yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below. The index may include emerging market debt. The **Barclays Capital Municipal Bond Index** is an unmanaged index comprised of investment-grade, fixed-rate municipal securities representative of the tax-exempt bond market in general. The **Barclays Capital US Treasury Total Return Index** is an unmanaged index of public obligations of the US Treasury with a remaining maturity of one year or more. The **Barclays Capital Global Aggregate ex-U.S. Index** is a market capitalization-weighted index, meaning the securities in the index are weighted according to the market size of each bond type. Most U.S. traded investment grade bonds are represented. Municipal bonds, and Treasury Inflation-Protected Securities are excluded, due to tax treatment issues. The index includes Treasury securities, Government agency bonds, Mortgage-backed bonds, Corporate bonds, and a small amount of foreign bonds traded in U.S. The **Barclays Capital U.S. 5-10 Year Corporate Bond Index** measures the investment return of U.S. dollar denominated, investment-grade, fixed rate, taxable securities issued by industrial, utility, and financial companies with maturities between 5 and 10 years. Treasury securities, mortgage-backed securities (MBS) foreign bonds, government agency bonds and corporate bonds are some of the categories included in the index. The **Barclays Capital U.S. Corporate High-Yield Index** is composed of fixed-rate, publicly issued, non-investment grade debt. The **Barclays Capital U.S. Corporate 5-10 Year Index** includes U.S. dollar-denominated, investment-grade, fixed-rate, taxable securities issued by industrial, utility, & financial companies, with maturities between 5 & 10 years. The **Russell 1000 Index** is a market capitalization-weighted benchmark index made up of the 1000 largest U.S. companies in the Russell 3000 Index. The **Russell 1000 Growth Index** is an unmanaged index considered representative of large-cap growth stocks. The **Russell 1000 Value Index** is an unmanaged index considered representative of large-cap value stocks. The **Russell 2000 Index** is an unmanaged index considered representative of small-cap stocks. The **Russell 2000 Growth Index** is an unmanaged index considered representative of small-cap growth stocks. The **Russell 2000 Value Index** is an unmanaged index considered representative of small-cap value stocks. The **Russell 3000 Index** is an unmanaged index considered representative of the US stock market. The **Russell Midcap Index** is a subset of the Russell 1000 Index. It includes approximately 800 of the smallest securities based on a combination of their market cap and current index membership. The **Russell Midcap Growth Index** is an unmanaged index considered representative of mid-cap growth stocks. The **Russell Midcap Value Index** is an unmanaged index considered representative of mid-cap value stocks. The **HFRX Indices** are a series of benchmarks of hedge fund industry performance which are engineered to achieve representative performance of a larger universe of hedge fund strategies. Hedge Fund Research, Inc. employs the HFRX Methodology (UCITS compliant), a proprietary and highly quantitative process by which hedge funds are selected as constituents for the HFRX Indices. The **University of Michigan Consumer Sentiment Index** (MCSI) is a survey of consumer confidence conducted by the University of Michigan using telephone surveys to gather information on consumer expectations regarding the overall economy. The **CBOE Volatility Index** (VIX) is an up-to-the-minute market estimate of expected volatility that is calculated by using real-time S&P 500 Index option bid/ask quotes. The Index uses nearby and second nearby options with at least 8 days left to expiration and then weights them to yield a constant, 30-day measure of the expected volatility of the S&P 500 Index. The **MSCI EAFE Index** is designed to measure the equity market performance of developed markets outside of the U.S. & Canada. The **MSCI EAFE Growth Index** is an unmanaged index considered representative of growth stocks of Europe, Australasia and the Far East. The **MSCI EAFE Value Index** is an unmanaged index considered representative of value stocks of Europe, Australasia and the Far East. The **MSCI EM (Emerging Markets) Latin America Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of emerging markets in Latin America. The **MSCI World ex-U.S. Index** captures large and mid-cap representation across 22 of 23 Developed Markets (DM) countries - excluding the US. With 1,002 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country. The **MSCI Japan Index** is designed to measure the performance of the large and mid-cap segments of the Japanese market. With 320 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Japan. The **MSCI Emerging Markets Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets. The **MSCI Europe Index** is an unmanaged index considered representative of stocks of developed European countries. The **MSCI Pacific Index** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of the developed markets in the Pacific region. The **Barclays Intermediate US Government/Credit Bond Index** is a market capitalization-weighted index of investment-grade, fixed-rate debt issues, including Treasuries, government-related and U.S. corporate securities, with maturities of at least one year and less than 10 years. The **NY Empire State Manufacturing Index** is based on the monthly survey of manufacturers in New York State – known as the Empire State Manufacturing Survey – conducted by the Federal Reserve Bank of New York. The **S&P The Dow Jones Wilshire U.S. REIT Index** tracks the performance of publicly traded REITs and REIT-like securities and is designed to serve as a proxy for direct real estate investment, in part by excluding companies whose performance may be driven by factors other than the value of real estate. The **Russell Top 200 Index** measures the performance of the 200 largest companies in the Russell 1000 Index, with a weighted average market capitalization of \$186 billion. The **Barclays 1-3 Year US Treasury Bond Index** measures public US Treasury obligations with remaining maturities of one to three years. The **S&P LSTA Leveraged Loan Index** is an unmanaged capitalization-weighted syndicated loan index based upon market weightings, spreads and interest payments. It covers the US market back to 1997 and currently calculates on a daily basis. The **NFIB Small Business Optimism Index** is compiled from a survey that is conducted each month by the National Federation of Independent **Business** (NFIB) of its members



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Exchange Traded Funds (ETFs) are subject to risks similar to those of stocks, such as market risk. Investing in ETFs may bear indirect fees and expenses charged by ETFs in addition to its direct fees and expenses, as well as indirectly bearing the principal risks of those ETFs. ETFs may trade at a discount to their net asset value and are subject to the market fluctuations of their underlying investments. Investing in commodities can be volatile and can suffer from periods of prolonged decline in value and may not be suitable for all investors.

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