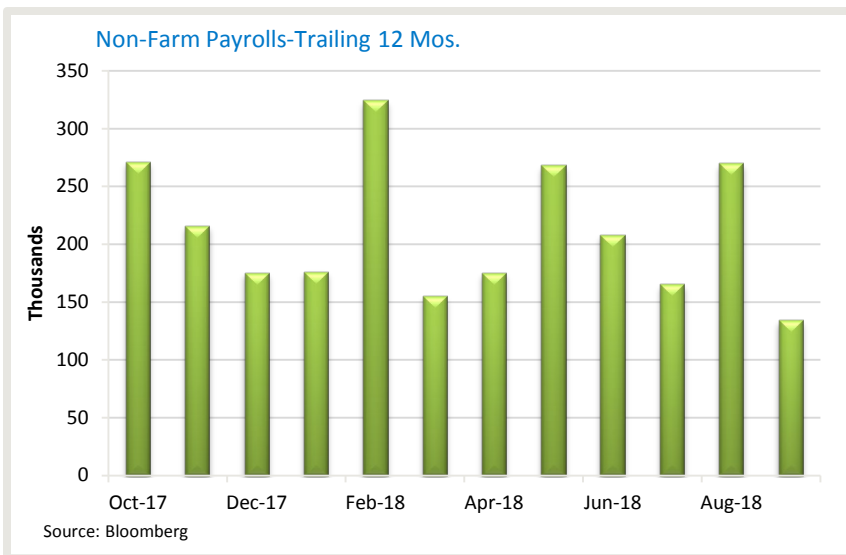


Weekly Market Review

October 12, 2018

Chart of the Week



Weekly Highlights

- **Global equity markets hit hard.** US equity markets led the way sharply lower this week, following up on last week's declines. US equity indices were down 4%-6%, before rebounding by 1%-1.5% in early trade Friday. The Russell 3000 Index was up 10.5% for the year through the end of September, but is up a little more than 4% for the year after October's losses are taken away.
- **Inflation remains tame.** Wholesale prices, as measured by the Producer Price Index, rose 0.2% in September and 2.6% on a trailing 12-month basis. The monthly rise reversed the fall in the PPI for August, and the annual increase was slightly smaller than the 2.8% increase for the 12-month period ending in August. The Consumer Price Index (CPI) was up just 0.1% in August, less than the 0.2% that was forecast. The trailing 12-month increase of 2.3% was down 0.4% from August.
- **Social Security benefits to rise 2.8%.** Based on the CPI numbers through August, retirement benefits paid to Americans receiving Social Security will jump by the largest amount since 2012.
- **Unemployment claims slightly higher.** Initial jobless claims rose slightly (+7,000) in the most recent reading to 214,000. The four-week moving average also rose very modestly, but remains near 50-year lows.

Talking Points

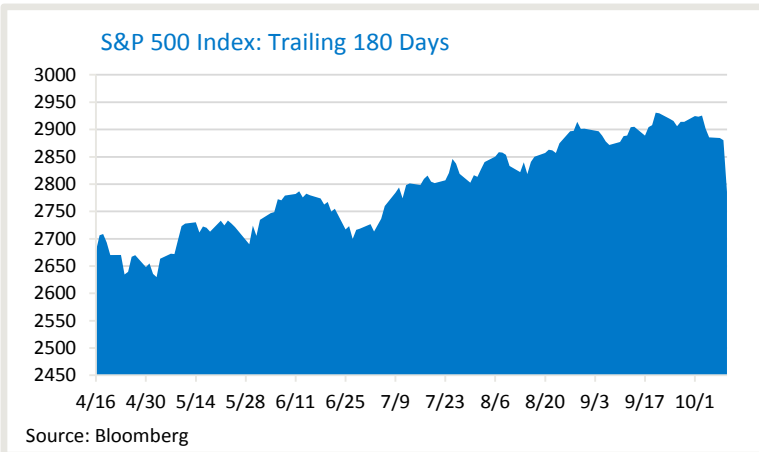
- **Global equities** followed the US lead for the week, with European markets down roughly 4% and Asian markets down more than 5%. Emerging markets equities also were down more than 5%, led by China at -6.7%. The Latin American markets were the only positive region for the week, driven by a post-election rally in Brazil.
- **Treasury yields mostly lower.** After last week's sharp rise, Treasury rates fell back in a shortened week of trading. Both 10-year and 30-year yields were down roughly eight basis points to 3.16% and 3.33%, respectively. Treasury notes from 3-months to 1-year were up 2 to 4 basis points.
- **The US Dollar Index** was modestly lower on the week. A slight weakening against both the euro and yen was partially offset by strength against the Chinese yuan.
- **Crude oil** finished the week down more than 3% after a modest rise in the first half of the week. Falling global equity prices and rising supplies were the driving factors in the Thursday sell-off.
- **Among other economic data released this week:** The IMF cut its forecast for global growth by 0.2% to 3.7% for both 2018 and 2019. Several banks opened up the third quarter earnings season with upbeat reports. JPMorgan Chase, Citigroup, Wells Fargo, and PNC Bank all reported increases in net earnings.

Market Dashboard

	Last Price	Change	% Chg.	YTD %
S&P 500	2,767.13	-118.44	-4.10%	3.5%
Dow Industrials	25,339.99	-1,107.06	-4.19%	2.5%
Nasdaq	7,496.90	-291.55	-3.74%	8.6%
Russell 2000	1,546.68	-85.43	-5.23%	0.7%
Euro Stoxx Index	358.95	-17.46	-4.64%	-7.8%
Shanghai Composite	2,606.91	-214.44	-7.60%	-21.2%
Russell Global	2,085.51	-105.51	-4.92%	-4.9%

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

	Last Price	Change	% Chg.	YTD %
Russell Global EM	2,989.23	-143.34	-4.58%	-18.0%
10-Year US Treas.	3.14	-8 bps	NM	NM
Bloomberg Cmnts. Idx.	86.24	-0.66	-0.76%	-2.2%
Gold	\$1,217.82	\$14.38	1.19%	-6.5%
Crude Oil	\$71.51	-\$2.82	-3.79%	22.5%
Dollar Index	95.27	-0.35	-0.36%	3.4%
VIX Index	21.31	6.47	43.66%	92.8%



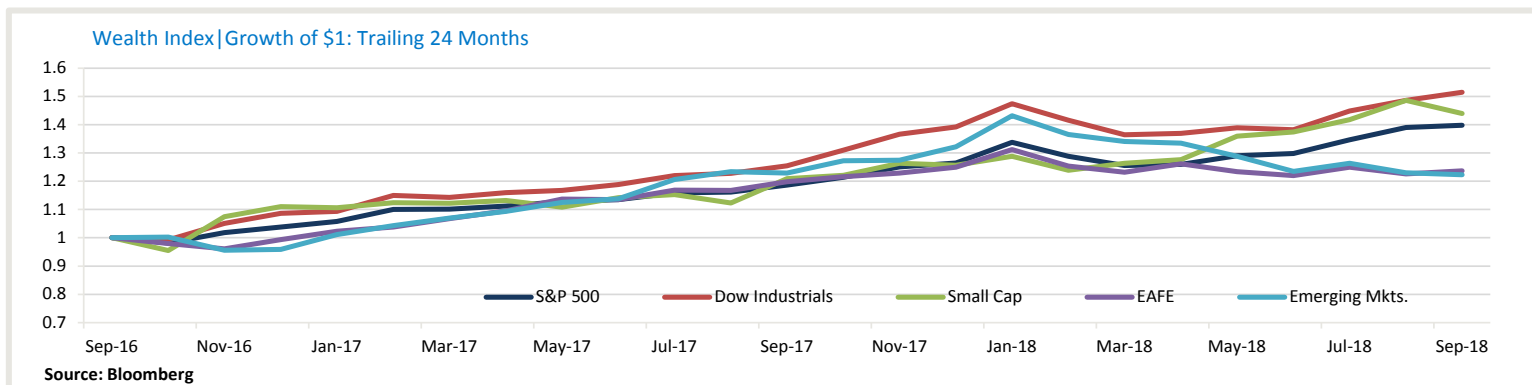
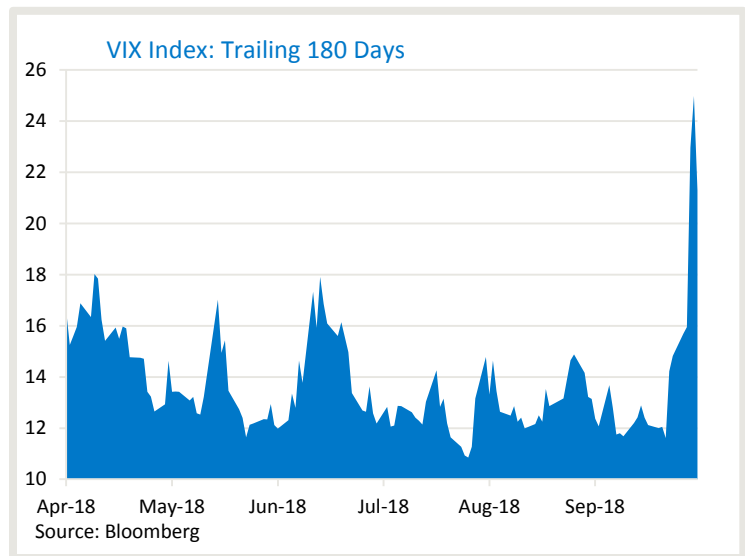
	One Week			YTD		
	Value	Growth		Value	Growth	
L	-4.33%	-3.98%	-3.68%	-1.42%	4.87%	10.43%
	-4.49%	-4.70%	-5.01%	-4.19%	-1.01%	3.10%
S	-4.75%	-5.23%	-5.70%	-1.85%	0.73%	3.14%

Source: Bloomberg

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

	% Wgt in S&P 500	Week % Chg.	YTD % Chg.
Consumer Discretionary	10.0	-3.52%	10.2%
Consumer Staples	6.9	-1.94%	-8.2%
Energy	6.1	-5.40%	1.3%
Financials	13.4	-5.57%	-5.3%
Health Care	15.1	-3.50%	10.2%
Industrials	9.7	-6.41%	-2.6%
Information Technology	20.8	-3.82%	12.4%
Materials	2.4	-6.59%	-10.9%
Real Estate	2.6	-2.91%	-6.5%
Communication Services	10.0	-3.09%	-8.4%
Utilities	3.0	-1.26%	0.5%

Source: Bloomberg



The Economy and Markets

A Macro View – Municipal Market Outperformance Explained

Through the first three quarters of the year, the US municipal market has outperformed the taxable market across the yield curve. The Bloomberg Barclays Municipal Bond Index is down 40 basis points through September, whereas the Aggregate Bond Index is down 1.60% and the US Treasury Index is down 1.67%. At the short end of the yield curve, the 1-3 Year Municipal Index is up 88 basis points, and the 1-3 Year Aggregate Index is up just 42 basis points. In long maturities, the 22+ year Municipal Index is down 1.13%, but the 20+ year Treasury Index is down 5.92%. Even in the noninvestment grade space, one of the few highlights in the taxable fixed income markets this year, the Municipal High Yield Index is up 4.45% through the end of the third quarter compared with just 2.57% for the Corporate High Yield Index. Although it is not at all unusual for the muni market to outperform the taxable market (2018 would be the seventh time in the last ten years the Municipal Index outperformed the Aggregate), the reasons for this year's outperformance are almost entirely technical factors rather than improving credit fundamentals, and this has implications for 2019 and beyond.

Most of the factors for the municipal market's outperformance this year stem from the tax reform bill passed at the end of 2017. One major provision of that bill eliminated the ability for municipal bonds issued after the end of 2017 to be "prerefunded," or refinanced at a lower rate. This provision was announced prior to the bill's actual passage by Congress, which spurred an enormous amount of issuance in late November and early December of last year to qualify for prerefunding in the future. It had the secondary effect of sharply reducing the amount of new issuance in the first quarter of the year. This was particularly pronounced in January, as most municipal bonds make their semiannual coupon payments in December or January, creating a significant demand for reinvestment. New issuance has remained well below average through the first nine months of the year. In fact, net issuance (new bonds issued minus bonds reaching final maturity) was negative from June through August and only barely positive in September. Meanwhile, more than \$12 billion has flowed into municipal bond mutual funds of all types so far this year, creating a dramatic supply/demand imbalance. This has driven prices up, yields down (particularly in the short end of the curve), and created much of the year's outperformance.

A secondary provision in the tax reform bill was a cap on taxpayers' ability to deduct state and local income taxes paid (including property taxes) from their federal taxable income. This has had the effect of making national muni bond portfolios less attractive for taxpayers in states with high income and/or property taxes (such as California and New York, among others). California residents have poured nearly \$1.5 billion into California-specific intermediate municipal bond funds. Other state-specific funds have not had flows like this, but that could change in early 2019 as taxpayers face suddenly higher tax bills.

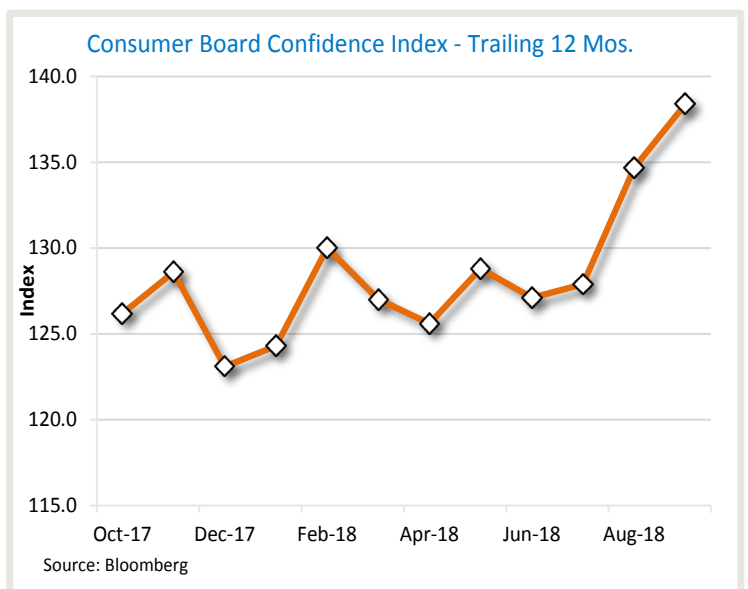
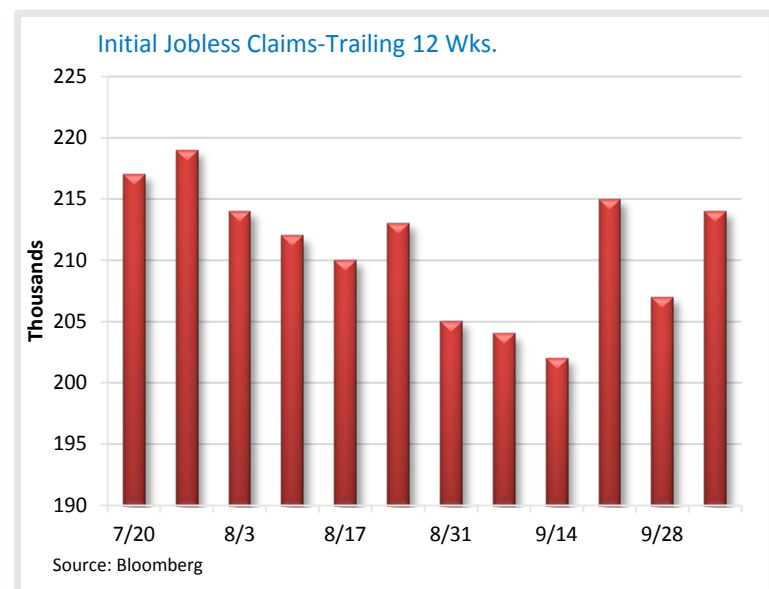
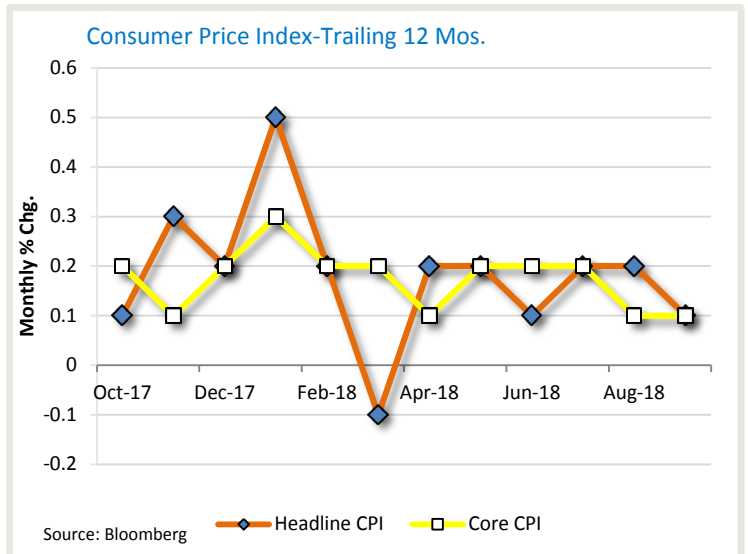
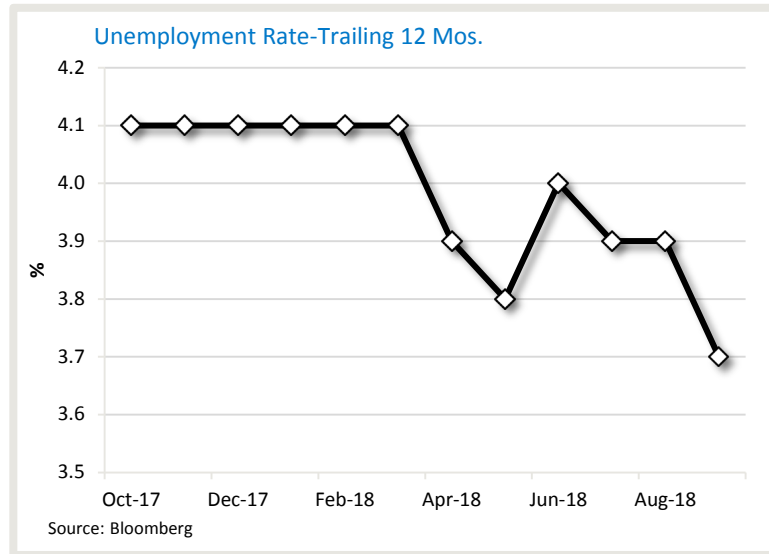
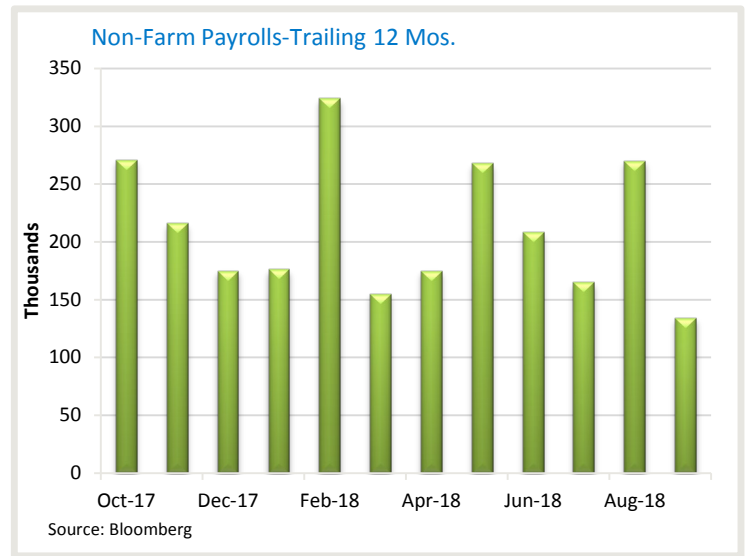
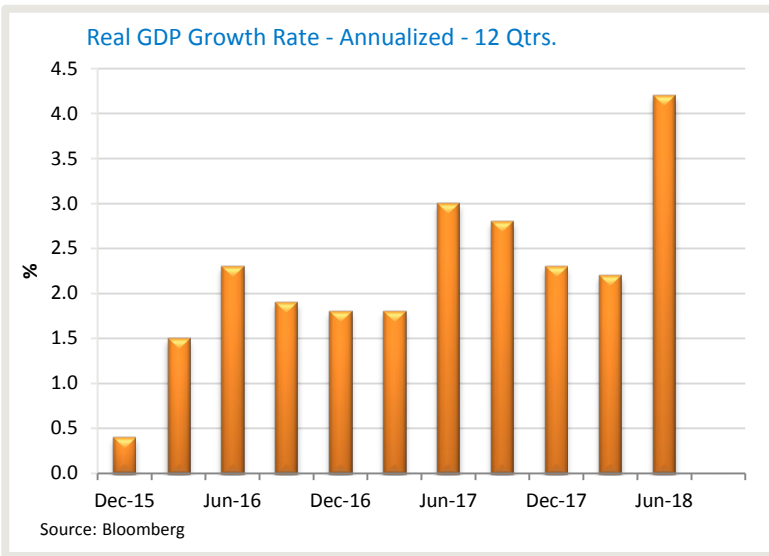
Finally, in what might be a positive for the municipal market in the coming years, the sharp drop in the corporate tax rate has changed the valuation equation for institutional investors, particularly pension funds and property and casualty insurance companies. These institutions are the overwhelming majority of buyers of long maturity bonds (those without call provisions or limited probability of being refinanced). But with a sharply lower tax rate, current municipal bond issuance does not make sense for them on an after-tax basis. Removing this major source of demand in the long end of the curve is one reason the municipal curve is actually steeper on a 2/30 basis this year, whereas the taxable curve is significantly flatter. This may be a positive situation for the municipal market in 2019 and beyond, as these institutions have billions of dollars of bonds to sell into the market and could be a very necessary source of supply if new issuance doesn't pick up.

Because the municipal market's outperformance this year has been almost entirely due to technical factors, which are generally more transient than credit-related events, municipals easily could give that advantage back next year, through either a surge in supply or a drop in demand (simply due to the tight credit spreads and lower yields), or both. This presents a much bigger risk factor for investors, even if the professional consensus is for this imbalance to continue well into 2019.

Nathan Behan
Senior Vice President, Investment Research

All indices are from Bloomberg/Barclays unless otherwise noted
Asset flow data from Morningstar through September 30th, 2018

Economic Data



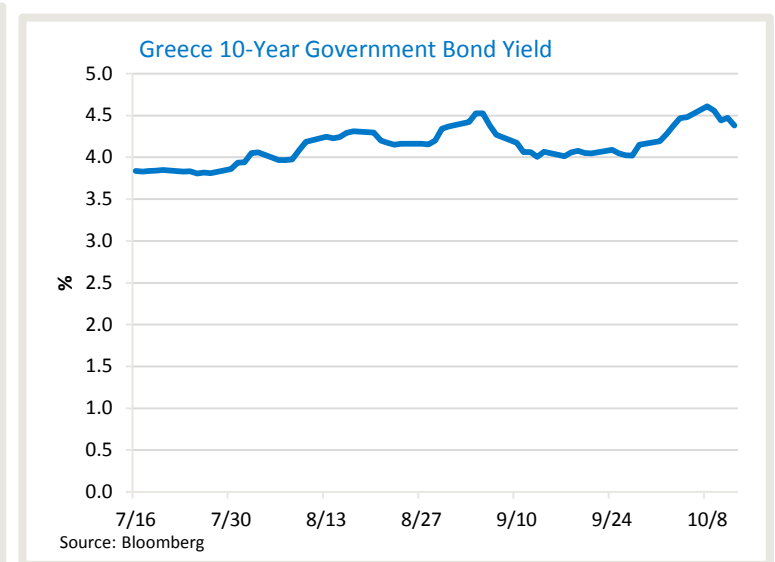
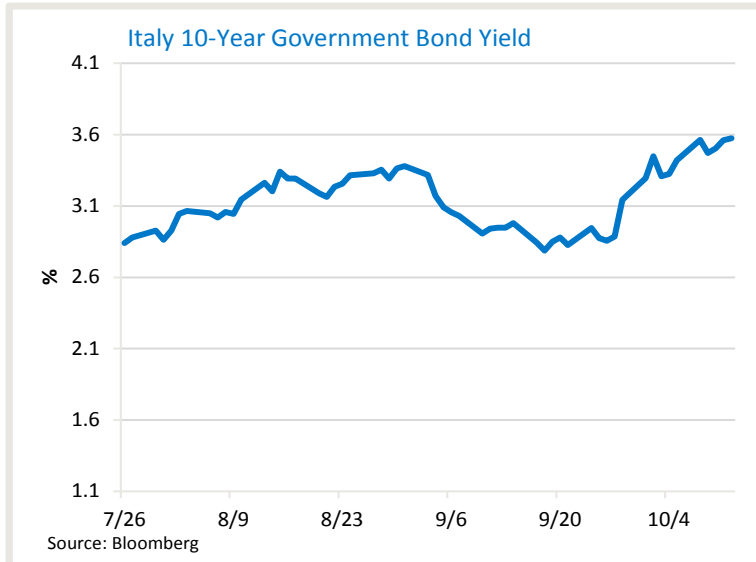
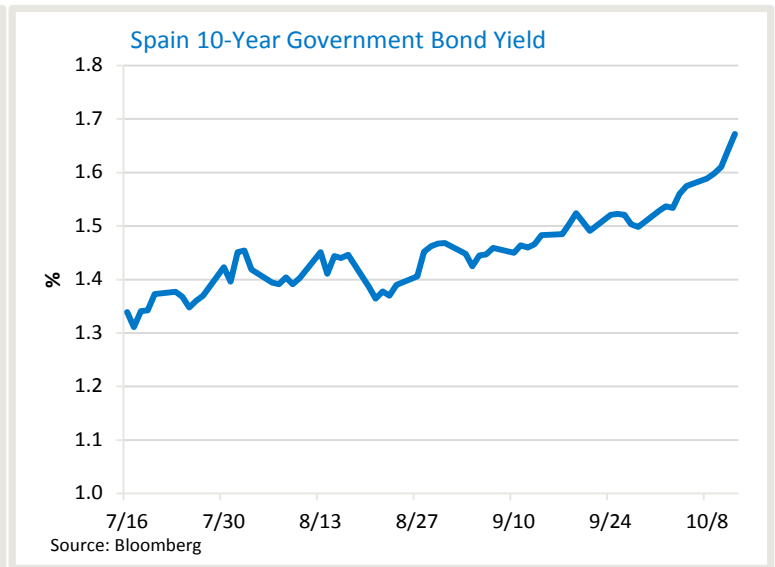
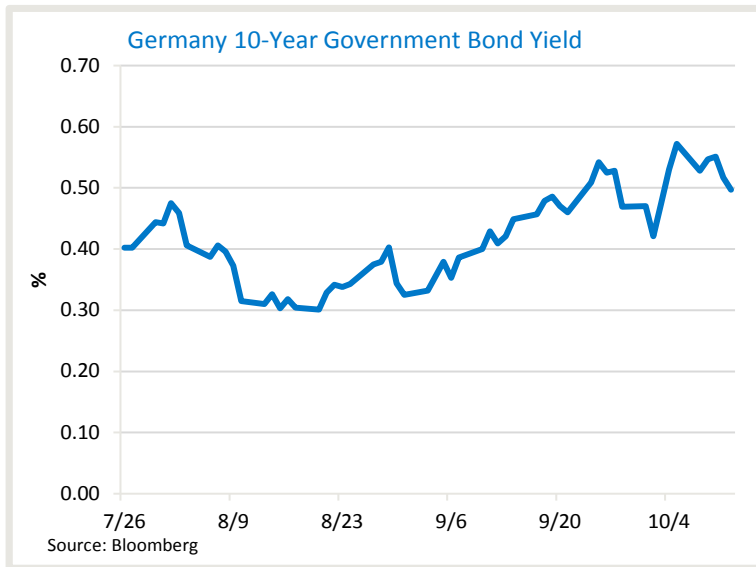
Eurozone

SELECTED EUROPEAN SOVEREIGN YIELD PERFORMANCE

	Last	Change	% Chg.	YTD %
Germany 10-Yr. Govt.	0.50	7 bps	NM	NM
Greece 10-Yr. Govt.	4.38	7 bps	NM	NM
Italy 10-Yr. Govt.	3.57	-12 bps	NM	NM
Spain 10-Yr. Govt.	1.67	-9 bps	NM	NM
Belgium 10-Yr. Govt.	0.88	3 bps	NM	NM

Source: Bloomberg
Basis points (bps)

	Last	Change	% Chg.	YTD %
France 10-Yr. Govt.	0.86	4 bps	NM	NM
Ireland 10-Yr. Govt.	1.06	2 bps	NM	NM
Portugal 10-Yr. Govt.	2.03	-9 bps	NM	NM
Netherlands 10-Yr. Govt.	0.61	6 bps	NM	NM
U.K. 10-Yr. Govt.	1.63	8 bps	NM	NM

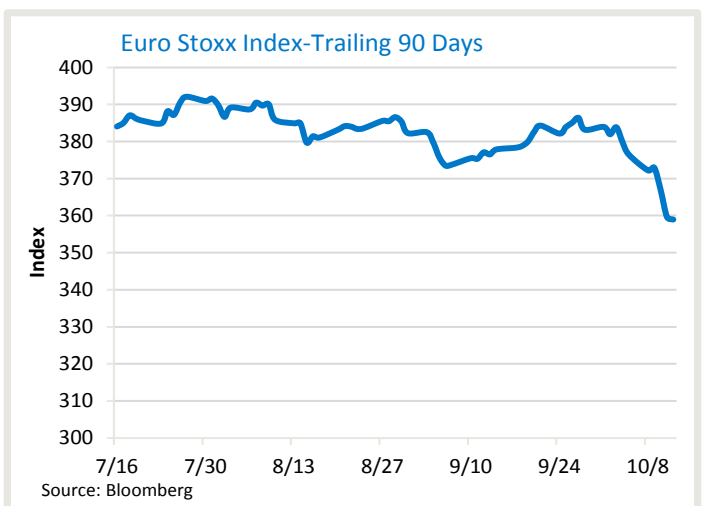
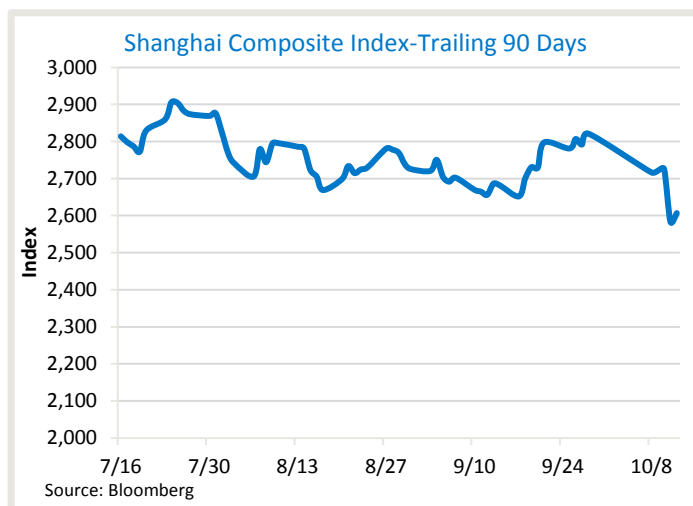
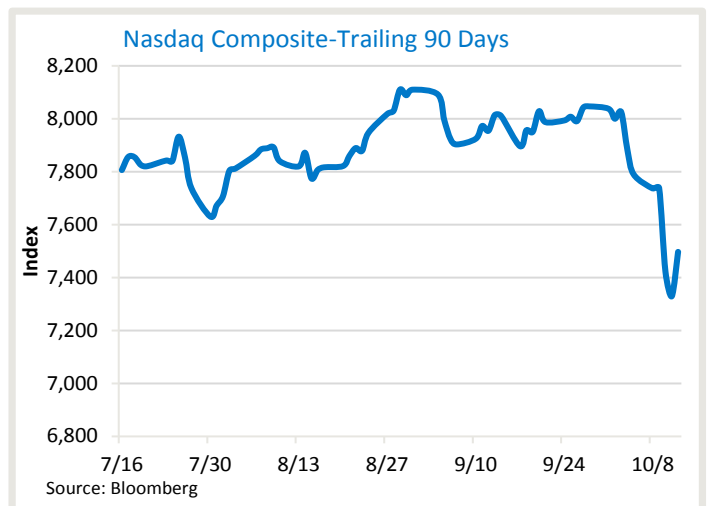
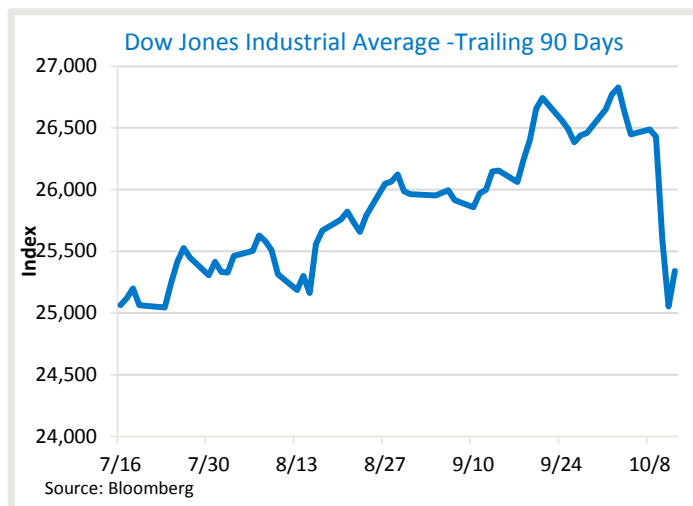


Equities

WORLD MARKET PERFORMANCE

	Last	Change	% Chg.	YTD %		Last	Change	% Chg.	YTD %
S&P 500	2,767.13	-118.44	-4.10%	3.50%	Swiss Market Index	8,660.38	-381.70	-4.22%	-7.69%
Dow Industrials	25,339.99	-1107.06	-4.19%	2.51%	CAC 40 Index (France)	5,095.98	-263.38	-4.91%	-4.08%
Nasdaq Composite	7,496.90	-291.55	-3.74%	8.60%	DAX Index (Germany)	11,523.81	-588.09	-4.86%	-10.79%
Russell Global	2,085.51	-105.51	-4.92%	-4.9%	Irish Overall Index	6,098.39	-352.34	-5.46%	-13.35%
Russell Global EM	2,989.23	-143.34	-4.58%	-18.0%	Nikkei 225	22,694.66	-1280.96	-5.34%	-0.31%
S&P/TSX (Canada)	15,414.29	-531.88	-3.34%	-4.90%	Hang Seng Index	25,801.49	-771.08	-2.90%	-13.76%
Mexico IPC	47,444.05	-610.71	-1.27%	-3.87%	Shanghai Composite	2,606.91	-214.44	-7.60%	-21.17%
Brazil Bovespa	82,921.06	599.55	0.73%	8.53%	Kospi Index (S. Korea)	2,161.85	-112.64	-4.95%	-12.39%
Euro Stoxx 600	358.95	-17.46	-4.64%	-7.77%	Taiwan Taiex Index	10,045.81	-471.31	-4.48%	-5.61%
FTSE 100	6,995.91	-322.63	-4.41%	-9.00%	Tel Aviv 25 Index	1,588.91	-48.25	-2.95%	5.24%
IBEX 35 (Spain)	8,902.00	-351.90	-3.80%	-11.37%	MOEX Index (Russia)	2,403.02	-47.88	-1.95%	13.90%

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



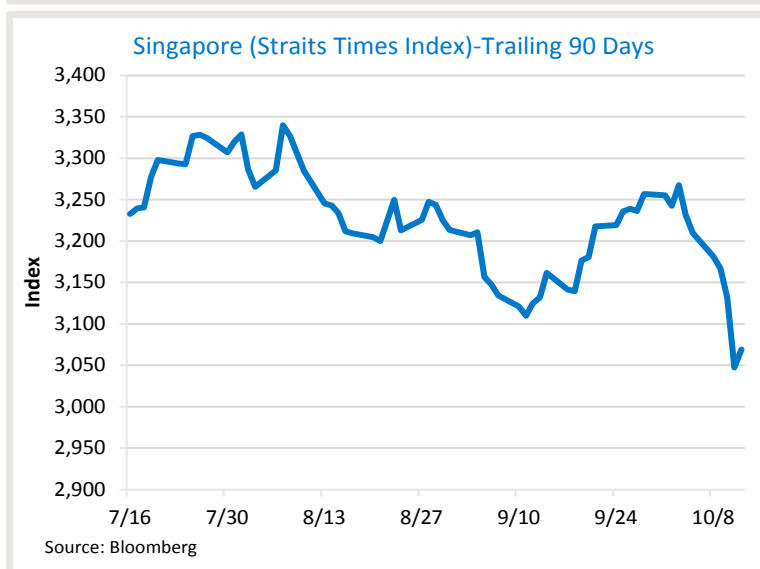
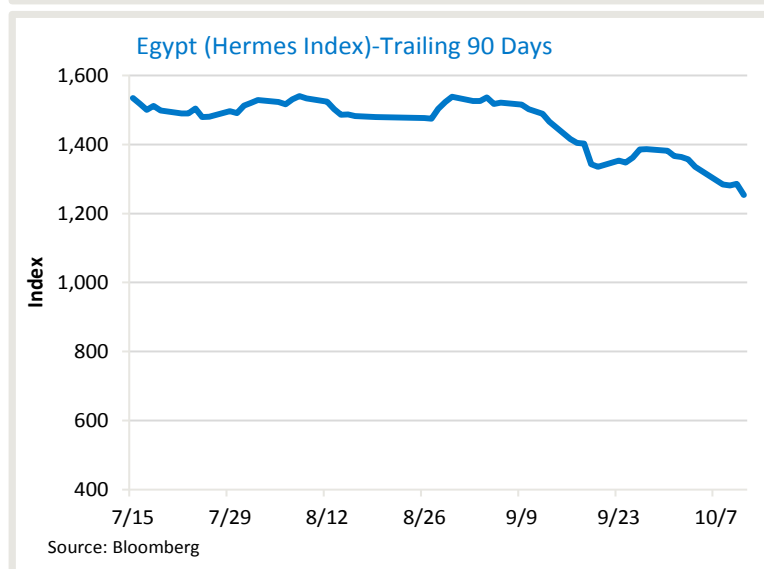
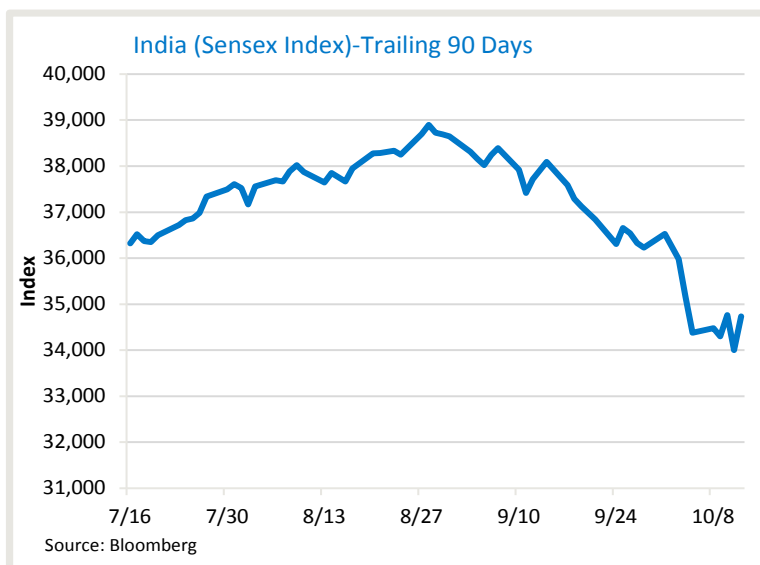
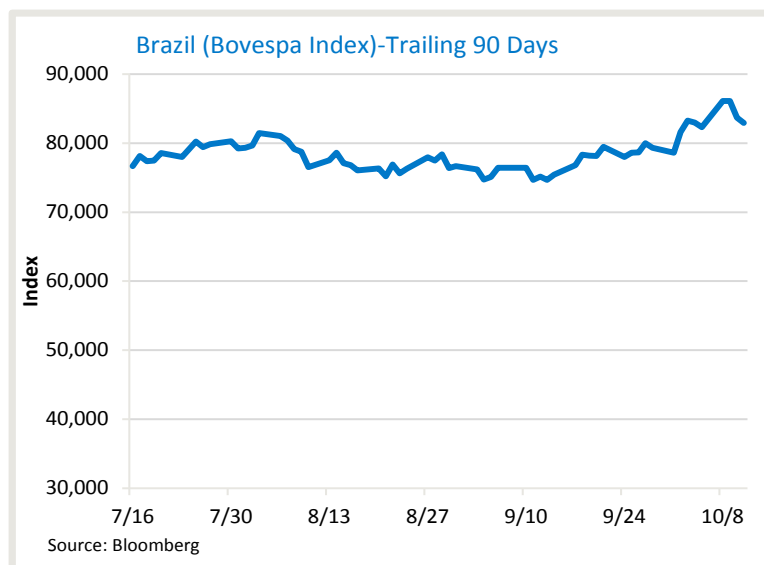
Equities – Emerging and Frontier Markets

EMERGING AND FRONTIER MARKET PERFORMANCE

	Last	Change	% Chg.	YTD %
Mexico IPC	47,444.05	-610.71	-1.3%	-3.9%
Brazil (Bovespa Index)	82,921.06	599.55	0.7%	8.5%
MOEX Index (Russia)	2,403.02	-47.88	-2.0%	13.9%
Czech Republic (Prague)	1,079.61	-23.77	-2.2%	0.1%
Turkey (Istanbul)	96,657.44	1773.95	1.9%	-16.2%
Egypt (Hermes Index)	1,253.77	-81.40	-6.1%	-12.7%
Kenya (Nairobi 20 Index)	2,807.03	-57.96	-2.0%	-24.4%
Saudi Arabia (TASI Index)	7,530.80	-466.81	-5.8%	4.2%
Lebanon (Beirut BLOM Index)	979.99	-1.31	-0.1%	-14.7%
Palestine	529.20	-3.51	-0.7%	-7.9%

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

	Last	Change	% Chg.	YTD %
Hang Seng Index	25,801.49	-771.08	-2.9%	-13.8%
India (Sensex 30)	34,733.58	356.59	1.0%	2.0%
Malaysia (KLCI Index)	1,730.74	-46.41	-2.6%	-3.7%
Singapore (Straits Times Index)	3,069.17	-140.62	-4.4%	-9.8%
Thailand (SET Index)	1,696.16	-24.36	-1.4%	-3.3%
Indonesia (Jakarta)	5,756.49	24.55	0.4%	-9.4%
Pakistan (Karachi KSE 100)	37,517.93	-1708.42	-4.4%	-7.3%
Vietnam (Ho Chi Minh)	970.08	-38.31	-3.8%	-1.4%
Sri Lanka (Colombo)	5,815.03	-68.74	-1.2%	-8.7%
Cambodia (Laos)	833.12	-45.22	-5.1%	-16.6%

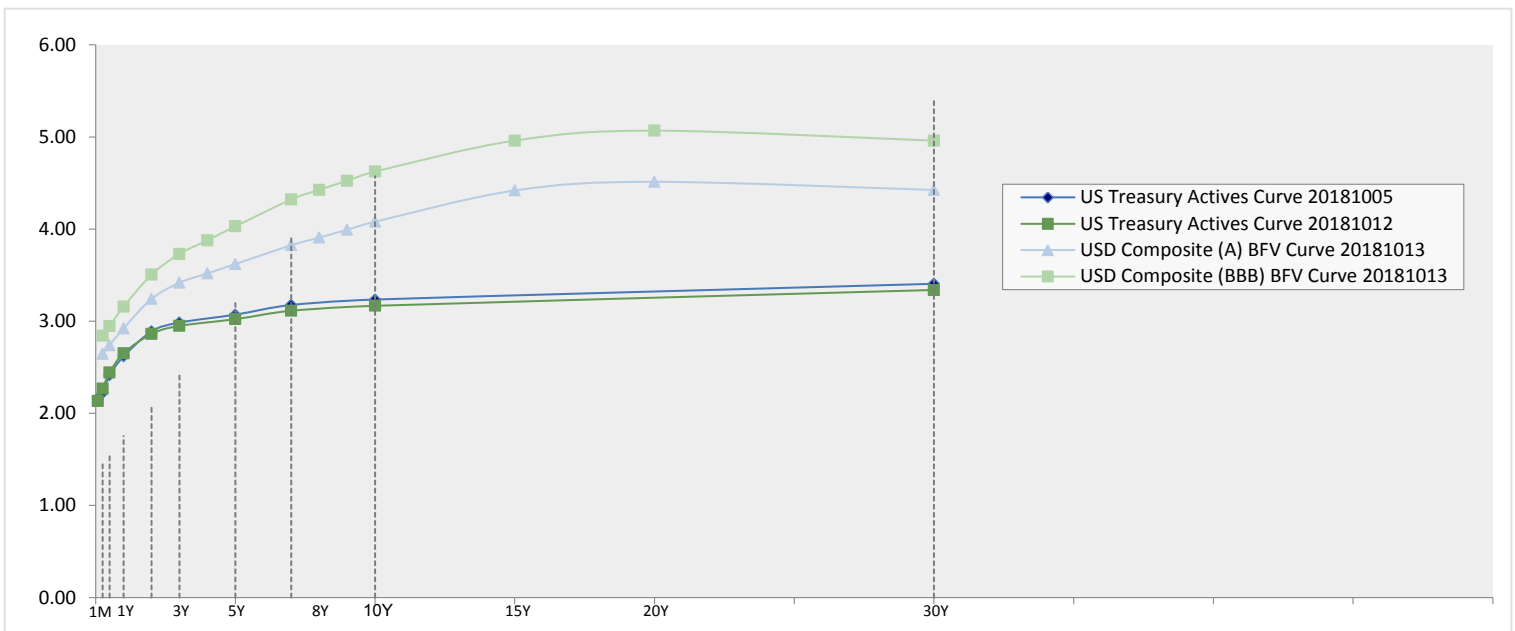


Interest Rates

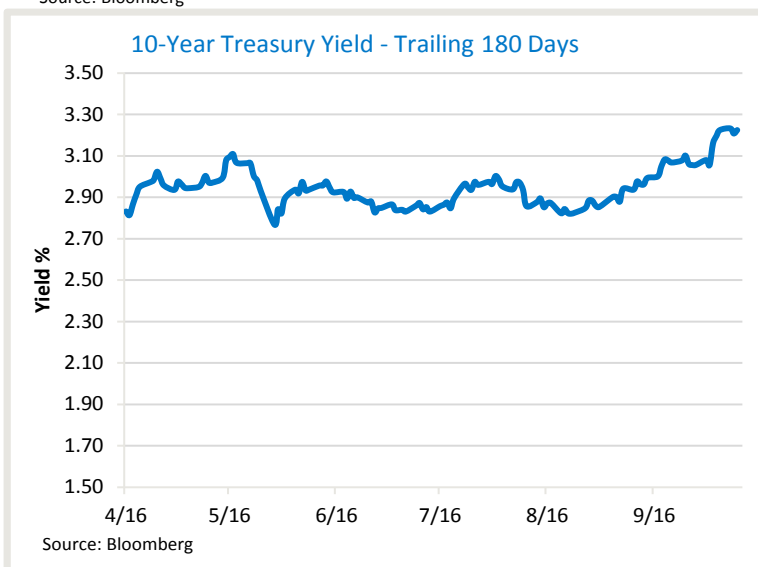
SELECTED INTEREST RATES

	Last	Change	% Chg.	YTD %		Last	Change	% Chg.	YTD %
2-Yr. U.S. Treasury	2.86%	1 bps	NM	NM	Prime Rate	5.25%	0.00	NM	NM
5-Yr. U.S. Treasury	2.99%	-8 bps	NM	NM	Fed Funds Rate	2.25%	0.00	NM	NM
10-Yr. U.S. Treasury	3.14%	-8 bps	NM	NM	Discount Rate	2.75%	0.00	NM	NM
30-Yr. U.S. Treasury	3.32%	-8 bps	NM	NM	LIBOR (3 Mo.)	2.44%	3 bps	NM	NM
German 10-Yr. Govt.	0.50%	7 bps	NM	NM	Bond Buyer 40 Muni	4.49%	12 bps	NM	NM
France 10-Yr.	0.86%	4 bps	NM	NM	Bond Buyer 40 G.O.	4.37%	NA	NM	NM
Italy 10-Yr.	3.57%	-12 bps	NM	NM	Bond Buyer 40 Rev.	4.88%	NA	NM	NM
Fed 5-Yr Fwd BE Inf.	2.17%	4 bps	NM	NM					

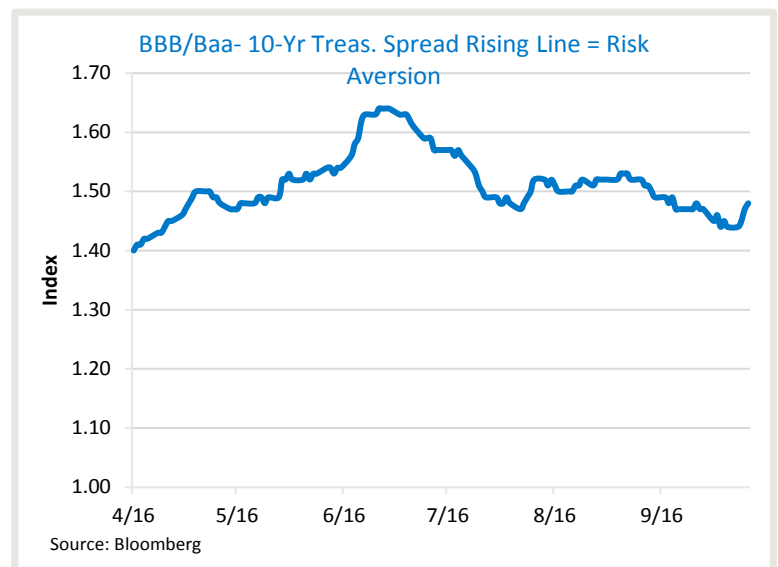
Source: Bloomberg



Source: Bloomberg



Source: Bloomberg



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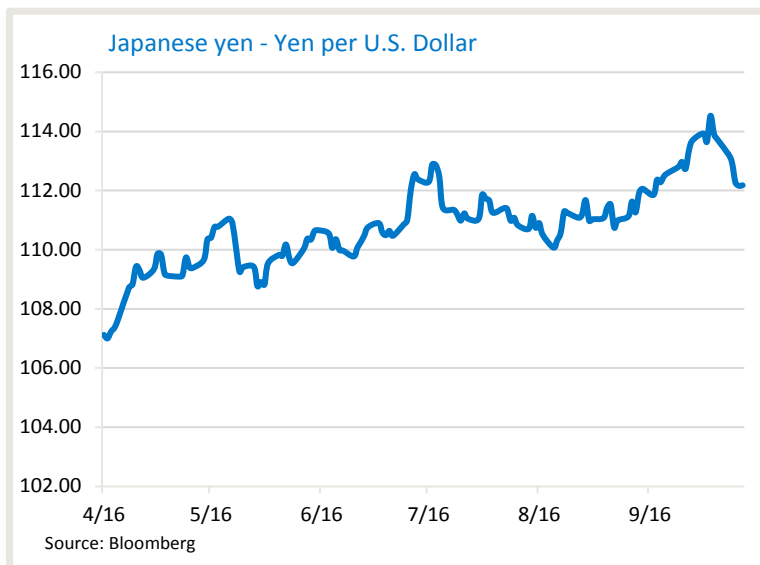
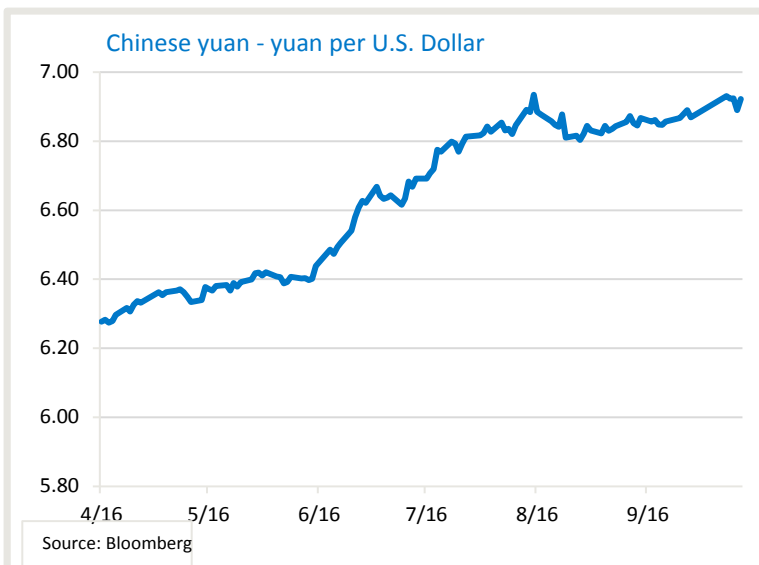
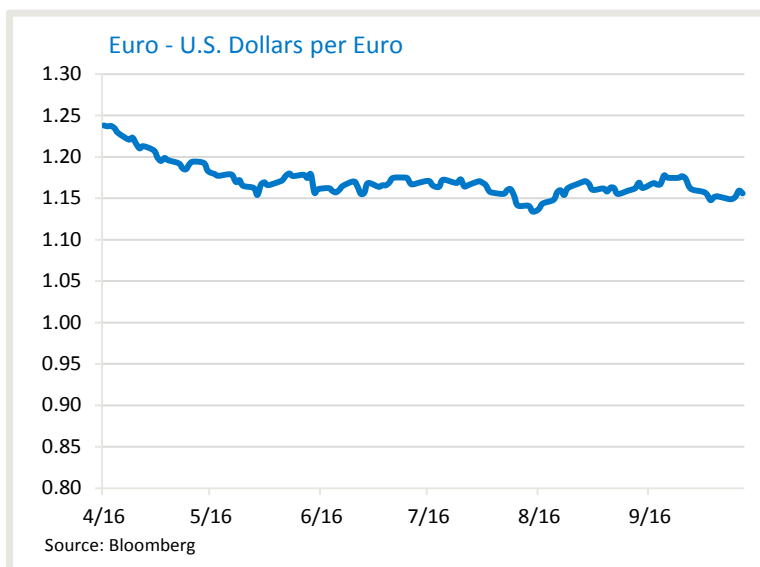
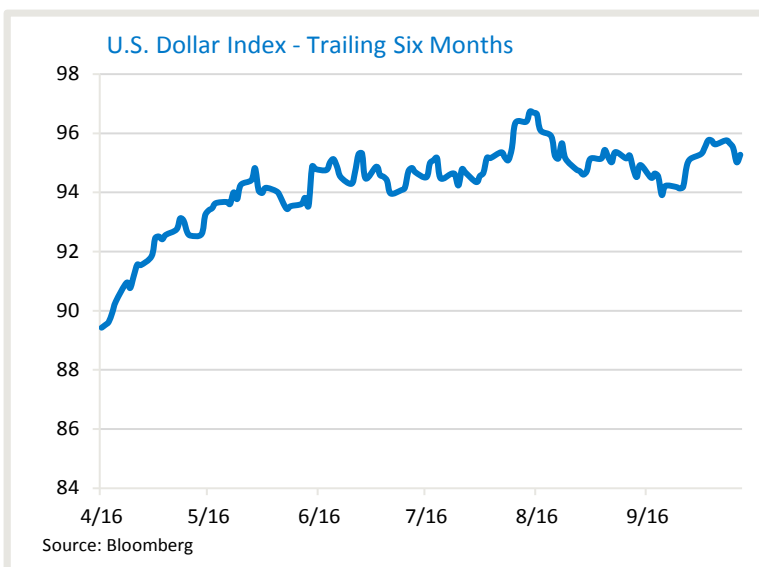
Currencies

SELECTED CURRENCY PERFORMANCE

	Last	Change	% Chg.	YTD %
Dollar Index	95.27	-0.349	-0.36%	3.42%
Euro	1.16	0.004	0.30%	-3.72%
Japanese Yen	112.19	-1.540	1.37%	0.45%
British Pound	1.32	0.003	0.25%	-2.66%
Canadian Dollar	1.30	0.009	-0.69%	-3.52%

	Last	Change	% Chg.	YTD %
Chinese Yuan	6.92	0.053	-0.77%	-6.00%
Swiss Franc	0.99	-0.001	0.07%	-1.71%
New Zealand Dollar	0.65	0.006	0.96%	-8.35%
Brazilian Real	3.78	-0.058	1.54%	-12.50%
Mexican Peso	18.86	0.044	-0.23%	4.19%

Source: Bloomberg



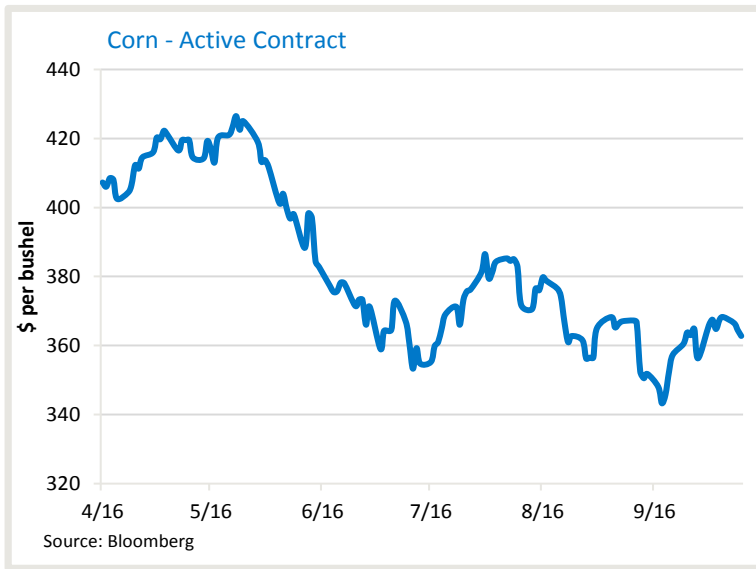
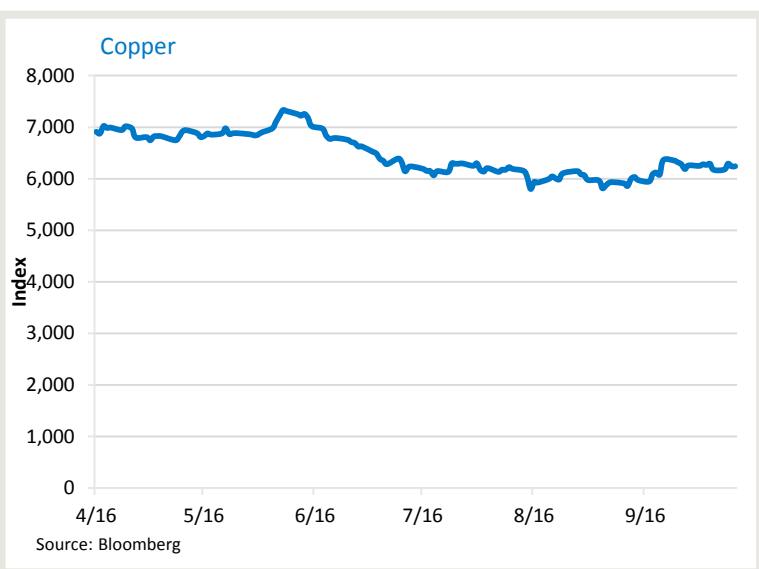
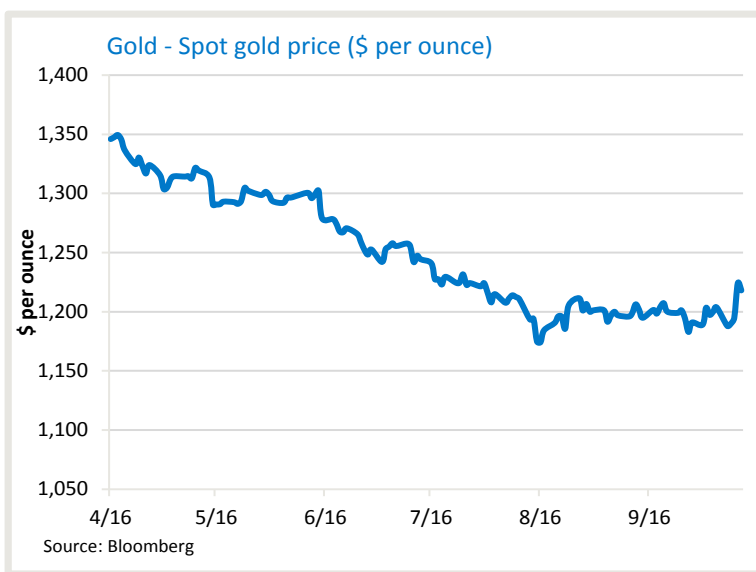
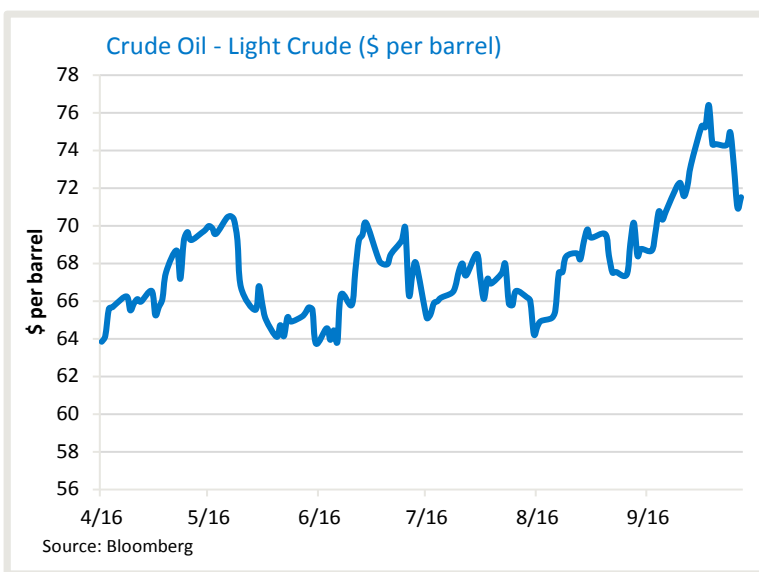
Commodities

SELECTED COMMODITY MARKET PERFORMANCE

	Last	Change	% Chg.	YTD %
Bloomberg Comm. Idx.	86.24	-0.66	-0.76%	-2.19%
Crude Oil	\$71.51	-\$2.82	-3.79%	22.51%
Natural Gas	\$3.15	\$0.01	0.25%	9.91%
Gasoline (\$/Gal.)	\$2.91	-\$0.01	-0.27%	16.89%
Heating Oil	232.73	-6.58	-2.75%	18.96%
Gold Spot	\$1,217.84	\$14.38	1.19%	-6.51%
Silver Spot	\$14.60	-\$0.03	-0.21%	-13.78%

Source: Bloomberg; % change is based on price.

	Last	Change	% Chg.	YTD %
Platinum Spot	\$838.11	\$15.62	1.90%	-9.71%
Corn	373.75	5.50	1.49%	-2.67%
Wheat	517.25	-3.75	-0.72%	7.31%
Soybeans	867.50	-1.50	-0.17%	-11.09%
Sugar	13.07	0.44	3.48%	-16.70%
Orange Juice	143.55	-0.10	-0.07%	0.17%
Aluminum	2,020.00	-110.00	-5.16%	-10.93%
Copper	6,242.00	69.00	1.12%	-13.87%

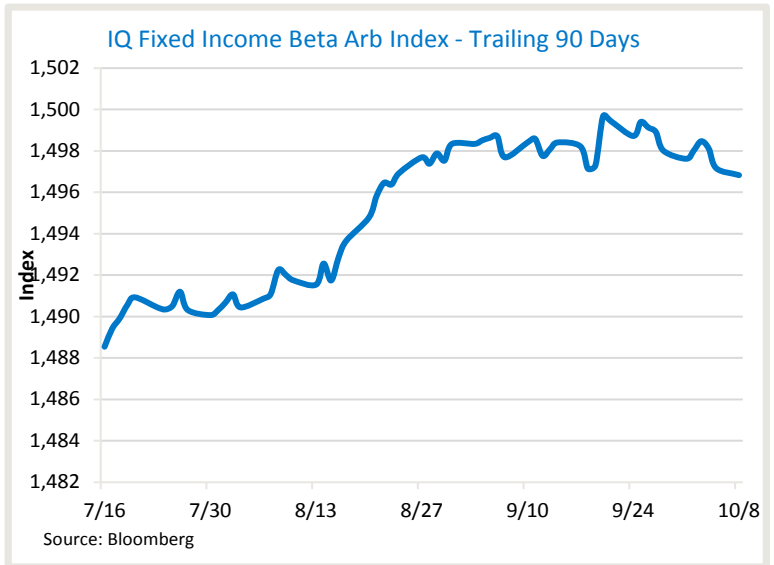
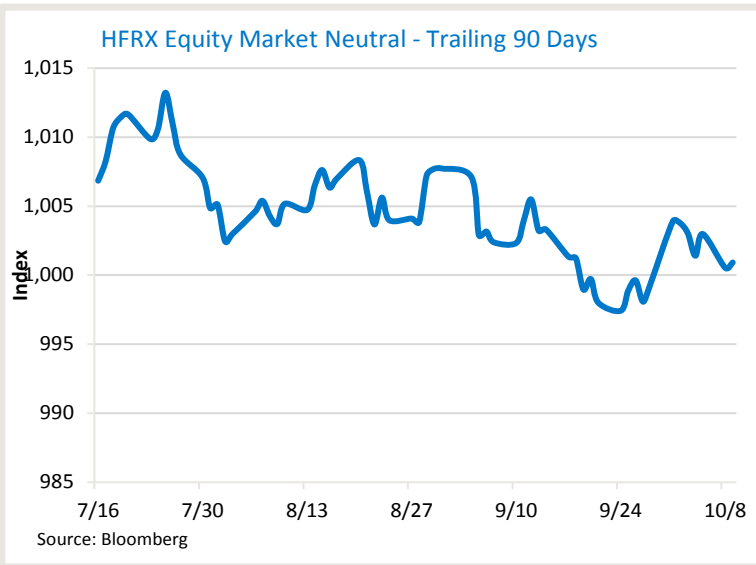
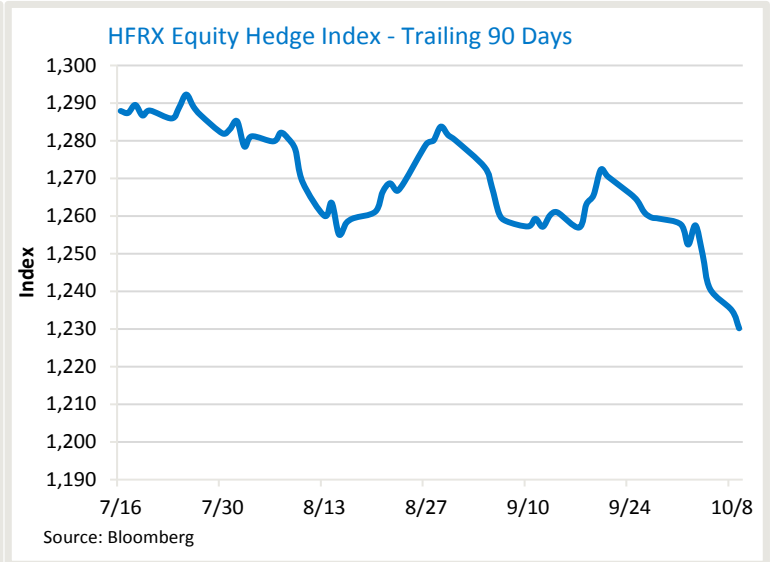
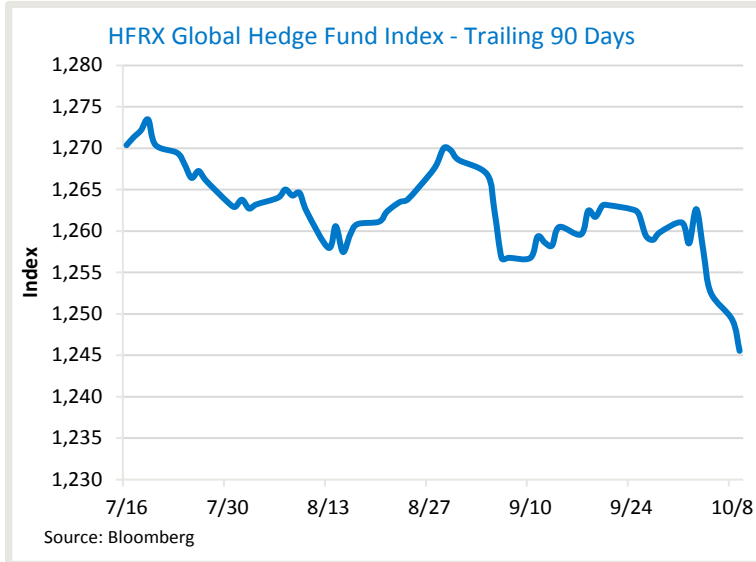


Alternative Investments

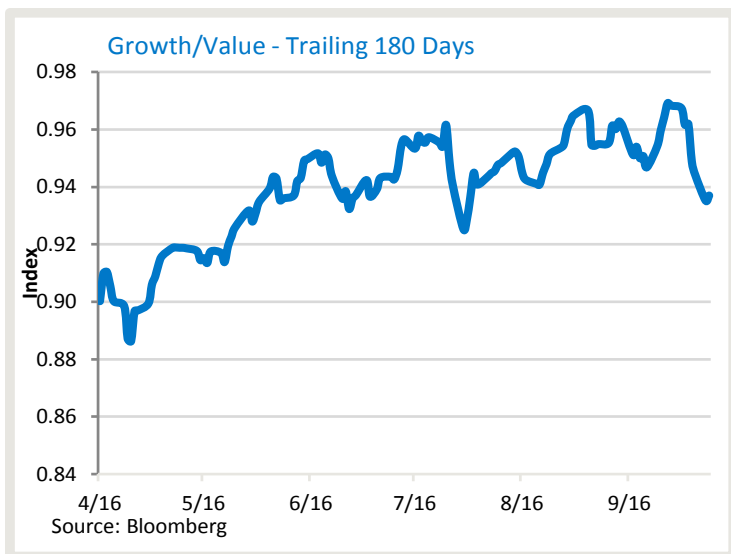
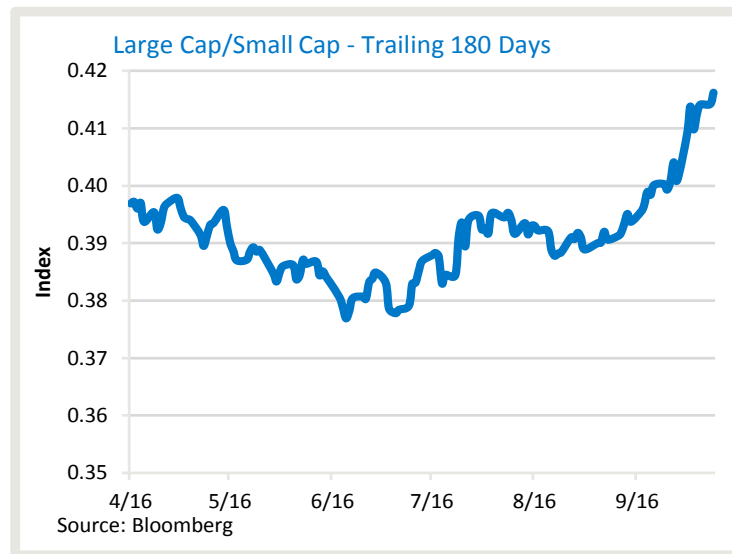
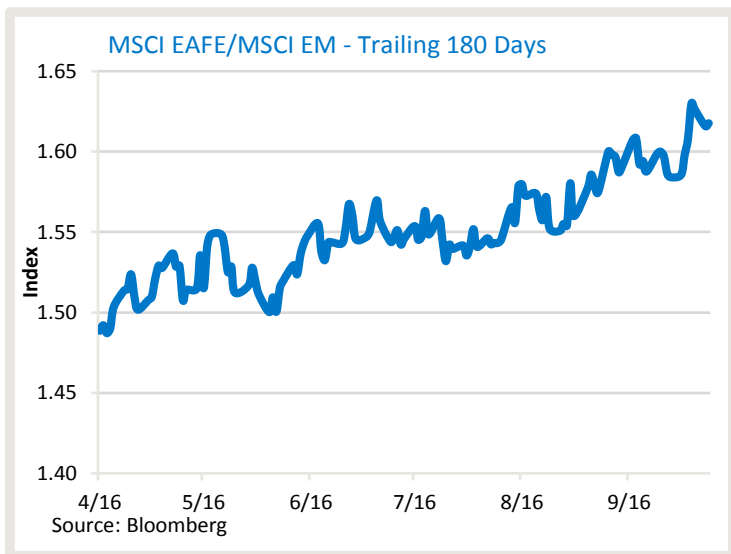
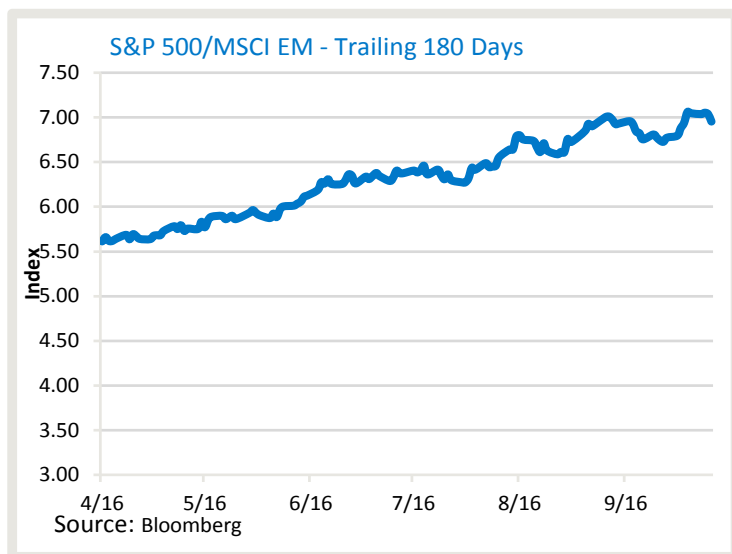
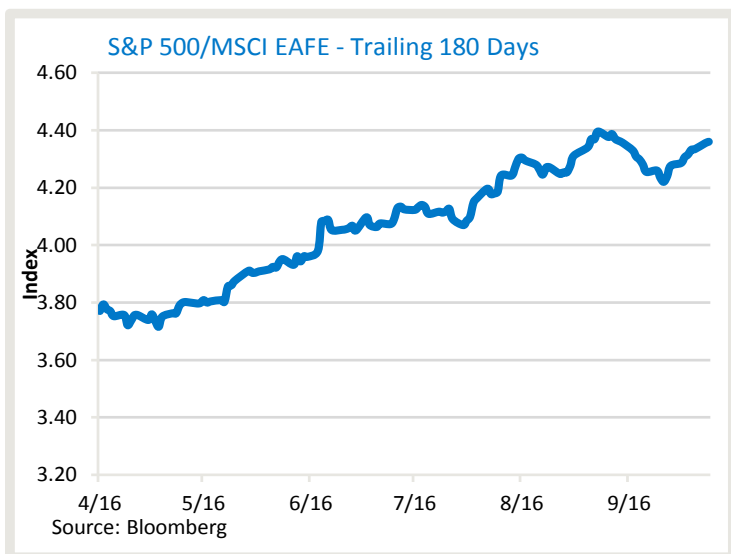
SELECTED ALTERNATIVE INVESTMENT INDEX PERFORMANCE

	Last	Change	% Chg.	YTD %		Last	Change	% Chg.	YTD %
HFRX Global Hedge Fund Index	1237.82	-14.74	-1.18%	-2.96%	HFRX Distressed Index	1040.19	-1.26	-0.12%	-6.01%
HFRX Equity Market Neutral	993.63	-9.35	-0.93%	-1.07%	HFRX Merger Arbitrage Index	1802.59	2.98	0.17%	-2.72%
HFRX Equity Hedge Index	1217.36	-23.28	-1.88%	-4.20%	HFRX Convertible Arbitrage Index	806.00	0.27	0.03%	1.23%
HFRX Event-Driven Index	1541.19	-22.18	-1.42%	-7.48%	HFRX Macro CTA Index	1140.01	-14.20	-1.23%	-2.05%
HFRX Absolute Return Index	1075.05	1.13	0.11%	1.11%	IQ Fixed Income Beta Arb Index	1491.56	-5.59	-0.37%	1.43%

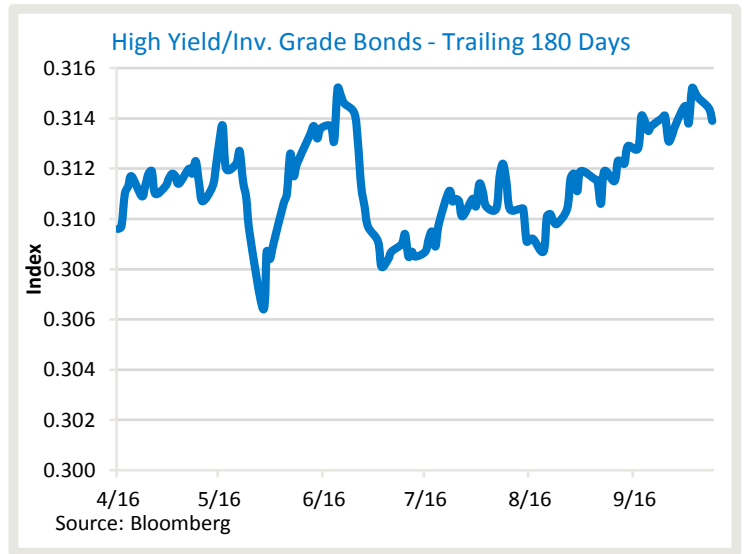
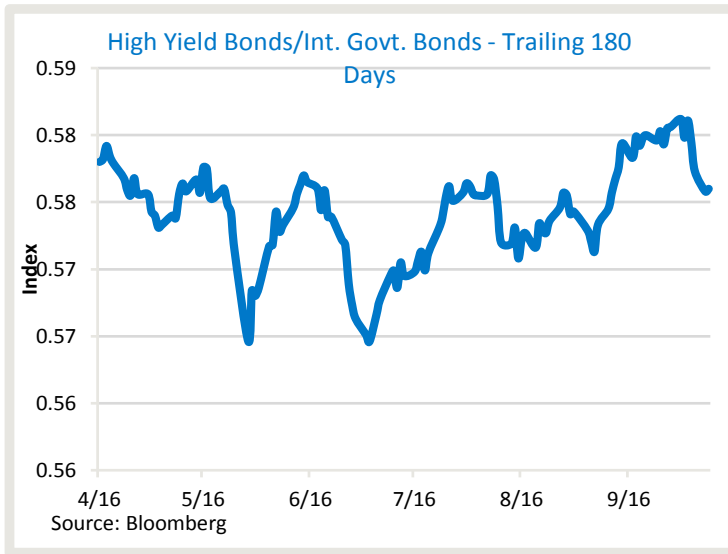
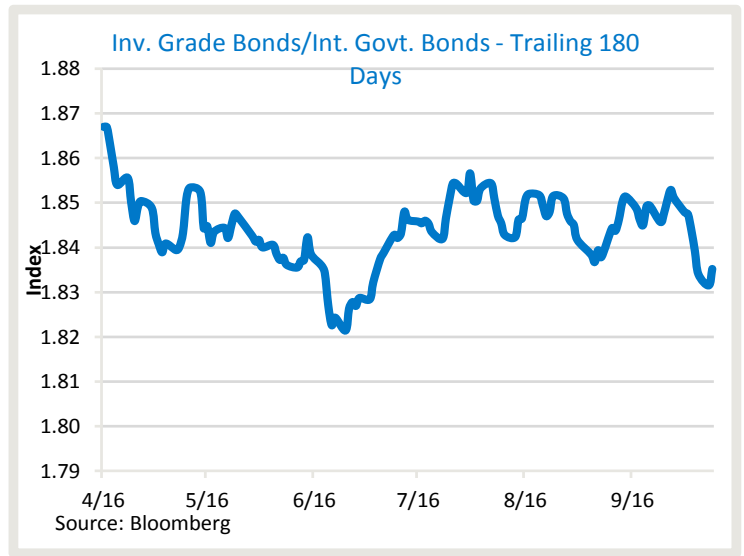
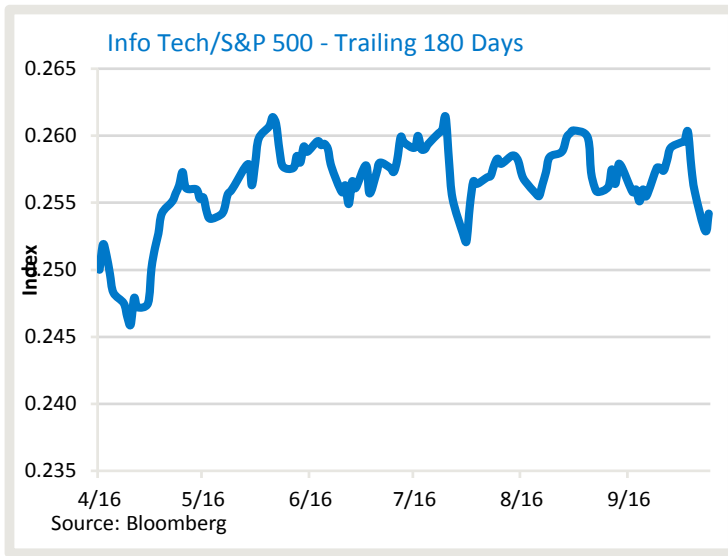
Source: Bloomberg; Index % change is based on price.



Portfolio Construction



Portfolio Construction (continued)



WEEKLY ASSET CLASS PERFORMANCE (Prior 12 weeks ending Thursday)

			7/26	8/2	8/9	8/16	8/23	8/30	9/6	9/13	9/20	9/27	10/4	10/11
Equity	Domestic Equity	Large Cap (R200)	1.22%	-0.21%	1.01%	-0.49%	0.49%	1.73%	-0.95%	1.03%	0.98%	-0.32%	-0.29%	-6.01%
		Small Cap (R2000)	-0.35%	-0.78%	0.52%	-0.30%	1.86%	0.89%	-1.03%	-0.01%	0.34%	-1.72%	-2.58%	-6.16%
	Int'l. Equity	MSCI EAFE	1.59%	-1.28%	0.54%	-3.26%	1.29%	1.49%	-3.13%	0.81%	2.69%	0.21%	-2.23%	-4.66%
		MSCI Em. Mkts.	2.69%	-2.00%	1.05%	-5.29%	2.61%	0.92%	-3.74%	-0.06%	1.90%	1.39%	-3.89%	-5.51%
Fixed Income	BarCap Agg. (AGG)	-0.45%	-0.25%	0.25%	0.38%	0.20%	-0.18%	-0.22%	-0.30%	0.46%	0.24%	-1.01%	0.15%	
	High Yield (JNK)	-0.45%	-0.11%	0.14%	-0.11%	0.33%	0.06%	-0.58%	0.62%	0.06%	0.19%	-0.86%	-1.12%	
Commodities	Bloomberg Commodity Index	2.27%	-0.52%	0.45%	-2.21%	0.12%	0.61%	-1.42%	0.35%	1.40%	1.04%	2.40%	-1.00%	
Alternatives	Hedge Funds (HFRX Global)	-0.49%	-0.36%	0.15%	-0.40%	0.32%	0.49%	-1.02%	0.12%	0.38%	-0.33%	-0.12%	-1.56%	
Asset Allocation	60/40*	0.57%	-0.52%	0.58%	-0.80%	0.74%	0.82%	-1.15%	0.35%	0.66%	-0.08%	-1.27%	-3.40%	
	48/32/20 (w/Alts.)**	0.36%	-0.49%	0.50%	-0.72%	0.66%	0.75%	-1.12%	0.30%	0.61%	-0.13%	-1.04%	-3.03%	

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	0.98	0.94	1.20	1.17	1.14	1.17	1.15	1.14	1.06	1.11	0.93	0.67	0.89	0.98
Large Cap Growth	1.02	1.00	0.96	1.23	1.20	1.17	1.20	1.18	1.16	1.08	1.14	0.95	0.68	0.91	1.00
Large Cap Value	1.06	1.04	1.00	1.28	1.25	1.21	1.25	1.23	1.21	1.12	1.18	0.99	0.71	0.95	1.05
Mid Cap Core	0.83	0.82	0.78	1.00	0.98	0.95	0.98	0.96	0.95	0.88	0.93	0.77	0.55	0.74	0.82
Mid Cap Growth	0.85	0.83	0.80	1.02	1.00	0.97	1.00	0.98	0.97	0.90	0.95	0.79	0.57	0.76	0.84
Mid Cap Value	0.88	0.86	0.82	1.05	1.03	1.00	1.03	1.01	1.00	0.93	0.98	0.81	0.58	0.78	0.86
Small Cap Core	0.85	0.83	0.80	1.02	1.00	0.97	1.00	0.98	0.97	0.90	0.95	0.79	0.57	0.76	0.84
Small Cap Growth	0.87	0.85	0.82	1.04	1.02	0.99	1.02	1.00	0.99	0.92	0.97	0.80	0.58	0.77	0.85
Small Cap Value	0.88	0.86	0.83	1.05	1.03	1.00	1.03	1.01	1.00	0.93	0.98	0.81	0.58	0.78	0.86
Int'l. Developed	0.95	0.93	0.89	1.14	1.11	1.08	1.11	1.09	1.08	1.00	1.05	0.88	0.63	0.84	0.93
Emerging Markets	0.90	0.88	0.84	1.08	1.06	1.03	1.05	1.04	1.02	0.95	1.00	0.83	0.60	0.80	0.88
REITs	1.08	1.06	1.02	1.30	1.27	1.23	1.27	1.24	1.23	1.14	1.20	1.00	0.72	0.96	1.06
Commodities	1.50	1.47	1.41	1.81	1.77	1.72	1.76	1.73	1.71	1.59	1.67	1.39	1.00	1.34	1.48
Int. Bond	1.12	1.10	1.06	1.35	1.32	1.28	1.32	1.30	1.28	1.19	1.25	1.04	0.75	1.00	1.10
High Yield	1.02	1.00	0.96	1.22	1.20	1.16	1.19	1.17	1.16	1.08	1.13	0.94	0.68	0.91	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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