



**YOUNGSTOWN
STATE
UNIVERSITY**

**BOARD OF TRUSTEES
INVESTMENT SUBCOMMITTEE**

**Anita A. Hackstedde, Chair
Capri S. Cafaro, Vice Chair
Molly S. Seals
James E. "Ted" Roberts
Rocco L. Core**

**Wednesday, December 5, 2018
10:00 a.m. or immediately following
previous meeting**

**Tod Hall
Board Meeting Room**

AGENDA

- A. Disposition of Minutes for Meeting Held September 5, 2018**
- B. Old Business**
- C. Committee Item**
 - 1. Discussion Item**

Tab C.1.a. a. December 5, 2018 Quarterly Portfolio Asset Allocation and Investment Performance Review
Mike Shebak, Sarah Parker and John Colla will report.

- D. New Business**
- E. Adjournment**



December 5, 2018

**YOUNGSTOWN STATE
UNIVERSITY**



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- 2018 Initiatives
- Market Update
- Non-Endowment Assets: Performance & Asset Allocation Review
 - Strategic Asset Allocation Review
- Endowment Assets: Performance & Asset Allocation Review

2018 OVERSIGHT DASHBOARD

| | | 1Q | 2Q | 3Q | 4Q | Comments: |
|------------------------------|-----------------------------------|----|----|----|----|-----------------------------------|
| Strategic/ Administrative | Investment Policy Review | | | | ✓ | |
| | Strategic Asset Allocation Review | | | | ✓ | |
| | Peer Review | | | | ✓ | |
| | 2019 Oversight Dashboard | | | | | Finalizing for 2019 |
| Portfolio | Fixed Income Review | ✓ | | | | Review Lord Abbett Short Duration |
| | Alternative Investments Review | | | ✓ | | Review Jhancock GARS |
| | Domestic Equity Review | | ✓ | | | |
| | International Equity Review | | ✓ | | | |
| | Active Equity Managers | | | | | Pending |
| Performance | Capital Markets Review | ✓ | ✓ | ✓ | ✓ | |
| | Quarterly Performance Review | ✓ | ✓ | ✓ | ✓ | |
| Other | Fee Review | | | ✓ | | |
| | ORC Compliance Review | | | ✓ | | |

Last Reviewed

Investment Policy: 12/05/2018
 Strategic Asset Allocation: 12/05/2018
 Fee Review: 09/05/2018

Meeting Schedule

1Q: March 14, 2018
 2Q: June 6, 2018
 3Q: September 5, 2018
 4Q: December 5, 2018

Follow-up Items

- Share class conversions have been executed in 1Q2018:

- 1) Jhancock Global Absolute Return
- 2) Diamond Hill Long-Short
- 3) JPMorgan Core Bond Fund

- \$8 million cash raise & realized gain completed in 1Q2018.

- Star Plus & Star Ohio annual review was completed in July 2018.



MARKET UPDATE

TOUR OVERSIGHT | DASHBOARDS

HISTORICAL ASSET CLASS RETURNS

| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Q1 2018 | Q2 2018 | Q3 2018 | 2018 |
|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|-------------------|--------------------|
| Glb Bond 9.4% | Em Mkt 78.5% | REITs 27.6% | US Bonds 7.8% | REITs 20.1% | Sm/Mid 36.8% | REITs 27.2% | REITs 2.3% | Sm/Mid 17.6% | Em Mkt 37.3% | Glb Bond 4.5% | REITs 8.3% | Large Cap 7.7% | Large Cap 10.6% |
| US Bonds 5.2% | Hi Yld 57.5% | Sm/Mid 26.7% | REITs 7.3% | Em Mkt 18.2% | Large Cap 32.4% | Large Cap 13.7% | Large Cap 1.4% | Hi Yld 17.5% | Dev Intl 25.0% | Em Mkt 1.4% | Sm/Mid 5.7% | Sm/Mid 4.7% | Sm/Mid 10.4% |
| Cash 2.1% | Sm/Mid 34.4% | Em Mkt 18.9% | Glb Bond 5.2% | Dev Intl 17.3% | Dev Intl 22.8% | Sm/Mid 7.1% | US Bonds 0.6% | Large Cap 12.0% | Large Cap 21.8% | Cash 0.4% | Large Cap 3.4% | Hi Yld 2.4% | Hi Yld 2.5% |
| Hdg Fnds -21.4% | Dev Intl 31.8% | Hi Yld 15.2% | Hi Yld 4.4% | Sm/Mid 17.9% | Hdg Fnds 9.0% | US Bonds 6.0% | Cash 0.1% | Em Mkt 11.2% | Sm/Mid 16.8% | Hdg Fnds 0.3% | Hi Yld 1.0% | Dev Intl 1.4% | REITs 1.8% |
| Hi Yld -26.4% | REITs 27.5% | Large Cap 15.1% | Large Cap 2.1% | Large Cap 16.0% | Hi Yld 7.4% | Hdg Fnds 3.4% | Hdg Fnds -0.3% | REITs 9.3% | Glb Bond 9.3% | Sm/Mid -0.2% | Hdg Fnds 0.5% | REITs 0.7% | Cash 1.3% |
| Sm/Mid -36.8% | Large Cap 26.5% | Dev Intl 7.8% | Cash 0.1% | Hi Yld 15.6% | REITs 3.2% | Hi Yld 2.5% | Dev Intl -0.8% | US Bonds 2.7% | REITs 9.3% | Large Cap -0.8% | Cash 0.5% | Cash 0.5% | Hdg Fnds 1.2% |
| Large Cap -37.0% | Hdg Fnds 11.5% | US Bonds 6.6% | Sm/Mid -2.5% | Hdg Fnds 4.8% | Cash 0.1% | Cash 0.0% | Sm/Mid -2.9% | Glb Bond 1.9% | Hdg Fnds 7.8% | Hi Yld -0.9% | US Bonds -0.2% | Hdg Fnds 0.4% | Dev Intl -1.4% |
| REITs -37.3% | US Bonds 5.9% | Glb Bond 6.1% | Hdg Fnds -5.7% | US Bonds 4.2% | US Bonds -2.0% | Em Mkt -2.2% | Hi Yld -4.6% | Dev Intl 1.0% | Hi Yld 7.5% | US Bonds -1.5% | Dev Intl -1.2% | US Bonds 0.0% | US Bonds -1.6% |
| Dev Intl -43.4% | Glb Bond 4.4% | Hdg Fnds 5.7% | Dev Intl -12.1% | Glb Bond 1.8% | Em Mkt -2.6% | Glb Bond -2.8% | Glb Bond -4.8% | Hdg Fnds 0.5% | US Bonds 3.5% | Dev Intl -1.5% | Glb Bond -4.9% | Em Mkt -1.1% | Glb Bond -2.8% |
| Em Mkt -53.3% | Cash 0.2% | Cash 0.1% | Em Mkt -18.4% | Cash 0.1% | Glb Bond -4.9% | Dev Intl -4.5% | Em Mkt -14.9% | Cash 0.3% | Cash 0.9% | REITs -6.7% | Em Mkt -8.0% | Glb Bond -2.2% | Em Mkt -7.7% |

Past performance is no guarantee of future results. Asset classes represented by: Large Cap – S&P 500 Index; Sm/Mid – Russell 2500 Index; Dev Intl – MSCI EAFE Index; Em Mkt – MSCI Emerging Markets Index; Hi Yld – Bank of America Merrill Lynch U.S. High Yield Master II; US Bonds – Barclays Capital U.S. Aggregate; Glb Bond – Barclays Capital Global Treasury ex US; REITs – NAREIT ALL REITs; Hdg Fnds – HFRI FOF: Diversified Index; Cash – Merrill Lynch 91-day Tbill.

Data as of 9/30/2018.

Source: Zephyr Associates.





NON-ENDOWMENT ASSETS: PERFORMANCE & ASSET ALLOCATION REVIEW

NON-ENDOWMENT PERFORMANCE REVIEW

| Non-Endowment Assets | Market Value (\$MM) | 3Q2018 | YTD | 1 Yr | 3 Yrs | 5 Yrs | 7 Yrs | 10 Yrs | 2017 | 2016 | 2015 | Since Inception ⁴ |
|--|------------------------------|--------|------|------|-------|-------|-------|--------|-------|------|-------|------------------------------|
| Total Non-Endowment Assets | \$86.794 | 2.0% | 2.6% | 4.5% | 5.1% | 3.7% | 4.0% | 4.0% | 7.8% | 4.0% | -0.5% | 3.9% |
| | <i>Benchmark¹</i> | 1.4% | 2.2% | 3.6% | 3.8% | 2.8% | 2.9% | 2.9% | 5.4% | 2.7% | 0.2% | 3.1% |
| Operating & Short-Term Pool | \$32.366 | 0.5% | 1.1% | 1.3% | 0.7% | 0.5% | 0.3% | - | 0.7% | 0.3% | 0.1% | 0.3% |
| | <i>Benchmark²</i> | 0.5% | 1.3% | 1.5% | 0.8% | 0.5% | 0.4% | 0.4% | 0.8% | 0.4% | 0.1% | 0.4% |
| Long-Term Pool | \$54.428 | 2.4% | 2.6% | 5.1% | 6.6% | 5.0% | 5.7% | - | 10.5% | 4.9% | -0.3% | 5.2% |
| | <i>Benchmark³</i> | 2.2% | 2.8% | 5.2% | 6.3% | 4.7% | 5.2% | 4.8% | 9.3% | 4.7% | 0.3% | 4.5% |

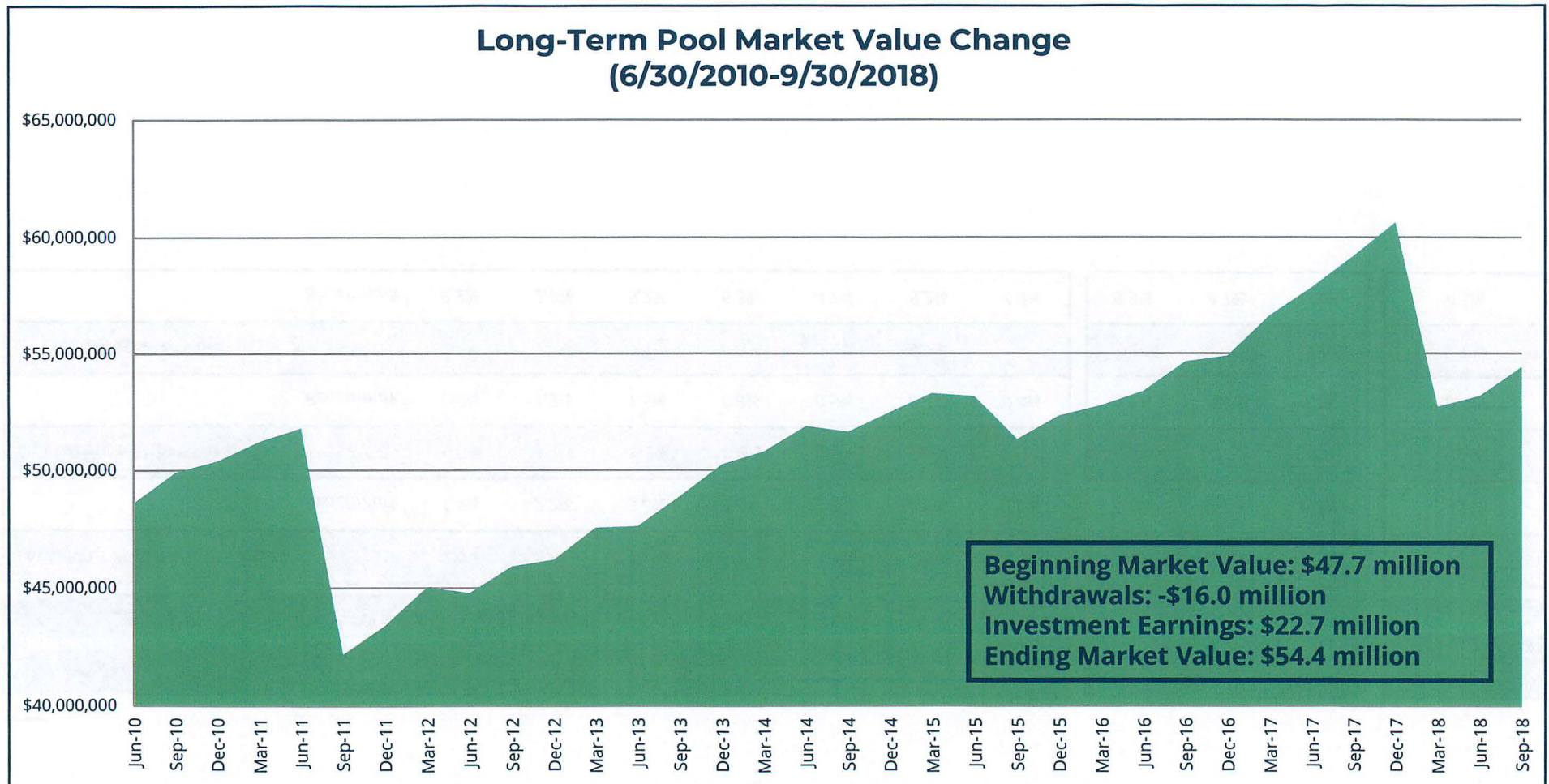
1) 5% BofA Merrill Lynch 91-Day T-Bill / 17% BofA Merrill Lynch US Corp & Gov 1-3 Yrs / 11% BBgBarc US Govt/Credit Int TR / 8% Total Alternatives Benchmark / 15% Russell 3000 / 4% MSCI EAFE Gross.

2) 95% BofA Merrill Lynch 91-Day T-Bill / 5% Barclays 1-3 Yr. Govt.

3) 27% Russell 3000 / 8% MSCI EAFE Gross / 15% Total Alternatives Benchmark / 30% BofA Merrill Lynch US Corp & Gov 1-3 Yrs / 20% BBgBarc US Govt/Credit Int TR.

4) Inception date for Long-Term and Short-Term Pools: June 2010, Inception Date for Total Non-Endowment Assets: March 2004.

ATTRIBUTION OF MARKET VALUE CHANGE: LONG-TERM POOL



PERFORMANCE & ASSET ALLOCATION REVIEW

| Non-Endowment Asset Pool | Current Asset Allocation | Compliance with Policy? | Investment Manager Comments |
|--------------------------|--|---|--|
| Short-Term Pool | <ul style="list-style-type: none"> 97% Cash 3% Short-Term Fixed Income | <u>In Compliance</u> | Liquid; modest return overtime that has increased with recent Fed rate hikes (+0.5% 3Q18, +1.1% YTD); investments include Star Plus and Star Ohio investments. |
| | <ul style="list-style-type: none"> Domestic Equity 29% International Equity 8% | <u>In Compliance</u> Overweight 2% In-Line | <p>Domestic Equity (+6.8% 3Q18, +10.6% YTD) Small cap manager Victory Integrity was affected by stock selection, but maintains favorable results long-term (+1.1% 3Q18, +2.2% YTD, more information in appendix); Loomis Sayles outpaced its respective benchmark benefitting from stock selection, specifically in the Healthcare sector (+8.3% 3Q18, +24.2% YTD).</p> <p>International Equity (+0.4% 3Q18, -4.0% YTD) William Blair International Growth was flat during the quarter, affected by currency and stock selection (+0.0% 3Q18, -1.7% YTD); Dodge & Cox was affected by it's emerging markets exposure and underweight to Japan (+0.8% 3Q18, -6.4% YTD, more information in appendix).</p> |
| Long-Term Pool | <ul style="list-style-type: none"> Alternatives 15% Short-Term Fixed Income 28% Intermediate Fixed Income 20% | In-Line Underweight 2% In-Line | <p>Alternatives (+1.5% 3Q18, -0.4% YTD) Diamond Hill led all of the alternative investment strategies due to strong performance from their "long" portfolio (+5.6% 3Q18, +3.9% YTD).</p> <p>Fixed Income (+0.5% 3Q18, +0.2% YTD) High yield continues to lead the way in fixed income markets in 2018 (Prudential High Yield +2.3% 3Q18, +3.1% YTD); All fixed income strategies were positive for the quarter.</p> |

Manager details can be found in the Appendix.

CURRENT PORTFOLIO

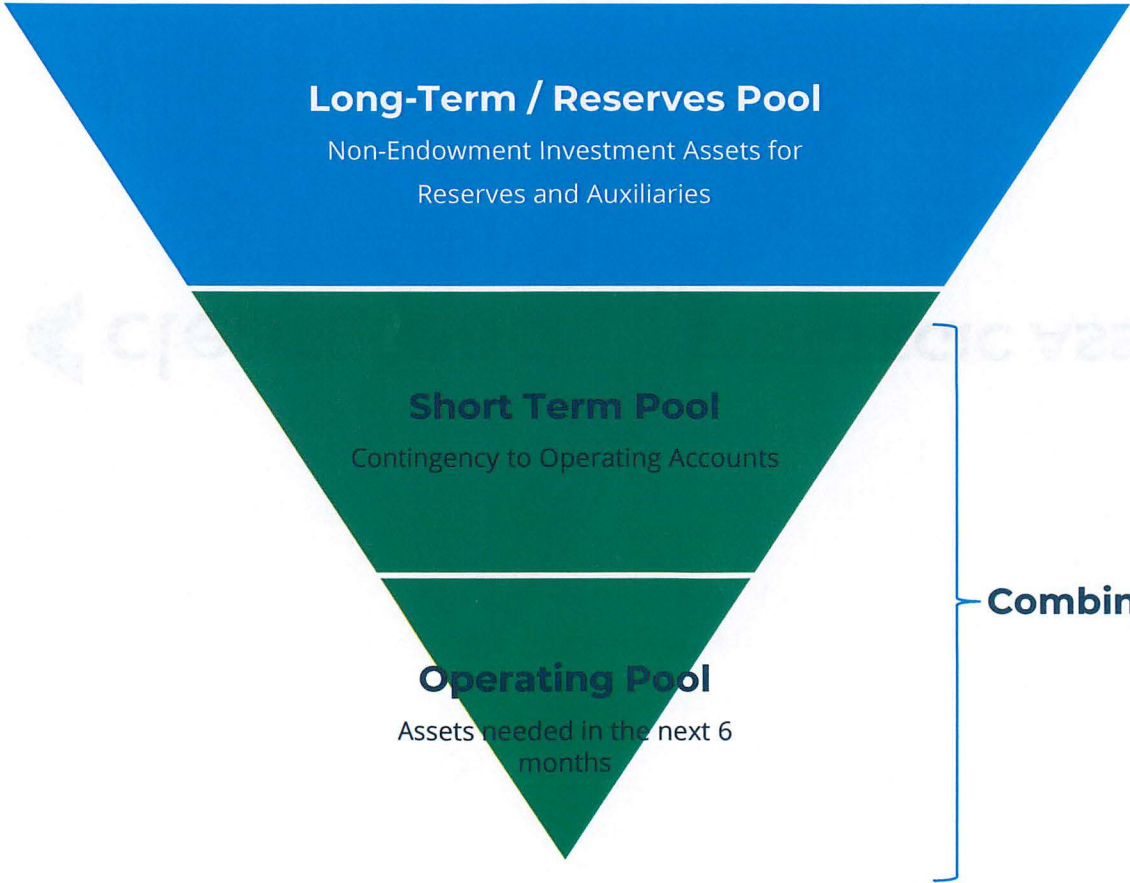
| | Ticker | Market Value (as of 10/29) | Percentage of Portfolio | Change | Market Value (post rebalance) | Percentage of Portfolio | Policy Target | Policy Range | Difference |
|---|--------------------------------------|-------------------------------|----------------------------|------------|----------------------------------|----------------------------|------------------|-----------------|--------------|
| Total Operating & Short Term | | \$29,363,254 | 100.0% | \$0 | \$29,363,254 | 100.0% | 100.0% | | |
| Operating Assets | | \$28,287,689 | 96.3% | | \$28,287,689 | 96.3% | | 60-100% | |
| | JPMorgan 100% U.S. Treas. MM Instl | JTSXX | \$17,105,549 | 58.3% | \$17,105,549 | 58.3% | | | |
| | Star Plus* | - | \$2,527,081 | 8.6% | \$2,527,081 | 8.6% | | | |
| | Star Ohio* | - | \$8,655,058 | 29.5% | \$8,655,058 | 29.5% | | | |
| Short-Term Assets | | \$1,075,565 | 3.7% | | \$1,075,565 | 3.7% | | 0-40% | |
| | Vanguard Short-Term Federal Adm | VSGDX | \$1,075,565 | 3.7% | \$1,075,565 | 3.7% | | | |
| Total Long Term Reserves Pool | | \$51,926,591 | 100.0% | \$0 | \$51,926,591 | 100.0% | 100.0% | | |
| Domestic Equity | | \$14,239,614 | 27.4% | | \$14,239,614 | 27.4% | 27.0% | 20-35% | 0.4% |
| | Vanguard Instl Index | VINIX | \$10,220,742 | 19.7% | \$10,220,742 | 19.7% | | | |
| | Vanguard Mid Cap Index Inv | VIMSX | \$2,020,989 | 3.9% | \$2,020,989 | 3.9% | | | |
| | Loomis Sayles Small Growth Instl | LSSIX | \$1,043,125 | 2.0% | \$1,043,125 | 2.0% | | | |
| | Victory Integrity Small Cap Value Y | VSVIX | \$954,758 | 1.8% | \$954,758 | 1.8% | | | |
| International Equity | | \$3,678,523 | 7.1% | | \$3,678,523 | 7.1% | 8.0% | 0-15% | -0.9% |
| | William Blair International Growth I | BIGIX | \$1,808,753 | 3.5% | \$1,808,753 | 3.5% | | | |
| | Dodge & Cox International Stock | DODFX | \$1,869,770 | 3.6% | \$1,869,770 | 3.6% | | | |
| Alternatives | | \$7,794,790 | 15.0% | | \$7,794,790 | 15.0% | 15.0% | 0-20% | 0.0% |
| | JPMorgan Strategic Income Opps Fd | JSOSX | \$2,094,053 | 4.0% | \$2,094,053 | 4.0% | | | |
| | Wells Fargo Adv Absolute Return I | WABIX | \$2,024,083 | 3.9% | \$2,024,083 | 3.9% | | | |
| | Diamond Hill Long-Short Y | DIAYX | \$2,085,841 | 4.0% | \$2,085,841 | 4.0% | | | |
| | Brookfield Global Real Estate | BLRIX | \$1,590,814 | 3.1% | \$1,590,814 | 3.1% | | | |
| Fixed Income | | \$26,213,606 | 50.5% | | \$26,213,606 | 50.5% | 50.0% | 35-75% | 0.5% |
| | YSU Short Term Bond | PCA SMA | \$11,170,623 | 21.5% | \$11,170,623 | 21.5% | | | |
| | Lord Abbett Short Duration | LLDYX | \$2,308,089 | 4.4% | \$2,308,089 | 4.4% | | | |
| | DFA Five-Year Global | DFGBX | \$1,845,235 | 3.6% | \$1,845,235 | 3.6% | | | |
| | JPMorgan Core Bond Fund Sel | WOBDX | \$4,508,200 | 8.7% | \$4,508,200 | 8.7% | | | |
| | YSU Intermediate Term Fixed | PCA SMA | \$3,956,132 | 7.6% | \$3,956,132 | 7.6% | | | |
| | Prudential High Yield Bond R6 | PHYQX | \$2,425,327 | 4.7% | \$2,425,327 | 4.7% | | | |
| Cash & Cash Equivalents | | \$56 | 0.0% | | \$56 | 0.0% | 0.0% | 0-5% | 0.0% |
| | Equity Account Cash | - | \$56 | 0.0% | \$56 | 0.0% | | | |
| Total University Assets | | \$81,289,845 | | | \$81,289,845 | | | | |

*As of 9/30/2018



STRATEGIC ASSET ALLOCATION REVIEW

STRATEGIC ASSET ALLOCATION REVIEW: LIQUIDITY MANAGEMENT & INVESTMENT STRUCTURE



Investment Pool Structure

- Separate guidelines and asset allocation targets
- The University can allocate assets between investment pools with respect to cash needs
- Allowable asset ranges established between investment pools

STRATEGIC ASSET ALLOCATION REVIEW: FORWARD LOOKING ANALYSIS (LONG-TERM POOL)

| | YSU Long-Term Pool |
|---------------------------------|--------------------|
| U.S. Equity | 27% |
| International Equity | 8% |
| Alternative Investments | 15% |
| Fixed Income: Short-Term | 30% |
| Fixed Income: Intermediate-Term | <u>20%</u> |
| Total | 100% |
| *Forecasted Return | 5.2% |
| *Forecasted Volatility | 7.1% |

The model does not take into account the potential alpha added from active management and tactical asset allocation.

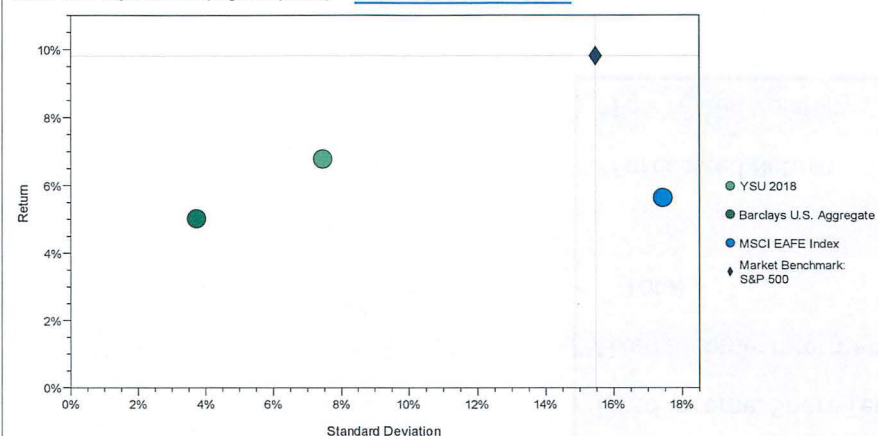
* Forecasted returns and volatility come from the methodology detailed on the slide titled "Strategic Asset Allocation Review: Forecasted Market Returns and Volatility".

STRATEGIC ASSET ALLOCATION REVIEW: LONG-TERM STATISTICS (BACK TESTED)

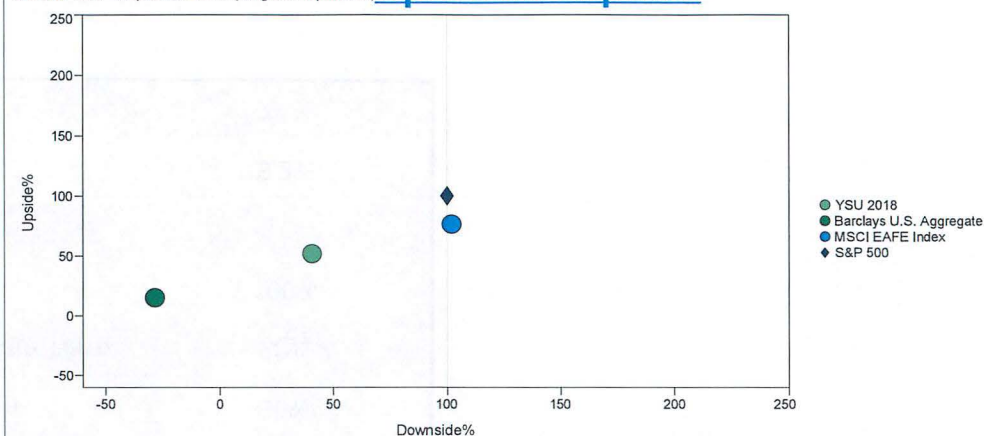
Zephyr StyleADVISOR

Zephyr StyleADVISOR, Hartland and Company

Risk / Return
October 1993 - September 2018 (Single Computation) **Risk/Return**



Upside / Downside
October 1993 - September 2018 (Single Computation) **Up/Down Capture**



Custom Table

October 1993 - September 2018: Summary Statistics

| | Return | Standard Deviation | Sharpe Ratio | Up Capture vs. Market | Down Capture vs. Market | Alpha vs. Market | Beta vs. Market |
|-------------------------|--------|--------------------|--------------|-----------------------|-------------------------|------------------|-----------------|
| YSU 2018 | 6.78% | 7.45% | 0.58 | 51.87% | 40.66% | 1.96% | 0.46 |
| Barclays U.S. Aggregate | 5.02% | 3.73% | 0.68 | 15.43% | -28.52% | 5.67% | -0.05 |
| MSCI EAFE Index | 5.65% | 17.44% | 0.18 | 76.78% | 101.83% | -3.12% | 0.96 |
| S&P 500 | 9.81% | 15.47% | 0.47 | 100.00% | 100.00% | 0.00% | 1.00 |

Past returns are not a guarantee of future returns.

STRATEGIC ASSET ALLOCATION REVIEW: ATTRIBUTION/ALLOCATION (LONG-TERM POOL)

| Year | Investment Assets Cash Outflow | Investment Assets Cash Inflow | Year End (12/31) Equity % | Year End (12/31) Alternatives % | Year End (12/31) Fixed Income % | Calendar Year Return | Market Value (12/31) |
|----------|--------------------------------|---|---------------------------|---------------------------------|---------------------------------|----------------------|----------------------|
| 2010 | \$0 | +\$46,871,000 <i>(Creation of LT Pool)</i> | 19.2% | 0% | 80.8% | +5.5% | \$50,383,000 |
| 2011 | -\$8,000,000 | \$0 | 24.9% | 0% | 75.1% | +1.9% | \$43,392,000 |
| 2012 | \$0 | \$0 | 27.1% | 0% | 72.9% | +6.4% | \$46,190,324 |
| 2013 | \$0 | \$0 | 33.8% | 0% | 66.2% | +8.7% | \$50,249,454 |
| 2014 | \$0 | \$0 | 37.7% | 0% | 62.3% | +4.5% | \$52,491,768 |
| 2015 | \$0 | \$0 | 35.0% | 11.9% | 53.2% | -0.5% | \$52,324,443 |
| 2016 | \$0 | \$0 | 36.5% | 15.6% | 47.9% | +4.0% | \$54,892,466 |
| 2017 | \$0 | \$0 | 37.0% | 15.1% | 47.8% | +10.5% | \$60,625,347 |
| YTD 2018 | -\$8,000,000 | \$0 | 36.7% | 14.9% | 48.4% | +2.6% | \$54,427,514 |

STRATEGIC ASSET ALLOCATION REVIEW: YSU ASSET ALLOCATION GUIDELINES

| Operating & Short Term Pool | Allocation | | |
|--------------------------------------|-------------|------------|-------------|
| | Pool Target | Pool Range | Total Range |
| Asset Class/Investment Strategy | | | |
| Total Cash/Operating Assets | n/a | 60-100% | |
| Total Short-Term Fixed Income | n/a | 0-40% | |
| | | | 25-50% |
| Long Term/Reserves Pool | | | |
| Total Domestic Equity | 27% | 20-35% | |
| Total International Equity | 8% | 0-15% | |
| Total Equity | 35% | 25-45% | |
| Total Alternatives | 15% | 0-20% | |
| Total Short-Term Fixed Income | 30% | 25-45% | |
| Total Intermediate-Term Fixed Income | 20% | 10-30% | |
| Cash | 0% | 0-5% | |
| | 100% | | 50-75% |

Hartland has reviewed YSU's Asset Allocation Guidelines and recommends no changes to the current guidelines at this time.

- The current asset allocation strategy conservatively factors:*
- Adherence with State of Ohio guidelines
 - Contingency for cash flow fluctuations in operating funds
 - Adequate liquidity
 - Growth opportunity through equity allocation
 - Diversification with the incorporation of alternative investments

STRATEGIC ASSET ALLOCATION REVIEW: ALLOCATION COMPARISONS VS. STATE UNIVERSITIES

| | Current YSU Allocation (ST & LT Pool) | Small State University | Small State University | Mid-Sized State University | Mid-Sized State University | Mid-Sized State University | Mid-Sized State University | Large State University | Large State University | Large State University |
|---------------------|---------------------------------------|------------------------|------------------------|----------------------------|----------------------------|----------------------------|----------------------------|------------------------|------------------------|------------------------|
| Equity | 26% | 0% | 38% | 2% | 12% | 17% | 46% | 33% | 40% | 17% |
| Alternatives | 11% | 0% | 0% | 37% | 0% | 3% | 20% | 19% | 30% | 45% |
| Fixed Income & Cash | 63% | 100% | 62% | 61% | 88% | 80% | 34% | 47% | 0% | 37% |

Source: State of Ohio Auditor; FY 2017; Asset size range: \$20MM-\$6.1B.



**ENDOWMENT ASSETS:
PERFORMANCE & ASSET ALLOCATION
REVIEW**

ENDOWMENT ASSETS: PERFORMANCE & ASSET ALLOCATION

| Endowment Assets | Market Value | Asset Allocation | Composition | 3Q2018 | YTD | 1 Yr | 2 Yrs | 3 Yrs | 5 Yrs | 2017 | 2016 | 2015 |
|-------------------------------------|--------------|--------------------------------------|------------------------------|--------|------|-------|-------|-------|-------|-------|-------|-------|
| YSU Endowment Fund | \$10.9 MM | 77% Equity / 23% Fixed Income & Cash | Stocks, Bonds, Mutual Funds | 4.6% | 4.2% | 9.1% | 10.3% | 9.7% | 8.6% | 14.2% | 8.5% | -0.3% |
| | | | <i>Benchmark¹</i> | 4.6% | 5.6% | 10.0% | 10.4% | 10.8% | 9.2% | 14.2% | 8.3% | 1.3% |
| Kilcawley Center | \$114,824 | 60% Equity / 40% Fixed Income | Mutual Fund | 4.2% | 5.6% | 9.8% | 10.2% | 13.8% | 6.7% | 13.8% | 4.9% | -5.3% |
| | | | <i>Benchmark¹</i> | 4.6% | 5.6% | 10.0% | 10.4% | 10.8% | 9.2% | 14.2% | 8.3% | 1.3% |
| Alumni License Plate Account | \$74,276 | 60% Equity / 40% Fixed Income | Mutual Fund | 3.6% | 5.0% | 9.2% | 9.3% | 10.8% | 8.1% | 10.3% | 13.8% | -0.2% |
| | | | <i>Benchmark¹</i> | 4.6% | 5.6% | 10.0% | 10.4% | 10.8% | 9.2% | 14.2% | 8.3% | 1.3% |

Compliance

- Asset Allocation Guidelines: 70% Equities (60-80%) / 30% Cash & Fixed Income (20-40%)
 - YSU Endowment (In-Line)
 - Kilcawley Center (In-Line)
 - Alumni (In-Line)
- Equity & Fixed Income Guidelines
 - YSU Endowment (In-Line)
 - Kilcawley Center (In-Line)
 - Alumni (In-Line)

1) 60% S&P 500 / 40% BBgBarc US Aggregate.

See page 27 in appendix for detail on holdings.

Kilcawley Center & Alumni License Plate accounts- Transition to PNC as custodian completed on 11/1/2017. Historical allocation to single stock and bond positions resulted in large differences relative to benchmark. Both accounts are now currently invested in one low cost, balanced Vanguard mutual fund.



APPENDIX

ENDOCARDIUM, PERICARDIUM & EPICARDIUM BY 2251 WET DRY TON

ASSET ALLOCATION GUIDELINES COMPLIANCE

As of September 30, 2018

| Total Plan Asset Allocation Policy | Range | Current |
|------------------------------------|-----------|---------|
| Operating & Short-Term Pool | 25% - 50% | 37% |
| Long Term/ Reserves Pool | 50% - 75% | 63% |

| Operating & Short-Term Pool | Range | Current |
|-----------------------------|------------|---------|
| Operating Assets | 60% - 100% | 97% |
| Short-Term Assets | 0% - 40% | 3% |

| Long Term/ Reserves Pool | Target | Range | Current |
|---------------------------|--------|-----------|---------|
| Domestic Equity | 27% | 20% - 35% | 29% |
| International Equity | 8% | 0% - 15% | 8% |
| Total Equity | 35% | 25% - 45% | 37% |
| Alternatives | 15% | 0%-20% | 15% |
| Short-Term Fixed Income | 30% | 25% - 45% | 28% |
| Intermediate Fixed Income | 20% | 10% - 30% | 20% |
| Cash & Cash Equivalents | 0% | 0% - 5% | 0% |

In Line
 Within Tolerance
 Review

SCHEDULE OF ASSETS

| | Asset Class | Market Value 6/30/18 (\$) | Market Value 9/30/18 (\$) | % of Total Plan | % of Pool |
|--|----------------------------|------------------------------|------------------------------|-----------------|--------------|
| Total University Assets | | 71,560,137 | 86,793,938 | 100.0 | 100.0 |
| Total Operating & Short Term | | 18,387,166 | 32,366,424 | 37.3 | 100.0 |
| JPMorgan 100% U.S. Tr Sec MM Inst | Cash | 4,189,327 | 20,108,711 | 23.2 | 62.1 |
| Star Plus | Cash | 2,513,740 | 2,527,081 | 2.9 | 7.8 |
| Vanguard Short-Term Federal Adm | US Fixed Income Short Term | 1,073,960 | 1,075,573 | 1.2 | 3.3 |
| STAR Ohio | | 10,610,139 | 8,655,058 | 10.0 | 26.7 |
| Total Long Term/ Reserves Pool | | 53,172,971 | 54,427,514 | 62.7 | 100.0 |
| Total Domestic Equity | | 14,820,629 | 15,831,208 | 18.2 | 29.1 |
| Vanguard Institutional Index | US Stock Large Cap Core | 10,459,505 | 11,265,052 | 13.0 | 20.7 |
| Vanguard Mid Cap Index Inv | US Stock Mid Cap Core | 2,177,340 | 2,278,123 | 2.6 | 4.2 |
| Loomis Sayles Sm Growth Instl | US Stock Small Cap Growth | 1,113,023 | 1,205,075 | 1.4 | 2.2 |
| Victory Integrity Small Value Y | US Stock Small Cap Value | 1,070,761 | 1,082,958 | 1.2 | 2.0 |
| Total International Equity | | 4,634,416 | 4,139,298 | 4.8 | 7.6 |
| William Blair International Growth I | International | 2,352,483 | 2,095,607 | 2.4 | 3.9 |
| Dodge & Cox Internat'l Stock | International | 2,281,933 | 2,043,691 | 2.4 | 3.8 |
| Total Alternatives | | 7,826,231 | 8,119,612 | 9.4 | 14.9 |
| JPMorgan Strategic Income Opps Sel | Absolute Return | -- | 2,106,766 | 2.4 | 3.9 |
| Wells Fargo Adv Absolute Return Instl | All Assets | 2,313,674 | 2,118,314 | 2.4 | 3.9 |
| Diamond Hill Long-Short Y | Long/Short Equity | 2,362,147 | 2,241,282 | 2.6 | 4.1 |
| Brookfield Global Listed Real Estate I | Global Real Estate | 1,435,072 | 1,653,250 | 1.9 | 3.0 |
| Total Fixed Income | | 25,822,566 | 26,337,340 | 30.3 | 48.4 |
| JPMorgan Core Bond | US Fixed Income Core | 4,632,174 | 4,521,630 | 5.2 | 8.3 |
| YSU Intermediate Term Bond | US Fixed Income Core | 3,976,479 | 3,988,956 | 4.6 | 7.3 |
| PGIM High Yield R6 | US Fixed Income High Yield | 2,419,220 | 2,475,510 | 2.9 | 4.5 |
| YSU Short Term Bond | US Fixed Income Short Term | 11,147,184 | 11,199,709 | 12.9 | 20.6 |
| Lord Abbett Short Duration Income I | US Fixed Income Short Term | 1,813,558 | 2,313,071 | 2.7 | 4.2 |
| DFA Five-Yr Global Fxd-Inc I | US Fixed Income Short Term | 1,833,951 | 1,838,465 | 2.1 | 3.4 |
| Total Cash & Cash Equivalents | | 69,130 | 56 | 0.0 | 0.0 |
| PNC Govt MMkt | Global Fixed Income | 69,130 | 56 | 0.0 | 0.0 |

PERFORMANCE REPORT CARD

| | Ending September 30, 2018 | | | | | | | | Calendar Years | | | | Inception Date |
|---|---------------------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|----------------|-------------|-------------|---------------|----------------|
| | 2018 Q3 (%) | YTD (%) | 1 Yr (%) | 2 Yrs (%) | 3 Yrs (%) | 5 Yrs (%) | 7 Yrs (%) | 10 Yrs (%) | 2017 (%) | 2016 (%) | 2015 (%) | Inception (%) | |
| Total University Assets | 2.0 | 2.6 | 4.5 | 5.4 | 5.1 | 3.7 | 4.0 | 4.0 | 7.8 | 4.0 | -0.5 | 3.9 | Mar-04 |
| <i>Total Policy Benchmark</i> | 1.4 | 2.2 | 3.6 | 3.9 | 3.8 | 2.8 | 2.9 | 2.9 | 5.4 | 2.7 | 0.2 | 3.1 | |
| Total Operating & Short Term | 0.5 | 1.1 | 1.3 | 0.9 | 0.7 | 0.5 | 0.3 | -- | 0.7 | 0.3 | 0.1 | 0.3 | Jun-10 |
| <i>Total Operating & Short Term Benchmark</i> | 0.5 | 1.3 | 1.5 | 1.1 | 0.8 | 0.5 | 0.4 | 0.4 | 0.8 | 0.4 | 0.1 | 0.4 | |
| JPMorgan 100% U.S. Tr Sec MM Inst | 0.4 | 1.2 | 1.4 | 1.0 | 0.7 | 0.4 | 0.3 | 0.2 | 0.7 | 0.2 | 0.0 | 0.3 | Sep-11 |
| <i>ICE BofAML 91 Days T-Bills TR</i> | 0.5 | 1.3 | 1.6 | 1.1 | 0.8 | 0.5 | 0.4 | 0.3 | 0.9 | 0.3 | 0.0 | 0.4 | |
| <i>Money Market - Taxable MStar MF Rank</i> | 49 | 44 | 48 | 54 | 53 | 53 | 56 | 61 | 55 | 60 | 93 | 56 | |
| Vanguard Short-Term Federal Adm | 0.2 | 0.0 | -0.2 | 0.0 | 0.6 | 0.8 | 0.8 | 1.8 | 0.8 | 1.2 | 0.8 | 1.0 | Sep-10 |
| <i>BBgBarc US Govt 1-5 Yr TR</i> | 0.1 | -0.2 | -0.6 | -0.3 | 0.3 | 0.7 | 0.7 | 1.7 | 0.7 | 1.0 | 0.9 | 0.9 | |
| <i>Short Government MStar MF Rank</i> | 37 | 56 | 58 | 54 | 25 | 32 | 30 | 27 | 31 | 17 | 14 | 28 | |
| STAR Plus | 0.5 | 1.2 | 1.4 | 1.0 | 0.8 | -- | -- | -- | 0.7 | 0.4 | 0.2 | 0.6 | Jan-14 |
| <i>ICE BofAML 91 Days T-Bills TR</i> | 0.5 | 1.3 | 1.6 | 1.1 | 0.8 | 0.5 | 0.4 | 0.3 | 0.9 | 0.3 | 0.0 | 0.5 | |
| STAR Ohio | 0.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.5 | Jun-18 |
| <i>ICE BofAML 91 Days T-Bills TR</i> | 0.5 | 1.3 | 1.6 | 1.1 | 0.8 | 0.5 | 0.4 | 0.3 | 0.9 | 0.3 | 0.0 | 0.5 | |
| Total Long Term/ Reserves Pool | 2.4 | 2.6 | 5.1 | 6.7 | 6.6 | 5.0 | 5.7 | -- | 10.5 | 4.9 | -0.3 | 5.2 | Jun-10 |
| <i>Total Long Term/ Reserves Fund Benchmark</i> | 2.2 | 2.8 | 5.2 | 6.3 | 6.3 | 4.7 | 5.2 | 4.8 | 9.3 | 4.7 | 0.3 | 4.7 | |
| Total Domestic Equity | 6.8 | 10.6 | 17.4 | 18.3 | 16.8 | 13.1 | 16.8 | -- | 21.6 | 11.7 | 0.7 | 15.6 | Jun-10 |
| <i>Russell 3000</i> | 7.1 | 10.6 | 17.6 | 18.1 | 17.1 | 13.5 | 16.9 | 12.0 | 21.1 | 12.7 | 0.5 | 15.7 | |
| Vanguard Institutional Index | 7.7 | 10.5 | 17.9 | 18.2 | 17.3 | 13.9 | 16.9 | 12.0 | 21.8 | 11.9 | 1.4 | 15.8 | Jun-10 |
| <i>S&P 500</i> | 7.7 | 10.6 | 17.9 | 18.3 | 17.3 | 13.9 | 16.9 | 12.0 | 21.8 | 12.0 | 1.4 | 15.8 | |
| <i>Large Blend MStar MF Rank</i> | 24 | 23 | 23 | 29 | 13 | 14 | 27 | 30 | 32 | 28 | 24 | 23 | |

PERFORMANCE REPORT CARD

| | Ending September 30, 2018 | | | | | | | | Calendar Years | | | Inception (%) | Inception Date |
|---|---------------------------|-------------|-------------|--------------|--------------|--------------|--------------|---------------|----------------|-------------|-------------|------------------|-------------------|
| | 2018 Q3 (%) | YTD (%) | 1 Yr (%) | 2 Yrs (%) | 3 Yrs (%) | 5 Yrs (%) | 7 Yrs (%) | 10 Yrs (%) | 2017 (%) | 2016 (%) | 2015 (%) | | |
| Vanguard Mid Cap Index Inv | 4.6 | 7.3 | 13.4 | 14.3 | 13.8 | 11.7 | 15.9 | 12.4 | 19.3 | 11.2 | -1.3 | 13.7 | Sep-10 |
| <i>Vanguard Mid Cap Index Benchmark</i> | 4.7 | 7.4 | 13.4 | 14.4 | 13.8 | 11.7 | 16.0 | 12.5 | 19.3 | 11.2 | -1.3 | 13.7 | |
| <i>Mid-Cap Blend MStar MF Rank</i> | 36 | 35 | 41 | 48 | 45 | 21 | 30 | 11 | 16 | 74 | 19 | 27 | |
| Loomis Sayles Sm Growth Instl | 8.3 | 24.2 | 29.8 | 27.0 | 19.9 | 12.5 | 17.8 | 13.8 | 26.9 | 5.7 | 1.1 | 16.4 | Sep-10 |
| <i>Russell 2000 Growth</i> | 5.5 | 15.8 | 21.1 | 21.0 | 18.0 | 12.1 | 17.5 | 12.7 | 22.2 | 11.3 | -1.4 | 15.0 | |
| <i>Small Growth MStar MF Rank</i> | 37 | 25 | 28 | 20 | 31 | 40 | 34 | 34 | 22 | 85 | 20 | 24 | |
| Victory Integrity Small Value Y | 1.1 | 2.2 | 7.9 | 14.5 | 13.2 | 9.3 | 15.5 | 11.9 | 12.4 | 24.4 | -6.7 | 12.8 | Sep-10 |
| <i>Russell 2000 Value</i> | 1.6 | 7.1 | 9.3 | 14.8 | 16.1 | 9.9 | 15.3 | 9.5 | 7.8 | 31.7 | -7.5 | 12.4 | |
| <i>Small Value MStar MF Rank</i> | 53 | 86 | 44 | 30 | 58 | 50 | 32 | 8 | 19 | 61 | 62 | 26 | |
| Total International Equity | 0.4 | -4.0 | -1.3 | 10.0 | 8.7 | 4.5 | 8.5 | -- | 26.6 | 2.7 | -5.9 | 5.1 | Sep-10 |
| <i>MSCI EAFE</i> | 1.4 | -1.4 | 2.7 | 10.6 | 9.2 | 4.4 | 8.3 | 5.4 | 25.0 | 1.0 | -0.8 | 5.9 | |
| <i>MSCI ACWI ex USA</i> | 0.7 | -3.1 | 1.8 | 10.3 | 10.0 | 4.1 | 7.2 | 5.2 | 27.2 | 4.5 | -5.7 | 4.8 | |
| William Blair International Growth I | 0.0 | -1.7 | 2.9 | 10.4 | 9.1 | 5.3 | 9.3 | 6.8 | 29.5 | -2.5 | 0.0 | 8.3 | Jun-12 |
| <i>MSCI ACWI ex USA</i> | 0.7 | -3.1 | 1.8 | 10.3 | 10.0 | 4.1 | 7.2 | 5.2 | 27.2 | 4.5 | -5.7 | 7.1 | |
| <i>Foreign Large Growth MStar MF Rank</i> | 63 | 71 | 67 | 60 | 65 | 65 | 61 | 45 | 66 | 60 | 68 | 62 | |
| Dodge & Cox Internat'l Stock | 0.8 | -6.4 | -5.3 | 9.5 | 8.2 | 3.7 | 8.5 | 5.9 | 23.9 | 8.3 | -11.4 | 5.6 | Sep-10 |
| <i>MSCI EAFE</i> | 1.4 | -1.4 | 2.7 | 10.6 | 9.2 | 4.4 | 8.3 | 5.4 | 25.0 | 1.0 | -0.8 | 5.9 | |
| <i>Foreign Large Value MStar MF Rank</i> | 52 | 93 | 96 | 44 | 41 | 53 | 26 | 18 | 43 | 18 | 95 | 35 | |
| Total Alternatives | 1.5 | -0.4 | 2.3 | 3.8 | 4.6 | -- | -- | -- | 7.9 | 3.5 | -- | 1.5 | Mar-15 |
| <i>Total Alternatives Benchmark</i> | 0.1 | 0.8 | 3.3 | 4.2 | 4.3 | -- | -- | -- | 8.4 | 1.5 | -- | 2.1 | |

PERFORMANCE REPORT CARD

| | Ending September 30, 2018 | | | | | | | | Calendar Years | | | | Inception Date |
|--|---------------------------|------------|------------|------------|------------|------------|------------|------------|----------------|------------|------------|---------------|----------------|
| | 2018 Q3 (%) | YTD (%) | 1 Yr (%) | 2 Yrs (%) | 3 Yrs (%) | 5 Yrs (%) | 7 Yrs (%) | 10 Yrs (%) | 2017 (%) | 2016 (%) | 2015 (%) | Inception (%) | |
| JPMorgan Strategic Income Opps Sel | 1.0 | 2.1 | 2.3 | 3.3 | 4.4 | 2.6 | 3.7 | -- | 3.3 | 9.2 | -2.2 | -- | Sep-18 |
| BBgBarc US Universal TR | 0.3 | -1.4 | -1.0 | 0.0 | 2.0 | 2.5 | 2.6 | 4.2 | 4.1 | 3.9 | 0.4 | -- | |
| Multisector Bond MStar MF Rank | 62 | 9 | 23 | 37 | 54 | 80 | 74 | -- | 96 | 26 | 65 | -- | |
| Wells Fargo Adv Absolute Return Instl | 0.4 | -1.3 | 1.3 | 4.7 | 5.1 | 2.6 | -- | -- | 12.6 | 3.0 | -4.6 | 1.4 | Mar-15 |
| HFRF Fund of Funds Composite Index | 0.3 | 1.0 | 3.1 | 4.8 | 3.3 | 3.2 | 3.6 | 2.6 | 7.8 | 0.5 | -0.3 | 1.9 | |
| Diamond Hill Long-Short Y | 5.6 | 3.9 | 7.0 | 7.8 | 8.2 | 6.5 | 9.7 | 6.0 | 6.0 | 10.5 | -1.4 | 5.4 | Mar-15 |
| HFRX Equity Hedge Index | -1.1 | -0.9 | 1.8 | 4.8 | 3.2 | 2.4 | 3.2 | 0.8 | 10.0 | 0.1 | -2.3 | 1.2 | |
| Long-Short Credit Mstar MF Rank | 1 | 21 | 1 | 1 | 1 | 1 | 1 | -- | 10 | 10 | 42 | 15 | |
| Brookfield Global Listed Real Estate I | -2.1 | -1.9 | 1.9 | 1.2 | 5.8 | 6.2 | -- | -- | 10.1 | 6.3 | -1.4 | 1.3 | Jul-17 |
| FTSE NAREIT Developed | -0.3 | 0.1 | 3.7 | 2.1 | 6.2 | 5.4 | 9.3 | 6.0 | 10.4 | 4.1 | -0.8 | 2.9 | |
| Global Real Estate MStar MF Rank | 87 | 73 | 87 | 86 | 59 | 30 | -- | -- | 81 | 10 | 72 | 85 | |
| Total Fixed Income | 0.5 | 0.2 | 0.2 | 0.6 | 1.2 | 1.5 | 1.5 | -- | 2.4 | 1.6 | 0.8 | 1.9 | Jun-10 |
| Total Fixed Income Benchmark | 0.3 | 0.0 | -0.2 | 0.2 | 0.8 | 1.1 | 1.2 | 2.3 | 1.3 | 1.6 | 0.8 | 1.5 | |
| JPMorgan Core Bond | 0.0 | -1.4 | -1.0 | -0.4 | 1.2 | 2.1 | 2.1 | 4.1 | 3.8 | 2.3 | 0.7 | -1.5 | Aug-17 |
| BBgBarc US Aggregate TR | 0.0 | -1.6 | -1.2 | -0.6 | 1.3 | 2.2 | 2.0 | 3.8 | 3.5 | 2.6 | 0.6 | -1.6 | |
| Intermediate-Term Bond MStar MF Rank | 79 | 56 | 50 | 71 | 78 | 71 | 82 | 73 | 57 | 83 | 23 | 62 | |
| YSU Intermediate Term Bond | 0.3 | -0.7 | -0.8 | -0.2 | 1.0 | 1.5 | 1.8 | 3.6 | 2.4 | 2.0 | 0.5 | 3.5 | Mar-04 |
| BBgBarc US Govt/Credit Int TR | 0.2 | -0.8 | -1.0 | -0.4 | 0.9 | 1.5 | 1.6 | 3.2 | 2.1 | 2.1 | 1.1 | 3.2 | |
| Intermediate-Term Bond MStar MF Rank | 27 | 16 | 39 | 58 | 89 | 93 | 89 | 87 | 94 | 90 | 34 | 84 | |

PERFORMANCE REPORT CARD

| | Ending September 30, 2018 | | | | | | | | Calendar Years | | | | Inception Date |
|---|---------------------------|---------|----------|-----------|-----------|-----------|-----------|------------|----------------|----------|----------|---------------|----------------|
| | 2018 Q3 (%) | YTD (%) | 1 Yr (%) | 2 Yrs (%) | 3 Yrs (%) | 5 Yrs (%) | 7 Yrs (%) | 10 Yrs (%) | 2017 (%) | 2016 (%) | 2015 (%) | Inception (%) | |
| PGIM High Yield R6 | 2.3 | 3.1 | 3.5 | 6.2 | 7.9 | 5.8 | -- | -- | 7.8 | 15.3 | -2.6 | 6.2 | Dec-16 |
| <i>BBgBarc US High Yield TR</i> | 2.4 | 2.6 | 3.0 | 5.9 | 8.1 | 5.5 | 7.6 | 9.5 | 7.5 | 17.1 | -4.5 | 5.7 | |
| <i>High Yield Bond MStar MF Rank</i> | 31 | 15 | 22 | 27 | 16 | 10 | -- | -- | 27 | 30 | 38 | 13 | |
| YSU Short Term Bond | 0.5 | 0.5 | 0.4 | 0.6 | 0.8 | 0.9 | 1.0 | 1.9 | 1.1 | 1.1 | 0.6 | 2.4 | Mar-04 |
| <i>ICE BofAML 1-3 Yrs US Corp & Govt TR</i> | 0.4 | 0.5 | 0.3 | 0.5 | 0.7 | 0.8 | 0.9 | 1.7 | 0.9 | 1.3 | 0.7 | 2.2 | |
| <i>Short-Term Bond MStar MF Rank</i> | 65 | 60 | 67 | 81 | 90 | 93 | 93 | 95 | 89 | 90 | 46 | 75 | |
| Lord Abbett Short Duration Income I | 0.6 | 0.9 | 1.1 | 1.8 | 2.4 | 2.2 | 2.9 | 4.4 | 2.7 | 4.0 | 0.9 | 1.1 | Mar-18 |
| <i>ICE BofAML 1-3 Yrs US Corp & Govt TR</i> | 0.4 | 0.5 | 0.3 | 0.5 | 0.7 | 0.8 | 0.9 | 1.7 | 0.9 | 1.3 | 0.7 | 0.6 | |
| <i>Short-Term Bond MStar MF Rank</i> | 53 | 32 | 25 | 23 | 19 | 12 | 7 | 7 | 14 | 12 | 23 | 25 | |
| DFA Five-Yr Global Fxd-Inc I | 0.2 | 0.4 | 0.3 | 0.3 | 1.2 | 1.7 | 1.8 | 3.0 | 2.0 | 1.8 | 1.4 | 1.8 | Jun-13 |
| <i>FTSE WGBI 1-5 Yr Hdg USD</i> | 0.2 | 0.6 | 0.7 | 0.6 | 1.0 | 1.3 | 1.3 | 1.9 | 1.1 | 1.5 | 1.0 | 1.3 | |
| <i>World Bond MStar MF Rank</i> | 24 | 19 | 29 | 55 | 87 | 50 | 55 | 72 | 93 | 80 | 3 | 50 | |
| Total Cash & Cash Equivalents | 0.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.8 | Mar-18 |
| <i>ICE BofAML 91 Days T-Bills TR</i> | 0.5 | 1.3 | 1.6 | 1.1 | 0.8 | 0.5 | 0.4 | 0.3 | 0.9 | 0.3 | 0.0 | 0.9 | |
| PNC Govt MMkt | 0.5 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.8 | Mar-18 |
| <i>ICE BofAML 91 Days T-Bills TR</i> | 0.5 | 1.3 | 1.6 | 1.1 | 0.8 | 0.5 | 0.4 | 0.3 | 0.9 | 0.3 | 0.0 | 0.9 | |

- Total Policy Benchmark = 45% ICE BofAML 91 Days T-Bills TR / 17% ICE BofAML 1-3 Yrs US Corp & Govt TR / 11% BBgBarc US Govt/Credit Int TR / 8% Total Alternatives Benchmark / 15% Russell 3000 / 4% MSCI EAFE

- Total Operating & Short Term Benchmark = 95% ICE BofAML 91 Days T-Bills TR / 5% BBgBarc US Govt 1-3 Yr TR

- Total Long Term/ Reserves Fund Benchmark = 27% Russell 3000 / 8% MSCI EAFE / 15% Total Alternatives Benchmark / 30% ICE BofAML 1-3 Yrs US Corp & Govt TR / 20% BBgBarc US Govt/Credit Int TR

- Vanguard Mid Cap Index Benchmark = 100% CRSP US Mid Cap TR USD

- Total Alternatives Benchmark = 25% FTSE NAREIT Developed / 75% HFRI Fund of Funds Composite Index

- Total Fixed Income Benchmark = 64% ICE BofAML 1-3 Yrs US Corp & Govt TR / 36% BBgBarc US Govt/Credit Int TR

ENDOWMENT HOLDINGS

- **YSU Endowment (Huntington)**
 - Equity Mutual Funds – 10% (6 Mutual Funds & ETFs)
 - Stocks – 61% (45-60 U.S. Large Cap & Mid-Cap Stocks)
 - Fixed Income Mutual Funds – 2% (Federated Total Return Bond)
 - Bonds – 23% (15 Bonds, U.S. Corporate / Gov't / Asset Backed Debt)
 - Cash – 4%
- **Kilcawley (PNC)**
 - Vanguard Balanced Index Fund (Adm) – 100%
- **Alumni License Plate (PNC)**
 - Vanguard Balanced Index Fund (Adm) – 100%

VICTORY INTEGRITY SMALL CAP VALUE: STRATEGY OVERVIEW & PERFORMANCE DRIVERS

Team

Daniel Bandi, Adam Friedman and Daniel DeMonica are Portfolio Managers and Principals of the firm. They have been managing assets together since 1998, when the team was formed at National City. They are supported by a team of six fundamental analysts and one quantitative analyst. Decision making is one-on-one bases between the lead portfolio manager and sector analyst, allowing for decisions to be made quickly.

Process

A front-end screen comprised of three factors is run on a universe of 11,000 stocks. First, they screen for stocks with a market capitalization from \$100 million to \$2 billion. Then, to ensure liquidity, they screen for stocks with a trading volume of \$1 million per day. This reduces the universe to approximately 1,700 stocks. Finally, the narrowed small cap universe is screened for low P/B, P/S, P/CF and P/FCF ratios. Those stocks which fall in the cheapest 50% of this universe will be further evaluated.

After the universe has been narrowed, stocks are recommended if they meet the criteria of right company, right price and right time. Right Company - The team evaluates company management to ensure their interests are in line with shareholders. They want the management team to be adding value and disciplined in allocating capital. Right Price - They evaluate the statistical cheapness of a company relative to the universe, sector and history. They determine intrinsic value using multiple methods based off of modeled earnings and balance sheet growth. These methods include a discounted cash flow, discounted economic value added and dividend discount model. The overall goal is to balance upside potential with downside risk. Right Time - They look to identify a catalyst that will drive the share price higher. Catalyst can be company specific, industry or macroeconomic developments.

Recent Performance Drivers (underperformed by -313 bps in Q2-2018)

- Security selection in energy, financials, and materials were the main detractors to performance. Stock selection in industrials and health care hurt.
 - Callon Petroleum Co. (CPE), Ultra Petroleum Corp. (UPL), and Nabors Industries Ltd. (NBR) were the largest detractors within energy. Callon Petroleum Co. (CPE) announced and completed an equity and debt offering to acquire additional acreage in the Permian. The current bottlenecks and takeaway capacity in the Permian will not be mitigated until mid-2019.
 - In addition to the western gas differentials blowing out due to better weather, Ultra Petroleum Corp. (UPL) released disappointing results on one of its horizontal wells. The team exited the position.
- Within financials, MGIC Investment Corp. (MTG), Stifel Financial Corp. (SF), and IBERIABANK Corp. (IBKC) hurt performance.
 - MGIC Investment Corporation (MTG) succumbed to deteriorating pricing pressure, which was evident across the entire mortgage insurance complex.
 - Both Stifel Financial Corp. (SF) and IBERIABANK Corp. (IBKC) sold off along with other interest rate sensitive stocks.
- Security selection in utilities and semiconductors were minor positives.
- From a style perspective, higher market capitalization and lower momentum were headwinds.
 - Flows into small-cap ETFs were very sizeable and led to lower market cap stocks outperforming.
 - According to Jefferies, only 12% of small-cap value managers outperformed for the quarter.
- The team has become more conservative in our outlook.
 - Previously, they believed that cooler heads would prevail in the global trade disputes; however, tariffs have been enacted or threatened to be enacted globally, and markets are adjusting to these uncertainties.

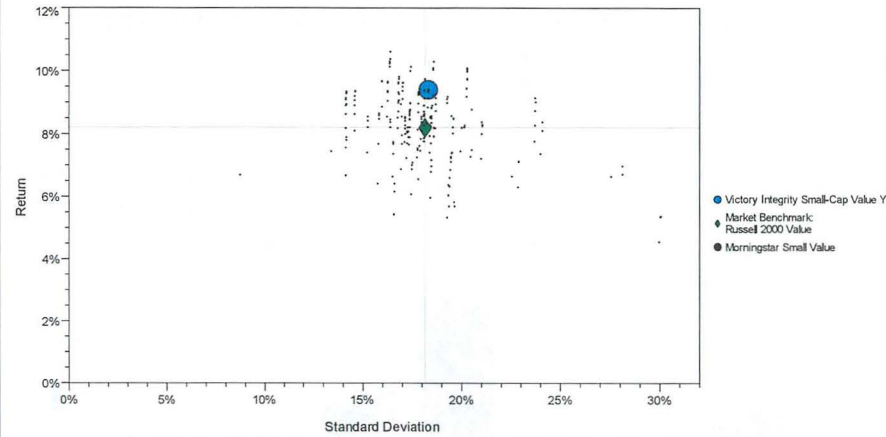
VICTORY INTEGRITY SMALL CAP VALUE: LONG-TERM CHARACTERISTICS

Zephyr StyleADVISOR

Zephyr StyleADVISOR: Hartland and Company

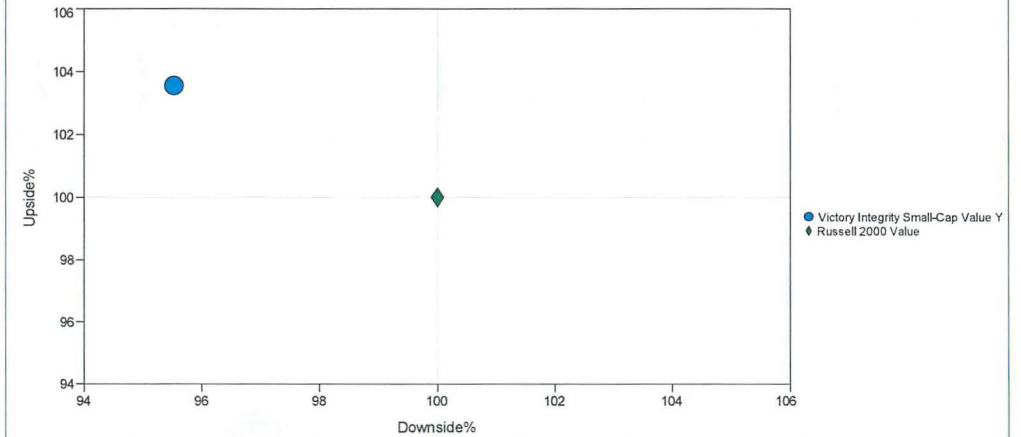
Risk / Return

April 2004 - September 2018 (Single Computation)



Upside / Downside

April 2004 - September 2018 (Single Computation)



Custom Table

April 2004 - September 2018: Summary Statistics

| | Return | Standard Deviation | Sharpe Ratio | Up Capture vs. Market | Down Capture vs. Market | Alpha vs. Market | Beta vs. Market |
|-------------------------------------|--------|--------------------|--------------|-----------------------|-------------------------|------------------|-----------------|
| Victory Integrity Small-Cap Value Y | 9.40% | 18.33% | 0.44 | 103.57% | 95.53% | 1.27% | 0.98 |
| Russell 2000 Value | 8.20% | 18.15% | 0.38 | 100.00% | 100.00% | 0.00% | 1.00 |

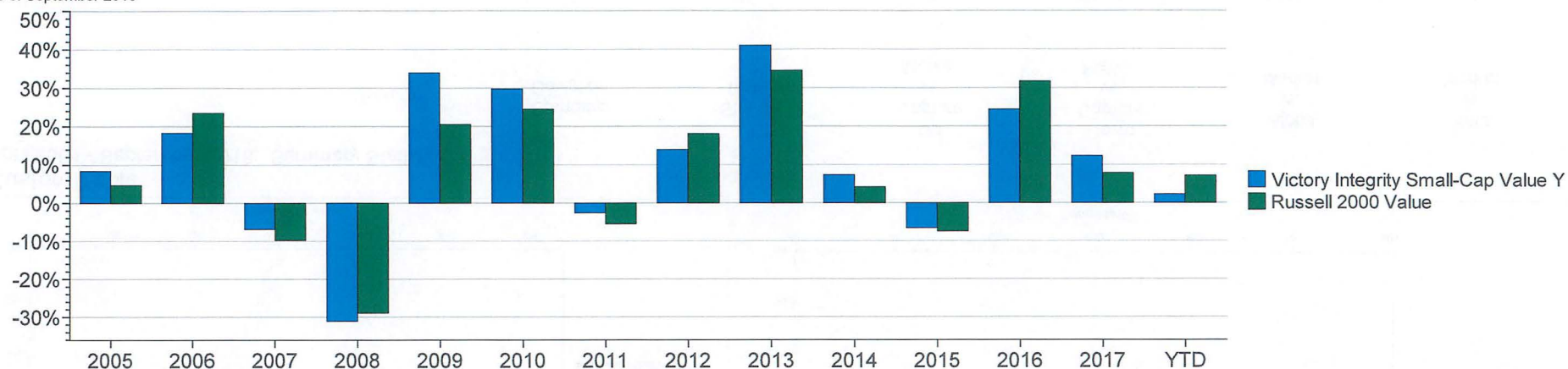
Past returns are not a guarantee of future returns.

VICTORY INTEGRITY SMALL CAP VALUE: CALENDAR YEAR RETURNS

Zephyr StyleADVISOR

Zephyr StyleADVISOR: Hartland and Company

Calendar Year Return
As of September 2018



Calendar Year Return
As of September 2018

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | YTD |
|-------------------------------------|------------|--------|-------------|---------|-------------|-------------|-------------|--------|-------------|------------|-------------|--------|-------------|-------|
| Victory Integrity Small-Cap Value Y | ↑ 8.42% | 18.28% | ↑ -6.87% | -31.09% | ↑ 33.95% | ↑ 29.74% | ↑ -2.60% | 13.97% | ↑ 41.02% | ↑ 7.33% | ↑ -6.65% | 24.38% | ↑ 12.35% | 2.20% |
| Russell 2000 Value | 4.71% | 23.48% | -9.78% | -28.92% | 20.58% | 24.50% | -5.50% | 18.05% | 34.52% | 4.22% | -7.47% | 31.74% | 7.84% | 7.14% |

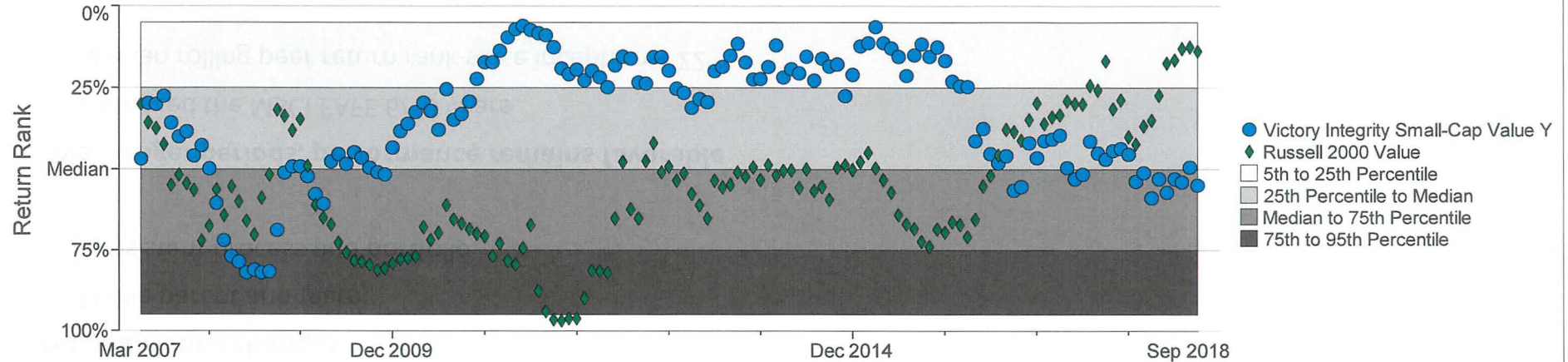
Past returns are not a guarantee of future returns.

VICTORY INTEGRITY SMALL CAP VALUE: ROLLING PERIOD PEER RANKINGS

Zephyr StyleADVISOR

Zephyr StyleADVISOR: Hartland and Company

Manager vs Morningstar Small Value: Return Rank
April 2004 - September 2018 (36-Month Moving Windows, Computed Monthly)



Manager vs Benchmark: Return
April 2004 - September 2018 (36-Month Moving Windows, Computed Monthly)

| | Feb 2008 | Feb 2009 | Jan 2010 | Jan 2011 | Dec 2011 | Dec 2012 | Dec 2013 | Nov 2014 | Nov 2015 | Oct 2016 | Oct 2017 | Sep 2018 |
|-------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Victory Integrity Small-Cap Value Y | 2.45% | -18.39% | -5.83% | 8.54% | 19.17% | 12.93% | 16.11% | 19.05% | 16.03% | 3.66% | 9.09% | 13.21% |
| Russell 2000 Value | 3.09% | -18.58% | -9.57% | 3.64% | 12.36% | 11.57% | 14.49% | 17.84% | 12.59% | 4.47% | 9.67% | 16.12% |

Past returns are not a guarantee of future returns.



DODGE & COX INTERNATIONAL: EXECUTIVE SUMMARY

1. Performance has been challenged in 2018

- Exposure to Emerging Markets (26%)
- Deep value style and financial overweight position (29% vs. 21% for the MSCI EAFE Index)
- Underweight position in Japan (10% vs. 25% for the MSCI EAFE Index)

2. No qualitative changes

- Stable parent and team
- Consistent process and portfolio

3. Over longer periods, performance remains favorable

- Outpaced the MSCI EAFE 6/10 years
- Median rolling peer return rank since inception = 22nd

DODGE & COX INTERNATIONAL: HISTORICAL & CALENDAR YEAR RETURNS

Zephyr StyleADVISOR

Zephyr StyleADVISOR: Hartland and Company

Manager vs Benchmark: Return

June 2001 - September 2018 (not annualized if less than 1 year)

| | YTD | 1 year | 2 years | 3 years | 4 years | 5 years | 10 years | 15 years | Since Inception |
|---------------------------------|--------|--------|---------|---------|---------|---------|----------|----------|-----------------|
| Dodge & Cox International Stock | -6.39% | -5.26% | 9.51% | 8.20% | 1.50% | 3.74% | 5.90% | 8.28% | 7.31% |
| MSCI EAFE (Net) | -1.43% | 2.74% | 10.62% | 9.23% | 4.46% | 4.42% | 5.38% | 6.80% | 5.06% |

Calendar Year Return

As of September 2018

| | YTD | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011 | 2010 | 2009 | 2008 |
|---------------------------------|--------|--------|---------|---------|---------|----------|----------|---------|----------|----------|---------|
| Dodge & Cox International Stock | -6.39% | 23.94% | 8.26% ↑ | -11.35% | 0.08% ↑ | 26.31% ↑ | 21.03% ↑ | -15.97% | 13.69% ↑ | 47.46% ↑ | -46.69% |
| MSCI EAFE (Net) | -1.43% | 25.03% | 1.00% | -0.81% | -4.90% | 22.78% | 17.32% | -12.14% | 7.75% | 31.78% | -43.38% |

Past returns are not a guarantee of future returns.

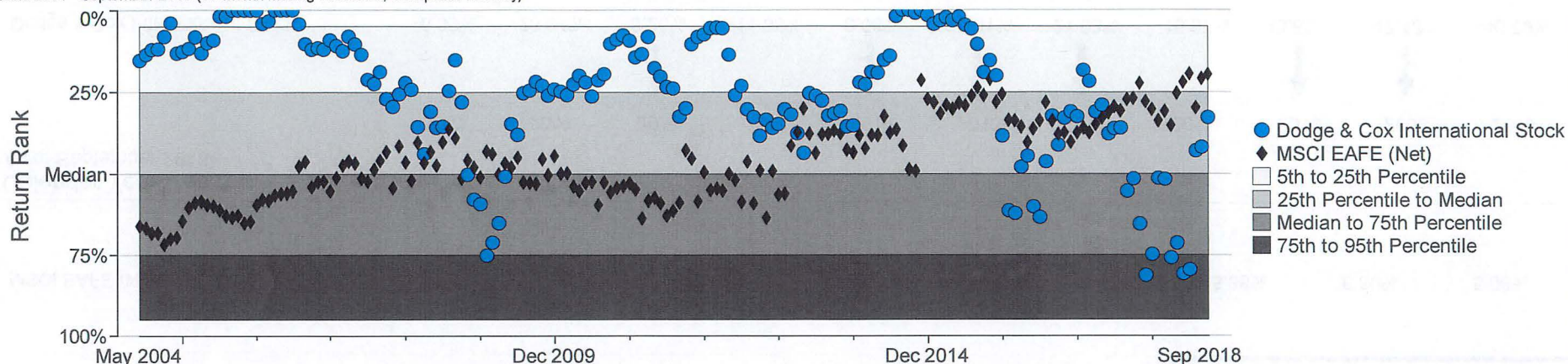


DODGE & COX INTERNATIONAL: ROLLING PERIOD PEER RANKINGS

Zephyr StyleADVISOR

Zephyr StyleADVISOR: Hartland and Company

Manager vs Morningstar Foreign Large Value: Return Rank
June 2001 - September 2018 (36-Month Moving Windows, Computed Monthly)



Manager vs Morningstar Foreign Large Value: Return Rank
June 2001 - September 2018 (36-Month Moving Windows, Computed Monthly)

| | Median Rank | Jul 2005 | Sep 2006 | Dec 2007 | Feb 2009 | May 2010 | Jul 2011 | Sep 2012 | Dec 2013 | Feb 2015 | May 2016 | Jul 2017 | Sep 2018 |
|---------------------------------|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | | 124 mng | 131 mng | 135 mng | 147 mng | 175 mng | 210 mng | 221 mng | 236 mng | 241 mng | 258 mng | 262 mng | 287 mng |
| Dodge & Cox International Stock | 22.43% | 1.87% | 11.96% | 22.16% | 71.09% | 22.04% | 23.91% | 38.30% | 35.12% | 3.17% | 60.09% | 35.87% | 32.83% |
| MSCI EAFE (Net) | 46.65% | 62.87% | 54.06% | 46.38% | 43.94% | 52.83% | 61.51% | 48.92% | 43.41% | 31.54% | 36.29% | 30.74% | 19.58% |

Past returns are not a guarantee of future returns.

STRATEGIC ASSET ALLOCATION REVIEW: FORECASTED MARKET RETURNS & VOLATILITY

| Asset Class | Forecasted Return Methodology | Notes: |
|---|--|---|
| Traditional Asset Classes (e.g. public equity, MLPs, REITs, and fixed income) | Black-Litterman Model Expected Returns | - Risk free rate: 2.0% - Risk premium: 4.0% - Views added for US Large Cap Equity, REITs, MLPs and U.S. IG Bonds based on current yield and growth assumption |
| Hedge Funds | Long/Short Equity / Event Driven = BL Large Cap Equity Expected Return Relative Value = Cash + 4% | Historical volatility and correlations |
| Private Equity | BL Large Cap Equity Expected Return + 4% | Historical volatility and correlations |
| Private Real Estate / Infrastructure | Public Real Estate + 1.5% | Historical volatility and correlations |

| Asset | Forecasts | | | Correlations | | | | | | | | | | | | | | | | | | |
|---------------------------------|-----------|-----------|------|--------------|------|------|-----|------|------|-----|-----|------|------|-----|-----|-----|-----|-----|------|-----|----|--|
| | Return | Std. Dev. | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | |
| 1. U.S. Large/ Mid Cap Equity | 7.5 | 15.3 | 1.0 | | | | | | | | | | | | | | | | | | | |
| 2. U.S. Small Cap Equity | 8.8 | 19.9 | 0.8 | 1.0 | | | | | | | | | | | | | | | | | | |
| 3. Developed Int'l Equity | 7.9 | 16.8 | 0.9 | 0.7 | 1.0 | | | | | | | | | | | | | | | | | |
| 4. Emerging Market Equity | 10.2 | 23.6 | 0.8 | 0.7 | 0.8 | 1.0 | | | | | | | | | | | | | | | | |
| 5. Equity Hedge | 7.5 | 9.0 | 0.8 | 0.8 | 0.8 | 0.8 | 1.0 | | | | | | | | | | | | | | | |
| 6. Event-Driven | 7.5 | 6.6 | 0.8 | 0.8 | 0.8 | 0.8 | 0.9 | 1.0 | | | | | | | | | | | | | | |
| 7. Private Equity | 11.5 | 10.7 | 0.8 | 0.7 | 0.7 | 0.6 | 0.8 | 0.8 | 1.0 | | | | | | | | | | | | | |
| 8. Relative Value | 6.0 | 4.2 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.8 | 0.6 | 1.0 | | | | | | | | | | | | |
| 9. Global Macro | 6.0 | 5.6 | 0.3 | 0.3 | 0.4 | 0.4 | 0.5 | 0.5 | 0.4 | 0.3 | 1.0 | | | | | | | | | | | |
| 10. Private Real Estate | 9.7 | 6.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.4 | 0.0 | 0.1 | 1.0 | | | | | | | | | | |
| 11. Global REITs | 8.2 | 17.8 | 0.7 | 0.7 | 0.8 | 0.7 | 0.6 | 0.6 | 0.5 | 0.6 | 0.3 | 0.0 | 1.0 | | | | | | | | | |
| 12. Master Limited Partnerships | 9.1 | 16.6 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.3 | 0.6 | 0.2 | 0.0 | 0.4 | 1.0 | | | | | | | | |
| 13. U.S. TIPS | 2.7 | 5.6 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 | 0.1 | -0.1 | 0.3 | 0.2 | -0.2 | 0.3 | 0.1 | 1.0 | | | | | | | |
| 14. U.S. Core Bonds | 2.5 | 3.4 | -0.1 | -0.1 | 0.0 | 0.0 | 0.0 | -0.1 | -0.3 | 0.1 | 0.2 | -0.1 | 0.2 | 0.0 | 0.8 | 1.0 | | | | | | |
| 15. Global Bonds | 2.4 | 5.6 | 0.1 | 0.1 | 0.3 | 0.2 | 0.2 | 0.1 | -0.1 | 0.2 | 0.3 | -0.1 | 0.4 | 0.2 | 0.6 | 0.7 | 1.0 | | | | | |
| 16. Emerging Market Bonds | 5.6 | 11.5 | 0.6 | 0.5 | 0.6 | 0.7 | 0.5 | 0.6 | 0.5 | 0.6 | 0.3 | -0.0 | 0.6 | 0.3 | 0.4 | 0.3 | 0.3 | 1.0 | | | | |
| 17. U.S. Corp. High Yield Bonds | 5.3 | 9.1 | 0.6 | 0.6 | 0.7 | 0.7 | 0.6 | 0.7 | 0.5 | 0.7 | 0.2 | -0.2 | 0.7 | 0.6 | 0.3 | 0.2 | 0.3 | 0.6 | 1.0 | | | |
| 18. Cash | 2.0 | 0.6 | 0.0 | -0.1 | -0.1 | -0.1 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | -0.1 | 0.0 | 0.1 | 0.2 | 0.1 | 0.0 | -0.1 | 1.0 | | |

STRATEGIC ASSET ALLOCATION REVIEW: PURPOSE DRIVEN FRAMEWORK

| | Asset Class | Purpose | Forecasted Return | Forecasted Volatility |
|---------------|----------------------------|-------------------------|-------------------|-----------------------|
| Public Equity | Domestic Large / Mid Cap | Growth | 7.5% | 15.3% |
| | Domestic Small Cap | Growth | 8.8% | 19.9% |
| | Developed International | Growth | 7.9% | 16.8% |
| | Emerging Markets | Growth | 10.2% | 23.6% |
| Alternatives | Event-Driven | Growth/Diversification | 7.5% | 6.6% |
| | Equity Hedge | Growth/Diversification | 7.5% | 9.0% |
| | Relative Value | Growth/Diversification | 6.0% | 4.2% |
| | Public Real Estate (REITs) | Growth/Diversification | 8.2% | 17.8% |
| Fixed Income | Core Fixed Income | Income/Stability | 2.5% | 3.4% |
| | Global Bonds | Income/ Diversification | 2.4% | 5.6% |
| | Emerging Markets Debt | Income/Growth | 5.6% | 11.5% |
| | High Yield | Income/Growth | 5.3% | 9.1% |
| | Cash | Liquidity | 2.0% | 0.6% |

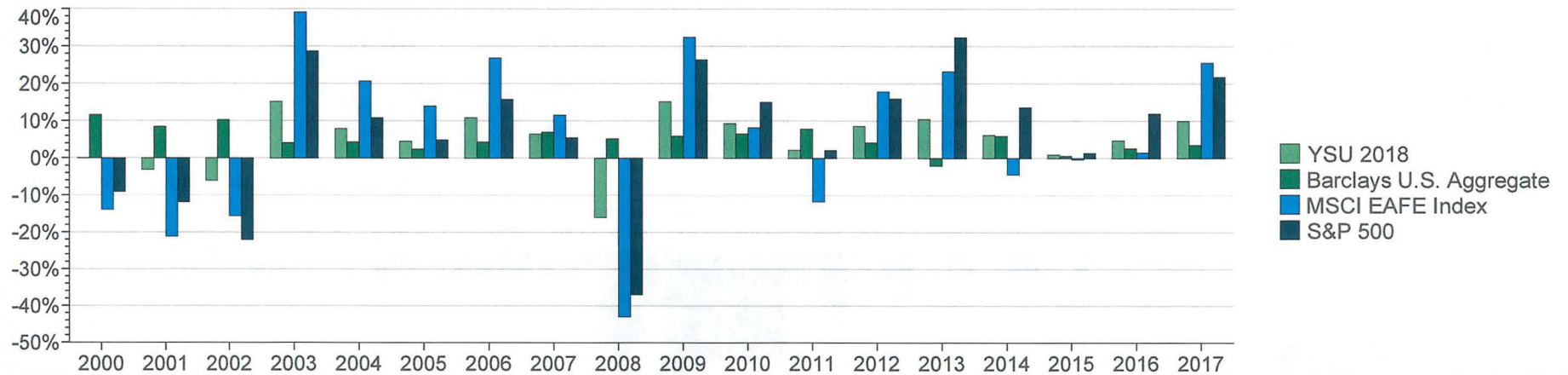
* Forecasted returns and volatility come from the methodology detailed on the slide titled "Strategic Asset Allocation Review: Forecasted Market Returns and Volatility"

STRATEGIC ASSET ALLOCATION REVIEW: CALENDAR YEAR RETURNS (BACK TESTED)

Zephyr StyleADVISOR

Zephyr StyleADVISOR: Hartland and Company

Calendar Year Return
As of March 2018



Calendar Year Return
As of March 2018

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|-------------------------|---------|---------|---------|--------|--------|--------|--------|--------|---------|--------|--------|---------|--------|--------|--------|--------|--------|--------|
| YSU 2018 | -0.10% | -3.18% | -6.09% | 15.19% | 7.92% | 4.56% | 10.85% | 6.48% | -16.03% | 15.22% | 9.33% | 2.17% | 8.60% | 10.54% | 6.23% | 0.96% | 4.75% | 9.97% |
| Barclays U.S. Aggregate | 11.63% | 8.44% | 10.25% | 4.10% | 4.34% | 2.43% | 4.33% | 6.97% | 5.24% | 5.93% | 6.54% | 7.84% | 4.21% | -2.02% | 5.97% | 0.55% | 2.65% | 3.54% |
| MSCI EAFE Index | -13.96% | -21.21% | -15.66% | 39.17% | 20.70% | 14.02% | 26.86% | 11.63% | -43.06% | 32.46% | 8.21% | -11.73% | 17.90% | 23.29% | -4.48% | -0.39% | 1.51% | 25.62% |
| S&P 500 | -9.11% | -11.88% | -22.10% | 28.68% | 10.88% | 4.91% | 15.79% | 5.49% | -37.00% | 26.46% | 15.06% | 2.11% | 16.00% | 32.39% | 13.69% | 1.38% | 11.96% | 21.83% |

Past returns are not a guarantee of future returns.



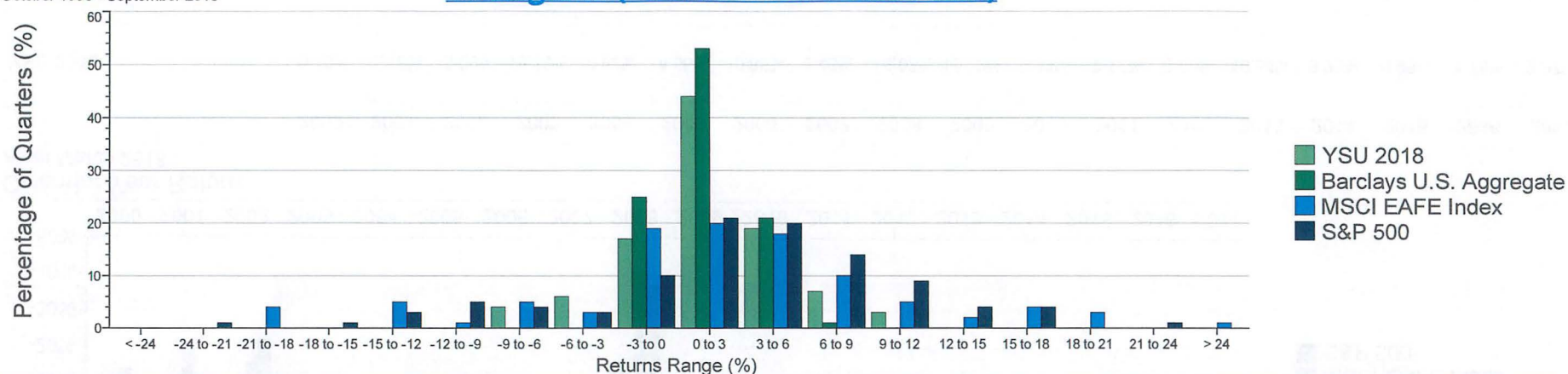
STRATEGIC ASSET ALLOCATION REVIEW: RISK CHARACTERISTICS (BACK TESTED)

Zephyr StyleADVISOR

Zephyr StyleADVISOR: Hartland and Company

Histogram of Returns
October 1993 - September 2018

Histogram (Distribution of Returns)



October 1993 - September 2018: Summary Statistics

| | Standard Deviation | Maximum Drawdown | Maximum Drawdown End Date | Maximum Drawdown Length | Maximum Drawdown Recovery Date | Down Capture vs. Market | Beta vs. Market |
|-------------------------|--------------------|------------------|---------------------------|-------------------------|--------------------------------|-------------------------|-----------------|
| YSU 2018 | 7.45% | -20.21% | Mar 2009 | 5 | Sep 2010 | 40.66% | 0.46 |
| Barclays U.S. Aggregate | 3.73% | -3.87% | Jun 1994 | 2 | Mar 1995 | -28.52% | -0.05 |
| MSCI EAFE Index | 17.44% | -51.78% | Mar 2009 | 6 | Dec 2013 | 101.83% | 0.96 |
| S&P 500 | 15.47% | -45.80% | Mar 2009 | 6 | Mar 2012 | 100.00% | 1.00 |

Past returns are not a guarantee of future returns.

STRATEGIC ASSET ALLOCATION REVIEW: PORTFOLIO SENSITIVITY ANALYSIS (LONG-TERM POOL)

Equity and Interest Rate Sensitivity Analysis

| Portfolio Return (%) - 1 Year Estimate | | Equity Return | | | | | | |
|--|-------|---------------|------|-------|-------|-------|--------|--------|
| | | 25% | 15% | 5% | 0% | -5% | -15% | -25% |
| Rate Change | -1.0% | 13.5% | 8.7% | 3.9% | 1.5% | -0.9% | -5.7% | -10.5% |
| | -0.5% | 12.7% | 7.9% | 3.1% | 0.7% | -1.7% | -6.5% | -11.3% |
| | 0.0% | 12.0% | 7.2% | 2.4% | 0.0% | -2.4% | -7.2% | -12.0% |
| | 1.0% | 10.6% | 5.8% | 1.0% | -1.4% | -3.8% | -8.6% | -13.4% |
| | 2.0% | 9.1% | 4.3% | -0.5% | -2.9% | -5.3% | -10.1% | -14.9% |

How to read:

A 1.0% increase in rates combined with a 15% decline in the S&P 500 would result in a return of approximately -8.6% for the Portfolio

| Portfolio Return (\$ in '000) - 1 Year Estimate | | Equity Return | | | | | | |
|---|-------|---------------|---------|---------|----------|----------|----------|----------|
| | | 25% | 15% | 5% | 0% | -5% | -15% | -25% |
| Rate Change | -1.0% | \$7,321 | \$4,709 | \$2,096 | \$790 | -\$516 | -\$3,129 | -\$5,742 |
| | -0.5% | \$6,929 | \$4,317 | \$1,704 | \$398 | -\$908 | -\$3,521 | -\$6,133 |
| | 0.0% | \$6,537 | \$3,925 | \$1,312 | \$6 | -\$1,300 | -\$3,913 | -\$6,525 |
| | 1.0% | \$5,754 | \$3,141 | \$529 | -\$778 | -\$2,084 | -\$4,696 | -\$7,309 |
| | 2.0% | \$4,970 | \$2,357 | -\$255 | -\$1,561 | -\$2,868 | -\$5,480 | -\$8,093 |

| Portfolio Market Value (\$ in '000) - 1 Year Estimate | | Equity Return | | | | | | |
|---|-------|---------------|----------|----------|----------|----------|----------|----------|
| | | 25% | 15% | 5% | 0% | -5% | -15% | -25% |
| Rate Change | -1.0% | \$61,749 | \$59,137 | \$56,524 | \$55,218 | \$53,912 | \$51,299 | \$48,686 |
| | -0.5% | \$61,357 | \$58,745 | \$56,132 | \$54,826 | \$53,520 | \$50,907 | \$48,295 |
| | 0.0% | \$60,965 | \$58,353 | \$55,740 | \$54,434 | \$53,128 | \$50,515 | \$47,903 |
| | 1.0% | \$60,182 | \$57,569 | \$54,957 | \$53,650 | \$52,344 | \$49,732 | \$47,119 |
| | 2.0% | \$59,398 | \$56,785 | \$54,173 | \$52,867 | \$51,560 | \$48,948 | \$46,335 |

Data Inputs

Beginning Value: \$54.428 mm
 Portfolio Beta (S&P 500): 0.48
 Fixed Income Duration: 3.2
 Fixed Income YTM: 3.4%

*Sources: Quarterly Report; Morningstar, Zephyr, Assumptions: For illustrative purposes only.

STRATEGIC ASSET ALLOCATION REVIEW: OBJECTIVES & RISK CONSIDERATIONS

Portfolio Objectives

- The YSU non-endowment assets have performed well over a full market cycle.

Asset allocation is the most important determinant of portfolio risk and return - looking forward, it is important to align the asset allocation, structure and risk/return objectives of the non-endowment assets with those of the strategic focus of YSU.

- Compliance with Ohio Revised Code 3345.05 (25% average rule*)
- Support YSU cash-flow and financial needs both currently and in the future
- Target a prudent level of investment return once risks have been mitigated

Risk Considerations

- Ohio Revised Code 3345.05
 - ❖ Short-Term pool provides compliance; additionally, approximately 10-15% of the Long-Term Pool assets provide additional support
- Liquidity
 - ❖ 100% of the Non-Endowment assets have daily liquidity
- Cash flow forecast
 - ❖ YSU does not anticipate needing to withdraw funds from the Long-Term Pool in the near-term
- Market value volatility
 - ❖ YSU staff and trustees have expressed a willingness to except modest increase in investment risk in pursuit of a higher investment return
- Cash flow cyclical
 - ❖ The University's cash flows fluctuate over the year due to operations

*A minimum of 25% of the average amount of the University's investment portfolio over the course of the previous fiscal year must be invested according to ORC guidelines (i.e. US government bonds, cash equivalents)

EXECUTIVE SUMMARY

Capital Markets: The U.S. had another excellent quarter (+7.7%) while Emerging Markets (-1.1%) were dragged down by trade tension and currencies, particularly Turkey and Argentina.

Stimulus “Trumps” Tariffs: The estimated fiscal stimulus of 2017 tax reform is \$1 trillion. The U.S. has installed tariffs on \$250 billion of goods representing ~ half of the \$505 billion of U.S. imports from China.

Divergent Economic Growth: U.S. momentum continues to pull away from activity overseas. Eurozone growth appears to be moderating and China is grappling with trade issues. Q2 U.S. GDP growth was 4.2% with forecasted Q3 growth of 3.5%.

“Gone Hiking”: The Fed hiked an eighth time in this tightening cycle by 0.25% with the market expecting another rate hike in December. Looking to next year, the Fed forecasts three hikes for 2019.

“QE to QT”: The gradual pullback of monetary support is underway in the U.S. and has been started by the Bank of England. The European Central Bank looks set to begin their normalization while the Bank of Japan remains supportive lagging other central banks.

Valuations: Valuations are slightly above average in the U.S. and more attractive outside the U.S., which may be justified given greater uncertainties regarding growth and currency challenges.

Earnings: Earnings growth was again robust in the U.S., though the rate of growth is likely to slow based on tougher year-over-year comparisons. Q3 S&P 500 earnings growth expectations are 19.2%, a decline from Q2-18 growth of 25.0%.

Fixed Income: The U.S. Treasury curve shifted higher with modest flattening during the quarter. U.S. credit spreads narrowed, benefitting from solid fundamentals.

Risks: Trade tensions and less supportive monetary policy could pressure the rate of global growth.

Past performance is not a guarantee of future results. Asset classes represented by: Large Cap – S&P 500 Index; Emerging Markets – MSCI EM Index. Data as of 9/30/2018. Source: Zephyr Associates, Bloomberg, Factset as of 10/5/18, Strategas.

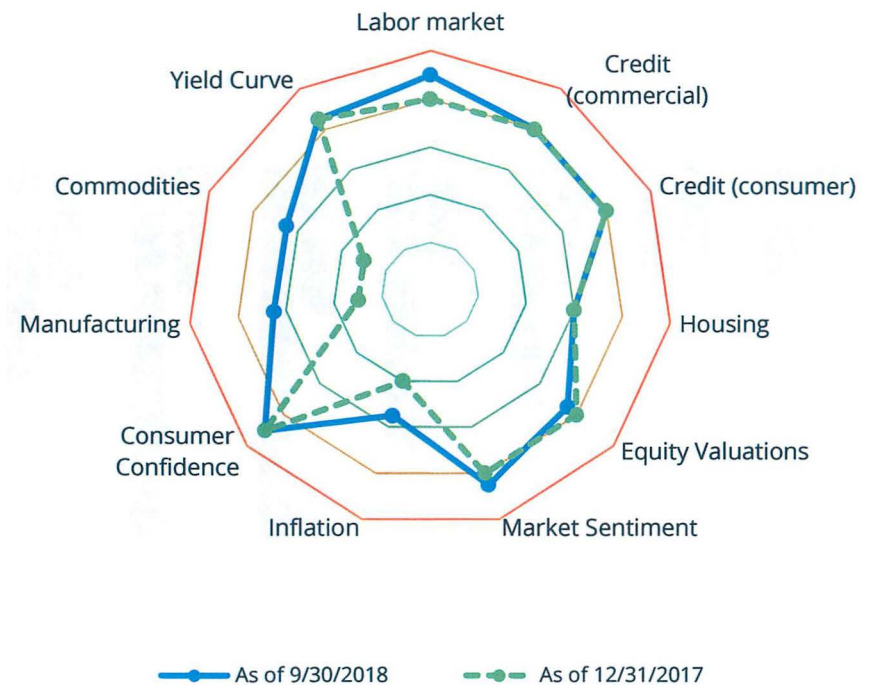
DASHBOARD: ECONOMIC INDICATORS

| Economic Indicators | 2015 | 2016 | 2017 | 1Q18 | 2Q18 | 3Q18 or MRM |
|--|--------|--------|--------|--------|--------|-------------|
| U.S. GDP | 2.9 | 1.5 | 2.2 | 2.2 | 4.2 | |
| Inflation (PCE Core) | 1.3 | 1.8 | 1.5 | 1.8 | 2.0 | 2.0* |
| Labor Market | | | | | | |
| Unemployment Rate | 5.3 | 4.9 | 4.4 | 4.1 | 4.0 | 3.7 |
| Labor Force Particip. Rate | 62.7 | 62.8 | 62.8 | 62.9 | 62.9 | 62.7 |
| Average Hourly Earnings | \$25.0 | \$25.7 | \$26.3 | \$26.8 | \$27.0 | \$27.2 |
| Initial Claims as % of Labor Force | 0.18 | 0.17 | 0.15 | 0.14 | 0.14 | 0.13 |
| ISM Manufacturing | 51.3 | 51.5 | 57.5 | 59.3 | 60.2 | 59.8 |
| ISM Non-Manufacturing | 57.1 | 54.8 | 57.1 | 58.8 | 59.1 | 61.6 |
| Industrial Production % change yoy | -1.0 | -1.9 | 1.6 | 3.6 | 3.5 | 4.9* |
| Consumer Confidence Index (Conference Board) | 98.0 | 99.6 | 120.5 | 127.0 | 127.1 | 138.4 |
| Auto Sales yoy % | 5.9 | 0.1 | -1.6 | 0.3 | 2.6 | -0.5 |
| Retail Sales ex. Auto yoy % | 0.4 | 2.3 | 4.8 | 4.9 | 6.3 | 7.3* |
| Housing Starts yoy % | 10.6 | 6.3 | 2.6 | 7.0 | 7.7 | 9.4* |
| Existing Home Sales yoy % | 6.4 | 3.9 | 1.8 | -1.7 | -2.4 | -1.5* |
| New Home Sales yoy % | 14.3 | 11.6 | 10.1 | 6.0 | 5.0 | 12.7* |
| S&P/Case-Shiller Home Price Index (20-city) | 5.5 | 5.4 | 6.3 | 6.8 | 6.4 | 5.9* |

Source: Bureau of Economic Analysis, Bureau of Labor Statistics, Institute for Supply Management, Federal Reserve System, Conference Board, U.S. Census Bureau, National Association of Realtors, Standard & Poors. Data as of 9/30/2018, unless indicated by an asterisk (*), which indicates data as of 8/31/2018.

U.S. ECONOMY: A SNAPSHOT

The divergence of growth between the U.S. economy and the rest of the world solidified through the year, and the capital market performance reflected this reality. During the third quarter, fundamentals at home remained strong without much change. The chart on the right shows that the largest shift in the economy year-to-date is in the manufacturing sector, PMI's hovering over 60, inflation firming up for durable goods, and new orders and production at a healthy pace.



The inner sections of the concentric hendecagon imply earlier stages of the economic cycle, with outer parts indicating later stages.
Source: Clearstead.

S&P 500 EARNINGS & REVENUES



- Expectations for Q3 and Q4 earnings growth remain robust, but estimates for Q1 and Q2 2019 earnings are in the mid-single digit range as year-over-year numbers become more difficult to beat.
- Revenue growth expectations are softening for the second half of the year into 2019.

Source: FactSet.
Data as of 10/05/2018.

SYNCHRONIZED GLOBAL GROWTH TAKES A PAUSE

| | Oct 16 | Nov 16 | Dec 16 | Jan 17 | Feb 17 | Mar 17 | Apr 17 | May 17 | June 17 | July 17 | Aug 17 | Sep 17 | Oct 17 | Nov 17 | Dec 17 | Jan 18 | Feb 18 | Mar 18 | Apr 18 | May 18 | Jun 18 | July 18 | Aug 18 | Sep 18 |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|
| World | 53.1 | 53.2 | 53.6 | 53.9 | 53.5 | 53.8 | 53.7 | 53.8 | 53.7 | 53.6 | 54.0 | 54.0 | 54.0 | 54.1 | 54.4 | 54.6 | 54.8 | 53.3 | 53.9 | 54.0 | 54.2 | 53.7 | 53.4 | 52.8 |
| U.S. | 54.3 | 55.9 | 56.4 | 56.4 | 57.6 | 55.4 | 57.5 | 56.9 | 57.4 | 54.2 | 55.7 | 59.9 | 59.9 | 57.5 | 56.3 | 59.8 | 59.6 | 58.9 | 56.9 | 58.6 | 59.2 | 56.0 | 58.8 | 61.4 |
| Canada | 51.1 | 51.5 | 51.8 | 53.5 | 54.7 | 55.5 | 55.9 | 55.1 | 54.7 | 55.5 | 54.6 | 55.0 | 54.3 | 54.4 | 54.7 | 55.9 | 55.6 | 55.7 | 55.5 | 56.2 | 57.1 | 56.9 | 56.8 | 54.8 |
| U.K. | 54.8 | 55.3 | 56.7 | 55.2 | 53.8 | 54.9 | 56.2 | 54.3 | 53.8 | 54.1 | 54.0 | 54.1 | 55.8 | 54.8 | 54.9 | 53.4 | 54.5 | 52.5 | 53.2 | 54.5 | 55.2 | 53.5 | 54.2 | 54.1 |
| Eurozone | 53.3 | 53.9 | 54.4 | 54.4 | 56.0 | 56.4 | 56.8 | 56.8 | 56.3 | 55.7 | 55.7 | 56.7 | 56.0 | 57.5 | 58.1 | 58.8 | 57.1 | 55.2 | 55.1 | 54.1 | 54.9 | 54.3 | 54.5 | 54.1 |
| Germany | 55.1 | 55.0 | 55.2 | 54.8 | 56.1 | 57.1 | 56.7 | 57.4 | 56.4 | 54.7 | 55.8 | 57.7 | 56.6 | 57.3 | 58.9 | 59.0 | 57.6 | 55.1 | 54.6 | 53.4 | 54.8 | 55.0 | 55.6 | 55.0 |
| France | 51.6 | 51.4 | 53.1 | 54.1 | 55.9 | 56.8 | 56.6 | 56.9 | 56.6 | 55.6 | 55.2 | 57.1 | 57.4 | 60.3 | 59.6 | 59.6 | 57.3 | 56.3 | 56.9 | 54.2 | 55.0 | 54.4 | 54.9 | 54.0 |
| Italy | 51.1 | 53.4 | 52.9 | 52.8 | 54.8 | 54.2 | 56.8 | 55.2 | 54.5 | 56.2 | 55.8 | 54.3 | 53.9 | 56.0 | 56.5 | 59.0 | 56.0 | 53.5 | 52.9 | 52.9 | 53.9 | 53.0 | 51.7 | 52.4 |
| Greece | 48.6 | 48.3 | 49.3 | 46.6 | 47.7 | 46.7 | 48.2 | 49.6 | 50.5 | 50.5 | 52.2 | 52.8 | 52.1 | 52.2 | 53.1 | 55.2 | 56.1 | 55.0 | 52.9 | 54.2 | 53.5 | 53.5 | 53.9 | 53.6 |
| Ireland | 54.0 | 55.5 | 58.4 | 59.3 | 57.8 | 56.9 | 61.1 | 59.5 | 57.6 | 57.0 | 58.2 | 57.6 | 56.0 | 57.7 | 60.2 | 59.0 | 56.8 | 53.7 | 57.6 | 57.7 | 58.1 | 56.8 | 58.4 | 58.4 |
| Japan | 51.3 | 52.0 | 52.8 | 52.3 | 52.2 | 52.9 | 52.6 | 53.4 | 52.9 | 51.8 | 51.9 | 51.7 | 53.4 | 52.2 | 52.2 | 52.8 | 52.2 | 51.3 | 53.1 | 51.7 | 52.1 | 51.8 | 52.0 | 50.7 |
| Australia | 50.9 | 54.2 | 55.4 | 51.2 | 59.3 | 57.5 | 59.2 | 54.8 | 55.0 | 56.7 | 54.1 | 53.1 | 53.1 | 54.3 | 55.5 | 54.2 | 54.3 | 55.4 | 55.3 | 55.6 | 52.9 | 52.3 | 52.0 | 52.5 |
| EM | 51.8 | 51.4 | 51.9 | 51.9 | 52.1 | 52.5 | 51.9 | 52.2 | 51.5 | 51.5 | 52.1 | 51.8 | 51.5 | 51.9 | 53.0 | 53.6 | 53.3 | 52.3 | 52.4 | 52.2 | 52.4 | 52.4 | 51.8 | 51.6 |
| China | 52.9 | 52.9 | 53.5 | 52.2 | 52.6 | 52.1 | 51.2 | 51.5 | 51.1 | 51.9 | 52.4 | 51.4 | 51.0 | 51.6 | 53.0 | 53.7 | 53.3 | 51.8 | 52.3 | 52.3 | 53.0 | 52.3 | 52.0 | 52.1 |
| India | 55.4 | 49.1 | 47.6 | 49.4 | 50.7 | 52.3 | 51.3 | 52.5 | 52.7 | 46.0 | 49.0 | 51.1 | 51.3 | 50.3 | 53.0 | 52.5 | 49.7 | 50.8 | 51.9 | 50.4 | 53.3 | 54.1 | 51.9 | 51.6 |
| Russia | 53.7 | 55.8 | 56.6 | 58.3 | 55.4 | 56.3 | 55.3 | 56.0 | 54.8 | 53.4 | 54.2 | 54.8 | 53.2 | 56.3 | 56.0 | 54.8 | 55.2 | 53.2 | 54.9 | 53.4 | 52.0 | 51.7 | 52.1 | 53.5 |
| Brazil | 44.9 | 45.3 | 45.2 | 44.7 | 46.6 | 48.7 | 50.4 | 50.4 | 48.5 | 49.4 | 49.6 | 51.1 | 49.5 | 48.9 | 48.8 | 50.7 | 53.1 | 51.5 | 50.6 | 49.7 | 47.0 | 50.4 | 47.8 | 47.3 |
| S. Africa | 50.5 | 50.8 | 51.6 | 51.3 | 50.5 | 50.7 | 50.3 | 50.2 | 49.0 | 50.1 | 49.8 | 48.5 | 49.6 | 48.8 | 48.4 | 49.0 | 51.4 | 51.1 | 50.4 | 50.0 | 50.9 | 49.3 | 47.2 | 48.0 |

- While the U.S. economy remains strong, the rate of growth in the outside world continues to lag
- Out of the 15 countries listed, 13 are reporting PMI figures above 50, which indicates expansion. Various emerging markets countries, including China, are dealing with trade uncertainties and currency challenges.
- U.S. is showing the strongest expansion with a PMI of 61.4, and Germany, France, and Ireland are leading the group in the Eurozone. Brazil continued to contract, with South Africa joining the slowdown.

Source: Bloomberg. The above numbers represent the composite Purchasing Managers Index (PMI), unless otherwise indicated. PMI indicates the health of the economy, where a number above "50" indicates expansion and below "50" implies contraction. World (JPMorgan); U.S. (ISM); Canada, Eurozone, Germany, France, Greece, EM, Russia, Brazil (Markit); U.K. (Markit/CIPS); Italy (Markit/ADACI); Ireland (Investec); Japan, India (Nikkei); Australia (Australian Industry Group); China (Caixin); South Africa (Standard Bank). All numbers are "composite," both manufacturing and non-manufacturing, except for Canada, Greece, and Australia. The indexes for those countries are for the manufacturing sector, based on availability.

INTERNATIONAL RETURNS & COUNTRY WEIGHTING

Developed Markets

| | USD Return | Local Return | Weighting |
|----------------|--------------|--------------|--------------|
| AUSTRALIA | -0.9% | 1.2% | 6.8% |
| AUSTRIA | 0.2% | 0.8% | 0.2% |
| BELGIUM | -5.2% | -4.7% | 1.0% |
| DENMARK | 2.3% | 2.9% | 1.7% |
| FINLAND | 3.2% | 3.7% | 1.1% |
| FRANCE | 2.8% | 3.4% | 11.2% |
| GERMANY | -0.6% | -0.1% | 9.4% |
| HONG KONG | -1.0% | -1.2% | 3.5% |
| IRELAND | -5.4% | -4.9% | 0.5% |
| ISRAEL | 5.1% | 4.8% | 0.6% |
| ITALY | -4.5% | -4.0% | 2.3% |
| JAPAN | 3.7% | 6.3% | 24.6% |
| NETHERLANDS | -1.5% | -1.1% | 3.3% |
| NEW ZEALAND | 2.4% | 4.6% | 0.2% |
| NORWAY | 6.7% | 6.6% | 0.8% |
| PORTUGAL | -0.6% | 0.0% | 0.2% |
| SINGAPORE | 2.2% | 2.4% | 1.3% |
| SPAIN | -2.4% | -1.9% | 3.0% |
| SWEDEN | 7.0% | 6.4% | 2.7% |
| SWITZERLAND | 7.3% | 5.5% | 8.3% |
| UNITED KINGDOM | -1.7% | -0.4% | 17.5% |

| | | | |
|-------------|-------------|-------------|--|
| EAFE | 1.4% | 2.4% | |
|-------------|-------------|-------------|--|

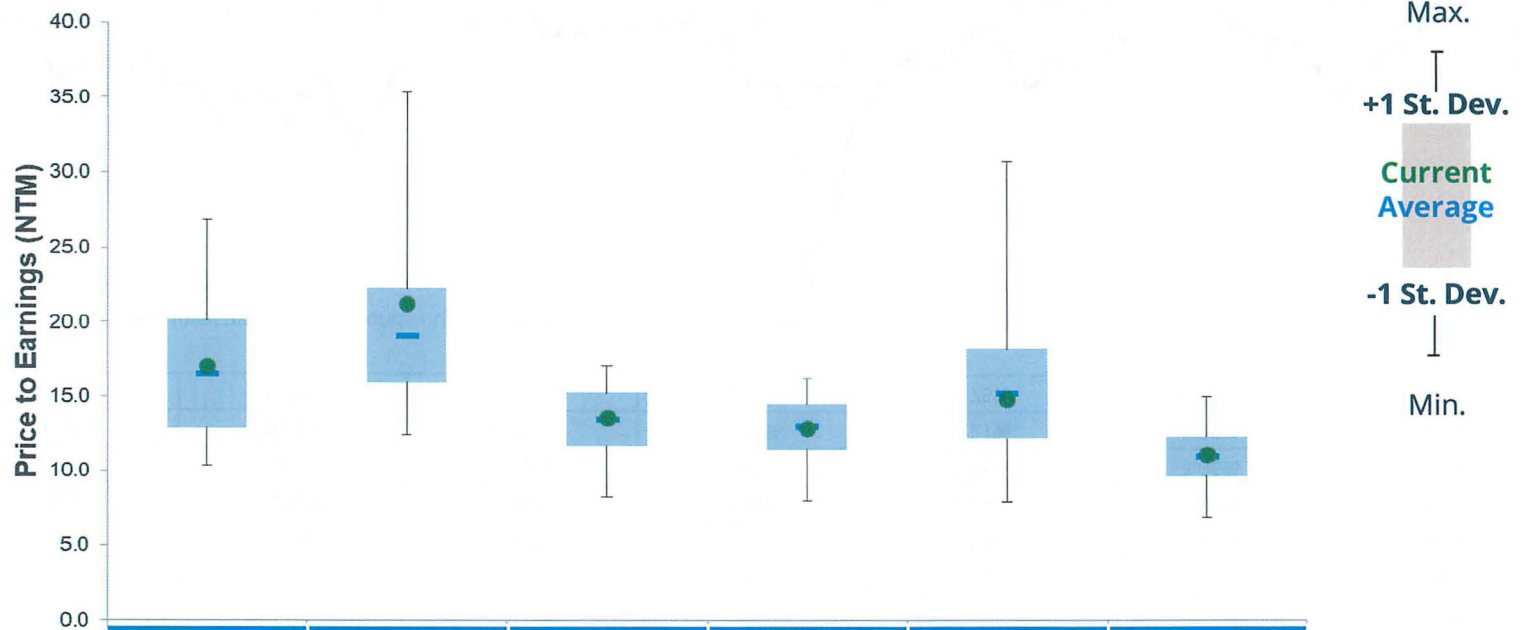
Emerging Markets

| | USD Return | Local Return | Weighting |
|----------------|---------------|---------------|--------------|
| BRAZIL | 6.1% | 10.1% | 6.2% |
| CHILE | -2.0% | -0.7% | 1.1% |
| CHINA | -7.5% | -7.6% | 31.0% |
| COLOMBIA | -2.5% | -1.4% | 0.5% |
| CZECH REPUBLIC | 4.0% | 3.6% | 0.2% |
| EGYPT | -6.8% | -6.7% | 0.1% |
| GREECE | -17.6% | -17.2% | 0.3% |
| HUNGARY | 4.7% | 3.4% | 0.3% |
| INDIA | -2.3% | 3.4% | 8.5% |
| INDONESIA | 2.0% | 6.0% | 2.0% |
| KOREA | 0.7% | 0.2% | 14.9% |
| MALAYSIA | 3.8% | 6.4% | 2.4% |
| MEXICO | 6.9% | 1.7% | 3.2% |
| PERU | -2.1% | -2.1% | 0.4% |
| PHILIPPINES | 1.0% | 2.2% | 1.0% |
| POLAND | 10.6% | 8.9% | 1.2% |
| RUSSIA | 6.2% | 10.2% | 3.7% |
| SOUTH AFRICA | -7.4% | -4.4% | 6.1% |
| TAIWAN | 6.5% | 6.7% | 12.3% |
| THAILAND | 13.6% | 10.9% | 2.5% |
| TURKEY | -20.5% | 4.2% | 0.6% |

| | | | |
|------------------------------|--------------|-------------|--|
| EM (EMERGING MARKETS) | -1.1% | 0.0% | |
|------------------------------|--------------|-------------|--|

Past performance is no guarantee of future results. Q3-18 Returns.
Source: MSCI Barra.
Data as of 9/30/2018.

GLOBAL EQUITY VALUATIONS



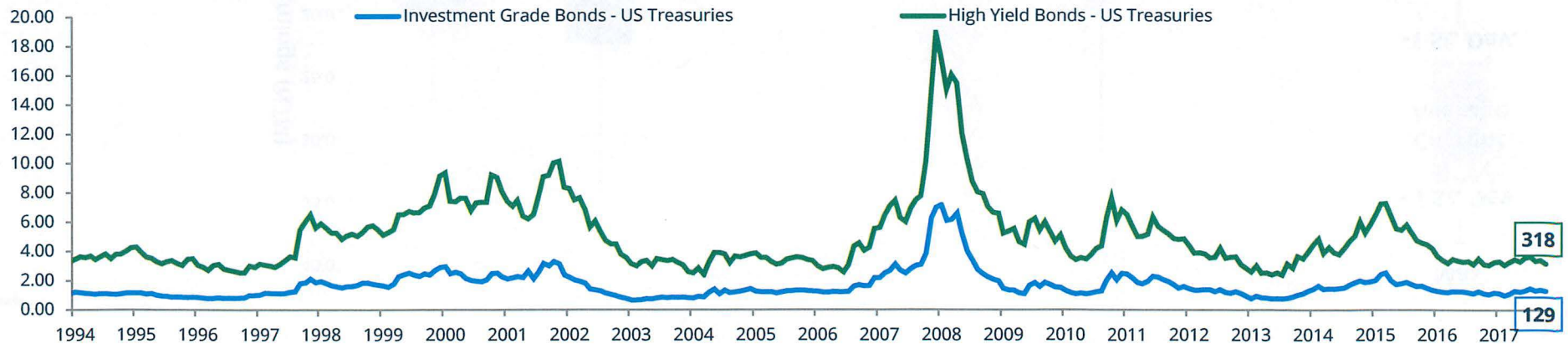
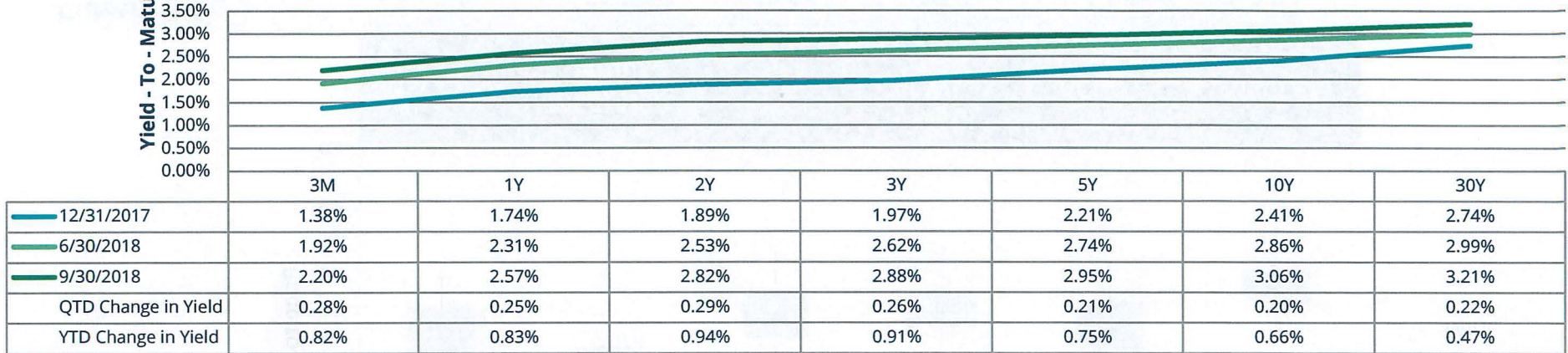
| | MSCI USA | MSCI USA Small | MSCI EAFE | MSCI ACWI ex USA | MSCI ACWI ex USA Small | MSCI EM |
|--------------------------|----------|----------------|-----------|------------------|------------------------|---------|
| Current P/E (NTM) | 17.1 | 21.3 | 13.6 | 12.9 | 14.8 | 11.1 |
| Average P/E (NTM) | 16.5 | 19.1 | 13.5 | 13.0 | 15.2 | 11.0 |

Average taken over full index history.
Source: Bloomberg.
Data as of 9/30/2018.

FIXED INCOME: RISING YIELDS, TIGHT SPREADS

Yield - To - Maturity

US Treasury Yield Curve



Past performance is no guarantee of future results. US Treasuries – BarCap US Govt 10-Yr Treasury; Investment Grade Bonds – BarCap BAA Corp; High Yield Bonds - BarCap US High Yield.
 Source: Bloomberg.
 Data as of 9/30/2018.

\$422 BILLION TRADE WAR LARGELY AIMED AT CHINA

Tariff Rhetoric Surprise

- **22-Jan:** Trump implements 30% tariff on solar panels and 30% tariff on washing machines (\$450 million)
- **16-Feb:** Dept. of Commerce releases report finding imports of steel & aluminum threaten US national security
- **1-Mar:** Trump announces 25% on steel imports and 10% tariff on aluminum imports
- **22-Mar:** Trump announces temporary exemptions for Canada, Mexico, EU, Australia, S. Korea, Brazil, and Argentina
- **23-Mar:** Trump implements steel & aluminum tariffs on China, Russia, Japan, and others
- **28-March:** South Korea is granted a permanent exemption for steel & aluminum tariffs; 25% tariff on Korean trucks is extended until 2041

Jan-Mar

Trade Tariff Scorched Earth

- **2-Apr:** China retaliates with tariffs on \$2.4 billion worth of meat, wine, fruit, nuts, etc. from the U.S.
- **3-Apr:** Trump announces \$50 billion of Chinese good subject further 25% tariffs in July
- **4-Apr:** China announces retaliatory tariffs on \$50 billion worth of soybeans and other goods from the U.S.
- **1-Jun:** Trump imposes 25% tariff on steel & 10% on aluminum for the EU, CAN, MX
- **5-Jun:** Mexico imposes tariffs on steel, pork, cheese, whiskey, and other products worth \$3 billion US imports
- **22-Jun:** EU implement tariffs on 180 types of products worth \$3 billion of U.S. imports
- **30-Jun:** Canada implements tariffs covering ≈300 goods in retaliation worth \$12.6 billion US imports

Apr-Jun

Allied Trade Détente

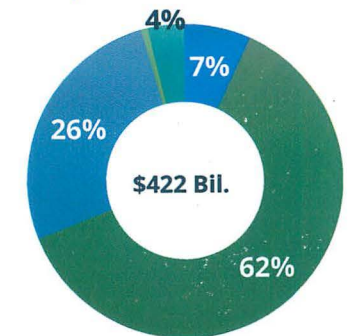
- **6-Jul:** Trump implements 25% tariff on \$34 billion of Chinese imports and announces an additional \$16 billion of Chinese imports subject to 25% tariff
- **7-Jul:** China retaliates with tariffs on \$34 billion worth of US imports ranging from vehicles to soybeans, beef and other agricultural products
- **24-July:** Trump-Juncker meeting results in a potential de-escalation of the US-EU trade dispute
- **23-Aug:** US imposes a 25% tariff on \$16 billion Chinese imports
- **27-Aug:** US-Mexico deal on revising NAFTA
- **24-Sep:** US imposes a 10% tariff on \$200 billion of Chinese imports
- **25-Sep:** China imposes 5%-10% tariff on \$60 billion in US exports to China
- **30-Sep:** US & Canada finalize the terms of the USMCA (NAFTA 2.0)

Jul-Sep

US-China Trade War

- No scheduled trade dialogue w/ China is planned until potentially the G20 Summit in December
- US is considering another round of tariffs on China (\$267 billion) that would cover all the remaining imports from China

Implemented Tariffs



- US on Other
- US on China
- China on US
- EU on US
- CAN & MX on US

Oct - ???

Source: Peterson Institute for International Economics & Clearstead.



DEFINITIONS & DISCLOSURES

