

**BOARD OF TRUSTEES  
INVESTMENT SUBCOMMITTEE**

**John R. Jakubek, Chair  
Delores E. Crawford, Vice Chair  
Charles R. Bush  
Samuel W. Grooms  
Allan K. Metz**

**Tuesday, September 6, 2016  
3:30 p.m. or immediately following  
previous meeting**

**Tod Hall  
Board Meeting Room**

**AGENDA**

- A. Disposition of Minutes for Meetings Held December 9, 2014; and June 1, 2016**
- B. Old Business**
- C. Committee Item**
  - 1. Discussion Item**

**Tab C.1.a. a. September 6, 2016 Quarterly Portfolio Asset Allocation and Investment Performance Review**  
Mike Shebak and Sarah Parker will report.

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

# HARTLAND



independence  
expertise  
results

1100 Superior Avenue East Suite 700  
Cleveland, Ohio 44114  
216.621.1090 | [HARTLAND.com](http://HARTLAND.com)

September 6, 2016

# YOUNGSTOWN STATE UNIVERSITY NON-ENDOWMENT & ENDOWMENT ASSETS

## CONTENTS

- I. Accomplishments and Future Initiatives
- II. Market Update
- III. Non-Endowment 1Q16 Performance & Asset Allocation Review
- IV. Endowment 1Q16 Performance & Asset Allocation Review
- V. High Yield Fixed Income

## ACCOMPLISHMENTS & FUTURE INITIATIVES

	2015	1Q2016	2Q2016	3Q2016	4Q2016
<b>Strategic/Administrative</b>	<ul style="list-style-type: none"> <li>• Non-Endowment Asset Allocation Review</li> <li>• Peer Asset Allocation Comparisons</li> </ul>	<ul style="list-style-type: none"> <li>• Endowment Allocation/ Management Review</li> <li>• Non-Endowment Asset Allocation Review</li> </ul>			
<b>Investment Opportunities</b>	<ul style="list-style-type: none"> <li>• Additional Alternative Investments</li> </ul>	<ul style="list-style-type: none"> <li>• Alternative Investments/ GARS</li> </ul>		<ul style="list-style-type: none"> <li>• High Yield Fixed Income Education</li> </ul>	<ul style="list-style-type: none"> <li>• High Yield Fixed Income Discussion</li> </ul>
<b>Manager Reviews</b>	<ul style="list-style-type: none"> <li>• PNC Fixed Income</li> <li>• Money Market Reform (no action, invested in US Treasury/Gov't Money Markets)</li> </ul>		<ul style="list-style-type: none"> <li>• PNC Fixed Income Review</li> </ul>		
<b>Fiduciary Responsibilities</b>	<ul style="list-style-type: none"> <li>• Asset Allocation Guidelines Review</li> <li>• Fee Review</li> </ul>	<ul style="list-style-type: none"> <li>• Asset Allocation Guidelines Review</li> </ul>			<ul style="list-style-type: none"> <li>• Fee Review</li> </ul>



## MARKET UPDATE

## MARKET OVERVIEW

Market Index as of 3/31/2016	YTD	1-Year	3-Year	5-Year	10-Year
<b>S&amp;P 500 Index</b> (Large Cap Domestic Stocks)	+3.8%	+4.0%	+11.7%	+12.1%	+7.4%
<b>Dow Jones Industrial Average</b> (30 Large Cap Domestic Stocks)	+4.3%	+4.5%	+9.0%	+10.4%	+7.7%
<b>MSCI EAFE Index</b> (International Stocks)	-4.0%	-9.7%	+2.5%	+2.2%	+2.1%
<b>Barclays Aggregate Bond Index</b> (US Bonds)	+5.3%	+6.0%	+4.1%	+3.8%	+5.1%

## THOUGHTS ON THE CURRENT ENVIRONMENT

**Capital Markets:** Equity markets experienced another wild ride, finishing the quarter higher, with the exception of Europe. The S&P 500 returned 2.5%, Developed International -1.2%, Emerging Markets 0.8% and Intermediate Fixed Income 2.2%.

**Brexit:** British voters shocked investors by electing to leave the EU. Equity markets initially sold-off but rebounded in the following days. Brexit creates uncertainty with a long timeline (2 years once Britain notifies the EU of intent to leave).

**“Lower for Longer”:** Fed may be one and done. Brexit and May jobs report took a summer rate hike off the table. Investors seeking safe havens pushed high quality government bond yields toward record lows.

**Fixed Income:** Credit spreads tightened for the quarter with risk assets performing well as evidenced by High Yield’s 5.5% return. Despite low yields in the U.S., yields are even more depressed overseas. Safety appears expensive.

**Inflation Sensitive Assets:** Commodities and Real Estate performed very well with oil’s recovery and the rally in gold/precious metals.

**Currencies:** Highly volatile as investors sought refuge in the US dollar and Japanese yen with the British pound falling sharply.

**Valuations:** U.S. equity valuations remain slightly above long-term averages; 17.0X one year forward P/E on MSCI US Equity Index.

**Economy:** U.S. GDP growth remains modest. Q1 GDP growth was 1.1% with expectations of a second half pickup to 2-2.5%. ISM surveys (both service and manufacturing) are very strong, which along with consumer confidence and wage growth, support expansion.

**Earnings Outlook:** 2Q estimates reflect a 5% year over year decline which is better than previous expectations. Analysts are forecasting a strong second half recovery in earnings. With the earnings cycle facing headwinds and profit margins near historic highs, it is hard to build an overly bullish case for equities.

**Looking Forward:** We are living in a low return world; low yields, subdued earnings expectations and valuations pose challenges. Risk assets should perform relatively well in a low growth, easy monetary policy environment. Defensive assets provide downside protection if the global economy heads down recession road which is not our expectation. Potential for higher ongoing market volatility continues given geopolitical risks, uncertain global growth, valuations, and monetary policy. Maintaining diversified portfolios consistent with a client’s ability to withstand downside risks and meet return objectives is warranted.

**“The Wild Cards”:** Populism is increasing as evidenced by the Brexit vote. The U.S. Presidency is up next.



## NON-ENDOWMENT 2Q16 PERFORMANCE & ASSET ALLOCATION REVIEW



## EXECUTIVE SUMMARY (AS OF 6/30/16)

Non-Endowment Assets	Market Value	2Q2016	YTD	1 Yr	3 Yrs	5 Yrs	2015	2014	2013	Since Inception****
Operating & Short-Term Pool	\$10.463 Million	0.1%	0.2%	0.3%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%
	<i>Benchmark*</i>	0.1%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Long-Term Pool	\$53.372 Million	1.1%	2.0%	0.4%	3.9%	4.0%	-0.3%	4.5%	8.7%	4.5%
	<i>Benchmark**</i>	1.4%	2.3%	1.2%	3.7%	3.8%	0.6%	4.0%	7.1%	3.9%
Total Non-Endowment Assets	\$63.836 Million	0.9%	1.4%	0.2%	2.5%	2.6%	-0.5%	2.9%	5.6%	3.5%
	<i>Benchmark***</i>	0.8%	1.4%	0.8%	2.1%	2.0%	0.4%	2.3%	3.6%	2.9%

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

\*\*27% Russell 3000 / 8% MSCI EAFE Gross / 10% YSU Alternative Benchmark / 35% BofA Merrill Lynch US Corp & Gov 1-3 Yrs / 20% Barclays Int Govt/Credit

\*\*\*45% BofA Merrill Lynch 91-Day T-Bill / 19% BofA Merrill Lynch US Corp & Gov 1-3 Yrs / 11% Barclays Int Govt/Credit / 6% YSU Alternative Benchmark / 15% Russell 3000 / 4% MSCI EAFE Gross

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

## ASSET ALLOCATION AND MANAGER EXECUTIVE SUMMARY (DETAILS CONTAINED IN APPENDIX)

Non-Endowment Asset Pool	Asset Allocation	Portfolio Comments	Investment Manager Comments
Short-Term Pool	In-Line	90% cash and 10% short-term fixed income	Liquidity; modest return overtime (+0.1%/year for 5-years).
Long-Term Pool	In-Line	<p>At target to equities</p> <p>Underweight short-term fixed income by 4%.</p> <p>Overweight alternative investments by 1% and intermediate-term fixed income by 4%.</p>	<p><i>Domestic Equity (+2.6% YTD):</i> Large/mid cap passive funds continue to outpace the majority of actively managed strategies and small cap; Small cap managers (Loomis Sayles, Victory) lagged for the year-to-date, but outpace over longer time periods.</p> <p><i>International Equity (-4.3% YTD):</i> Dodge &amp; Cox Int'l (value bias) and William Blair (emerging market exposure) were impacted by sector allocations in the quarter</p> <p><i>Alternative Investments (+0.4% YTD):</i> Alternative managers performed well YTD with the Voya Global REIT Fund leading the way +6.5%.</p> <p><i>Fixed Income (+2.9% YTD):</i> Managers performed mostly in-line with benchmarks. Longer duration outpaced short as rates moved downward.</p>

**Hartland does not recommend any rebalancing of the portfolio at this time.**



## ENDOWMENT 2Q16 PERFORMANCE & ASSET ALLOCATION REVIEW

## EXECUTIVE SUMMARY (AS OF 6/30/16)

Endowment Assets	Market Value	Asset Allocation	Composition	2Q2016	1-Yr	3-Yr
YSU Endowment	\$9.100 million	75% Equities/ 25% Fixed Income	Stocks, Bonds, Mutual Funds	0.3%	5.9%	7.6%
<i>60 S&amp;P 500 Index/40% Barclays Index</i>				2.4%	5.0%	8.7%
Kilcawley Center*	\$92,021	60% Equities/ 40% Fixed Income	Mutual Funds	2.5%	4.6%	5.1%
<i>60 S&amp;P 500 Index/40% Barclays Index</i>				2.4%	5.0%	8.7%
Alumni License Plate	\$446,064	67% Equities/ 11% Fixed Income/22% Cash	Stocks, ETFs, Mutual Funds	2.8%	4.4%	6.3%
<i>60 S&amp;P 500 Index/40% Barclays Index</i>				2.4%	5.0%	8.7%

### 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 and Fixed Income Guidelines
  - YSU Endowment (In-Line)
  - Kilcawley Center (In-Line)
  - Alumni (In-Line)



## HIGH YIELD FIXED INCOME

# NON-ENDOWMENT ASSETS FIXED INCOME PORTFOLIO

Asset Class	Market Value 3/31/16 (\$)	Market Value 6/30/16 (\$)	% of Total Plan	% of Pool	
<b>Total University Assets</b>	<b>78,056,468</b>	<b>63,836,398</b>	<b>100.0</b>	<b>100.0</b>	
<b>Total Operating &amp; Short Term</b>	<b>25,289,882</b>	<b>10,463,547</b>	<b>16.4</b>	<b>100.0</b>	
JPMorgan 100% U.S. Tr Sec MM Inst	Cash	11,006,457	4,008,601	6.3	38.3
JPMorgan Sweep Account	Cash	8,198,015	357,738	0.6	3.4
Star Plus	Cash	5,017,965	5,022,595	7.9	48.0
Vanguard Short-Term Federal Adm	US Fixed Income Short Term	1,067,445	1,074,613	1.7	10.3
<b>Total Long Term/ Reserves Pool</b>	<b>52,766,586</b>	<b>53,372,851</b>	<b>83.6</b>	<b>100.0</b>	
<b>Total Domestic Equity</b>	<b>14,148,880</b>	<b>14,472,198</b>	<b>22.7</b>	<b>27.1</b>	
TRP Instl US Structured Rsch	US Stock Large Cap Core	4,568,980	4,676,849	7.3	8.8
Vanguard 500 Index Adm	US Stock Large Cap Core	4,607,227	4,719,912	7.4	8.8
Vanguard Mid Cap Index Adm	US Stock Mid Cap Core	2,616,548	2,677,468	4.2	5.0
Loomis Sayles Sm Growth Instl	US Stock Small Cap Growth	1,206,383	1,240,868	1.9	2.3
Victory Integrity Sm-Cap Value Y	US Stock Small Cap Value	1,149,743	1,157,101	1.8	2.2
<b>Total International Equity</b>	<b>4,025,000</b>	<b>3,990,761</b>	<b>6.3</b>	<b>7.5</b>	
William Blair International Growth I	International	2,075,711	2,064,791	3.2	3.9
Dodge & Cox Internat'l Stock	International	1,949,289	1,925,971	3.0	3.6
<b>Total Alternatives</b>	<b>8,290,075</b>	<b>8,288,369</b>	<b>13.0</b>	<b>15.5</b>	
John Hancock Global Absolute Return I	Absolute Return	1,990,089	1,972,250	3.1	3.7
Wells Fargo Adv Absolute Instl	All Assets	2,287,594	2,305,589	3.6	4.3
Diamond Hill Long-Short I	Long/Short Equity	2,315,037	2,277,213	3.6	4.3
Voya Global Real Estate I	Global Real Estate	1,697,354	1,733,317	2.7	3.2
<b>Total Fixed Income</b>	<b>26,302,632</b>	<b>26,621,523</b>	<b>41.7</b>	<b>49.9</b>	
JPMorgan Core Bond Ultra	US Fixed Income Core	5,319,334	5,444,137	8.5	10.2
YSU Intermediate Term Bond	US Fixed Income Core	5,189,302	5,270,806	8.3	9.9
YSU Short Term Bond	US Fixed Income Short Term	12,713,784	12,793,151	20.0	24.0
Vanguard Short-Term Bond Instl	US Fixed Income Short Term	1,275,809	1,287,620	2.0	2.4
DFA Five-Yr Global Fxd-Inc I	Global Fixed Income	1,804,404	1,825,809	2.9	3.4

	Average Maturity	Average Duration	Credit Quality	Yield
YSU Portfolio	4.0 years	3.6 years	AA	1.6%

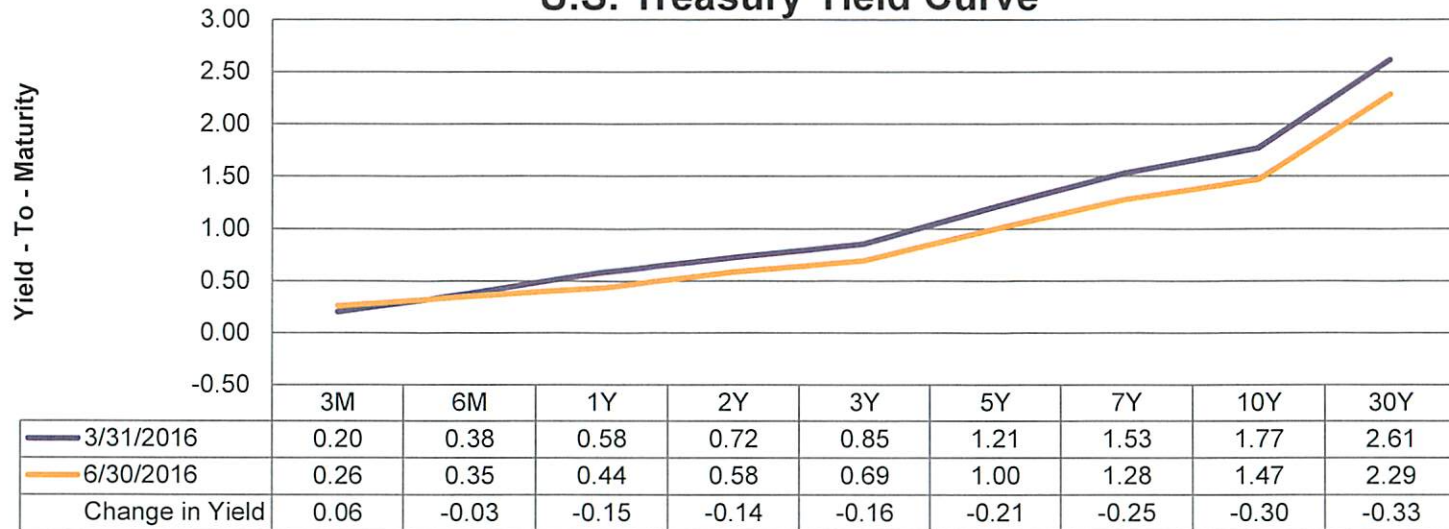
## BOND RATINGS

Credit Quality	Moody's	S&P	Fitch
<b>Investment Grade</b>			
Prime	Aaa	AAA	AAA
High quality	Aa	AA	AA
Upper medium grade	A	A	A
Medium grade	Baa	BBB	BBB
<b>Below Investment Grade</b>			
Lower medium grade	Ba	BB	BB
Low grade	B	B	B
Poor	Caa	CCC	CCC
Highly speculative	Ca	CC	CC
No paying	C	C	C
Defaulted	D	D	D

YSU Fixed Income Portfolio

# FIXED INCOME OVERVIEW

## U.S. Treasury Yield Curve



## One Year Change in Nominal Interest Rates

	Down 25 bps	No Change	Up 25 bps	Up 50 bps	Up 100 bps
High Yield Corp.	8.34%	7.27%	6.21%	5.14%	3.01%
U.S. Aggregate	3.28%	1.91%	0.54%	-0.83%	-3.56%
Global Aggregate	2.86%	1.14%	-0.58%	-2.31%	-5.75%
Emerging Markets	6.30%	4.83%	3.37%	1.90%	-1.03%
3-Yr Treasury	1.42%	0.69%	-0.04%	-0.77%	-2.23%
10-Yr Treasury	3.77%	1.47%	-0.83%	-3.13%	-7.73%

### How to read:

High yield bonds are yielding more than investment grade bonds.

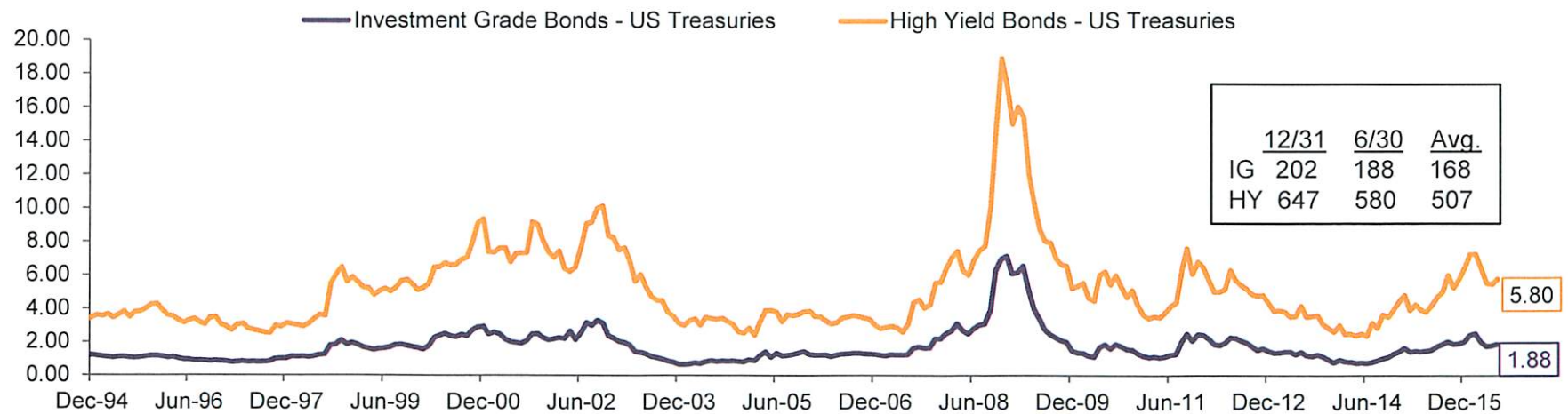
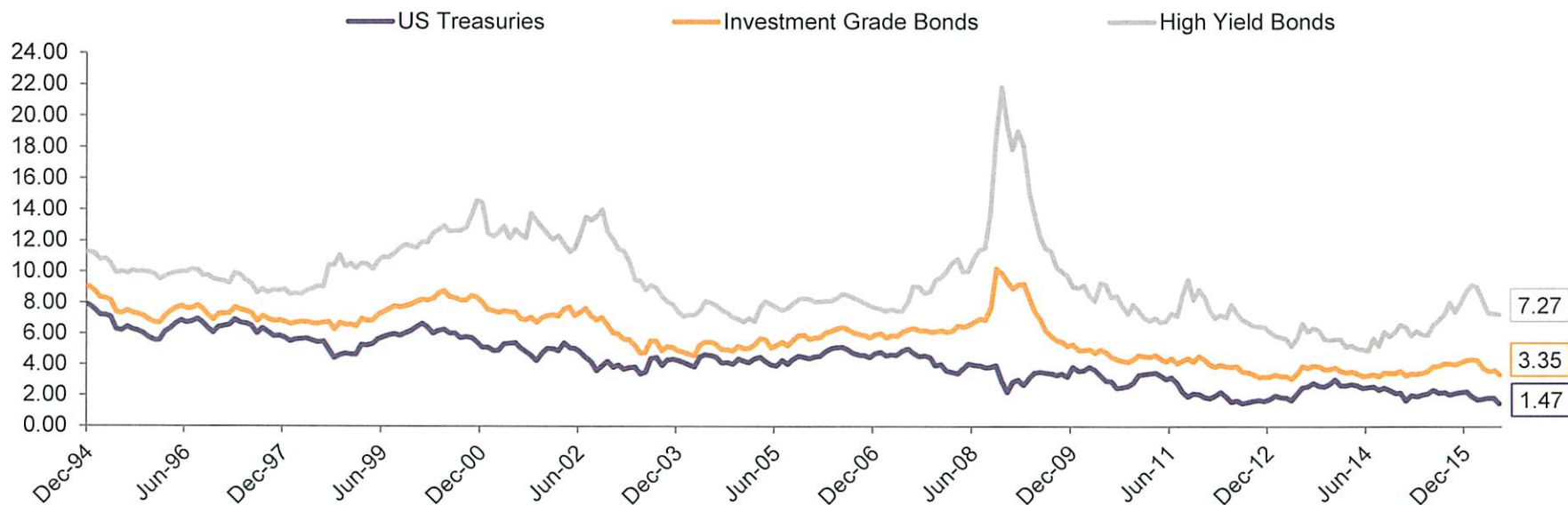
If rates moved up by 1% then high yield would return 3.01% and the U.S. Aggregate Bond Index would return -3.6%.

Past performance is no guarantee of future results. For informational purposes only to demonstrate the potential effect a change in interest rates would have on the yield of various types of fixed income securities. The calculations are simply based on the yield and duration for each index as of the period listed. The actual results could be higher or lower than results shown. Yield Curve Data – Source: Bloomberg. High Yield – Barclay’s High Yield Corporate Index; Emerging Market – Barclay’s Emerging Market Aggregate Index; U.S. Aggregate – Barclay’s U.S. Aggregate Index; , Global Aggregate – Barclay’s Global Aggregate Index, 3-Yr & 10-Yr TSY represent constant maturity treasuries. Source: Barclays. Data as of 6/30/2016.



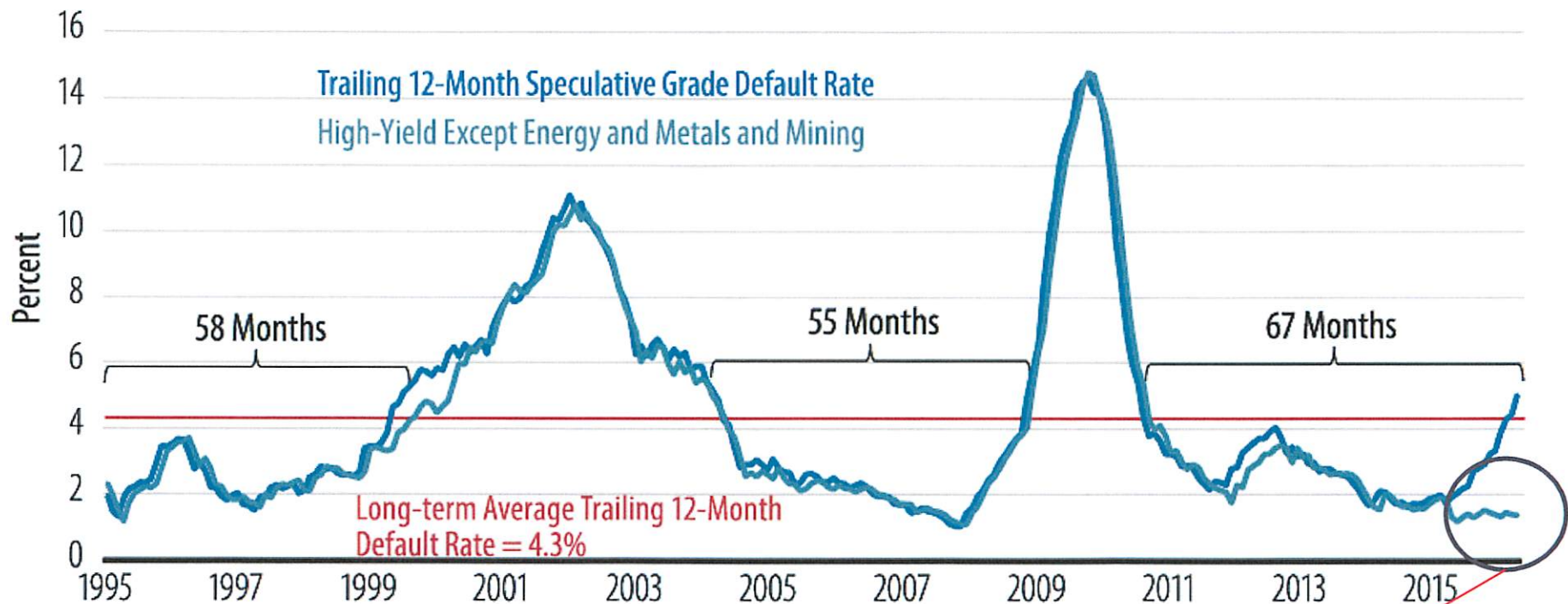
## CORPORATE SPREADS: INVESTMENT GRADE AND HIGH YIELD TO 10-YEAR TREASURIES

### Historical Bond Yields



Past performance is no guarantee of future results. US Treasuries – BarCap US Gov't 10-Yr Treasury; Investment Grade Bonds – BarCap BAA Corp; High Yield Bonds - BarCap US High Yield. Source: Bloomberg. Data as of 6/30/2016

# HIGH YIELD DEFAULT RATE



Source: Western Asset and Moody's.  
As of May 31, 2016

HY X-Energy and Metals & Mining  
12-month default rate only 1.4%

# FIXED INCOME MARKET RISK AND RETURN

## Zephyr StyleADVISOR

Zephyr StyleADVISOR: Hartland and Company

### Manager vs Benchmark: Return

July 1983 - June 2016 (not annualized if less than 1 year)

	1 year	3 years	5 years	10 years	15 years
S&P 500	3.99%	11.66%	12.10%	7.42%	5.75%
Barclays U.S. Corporate High Yield	1.62%	4.18%	5.84%	7.56%	7.93%
Barclays U.S. Corporate Investment Grade	7.94%	5.42%	5.43%	6.24%	6.03%
Barclays U.S. Aggregate	6.00%	4.06%	3.76%	5.13%	5.08%
Barclays U.S. Government: Intermediate	3.93%	2.41%	2.31%	4.07%	4.08%

### Manager vs Benchmark: Standard Deviation

July 1983 - June 2016 (not annualized if less than 1 year)

	1 year	3 years	5 years	10 years	15 years
S&P 500	14.50%	11.25%	12.10%	15.24%	14.69%
Barclays U.S. Corporate High Yield	8.61%	6.00%	6.65%	10.72%	9.86%
Barclays U.S. Corporate Investment Grade	3.71%	3.81%	4.35%	6.01%	5.74%
Barclays U.S. Aggregate	2.31%	2.66%	2.77%	3.23%	3.50%
Barclays U.S. Government: Intermediate	2.23%	2.06%	2.07%	2.78%	3.02%

# FIXED INCOME MARKET RISK AND RETURN

Zephyr StyleADVISOR

Zephyr StyleADVISOR: Hartland and Company

## Calendar Year Return As of June 2016

	YTD	2015	2014	2013	2012	2011	2010	2009	2008	2007
S&P 500	3.84%	1.38%	13.69%	32.39%	16.00%	2.11%	15.06%	26.46%	-37.00%	5.49%
Barclays U.S. Corporate High Yield	9.06%	-4.47%	2.45%	7.44%	15.81%	4.98%	15.12%	58.21%	-26.16%	1.87%
Barclays U.S. Corporate Investment Grade	7.68%	-0.68%	7.46%	-1.53%	9.82%	8.15%	9.00%	18.68%	-4.94%	4.56%
Barclays U.S. Aggregate	5.31%	0.55%	5.97%	-2.02%	4.21%	7.84%	6.54%	5.93%	5.24%	6.97%
Barclays U.S. Government: Intermediate	3.55%	1.18%	2.52%	-1.25%	1.73%	6.08%	4.98%	-0.32%	10.43%	8.47%
S&P 500	3.84%	1.38%	13.69%	32.39%	16.00%	2.11%	15.06%	26.46%	-37.00%	5.49%

## CONCLUSIONS

The YSU Non-Endowment fixed income assets are exclusively investment grade

The assets are safe, and high quality, but yield generated from the portfolio is low

In a low interest rate environment it is prudent to consider generating additional yield to help off-set the impact from rising interest rates

Including high yield bonds in the portfolio would increase the portfolio yield, but would also increase the portfolio's credit risk

YSU's current investment guidelines do not permit below investment grade, or high yield, investments

### **Next Meeting**

- Analysis of portfolio impact from addition of high yield
- Recommended edits to investment policy
- Recommended high yield bond investment manager



## APPENDIX

# NON-ENDOWMENT ASSETS: POLICY COMPLIANCE

As of June 30, 2016

Total Plan Asset Allocation Policy	Range	Current
Operating & Short-Term Pool	25% - 50%	16%
Long Term/ Reserves Pool	50% - 75%	84%

Operating & Short-Term Pool	Range	Current
Operating Assets	60% - 100%	90%
Short-Term Assets	0% - 40%	10%

Long Term/ Reserves Pool	Target	Range	Current
Domestic Equity	27%	20% - 35%	27%
International Equity	8%	0% - 15%	7%
Total Equity	35%	25% - 45%	35%
Alternatives	15%	0%-20%	16%
Short-Term Fixed Income	30%	25% - 45%	26%
Intermediate Fixed Income	20%	10% - 30%	24%
Cash & Cash Equivalents	0%	0% - 5%	0%

In Line
  Within Tolerance
  Review

## NON-ENDOWMENT ASSETS: REPORT CARD

	Ending June 30, 2016								Calendar Years			Inception	
	2016 Q2 (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	2015 (%)	2014 (%)	2013 (%)	Return (%)	Since
<b>Total University Assets</b>	<b>0.9</b>	<b>1.4</b>	<b>0.2</b>	<b>0.8</b>	<b>2.5</b>	<b>2.6</b>	<b>3.3</b>	<b>3.8</b>	<b>-0.5</b>	<b>2.9</b>	<b>5.6</b>	<b>3.5</b>	<b>Mar-04</b>
<i>YSU Policy Benchmark</i>	0.8	1.4	0.8	1.1	2.1	2.0	2.5	3.1	0.2	2.3	3.6	2.9	Mar-04
<b>Total Operating &amp; Short Term</b>	<b>0.1</b>	<b>0.2</b>	<b>0.3</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>--</b>	<b>--</b>	<b>0.1</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>	<b>Jun-10</b>
<i>YSU Total Operating &amp; Short Term Benchmark</i>	0.1	0.2	0.2	0.2	0.1	0.1	0.1	1.1	0.1	0.1	0.1	0.1	Jun-10
JPMorgan 100% U.S. Tr Sec MM Inst	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	Sep-11
<i>BofA Merrill Lynch 91-Day T-Bill</i>	0.1	0.1	0.2	0.1	0.1	0.1	0.1	1.0	0.1	0.0	0.1	0.1	Sep-11
JPMorgan Sweep Account													
Vanguard Short-Term Federal Adm	0.7	2.0	2.2	1.6	1.5	1.4	1.9	3.2	0.8	1.3	-0.2	1.3	Sep-10
<i>Barclays 1-5 Yr. Govt.</i>	0.8	2.4	2.4	1.9	1.6	1.4	1.9	3.2	0.9	1.2	-0.1	1.4	Sep-10
Star Plus	0.1	0.2	0.3	0.3	--	--	--	--	0.2	--	--	0.2	Jan-14
<i>BofA Merrill Lynch 91-Day T-Bill</i>	0.1	0.1	0.2	0.1	0.1	0.1	0.1	1.0	0.1	0.0	0.1	0.1	Jan-14
<b>Total Long Term/ Reserves Pool</b>	<b>1.1</b>	<b>2.0</b>	<b>0.4</b>	<b>1.4</b>	<b>3.9</b>	<b>4.0</b>	<b>--</b>	<b>--</b>	<b>-0.3</b>	<b>4.5</b>	<b>8.7</b>	<b>4.5</b>	<b>Jun-10</b>
<i>YSU Total Long Term/ Reserves Fund Benchmark</i>	1.4	2.3	1.2	1.8	3.7	3.8	4.3	4.6	0.3	4.0	7.1	4.0	Jun-10
<b>Total Domestic Equity</b>	<b>2.3</b>	<b>2.6</b>	<b>0.8</b>	<b>4.2</b>	<b>10.6</b>	<b>11.1</b>	<b>--</b>	<b>--</b>	<b>0.7</b>	<b>11.6</b>	<b>35.2</b>	<b>14.6</b>	<b>Jun-10</b>
<i>Russell 3000</i>	2.6	3.6	2.1	4.7	11.1	11.6	14.9	7.4	0.5	12.6	33.6	14.8	Jun-10
TRP Instl US Structured Rsch	2.4	2.5	3.4	5.5	11.6	11.9	14.5	--	2.9	12.4	32.9	14.7	Jun-10
<i>S&amp;P 500</i>	2.5	3.8	4.0	5.7	11.7	12.1	14.9	7.4	1.4	13.7	32.4	15.0	Jun-10
Vanguard 500 Index Adm	2.4	3.8	4.0	5.7	11.6	12.1	14.9	7.4	1.4	13.6	32.3	15.0	Jun-10
<i>S&amp;P 500</i>	2.5	3.8	4.0	5.7	11.7	12.1	14.9	7.4	1.4	13.7	32.4	15.0	Jun-10
Vanguard Mid Cap Index Adm	2.3	3.5	-0.9	3.8	10.8	10.6	16.5	7.8	-1.3	13.8	35.1	13.1	Sep-10
<i>Vanguard Mid Cap Index Benchmark</i>	2.3	3.5	-0.9	3.8	10.8	10.6	16.5	7.8	-1.3	13.8	35.3	13.1	Sep-10
Loomis Sayles Sm Growth Instl	2.9	-2.1	-10.6	0.7	6.3	8.0	15.5	8.7	1.1	1.1	47.7	12.7	Sep-10
<i>Russell 2000 Growth</i>	3.2	-1.6	-10.8	0.1	7.7	8.5	14.3	7.1	-1.4	5.6	43.3	11.9	Sep-10



## NON-ENDOWMENT ASSETS: REPORT CARD

	Ending June 30, 2016								Calendar Years			Inception	
	2016 Q2 (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	2015 (%)	2014 (%)	2013 (%)	Return (%)	Since
Victory Integrity Sm-Cap Value Y	0.6	1.5	-6.5	-2.1	6.7	8.7	14.9	6.7	-6.7	7.3	41.0	11.5	Sep-10
<i>Russell 2000 Value</i>	4.3	6.1	-2.6	-0.9	6.4	8.1	13.5	5.2	-7.5	4.2	34.5	10.5	Sep-10
<b>Total International Equity</b>	<b>-0.9</b>	<b>-4.3</b>	<b>-14.2</b>	<b>-8.2</b>	<b>1.8</b>	<b>0.8</b>	<b>--</b>	<b>--</b>	<b>-5.9</b>	<b>-1.4</b>	<b>23.4</b>	<b>2.4</b>	<b>Sep-10</b>
<i>MSCI EAFE Gross</i>	-1.2	-4.0	-9.7	-6.8	2.5	2.1	6.4	2.1	-0.4	-4.5	23.3	3.9	Sep-10
<i>MSCI ACWI ex USA Gross</i>	-0.4	-0.7	-9.8	-7.4	1.6	0.6	5.8	2.3	-5.3	-3.4	15.8	2.4	Sep-10
William Blair International Growth I	-0.5	-3.6	-9.3	-4.8	2.9	3.0	8.2	3.0	0.0	-2.9	19.0	6.4	Jun-12
<i>MSCI ACWI ex USA Gross</i>	-0.4	-0.7	-9.8	-7.4	1.6	0.6	5.8	2.3	-5.3	-3.4	15.8	4.6	Jun-12
Dodge & Cox Internat'l Stock	-1.2	-4.9	-18.9	-11.6	0.4	1.0	6.6	2.2	-11.4	0.1	26.3	2.8	Sep-10
<i>MSCI EAFE Gross</i>	-1.2	-4.0	-9.7	-6.8	2.5	2.1	6.4	2.1	-0.4	-4.5	23.3	3.9	Sep-10
<b>Total Alternatives</b>	<b>0.0</b>	<b>0.4</b>	<b>-1.9</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>-3.7</b>	<b>Mar-15</b>
<i>YSU Total Alternatives Benchmark</i>	1.9	1.9	-1.0	--	--	--	--	--	--	--	--	--	Mar-15
John Hancock Global Absolute Return I	-0.9	-4.3	-4.8	0.1	1.5	--	--	--	1.7	4.0	4.8	-0.9	Mar-16
<i>HFRI Relative Value (Total) Index</i>	2.9	2.4	-0.5	0.7	3.4	4.1	6.6	5.3	-0.3	4.0	7.1	2.9	Mar-16
Wells Fargo Adv Absolute Instl	0.8	0.9	-4.6	-3.5	1.0	--	--	--	-4.6	0.9	10.2	-5.6	Mar-15
<i>CPI +3%</i>	2.1	2.7	4.1	3.5	4.1	4.3	4.7	4.8	3.5	4.4	4.3	5.1	Mar-15
<i>GMO Benchmark-Free Allocation III</i>	0.9	1.0	-4.3	-3.3	1.3	3.6	5.6	5.4	-4.3	1.2	10.7	-5.3	Mar-15
Diamond Hill Long-Short I	-1.6	-1.2	-3.5	-0.5	4.7	6.9	7.6	4.0	-1.4	7.5	23.2	-2.4	Mar-15
<i>HFRI Equity Hedge (Total) Index</i>	1.4	-0.4	-5.0	-1.4	3.0	2.3	4.8	2.9	-1.0	1.8	14.3	-2.2	Mar-15
Voya Global Real Estate I	2.1	6.5	8.7	3.4	7.1	6.7	12.0	4.5	-1.7	14.0	3.9	0.5	Mar-15
<i>FTSE NAREIT Developed</i>	3.5	8.9	11.6	5.4	8.1	7.8	13.3	4.3	-0.8	15.0	3.7	2.7	Mar-15
<b>Total Fixed Income</b>	<b>1.2</b>	<b>2.9</b>	<b>3.0</b>	<b>2.1</b>	<b>2.1</b>	<b>2.1</b>	<b>--</b>	<b>--</b>	<b>0.8</b>	<b>2.1</b>	<b>-0.1</b>	<b>2.4</b>	<b>Jun-10</b>
<i>YSU Fixed Income Benchmark</i>	1.0	2.5	2.6	1.9	1.9	1.8	2.5	3.5	0.8	1.7	0.1	2.0	Jun-10

## NON-ENDOWMENT ASSETS: REPORT CARD

	Ending June 30, 2016								Calendar Years			Inception	
	2016 Q2 (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	2015 (%)	2014 (%)	2013 (%)	Return (%)	Since
JPMorgan Core Bond Ultra	2.3	5.2	5.9	4.0	4.0	3.9	5.0	5.6	1.0	5.4	-1.6	4.0	Apr-11
<i>Barclays Aggregate</i>	2.2	5.3	6.0	3.9	4.1	3.8	4.6	5.1	0.6	6.0	-2.0	3.8	Apr-11
YSU Intermediate Term Bond	1.5	3.9	3.7	2.4	2.7	2.9	3.8	4.8	0.5	3.0	-0.5	4.1	Mar-04
<i>Barclays Int Govt/Credit</i>	1.6	4.1	4.3	3.0	3.0	2.9	3.8	4.5	1.1	3.1	-0.9	3.8	Mar-04
YSU Short Term Bond	0.6	1.5	1.5	1.1	1.1	1.2	1.7	2.9	0.6	0.7	0.6	2.7	Mar-04
<i>BofA Merrill Lynch US Corp &amp; Gov 1-3 Yrs</i>	0.7	1.7	1.6	1.2	1.2	1.2	1.6	2.8	0.7	0.8	0.7	2.5	Mar-04
Vanguard Short-Term Bond Instl	0.9	2.6	2.5	1.9	1.8	--	--	--	1.0	1.3	0.2	1.6	Dec-11
<i>Barclays 1-5 Yr. Govt/Credit</i>	1.0	2.6	2.6	2.0	1.9	1.8	2.5	3.5	1.0	1.4	0.3	1.7	Dec-11
DFA Five-Yr Global Fxd-Inc I	1.2	3.5	4.0	2.9	2.9	2.8	3.5	3.8	1.4	2.9	-0.4	2.9	Jun-13
<i>Citi WGBI 1-5 Yr Hdg USD</i>	0.7	1.9	2.4	1.8	1.8	1.8	1.9	3.0	1.0	1.9	0.6	1.8	Jun-13

# ENDOWMENT PERFORMANCE REPORT CARD

	Ending June 30, 2016								Calendar Years			Inception	
	2016 Q2 (%)	YTD (%)	1 Yr (%)	2 Yrs (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	2015 (%)	2014 (%)	2013 (%)	Return (%)	Since
YSU Endowment Fund	0.3	4.7	5.9	4.5	7.6	--	--	--	-0.3	10.5	--	7.6	Jun-13
60/40 S&P 500/Barclays Aggregate	2.4	4.5	5.0	5.2	8.7	8.9	10.9	6.8	1.3	10.6	17.6	8.7	Jun-13
Kilcawley Center	2.5	1.0	4.6	-1.7	5.1	--	--	--	-5.3	8.6	--	5.1	Jun-13
60/40 S&P 500/Barclays Aggregate	2.4	4.5	5.0	5.2	8.7	8.9	10.9	6.8	1.3	10.6	17.6	8.7	Jun-13
The Alumni License Plate Account Endowment Fund	2.8	6.8	4.4	3.5	6.3	--	--	--	-0.2	7.1	--	6.3	Jun-13
60/40 S&P 500/Barclays Aggregate	2.4	4.5	5.0	5.2	8.7	8.9	10.9	6.8	1.3	10.6	17.6	8.7	Jun-13

## MARKET VALUE ATTRIBUTION

**Long-Term Pool Only**

# DEFINITIONS AND DISCLOSURES

Information provided is general in nature, is provided for informational purposes only, and should not be construed as investment advice. Any views expressed are based upon the data available at the time the information was produced and are subject to change at any time based on market or other conditions. Hartland disclaims any liability for any direct or incidental loss incurred by applying any of the information in this presentation. All investment decisions must be evaluated as to whether it is consistent with their investment objectives, risk tolerance, and financial situation.

Past performance is no guarantee of future results. Investing involves risk, including risk of loss. Diversification does not ensure a profit or guarantee against loss.

All indices are unmanaged and performance of the indices includes reinvestment of dividends and interest income and, unless otherwise noted, an investment cannot be made in any index.

Although bonds generally present less short-term risk and volatility than stocks, bonds do contain interest rate risk (as interest rates rise, bond prices usually fall and vice versa) and the risk of default, or the risk that an issuer will be unable to make income or principal payments. Additionally, bonds and short-term investments entail greater inflation risk, or the risk that the return of an investment will not keep up with increases in the prices of goods and services, than stocks.

Lower-quality debt securities generally offer higher yields, but also involve greater risk of default or price changes due to potential changes in the credit quality of the issuer. Any fixed income security sold or redeemed prior to maturity may be subject to loss.

The municipal market is volatile and can be significantly affected by adverse tax, legislative, or political changes and by the financial condition of the issuers of municipal securities. Interest rate increases can cause the price of a debt security to decrease. A portion of the dividends you receive may be subject to federal, state, or local income tax or may be subject to the federal alternative minimum tax. Generally, tax-exempt municipal securities are not appropriate holdings for tax advantaged accounts such as IRAs and 401(k)s.

Stock markets, especially foreign markets, are volatile and can decline significantly in response to adverse issuer, political, regulatory, market, or economic developments. Foreign securities are subject to interest-rate, currency-exchange-rate, economic, and political risks, all of which are magnified in emerging markets. The securities of smaller, less well-known companies can be more volatile than those of larger companies. Growth stocks can perform differently from the market as a whole and other types of stocks and can be more volatile than other types of stocks. Value stocks can perform differently than other types of stocks and can continue to be undervalued by the market for long periods of time.

The commodities industry can be significantly affected by commodity prices, world events, import controls, worldwide competition, government regulations, and economic conditions.

Changes in real estate values or economic conditions can have a positive or negative effect on issuers in the real estate industry, which may affect your investment.

## Index Definitions:

The **S&P 500 Index** is a broad-based market index, comprised of 500 large-cap companies, generally considered representative of the stock market as a whole. The **S&P 400 Index** is an unmanaged index considered representative of mid-sized U.S. companies. The **S&P 600 Index** is a market-value weighted index that consists of 600 small-cap U.S. stocks chosen for market size, liquidity and industry group representation.

The **Russell 1000 Value Index**, **Russell 1000 Index** and **Russell 1000 Growth Index** are indices that measure the performance of large-capitalization value stocks, large-capitalization stocks and large-capitalization growth stocks, respectively. The **Russell 2000 Value Index**, **Russell 2000 Index** and **Russell 2000 Growth Index** are indices that measure the performance of mid-capitalization value stocks, mid-capitalization stocks and mid-capitalization growth stocks, respectively. The **Russell Midcap Value Index**, **Russell Midcap Index** and **Russell Midcap Growth Index** are indices that measure the performance of mid-capitalization value stocks, mid-capitalization stocks and mid-capitalization growth stocks, respectively. The **Russell 2500 Value Index**, **Russell 2500 Index** and **Russell 2500 Growth Index** measure the performance of small to mid-cap value stocks, small to mid-cap stocks and small to mid-cap growth stocks, respectively, commonly referred to as "smid" cap. The **Russell 3000 Value Index**, **Russell 3000 Index** and **Russell 3000 Growth Index** measure the performance of the 3,000 largest U.S. value stocks, 3,000 largest U.S. stocks and 3,000 largest U.S. growth stocks, respectively, based on total market capitalization.

The **Wilshire 5000 Index** represents the broadest index for the U.S. equity market, measuring the performance of all U.S. equity securities with readily available price data. The **Wilshire Micro Cap Index** is a market capitalization-weighted index comprised of all stocks in the Wilshire 5000 Index below the 2,501<sup>st</sup> rank.

The **MSCI EAFE (Europe, Australasia, Far East) Index** is designed to measure developed market equity performance, excluding the U.S. and Canada. The **MSCI Emerging Markets (EM) Index** is designed to measure global emerging market equity performance. The **MSCI World Index** is designed to measure global developed market equity performance. The **MSCI World Index Ex-U.S. Index** is designed to measure the equity market performance of developed markets and excludes the U.S. The **MSCI Europe Index** is an unmanaged index considered representative of developed European countries. The **MSCI Japan Index** is an unmanaged index considered representative of stocks of Japan. The **MSCI Pacific ex. Japan Index** is an unmanaged index considered representative of stocks of Asia Pacific countries excluding Japan.

The **U.S. 10-Year treasury Yield** is generally considered to be a barometer for long-term interest rates.

**Merrill Lynch 91-day T-bill index** includes U.S. Treasury bills with a remaining maturity from 1 up to 3 months.

The **Barclays Capital® (BC) U.S. Treasury Index** is designed to cover public obligations of the U.S. Treasury with a remaining maturity of one year or more. The **BC Aggregate Bond Index** is an unmanaged, market value-weighted performance benchmark for investment-grade fixed-rate debt issues, including government, corporate, asset-backed, and mortgage-backed securities with maturities of at least one year. The **BC U.S. Credit Bond Index** is designed to cover publicly issued U.S. corporate and specified foreign debentures and secured notes that meet the specified maturity, liquidity, and quality requirements; bonds must be SEC-registered to qualify. The **BC U.S. Agency Index** is designed to cover publicly issued debt of U.S. Government agencies, quasi-federal corporations, and corporate or foreign debt guaranteed by the U.S. Government. The **BC CMBS Index** is designed to mirror commercial mortgage-backed securities of investment-grade quality (Baa3/BBB-/BBB- or above) using Moody's, S&P, and Fitch respectively, with maturity of at least one year. The **BC MBS Index** covers agency mortgage-backed pass-through securities (both fixed-rate and hybrid ARMs) issued by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC). The **BC U.S. Municipal Bond Index** covers the U.S. dollar-denominated, long-term tax-exempt bond market with four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds. The **BC TIPS Index** is an unmanaged market index made up of U.S. Treasury Inflation Linked Index securities. The **BC U.S. Government Bond Index** is a market value-weighted index of U.S. Government fixed-rate debt issues with maturities of one year or more. The **BC ABS Index** is a market value-weighted index that covers fixed-rate asset-backed securities with average lives greater than or equal to one year and that are part of a public deal; the index covers the following collateral types: credit cards, autos, home equity loans, stranded-cost utility (rate-reduction bonds), and manufactured housing. The **BC Global Aggregate Index** is composed of three sub-indices: the U.S. Aggregate Index, Pan-European Aggregate Index, and the Asian-Pacific Aggregate Index. In aggregate the index is created to be a broad-based measure of the performance of investment grade fixed rate debt on a global scale. The **BC US Corporate Long Aa Index** is an unmanaged index representing public obligations of U.S. corporate and specified foreign debentures and secured notes with a remaining maturity of 10 years or more. The **BC U.S. Corporate High-Yield Index** measures the market of USD-denominated, non-investment grade, fixed-rate, taxable corporate bonds. The **BC Intermediate Corporate Index** includes dollar-denominated debt from U.S. and non-U.S. industrial, utility, and financial institutions issuers with a duration of 1-10 years. The **BC U.S. Treasury Long Index** is an unmanaged index representing public obligations of the U.S. Treasury with a remaining maturity of one year or more. The **BC U.S. Government 10 Year Treasury Index** measures the performance of U.S. Treasury securities that have a remaining maturity of less than 10 years. The **BC BAA Corporate Index** measures the performance of the taxable Baa rated fixed-rate U.S. dollar-denominated corporate bond market. The **BC Global Treasury ex US Index** includes government bonds issued by investment-grade countries outside the United States, in local currencies, that have a remaining maturity of one year or more and are rated investment grade or higher. The **BC Emerging Market Bond Index** is an unmanaged index that total returns for external-currency-denominated debt instruments of the emerging markets. The **BC U.S. Securitized Bond Index** is a composite of asset-backed securities, collateralized mortgage-backed securities (ERISA-eligible) and fixed rate mortgage-backed securities. The **BC Quality Distribution AAA, B, and CC-D Indices** measure the respective credit qualities of U.S. corporate and specified foreign debentures and secured notes. The **BC Universal Index** represents the union of the U.S. Aggregate Index, the U.S. High Yield Corporate Index, the 144A Index, the Eurodollar Index, the Emerging Markets Index, and the non-ERISA portion of the CMBS Index. The **BC 1-3 Year Government Credit Index** is an unmanaged index considered representative of performance of short-term U.S. corporate bonds and U.S. government bonds with maturities from one to three years. The **BC Long-term Government Index** is an unmanaged index reflecting performance of the long-term government bond market. The **BC Intermediate Aggregate Index** measures the performance of intermediate-term investment grade bonds. The **BC Intermediate 1-3 Year Government/Credit Index** measures the performance of U.S. Dollar denominated U.S. Treasuries, government-related and investment grade U.S. corporate securities that have a remaining maturity of greater than one year and less than ten years.

The **Bank of America ML U.S. High Yield Index** tracks the performance of below investment grade US Dollar Denominated corporate bonds publicly issued in the US market. Qualifying bonds have at least one year remaining term to maturity, are fixed coupon schedule and minimum outstanding of \$100 million.

# DEFINITIONS AND DISCLOSURES

**Signal Identification Model (SIM)** - The balance between fixed income and equity securities is guided by a proprietary, quantitative modeling technique we call "SIM". SIM is a four factor model that measures short-term under or over-valuation of equity markets. When SIM is negative, for example, the Investment Review Committee (IRC) may recommend that Consultants reduce equity ratios within prescribed ranges in client portfolios; when positive, that Consultants increase equity ratios within prescribed ranges. Other judgments, such as short-term, relative weights between different asset classes often come from fundamental assessments of IRC members. Unemployment – Total labor force seasonally adjusted (U.S. Bureau of Labor Statistics) ; ISM - An index based on surveys of more than 300 manufacturing firms by the Institute of Supply Management; Spread – indicates the difference in yield between Moody's AAA corporate bonds and Moody's BAA corporate bonds; S&P Earnings Yield – earnings per share for the most recent 12-month period divided by the current market price per share of the stocks in the S&P 500.

**Hartland Research Portfolio (HPR)** - Our Optimal Long-Term Strategic Asset Allocation, called the Hartland Research Portfolio, sets forth our best thinking on the mix of different asset classes; it is the benchmark we use in considering appropriate asset allocation for all client portfolios. The Hartland Research Portfolio is developed with two major inputs. One is quantitative, based on the Black-Litterman model, and one is qualitative, based on the input of the professionals on our Investment Research Committee (IRC). The Hartland & Co. research team begins with the Black-Litterman model, a mathematical model that seeks asset allocations that are optimal; those that produce the best results with the lowest level of volatility or risk. Black-Litterman is more dynamic than other models and builds on traditional mean-variance techniques to create stable and consistent return forecasts for a set of asset classes. The IRC assess the quantitative output from Black-Litterman and integrate it with their own fundamental or qualitative judgments. The result is the Hartland Research Portfolio, which combines quantitative and qualitative inputs and our capital market projections.

The **HFRI Funds of Funds Index (HFRI FOF)** is an equal weighted index designed to measure the performance of hedge fund of fund managers. The more than 800 multi-strategy constituents are required to have at least \$50 million in assets under management and a trading track record spanning at least 12 months. The index includes both on and offshore funds and all returns are reported in USD

The **NCREIF Property Index (NPI)** represents quarterly time series composite total rate of return measure of a very large pool of individual commercial real estate properties acquired in the private market. The index represents apartments, hotels, industrial properties, office buildings and retail properties which are at least 60% occupied and owned or controlled, at least in part by tax-exempt institutional investors or its designated agent. In addition these properties that are included must be investment grade, non-agricultural and income producing and all development projects are excluded. Constituents included in the NPI be valued at least quarterly, either internally or externally, using standard commercial real estate appraisal methodology. Each property must be independently appraised a minimum of once every three years.

The **FTSE NAREIT All REITs Index** is a market capitalization-weighted index that is designed to measure the performance of all tax-qualified Real Estate Investment Trusts (REITs) that are listed on the New York Stock Exchange, the American Stock Exchange, or the NASDAQ National Market List.

The **Dow Jones U.S. Select Real Estate Securities Index** is a float-adjusted market capitalization-weighted index of publicly traded real estate securities such as real estate investment trusts (REITs) and real estate operating companies (REOCs).

The **Cambridge PE Index** is a representation of returns for over 70% of the total dollars raised by U.S. leveraged buyout, subordinated debt and special situation managers from 1986 to December 2007. Returns are calculated based on the pooled time weighted return and are net of all fees. These pooled means represent the end to end rate of return calculated on the aggregate of all cash flows and market values reported by the general partners of the underlying constituents in the quarterly and annual reports.

The **University of Michigan Consumer Sentiment Index** is a consumer confidence index published monthly by the University of Michigan and Thomson Reuters. The index is normalized to have a value of 100 in December 1964.

**VIX** - The CBOE Volatility Index (VIX) is based on the prices of eight S&P 500 index put and call options.

**Gold** – represented by the dollar spot price of one troy ounce

**WTI Crude** – West Texas Intermediate is a grade of crude oil used as a benchmark in oil pricing.

The **Affordability Index** measures of a population's ability to afford to purchase a particular item, such as a house, indexed to the population's income

The **Homeownership %** is computed by dividing the number of owner-occupied housing units by the number of occupied housing units or households.

**HFRI Emerging Markets: Asia ex-Japan, Global Index, Latin America Index, Russia/Eastern Europe Index:** The constituents of the HFRI Emerging Markets Indices are selected according to their Regional Investment Focus only. There is no Investment Strategy criteria for inclusion in these indices. Funds classified as Emerging Markets have a regional investment focus in one of the following geographic areas: Asia ex-Japan, Russia/Eastern Europe, Latin America, Africa or the Middle East. **HFRI EH: Energy/Basic Materials** strategies which employ investment processes designed to identify opportunities in securities in specific niche areas of the market in which the Manager maintains a level of expertise which exceeds that of a market generalist. **HFRI EH: Equity Market Neutral** strategies employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities, select securities for purchase and sale. **HFRI EH: Quantitative Directional** strategies employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities, select securities for purchase and sale. **HFRI EH: Short-Biased** strategies employ analytical techniques in which the investment thesis is predicated on assessment of the valuation characteristics on the underlying companies with the goal of identifying overvalued companies. **HFRI EH: Technology/Healthcare** strategies employ investment processes designed to identify opportunities in securities in specific niche areas of the market in which the Manager maintain a level of expertise which exceeds that of a market generalist in identifying opportunities in companies engaged in all development, production and application of technology, biotechnology and as related to production of pharmaceuticals and healthcare industry. **HFRI ED: Distressed Restructuring** strategies which employ an investment process focused on corporate fixed income instruments, primarily on corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceeding or financial market perception of near term proceedings. **HFRI ED: Merger Arbitrage** strategies which employ an investment process primarily focused on opportunities in equity and equity related instruments of companies which are currently engaged in a corporate transaction. **HFRI ED: Private Issue/Regulation D** strategies which employ an investment process primarily focused on opportunities in equity and equity related instruments of companies which are primarily private and illiquid in nature. **HFRI Macro: Systematic Diversified** strategies have investment processes typically as function of mathematical, algorithmic and technical models, with little or no influence of individuals over the portfolio positioning. **HFRI RV: Fixed Income - Asset Backed** includes strategies in which the investment thesis is predicated on realization of a spread between related instruments in which one or multiple components of the spread is a fixed income instrument backed physical collateral or other financial obligations (loans, credit cards) other than those of a specific corporation. **HFRI RV: Fixed Income - Convertible Arbitrage** includes strategies in which the investment thesis is predicated on realization of a spread between related instruments in which one or multiple components of the spread is a convertible fixed income instrument. **HFRI RV: Fixed Income - Corporate** includes strategies in which the investment thesis is predicated on realization of a spread between related instruments in which one or multiple components of the spread is a corporate fixed income instrument. **HFRI RV: Multi-Strategies** employ an investment thesis is predicated on realization of a spread between related yield instruments in which one or multiple components of the spread contains a fixed income, derivative, equity, real estate, MLP or combination of these or other instruments. **HFRI RV: Yield Alternatives Index** strategies employ an investment thesis is predicated on realization of a spread between related instruments in which one or multiple components of the spread contains a derivative, equity, real estate, MLP or combination of these or other instruments. Strategies are typically quantitatively driven to measure the existing relationship between instruments and, in some cases, identify attractive positions in which the risk adjusted spread between these instruments represents an attractive opportunity for the investment manager.

The **Consumer Price Index (CPI)** is an inflationary indicator that measures the change in the cost of a fixed basket of products and services, including housing, electricity, food, and transportation. The CPI is published monthly. Unless otherwise noted, the CPI figure is as of the date this report is created.

The **Credit Suisse Leveraged Loan Index** is a market value-weighted index designed to represent the investable universe of the U.S. dollar-denominated leveraged loan market.

The **Dow Jones-UBS Commodity Index** measures the performance of the commodities market. It consists of exchange-traded futures contracts on physical commodities that are weighted to account for the economic significance and market liquidity of each commodity.