## **Quarterly Investment Performance** Analysis North Dakota Board of University and School Lands

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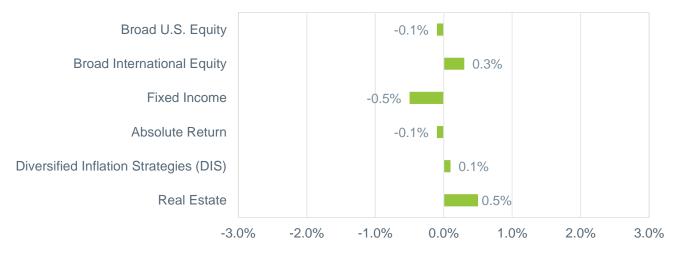
# **Board Executive Summary**



### **Board Executive Summary**

Asset All	location vs. Target All	ocation	
	Market Value (\$) as of 3/31/17	Allocation (%)	Target Asset Allocation
Broad U.S. Equity	680,442,307	16.9%	17.0%
Broad International Equity	615,513,253	15.3%	15.0%
Fixed Income	906,876,927	22.5%	23.0%
Absolute Return	800,769,201	19.9%	20.0%
Diversified Inflation Strategies (DIS)	406,577,437	10.1%	10.0%
Real Estate	624,137,808	15.5%	15.0%
Total Fund	4,034,316,932	100.0%	100.0%

### Asset Allocation vs. Target Allocation Differences



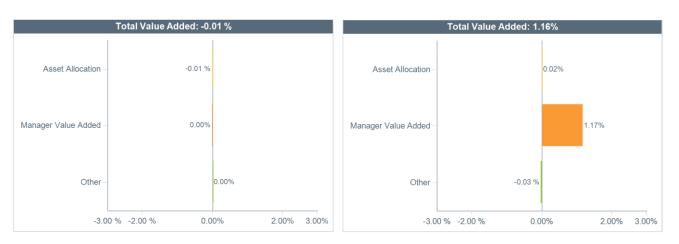
- The Land Board's assets totaled \$4.0 billion as of March 31, 2017, an increase of approximately \$152 million from the previous quarter. The Total Fund remained in line with its target allocations.
- There were no additional significant changes to the Total Fund during the first quarter.



#### **Total Fund Performance**

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	2016	2015	2014	Since Incep.	Inception Date
Total Fund (Net)	3.7	3.7	10.7	3.3	5.9	6.7	8.7	-4.6	4.8	6.7	08/01/1995
Target Allocation Index	3.8	3.8	9.9	4.8	7.0	7.6	7.9	-0.9	6.5	N/A	
Total Fund (Gross)	3.9	3.9	11.2	3.7	6.3	7.0	9.2	-4.2	5.1	8.7	07/01/2009
Target Allocation Index (Gross)	3.9	3.9	10.1	5.0	7.1	7.6	8.0	-0.8	6.6	9.6	

- The Total Fund returned 3.7% (net of fees) during the quarter, 11 basis points below its target allocation index. The underperformance is attributable to the Diversified Inflation Strategies (DIS) composite, which underperformed its custom benchmark by 2.1%. All other asset classes outperformed their respective benchmarks.
- Relative outperformance was moderate among all asset classes, with the exception of DIS, which underperformed. U.S. and international equity beat their respective asset class benchmarks by 0.1% and 0.2%. Fixed income and absolute return contributed 0.3% and 0.2% to partially offset underperformance by the inflation strategies. Real estate had the strongest relative performance, finishing the first quarter 0.5% ahead of the NCREIF ODCE Index.
- The largest absolute gains belonged to U.S. and international equity, which returned 5.8% and 8.0%, respectively, for the quarter. Absolute return gained 4.5% during the first quarter, followed by 2.3% for real estate and 1.6% for fixed income.



#### Total Fund QTD Attribution (versus Target Allocation)

#### Total Fund Trailing 1-Year Attribution (versus Target Allocation)



#### Broad U.S. Equity<sup>1</sup>

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	2016	2015	2014	Since Incep.	Inception Date
Broad U.S. Equity	5.8	5.8	18.7	9.4	12.4	12.2	13.5	0.2	12.4	15.0	07/01/2009
Russell 3000 Index	5.7	5.7	18.1	9.8	13.2	12.9	12.7	0.5	12.6	15.5	
Difference	0.1	0.1	0.6	-0.3	-0.8	-0.7	0.7	-0.3	-0.1	-0.5	

- The first quarter was marked by strong S&P earnings growth and continued muted volatility. Specifically, the year-over-year earnings growth rate for the S&P 500 was estimated at 9.2% by FactSet, which would mark the highest growth rate since 2011. Combining this with lower levels of stock correlation and investor comfort with market risks led to an environment where active manager performance generally improved over the quarter.
- The Total Fund's U.S. equity composite slightly outperformed the Russell 3000 Index over the first quarter. The State Street S&P 500 Index fund returned 6.1% while the actively managed NT Small Cap Core fund gained 4.7%, 226 basis points ahead of the Russell 2000 Index.
- The NT Fund, which invests in four concentrated small cap managers, returned 4.7% for the quarter versus 2.5% for the Russell 2000 Index. All four underlying managers outperformed their respective value and growth small cap indices. Relative performance benefitted from stock selection in consumer discretionary and technology sectors. The portfolio was also aided by an underweight to small banks and the energy industry.
- Since the U.S. equity composite was restructured in 2014, it has closely tracked the performance of its benchmark as expected, given its high allocation to passive strategies.

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	2016	2015	2014	Since Incep.	Inception Date
Broad International Equity	8.0	8.0	13.6	0.2	6.5	4.8	5.0	-5.1	-4.9	7.1	07/01/2009
MSCI ACW Ex U.S. Index (Net)	7.9	7.9	13.1	0.6	4.4	3.8	4.5	-5.7	-3.9	6.6	
Difference	0.2	0.2	0.4	-0.3	2.1	1.0	0.5	0.6	-1.1	0.6	

#### **Broad International Equity**

- Underpinning the positive international equity performance was the expectation that the global economy is on more stable footing than previously believed, supported by improving economic fundamentals. This was especially true in the UK, where recent economic data showed a steady expansion in the face of potentially leaving the EU Common Market.
- The Total Fund's international equity outperformed the MSCI All Country World Ex U.S. Index by 17 basis points, posting a return of 8.0% for the quarter. Performance from the composite's active mandates added to the relative performance as DFA Emerging Market Core Equity and Harding Loevner Emerging Market returned 13.7% and 11.8%, respectively, 224 and 39 basis points ahead of the MSCI Emerging Markets Index.
- DFA's relative outperformance was partially due to an emphasis on small cap stocks, particularly those in Taiwan and India. An underweight to Russia also added to the strong relative performance.
- Harding Loevner outperformed its benchmark in the first quarter by 39 basis points. The modest outperformance was a result of stock selection within financials, utilities, and information technology, which offset poor stock performance in the energy sector and a drag caused by the portfolio holding approximately 3% in cash. From a regional standpoint, Latin American bank holdings were a significant contributor to the outperformance, as was stock selection in Taiwan.

<sup>&</sup>lt;sup>1</sup> Throughout the Board summary, the Total Fund's composite asset class performance shown is gross of fees. Specific manager performance referenced is net of fees.



• The international equity composite portfolio has added value relative to the MSCI All Country World ex-U.S. Index over the longer 5- and 7-year trailing periods and is ahead by 56 basis points since its inception. DFA and Harding Loevner have outperformed their benchmark since being added to the Land Board portfolio in July 2014, contributing 116 and 130 basis points of relative outperformance, respectively.

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	2016	2015	2014	Since Incep.	Inception Date
Fixed Income	1.6	1.6	2.5	3.0	3.1	4.3	4.1	0.1	5.0	5.0	07/01/2009
Gbl Fixed Income Custom Index	1.3	1.3	1.2	2.2	2.3	3.5	3.7	-0.5	4.3	4.0	
Difference	0.3	0.3	1.3	0.8	0.8	0.8	0.5	0.6	0.7	1.0	
Bloomberg US Agg Bond Index	0.8	0.8	0.4	2.7	2.3	3.5	2.7	0.6	6.0	3.9	
Difference	0.7	0.7	2.0	0.3	0.8	0.8	1.5	-0.5	-1.0	1.1	

#### Fixed Income

• Short-dated global rates continued to be impacted by global central bank policy actions, while longer-dated rates reacted to broader economic developments and expectations for continued, albeit modest, improvements in global growth.

- The portfolio's fixed income composite returned 1.6% in the first quarter, outperforming its custom global fixed income benchmark by 26 basis points. All of the composite's fixed income managers outperformed their respective benchmarks for the quarter with the exception of Lazard.
- The Payden & Rygel U.S. aggregate bond strategy rose 1.2%, outperforming the Bloomberg U.S. Aggregate Index by 34 basis points. The portfolio benefitted from its credit sector overweight as credit-related spread premiums tightened. The overweight to securitized issues also contributed to outperformance in the first quarter due to improvements in housing prices and investors seeking lower duration sources of yield.
- Brandywine returned 5.2% for the quarter compared to its benchmark return of 1.6%. The fund benefitted from bond exposure in Mexico, Brazil, and Indonesia. For the fund's currency exposure, Mexico and Australia contributed most while the Japanese Yen and Euro detracted from relative performance.
- Lazard High Yield gained 1.6% for the quarter but trailed its benchmark by 70 basis points. The fund's underweight to lower quality securities was the main driver of underperformance, as CCC and lower rated issues returned 5.3% for the quarter versus 2.7% for the B rated issues index. An underweight to retail and banks helped offset relative underperformance, while an underweight to telecommunications detracted from performance.



#### **Absolute Return**

	QTD	CYTD	1 Year	2016	2015	Since Incep.	Inception Date
Absolute Return	4.5	4.5	10.7	8.5	-5.5	1.4	07/01/2014
Absolute Return Custom Index <sup>2</sup>	4.4	4.4	9.2	6.2	-0.9	3.3	
Difference	0.2	0.2	1.5	2.2	-4.6	-1.8	
Consumer Price Index + 5%	2.2	2.2	7.5	7.2	5.8	5.9	
Difference	2.3	2.3	3.2	1.3	-11.3	-4.4	

- Most GTAA managers outperformed an undiversified and static 60/40 portfolio of U.S. large cap equity and U.S. fixed income. Managers that held disciplined value-oriented processes, especially those with fewer constraints on emerging market allocations, outperformed peers. U.S.-oriented strategies, particularly those with biases toward income-oriented exposures, moderately underperformed both traditional long-oriented GTAA managers and a static 60/40 allocation.
- The Land Board's absolute return composite returned 4.5% during the first quarter, outperforming its custom benchmark by 16 basis points. PIMCO and Westwood outperformed their respective benchmarks with PIMCO leading the way for relative performance.
- GMO gained 4.7% over the quarter, trailing its global 60/40 benchmark by 12 basis points. All strategies within the portfolio had positive performance with emerging markets equities providing the largest contribution, including a relative strengthening of emerging markets currencies. Of the fixed income strategies, emerging markets was again the largest contributor. In alternative strategies, Merger Arbitrage provided the biggest gain as deals neared closing.
- PIMCO All Asset All Authority gained 4.6% during the quarter as it again finished ahead of its benchmark. The fund outperformed the benchmark by 1.9%, largely due to performance in emerging markets equities and debt. The two combined to add 336 basis points to the fund's performance. Developed international equity also added value, while commodities and REITs presented the only weakness for the first quarter.
- During the first quarter, Westwood returned 3.7%, 132 basis points ahead of its custom benchmark. Performance was largely due to select stock holdings in information technology, retail, and industrials.

	QTD	CYTD	1 Year	2016	2015	Since Incep.	Inception Date
Diversified Inflation Strategies (DIS)	0.7	0.7	18.2	19.6	-23.9	0.9	04/01/2014
DIS Custom Index	2.8	2.8	17.1	16.5	-18.9	1.2	
Difference	-2.1	-2.1	1.1	3.0	-5.0	-0.2	

#### **Diversified Inflation Strategies (DIS)**

 Inflation sensitive markets provided divergent performance in a quarter characterized by little change to long-term inflation expectations. This was evidenced by the breakeven inflation markets, as measured by the difference between nominal treasuries and TIPS, ending the quarter largely unchanged.

• The DIS composite gained 0.7% for the quarter but trailed its benchmark by 2.1% due to underperformance from Gresham and Van Eck.

<sup>&</sup>lt;sup>2</sup> The Absolute Return Custom Index consists of 60% MSCI ACW Investable Mkt Index (Net) and 40% Barclays U.S. Aggregate Bond Index.



- Van Eck Natural Resources provided the portfolio's weakest performance for the quarter, both absolute and relative. The fund returned -3.4% during the quarter versus a positive 2.9% for the S&P Global Natural Resource Index. The largest detractors to relative performance were investments in three Oil & Gas categories: Equipment and Services, Drilling, and Exploration and Production. Gains in Metals & Mining and Forest Products helped to partially offset losses.
- Harvest MLP gained 4.2%, 47 basis points ahead of its benchmark. The portfolio benefitted from an underweight to MLPs with crude exposure.
- Gresham Commodities returned -0.8% for the quarter, trailing its benchmark by 3.6%. Negative contribution to overall performance came from energy and soft commodities while industrial and precious metals helped to reduce losses for the quarter. Livestock also produced positive gains and to a lesser extent, agriculture detracted from performance.

#### **Real Estate**

	QTD	CYTD	1 Year	2016	Since Incep.	Inception Date
Real Estate	2.3	2.3	10.2	9.8	11.2	07/01/2015
NCREIF ODCE Index (Gross) (AWA)	1.8	1.8	8.3	8.8	10.2	
Difference	0.5	0.5	1.8	1.0	1.0	

- Despite a few modest signs of softening in the market, such as more favorable lease terms and concessions, the residential and commercial real estate markets continued to be supported by a generally positive outlook for U.S. economic growth. In terms of performance attribution, income returns accounted for 1.1% of the NCREIF ODCE Index's 1.8% return, with the remaining portion provided through capital appreciation.
- The Land Board committed approximately \$562.5 million to private real estate, representing just over 15% of the Total Fund's assets. Real estate allocations are split among two core real estate managers and three core-plus real estate managers. As of December 31, 2016, the real estate portfolio is fully funded.
- The Land Board's real estate composite returned 2.3% for the quarter, 51 basis points above the NCREIF-ODCE Index.
- Morgan Stanley Prime Property Fund (core) returned 1.9% during the first quarter, outperforming the NCREIF-ODCE Index by 38 basis points.
- UBS Trumbull Property Fund (core) returned 0.9% during the quarter, underperforming the Index by 62 basis points.
- Jamestown Premier Property Fund (core-plus) returned 1.9% for the quarter, 38 basis points ahead of its benchmark.
- Prologis USLF and JP Morgan U.S. Real Estate Income and Growth returned 4.0% and 2.0%, respectively, outperforming the benchmark by 244 and 45 basis points.



#### North Dakota Board of University and School Lands Long-Term Monitoring Tool

			Asset	Alloca	tion			
			With	in Tar	get Range?		Targets	
Asset Class	r	Market Value	Yes	No	Current (%)	Min.	Target	Max.
Broad US Equity	\$	680,442,307	<ul> <li>Image: A second s</li></ul>		16.87%	12%	17%	22%
Broad International Equity	\$	615,513,253	<ul> <li>Image: A second s</li></ul>		15.26%	10%	15%	20%
Fixed Income	\$	906,876,927	-		22.48%	18%	23%	28%
Absolute Return	\$	800,769,201	-		19.85%	15%	20%	25%
Diversified Inflation Strategies (DIS)	\$	406,577,437	-		10.08%	5%	10%	15%
Real Estate	\$	624,137,808	-		15.47%	10%	15%	20%
Total Fund	\$	4,034,316,932			100.00%			

Monitoring Guideline (Over a Full Market Cycle of 5 Years)			Explanation
Total Fund (Gross)	Yes	No	
Total Fund returns exceed the Target Allocation Index (Gross) over a 5-year period.		<b>√</b>	The Total Fund Composite returned 6.29% vs. 7.09% for the index.
Broad US Equity Composite	Yes	No	
The composite returns exceed the Russell 3000 Index over a 5 year period.		<ul> <li>Image: A start of the start of</li></ul>	The composite returned 12.24% vs. 13.18% for the index. Includes managers which are no longer in the portfolio.
Rank above the IM U.S. Equity Median.		<ul> <li>Image: A start of the start of</li></ul>	The composite has a ranking of 64 (gross of fees). Includes managers which are no longer in the portfolio.
State Street S&P 500 Index (CF)	Yes	No	
The fund returns are in line with the S&P 500 Index (Cap Wtd) over a 5 year period.	<ul> <li>Image: A set of the set of the</li></ul>		The fund returned 13.29% vs. 13.30% for the index.
Rank above the IM U.S. Large Cap Equity Median.	<ul> <li>Image: A set of the set of the</li></ul>		The fund has a ranking of 41 (gross of fees).
NT Small/Smid Composite	Yes	No	
The fund returns exceed the Small/Smid Blended Index over a 5 year period.		1	The fund returned 11.12% vs. 12.92% for the index. Mandate was altered June 2014 to a more concentrated small cap strategy; continue to monitor.
Rank above the IM US SMID Cap Core Equity Median.		1	The fund has a ranking of 88 (gross of fees). Mandate was altered June 2014 to a more concentrated small cap strategy; continue to monitor.
Broad International Equity Composite	Yes	No	
The composite returns exceed the MSCI ACW Ex US Index (USD) (Net) over a 5 year period.	✓		The composite returned 6.05% vs. 4.36% for the index. Includes managers which are no longer in the portfolio. Current managers added July 2014.
Rank above the IM International Large Cap Equity Median.		<b>~</b>	The composite has a ranking of 53 (gross of fees). Includes managers which are no longer in the portfolio. Current managers added July 2014.
State Street World Ex US Index (CF)	Yes	No	
The fund returns are in line with the MSCI Wrld Ex US Index (USD) (Net) over a 5 year period.			5 year data is unavailable.
Rank above the IM International Large Cap Equity Median.			5 year data is unavailable.
DFA Emg Mkts Core Eq;I (DFCEX)	Yes	No	
The fund returns exceed the MSCI Emg Mkts Index (USD) (Net) over a 5 year period.			5 year data is unavailable.
Rank above the IM Emerging Markets Equity Median.			5 year data is unavailable.
Harding Loevner:IEM;II (HLEEX)	Yes	No	
The fund returns exceed the MSCI Emg Mkts Index (USD) (Net) over a 5 year period.			5 year data is unavailable.
Rank above the IM Emerging Markets Equity Median.			5 year data is unavailable.
Fixed Income Composite	Yes	No	
The composite returns exceed the Global Fixed Income Custom Index over a 5 year period.	<ul> <li>Image: A set of the set of the</li></ul>		The composite returned 2.89% vs. 2.29% for the index.
Rank above the IM Global Fixed Income Median.		<ul> <li>Image: A start of the start of</li></ul>	The composite has a ranking of 52 (gross of fees).
Payden & Rygel Long Term (SA)	Yes	No	
The fund returns exceed the Bloomberg US Agg Bond Index over a 5 year period.	<ul> <li>Image: A set of the set of the</li></ul>		The fund returned 3.18% vs. 2.34% for the index.
Rank above the IM U.S. Broad Market Core Fixed Income Median.	<ul> <li>Image: A set of the set of the</li></ul>		The fund has a ranking of 18 (gross of fees).
JP Morgan FI Intermediate Bond (SA)	Yes	No	
The fund returns exceed the Bloomberg US Gov't/Credit: Int Trm Bond Index over a 5 year period.			5 year data is unavailable.
Rank above the IM U.S. Intermediate Duration Fixed Income Median.			5 year data is unavailable.
FIA International Fixed Income (SA)	Yes	No	
The fund returns exceed the Bloomberg Gbl Agg Ex USD Index (Hedged) over a 5 year period.	<ul> <li>Image: A start of the start of</li></ul>		The fund returned 4.31% vs. 4.15% for the index.
Rank above the IM International Fixed Income Median.	<ul> <li>Image: A state of the state of</li></ul>		The fund has a ranking of 25 (gross of fees).
Brandywine Glbl Opp FI (CF)	Yes	No	
The fund returns exceed the Citi Wrld Gov't Bond Index over a 5 year period.			5 year data is unavailable.
Rank above the IM Global Fixed Income Median.			5 year data is unavailable.
Lazard High Yield (SA)	Yes	No	
The fund returns exceed the BofA ML US Hi Yld BB-B Rated Index over a 5 year period.		1	The fund returned 5.45% vs. 6.62% for the index.
Rank above the IM U.S. High Yield Bonds Median.		1	The fund has a ranking of 75 (gross of fees).

#### North Dakota Board of University and School Lands Long-Term Monitoring Tool

Payden:Low Dur;Inv (PYSBX)	Yes	No	
The fund returns exceed the Bloomberg US Trsy: 1-3 Yr Index over a 5 year period.	<ul> <li>Image: A start of the start of</li></ul>		The fund returned 1.49% vs. 0.64% for the index.
Rank above the IM U.S. Short Duration Fixed Income Median.	<ul> <li>Image: A start of the start of</li></ul>		The fund has a ranking of 14 (gross of fees).
Payden & Rygel Cash (SA)	Yes	No	
The fund returns exceed the BofA ML 3 Mo US T-Bill Index over a 5 year period.		<ul> <li>Image: A second s</li></ul>	The fund returned 0.06% vs. 0.14% for the index.
Absolute Return Composite	Yes	No	
The composite returns exceed the Absolute Return Custom Index over a 5 year period.			5 year data is unavailable.
GMO:Bchmk-Fr All;IV (GBMBX)	Yes	No	
The fund returns exceed the 60% MSCI ACWI (Net)/40% B Gbl Agg ldx over a 5 year period.			5 year data is unavailable.
PIMCO:All Ast Ath;Inst (PAUIX)	Yes	No	
The fund returns exceed the All Asset Custom Index (Eql Wtd) over a 5 year period.			5 year data is unavailable.
Westwood Income Opportunity (SA)	Yes	No	
The fund returns exceed the Westwood Custom Index over a 5 year period.			5 year data is unavailable.
Diversified Inflation Strategies (DIS) Composite	Yes	No	
The composite returns exceed the DIS Custom Index over a 5 year period.			5 year data is unavailable.
NT Common TIPS Index (CF)	Yes	No	
The fund returns are in line with the Bloomberg US Trsy: US TIPS Index over a 5 year period.	<ul> <li>Image: A second s</li></ul>		The fund returned 0.98% vs. 0.97% for the index.
Rank above the IM U.S. TIPS Median.	<ul> <li>Image: A set of the set of the</li></ul>		The fund has a ranking of 44 (gross of fees).
Gresham Commodities (SA)	Yes	No	
The fund returns exceed the Bloomberg Cmdty Ex-Energy Index (TR) over a 5 year period.			5 year data is unavailable.
Harvest MLP (SA)	Yes	No	
The fund returns exceed the S&P MLP Index Index (TR) over a 5 year period.			5 year data is unavailable.
Van Eck NR Equities (SA)	Yes	No	
The fund returns exceed the S&P Gbl Natural Res Sect Index (TR) Index over a 5 year period.			5 year data is unavailable.
Real Estate Composite	Yes	No	
The composite returns exceed the NCREIF ODCE Index (AWA) (Net) over a 5 year period.			5 year data is unavailable.
Morgan Stanley Prime Property Fund (CF)	Yes	No	
The fund returns exceed the NCREIF ODCE Index (AWA) (Net) over a 5 year period.			5 year data is unavailable.
UBS Trumbull Property Fund, L.P. (CF)	Yes	No	
The fund returns exceed the NCREIF ODCE Index (AWA) (Net) over a 5 year period.			5 year data is unavailable.
Jamestown Premier Property Fund (CF)	Yes	No	
The fund returns exceed the NCREIF ODCE Index (AWA) (Net) over a 5 year period.			5 year data is unavailable.
Prologis USLF (CF)	Yes	No	
The fund returns exceed the NCREIF ODCE Index (AWA) (Net) over a 5 year period.			5 year data is unavailable.
JP Morgan US Real Estate Income and Growth, LP (CF)	Yes	No	
The fund returns exceed the NCREIF ODCE Index (AWA) (Net) over a 5 year period.			5 year data is unavailable.

Color Key	
Performance:	
Green: Manager outperformed benchmark.	
Yellow: Manager underperformed benchmark by 100 basis points or less.	
Red: Manager underperformed benchmark by more than 100 basis points.	
Peer Group Ranks:	
Green: Manager ranks in the top 50th percentile compared to its peers.	
Yellow: Manager ranks between the 51st and 64th percentile compared to its peers.	
Red: Manager ranks in the 65th percentile or lower compared to its peers.	

# **Capital Markets Review**



#### **Capital Markets Review**

#### As of March 31, 2017

#### First Quarter Economic Environment

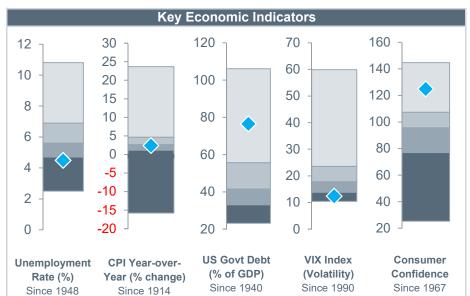
#### **Key Economic Indicators**

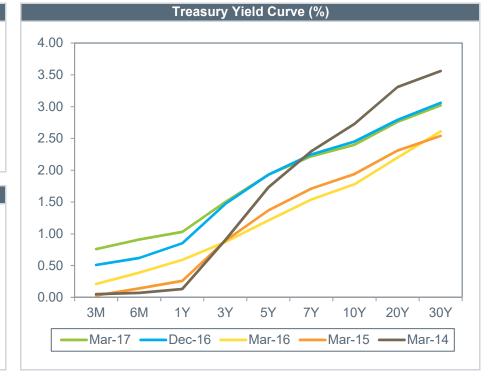
Global risk assets rallied during the first quarter of 2017, driven largely by continued positive expectations for US fiscal policy, as well as continued improvements in global economic growth and inflation, more broadly. Duration sensitive assets, however, traded with less conviction and direction, as sovereign debt yields of developed economies ended the quarter relatively unchanged.

Globally, commodities were mixed, but traded down as a broad category, and the dollar weakened against a trade weighted basket of currencies. Oil prices declined during the quarter, as increased US shale production offset production cuts announced by OPEC in November of last year. In the US, the new administration provided few details regarding proposed pro-growth policies, which may include infrastructure spending, tax reform, and easing of regulations. Nevertheless, elevated valuations in domestic equity markets suggested that investors anticipate positive changes and are comfortable with near-term equity risk.

Economic Indicators	Mar-17	Dec-16	Mar-16	Mar-14	20 Yr
Federal Funds Rate (%)	0.82	0.55	0.25	0.06	2.29
Breakeven Infl 1 Yr (%)	2.06	1.27	2.10	1.79	N/A
Breakeven Infl 10 Yr (%)	1.98	1.97	1.63	2.14	N/A
CPI YoY (Headline) (%)	2.4	2.1	0.9	1.5	2.2
Unemployment Rate (%)	4.5	4.7	5.0	6.7	6.0
Real GDP YoY (%)	1.9	2.0	1.6	1.6	2.3
PMI - Manufacturing	57.20	54.50	51.70	55.00	52.24
USD Total Wtd Idx	94.01	95.76	89.73	76.63	86.89
WTI Crude Oil per Barrel (\$)	50.6	53.7	38.3	101.6	56.4
Gold Spot per Oz (\$)	1,249.4	1,152.3	1,232.7	1,284.0	795.0

Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	6.07	6.07	17.17	13.30	7.51
Russell 2000	2.47	2.47	26.22	12.35	7.12
MSCI EAFE (Net)	7.25	7.25	11.67	5.83	1.05
MSCI EAFE SC (Net)	7.97	7.97	10.99	9.20	3.03
MSCI Emg Mkts (Net)	11.44	11.44	17.21	0.81	2.72
Bloomberg US Agg Bond	0.82	0.82	0.44	2.34	4.27
BofA ML 3 Mo US T-Bill	0.10	0.10	0.36	0.14	0.68
NCREIF ODCE (Gross)	1.77	1.77	8.34	11.98	5.59
Wilshire US REIT	0.03	0.03	1.98	9.76	4.42
HFRI FOF Comp	2.39	2.39	6.23	3.22	1.24
Bloomberg Cmdty (TR)	-2.33	-2.33	8.69	-9.54	-6.22





Treasury data courtesy of the US Department of the Treasury. Economic data courtesy of Bloomberg Professional Service. Breakeven Inflation does not have 20 years of history; therefore, its 20-year average is shown as N/A.

# **Total Fund**

## North Dakota Board of University and School Lands AA by Manager, AA vs. Target, and Schedule of Investable Assets

Broad US Equity Broad International Equity Fixed Income Absolute Return Diversified Inflation Strategies (DIS) Real Estate Total Fund	Market Value (\$) 680,442,307 615,513,253 906,876,927 800,769,201 406,577,437 624,137,808 4,034,316,932	Allocation (%) 16.87 15.26 22.48 19.85 10.08 15.47 100.00	Target           (%)           17.00           15.00           23.00           20.00           10.00           15.00
Broad International Equity Fixed Income Absolute Return Diversified Inflation Strategies (DIS) Real Estate	680,442,307 615,513,253 906,876,927 800,769,201 406,577,437 624,137,808	16.87 15.26 22.48 19.85 10.08 15.47	17.00 15.00 23.00 20.00 10.00 15.00
Broad International Equity Fixed Income Absolute Return Diversified Inflation Strategies (DIS) Real Estate	615,513,253 906,876,927 800,769,201 406,577,437 624,137,808	15.26 22.48 19.85 10.08 15.47	15.00 23.00 20.00 10.00 15.00
Fixed Income Absolute Return Diversified Inflation Strategies (DIS) Real Estate	906,876,927 800,769,201 406,577,437 624,137,808	22.48 19.85 10.08 15.47	23.00 20.00 10.00 15.00
Absolute Return Diversified Inflation Strategies (DIS) Real Estate	800,769,201 406,577,437 624,137,808	19.85 10.08 15.47	20.00 10.00 15.00
Diversified Inflation Strategies (DIS) Real Estate	406,577,437 624,137,808	10.08 15.47	10.0 15.0
Real Estate	624,137,808	15.47	15.0
Total Fund	4,034,316,932	100.00	100.0
Asset Allocation vs. Ta	arget Allocation	Difforences	
	arger Anocation	Differences	
Broad US Equity	-0.13 %		
	· · · · · · · · · · · · · · · · · · ·		
Broad International Equity		0.26%	
Fixed Income	-0.52 %		
Absolute Poture	0.15.%		
Absolute Return	-0.15 %		
Diversified Inflation Strategies (DIS)		0.08%	
Real Estate		0.47%	
	L		
	-1.00 % 0	.00% 1.0	00%
	_		
	Allocation Diff	ferences	
		Broad International Equity	Broad International Equity

Schedule of Investable Assets													
Periods Ending	Beginning Market Value (\$)	Net Cash Flow (\$)	Gain/Loss (\$)	Ending Market Value (\$)	% Return	Unit Value							
QTD	3,882,294,117	2,235,137	149,787,678	4,034,316,932	3.86	103.86							

Allocations shown may not sum up to 100% exactly due to rounding. Performance shown is gross of fees.



#### North Dakota Board of University and School Lands Comparative Performance - Gross

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2016	2015	2014	Since Incep.	Inception Date
Total Fund (Net)	3.73	3.73	10.68	3.30	5.92	6.71	4.65	8.65	-4.55	4.78	6.73	08/01/1995
Target Allocation Index (Net)	3.84	3.84	9.93	4.83	7.00	7.58	N/A	7.85	-0.93	6.50	N/A	
Difference	-0.11	-0.11	0.75	-1.53	-1.08	-0.87	N/A	0.80	-3.62	-1.72	N/A	
Total Fund	3.86	3.86	11.24	3.73	6.29	7.04	N/A	9.17	-4.19	5.10	8.72	07/01/2009
Target Allocation Index (Gross)	3.87	3.87	10.08	4.96	7.09	7.64	N/A	8.00	-0.78	6.58	9.61	
Difference	-0.01	-0.01	1.16	-1.23	-0.80	-0.60	N/A	1.17	-3.41	-1.48	-0.89	
Broad US Equity	5.83	5.83	18.71	9.42	12.38	12.18	N/A	13.47	0.22	12.43	15.02	07/01/2009
Russell 3000 Index	5.74	5.74	18.07	9.76	13.18	12.89	7.54	12.74	0.48	12.56	15.48	
Difference	0.09	0.09	0.64	-0.34	-0.80	-0.71	N/A	0.73	-0.26	-0.13	-0.46	
IM U.S. Equity (SA+CF) Median	5.03	5.03	18.63	8.82	13.07	13.03	8.11	12.86	-0.52	10.00	15.69	
Broad International Equity	8.03	8.03	13.57	0.24	6.50	4.78	N/A	5.02	-5.06	-4.94	7.15	07/01/2009
MSCI ACW Ex US Index (USD) (Net)	7.86	7.86	13.13	0.56	4.36	3.82	1.35	4.50	-5.66	-3.87	6.59	
Difference	0.17	0.17	0.44	-0.32	2.14	0.96	N/A	0.52	0.60	-1.07	0.56	
IM International Large Cap Equity (SA+CF) Median	7.92	7.92	11.80	1.70	6.60	6.16	2.52	1.52	0.34	-3.75	8.70	
Fixed Income	1.55	1.55	2.48	2.97	3.12	4.32	N/A	4.13	0.07	4.97	5.04	07/01/2009
Global Fixed Income Custom Index	1.29	1.29	1.19	2.19	2.29	3.50	4.27	3.66	-0.50	4.27	4.04	
Difference	0.26	0.26	1.29	0.78	0.83	0.82	N/A	0.47	0.57	0.70	1.00	
Bloomberg US Agg Bond Index	0.82	0.82	0.44	2.68	2.34	3.48	4.27	2.65	0.55	5.97	3.90	
Difference	0.73	0.73	2.04	0.29	0.78	0.84	N/A	1.48	-0.48	-1.00	1.14	
IM Global Fixed Income (SA+CF) Median	2.17	2.17	5.38	2.38	3.21	4.00	4.83	5.71	-2.40	2.47	4.76	
Absolute Return	4.53	4.53	10.69	N/A	N/A	N/A	N/A	8.45	-5.52	N/A	1.44	07/01/2014
Absolute Return Custom Index	4.37	4.37	9.22	4.26	6.19	6.45	4.63	6.22	-0.88	4.77	3.28	
Difference	0.16	0.16	1.47	N/A	N/A	N/A	N/A	2.23	-4.64	N/A	-1.84	
Consumer Price Index+5%	2.22	2.22	7.50	6.10	6.29	6.72	6.82	7.18	5.77	5.79	5.87	
Difference	2.31	2.31	3.19	N/A	N/A	N/A	N/A	1.27	-11.29	N/A	-4.43	
Diversified Inflation Strategies (DIS)	0.75	0.75	18.18	0.94	N/A	N/A	N/A	19.55	-23.87	N/A	0.94	04/01/2014
DIS Custom Index	2.81	2.81	17.08	1.16	2.81	5.09	2.65	16.53	-18.88	9.69	1.16	
Difference	-2.06	-2.06	1.10	-0.22	N/A	N/A	N/A	3.02	-4.99	N/A	-0.22	
Real Estate	2.28	2.28	10.17	N/A	N/A	N/A	N/A	9.77	N/A	N/A	11.24	07/01/2015
NCREIF ODCE Index (AWA) (Gross)	1.77	1.77	8.34	11.79	11.98	13.49	5.59	8.77	15.02	12.50	10.25	
Difference	0.51	0.51	1.83	N/A	N/A	N/A	N/A	1.00	N/A	N/A	0.99	

Performance shown is gross of fees except where noted. Composite inception dates are based on availability of data for each asset class. Please see the Addendum for custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Glossary.



			Com	parative	Perform	ance							
	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
Broad US Equity	5.83	5.83	18.71	9.42	12.38	N/A	13.47	0.22	12.43	28.28	14.66	15.02	07/01/2009
Russell 3000 Index	5.74	5.74	18.07	9.76	13.18	7.54	12.74	0.48	12.56	33.55	16.42	15.48	
Difference	0.09	0.09	0.64	-0.34	-0.80	N/A	0.73	-0.26	-0.13	-5.27	-1.76	-0.46	
State Street S&P 500 Index (CF)	6.06	6.06	17.18	10.39	13.31	N/A	12.00	1.41	13.69	32.38	15.98	9.03	04/01/2008
S&P 500 Index (Cap Wtd)	6.07	6.07	17.17	10.37	13.30	7.51	11.96	1.38	13.69	32.39	16.00	9.01	
Difference	-0.01	-0.01	0.01	0.02	0.01	N/A	0.04	0.03	0.00	-0.01	-0.02	0.02	
IM U.S. Large Cap Equity (SA+CF) Median	5.96	5.96	17.04	9.59	13.16	7.77	10.98	0.93	12.91	33.51	15.83	9.23	
Rank	47	47	48	32	41	N/A	40	45	36	65	48	58	
NT Small Cap Core (CF)	4.91	4.91	24.59	N/A	N/A	N/A	19.02	-5.35	N/A	N/A	N/A	6.02	07/01/2014
Russell 2000 Index	2.47	2.47	26.22	7.22	12.35	7.12	21.31	-4.41	4.89	38.82	16.35	7.11	
Difference	2.44	2.44	-1.63	N/A	N/A	N/A	-2.29	-0.94	N/A	N/A	N/A	-1.09	
IM U.S. Small Cap Core Equity (SA+CF) Median	2.93	2.93	24.15	8.75	13.90	8.40	20.61	-1.36	6.55	41.26	16.84	8.45	
Rank	15	15	46	N/A	N/A	N/A	73	86	N/A	N/A	N/A	84	
NT Small/Smid Composite	4.91	4.91	24.59	6.11	11.90	7.24	19.02	-5.35	3.37	37.57	18.30	10.46	03/01/1996
Small/Smid Blended Index	2.47	2.47	26.22	7.93	12.92	7.86	21.31	-4.41	8.25	36.80	17.88	9.93	
Difference	2.44	2.44	-1.63	-1.82	-1.02	-0.62	-2.29	-0.94	-4.88	0.77	0.42	0.53	
IM U.S. SMID Cap Core Equity (SA+CF) Median	4.35	4.35	19.65	8.83	13.38	8.93	17.03	0.10	7.81	37.62	17.91	N/A	
Rank	34	34	6	93	88	96	15	95	88	51	43	N/A	

 Asset Allocation by Manager
 Market Value
 Allocation

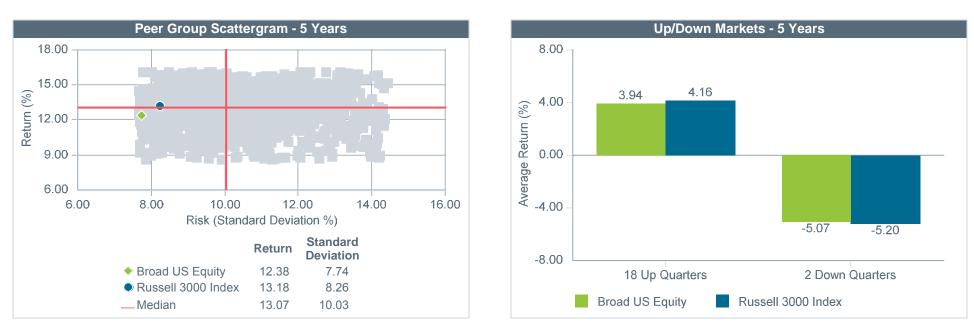
 \$680,442,307
 (\$)
 (%)

 • State Street S&P 500 Index (CF)
 539,804,820
 79.33

 • NT Small Cap Core (CF)
 140,637,486
 20.67

Performance shown is gross of fees. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Glossary.





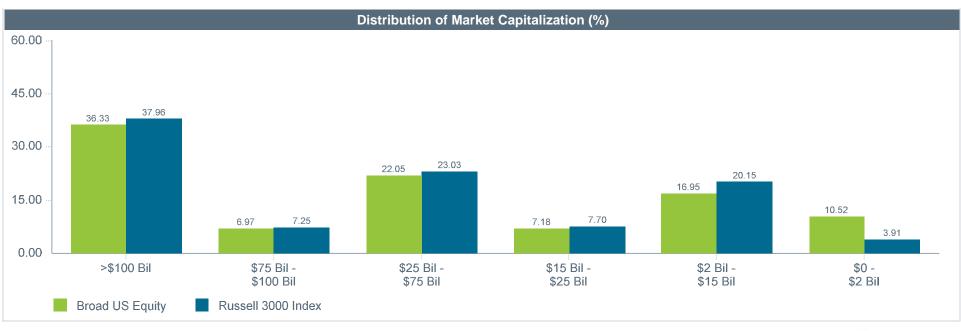


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#### North Dakota Board of University and School Lands Broad US Equity vs. Russell 3000 Index Portfolio Characteristics







As	of	March	31,	2017
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			Compa	rative P	erforma	nce							
	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
Broad International Equity	8.03	8.03	13.57	0.24	6.50	N/A	5.02	-5.06	-4.94	26.50	17.72	7.15	07/01/2009
MSCI ACW Ex US Index (USD) (Net)	7.86	7.86	13.13	0.56	4.36	1.35	4.50	-5.66	-3.87	15.29	16.83	6.59	
Difference	0.17	0.17	0.44	-0.32	2.14	N/A	0.52	0.60	-1.07	11.21	0.89	0.56	
State Street World Ex US Index (CF)	6.80	6.80	11.88	N/A	N/A	N/A	2.68	-3.10	N/A	N/A	N/A	-1.31	07/01/2014
MSCI Wrld Ex US Index (USD) (Net)	6.81	6.81	11.93	0.35	5.38	1.13	2.75	-3.04	-4.32	21.02	16.41	-1.25	
Difference	-0.01	-0.01	-0.05	N/A	N/A	N/A	-0.07	-0.06	N/A	N/A	N/A	-0.06	
IM International Large Cap Equity (SA+CF) Median	7.92	7.92	11.80	1.70	6.60	2.52	1.52	0.34	-3.75	22.55	19.04	0.41	
Rank	81	81	49	N/A	N/A	N/A	39	77	N/A	N/A	N/A	83	
DFA Emg Mkts Core Eq;I (DFCEX)	13.85	13.85	19.80	N/A	N/A	N/A	13.05	-14.33	N/A	N/A	N/A	0.74	07/01/2014
MSCI Emg Mkts Index (USD) (Net)	11.44	11.44	17.21	1.18	0.81	2.72	11.19	-14.92	-2.19	-2.60	18.23	-1.04	
Difference	2.41	2.41	2.59	N/A	N/A	N/A	1.86	0.59	N/A	N/A	N/A	1.78	
IM Emerging Markets Equity (SA+CF) Median	12.22	12.22	18.42	2.55	2.86	3.85	10.02	-12.71	-0.18	0.95	20.55	0.14	
Rank	17	17	40	N/A	N/A	N/A	30	63	N/A	N/A	N/A	38	
Harding Loevner:IEM;II (HLEEX)	12.14	12.14	20.38	N/A	N/A	N/A	14.73	-12.30	N/A	N/A	N/A	1.40	07/01/2014
MSCI Emg Mkts Index (USD) (Net)	11.44	11.44	17.21	1.18	0.81	2.72	11.19	-14.92	-2.19	-2.60	18.23	-1.04	
Difference	0.70	0.70	3.17	N/A	N/A	N/A	3.54	2.62	N/A	N/A	N/A	2.44	
IM Emerging Markets Equity (SA+CF) Median	12.22	12.22	18.42	2.55	2.86	3.85	10.02	-12.71	-0.18	0.95	20.55	0.14	
Rank	52	52	36	N/A	N/A	N/A	19	47	N/A	N/A	N/A	28	

#### Asset Allocation by Manager

\$615,513,253

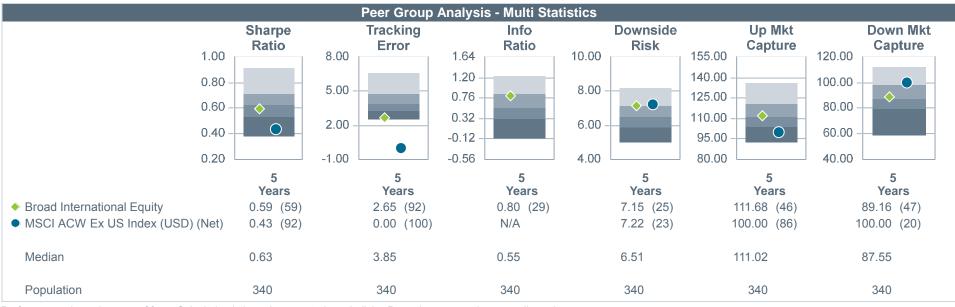
State Street World Ex US Index (CF)
DFA Emg Mkts Core Eq;I (DFCEX)
Harding Loevner:IEM;II (HLEEX)

Market Value (\$)	Allocation (%)
492,954,884	80.09
61,577,565	10.00
60,980,804	9.91

Performance shown is gross of fees. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Glossary.



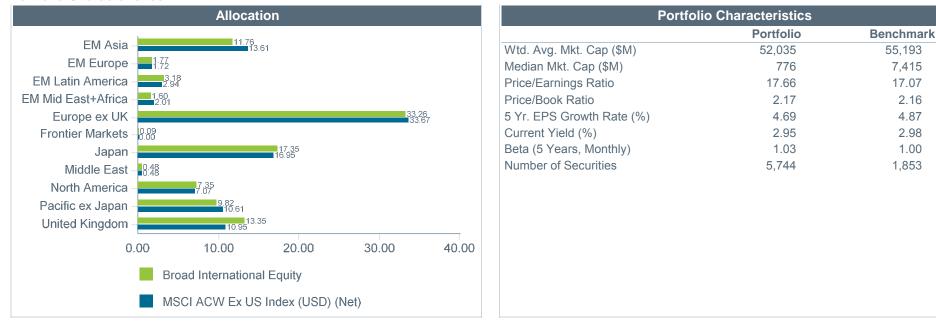


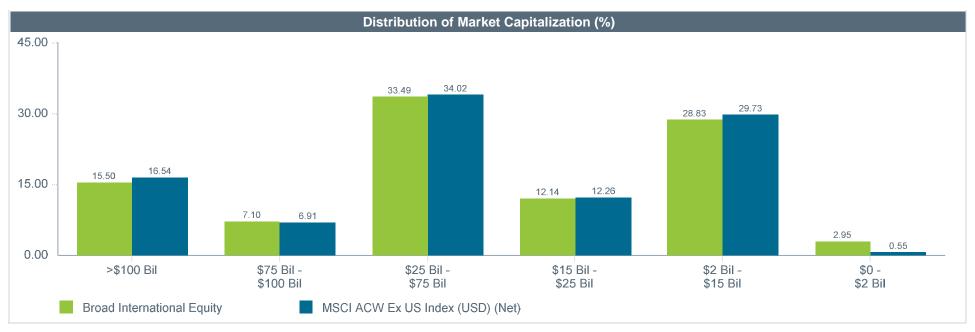


Performance shown is gross of fees. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks.



#### North Dakota Board of University and School Lands Broad International Equity vs. MSCI ACW Ex US Index (USD) (Net) Portfolio Characteristics

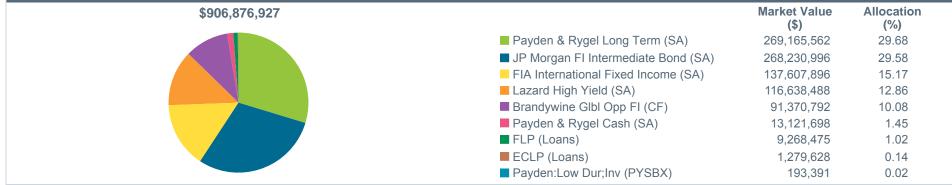






Comparative Performance													
	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
Fixed Income	1.55	1.55	2.48	2.97	3.12	N/A	4.13	0.07	4.97	-0.36	7.36	5.04	07/01/2009
Global Fixed Income Custom Index	1.29	1.29	1.19	2.19	2.29	4.27	3.66	-0.50	4.27	-1.55	5.37	4.04	
Difference	0.26	0.26	1.29	0.78	0.83	N/A	0.47	0.57	0.70	1.19	1.99	1.00	
Bloomberg US Agg Bond Index	0.82	0.82	0.44	2.68	2.34	4.27	2.65	0.55	5.97	-2.02	4.21	3.90	
Difference	0.73	0.73	2.04	0.29	0.78	N/A	1.48	-0.48	-1.00	1.66	3.15	1.14	
Payden & Rygel Long Term (SA)	1.21	1.21	2.64	3.33	3.38	4.99	4.03	0.82	6.01	-1.25	9.04	6.13	08/01/1995
Bloomberg US Agg Bond Index	0.82	0.82	0.44	2.68	2.34	4.27	2.65	0.55	5.97	-2.02	4.21	5.39	
Difference	0.39	0.39	2.20	0.65	1.04	0.72	1.38	0.27	0.04	0.77	4.83	0.74	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	0.92	0.92	1.01	2.97	2.81	4.76	3.10	0.82	6.14	-1.56	5.88	5.73	
Rank	15	15	10	24	18	33	18	49	63	34	5	11	
JP Morgan FI Intermediate Bond (SA)	0.85	0.85	0.62	2.34	N/A	N/A	1.99	1.53	3.97	-0.91	N/A	1.81	08/01/2012
Bloomberg US Gov't/Crdt: Int Trm Bond Index	0.78	0.78	0.42	2.01	1.88	3.76	2.08	1.07	3.13	-0.86	3.89	1.49	
Difference	0.07	0.07	0.20	0.33	N/A	N/A	-0.09	0.46	0.84	-0.05	N/A	0.32	
IM U.S. Intermediate Duration (SA+CF) Median	0.81	0.81	0.94	2.31	2.23	4.22	2.39	1.31	3.56	-0.53	4.98	1.84	
Rank	34	34	69	48	N/A	N/A	76	31	35	74	N/A	55	
FIA International Fixed Income (SA)	1.24	1.24	1.25	4.59	4.56	5.10	3.54	-0.22	13.10	-0.80	7.81	5.09	05/01/2004
Bloomberg Gbl Agg Ex USD Index (Hedged)	0.06	0.06	1.40	4.25	4.15	4.32	4.90	1.36	8.79	1.18	6.46	4.42	
Difference	1.18	1.18	-0.15	0.34	0.41	0.78	-1.36	-1.58	4.31	-1.98	1.35	0.67	
IM International Fixed Income (SA+CF) Median	2.23	2.23	1.75	1.16	2.12	4.51	3.51	-0.50	2.86	-0.43	7.23	5.13	
Rank	70	70	55	19	25	36	49	50	5	53	49	51	

Asset Allocation by Manager

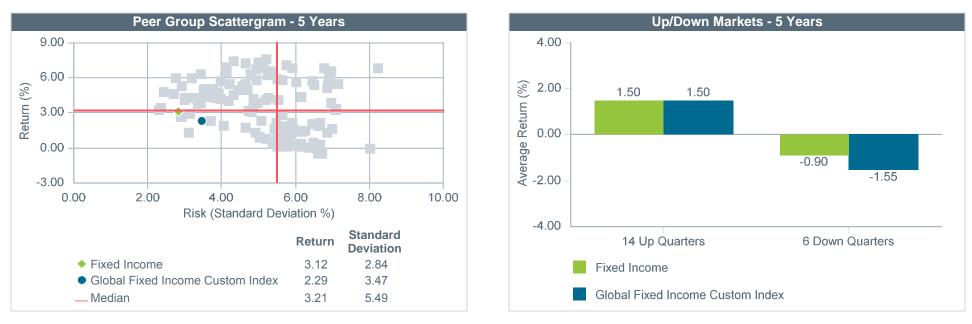


Performance shown is gross of fees. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Glossary.



Comparative Performance													
	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
Brandywine Glbl Opp FI (CF)	5.29	5.29	2.32	N/A	N/A	N/A	5.69	-7.98	N/A	N/A	N/A	0.50	11/01/2014
Citi Wrld Gov't Bond Index	1.55	1.55	-3.65	-1.20	-0.58	3.03	1.60	-3.57	-0.48	-4.00	1.65	-0.73	
Difference	3.74	3.74	5.97	N/A	N/A	N/A	4.09	-4.41	N/A	N/A	N/A	1.23	
IM Global Fixed Income (SA+CF) Median	2.17	2.17	5.38	2.38	3.21	4.83	5.71	-2.40	2.47	-0.06	9.53	2.13	
Rank	1	1	63	N/A	N/A	N/A	51	94	N/A	N/A	N/A	65	
Lazard High Yield (SA)	1.68	1.68	8.85	4.21	5.77	6.49	9.91	-0.10	4.00	6.15	11.94	6.76	01/01/2004
BofA ML US Hi Yld BB-B Rated Index	2.30	2.30	13.80	4.63	6.62	6.86	14.75	-2.86	3.47	6.31	14.71	7.16	
Difference	-0.62	-0.62	-4.95	-0.42	-0.85	-0.37	-4.84	2.76	0.53	-0.16	-2.77	-0.40	
IM U.S. High Yield Bonds (SA+CF) Median	2.44	2.44	14.16	4.29	6.57	7.21	14.04	-2.16	2.55	7.48	15.30	7.59	
Rank	85	85	88	54	75	79	84	20	20	82	86	88	
Payden:Low Dur;Inv (PYSBX)	0.64	0.64	1.97	1.51	1.99	3.89	2.26	0.91	1.21	0.99	5.03	4.15	04/01/2002
Bloomberg US Trsy: 1-3 Yr Index	0.27	0.27	0.24	0.73	0.64	2.01	0.86	0.56	0.63	0.36	0.43	2.38	
Difference	0.37	0.37	1.73	0.78	1.35	1.88	1.40	0.35	0.58	0.63	4.60	1.77	
IM U.S. Short Duration Fixed Income (SA+CF) Median	0.52	0.52	1.00	1.35	1.35	2.73	1.59	0.93	1.25	0.67	2.43	2.99	
Rank	28	28	19	34	14	5	22	57	55	24	8	1	
Payden & Rygel Cash (SA)	0.11	0.11	0.35	0.20	0.16	0.78	0.36	0.08	0.05	0.06	0.14	2.72	08/01/1995
BofA ML 3 Mo US T-Bill Index	0.10	0.10	0.36	0.17	0.14	0.68	0.33	0.05	0.04	0.07	0.11	2.47	
Difference	0.01	0.01	-0.01	0.03	0.02	0.10	0.03	0.03	0.01	-0.01	0.03	0.25	
FLP (Loans)	1.42	1.42	6.07	6.02	5.88	6.38	6.12	6.09	5.85	5.52	5.89	7.33	08/01/1995
ECLP (Loans)	0.89	0.89	4.53	4.90	5.05	N/A	4.89	5.13	5.03	5.16	5.58	5.25	11/01/2010

Performance shown is gross of fees, except for FLP & ECLP Bank Loans which are shown net of fees. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies.



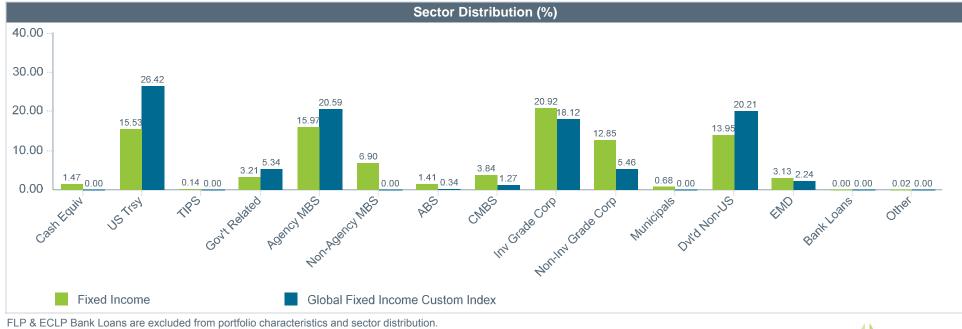
		Peer Group	Analysis - Multi Sta	atistics		
0.00	Sharpe Ratio	Tracking Error	Info Ratio	Downside Risk	Up Mkt Capture	Down Mkt Capture
2.30		.00	1.84	8.00	200.00	300.00
1.64 -		.00	1.17	6.00 -	150.00	200.00
0.98 -	- • - 5.	.00	0.50 🔶	4.00	100.00 🔶 🔵	100.00
0.32 -	2.	.00 - 00.	-0.17	2.00		0.00
-0.34 -	-1.	.00	-0.84 -	0.00 -	50.00	-100.00
-1.00		.00	-1.51	-2.00	0.00	-200.00
	5 Years	5 Years	5 Years	5 Years	5 Years	5 Years
<ul> <li>Fixed Income</li> </ul>	1.05 (35)	1.20 (100)	0.66 (33)	1.61 (83)	100.22 (71)	57.90 (57)
Global Fixed Income Custom Index	0.63 (53)	0.00 (100)	N/A	2.11 (71)	100.00 (71)	100.00 (47)
Median	0.75	3.66	0.28	3.29	119.72	87.05
Population	165	165	165	165	165	165

Performance shown is gross of fees. Calculation is based on quarterly periodicity. Parentheses contain percentile ranks.



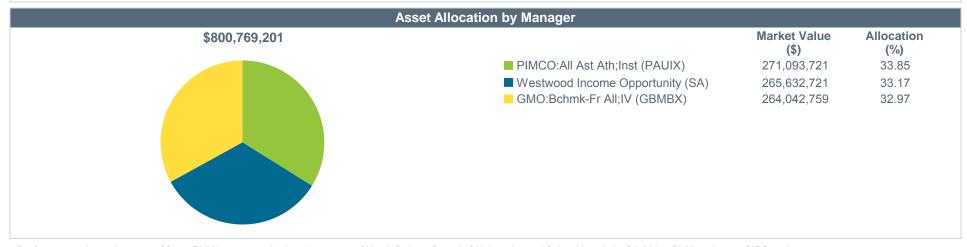
#### North Dakota Board of University and School Lands Fixed Income vs. Global Fixed Income Custom Index Portfolio Characteristics

Portfolio Characteristics									
	Portfolio	Benchmark							
Effective Duration	5.01	6.03							
Modified Duration	5.02	5.95							
Avg. Maturity	7.45	8.15							
Avg. Quality	A2	N/A							
Coupon Rate (%)	3.79	3.31							
Yield To Worst (%)	2.95	2.17							
Current Yield (%)	3.69	N/A							





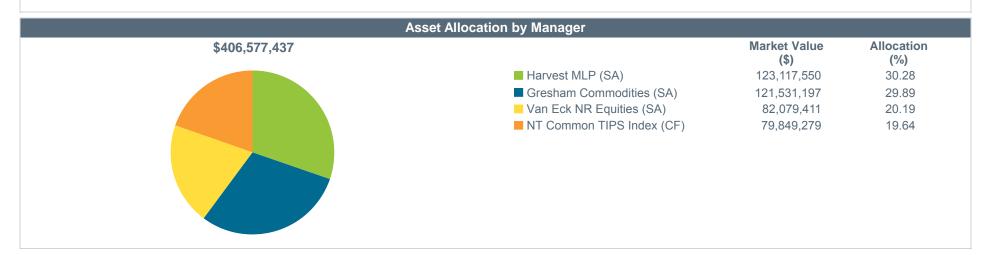
			Cor	nparativ	e Perfor	mance							
	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
Absolute Return	4.53	4.53	10.69	N/A	N/A	N/A	8.45	-5.52	N/A	N/A	N/A	1.44	07/01/2014
Absolute Return Custom Index	4.37	4.37	9.22	4.26	6.19	4.63	6.22	-0.88	4.77	12.74	11.63	3.28	
Difference	0.16	0.16	1.47	N/A	N/A	N/A	2.23	-4.64	N/A	N/A	N/A	-1.84	
GMO:Bchmk-Fr All;IV (GBMBX)	4.94	4.94	9.09	N/A	N/A	N/A	4.35	-3.43	N/A	N/A	N/A	0.98	07/01/2014
60% MSCI ACWI (Net)/40% Bbrg Gbl Agg Idx	4.83	4.83	8.03	2.99	5.25	4.04	5.69	-2.47	2.78	12.05	11.45	1.80	
Difference	0.11	0.11	1.06	N/A	N/A	N/A	-1.34	-0.96	N/A	N/A	N/A	-0.82	
PIMCO:All Ast Ath;Inst (PAUIX)	4.81	4.81	13.71	N/A	N/A	N/A	14.80	-10.89	N/A	N/A	N/A	-0.38	07/01/2014
All Asset Custom Index (Eql Wtd)	2.67	2.67	6.76	3.35	4.43	4.73	6.47	-1.07	3.73	6.10	8.92	2.64	
Difference	2.14	2.14	6.95	N/A	N/A	N/A	8.33	-9.82	N/A	N/A	N/A	-3.02	
Westwood Income Opportunity (SA)	3.84	3.84	9.26	N/A	N/A	N/A	6.47	-2.07	N/A	N/A	N/A	3.68	07/01/2014
Westwood Custom Index	2.38	2.38	4.60	6.15	6.56	5.23	5.37	1.61	12.88	6.15	9.98	5.31	
Difference	1.46	1.46	4.66	N/A	N/A	N/A	1.10	-3.68	N/A	N/A	N/A	-1.63	



Performance shown is gross of fees. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Glossary.



				Compara	ative Per	formance	•						
	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
Diversified Inflation Strategies (DIS)	0.75	0.75	18.18	0.94	N/A	N/A	19.55	-23.87	N/A	N/A	N/A	0.94	04/01/2014
DIS Custom Index	2.81	2.81	17.08	1.16	2.81	2.65	16.53	-18.88	9.69	-2.19	17.59	1.16	
Difference	-2.06	-2.06	1.10	-0.22	N/A	N/A	3.02	-4.99	N/A	N/A	N/A	-0.22	
NT Common TIPS Index (CF)	1.30	1.30	1.61	2.08	1.03	4.35	4.82	-1.48	3.69	-8.58	6.94	4.37	06/01/2004
Bloomberg US Trsy: US TIPS Index	1.26	1.26	1.48	2.03	0.97	4.24	4.68	-1.44	3.64	-8.61	6.98	4.26	
Difference	0.04	0.04	0.13	0.05	0.06	0.11	0.14	-0.04	0.05	0.03	-0.04	0.11	
IM U.S. TIPS (SA+CF) Median	1.27	1.27	1.56	2.03	1.01	4.28	4.65	-1.41	3.54	-8.33	6.99	4.26	
Rank	46	46	43	38	44	36	31	62	36	63	58	33	
Gresham Commodities (SA)	-0.65	-0.65	10.65	N/A	N/A	N/A	12.44	N/A	N/A	N/A	N/A	-8.93	07/01/2015
Bloomberg Cmdty Ex-Energy Index (TR)	2.83	2.83	6.00	-7.76	-6.87	-1.36	7.77	-17.74	-6.47	-16.76	2.85	-2.71	
Difference	-3.48	-3.48	4.65	N/A	N/A	N/A	4.67	N/A	N/A	N/A	N/A	-6.22	
Harvest MLP (SA)	4.36	4.36	32.94	N/A	N/A	N/A	20.10	N/A	N/A	N/A	N/A	-3.62	07/01/2015
S&P MLP Index (TR)	3.70	3.70	35.01	-4.90	3.39	7.29	21.95	-35.07	7.66	29.75	4.95	-6.21	
Difference	0.66	0.66	-2.07	N/A	N/A	N/A	-1.85	N/A	N/A	N/A	N/A	2.59	
Van Eck NR Equities (SA)	-3.18	-3.18	25.81	N/A	N/A	N/A	45.15	N/A	N/A	N/A	N/A	-2.26	07/01/2015
S&P Gbl Natural Res Sect Index (TR)	2.92	2.92	24.60	-2.22	-1.03	1.06	32.28	-24.00	-9.66	1.55	7.15	3.45	
Difference	-6.10	-6.10	1.21	N/A	N/A	N/A	12.87	N/A	N/A	N/A	N/A	-5.71	

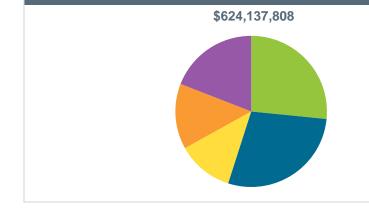


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		Com	parativo	e Perfoi	mance								
	QTD	CYTD	1 Year	3 Years	5 Years	10 Years	2016	2015	2014	2013	2012	Since Incep.	Inception Date
Real Estate	2.28	2.28	10.17	N/A	N/A	N/A	9.77	N/A	N/A	N/A	N/A	11.24	07/01/2015
NCREIF ODCE Index (AWA) (Gross)	1.77	1.77	8.34	11.79	11.98	5.59	8.77	15.02	12.50	13.94	10.94	10.25	
Difference	0.51	0.51	1.83	N/A	N/A	N/A	1.00	N/A	N/A	N/A	N/A	0.99	
Morgan Stanley Prime Property Fund (CF)	2.20	2.20	10.44	N/A	N/A	N/A	10.43	N/A	N/A	N/A	N/A	11.64	07/01/2015
NCREIF ODCE Index (AWA) (Gross)	1.77	1.77	8.34	11.79	11.98	5.59	8.77	15.02	12.50	13.94	10.94	10.25	
Difference	0.43	0.43	2.10	N/A	N/A	N/A	1.66	N/A	N/A	N/A	N/A	1.39	
UBS Trumbull Property Fund, L.P. (CF)	1.15	1.15	6.24	N/A	N/A	N/A	7.21	N/A	N/A	N/A	N/A	8.61	07/01/2015
NCREIF ODCE Index (AWA) (Gross)	1.77	1.77	8.34	11.79	11.98	5.59	8.77	15.02	12.50	13.94	10.94	10.25	
Difference	-0.62	-0.62	-2.10	N/A	N/A	N/A	-1.56	N/A	N/A	N/A	N/A	-1.64	
Jamestown Premier Property Fund (CF)	2.28	2.28	7.90	N/A	N/A	N/A	6.58	N/A	N/A	N/A	N/A	10.10	07/01/2015
NCREIF ODCE Index (AWA) (Gross)	1.77	1.77	8.34	11.79	11.98	5.59	8.77	15.02	12.50	13.94	10.94	10.25	
Difference	0.51	0.51	-0.44	N/A	N/A	N/A	-2.19	N/A	N/A	N/A	N/A	-0.15	
Prologis USLF (CF)	4.72	4.72	19.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19.02	04/01/2016
NCREIF ODCE Index (AWA) (Gross)	1.77	1.77	8.34	11.79	11.98	5.59	8.77	15.02	12.50	13.94	10.94	8.34	
Difference	2.95	2.95	10.68	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10.68	
JP Morgan US Real Estate Income and Growth, LP (CF)	2.24	2.24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8.16	07/01/2016
NCREIF ODCE Index (AWA) (Gross)	1.77	1.77	8.34	11.79	11.98	5.59	8.77	15.02	12.50	13.94	10.94	6.07	
Difference	0.47	0.47	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.09	

#### Asset Allocation by Manager



	Market Value	Allocation
	(\$)	(%)
Morgan Stanley Prime Property Fund (CF)	176,778,854	28.32
UBS Trumbull Property Fund, L.P. (CF)	165,968,882	26.59
JP Morgan US Real Estate Income and Growth, LP (CF)	119,166,988	19.09
Prologis USLF (CF)	87,276,918	13.98
Jamestown Premier Property Fund (CF)	74,946,165	12.01

Performance shown is gross of fees. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Actual funding date for Prologis USLF (CF) was April 14, 2016. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Glossary.



#### North Dakota Board of University and School Lands Comparative Performance - Net

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2016	2015	2014	Since Incep.	Inception Date
Total Fund	3.73	3.73	10.68	3.30	5.92	6.71	4.65	8.65	-4.55	4.78	6.73	08/01/1995
Target Allocation Index (Net)	3.84	3.84	9.93	4.83	7.00	7.58	N/A	7.85	-0.93	6.50	N/A	
Difference	-0.11	-0.11	0.75	-1.53	-1.08	-0.87	N/A	0.80	-3.62	-1.72	N/A	
Broad US Equity	5.79	5.79	18.53	9.27	12.24	12.04	N/A	13.29	0.08	12.29	14.87	07/01/2009
Russell 3000 Index	5.74	5.74	18.07	9.76	13.18	12.89	7.54	12.74	0.48	12.56	15.48	
Difference	0.05	0.05	0.46	-0.49	-0.94	-0.85	N/A	0.55	-0.40	-0.27	-0.61	
State Street S&P 500 Index (CF)	6.06	6.06	17.17	10.38	13.29	12.93	N/A	11.98	1.40	13.67	9.01	04/01/2008
S&P 500 Index (Cap Wtd)	6.07	6.07	17.17	10.37	13.30	12.94	7.51	11.96	1.38	13.69	9.01	
Difference	-0.01	-0.01	0.00	0.01	-0.01	-0.01	N/A	0.02	0.02	-0.02	0.00	
NT Small Cap Core (CF)	4.73	4.73	23.73	N/A	N/A	N/A	N/A	18.20	-6.01	N/A	5.29	07/01/2014
Russell 2000 Index	2.47	2.47	26.22	7.22	12.35	12.27	7.12	21.31	-4.41	4.89	7.11	
Difference	2.26	2.26	-2.49	N/A	N/A	N/A	N/A	-3.11	-1.60	N/A	-1.82	
NT Small/Smid Composite	4.73	4.73	23.73	5.37	11.12	11.09	6.48	18.20	-6.01	2.65	9.67	03/01/1996
Small/Smid Blended Index	2.47	2.47	26.22	7.93	12.92	12.95	7.86	21.31	-4.41	8.25	9.93	
Difference	2.26	2.26	-2.49	-2.56	-1.80	-1.86	-1.38	-3.11	-1.60	-5.60	-0.26	
Broad International Equity	7.98	7.98	13.35	0.06	6.05	4.30	N/A	4.82	-5.25	-5.28	6.64	07/01/2009
MSCI ACW Ex US Index (USD) (Net)	7.86	7.86	13.13	0.56	4.36	3.82	1.35	4.50	-5.66	-3.87	6.59	
Difference	0.12	0.12	0.22	-0.50	1.69	0.48	N/A	0.32	0.41	-1.41	0.05	
State Street World Ex US Index (CF)	6.80	6.80	11.86	N/A	N/A	N/A	N/A	2.66	-3.12	N/A	-1.33	07/01/2014
MSCI Wrld Ex US Index (USD) (Net)	6.81	6.81	11.93	0.35	5.38	4.42	1.13	2.75	-3.04	-4.32	-1.25	
Difference	-0.01	-0.01	-0.07	N/A	N/A	N/A	N/A	-0.09	-0.08	N/A	-0.08	
DFA Emg Mkts Core Eq;I (DFCEX)	13.68	13.68	19.08	N/A	N/A	N/A	N/A	12.35	-14.86	N/A	0.12	07/01/2014
MSCI Emg Mkts Index (USD) (Net)	11.44	11.44	17.21	1.18	0.81	1.69	2.72	11.19	-14.92	-2.19	-1.04	
Difference	2.24	2.24	1.87	N/A	N/A	N/A	N/A	1.16	0.06	N/A	1.16	
Harding Loevner:IEM;II (HLEEX)	11.83	11.83	19.04	N/A	N/A	N/A	N/A	13.44	-13.31	N/A	0.26	07/01/2014
MSCI Emg Mkts Index (USD) (Net)	11.44	11.44	17.21	1.18	0.81	1.69	2.72	11.19	-14.92	-2.19	-1.04	
Difference	0.39	0.39	1.83	N/A	N/A	N/A	N/A	2.25	1.61	N/A	1.30	

Performance shown is net of fees. Manager inception dates shown represent the first full month following initial funding. Composite inception dates are based on availability of data for each asset class. Please see the Addendum for custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Addendum and Glossary.



#### North Dakota Board of University and School Lands Comparative Performance - Net

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2016	2015	2014	Since Incep.	Inception Date
Fixed Income	1.50	1.50	2.27	2.74	2.89	4.09	4.69	3.91	-0.15	4.72	5.81	08/01/1995
Global Fixed Income Custom Index	1.29	1.29	1.19	2.19	2.29	3.50	4.27	3.66	-0.50	4.27	N/A	
Difference	0.21	0.21	1.08	0.55	0.60	0.59	0.42	0.25	0.35	0.45	N/A	
Bloomberg US Agg Bond Index	0.82	0.82	0.44	2.68	2.34	3.48	4.27	2.65	0.55	5.97	5.39	
Difference	0.68	0.68	1.83	0.06	0.55	0.61	0.42	1.26	-0.70	-1.25	0.42	
Payden & Rygel Long Term (SA)	1.16	1.16	2.44	3.13	3.18	4.32	4.83	3.83	0.62	5.80	6.00	08/01/1995
Bloomberg US Agg Bond Index	0.82	0.82	0.44	2.68	2.34	3.48	4.27	2.65	0.55	5.97	5.39	
Difference	0.34	0.34	2.00	0.45	0.84	0.84	0.56	1.18	0.07	-0.17	0.61	
JP Morgan FI Intermediate Bond (SA)	0.83	0.83	0.51	2.23	N/A	N/A	N/A	1.88	1.42	3.86	1.70	08/01/2012
Bloomberg US Gov't/Crdt: Int Trm Bond Index	0.78	0.78	0.42	2.01	1.88	2.86	3.76	2.08	1.07	3.13	1.49	
Difference	0.05	0.05	0.09	0.22	N/A	N/A	N/A	-0.20	0.35	0.73	0.21	
FIA International Fixed Income (SA)	1.18	1.18	1.01	4.34	4.31	4.38	4.82	3.29	-0.46	12.84	4.80	05/01/2004
Bloomberg Gbl Agg Ex USD Index (Hedged)	0.06	0.06	1.40	4.25	4.15	4.01	4.32	4.90	1.36	8.79	4.42	
Difference	1.12	1.12	-0.39	0.09	0.16	0.37	0.50	-1.61	-1.82	4.05	0.38	
Brandywine Glbl Opp FI (CF)	5.19	5.19	1.92	N/A	N/A	N/A	N/A	5.28	-8.31	N/A	0.16	11/01/2014
Citi Wrld Gov't Bond Index	1.55	1.55	-3.65	-1.20	-0.58	1.31	3.03	1.60	-3.57	-0.48	-0.73	
Difference	3.64	3.64	5.57	N/A	N/A	N/A	N/A	3.68	-4.74	N/A	0.89	
Lazard High Yield (SA)	1.60	1.60	8.52	3.89	5.45	6.53	6.17	9.58	-0.41	3.69	6.44	01/01/2004
BofA ML US Hi Yld BB-B Rated Index	2.30	2.30	13.80	4.63	6.62	7.55	6.86	14.75	-2.86	3.47	7.16	
Difference	-0.70	-0.70	-5.28	-0.74	-1.17	-1.02	-0.69	-5.17	2.45	0.22	-0.72	
Payden:Low Dur;Inv (PYSBX)	0.52	0.52	1.46	1.01	1.49	2.41	3.38	1.74	0.44	0.70	3.64	04/01/2002
Bloomberg US Trsy: 1-3 Yr Index	0.27	0.27	0.24	0.73	0.64	0.91	2.01	0.86	0.56	0.63	2.38	
Difference	0.25	0.25	1.22	0.28	0.85	1.50	1.37	0.88	-0.12	0.07	1.26	
Payden & Rygel Cash (SA)	0.09	0.09	0.24	0.09	0.06	0.05	0.68	0.24	-0.02	-0.04	2.62	08/01/1995
BofA ML 3 Mo US T-Bill Index	0.10	0.10	0.36	0.17	0.14	0.13	0.68	0.33	0.05	0.04	2.47	
Difference	-0.01	-0.01	-0.12	-0.08	-0.08	-0.08	0.00	-0.09	-0.07	-0.08	0.15	
FLP (Loans)	1.42	1.42	6.07	6.02	5.88	6.02	6.38	6.12	6.09	5.85	7.33	08/01/1995
ECLP (Loans)	0.89	0.89	4.53	4.90	5.05	N/A	N/A	4.89	5.13	5.03	5.25	11/01/2010

Performance shown is net of fees. Manager inception dates shown represent the first full month following initial funding. Composite inception dates are based on availability of data for each asset class. Please see the Addendum for custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Addendum and Glossary.



#### North Dakota Board of University and School Lands **Comparative Performance - Net**

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2016	2015	2014	Since Incep.	Inception Date
Absolute Return	4.32	4.32	9.83	N/A	N/A	N/A	N/A	7.61	-6.25	N/A	0.66	07/01/2014
Absolute Return Custom Index	4.37	4.37	9.22	4.26	6.19	6.45	4.63	6.22	-0.88	4.77	3.28	
Difference	-0.05	-0.05	0.61	N/A	N/A	N/A	N/A	1.39	-5.37	N/A	-2.62	
GMO:Bchmk-Fr All;IV (GBMBX)	4.71	4.71	8.14	N/A	N/A	N/A	N/A	3.45	-4.23	N/A	0.13	07/01/2014
60% MSCI ACWI (Net)/40% Bbrg Gbl Agg Idx	4.83	4.83	8.03	2.99	5.25	5.65	4.04	5.69	-2.47	2.78	1.80	
Difference	-0.12	-0.12	0.11	N/A	N/A	N/A	N/A	-2.24	-1.76	N/A	-1.67	
Consumer Price Index+5%	2.22	2.22	7.50	6.10	6.29	6.72	6.82	7.18	5.77	5.79	5.87	
Difference	2.49	2.49	0.64	N/A	N/A	N/A	N/A	-3.73	-10.00	N/A	-5.74	
PIMCO:All Ast Ath;Inst (PAUIX)	4.56	4.56	12.66	N/A	N/A	N/A	N/A	13.73	-11.73	N/A	-1.31	07/01/2014
All Asset Custom Index (Eql Wtd)	2.67	2.67	6.76	3.35	4.43	5.20	4.73	6.47	-1.07	3.73	2.64	
Difference	1.89	1.89	5.90	N/A	N/A	N/A	N/A	7.26	-10.66	N/A	-3.95	
Consumer Price Index+5%	2.22	2.22	7.50	6.10	6.29	6.72	6.82	7.18	5.77	5.79	5.87	
Difference	2.34	2.34	5.16	N/A	N/A	N/A	N/A	6.55	-17.50	N/A	-7.18	
Westwood Income Opportunity (SA)	3.70	3.70	8.67	N/A	N/A	N/A	N/A	5.90	-2.61	N/A	3.12	07/01/2014
Westwood Custom Index	2.38	2.38	4.60	6.15	6.56	7.71	5.23	5.37	1.61	12.88	5.31	
Difference	1.32	1.32	4.07	N/A	N/A	N/A	N/A	0.53	-4.22	N/A	-2.19	
Consumer Price Index+5%	2.22	2.22	7.50	6.10	6.29	6.72	6.82	7.18	5.77	5.79	5.87	
Difference	1.48	1.48	1.17	N/A	N/A	N/A	N/A	-1.28	-8.38	N/A	-2.75	
Diversified Inflation Strategies (DIS)	0.61	0.61	17.54	0.47	N/A	N/A	N/A	18.91	-24.22	N/A	0.47	04/01/2014
DIS Custom Index	2.81	2.81	17.08	1.16	2.81	5.09	2.65	16.53	-18.88	9.69	1.16	
Difference	-2.20	-2.20	0.46	-0.69	N/A	N/A	N/A	2.38	-5.34	N/A	-0.69	
NT Common TIPS Index (CF)	1.29	1.29	1.55	2.04	0.98	3.52	4.31	4.77	-1.53	3.66	4.32	06/01/2004
Bloomberg US Trsy: US TIPS Index	1.26	1.26	1.48	2.03	0.97	3.48	4.24	4.68	-1.44	3.64	4.26	
Difference	0.03	0.03	0.07	0.01	0.01	0.04	0.07	0.09	-0.09	0.02	0.06	
Gresham Commodities (SA)	-0.81	-0.81	9.98	N/A	N/A	N/A	N/A	11.76	N/A	N/A	-9.48	07/01/201
Bloomberg Cmdty Ex-Energy Index (TR)	2.83	2.83	6.00	-7.76	-6.87	-1.96	-1.36	7.77	-17.74	-6.47	-2.71	
Difference	-3.64	-3.64	3.98	N/A	N/A	N/A	N/A	3.99	N/A	N/A	-6.77	
Harvest MLP (SA)	4.17	4.17	31.97	N/A	N/A	N/A	N/A	19.24	N/A	N/A	-4.34	07/01/201
S&P MLP Index (TR)	3.70	3.70	35.01	-4.90	3.39	8.07	7.29	21.95	-35.07	7.66	-6.21	
Difference	0.47	0.47	-3.04	N/A	N/A	N/A	N/A	-2.71	N/A	N/A	1.87	

Performance shown is net of fees. Manager inception dates shown represent the first full month following initial funding. Composite inception dates are based on availability of data for each asset class. Please see the Addendum for custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Addendum and Glossary.



### North Dakota Board of University and School Lands

**Comparative Performance - Net** 

	QTD	CYTD	1 Year	3 Years	5 Years	7 Years	10 Years	2016	2015	2014	Since Incep.	Inception Date
Van Eck NR Equities (SA)	-3.35	-3.35	24.98	N/A	N/A	N/A	N/A	44.23	N/A	N/A	-2.92	07/01/201
S&P Gbl Natural Res Sect Index (TR)	2.92	2.92	24.60	-2.22	-1.03	-0.33	1.06	32.28	-24.00	-9.66	3.45	
Difference	-6.27	-6.27	0.38	N/A	N/A	N/A	N/A	11.95	N/A	N/A	-6.37	
Real Estate	1.95	1.95	8.80	N/A	N/A	N/A	N/A	8.48	N/A	N/A	9.86	07/01/2015
NCREIF ODCE Index (AWA) (Net)	1.54	1.54	7.36	10.77	10.94	12.44	4.62	7.79	13.95	11.46	9.24	
Difference	0.41	0.41	1.44	N/A	N/A	N/A	N/A	0.69	N/A	N/A	0.62	
Morgan Stanley Prime Property Fund (CF)	1.92	1.92	9.27	N/A	N/A	N/A	N/A	9.23	N/A	N/A	10.39	07/01/2015
NCREIF ODCE Index (AWA) (Net)	1.54	1.54	7.36	10.77	10.94	12.44	4.62	7.79	13.95	11.46	9.24	
Difference	0.38	0.38	1.91	N/A	N/A	N/A	N/A	1.44	N/A	N/A	1.15	
UBS Trumbull Property Fund, L.P. (CF)	0.92	0.92	5.20	N/A	N/A	N/A	N/A	6.14	N/A	N/A	7.52	07/01/2015
NCREIF ODCE Index (AWA) (Net)	1.54	1.54	7.36	10.77	10.94	12.44	4.62	7.79	13.95	11.46	9.24	
Difference	-0.62	-0.62	-2.16	N/A	N/A	N/A	N/A	-1.65	N/A	N/A	-1.72	
Jamestown Premier Property Fund (CF)	1.92	1.92	6.39	N/A	N/A	N/A	N/A	5.26	N/A	N/A	8.16	07/01/2015
NCREIF ODCE Index (AWA) (Net)	1.54	1.54	7.36	10.77	10.94	12.44	4.62	7.79	13.95	11.46	9.24	
Difference	0.38	0.38	-0.97	N/A	N/A	N/A	N/A	-2.53	N/A	N/A	-1.08	
Prologis USLF (CF)	3.98	3.98	16.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16.37	04/01/2016
NCREIF ODCE Index (AWA) (Net)	1.54	1.54	7.36	10.77	10.94	12.44	4.62	7.79	13.95	11.46	7.36	
Difference	2.44	2.44	9.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9.01	
JP Morgan US Real Estate Income and Growth, LP (CF)	1.99	1.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7.31	07/01/2016
NCREIF ODCE Index (AWA) (Net)	1.54	1.54	7.36	10.77	10.94	12.44	4.62	7.79	13.95	11.46	5.35	
Difference	0.45	0.45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.96	
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• Actual funding date for Prologis USLF (CF) was April 14, 2016.

Performance shown is net of fees. Manager inception dates shown represent the first full month following initial funding. Composite inception dates are based on availability of data for each asset class. Please see the Addendum for custom index definitions. RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. RVK endorses GIPS and calculates performance for composites and investment managers using different methodologies. For additional information, please see the Addendum and Glossary.



As of March 31, 2017

# Addendum & Glossary



## North Dakota Board of University and School Lands Addendum

Fee Schedules	
<ul> <li>State Street S&amp;P 500 Index (CF):</li> </ul>	0.012% on total market value
NT Small Cap Core (CF):	0.70% on total market value
<ul> <li>State Street World Ex US Index (CF):</li> </ul>	0.025% on total market value
DFA Emg Mkts Core Eq;I (DFCEX):	0.61% on total market value
Harding Loevner:IEM;II (HLEEX):	1.13% on total market value
<ul> <li>Payden &amp; Rygel Long Term (SA):</li> </ul>	0.20% on total market value
JP Morgan FI Intermediate Bond (SA):	0.20% on the first \$75M, 0.18% thereafter
FIA International Fixed Income (SA):	0.35% on the first \$30M, 0.25% on the next \$20M, 0.20% over \$50M
Brandywine Glbl Opp FI (CF):	0.45% on the first \$50M, 0.40% on the next \$50M, 0.35% thereafter
Lazard High Yield (SA):	0.30% on total market value
Payden:Low Dur;Inv (PYSBX):	0.45% on total market value
Payden & Rygel Cash (SA):	0.10% on total market value
GMO:Bchmk-Fr All;IV (GBMBX):	0.89% on total market value
PIMCO:All Ast Ath; Inst (PAUIX):	0.94% on total market value
Westwood Income Opportunity (SA):	0.80% on the first \$25M, 0.65% on the next \$25M, 0.50% thereafter
NT Common TIPS Index (CF):	0.06% on the first \$50M, 0.03% thereafter
Gresham Commodities (SA):	0.67% on the first \$75M, 0.50% on the next \$75M, 0.40% thereafter
Harvest MLP (SA):	0.75% on the first \$100M, and a 0.05% discount on each \$50M
	thereafter until \$300M, where it's 0.50%
<ul> <li>Van Eck NR Equities (SA):</li> </ul>	0.75% on the first \$50M, 0.50% on the next \$200M, 0.475% thereafter
<ul> <li>Morgan Stanley Prime Property Fund (CF):</li> </ul>	0.84% on total market value; Incentive fee: 5.0% * NAV * comparable
	property NOI growth (total capped at 0.35%)
<ul> <li>UBS Trumbull Property Fund, L.P. (CF):</li> </ul>	0.955% on the first \$10M, 0.825% on the next \$15M, 0.805% on the
	next \$25M, 0.79% on the next \$50M, 0.67% on the next \$150M, and
	0.6% thereafter, and a 0.15% incentive fee
<ul> <li>Jamestown Premier Property Fund (CF):</li> </ul>	0.70% on total market value, plus 20% of returns greater than 7% and
	25% of returns greater than 10%
<ul> <li>Prologis USLF (CF):</li> </ul>	Priority Distribution: 7.5% of net operating income;
	Acquisition Fee: 0.90% of total acquisition cost on fund acquisitions;
	Renovation Fee: 0.70% per annum of the acquisition cost of the capital
	expenditures made with respect to renovation properties during the applicable renovation period
	* Fees are subject to a quarterly cap of 0.30% of the fund's NAV.
	Incentive fee of 15% over a 9% net IRR and 20% over a 12% net IRR
	is payable at the end of each three-year incentive period (next period
	ends June 30, 2017)
• JP Morgan US Real Estate Income and Growth, LP (CF)	1.25% on total market value
-	* Beginning October 1st, 2016, a reduced fee schedule will be
	implemented as follows: 1.05% on the first \$50M, 0.90% on the next
	\$50M, 0.85% on the next \$50M, 0.80% on the next \$50M, and 0.75%
	thereafter

#### Performance Related Comments

- Manager inception dates shown represent the first full month following initial funding.
- RVK began monitoring the assets of North Dakota Board of University and School Lands in Q3 2014. Prior historical data was provided by North Dakota Board of University and School Lands.
- RVK endorses GIPS and calculates performance for composites and investment managers using differing methodologies. For additional information, please see the Glossary.
- Indices show N/A for since inception returns when the fund contains more history than the corresponding benchmark.
- Historical gross performance for composites was calculated by aggregating gross performance for each of the composites' underlying managers. Managers' gross performance was provided by North Dakota Board of University and School Lands. As of July 2014, composite and manager performance is provided and calculated by RVK.
- NT Small Cap Core (CF) changed mandate from small and mid cap to strictly small cap in June 2014. Performance for NT Small/Smid Composite consists of blended history from the previous mandate. From July 2014 through present, performance consists of only the small cap mandate.
- Payden:Low Dur;Inv (PYSBX) performance prior to August 2012 consists of blended Payden:Low Dur;Inv (PYSBX) and Payden:GNMA;Inv (PYGNX).



## North Dakota Board of University and School Lands Addendum

#### Index Comments

- The Target Allocation Index (Net) is a static custom index that is calculated monthly and consists of:
  - From July 2014 through present: 17% Russell 3000 Index, 15% MSCI ACW Ex US Index (USD) (Net), 23% Global Fixed Income Custom Index, 15% NCREIF ODCE Index (AWA) (Net), 20% Absolute Return Custom Index, and 10% DIS Custom Index.
  - From January 2013 through June 2014: 18.7% Russell 1000 Index, 12.4% Russell 2500 Index, 7.5% FTSE EPRA/NAREIT US Index, 12.4% MSCI EAFE Index (USD) (Net), 33.3% Bloomberg US Agg Bond Index, 0.70% Credit Suisse Leveraged Loan Index, 10% Bloomberg US Corporate: High Yield Index, and 5% Bloomberg Gbl Agg Ex USD Index (Hedged).
  - From July 2009 through December 2012: 15% Russell 1000 Index, 10% Russell 2500 Index, 6% FTSE EPRA/NAREIT US Index, 10% MSCI EAFE Index (USD) (Net), 32.3% Bloomberg US Aggregate Bond Index, 1.70% Credit Suisse Leveraged Loan Index, 10% Bloomberg US Corporate: High Yield Index, 5% Bloomberg Gbl Agg Ex USD Index (Hedged), and 10% BofA Merrill Lynch Convertible Bonds Index (All Qualities).
- The Target Allocation Index (Gross) is a static custom index that is calculated monthly and consists of:
  - From July 2014 through present: 17% Russell 3000 Index, 15% MSCI ACW Ex US Index (USD) (Net), 23% Global Fixed Income Custom Index, 15% NCREIF ODCE Index (AWA) (Gross), 20% Absolute Return Custom Index, and 10% DIS Custom Index.
  - From January 2013 through June 2014: 18.7% Russell 1000 Index, 12.4% Russell 2500 Index, 7.5% FTSE EPRA/NAREIT US Index, 12.4% MSCI EAFE Index (USD) (Net), 33.3% Bloomberg US Agg Bond Index, 0.70% Credit Suisse Leveraged Loan Index, 10% Bloomberg US Corporate: High Yield Index, and 5% Bloomberg Gbl Agg Ex USD Index (Hedged).
  - From July 2009 through December 2012: 15% Russell 1000 Index, 10% Russell 2500 Index, 6% FTSE EPRA/NAREIT US Index, 10% MSCI EAFE Index (USD) (Net), 32.3% Bloomberg US Aggregate Bond Index, 1.70% Credit Suisse Leveraged Loan Index, 10% Bloomberg US Corporate: High Yield Index, 5% Bloomberg Gbl Agg Ex USD Index (Hedged), and 10% BofA Merrill Lynch Convertible Bonds Index (All Qualities).
- The Global Fixed Income Custom Index consists of 75% Bloomberg US Unv Bond Index and 25% Bloomberg Multiverse Index.
- The Absolute Return Custom Index consists of 60% MSCI ACW IM Index (USD) (Net) and 40% Bloomberg US Agg Bond Index.
- The DIS Custom Index consists of 50% Bloomberg US Trsy: US TIPS Index and 50% FTSE EPRA/NAREIT Developed Index (Gross) through June 2015. It consists of 20% Bloomberg US Trsy: US TIPS Index, 30% Bbrg Cmdty Ex-Energy Index (TR), 30% S&P MLP Index (TR), and 20% S&P Gbl Natural Res Index (TR) thereafter.
- The Small/Smid Blended Index consists of 100% Russell 2500 Index through May 2014 and 100% Russell 2000 Index thereafter.
- The Westwood Custom Index consists of 25% S&P 500 Index (Cap Weighted), 25% FTSE NAREIT All Eq REITs TR Index, 25% Citi 3 Mo T-Bill Index, and 25% Citi 10 Yr Trsy Index.
- The All Asset Custom Index (Eql Wtd) is an equal-weighted hybrid created independently by RVK specifically for PIMCO's All Asset strategies, and it consists of the following benchmarks:
  - 1. Short Term Strategies: BofA ML 1 Year T-Bill Index
  - 2. US Core and Long Maturity Bond Strategies: Bloomberg US Agg Bond Index
  - 3. EM and Global Bond Strategies: PIMCO GLADI Index\*
  - 4. Credit Strategies: BofA ML US Hi Yld Master II Index
  - 5. Inflation Related Strategies: Bloomberg US Trsy: US TIPS Index
  - 6. US Equity Strategies: Russell 3000 Index
  - 7. Global Equity Strategies: MSCI ACW Index (USD) (Net)
  - 8. Alternative Strategies: BofA ML 3 Mo US T-Bill Index + 3%

\* Performance for the PIMCO Gbl Advantage Bond Index (London Close) prior to January 2004 consists of the JPM EMBI Gbl Dvf'd TR Index.



Active Share - Measures the degree to which the holdings of a fund differ from the holdings of the benchmark. Active share is calculated by taking the sum of the absolute value of the differences of the weight of each holding in the fund versus the weight of each holding in the benchmark and dividing by two.

Alpha - A measure of the difference between a portfolio's actual returns and its expected performance, given its level of risk as measured by beta. It is a measure of the portfolio's historical performance not explained by movements of the market or a portfolio's non-systematic return.

Alpha Ratio - A measure of a portfolio's non-systematic return per unit of downside risk. It is measured by dividing the alpha of a portfolio by the downside risk. The non-systematic return is a measure of a portfolio's historical performance not explained by movements of the market.

Average Quality - Bond quality ratings are reported using the investment managers' and the index providers' preferred rating agency. Average Quality for managers unable to provide this statistic is instead provided by Morningstar; if unavailable on Morningstar, it has been estimated using a credit quality distribution provided by the manager. There are two primary rating agencies in the US. Moody's assigns ratings on a system that employs up to four symbols (consisting of letters and numbers) such as, Aaa, Aa2, etc., with Aaa being the highest or safest rating. Standard & Poor's (S&P) employs a system that uses + and - along with letters such as AAA, AA+, etc. The two rating agencies' systems are summarized below:

<u>S&amp;P</u>	Moody's	<b>Explanation</b>	<u>S&amp;P</u>	Moody's	<b>Explanation</b>
Higher Credit Quality – Investment Grade			Lower Credit Quality – Below Investment Grade		
AAA	Aaa	Prime/Highest credit quality	BB+	Ba1	Speculative/Low credit quality
AA+	Aa1	High credit quality	BB	Ba2	
AA	Aa2		BB-	Ba3	
AA-	Aa3		B+	B1	Highly speculative
A+	A1	Upper-medium credit quality	В	B2	0 7 1
А	A2		B-	B3	
A-	A3		CCC+	Caa1	Substantial credit/default risk
BBB+	Baa1	Lower-medium credit quality	CCC	Caa2	Extremely speculative
BBB	Baa2		CCC-	Caa3	
BBB-	Baa3		CC	Ca	Vulnerable to default
			C	Ca	
			D	C	In default

Beta - A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of a portfolio's non-diversifiable or systematic risk.

**Box Plots** - A graphical representation of the distribution of observations. From top to bottom, the four boxes represent the spread between the maximum value and the minimum value in each quartile. A quartile represents the values that divide the observations into four quarters (i.e., 1<sup>st</sup> quartile, 2<sup>nd</sup> quartile, 3<sup>rd</sup> quartile, and 4<sup>th</sup> quartile). The median observation is where the 2<sup>nd</sup> quartile and 3<sup>rd</sup> quartile meet.

**Buy and Hold Attribution** - At the beginning of the time period under analysis, the manager and benchmark portfolios are broken down into segments (i.e., styles, sectors, countries, and regions) based on the desired type of attribution. The formula assumes zero turn-over to the manager and benchmark portfolios throughout the period and calculates the segment returns ("buy and hold returns") to arrive at performance attribution. Due to portfolio turnover, buy and hold attribution may not accurately represent quarterly performance relative to the benchmark. Country, region, sector, and style allocations are as of the date one quarter prior to the reporting date, and the returns shown are for those segments throughout the quarter reported. Due to disclosure guidelines set by each investment manager, equity characteristics shown are as of the most recent date available. The following is the methodology for segment classification:

Sector - Attribution is calculated using the Global Industry Classification Standard (GICS) which is a detailed and comprehensive structure for sector and industry analysis. Stocks are classified by their primary sector, as defined by S&P Capital IQ data.

Country/Region - Attribution is calculated using the Morgan Stanley Capital International (MSCI) region standards. Stocks are classified by their domicile country/region, as defined by S&P Capital IQ data.

Style - Stocks are classified into the following style boxes: large/mid/small vs. growth/neutral/value. Stocks are classified along large/mid/small categories at the time of the Russell index rebalancing, using the index market cap boundaries as cutoff points. Stocks are classified along growth/neutral/value categories at the time of the Russell index rebalancing, using the price/book ratio as supplied by S&P Capital IQ. Stocks in the Russell 3000 Index portfolio are sorted by price/book ratio; names with the highest price/book ratio that make up 1/3 of the total market capitalization are assigned to the growth category, names that make up the subsequent 1/3 of the total market capitalization are assigned to the neutral category, while the balance of the names are assigned to the value category.

Portfolio Characteristics and Buy and Hold Attribution reports utilize product-specific data for all mutual funds and commingled funds.

#### Capital Markets Review -

Breakeven Inflation - Measures the expected inflation rate at each stated maturity by taking the difference between the real yield of the inflationlinked maturity curve and the yield of the closest nominal Treasury maturity.

**Consumer Confidence** - Measures domestic consumer confidence as defined by the degree of optimism on the state of the economy that consumers express through saving and spending.

Consumer Price Index (CPI) - Measures the change in the price level of consumer goods and services.

**Federal Funds Rate** - The interest rate at which a depository institution lends funds maintained at the Federal Reserve to another depository institution overnight. It is one of the most influential interest rates in the US economy, since it affects monetary and financial conditions, which in turn have a bearing on key aspects of the broad economy including employment, growth and inflation.

**Option-Adjusted Spread** - Measures the flat spread of an index or bond to the Treasury yield curve after removing the effect of any embedded options.

Purchasing Managers Index (PMI) - Measures economic activity by surveying purchasing managers on a monthly basis as to whether business conditions have improved, worsened, or stayed the same.

Real Gross Domestic Product (Real GDP) - An inflation-adjusted measure that reflects the value of all goods and services produced by an economy in a given year.

US Dollar Total Weighted Index - Measures the value of the US Dollar relative to a basket of other world currencies. It is calculated as the weighted geometric mean of the dollar's value versus the EUR, GBP, CAD, SEK, CHF, and JPY.



Unemployment Rate - The percentage of the total labor force that is unemployed but actively seeking employment. VIX - Measures the implied volatility of S&P 500 Index options by looking at the market's expectation of the S&P 500 Index volatility over the next 30 day period. Commonly referred to as the "fear index" or the "fear gauge."

**Consistency** - The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. The higher the consistency figure, the more value a manager has contributed to the product's performance.

Convexity - A measure of the shape of the curve that describes the relationship between bond prices and bond yields.

**Correlation** - A statistical measure of the relationship between asset class returns. A value of 1.00 is a perfect correlation; that is, the asset classes always move in the same direction. A value of -1.00 indicates a perfect negative correlation, in which the asset classes always move in opposite directions of each other. A value of 0 indicates there is no relationship between the direction of returns of the two asset classes. Correlation calculations only consider the direction of changes relative to two variables and not the magnitude of those changes.

Coupon Rate - The percentage rate of interest paid on a bond or fixed income security; it is typically paid twice per year.

Current Yield - The annual income of a security divided by the security's current price.

**Down Market Capture** - Down market by definition is negative benchmark return and down market capture represents the ratio in % terms of the average portfolios return over the benchmark during the down market period. The lower the value of the down market capture the better the product's performance.

**Downside Risk** - A measure similar to standard deviation, but focuses only on the negative movements of the return series. It is calculated by taking the standard deviation of the negative monthly returns. The higher the factor, the riskier the product.

Earnings Per Share - It is backward looking, calculated using the one year current EPS divided by the one year EPS five years ago.

Effective Duration - The approximate percentage change in a bond's price for a 100 basis point change in yield.

Excess Return vs. Market - Average of the monthly arithmetic difference between the manager's return and the benchmark return over a specified time period, shown on an annualized basis.

**Excess Return vs. Risk Free** - Average of the monthly arithmetic difference between the manager's return and the risk-free return (i.e., BofA ML 3 Mo US T-Bill Index unless specified otherwise) over a specified time period, shown on an annualized basis.

Excess Risk - A measure of the standard deviation of a portfolio's performance relative to the risk free return.

Expense Ratios - Morningstar is the source for mutual fund expense ratios.

Gain/Loss - The net increase or decrease in the market value of a portfolio excluding its Net Cash Flow for a given period.

Indices - All indices and related information are considered intellectual property and are licensed by each index provider. The indices may not be copied, used or distributed without the index provider's prior written approval. Index providers make no warranties and bear no liability with respect to the indices, any related data, their quality, accuracy, suitability and/or completeness.

Information Ratio - Measured by dividing the active rate of return by the tracking error. The higher the information ratio, the more value-added contribution by the manager.

Liability Driven Investing (LDI) - A method to optimally structure asset investments relative to liabilities. The change in liabilities is estimated by the Ryan Labs Generic PPA Index of appropriate duration for that Plan. This benchmark is based on generic data and is therefore an approximation. RVK is not an actuarial firm, and does not have actuarial expertise.

Estimated Funded Status - The estimated ratio of a Plan's assets relative to its future liabilities. This is calculated by dividing the Plan's asset market value by the estimated present value of its liabilities. The higher the estimated funded status, the better the Plan's ability to cover its projected benefit obligations. An estimated funded status of 100% indicates a Plan that is fully funded.

**Estimated PV of Liabilities** - An estimate of a Plan's future liabilities in present value terms. The beginning of the period liability is provided by the Plan's actuary. The period-end present value liability estimate provided in this report is derived by applying the estimated percentage change generated using the Ryan Labs Generic PPA Index with duration similar to that reported on the most recent actuarial valuation report.

Duration of Liabilities - The sensitivity of the value of a Plan's liabilities to changes in interest rates, as calculated by the Plan's actuary. Duration of Assets - The dollar-weighted average duration of all the individual Plan assets.

**Estimated Plan Hedge Ratio** - The estimate of how well a Plan's investment portfolio is hedged against changes in interest rates - a primary driver of funded status movements. This is calculated by dividing the dollar-weighted values of both the Plan asset duration by the liability duration and multiplying by the estimated funded status. An estimated plan hedge ratio of zero indicates that the Plan's liabilities have not been hedged, whereas a value of one indicates fully hedged.

Modified Duration - The approximate percentage change in a bond's price for a 100 basis point change in yield, assuming the bonds' expected cash flows do not change.

**Mutual Fund Performance** - Whenever possible, manager performance is extended for any share class that does not have 10 years of history. Using Morningstar's methodology, a single ticker within the same fund family (often the oldest share class) is chosen to append historical performance.

**Net Cash Flow** - The sum, in dollars, of a portfolio's contributions and withdrawals. This includes all management fees and expenses only when performance shown is gross of fees.



#### Peer Groups -

**Plan Sponsor Peer Groups** - RVK utilizes the Mellon Analytical Solutions Trust Universe along with the Investment Metrics Plan Sponsor Universe. The combined Mellon Analytical Solutions Trust Universe and Investment Metrics Plan Sponsor Universe is used for comparison of total fund composite results and utilizes actual client returns compiled from consultant and custodial data. The Plan Sponsor Peer Group database includes performance and other quantitative data for over 2,100 plans which include corporate, endowment, foundation, public, and Taft Hartley plans. Plan Sponsor Peer Groups are gross of fees.

Institutional Peer Groups (Separate Account and Commingled Fund) - RVK utilizes the Investment Metrics Separate Account and Commingled Fund Manager Peer Groups for peer comparison and rankings. The Separate Account and Commingled Fund Peer Group database includes performance and other quantitative data for over 1,000 investment management firms, 6,400 investment products, across 100 standard peer groups. Separate Account and Commingled Fund Peer Groups are groups are gross of fees.

Mutual Fund (MF) Peer Groups - RVK utilizes the Lipper Mutual Fund Manager Peer Groups for peer comparison and rankings. The Lipper Manager Peer Group database includes performance and other quantitative data for over 700 investment management firms and 24,500 investment products, across more than 140 standard peer groups. Mutual Fund Peer Groups are net of fees.

For more information on Peer Groups, visit https://www.invmetrics.com/style-peer-groups.

**Percentile Rankings** - Percentile rank compares an individual fund's performance with those of other funds within a defined peer group of managers possessing a similar investment style. Percentile rank identifies the percentage of a fund's peer group that has a higher return (or other comparative measurement) than the fund being ranked. Conversely, 100 minus the individual fund's ranking will identify the percentage of funds within the peer group that have a lower return than the fund being ranked.

#### 1 - Highest Statistical Value 100 - Lowest Statistical Value

Example: American Funds AMCP;R-4 (RAFEX) is ranked in the 4<sup>th</sup> percentile within the IM US Equity Large-Cap Growth Funds (MF) Peer Group for the Sharpe Ratio. Within the IM US Equity Large-Cap Growth Funds peer group, 4% of the other funds performed better than American Funds AMCP;R-4 (RAFEX), while 96% of the funds performed worse.

Performance Methodology - RVK calculates performance for investment managers and composites using different methodologies. Investment Managers - Performance is calculated for interim periods between all large external cash flows for a given month and geometrically linked to calculate period returns. An external cash flow is defined as cash, securities, or assets that enter or exit a portfolio. RVK defines a "large cash flow" as a net aggregate cash flow of ≥10% of the beginning-period portfolio market value or any cash flow that causes RVK calculated performance to deviate from manager/custodian reported performance in excess of 5 basis points for a given month.

**Composites** - The Modified Dietz methodology is utilized to calculate asset class, sub-asset class, and total fund composite performance. The Modified Dietz method calculates a time-weighted total rate of return that considers the timing of external cash flows; however, it does not utilize interim period performance to mitigate the impact of significant cash in- and outflows to the composite.

RVK calculates performance beginning with the first full month following inception. Since inception performance may vary from manager reported performance due to RVK using the first full month of returns as the inception date. Performance for both managers and composites is annualized for periods greater than one year.

Portfolio Characteristics - Due to disclosure guidelines set by each investment manager, portfolio characteristics shown are as of the most recent date available.

Price to Earnings Ratio - The ratio of a company's share price to its per-share earnings

Private Equity Quartile Ranks - Private Equity quartile ranks are generated using vintage year peer group data provided by Thomson Reuters, and are based on each fund's annualized, since inception internal rate of return (IRR). Three Private Equity peer groups are available via Thomson Reuters: Buyout, Venture, and All Private Equity. Ranks are available quarterly, at a one-quarter lag. Return - Compounded rate of return for the period.

% Return - The time-weighted rate of return of a portfolio for a given period.

**R-Squared** - The percentage of a portfolio's performance explained by the behavior of the appropriate benchmark. High R-Squared means a higher correlation of the portfolio's performance to the appropriate benchmark.

Risk Free Benchmark - BofA ML 3 Mo US T-Bill Index unless specified otherwise.



**RVK Liquidity Rating** - A qualitative method for determining the relative amount of liquidity in a portfolio. The characteristics considered when determining relative liquidity include trading volume, gates for redemption, leverage, nature of transactions, and pricing mechanisms. The RVK Liquidity Rating is calculated using beginning of month investment weights applied to each corresponding asset class liquidity rating.

Asset Class	<b>RVK Liquidity Rating</b>	Asset Class	<b>RVK Liquidity Rating</b>
Liquid Investments		Less Liquid Investments	
T-Bills and Treasurys	100	Fixed Income Plus Sector	50
Cash Equivalents	98	Bank Loans	50
TIPS	95	Stable Value (Plan Sponsor Directed)	50
US Large Cap Equity	95	Absolute Return Strategies	35
Diversified Real Return	93	-	
Stable Value (Participant Directed)	91		
Non-US Large Cap Equity	90	Not Liquid Investments	
Global Tactical Asset Allocation	88	Core Real Estate	25
US Small Cap Equity	85	Core Plus Real Estate	15
REITS	85	Non-Core Real Estate	5
Non-US Small Cap Equity	85	Private Equity Funds of Funds	5
Emerging Markets Equity	85		
Core Fixed Income	85		
Core Plus Fixed Income	80		

Sector Allocation - Negative fixed income sector allocation reflects manager's use of derivatives, short selling, or interest rate swaps.

Sharpe Ratio - Represents the excess rate of return over the risk-free return (i.e., BofA ML 3 Mo US T-Bill Index unless specified otherwise), divided by the standard deviation of the excess return to the risk free asset. The result is the absolute rate of return per unit of risk. The higher the value, the better the product's historical risk-adjusted performance.

Simple Alpha - The difference between the manager's return and the benchmark's return.

**Spread Duration** - The approximate percentage change in a bond's price for a 100 basis point change in its spread over a Treasury of the same maturity.

Standard Deviation - A statistical measure of the range of a portfolio's performance. The variability of a return around its average return over a specified time period.

Time Period Abbreviations - QTD - Quarter-to-Date. CYTD - Calendar Year-to-Date. FYTD - Fiscal Year-to-Date. YOY - Year Over Year.

Thematic Classification - Represents dedicated manager allocations; as such, thematic allocations are approximations. RVK categorizes the following asset classes as Alpha, Capital Appreciation, Capital Preservation, and Inflation:

<u>Alpha</u> Absolute Return Strategies Currency Overlay

- Capital Appreciation Public Equity Private Equity Preferred Securities High Yield Convertible Fixed Income TALF Funds Distressed Debt Emerging Market Fixed Income Value Added Real Estate Opportunistic Real Estate
- Capital Preservation Core Fixed Income CMBS Fixed Income Asset Backed Fixed Income Domestic Core Plus Fixed Income Mortgage Backed Fixed Income International Developed Fixed Income Cash Equivalents Stable Value
- Inflation TIPS Bank Loans Core Real Estate Real Return Inflation Hedges REITS Commodities

**Total Fund Attribution** – The Investment Decision Process (IDP) model provides an approach to evaluating investment performance that applies to all asset classes and investment styles. The IDP model is based on a top-down hierarchy framework of investment decisions, with each decision contributing to the overall profit or loss. The IDP approach starts from the strategic asset allocation and follows the flow of the investments down to the manager's skill.

Strategic Asset Allocation (SAA) – The percentage return gained or lost from the long-term strategic asset allocation decision, the most significant determinant of long-term performance. SAA is the product of the target asset allocation multiplied by the corresponding benchmark returns. Tactical Asset Allocation (TAA) – The percentage return gained or lost from not having been precisely allocated at the target asset allocation mix, whether by deviations that are tactical in nature or a by-product of moving towards the target mix. TAA is the product of the actual asset allocation multiplied by the broad asset class benchmarks, less the SAA.

Style Selection (SS) – The percentage return gained or lost from intentional style biases within each asset class (e.g. value rather than core or overweight to emerging markets relative to benchmark). SS is the product of the actual manager allocation within each asset class multiplied by their specific benchmark, less TAA.

Manager's Skill (MS) – The percentage return gained or lost from manager value added relative to their specific benchmark. MS is the product of the actual manager allocation multiplied by their achieved excess return.

Total Fund Beta - Total Fund Beta is calculated using the S&P 500 as the benchmark. It represents a measure of the sensitivity of the total fund to movements in the S&P 500 and is a measure of the Total Fund's non-diversifiable or systematic risk.

Tracking Error - A measure of the standard deviation of a portfolio's performance relative to the performance of an appropriate market benchmark.



**Treynor Ratio** - Similar to Sharpe ratio, but focuses on beta rather than excess risk (standard deviation). Treynor ratio represents the excess rate of return over the risk-free rate (i.e., BofA ML 3 Mo US T-Bill Index unless specified otherwise) divided by the beta. The result is the absolute rate of return per unit of risk. The higher the value, the better historical risk-adjusted performance.

Unit Value - The dollar value of a portfolio, assuming an initial nominal investment of \$100, growing at the compounded rate of %Return for a given period.

**Up Market Capture** - Up market by definition is positive benchmark return and up market capture represents the ratio in % terms of the average portfolios return over the benchmark during the up market period. The higher the value of the up market capture the better the product's performance.

Yield to Maturity - The rate of return achieved on a bond or other fixed income security assuming the security is bought and held to maturity and that the coupon interest paid over the life of the bond will be reinvested at the same rate of return. The 30-Day SEC Yield is similar to the Yield to Maturity and is reported for mutual funds.

Yield to Worst - The bond yield calculated by using the worst possible yield taking into consideration all call, put, and optional sink dates.



### PORTLAND

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### **NEW YORK**

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