

INVESTMENT REVIEW

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Public Pension Oversight Board

September 28, 2015

INVESTMENT REVIEW

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- Markets Review
- Plan Performance and Risk
- Current Portfolio Allocation, Targets, and Benchmarking
- Historical Allocation Review & Peer Comparison
- Investment Fees & Expense Review
- Other Required Topics

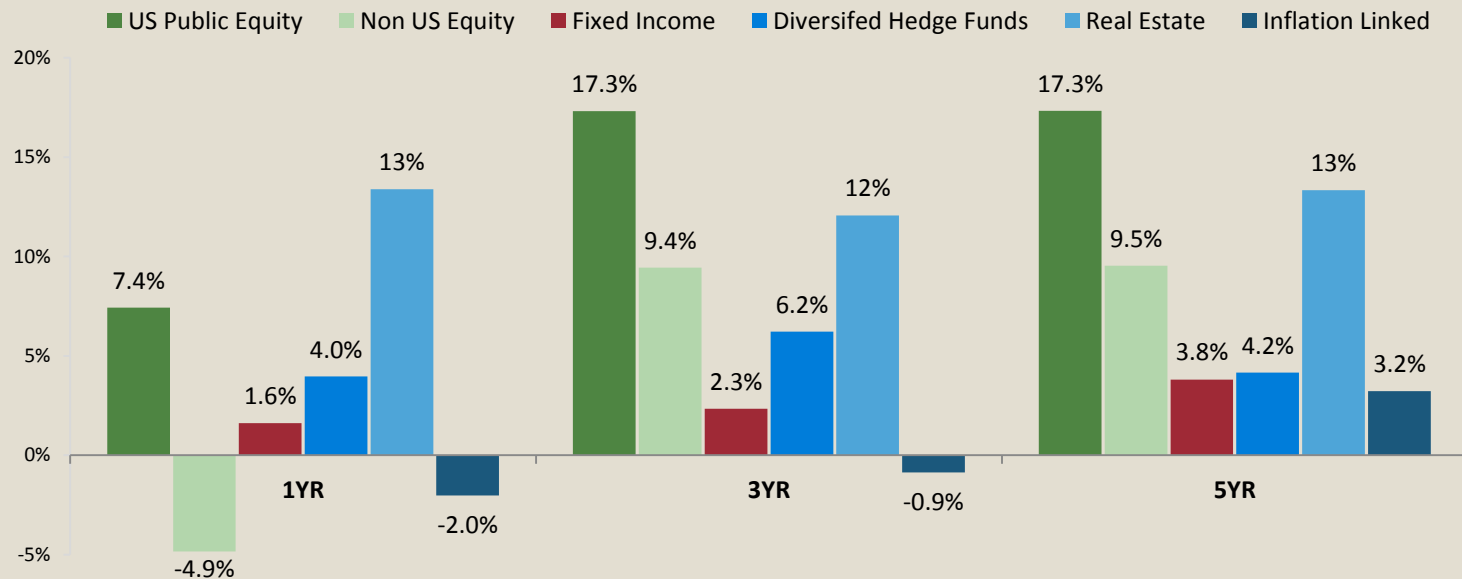
PERFORMANCE → Asset Class Results

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- More uncorrelated than prior years
 - US equity held strong, but global equity fell considerable
 - US Credit outperformed global/corporate bonds, but gross returns low
 - Some alternatives worked (RE and PE), others struggled (RA and Inflation Related)

Asset Class Index Returns

Periods Ending June 30, 2015



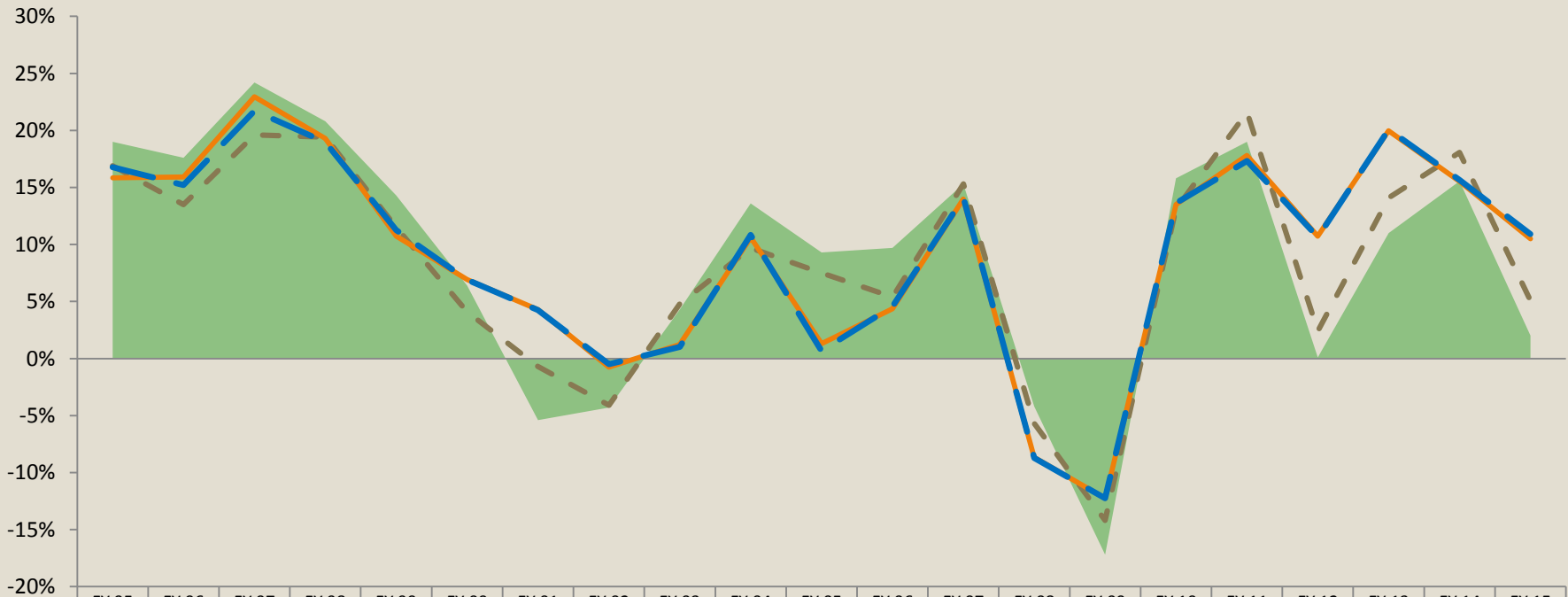
Source: US equity measured by return of S&P 500. Non US Equity measured by MSCI ACWI Ex-US. Fixed Income measured by Barclays Universal Bond Index. Diversified Hedge Funds measured by HFRI Fund of Funds Index. Real Estate measured by NCREIF NFI-ODCE. Inflation Linked measured by Barclays US TIPS. All returns as of 06.30.2015

Investment Returns → *FY Returns By System*

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Fiscal Year Returns

■ KRS
 - - - KTRS
 — JRP
 — LRP



	FY 95	FY 96	FY 97	FY 98	FY 99	FY 00	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15
KRS	19.0%	17.6%	24.2%	20.8%	14.3%	6.4%	-5.4%	-4.3%	4.3%	13.6%	9.3%	9.7%	15.3%	-4.2%	-17.2%	15.8%	19.0%	0.1%	11.0%	15.6%	2.0%
KTRS	16.9%	13.5%	19.6%	19.4%	11.5%	4.1%	-0.7%	-4.1%	4.8%	9.7%	7.5%	5.4%	15.3%	-5.7%	-14.2%	13.1%	21.6%	2.4%	14.1%	18.1%	5.1%
JRP	15.8%	15.9%	23.0%	19.3%	10.7%	6.9%	4.3%	-0.8%	1.2%	10.6%	1.3%	4.4%	14.0%	-8.7%	-12.3%	13.5%	17.8%	10.7%	20.0%	15.5%	10.5%
LRP	16.8%	15.2%	21.7%	19.0%	11.3%	6.9%	4.3%	-0.5%	1.0%	10.8%	0.7%	4.6%	14.1%	-8.7%	-12.2%	13.6%	17.3%	10.6%	20.1%	15.7%	10.9%

INVESTMENT PERFORMANCE

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Period Ending June 30, 2015

	MV	1 –Year	3-Year	5-Year	10-Year	20-Year
KRS Pension (N)	\$11.5 B	2.0%	9.3%	9.2%	6.1%	7.9%
Policy Benchmark		3.1%	9.6%	9.9%	6.3%	8.0%
KTRS Pension (G)	\$17.9 B	5.1%	12.3%	12.0%	7.0%	7.6%
Policy Benchmark ¹		3.4%	11.1%	11.3%	-	-
LRP (G)	\$97.2 M	10.9%	15.5%	14.9%	8.1%	8.4%
Policy Benchmark		4.7%	10.0%	10.4%	5.8%	6.7%
JRP (G)	\$332.8 M	10.5%	15.3%	14.9%	8.0%	8.5%
Policy Benchmark		4.7%	9.4%	9.9%	5.7%	6.6%

Peer Groups Median Returns

LRC Calculated <i>35 plans</i>	3.3%	10.8%	10.6%	6.8%	-
RV Kuhn's (G)	3.0%	10.5%	10.7%	6.4%	-
Wilshire TUCS (G)	3.4%	10.7%	11.0%	6.9%	-
BNY Mellon (G)	3.0%	-	11.0%	6.9%	-

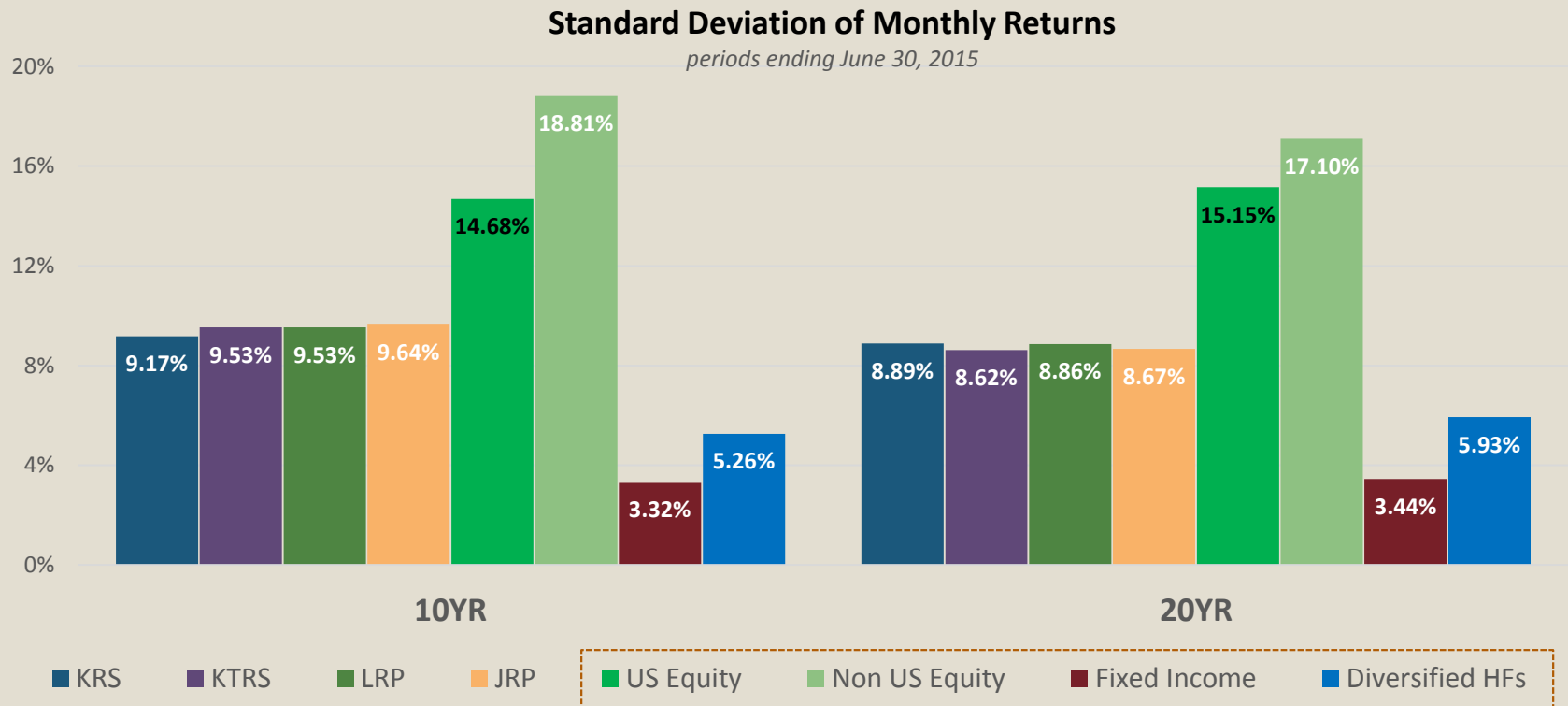
(G) Gross of fee return, (N) Net of Fee Return

¹ KTRS did not benchmark overall performance prior to July 1, 2008

PERFORMANCE → Risk or Volatility

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- All three plans exhibit reasonable risk characteristics
 - KRS had lowest standard deviation over 10 years, KTRS for 20 year period
 - Considerably less risk than public equity markets



ASSET ALLOCATION → *Public Pension Funds*

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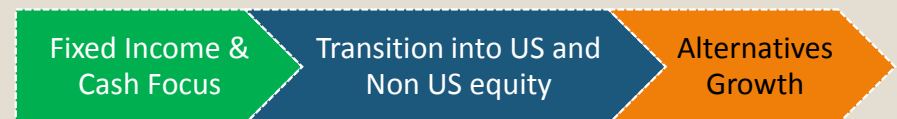
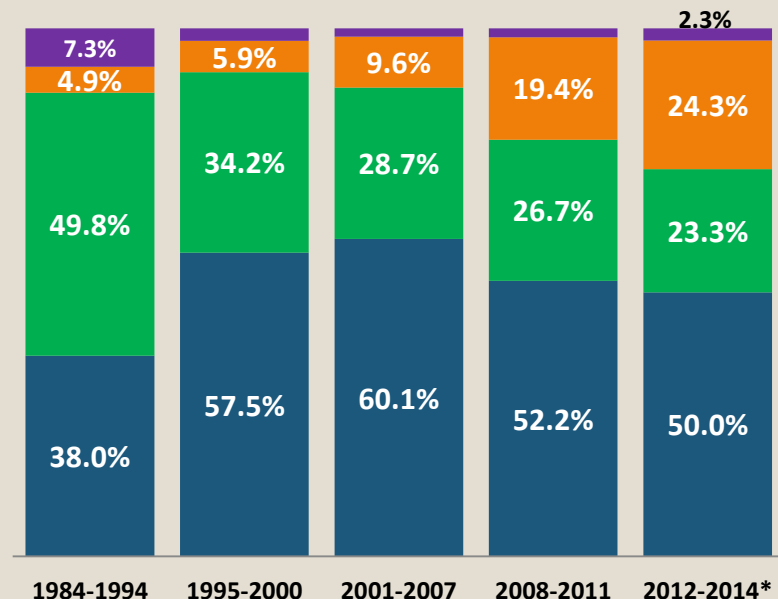
- **Asset Allocation continues to change across industry**

- Recent trend has seen increase in Alternatives (RE, PE, Real Return, HF)
- Alternative allocation declined slightly from prior year
- Cliffwater 2015 Annual study reported average allocation of 24%
- Others, including PEW, Wilshire, and Towers Watson

US Public Pension Funds

Historic Asset Allocation

■ Equity ■ Fixed Income ■ Alternatives ■ Cash



¹ 1984 -2011 data from <http://www.pionline.com/gallery/20121129/SLIDESHOW/112909999/3>
^{*} 2012-2014 data from <https://www.cliffwater.com/research>

ASSET ALLOCATION → KRS

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- **KRS has followed a similar trend**

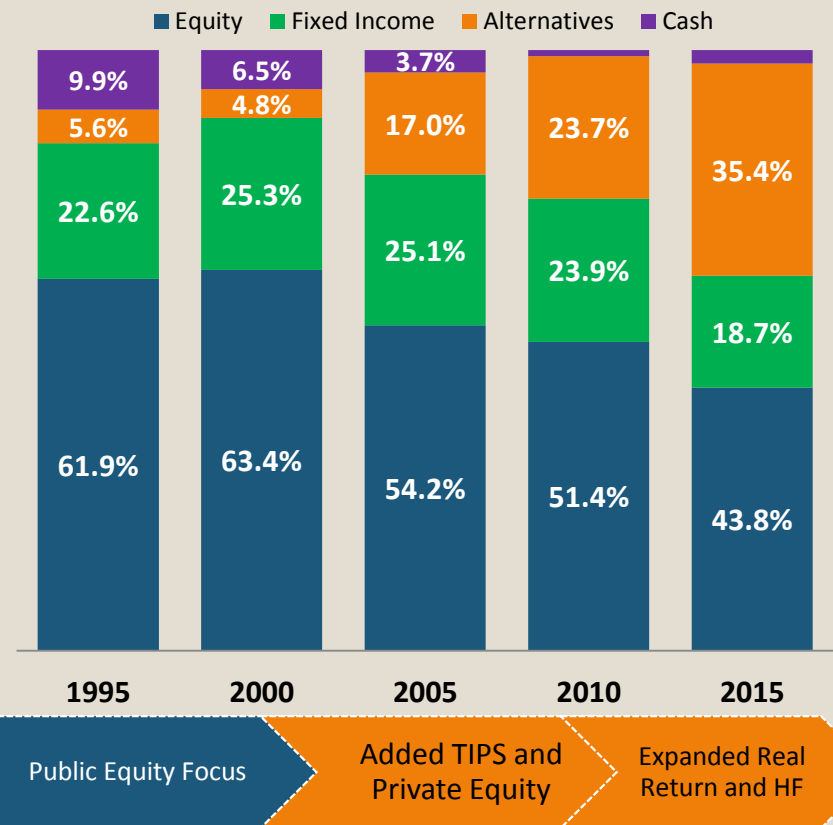
- Begin with Private Equity in 2001
- Added Hedge Funds in 2009
- Recently allocations to:
 - Real Return
 - Real Estate

- **Alternative Allocation includes**

- 10.7% Hedge Funds
- 9.7% Private Equity
- 5.3% Real Estate
- 9.7% Real Return

Kentucky Retirement Systems

Historic Asset Allocation



ASSET ALLOCATION → KTRS

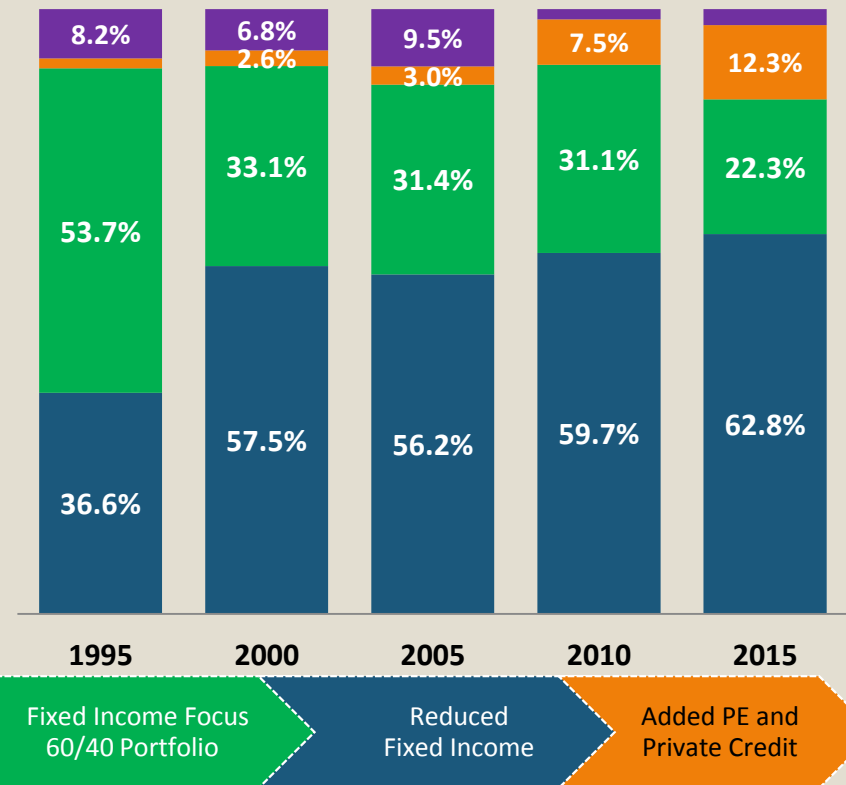
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- **KTRS similar, but slower trend**
 - Slower Adoption of Alternatives
 - Began Private Equity in 2008
 - Above Average Equity Allocation
 - Cash/Fixed Income has declined
- **Alternative Allocation includes**
 - 7.1% Private Equity/Credit
 - 4.1% Real Estate
 - 1.0% Real Return
 - 0.0% Hedge Funds

Kentucky Teachers Retirement System

Historic Asset Allocation

■ Equity ■ Fixed Income ■ Alternatives ■ Cash



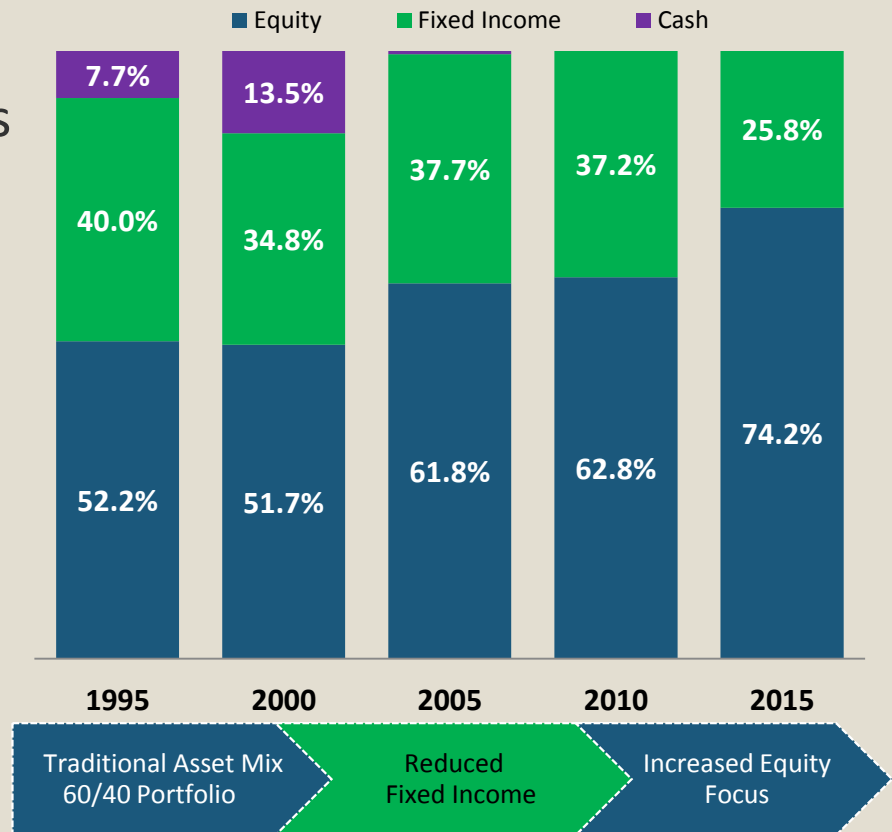
ASSET ALLOCATION → LRP

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- **LRP has remained traditional**
 - Has not adopted alternatives
 - Less diversified, traditional assets
 - Increased Equity Allocation
- **Peer Comparison**
 - No Non-US exposure
 - Higher Equity/Fixed Income

Legislative Retirement Plan

Historic Asset Allocation



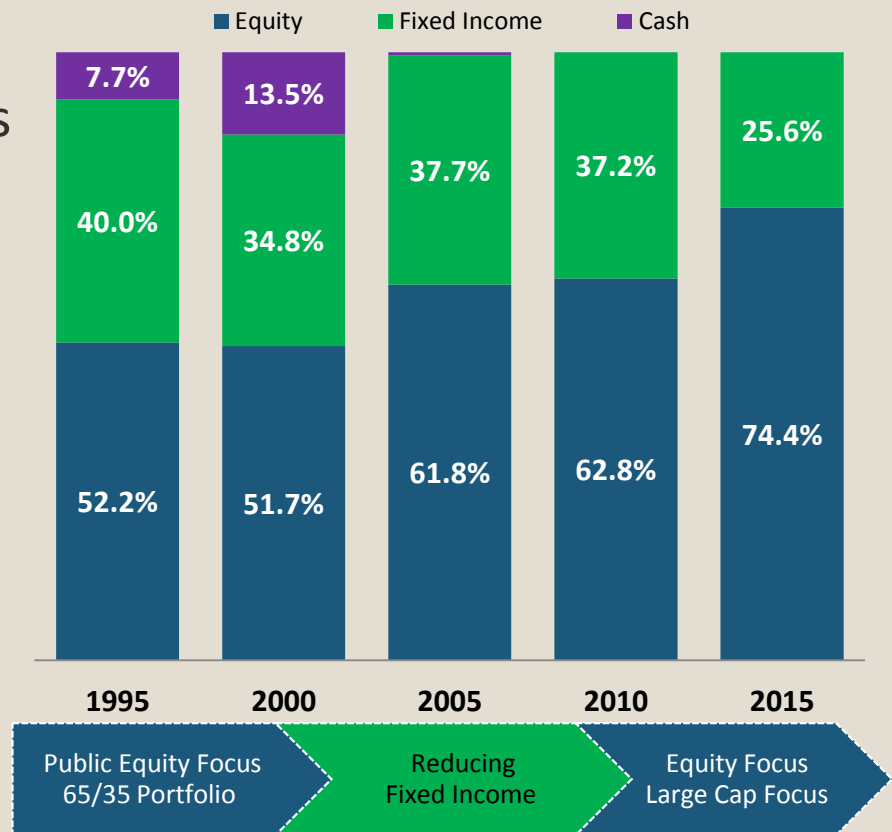
ASSET ALLOCATION → JRP

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- **JRP has remained traditional**
 - Has not adopted alternatives
 - Less diversified, traditional assets
 - Increased Equity Allocation
- **Peer Comparison**
 - No Non-US exposure
 - Higher Equity/Fixed Income

Judicial Retirement Plan

Historic Asset Allocation

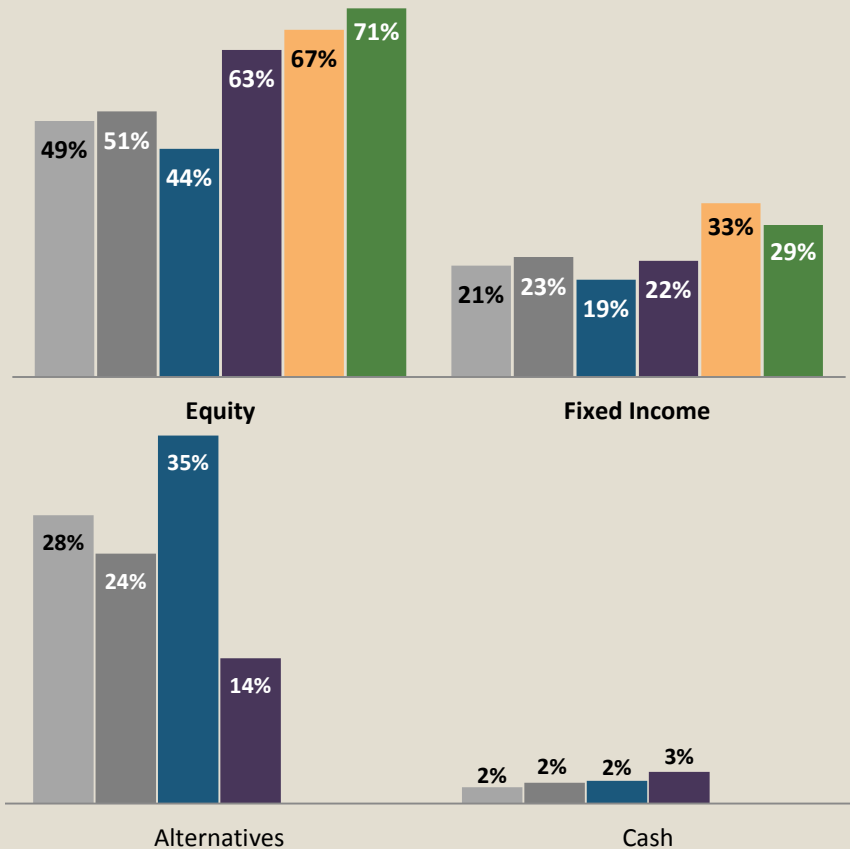


ASSET ALLOCATION → *KY Pension Comparisons*

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Peer Comparison

■ LRC Peer ■ Cliffwater ■ KRS ■ KTRS ■ JRP ■ LRP



KRS



Lowest Equity allocation



Highest allocation to alternatives

KTRS



Above Average Equity allocation



Lower Alternative vs. Peer group

LRP & JRP



Highest equity allocations



No Alternative exposure

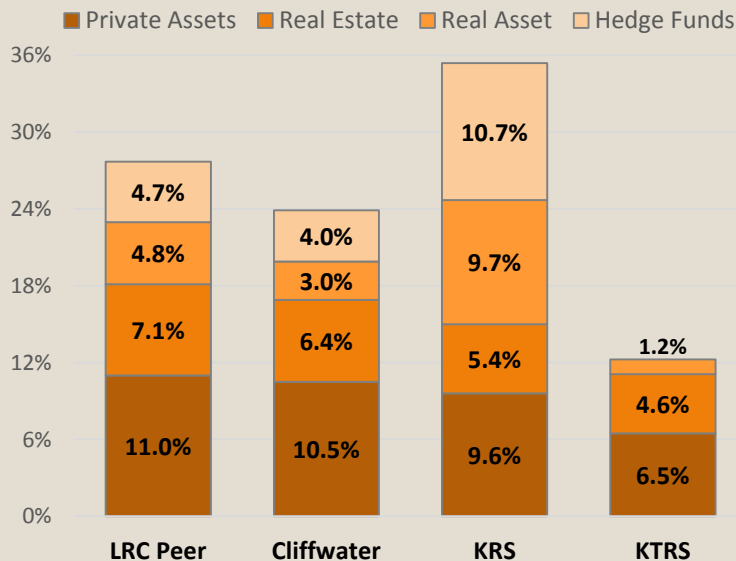
NOTE: LRC and Cliffwater Peer Groups are averages while KRS, KTRS, LRP, and JRP are actual as of 6/30/15

ASSET ALLOCATION → *Alternative Assets*

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- Breaking down Alternative Exposure a little more
 - State plans have added exposure recently, specifically within Hedge Funds and Real Assets
 - Significant discussion regarding fit for state plans and if benefits warrant use

Alternative Asset Breakdown



KRS

Healthy Allocation to Hedge Funds
Significant allocation to Real Return

KTRS

Have added to Private Assets
Small Real Asset allocation (Timber)
Direct Real Estate program

NOTE: LRC and Cliffwater Peer Groups are averages while KRS and KTRS are actual as of 6/30/15

Fees → Investment Expense By Plan

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- KRS and KTRS have many managers across multiple asset classes

	KRS			KTRS		
	Market Value	Fees ¹	BPS	Market Value	Fees ²	BPS
Global Equity	5,033,559,657	10,376,766	20.62	11,238,059,825	15,596,817	13.88
Private Equity	1,104,582,104	40,999,719	371.18	1,368,900,456	16,516,275	120.65
Real Assets	1,723,986,100	11,761,925	68.23	825,335,346	6,222,151	75.39
Fixed Income	2,145,359,836	7,626,751	35.55	3,984,853,673	3,408,808	8.55
Hedge Funds	1,231,943,209	13,137,276	106.64	-	-	-
Other ³	-	2,103,468	-	-	1,668,656	-
Total	11,239,430,906	86,005,905	76.52	17,417,149,300	43,412,707	24.93

¹ Fees include performance and carried interest fees.

² Fees do not include carried interest fees on Private Equity

Private Equity (155 base fee + 216 bps of performance), Absolute Return (67 base fee + 39 bps of performance) and Real Assets (56 base fee +12 bps of performance)

³ Other includes consultants, custody, legal and other operational expenses

- LRP and JRP have single manager, with flat fee agreement

	LRP			JRP		
	Market Value	Fees	BPS	Market Value	Fees	BPS
Asset Management	97,147,528	58,974	6.07	332,794,753	202,026	6.07
Custody	-	3,607	-	-	12,356	-
Total	97,147,528	62,581	6.44	332,794,753	214,382	6.44

STATUTORY REVIEW → Fees

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- A lot of interest on manager fees and expenses
 - Indirect Fees, such as performance fees or carried interest, not always reported
 - KRS Staff will present results of recent CEM study during future PPOB Meeting
- Where, Who and How will drive cost
 - WHERE: Some asset classes are more expensive than others
 - ✦ KRS has higher allocation to hedge funds and Real Assets. Private Equity portfolio
 - ✦ KTRS is adding to Private Assets, but has limited or no hedge funds/real assets
 - WHO: Managing assets internally can serve to reduce cost.
 - ✦ KTRS manages 35% of fund internally, specifically within US equity and Fixed Income
 - ✦ KRS does manage some U.S. equity, but no core fixed income. Only 18% of fund.
 - HOW: Number of managers and mandate sizes can also affect cost
 - ✦ KTRS currently utilizes approx. 30 managers¹, several who manage multiple strategies
 - ✦ KRS employs approximately 60 external managers¹

¹Does not include Private Equity partnerships

STATUTORY REVIEW → *Other Topics*

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- To meet statutory requirements, staff has reviewed the following:
 - Total Fund Objectives
 - ✦ Actuarial Return target of 7.50% (KRS and KTRS) and 7.0% (LRP/JRP)
 - ✦ Exceed Policy Benchmarks over market cycle (5 and 10 year periods)
 - Policies and Oversight
 - ✦ KRS – All policies available online at kyret.ky.gov/governance/Pages/transparency.aspx
 - ✦ KTRS – Investment Policy recorded as Administrative Regulation (102 KAR 1:175).
Board Governance manual, which includes several policies, available online
 - ✦ LRP/JRP - Policies not available online, but Staff did review hard copies.
 - Securities Litigation and Annual Recoveries
 - ✦ KRS – Filed 80 claims. \$23,639,564 proceeds received
 - ✦ KTRS – Filed 16 claims. \$2,091,167.25 proceeds received
 - ✦ LRP – No claims filed or proceeds received
 - ✦ JRP – No claims filed. \$1,063 proceeds received

INVESTMENT REVIEW → Allocation & Targets

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- Current Asset Allocation, Targets, and allowable ranges
 - No significant changes from prior fiscal year
 - Additional Categories from KTRS a little unusual

KRS			
	Actual	Target	Range
US Equity	20.7%	20.5%	+/- 5%
Non US Equity	23.1%	22.9%	+/- 7%
Fixed Income	18.7%	19.3%	+/- 7%
Real Estate	5.3%	4.5%	+/- 3%
Absolute Return	10.7%	10.0%	+/- 3%
Real Return	9.7%	10.0%	+/- 3%
Private Equity	9.6%	10.0%	+/- 5%
Cash	2.1%	2.8%	+/- 2%

LRP			
	Actual	Target	Range
US Equity	74.2%	70.0%	+/- 10%
Fixed Income	25.8%	30.0%	+/- 10%
Cash	0.1%	0.0%	

KTRS			
	Actual	Target	Range
US Equity	43.6%	42.0%	+/- 4%
Non US Equity	19.2%	20.0%	+/- 3%
Fixed Income	17.4%	16.0%	+/- 3%
Real Estate	4.6%	5.0%	+/- 2%
Alternative Investments ¹	4.7%	6.0%	+/- 3%
Additional Categories	7.9%	9.0%	+/- 3%
Cash	2.6%	2.0%	+/- 1%

¹ Includes PE, Venture Capitol, Timber, and Infrastructure Investment

JRP			
	Actual	Target	Range
US Equity	74.4%	70.0%	+/- 10%
Fixed Income	25.6%	30.0%	+/- 10%
Cash	0.1%	0.0%	

- KRS currently in final stages of ALM. KTRS most recent was 2013

INVESTMENT REVIEW → *Benchmarks*

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- **Asset Class and Total Fund Benchmarks**

- All plan using recognized and industry known indices
- LRP and JRP discounted Fund Benchmarks a bit unusual
- Alternative indices limited, most plan using a public index + model

KRS	BM%	Benchmark
US Equity	20.5%	Russell 3000
Non US Equity	22.9%	MSCI ACWI Ex US Standard
Fixed Income	19.3%	Barclays Universal Index
Real Estate	4.5%	NCREIF ODCE
Absolute Return	10.0%	HRFI Diversified FOF
Real Return	10.0%	Custom - Allocation Specific
Private Equity	10.0%	Actual Performance (< 5Yrs) or Russell 3000 + 400 bps (5+ Yrs)
Cash	2.8%	Citigroup 3-Mo Treasury Bill

LRP	BM%	Benchmark
US Equity	70%	80% of S&P 500
Fixed Income	30%	90% Barclays Intermediate Government/Credit

JRP	BM%	Benchmark
US Equity	70%	80% of S&P 500
Fixed Income	30%	90% Barclays Intermediate Government/Credit

KTRS	BM%	Benchmark
US Equity	42.0%	88.1% S&P500 + 7.1% S&P400 + 4.8% S&P600
Non US Equity	20.0%	MSCI ACWI Ex US
Fixed Income	16.0%	Barclays Government/Credit
Real Estate	5.0%	60% CPI + 2% + 20% NCREIF ODCE + 20% NCREIF
<u>Alternative Investments</u>		
Timberland	1.0%	NCREIF Timberland
Private Equity	5.0%	Actual Performance (< 5Yrs) or S&P500 + 300 bps (5+ Yrs)
Additional Categories	9.0%	Merrill Lynch High Yield
Cash	2.0%	90 Day T-Bill

INVESTMENT REVIEW

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