Inflation Linked Assets

Asset Class Review

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Arizona State Retirement System

December 1, 2014

Outline

1. Background
   - Evolution of the ASRS Inflation-linked program
2. Private Markets
   - Real Estate
   - Agriculture
   - Infrastructure
   - Timber
3. Public Markets
   - Commodities

Inflation Linked Assets

- Inflation linked assets are positively linked to inflation through their value and income streams
- Inflation linked assets are one of three major asset classes (along with equities and fixed income) as defined in the ASRS strategic asset allocation
- Inflation linked assets are implemented in both private and public markets
- Private market inflation linked assets are
    - Real estate
    - Farm land
    - Infrastructure
    - Timber
- Investments in commodities are generally implemented through highly liquid derivatives markets

The 2009 Asset Allocation Study

- The 2009 Strategic Asset Allocation Study established Inflation-linked as an asset class
  - Commodities & TIPS
    - Positive short and medium-term correlation to inflation
    - Diversification benefits from low correlation to traditional asset classes & low correlation among one another
- During 2009-2011 used TIPS opportunistically
  - Blackrock US TIPS passive
- In Q3 2010 ASRS hired two commodities managers
  - Gresham & Cargill

2009 Inflation Linked Allocations

Asset Class	Target	Range	Benchmark
Commodities	3%	0-5%	DJ UBS Total Return
TIPS	0%	0-5%	Barclay's TIPS
Total IL	3%	0-10%	

The 2012 Asset Allocation Study

- The 2012 Strategic Asset Allocation Study further built out the Inflation-linked program
  - Real Estate: Increased target allocation to 8% from 6%
  - Commodities: Increased target allocation from 3% to 4%
  - Farmland & Timber, Infrastructure, and Opportunistic Inflation-linked each established as asset classes, with 0% target allocation and 0-3% range

2012 Inflation Linked Allocations

Asset Class	Target	Range	Benchmark
Commodities	4%	1-7%	DJ UBS Total Return
Real Estate	8%	6-10%	NCREIF ODCE
Infrastructure	0%	0-3%	Core CPI plus 3.5%
Farmland & Timber	0%	0-3%	Core CPI plus 3.5%
Opportunisitic	0%	0-3%	Investment Specific
Total IL	12%	8-16%	

Real Estate Investment Philosophy

- As part of the inflation linked category, the primary role of real estate is cash flow generation from properties where we believe there is a likelihood of rental increases in the long run
- The real estate strategic plan establishes a goal for the portfolio of 65% (+/- 10%) in core and value add properties implemented primarily through separate accounts or open end funds in a long term hold strategy. The remainder of the assets are targeted to be held in opportunity fund style investments.
- The program is benchmarked against the NCREIF ODCE index, but is structured to achieve a target return of 8%. The real estate strategic plan provides the following guidance:

"By selecting the NFI-ODCE as benchmark, the ASRS considers this benchmark as an opportunity cost, not a model portfolio. The ASRS expects that its portfolio will vary significantly from the ODCE index. The ASRS will manage its investments actively and dynamically in the real estate asset class in order to target a net return expectation of 8%. The 8% net objective represents a significant premium over the 6.5% net long term expectation for passive, stable, equity real estate positions."

Real Estate Implementation Philosophy

- Real estate assets are long term assets and frequent trading tends to detract from returns
- Rental increases occur in situations with high demand and constraints on supply
- Trends tend to be durable in real estate and should not be ignored. Some important trends are:
  - The demographics of baby boomers and their children profoundly affect real estate demand
  - E-commerce affects utilization of industrial and retail space
  - The structure of employment away from goods producing to service occupations affects the geographic dispersion of economic activity
  - Urbanization is a continuing trend with a pattern of globally significant cities emerging
  - Office utilization is becoming much more efficient with a strong downward trend of space utilization per employee

Demand Driven Investing

- In order to capitalize on these trends, we are creating a customized investment strategy that we refer to as "demand driven investing".
  - We believe the risk of real estate is not having tenants
  - We search for opportunities with strong demand fundamentals driven by age and income demographics, education levels, concentrations of high quality jobs and other relevant location criteria
- We identify sectors that have favorable demand dynamics with demographic or other economic tail wind and search for markets with supply barriers
  - Apartments, industrial, self-storage, medical office, senior housing, student housing, value-add multi-strategy
- We have implemented a robust search and recruitment process to find the most qualified parties to be our partners in this program
  - Identify first tier operators in each of these sectors to implement through custom separate account arrangement

Niche and Tactical Investing

- In 2014, we commenced a niche and tactical investing program
- These investments focus on
  - niche opportunities requiring specialized execution
  - tactical investment stemming from temporal opportunities or dislocation
- We have invested in the following strategies under this program
  - Urban retail
  - Apartments in locations benefiting from energy development
  - Value add office in non-core markets trading at a wide spreads to core office

Current Portfolio

- The current portfolio construction is described in the next four slides
- The current portfolio is underweight in total allocation compared to the strategic target of 8%
- The current portfolio is substantially overweight to opportunity fund strategies compared to the strategic plan targets
- This will be transitioned to strategy weights as legacy positions liquidate and through implementation the strategic manager program

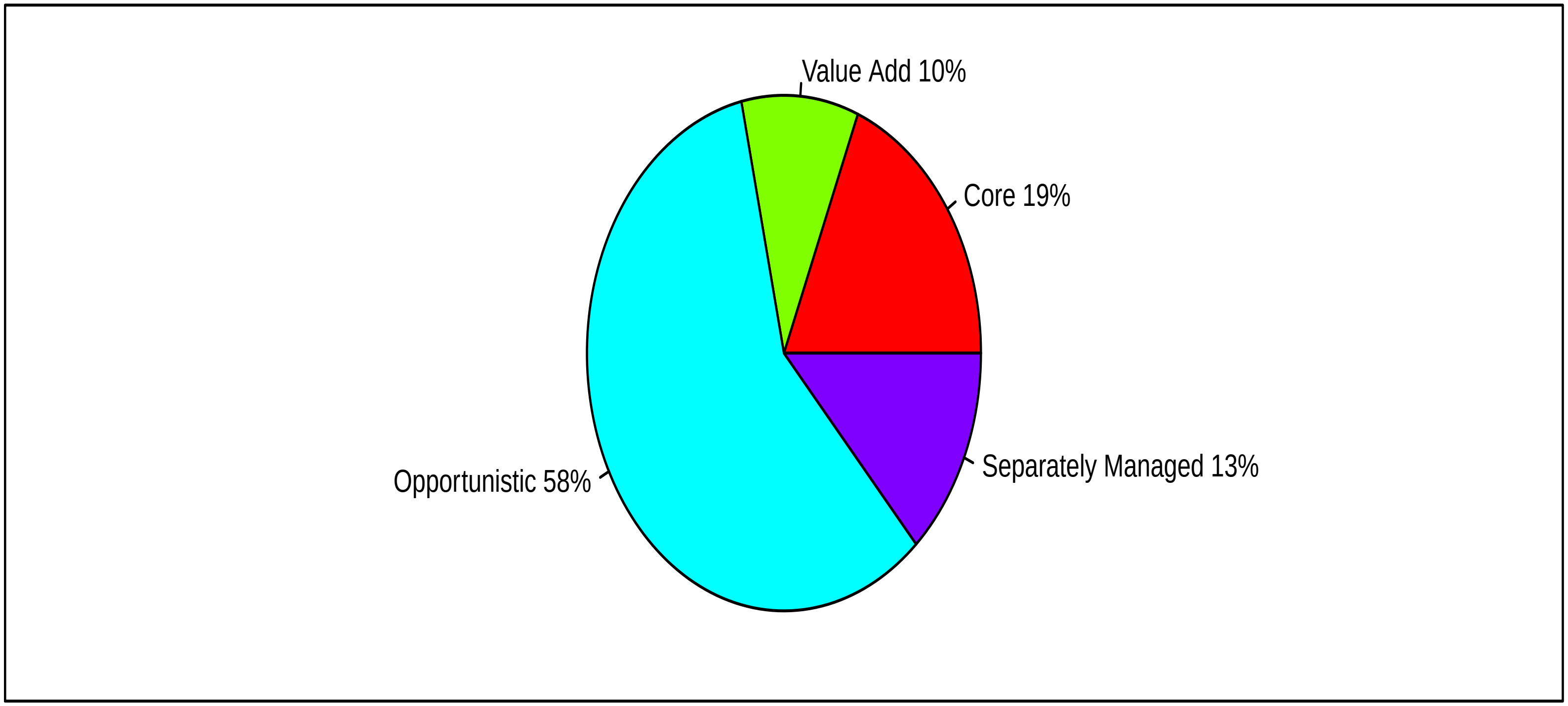
Current Portfolio

Real Estate Portfolio as of June 30, 2014

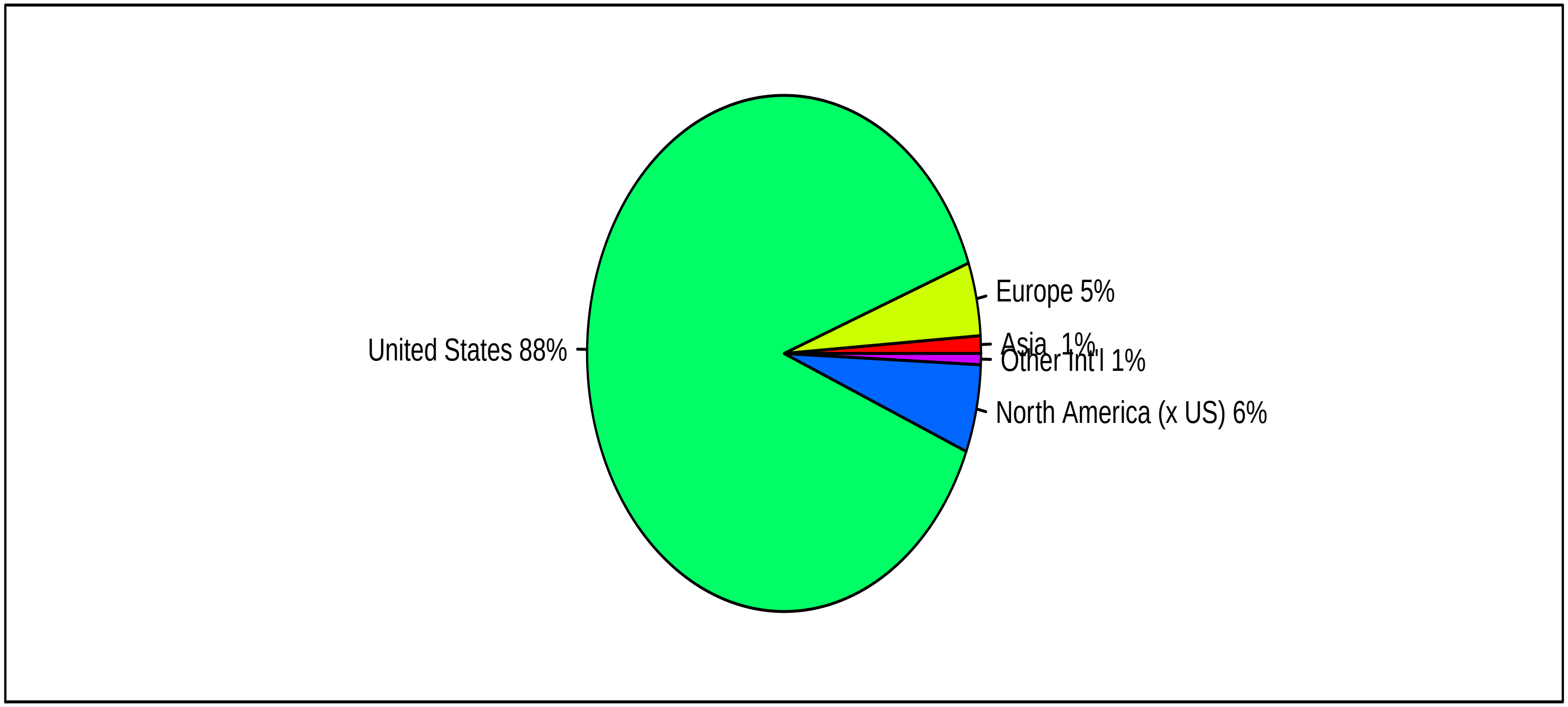
	$ millions	Percent of ASRS Total Fund
Net Asset Value	2,077	5.96%
Total Commitments to RE partnerships	3,233	9.27%

- Current Portfolio is $712 million below the target funding of 8%
- Commitments exceed target funding in order to achieve the target because later stage funds return cash offsetting capital demands from newer investments
- We update a pacing study each year to determine amount of new commitments

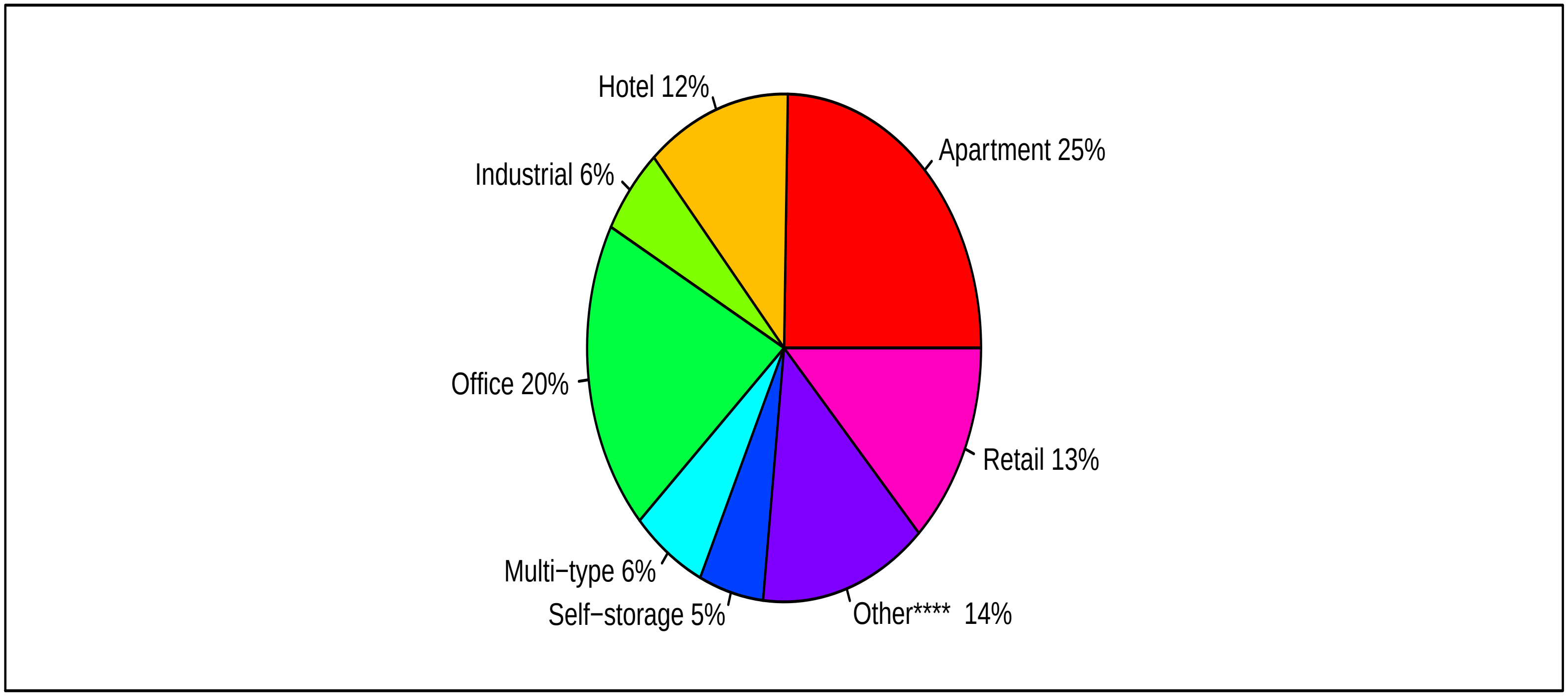
Current Portfolio by Strategy



Current Portfolio by Geography

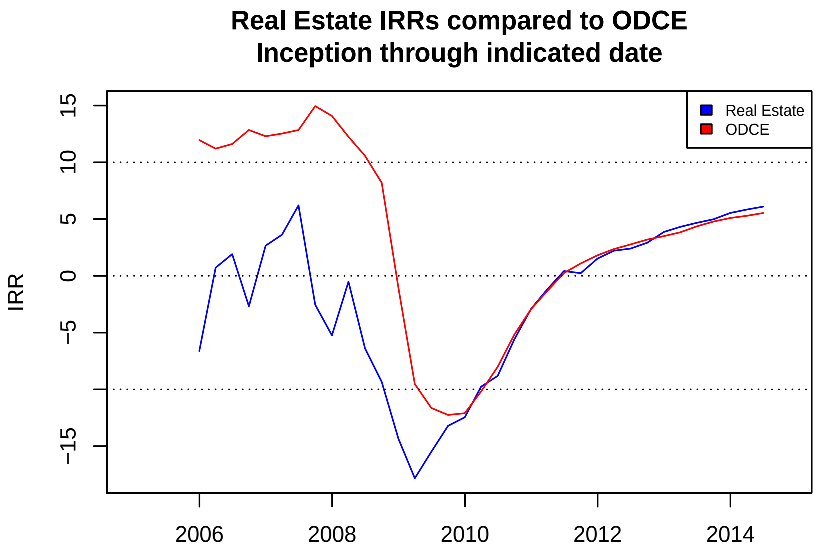


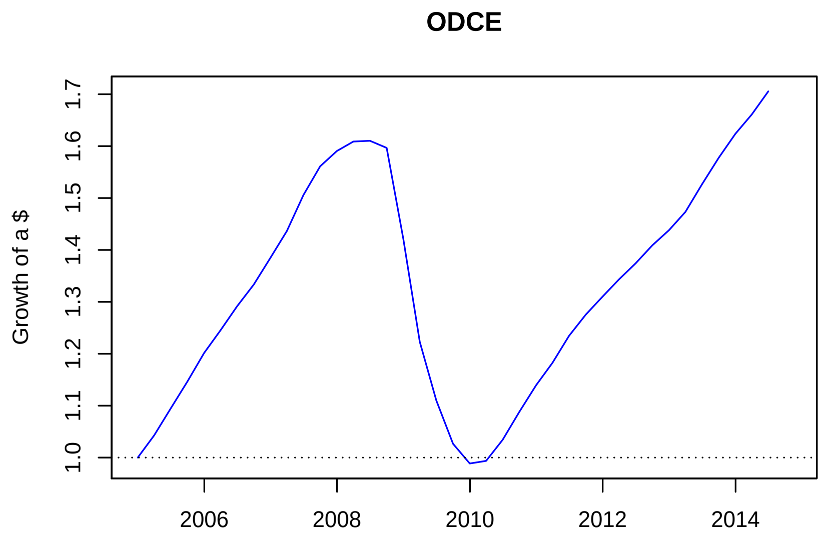
Current Portfolio by Property Type

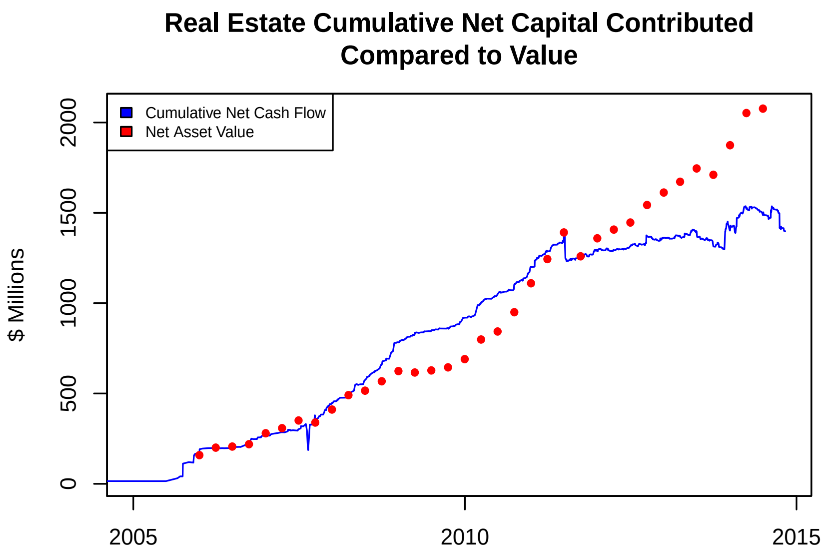


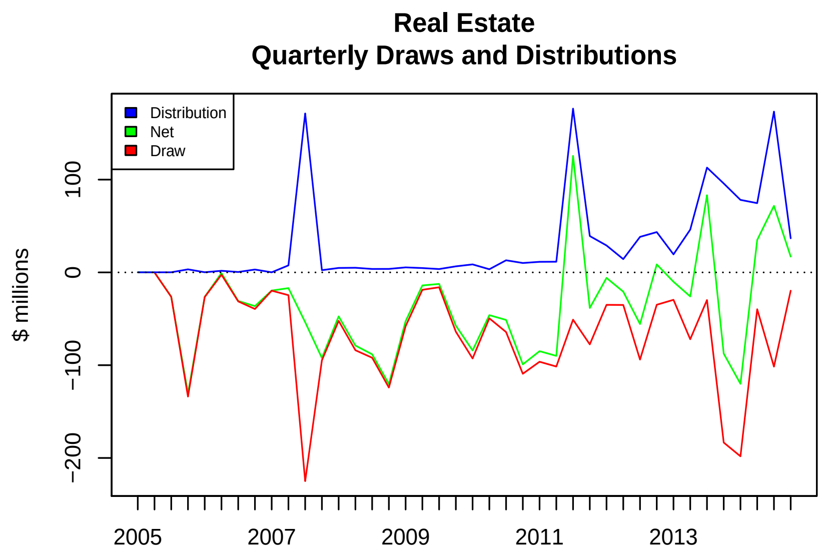
Performance

- The charts and tables on the following pages illustrate the performance of the real estate portfolio
- The real estate portfolio underperformed its benchmark in its early years, but recent out-performance has brought the inception to date performance above benchmark levels
- As noted above a majority of assets are invested in opportunity funds which have, as would be expected, underperformed during down markets but outperformed in up markets
- While it will be a number of years before these investments are fully realized, there does not appear to be strong evidence that the additional risk from opportunity fund concentration has been rewarded
- This performance history led to a reconsideration of strategies and amendments to the strategic plan that are now being implemented


Real Estate IRRs compared to ODCE
Inception through indicated date
Real Estate
ODCE
IRR
15
10
5
0
−5
−15
2006
2008
2010
2012
2014


ODCE
Growth of a $
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
2006
2008
2010
2012
2014


Real Estate Cumulative Net Capital Contributed
Compared to Value
Cumulative Net Cash Flow
Net Asset Value
$ Millions
0
500
1000
1500
2000
2005
2010
2015


Real Estate
Quarterly Draws and Distributions
Distribution
Net
Draw
$ millions
100
0
−100
−200
2005
2007
2009
2011
2013

Returns for Periods Ended June 30, 2014

Time Weighted Returns

	One Quarter	One Year	Three Years	Five Years	Inception
Real Estate TWR	2.87%	13.78%	12.36%	12.02%	3.97%
ODCE TWR	2.69%	11.75%	11.38%	8.97%	5.05%

IRRs

	One Quarter	One Year	Three Years	Five Years	Inception
Real Estate IRR	2.90%	13.68%	12.41%	12.79%	6.10%
ODCE IRR	2.69%	11.70%	11.35%	10.25%	5.53%

Opportunistic Investments

Real Estate Related Opportunistic Investments

	Commitment	Net Amount Inveted	NAV	Inception IRR
OCM STR Co-Invest 1, L.P.	150	139.44	181.22	19.2%
56th and Park (NY) Holdings, LLC	50	35.95	95.63	194.4%

- These investments are included in the private opportunistic equity portfolio
- OCM Store is a private REIT based in Scottsdale investing in single tenant net lease properties
- 56th and Park is a condominium at 432 Park in Manhattan

Performance Accountability

The following table shows performance for legacy real estate investments and those by the current management team.

Portfolio Returns

	Portfolio IRR	ODCE IRR	Outperformance
Total RE Legacy Portfolio	5.27	5.03	0.23
Total RE Current Portfolio	15.78	11.44	4.34
Real Estate Opportunistic	37.53	11.31	26.22
Combined Current Real Estate	20.85	11.41	9.44

The following table shows performance of the current consulting team.

Consultant Returns

	Portfolio IRR	ODCE IRR	Outperformance
RCLCO Real Estate	3.05	11.10	-8.05
RCLCO Opportunistic	194.39	10.61	183.77
RCLCO Combined	34.96	11.14	23.82

- The real estate returns reflect the strategic manager program and the opportunistic return is 432 Park
- The strategic manager program achieved positive returns ahead of schedule with less than a year of operation

State of the Real Estate Market

- Real estate markets have recovered unevenly
  - Major markets have high investor demand and are at new peak prices
  - Non-major markets are still below prior peaks
- Supply demand fundamentals vary by region and property type
- Real estate investment fund raising has improved and global dry powder exceeds $200 billion

Cap Rates and Interest Rates

- Cap Rates have fallen to a national average of a little over 6%
- Cap Rates in major markets are below 4% for stable property
- This 200bp to 400bp spread to treasuries is higher than historical average leaving some room for rate increases without disrupting property markets

Property Fundamentals

- Apartments nationally have less than 5% vacancy and exhibit steady rental growth
    - high demand urban markets have housing shortages and high rental growth
- Office recovery is mixed with national vacancy still above 15%
- Retail performance is mixed with "big box" formats impacted by e-commerce but grocery anchored in good locations performing well
- Industrial absorption has been averaging over 100 million square feet per year nationally with shortages of space in strategic locations

Looking Forward

- The challenge in real estate investing in coming years will be to adapt to a rising interest rate environment
- ASRS strategy in this context is
  - Avoid new investments in stabilized core in coastal markets
  - Pursue special property types with favorable demographic demand drivers (medical office, senior housing, student housing, self-storage)
  - Pursue "build-to-core" style development opportunity when risk is mitigated by
    - High demand/high barrier apartment/senior housing location
    - Substantial pre-leasing
    - Partnership with a highly experienced operator with large co-invest
- We review strategies annually and will present an implementation plan to the private markets committee in December

Farm Land Investing

- ASRS invests in farm land for its long-term inflation protection linked to the value of land and its income generation
- ASRS invested $175 million International Farming Corp (IFC)
  - IFC is a multi-generational U.S. farming corporation with deep operational expertise
  - They pursue a diversified and value add approach to agricultural investing
    - Diverse crop mix and geography
    - prefer properties with crop optionality
    - prefer properties with natural resource optionality (water and mineral rights)
    - Avoids the expensive Midwest 'I' states (Iowa, Illinois, and Indiana)
    - Current focus is southern California, northwest, lower Mississippi and Florida
  - ASRS negotiated custom structure with right-of-first-offer (ROFO) rights to buy assets upon sale from the fund
  - Inception IRR through June 30, 2014 is 1.5% reflecting less than a one year hold on the assets

Infrastructure

- ASRS invests in infrastructure for long-term inflation protected income streams from assets and systems that support transportation, energy, shipping, and communications
  - Global needs exist to support rising populations and antiquated operations
- ASRS invested $300 million with Industry Funds Management (IFM), an Australian-based infrastructure manager that invests globally using a core strategy in an open end fund structure
  - No capital has been called as yet, but ASRS is next in the queue
  - Fund structure provides diversity of exposure across strategies and geography
  - Long term vehicle structure is aligned with long term character of assets
  - Focused on OECD countries; current portfolio invests across US, UK, and Europe
  - Investments include airports, a petroleum pipeline, power generation & transmission facilities, regulated water & wastewater treatment company, and broadcast and wireless communication infrastructure

Timber

- Timber is a permitted asset in the inflation linked group because it can provide long-term inflation protection income derived from the rising utilization of timber and shrinking forest sizes
- Timber has a low correlation with other asset classes combined with low volatility
- ASRS has has made no investments in timber but monitors the space
- Should ASRS pursue this strategy, it will seek alignment of asset and vehicle life similar to other private markets inflation-linked assets

Background of ASRS Commodities Program

- ASRS approved a 3% (0%-5%) strategic allocation to commodities in October 2009. After an in-depth search, ASRS invested just over half of the allocation with two long-only commodities investment managers
  - Gresham - $200M on 8/30/2010
    - Systematic rules-based approach is used to construct and rebalance the portfolio. A discretionary, market-driven approach is used to implement and roll commodity futures.
  - Cargill - $200M on 9/30/2010
    - Fundamental, bottom up approach using trading desks to construct a regional and global supply/demand balance sheet for each commodity market in which Cargill participates
  - ASRS legged into its allocation to avoid chasing returns and because of valuation concerns.
  - ASRS GTAA managers' benchmark also included a 3% allocation to commodities.

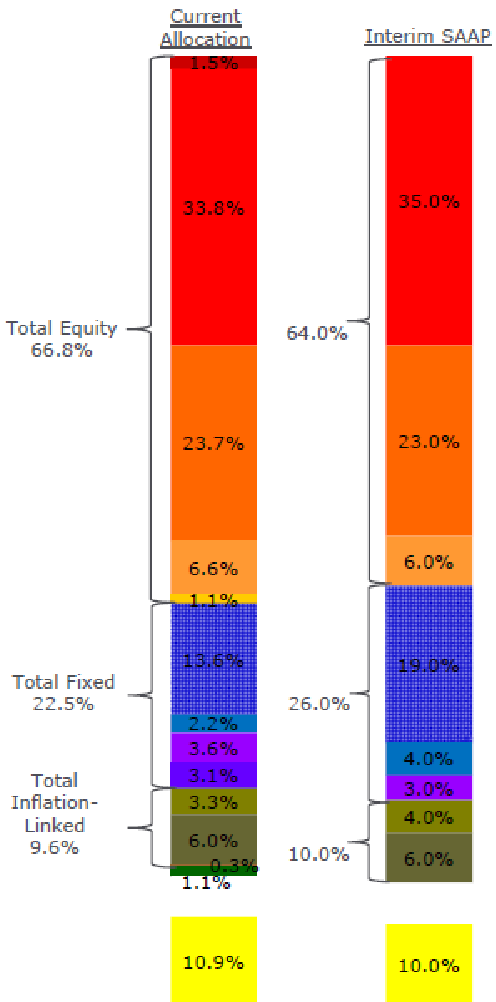
Background of ASRS Commodities Program (2)

- At the Board meeting on June 15, 2012, ASRS approved new strategic asset allocation policy targets which included a 4% (1%-7%) strategic allocation to commodities.
  - Over the past year, ASRS has maintained its tactical underweight to commodities.
    - Relative underperformance of asset class has resulted in further underweight to commodities from -0.5% (9/30/2013) to -0.7% (9/30/2014).
    - ASRS maintains its single manager relationship in commodities with Gresham. ASRS is comfortable with Greshams' role due to consistent outperformance, exceptional client service, and low fees
  - ASRS GTAA managers' benchmark also includes a 4% allocation to commodities.

ASRS Commodities Asset Class Overview as of 9/30/2014

Arizona State Retirement System

SAA Policy Compliance



	Current Mkt Value	Current Allocation	Interim SAAP	Difference	Policy Range	Within Range
Total Domestic and International Equity[1]	$20,107,558,419	59.0%	58.0%	1.0%		
Domestic Equity[3]	$11,503,593,068	33.8%	35.0%	-1.2%	26% - 38%	Yes
U.S. Large Cap[2]	*$8,666,173,427*	*25.4%*	*25.0%*	*0.4%*		
U.S. Mid Cap	*$1,485,956,040*	*4.4%*	*5.0%*	*-0.6%*		
U.S. Small Cap	*$1,351,463,600*	*4.0%*	*5.0%*	*-1.0%*		
International Equity[3]	$8,086,764,651	23.7%	23.0%	0.7%	16% - 28%	Yes
Developed Large Cap[2]	*$4,932,651,025*	*14.5%*	*14.0%*	*0.5%*		
Developed Small Cap	*$1,201,570,116*	*3.5%*	*3.0%*	*0.5%*		
Emerging Markets	*$1,952,543,510*	*5.7%*	*6.0%*	*-0.3%*		
Private Equity[4]	$2,249,040,843	6.6%	6.0%	0.6%	5% - 9%	Yes
Opportunistic Equity[4,6]	$378,636,388	1.1%	0.0%	1.1%	0% - 3%	Yes
Total Equity	$22,735,235,649	66.8%	64.0%	2.8%	53% - 70%	Yes
U.S. Fixed Income[3]	$4,628,342,436	13.6%	19.0%	-5.4%	8% - 28%	Yes
Core[2]	*$3,665,661,126*	*10.8%*	*14.0%*	*-3.2%*		
High Yield	*$962,681,310*	*2.8%*	*5.0%*	*-2.2%*		
Emerging Market Debt	$735,153,288	2.2%	4.0%	-1.8%		
Private Debt[4]	$1,241,477,856	3.6%	3.0%	0.6%		
Opportunistic Debt[4,6]	$1,062,075,523	3.1%	0.0%	3.1%	0% - 10%	Yes
Total Fixed Income	$7,667,049,102	22.5%	26.0%	-3.5%	15% - 35%	Yes
Commodities[2]	$1,108,360,052	3.3%	4.0%	-0.7%	1% - 7%	Yes
Real Estate[2,4]	$2,056,715,973	6.0%	6.0%	0.0%	6% - 10%	Yes
Infrastructure	$0	0.0%	0.0%	0.0%	0% - 3%	Yes
Farmland and Timber[4]	$116,218,653	0.3%	0.0%	0.3%	0% - 3%	Yes
Opportunistic Inflation-Linked[6]	$0	0.0%	0.0%	0.0%	0% - 3%	Yes
Total Inflation-Linked	$3,281,294,679	9.6%	10.0%	-0.4%	8% - 16%	Yes
Cash[5]	$374,540,574	1.1%	0.0%	1.1%		
Total	**$34,058,120,005**	**100.0%**	**100.0%**	**0.0%**		
Global Tactical Asset Allocation (GTAA)[2]	$3,729,097,756	10.9%	10.0%	0.9%	5% - 15%	Yes

[1]Total Domestic and International Equity includes Equity Risk Factor Portfolio with assets of $517.2 million.

[2]GTAA allocation distributed into U.S. Large Cap Equity, Int'l Developed Large Cap Equity, Core Fixed Income, Commodities and Real Estate.

[3]Domestic Equity, International Equity and U.S. Fixed Income market values include residual values remaining in terminated manager accounts.

[4]Values shown for private markets portfolios include cash flows that occurred during 3Q 2014.

[5]Cash includes money for the upcoming monthly pension distribution. Value shown also includes assets in liquidating GTAA account.

[6]Aggregate Opportunistic asset classes not to exceed 10%.

Note: Interim SAA Policy includes proration of 1% Private Equity and 2% Real Estate, which are unfunded.

Policy Ranges shown are relative to the long-term SAAP, causing some asset classes to be out of range while implementation of the long-term SAAP is in process.

Market values include manager held cash.

NEPC, LLC

September 30, 2014

Commodities Performance

Arizona State Retirement System

Asset Class Performance Summary - Public Markets

	Market Value ($)	% of Portfolio	3 Mo (%)	Rank	9 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Since
Total Inflation-Linked Assets	769,188,043	2.3	-10.9	--	-4.5	--	-5.5	--	-3.2	--	--	--	--	--	-0.7	Feb-10
ASRS Custom Inflation-Linked Benchmark			*-11.8*	--	*-5.6*	--	*-6.6*	--	*-5.3*	--	*-1.8*	--	*1.4*	--	*-2.7*	*Feb-10*
Over/Under			0.9		1.1		1.1		2.1						2.0	

as of 9/30/14

				Net Returns (%)								Excess Returns (basis points)							
								Annualized								Annualized			
	Style	Inception	Amount ($mil.)	Month	3 Months	YTD	1 Year	3 Years	5 Years	10 Years	ITD	Month	3 Months	YTD	1 Year	3 Years	5 Years	10 years	ITD
GLOBAL INFLATION LINKED																			
GRESHAM	FUNDAMENTAL	09/01/2010	761	-1.08	-8.02	-5.57	-5.61	-5.65	---	---	0.34	-27	-7	78	33	194	---	---	277
Bloomberg Commodity Index Total Return				-0.80	-7.95	-6.35	-5.94	-7.59	---	---	---								
TOTAL GLOBAL INFLATION LINKED			$ 761																

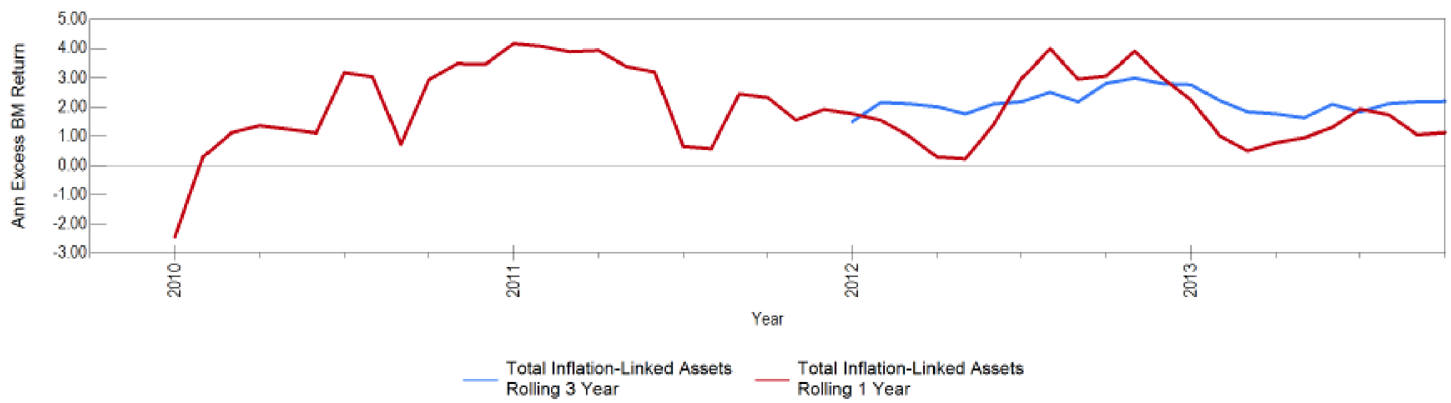
as of 10/31/14

Commodities Excess Return

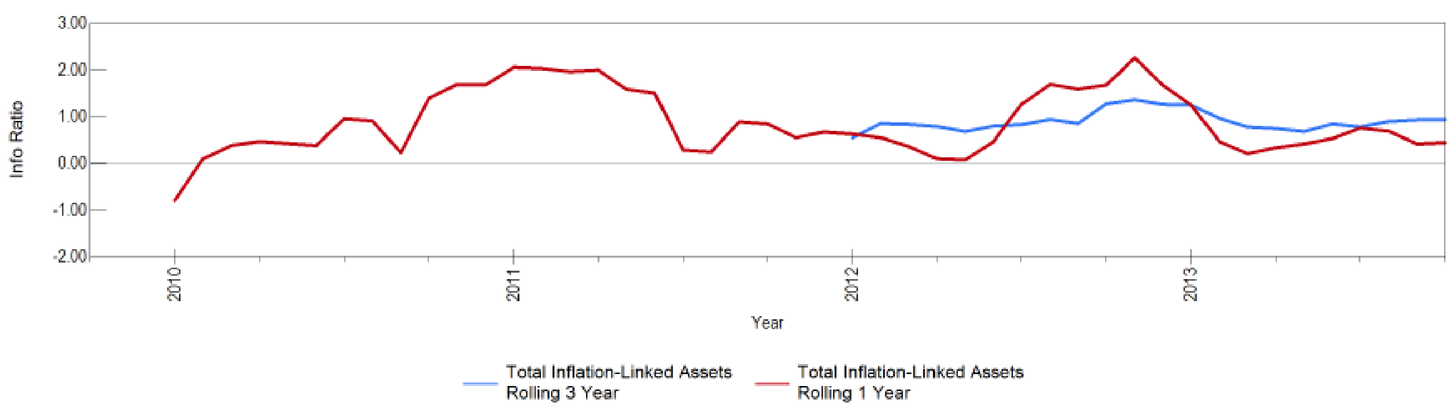
Arizona State Retirement System

Asset Class Analysis - Total Inflation-Linked Assets

Rolling Annual Excess Benchmark Return



Rolling Information Ratio

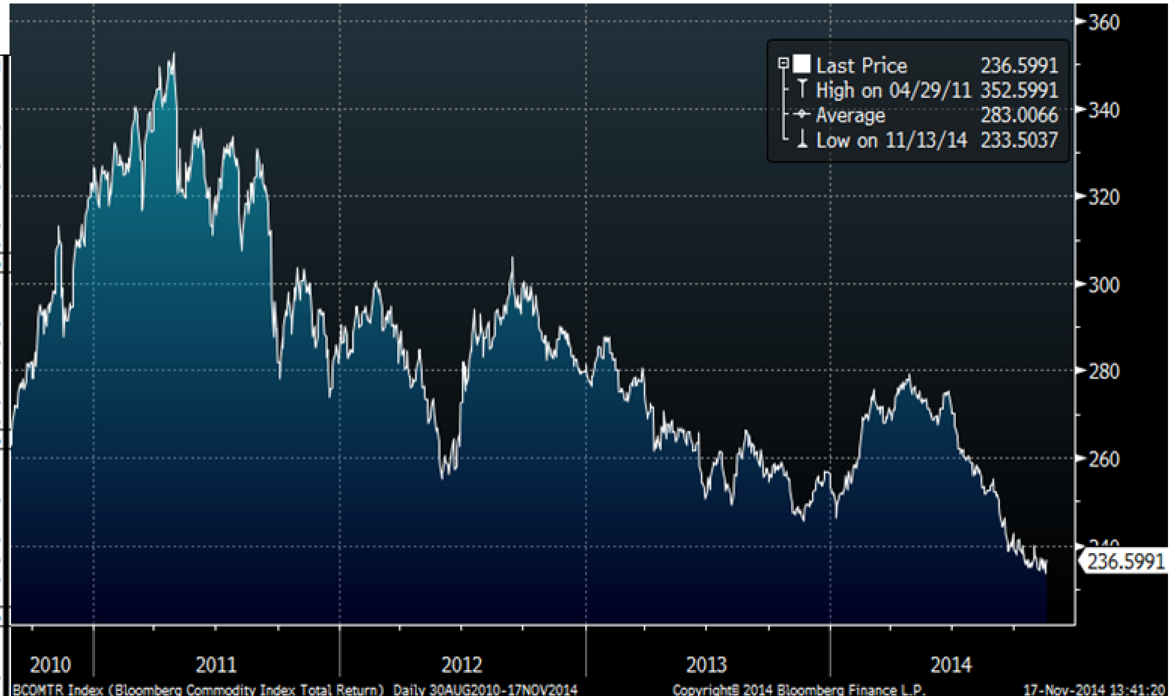


Commodities Profile

Bloomberg Commodities Total Return Index

9/30/2014 weights

	BCOM
AGRICULTURE	
Corn	5.75%
Soybean	4.32%
Wheat (CBOT)	2.81%
Wheat (KC)	1.11%
Wheat (MGE)	
Soybean Meal	2.05%
Soybean Oil	2.56%
Group SubTotal	18.59%
ENERGY	
Crude Oil	8.75%
Brent Crude	6.19%
Heating Oil	3.55%
Gas Oil	
Natural Gas	9.68%
Unleaded Gas (RBOB)	3.48%
Group SubTotal	31.65%
INDUSTRIAL METALS	
Aluminum	5.50%
Copper (LME)	
Copper (NY)	7.13%
Nickel	2.63%
Zinc	2.74%
Lead	
Group SubTotal	18.00%
LIVESTOCK	
Live Cattle	4.16%
Lean Hogs	2.20%
Feeder Cattle	
Group SubTotal	6.35%
PRECIOUS METALS	
Gold	12.05%
Silver	3.79%
Platinum	
Palladium	
Group SubTotal	15.84%
FOODS & FIBERS	
Cotton	1.21%
Sugar	4.30%
Coffee (ICE)	4.06%
Coffee (LIFFE)	
Cocoa	
Group SubTotal	9.57%
GROSS EXCESS RETURI	100.00%



Aug'10 - Apr'11	+35%	'risk on': positive global recovery
May'11	-9%	concerns re: Europe & global growth
Jun'11 - Aug'11	Range bound	mixed economic results
Sep'11	-16%	'risk off': Greece, Fed Twist, double dip fears
Oct'11 - Jan'12	Range bound	mixed economic results
Feb'12 - May'12	-14%	concerns re: Europe & global growth
Jun'12 - Sep'12	+16%	drought driven grains rally & Fed stimulus
Oct'12 - Dec'13	-14%	China slowdown, modest growth, anticipation of tapering
Jan'13 - Apr'14	+10%	momentum in growth, expectation of inflation
May'14 - Nov'14	-15%	broad supply strength, slowdown in grwoth ex-US

Commodities Index: Energy

- Performance [1]
  - YTD WTI (-23%) and Brent (-29%) have been very weak
    - The N. American shale gas story continues as the US ramps up production and reduces the Brent spread
    - Demand has not been robust as growth in the world ex-US has been weak
    - Saudi Arabia has met WTI production with production increases of its own
  - Natural gas (+2%) has been resilient as US infrastructure is being built out
- Market Commentary and Outlook
  - The US continues to set records for production and the petroleum complex is well supplied
  - Domestic growth continues to be moderate and not likely to surge
  - Geopolitical factors are unpredictable but have not been impactful

[1] as of 11/17/14

Commodities Index: Precious and Industrial Metals

- Performance YTD [2]
  - Gold (-1%) and silver (-17%) have been modestly weak as the Fed has ended its tapering program
  - Copper (-9%) has performed poorly as China has experienced a slowdown
- Market Commentary and Outlook
  - As a proxy for hedging against inflationary money printing and USD devaluation, gold and silver have a soft outlook
    - Relative US economic strength has positioned the USD for buoyancy
  - China's growth has moderated and its infrastructure build out for urbanization has shifted to a focus on a consumer driven economy
    - Industrial metals continue to be well supplied

[2] as of 11/17/14

Commodities Index: Ags, Livestock, and Softs

- Performance YTD [3]
  - Corn (-11%) and soybeans (-21%) have suffered meaningful losses driven by good weather and increases in global stocks
  - Cattle (+11%) and hogs (+18%) have been strong on the back of global protein demand and a virus that has thinned hog supplies
  - Coffee (+45%) has experienced the largest gains as Brazil has dealt with crop issues
- Market Commentary and Outlook
  - The weather has largely cooperated for a strong growing season in row crops. Final harvest numbers may create further downside price pressure.
  - Increased grain storage capacities over the past several years dampen these effects

[3] as of 11/17/14

Commodities House Views

COMMODITIES

Primary Market Metrics & Indicators:

1. Fundamentals: **NEGATIVE**
   - The Fed ended its tapering program in November but reiterated that inflation continues to run below the FOMC's long-term objective. As Europe has begun to deal with its economic weakness with stimulus, the US dollar has strengthened on a relative basis.
   - Most commodity sectors appear well supplied, particularly for the current global growth environment.
   - Corn and wheat stockpiles have recently hit multi-year highs while world food prices continue to slide. Energy markets reflect the continued growth in US production as WTI and Brent prices have fallen by more than $20 from their June highs. Metals have weakened as precious metals have suffered from US dollar strength while industrial metals still exhibit weak demand.
2. Valuations: **NEUTRAL**
   - The index rose to nearly 280 in April 2014 but has steadily sold off to its current level of 235.
   - YTD: coffee, cattle, & hogs have been the leaders; gas oil and silver are the biggest laggards.
   - The index on a year-to-date basis is down 7.7% as all of the index sub-groups have posted negative returns.
3. Sentiment: **NEGATIVE**
   - The moderate growth and weak inflation environment in the U.S. year-to-date has tempered investor enthusiasm for commodities and resulted in outflows from commodities.
   - Exogenous geopolitical shocks have not resulted in price spikes; weather has been favorable.
   - Looking across the individual commodities, most remain well supplied, which has been reflected in prices as inflationary fears have abated.

Commentary:

IMD has maintained a tactical underweight relative to the SAAP during 2013 and into 2014 after recognizing the potential effects of Fed tapering and Chinese transition. IMD recognizes that Fed's actions will be data dependent but the QE program has ended.

The North American shale play has resulted in increased US energy production and represents a long-term phenomenon. China's growth rate is also moderating and the era of infrastructure build-out which fueled a portion of the demand for commodities (particularly industrial metals) is abating. Precious metals may also be challenged as the US has moved to the front of the global recovery and other countries' stimulus should result in US dollar strength at the margin. While grains are currently well supplied, the unpredictability of weather inhibits long-term forecasting.

IMD will closely monitor the growth and inflation dynamics globally with improving economic conditions and inflationary pressures serving as a catalyst which may initiate a neutral position.

CURRENT PORTFOLIO POSTURE: Underweight vs. SAA target