Arizona State Retirement System

Investment Committee

Investment Program Updates

February 22, 2016

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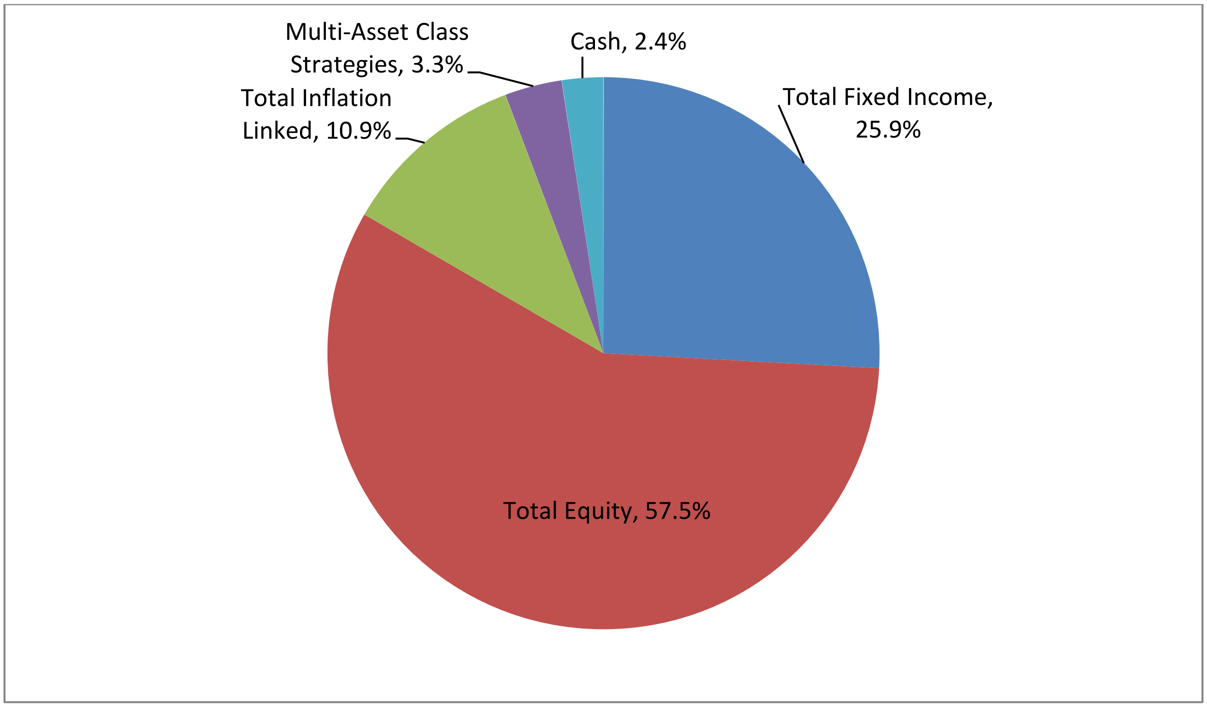
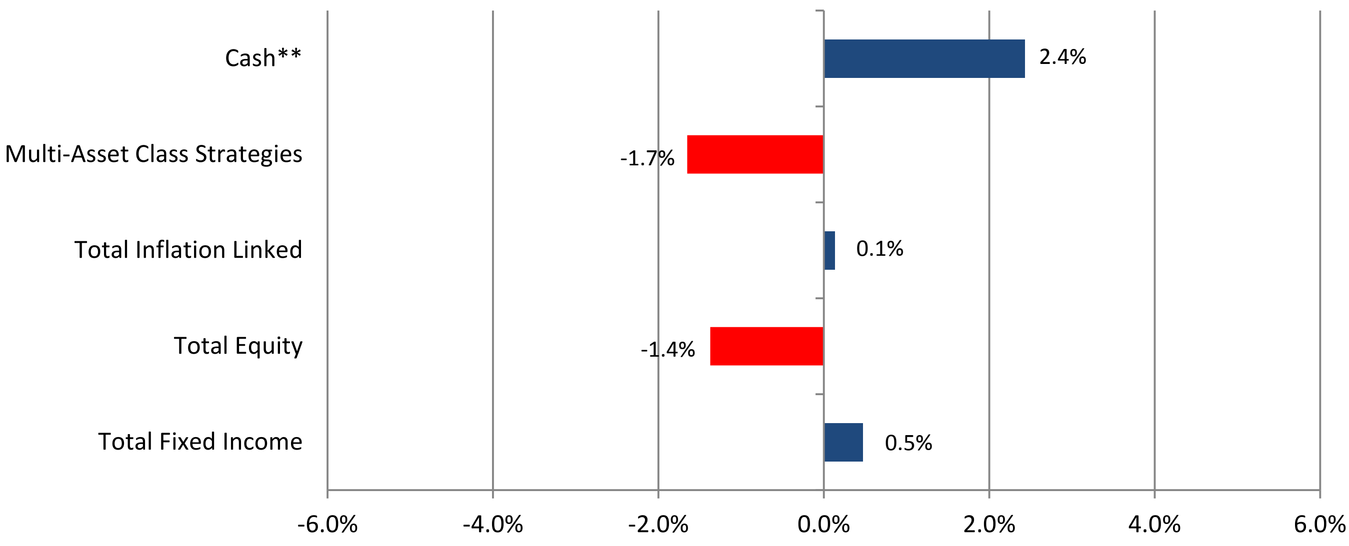
TABLE OF CONTENTS

TOTAL FUND POSITIONING 01/29/2016

ACTUAL PORTFOLIO



ACTUAL PORTFOLIO VS. INTERIM SAA POLICY *



**The Interim SAA Policy is prorated thusly: Real Estate was prorated to domestic equity, international equity and fixed income, Private Equity was prorated to domestic equity, and Private Debt was prorated to core fixed income and U.S. high yield. All Private asset classes' market values are reported on a quarter-lag and adjusted to include the current quarter's cash flows.*

***Cash represents assetized cash which is exposed via futures to ASRS public markets asset class, and unassetized cash which represents monies needed to cover external and internal cash flows.*

Pension (Plan, System, HBS Assets)		ASRS Market Value Report						Friday, January 29, 2016	
Account Manager	Account Manager Style	Fixed Income		Equity		Inflation Linked	Multi-Asset	Total	Pct of Fund
		Active	Enh/Passive	Active	Enh/Passive	Active	Active		
State Street B&T: Boston	Tactical Cash (non-assetized)							0	0.00%
								Tactical Cash Policy Range: 0% - 3%	0.00%
	Operating Cash (non-assetized)		24,925,611					24,925,611	0.08%
	Operating Cash (assetized)		763,896,313					763,896,313	2.35%
	Cash Total							**$788,943,835**	2.43%
								Cash Policy: 0%	0.00%
Blackrock: San Francisco	Treasuries (Long Duration)		370,803,883					370,803,883	1.14%
	Treasuries (Long Duration) Total							**$370,803,883**	1.14%
								Treasuries (Long Duration) Policy Range: 0% - 10%	**0.00%**
Blackrock: San Francisco	Passive (Intermediate Gov Credit)		24,633,086					24,633,086	0.08%
ASRS: Phoenix	Enhanced Passive F2		1,896,819,051					1,896,819,051	5.84%
Blackrock: San Francisco	Passive (US Debt Index)		1,562,692,169					1,562,692,169	4.81%
	Core Fixed Income Total							**$3,854,948,188.44**	11.86%
								Interest Rate Sensitive: 11%	11.00%
Columbia: Minneapolis	Active	665,578,756						665,578,756	2.05%
JP Morgan: Indianapolis	Active	332,786,432						332,786,432	1.02%
	High Yield Fixed Income Total							**$998,378,944**	3.07%
								High Yield Fixed Income Policy	**4.00%**
	Opportunistic Debt	1,162,882,158						**$1,162,882,158**	3.58%
								Opportunistic Debt Policy:	0.00%
	Private Debt Total	2,385,216,690						**$2,385,216,690**	7.34%
								Total Private Debt: 8% - 12%	10.00%
	Fixed Income Total							**$8,401,425,980**	25.86%
								Total Fixed Income Policy Range: 18% - 35%	25.00%
LSV: Chicago	Active (Value)			653,680,803				653,680,803	2.01%
ASRS: Phoenix	Passive E2				4,641,248,286			4,641,248,286	14.28%
ASRS: Phoenix	Enhanced Passive E7				572,289,835			572,289,835	1.76%
ASRS: Phoenix	Enhanced Passive E8				553,996,789			553,996,789	1.71%
ASRS: Phoenix	Risk Factor Portfolio				531,767,287			531,767,287	1.64%
	Large Cap Equity Total							**$6,953,384,997**	21.40%
								Large Cap Policy	**20.00%**
Wellington: Boston	Active (Core)			248,849,357				248,849,357	0.77%
ASRS: Phoenix	Passive E3 (Growth)				373,016,663			373,016,663	1.15%
ASRS: Phoenix	Passive E4 (Value)				328,341,986			328,341,986	1.01%
	Mid Cap Equity Total							**$950,208,006**	2.92%
								Mid Cap Policy	**3.00%**
TimesSquare: New York	Active (Growth)			321,873,081				321,873,081	0.99%
DFA: Santa Monica	Active (Value)			244,968,227				244,968,227	0.75%
ASRS: Phoenix	Passive E6				298,238,998			298,238,998	0.92%
	Small Cap Equity Total							**$865,080,306**	2.66%
								Small Cap Policy	**3.00%**
	U.S. Equity Total							**$8,768,673,309**	26.99%
								US Equity Policy Range: 16% - 36%	26.00%
Brandes: San Diego	Active (Value)			530,251,498				530,251,498	1.63%
American Century	Active (EAFE)			520,570,380				520,570,380	1.60%
Trinity Street	Active (EAFE)			297,544,289				297,544,289	0.92%
Thompson Siegel Walmsley	Active (EAFE)			275,185,897				275,185,897	0.85%
Blackrock: San Francisco	Passive (EAFE)				3,673,889,200			3,673,889,200	11.31%
	Large Cap Developed Non-US Equity Total							**$5,298,062,044**	16.31%
								Large Cap Developed Policy	**17.00%**
AQR: Greenwich	Active (EAFE SC)			91,012,536				91,012,536	0.28%
DFA: Santa Monica	Active (EAFE SC)			93,855,819				93,855,819	0.29%
Franklin Templeton: San Mateo	Active (EAFE SC)			199,467,160				199,467,160	0.61%
Blackrock: San Francisco	Passive (EAFE SC)				232,370,864			232,370,864	0.72%
	Small Cap Developed Non-US Equity Total							**$616,708,765**	1.90%
								Small Cap Developed Policy	**2.00%**
William Blair: Chicago	Active (EM)			312,178,092				312,178,092	0.96%
Eaton Vance: Boston	Active (EM)			235,167,016				235,167,016	0.72%
LSV: Chicago	Active (EM)			97,700,764				97,700,764	0.30%
Blackrock: San Francisco	Passive (EM)				272,157,571			272,157,571	0.84%
	Emerging Markets Equity Total							**$917,203,444**	2.82%
								Emerging Markets Policy	**5.00%**
	Non-US Equity Total							**$6,831,974,253**	21.03%
								Non-US Equity Policy Range: 14% - 34%	24.00%
	Private Equity Total			2,590,087,280				**$2,590,087,280**	7.97%
								Private Equity Policy Range: 6% - 10%	8.00%
	Opportunistic Equity			492,400,373				**$492,400,373**	1.52%
								Opportunistic Equity Policy:	0.00%
	Equity Total							**$18,683,135,216**	57.50%
								Total Equity Policy Range: 48% - 65%	58.00%
Gresham: New York						201,172,941		201,172,941	0.62%
	Commodities Total							**$201,172,941**	0.62%
								Commodities Policy Range: 0% - 4%	2.00%
	Real Estate Total					2,829,321,631		**$2,829,321,631**	8.71%
								Real Estate Policy Range: 8% - 12%	10.00%
	Infrastructure Total					316,552,365		**$316,552,365**	0.97%
								Infrastructure Policy Range: 0% - 3%	0.00%
	Farmland & Timber Total					182,760,272		**$182,760,272**	0.56%
								Farmland & Timber Policy Range: 0% - 3%	0.00%
	Inflation Linked Total							**$3,529,807,209**	10.86%
								Inflation Linked Policy Range: 10% - 16%	12.00%
Bridgewater							1,087,458,825	1,087,458,825	3.35%
	Multi-Asset Class Strategies							**$1,087,458,825**	3.35%
								Multi-Asset Class Policy Range: 0% - 12%	5.00%
	TOTAL Amounts	$4,546,477,792	$4,643,892,023	$7,205,679,660	$11,477,455,556	$3,529,807,209	$1,087,458,825	**$32,490,771,064**	Total Fund
	TOTAL Percent	13.99%	14.29%	22.18%	35.33%	10.86%	3.35%		

Asset Class	Actual Portfolio	SAAP Target (Range)	Interim SAA* Adj Policy	Actual - Interim SAA** % diff	Actual - Interim SAA** $ diff	Policy Band check Actual - Adj Policy	
Tactical Cash	0.00%	0% (0-3%)	0.00%	0.00%			
Cash	2.43%	0.00%	0.00%	2.43%	788,943,835		
Interest Rate Sensitive	11.86%	11%	13.34%	-1.47%			
High Yield	3.07%	4%	4.71%	-1.64%			
Opportunistic Debt	3.58%	0%	0.00%	3.58%	$1,162,882,158		
Private Debt	7.34%	10% (8-12%)	7.34% (5-9%)	0.00%			
Total Fixed Income	**25.86%**	**25% (18-35%)**	**25.39% (18-35%)**	**0.47%**	**$152,806,572**	**OK**	
Large Cap	21.40%	20%	20.53%	0.87%	$282,351,744		
Mid Cap	2.92%	3%	3.00%	-0.08%	-$24,515,126		
Small Cap	2.66%	3%	3.00%	-0.34%	-$109,642,826		
US Equity	**26.99%**	**26% (16-36%)**	**26.53% (17-37%)**	**0.46%**	**$148,193,792**	**OK**	
Developed Large Cap	16.31%	17%	17.37%	-1.07%	-$347,098,125		
Developed Small Cap	1.90%	2%	2.00%	-0.10%	-$33,106,656		
Emerging Markets	2.82%	5%	5.00%	-2.18%	-$707,335,110		
Non-US Equity	**21.03%**	**24% (14-34%)**	**24.37% (14-34%)**	**-3.35%**	**-$1,087,539,890**	**OK**	
Private Equity	7.97%	8% (6-10%)	7.97%	0.00%	$0	**OK**	
Opportunistic Equity	1.52%	0%	0.00%	1.52%	$492,400,373		
Total Equity	**57.50%**	**58% (48-65%)**	**58.88% (49-66%)**	**-1.38%**	**-$446,945,725**	**OK**	
Commodities	0.62%	2% (0-4%)	2.03%	-1.41%	-$457,037,590	**OK**	
Real Estate	8.71%	10% (8-12%)	8.71%	0.00%	$0	**OK**	
Infrastructure	0.97%	0% (0-3%)	0.00%	0.97%	$316,552,365	**OK**	
Farmland & Timber	0.56%	0% (0-3%)	0.00%	0.56%	$182,760,272	**OK**	
Opportunistic I/L	0.00%	0%	0.00%	0.00%	$0		
Total Inflation Linked	**10.86%**	**12% (10-16%)**	**10.73% (9-13%)**	**0.13%**	**$42,275,047**	**OK**	
Multi-Asset Strategies* **	**3.35%**	**5% (0-12%)**	**5% (0-12%)**	**-1.65%**	**-$537,079,729**	**OK**	
Total	**100.00%**	**100%**	**100.00%**	**0.00%**	**$0**		
						Internally Managed Portfolios:	
						$8,663,951,608	**27%**

***Interim SAA includes a proration of unfunded Private Equity, Private Debt, and Real Estate**

****Private Equity is prorated to domestic equity; Real Estate is prorated to equity, commodities, and fixed income; Private Debt is prorated to Interest Rate Sensitive and High Yield**

Opportunistic definitions:
An investment in a category that is not included in the ASRS Asset Allocation policy and represents an investment opportunity that is tactical in nature.
Opportunistic investments have a 0% target (0%-10% range), regardless of asset class.

Total Opportunistic		
Opportunistic Debt	**$1,162,882,158**	**3.6%**
Opportunistic Equity	**$492,400,373**	**1.5%**
Opoprtunistic IL	**$0**	**0.0%**
	$1,655,282,531	**5.1%**

ARIZONA STATE RETIREMENT SYSTEM'S INVESTMENT MANAGEMENT HOUSE VIEWS

(Notable changes from the previous month are highlighted in RED)

FEBRUARY 2016

U.S. EQUITIES

Primary Market Metrics & Indicators:

1. Fundamentals: **NEUTRAL**
   - Economic data still shows stable, sub-trend growth in 2015.
   - U.S. unemployment, is displaying sustained improvement. Income growth has not, although some localized instances of upward pressure has begun to surface.
   - Inflation remains generally subdued; disinflation may surface as the greater risk.
   - Liquidity remains generally available; Federal Reserve policy is accommodative even without the asset purchases program.
   - Overall U.S. corporate profits growth has decelerated, mostly due to the impact of lower energy prices; revenues are still in a modest uptrend; high profit margins are no longer expanding.

2. Valuations: **NEUTRAL**
   - U.S. equity markets have been more volatile, with a downward bias since year-end 2015. The mixed macro data, downward revisions to corporate growth estimates, apprehension over the timing of upward resets to interest rates, more volatile foreign exchange markets and anxieties that negative spill-overs may emanate from the energy sector issues have weighed heavily on equities.
   - Though marginally rich, price/earnings multiples remain near historic averages: S&P 500, 13.6x-15.4x; S&P MID, 14.2x-16.2x; S&P SC600, 14.3x-16.7x.
   - Historic P/Es imply advances of 13-19% for mid and small caps; 10-15% for S&P 500.
   - Still rising earnings and low yields on 10-Yr Treasury notes combine for equity risk premiums that are favorably above the 4.0% long-range average for large caps, whereas those of mid- and small-caps are around 4.0%.

3. Sentiment: **NEUTRAL**
   - Higher short-term caution as heightened and prolonged volatility has imparted a downside bias to what had formerly been an essentially trendless equity market late in 2015.
   - Investors appear to have a reduced demand for risk-oriented assets.
   - The strong U.S. Dollar no longer appears to be attracting asset flows from offshore into U.S. equities.

Commentary:

The opinion on Fundamentals has changed to "NEUTRAL"; "NEUTRAL" opinions for Sentiment and Valuations are unchanged.

Staff moved the allocation to U.S. equities in the Total Fund toward a modest underweight versus the interim SAA policy targets at the end of November 2015. It will continue toward that goal as capital market conditions warrant and as needs and opportunities arise elsewhere in the Total Fund. This reflects an increasingly cautious intermediate-term stance as capital market volatility continues to escalate; heightened market volatility with violent sell downs warrant lessened exposure to equities. This also reflects partly, a more clouded outlook over the intermediate term for U.S. equity returns, in general; more modest returns seem likeliest yet there are some offsets.

The equity markets have been undergoing "risk off" corrections, driven primarily by deteriorating market sentiment stemming mainly from mounting concerns that the U.S. economy is nearing recession. The secular rising U.S. equity market (i.e., "bull-market") that has been in place since the 2008-2009 Global Financial Crisis is certainly maturing, yet it still appears premature to consider that trend as ending despite the current selloff. There simply isn't the number of warning signs, nor the magnitudes, present as there were at this stage in the 2000 and 2007 ("bear") market declines. To cite just a few: Federal Reserve January 2016 forecasting models estimate less than 4% probability of recession in the next 12 months, whereas they estimated greater than 40% probability of such in 2007; only 25% of U.S. manufacturing sectors are currently experiencing anything near to recession conditions; personal mortgage debt outstanding is less than 25% of total debt, versus 30%+ in 2007; wages and the number of jobs are rising but they plateaued, and then fell, in 2009.

Certainly, some conditions that are more associated with late-stage market/business cycles – flattening of both profit margin expansion and revenue growth, primarily – have surfaced and do present some head winds to the secular trend for stocks. However, much of that impairment is due to a strong USD as well as collateral effects from the imbalances within the energy sector. USD strength is a function of a reasonably solid economy and valid monetary policy. As the latter shifts slowly toward neutrality, it remains lenient and quite unlike pre-recession restrictive policy; cessation of QE purchases is not tightening monetary policy. More irrational is that nearly all financial markets, but those of equities in particular, are currently being driven in large part by fluctuating market sentiment based on the direction of oil prices, which are now down more than 50% over the past 18 months. The financial stress on companies sensitive to weak energy prices is still at an early stage; however it appears that it will have negative impacts on lenders as well as operators and suppliers. Even so, it is unlikely that duress will affect a wider swath of the economy, case market participants.

CURRENT PORTFOLIO POSTURE: EQUAL WEIGHT vs. SAA target

NON – U.S. EQUITIES

Primary Market Metrics & Indicators:

1. Fundamentals: **NEUTRAL**
   - Progress of Eurozone and Japanese economic conditions are plateauing; economic continues are weakening in many lesser-developed economies.
   - Although relatively inexpensive, liquidity is shifting away from these developing, U.S. Dollar-sensitive economies.
   - Monetary and economic policies that are focused on promoting economic growth and stemming disinflation seem to be blunted by the collateral impact of the change in drivers of the Chinese economy.

2. Valuations: **POSITIVE**
   - Reasonable global valuations relative to the U.S.; price-to-book values of 1.3x - 1.4x; P/Es of 9.5x – 13.0x on trend earnings.
   - Dividend yields are incrementally more favorable -ranging from 1.2x to 1.6x that of the S&P500.

3. Sentiment: **NEUTRAL**
   - Excepting the Emerging Markets, and short-term volatility, money flows continue toward developed non-U.S. market counterparts.
   - The anxiety and accompanying volatility since late 2015 has undermined investors previously overall constructive attitude toward global equities.
   - Until recently, major non-U.S. markets performance had mostly strengthened; a slower or postponed normalization of U.S. monetary policy is supportive for the markets.

Commentary:

The "POSITIVE" opinion on Valuations is unchanged, as are the "NEUTRAL" opinions on Fundamentals and Sentiment. This is reflected in the underweight exposure of the EAFE and equal-weight exposure of EAFE-Small Capitalization equities subclasses to their respective "interim" SAA policy weights. The overall non-U.S. equities asset class is however, underweight to its "interim" SAA policy weight by about 3.3% from the effect of below-SAA policy weight allocation to the Emerging Markets equities asset subclass. It is currently about 59% of policy weight as result of IMD electing to reduce exposure to risk-oriented assets in 2015.

Developed economies (DM) equities still present reasonably favorable return vs. risks tradeoffs and are likely to play a greater role in the worldwide quest for return/yield. Reflation efforts are ongoing, so liquidity flow-driven major markets are still capable of posting high, single digit advances (in USD terms). Liquidity fostered by simulative monetary policy has historically dominated other market influences. It is abundant currently.

The current global macro backdrop supporting the current cycle differs from previous cycles in which the Federal Reserve increased short-term interest rates. Most other central banks are instead loosening monetary policies; the ECB is disposed toward even more Quantitative Easing. Economic growth, though sluggish overall, is mixed across most of the developed economies.

Historically, central banks' initial interest rate increases have had negligible impact on DM equities markets. Not presently in the picture, lengthy rate increase/tightening programs have proved otherwise, however. The economic cycle in the Euro area is a phase behind that of the U.S.; labor cost pressures are less there. European Central Bank easing against the opposite in the U.S., coupled with a weaker EURO versus the U.S. Dollar, makes for relatively attractive risk premiums for European shares, and those of most non-U.S. developed markets. For reasons set forth above, risk premiums among the EM equity markets are justifiably high. Even so, sustained, widespread appreciation is therefore, less likely until those fundamentals improve.

The Emerging Economies (EM), on the whole, are still contending with persistently weak demand, resultant over-capacity, high debt and follow-on disinflation. In past periods preceding the advent of FOMC rate increases, global economic growth was accelerating. It is not in the present cycle, suggesting a protracted period until those economic hindrances dissipate. However, the EM equity markets and companies that are less exposed those trends offer a somewhat more optimistic picture. They will still be vulnerable to volatility from occasional short run "risk-off" market events, but are capable of increasing value over the balance of the current cycle.

The global equity markets have been volatile in early 2016. Forces that prevailed last year haven't dissipated: weak energy and commodities prices, turmoil in the Chinese economy and capital markers, and the effects of rising U.S. interest rates. Prospects of sluggish global economic growth in 2016 have only intensified investor apprehensions.

CURRENT PORTFOLIO POSTURE: UNDERWEIGHT vs. SAA target

FIXED INCOME

Primary Markets Metrics & Indicators:

1. Fundamentals: **NEGATIVE**
    - Concerns about slowing global growth driven by weakening fundamentals in China and emerging markets have spilled over into the U.S. markets in a variety of ways. Credit spreads have materially widened in both the investment grade and high yield bond markets. While initially led by commodity sectors such as energy and mining, the spread widening has repriced a number of other sectors in these markets. Spreads have also widened as a result of diminished trading liquidity stemming from regulatory changes. In addition, China is exerting significant deflationary pressure in the global markets while other developed economies are struggling with disinflation. In the U.S., the economy has improved enough that the Federal Reserve has raised short-term rates for the first time in several years. However, the pace of future rate hikes is quite uncertain as some aspects of the U.S. economy such as manufacturing have recently softened and weakness in the broader financial markets remains an area of concern.
    - We believe that long-term U.S. interest rates may remain relatively low by historical standards for a number of reasons. These include slowing growth and disinflationary (or deflationary) pressures in many regions of the world including Europe and China, accommodative monetary policies in other countries and very low competing long-term interest rates in other developed markets.

2. Valuations: **ATTRACTIVE**
    - Valuations as measured by credit spreads in both the investment-grade and high yield bond markets have become more attractive; however, the wider spreads may primarily reflect deteriorating credit quality. Over the coming years, we expect both an increase in the number of bond issuers that are likely to lose their investment-grade ratings and a rise in corporate defaults. Initially, this deterioration in credit quality will be led by sectors that have been adversely affected by the severe decline in global commodity prices including energy, energy services, metals and mining. However, as we may be in the later stages of credit cycle (that began with an upturn in 2009), credit ratings may decline and defaults may increase in other sectors as well. We believe this may lead to further spread widening. With this view, we are underweight High Yield vs. the SAA target.
    - Private debt offers the most attractive opportunity in the fixed income markets with double-digit yields readily available for investors willing to accept illiquidity. We believe the market opportunity has recently improved due to a number of factors including the piecemeal sale of GE Capital, a leading provider of capital to the middle market; a reduced capacity to lend by business development companies; the enforcement of leveraged lending guidelines by banking regulators which further restricts the ability of banks to provide leveraged loans and underwrite high yield bonds; and a materially less receptive new issuance market for high yield bonds and tradable leveraged loans. In 2015, we expanded our commitments to take advantage of the attractive opportunities in the private debt asset class.
    - The core fixed income market is likely to generate low returns due to low overall yields as Treasury rates remain at low levels. That being said, core fixed income remains a safe haven in times of market turbulence and tends to perform well when risky assets such as equities sell off. We are underweight Interest Rate Sensitive fixed income vs. the SAA target.
    - Select areas of opportunistic debt such as distressed debt also offer opportunities to potentially achieve double-digit returns. That being said, in the near-term, returns for distressed debt have been adversely impacted by the recent sell-off in the credit markets.

3. Sentiment: **NEGATIVE**

   Sentiment has declined in the credit markets due to a combination of weakening fundamentals and diminished trading liquidity. While U.S. Treasuries remain a safe haven for investors looking to reduce risk, these securities may face technical selling pressure from central banks in China and other emerging market countries that may sell U.S. dollar assets to support their currencies to counteract recent U.S. dollar appreciation.

Commentary:

IMD views of the fixed income markets are bifurcated: positive on the return opportunities in the private markets (i.e. Private Debt) and less sanguine on the public markets (i.e. Interest Rate Sensitive fixed income and High Yield bonds).

CURRENT PORTFOLIO POSTURE: EQUAL WEIGHT vs. SAA target

REAL ESTATE

Primary Market Metrics & Indicators:

1. Fundamentals: **POSITIVE**
   - Property markets are generally moving out of a recovery phase to a mature phase. Excess inventory from the last cycle is largely absorbed and greater discipline in new supply delivery places property markets generally in reasonable supply/demand balance. The only property types that we consider to still be in a recovery phase are for-sale residential, suburban office and certain niche industrial property types.
   - Local conditions vary greatly with tight supply and rapidly accelerating rents in certain markets and a more normal recovery in other markets.
   - Our review of property market fundamentals leads us to emphasize apartments, industrial properties, medical office buildings, senior housing, self-storage, and student housing in our current investing efforts for demographic and macro policy reasons. We have entered in to separate account partnerships to pursue these opportunities.
   - The resolution of pre-global financial crisis CMBS structures continues to work its way through the system presenting opportunities in mezzanine and senior equity. We have retained managers well-positioned to pursue such opportunities.

2. Valuations: **NEUTRAL**
   - Values have recovered from the global financial crisis with stable properties in coastal markets priced at record values.
   - Increases in CMBS spreads are beginning to make financing less accommodating and this may trickle through to values.
   - Recent increases in treasury rates do not appear to have affected commercial real estate valuations. Many observers believe that ~100bps of rate increase was already discounted into cap rates.
   - In January, REITs were trading at an average dividend yield of 4.07% (215bp above 10y treasury) and a 8% discount to NAV. The dividend yield spread is above the historical average of 127 while the historical difference to NAV is a 4% premium.

3. Sentiment: **NEUTRAL**
    - About 80% of real estate executives believe we will see a recessionary cycle in property some time in the next several years.
    - Nevertheless, fund raising has been robust. The pace of U.S. focused real estate fund raising is around $100 billion per year with dry powder of around $200 billion. Additionally, there is evidence of high interest in U.S. property from foreign investors.
    - Consequently, there remains strong demand for good quality property and we have yet to see any softness in pricing as a result of recessionary or other concerns.

Commentary:

ASRS has become more cautious in property underwriting and requires its managers to consider a moderate recession in the next few years in property level underwriting. We continue to focus on niche property types and markets which receive less institutional focus. In new transactions, we will generally avoid construction risk except in the strongest locations with supply constraints and robust tenant demand. The 2016 implementation plan calls for about $300 million in new commitments to complete the separate account and net zero new investments in commingled product.

CURRENT PORTFOLIO POSTURE: UNDERWEIGHT vs. SAA target (in program funding/build-out phase)

PRIVATE EQUITY

Primary Market Metrics & Indicators:

1. Fundamentals: **POSITIVE**
    - The U.S. economy has moderated and inflation remains muted but the unemployment rate continues to fall. The relative strength of the U.S. economy has resulted in a strengthening dollar.
        - ◊ Oil prices have settled in the $30 price range which has resulted in reduced service costs and tempered production growth in the medium term. Debt markets have locked up and equity transactions will take time to sort out. We expect industry consolidation at the margin favoring low cost producers with less leverage and more production hedged.
        - ◊ Healthcare is being reshaped to implement the requirements of “Obamacare.”
        - ◊ The U.S. continues to be a global leader in technology innovation.
    - Europe continues to struggle in recovering from the financial crisis with the ECB maintaining its stimulus efforts by buying €60B per month. Its problems are exacerbated by a unified currency without unified fiscal policy and it is expected to experience a very slow recovery.
    - Emerging markets have slowed while the largest emerging markets are transitioning to focus on domestic consumption.

2. Valuations: **NEUTRAL**
    - Current U.S. median purchase price multiples are 8.5x, down from 8.9x a year ago.
    - The leveraged loan and high yield debt markets tightened up in 2015. Single B high yield spreads have widened to ~826bps.
    - The U.S. median Debt/EBITDA ratio of 6.2x is up a bit from 5.8x in 2014.

3. Sentiment: **NEUTRAL**
    - Globally, $551B (1,062 funds) closed in 2015 compared to $589B (1,394 funds) in 2014.

- Dry powder of nearly $1.3T globally has ticked up from $1.2T for 2014.
- The global number of buyout deals was 3,556 in 2015 compared to 3,796 for all of 2014. The aggregate value of deals was $411B in 2015 compared to $348B for all of 2014.
- There were 1,620 exits representing $405B in 2015. There were 1,734 exits representing $460B in 2014.
- The IPO market in 2015 has softened to a level of $30B in 2015 versus $67B in 2014.

Commentary:

Areas of emphasis are U.S. middle market buyout with focus on managers with strong operational capability. Vertical strategies in healthcare and technology are under consideration. IMD will reduce emphasis on large buyout strategies though larger managers with specialized deal flow remain of interest and continue to monitor Europe for a favorable reentry point and look for opportunities to capitalize upon distress.

ASRS 2016 private equity pacing plan calls for $700 million in new commitments to achieve the 8% strategic allocation target.

CURRENT PORTFOLIO POSTURE: EQUAL WEIGHT vs. SAA target

COMMODITIES

Primary Market Metrics & Indicators:

1. Fundamentals: **NEGATIVE**
   - The U.S. dollar remains strong on a relative basis and the Fed raised interest rates in December as expected. China's economy has slowed down while Europe has begun to deal with its economic weakness with stimulus.
   - Most commodity sectors appear well supplied, particularly for the current global growth environment.
   - The decision by Saudi Arabia not to reduce production with the addition of Iranian supply has kept energy markets depressed, resulting in rig lay downs in the U.S. while the budgetary impacts globally continue to add up.
   - Corn and wheat stockpiles have recently hit multi-year highs while world food prices continue to slide. Energy markets reflect the continued growth in global production as WTI and Brent prices are both near $30. Metals are mixed as precious metals have strengthened while industrial metals still exhibit weak demand.

2. Valuations: **NEGATIVE**
   - The Bloomberg Commodities Index is just above its 15 year low as global supplies outpace demand.
   - On a trailing twelve-month basis, commodities are down 25% with ags being the least impacted sector with a decline of 15%. Year-to-date gold and silver have risen by 12%.

3. Sentiment: **NEGATIVE**
   - The moderate growth, weak inflation, and strong dollar environment in the U.S. has reduced investor enthusiasm for commodities and resulted in outflows from commodities.
   - The slowdown in the Chinese economy and its equity market has tempered enthusiasm for commodities.

- Geopolitical news has not been constructive for energy prices. Looking across the individual commodities, most remain well supplied, which is reflected in prices as inflationary fears are muted.

Commentary:

IMD has maintained a tactical underweight relative to the SAA approved in 2015 which reduced the commodities target from 4% to 2%. The confluence of the Chinese slowdown, weakness in Europe, and sufficient broad-based global supplies have kept inflationary pressures soft. North American shale has idled rigs in a material way but supplies have not fully equilibrated yet.

IMD will maintain a tactical underweight relative to the SAAP and monitor global supply and demand swings for inflationary pressures. Improving economic conditions and inflationary pressures would serve as a catalyst to initiate a neutral position should the conditions arise.

CURRENT PORTFOLIO POSTURE: UNDERWEIGHT vs. SAA target

OPPORTUNISTIC INVESTMENTS

IMD continues to monitor and assess co-investment flow from real estate, private equity and debt managers for select opportunistic investments with favorable capital market dynamics. Opportunistic investments are tactical in nature AND are outside ASRS SAAP benchmarks or absolute return oriented.

CURRENT PORTFOLIO POSTURE: Approx. 4.8% of ASRS TOTAL MARKET VALUE

GLOSSARY

Commentary: Provides verbiage on 1) the current asset class market environment and possible changes to this environment and 2) ASRS asset class portfolio positioning relative to ASRS SAA policy, its rationale for positioning and anticipated changes which may occur in such positioning.

Current Portfolio Posture: Indicates ASRS asset class position relative to its asset allocation policy weight. "Overweight" indicates an asset class weight is greater than its policy target, "Neutral" indicates an equal weight and "Underweight" indicates a lesser weight than its policy target.

Investment House Views: Synthesizes IMD's current and forward-looking investment perspectives and tactical positioning in asset classes and investment strategies in which the ASRS invests.

Primary Market Metrics and Indicators: Broadly-defined metrics (Fundamentals, Valuations, and Sentiments) applied universally to ASRS asset classes and used collectively to evaluate existing market conditions. Indicators ("Positive," "Neutral" and "Negative") reflect IMD's existing views of these metrics and, in addition to other factors, generally determine the basis for the existing (and possible future changes) to ASRS aggregate portfolio position relative to or within ASRS SAA policy targets.

2015 ASSET CLASS COMMITTEE AND IC MEETINGS

2015		Asset Class Committees				Board Committee		Grand Totals
		Private Market Committee (PRIVMC)		Public Market Committee (PUBMC)		Investment Committee (IC)		
Quarter	Month	Dates	Total	Dates	Total	Dates	Total	
1st	January	01/23 01/29	2					8
	February	02/27	1			02/09 02/23	2	
	March	03/19 03/20 03/27	3					
2nd	April	04/21	1			04/20/15	1	6
	May	05/18	1					
	June	06/04 06/23	2			06/22	1	
3rd	July	07/20 07/29	2					6
	August	08/28	1	08/14	1	08/24	1	
	September	09/15	1					
4th	October	10/15	1			10/26	1	6
	November	11/18 11/24	2			11/30	1	
	December	12/18	1					
Totals			18		1		7	26

2016 ASSET CLASS COMMITTEE AND IC MEETINGS								
2016		Asset Class Committees				Board Committee		Grand Totals
		Private Market Committee (PRIVMC)		Public Market Committee (PUBMC)		Investment Committee (IC)		
Quarter	Month	Dates	Total	Dates	Total	Dates	Total	
1st	January	01/19	1					3
	February	02/25	1			02/22	1	
	March							
2nd	April							
	May							
	June							
3rd	July							
	August							
	September							
4th	October							
	November							
	December							
Totals			2				1	3

INVESTMENT MANAGEMENT DIVISION (IMD) ACTIVITIES: FUND REPOSITIONING, RESEARCH, PROJECTS & INITIATIVES

- In Q4-15, approximately $300 million was raised from U.S Equities to replenish ASRS Cash Assetization Program to meet external cash flow needs and anticipated capital calls for private markets commitments through the end of calendar year 2015.

- IMD annually prepares pacing and implementation plans for the private equity and real estate programs in order to establish target investment levels and strategies for the ensuing calendar year. The private equity pacing and implementation plan was completed and presented to the private markets committee on November 18 and a target commitment amount of $700 million was approved for calendar 2016. The real estate implementation plan was presented in December, 2015. The plan calls for about $300 million in new separate commitments to round out the separate account manager team and net zero in commitments to commingled product.

- As a standard course of business, IMD meets with both incumbent and potential investment managers to discuss macro-economies and capital markets as well as providing a means to review new initiatives, relationships and new strategy offerings. Since the last IC meeting, IMD met (conference call or in-person) with 138 investment managers: Private markets (RE, PE, Debt) – 62 and Public markets (Equity and Debt) – 76.

- IMD internally manages 7 public equities and fixed income portfolios with an approximate aggregate market value of $9 billion or 27% of Total Fund. For CY 2015 thru December 31, 2015, 2 of 7 met or exceeded their benchmarks, and 7 of 7 portfolios met or exceeded their benchmarks on an inception-to-date basis.