Arizona State Retirement System

Investment Committee

Investment Program Updates

November 30, 2015

Presented by:
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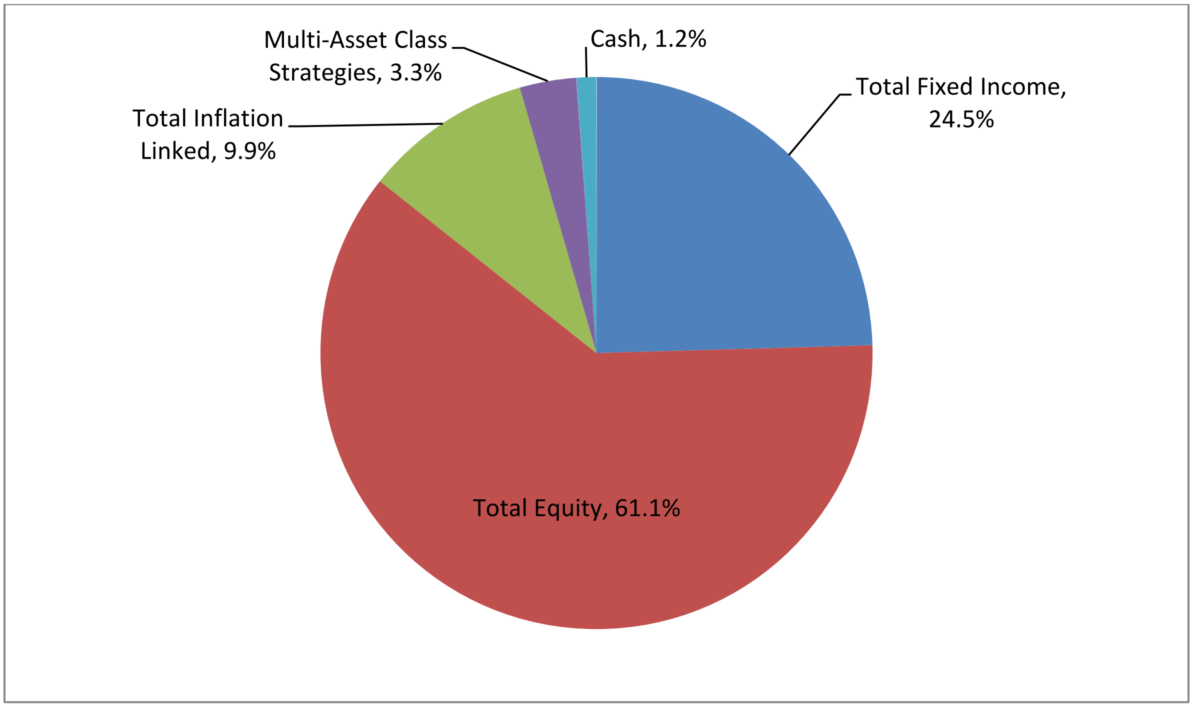
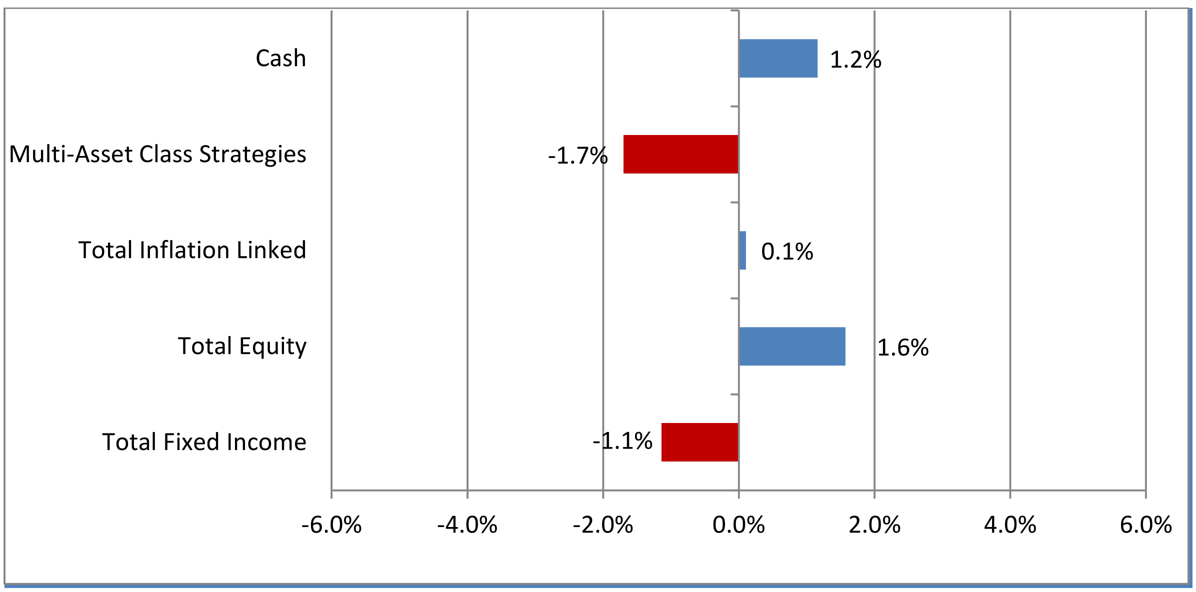
TOTAL FUND POSITIONING 10/30/2015

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.*

Pension (Plan, System, HBS Assets)		ASRS Market Value Report						Friday, October 30, 2015	
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)		40,615,200					40,615,200	0.12%
	Operating Cash (assetized)		353,872,975					353,872,975	1.04%
	Cash Total							**$394,488,175**	1.16%
								Cash Policy: 0%	0.00%
Blackrock: San Francisco	Treasuries (Long Duration)		386,321,341					386,321,341	1.14%
	Treasuries (Long Duration) Total							**$386,321,341**	1.14%
								Treasuries (Long Duration) Policy Range: 0% - 10%	**0.00%**
Blackrock: San Francisco	Passive (Intermediate Gov Credit)		24,521,944					24,521,944	0.07%
ASRS: Phoenix	Enhanced Passive F2		1,881,462,220					1,881,462,220	5.54%
Blackrock: San Francisco	Passive (US Debt Index)		1,822,639,019					1,822,639,019	5.37%
	Core Fixed Income Total							**$4,115,107,054.65**	12.13%
								Interest Rate Sensitive: 11%	11.00%
Columbia: Minneapolis	Active	690,169,090						690,169,090	2.03%
JP Morgan: Indianapolis	Active	355,666,392						355,666,392	1.05%
	High Yield Fixed Income Total							**$1,045,849,236**	3.08%
								High Yield Fixed Income Policy	**4.00%**
	Opportunistic Debt	1,166,208,958						**$1,166,208,958**	3.44%
								Opportunistic Debt Policy:	0.00%
	Private Debt Total	2,004,420,377						**$2,004,420,377**	5.91%
								Total Private Debt: 8% - 12%	10.00%
	Fixed Income Total							**$8,331,603,971**	24.55%
								Total Fixed Income Policy Range: 18% - 35%	25.00%
Intech: FL	Active (Growth)			432,441,721				432,441,721	1.27%
LSV: Chicago	Active (Value)			743,441,908				743,441,908	2.19%
ASRS: Phoenix	Passive E2				5,110,322,560			5,110,322,560	15.06%
ASRS: Phoenix	Enhanced Passive E7				671,412,049			671,412,049	1.98%
ASRS: Phoenix	Enhanced Passive E8				565,898,281			565,898,281	1.67%
ASRS: Phoenix	Risk Factor Portfolio				567,485,632			567,485,632	1.67%
	Large Cap Equity Total							**$8,091,002,152**	23.84%
								Large Cap Policy	**20.00%**
Wellington: Boston	Active (Core)			282,243,046				282,243,046	0.83%
ASRS: Phoenix	Passive E3 (Growth)				380,600,115			380,600,115	1.12%
ASRS: Phoenix	Passive E4 (Value)				334,382,773			334,382,773	0.99%
	Mid Cap Equity Total							**$997,225,934**	2.94%
								Mid Cap Policy	**3.00%**
TimesSquare: New York	Active (Growth)			355,470,455				355,470,455	1.05%
DFA: Santa Monica	Active (Value)			271,324,967				271,324,967	0.80%
ASRS: Phoenix	Passive E6				326,241,547			326,241,547	0.96%
	Small Cap Equity Total							**$953,036,969**	2.81%
								Small Cap Policy	**3.00%**
	U.S. Equity Total							**$10,041,265,055**	29.59%
								US Equity Policy Range: 16% - 36%	26.00%
Brandes: San Diego	Active (Value)			580,734,586				580,734,586	1.71%
American Century	Active (EAFE)			571,745,890				571,745,890	1.68%
Trinity Street	Active (EAFE)			330,722,796				330,722,796	0.97%
Thompson Siegel Walmsley	Active (EAFE)			305,320,608				305,320,608	0.90%
Blackrock: San Francisco	Passive (EAFE)				4,092,837,228			4,092,837,228	12.06%
	Large Cap Developed Non-US Equity Total							**$5,883,413,613**	17.34%
								Large Cap Developed Policy	**17.00%**
AQR: Greenwich	Active (EAFE SC)			96,585,405				96,585,405	0.28%
DFA: Santa Monica	Active (EAFE SC)			103,900,156				103,900,156	0.31%
Franklin Templeton: San Mateo	Active (EAFE SC)			223,148,440				223,148,440	0.66%
Blackrock: San Francisco	Passive (EAFE SC)				249,964,378			249,964,378	0.74%
	Small Cap Developed Non-US Equity Total							**$673,600,816**	1.98%
								Small Cap Developed Policy	**2.00%**
William Blair: Chicago	Active (EM)			359,762,633				359,762,633	1.06%
Eaton Vance: Boston	Active (EM)			267,564,023				267,564,023	0.79%
LSV: Chicago	Active (EM)			116,560,437				116,560,437	0.34%
Blackrock: San Francisco	Passive (EM)				317,783,219			317,783,219	0.94%
	Emerging Markets Equity Total							**$1,061,670,312**	3.13%
								Emerging Markets Policy	**5.00%**
	Non-US Equity Total							**$7,618,684,740**	22.45%
								Non-US Equity Policy Range: 14% - 34%	24.00%
	Private Equity Total			2,621,978,520				**$2,621,978,520**	7.73%
								Private Equity Policy Range: 6% - 10%	8.00%
	Opportunistic Equity			463,829,055				**$463,829,055**	1.37%
								Opportunistic Equity Policy:	0.00%
	Equity Total							**$20,745,757,370**	61.13%
								Total Equity Policy Range: 48% - 65%	58.00%
Gresham: New York						231,943,640		231,943,640	0.68%
	Commodities Total							**$231,943,640**	0.68%
								Commodities Policy Range: 0% - 4%	2.00%
	Real Estate Total					2,613,684,572		**$2,613,684,572**	7.70%
								Real Estate Policy Range: 8% - 12%	10.00%
	Infrastructure Total					314,726,632		**$314,726,632**	0.93%
								Infrastructure Policy Range: 0% - 3%	0.00%
	Farmland & Timber Total					182,866,866		**$182,866,866**	0.54%
								Farmland & Timber Policy Range: 0% - 3%	0.00%
	Inflation Linked Total							**$3,343,221,711**	9.85%
								Inflation Linked Policy Range: 10% - 16%	12.00%
Bridgewater							1,121,492,520	1,121,492,520	3.30%
	Multi-Asset Class Strategies							**$1,121,492,520**	3.30%
								Multi-Asset Class Policy Range: 0% - 12%	5.00%
	TOTAL Amounts	$4,216,496,916	$4,509,595,230	$8,128,526,266	$12,617,231,104	$3,343,221,711	$1,121,492,520	**$33,936,563,747**	**Total Fund**
	TOTAL Percent	12.42%	13.29%	23.95%	37.18%	9.85%	3.30%		

Asset Class	Actual Portfolio	SAAP Target (Range)	Interim SAA* Adj Policy	Actual - Interim SAA** % diff	$ diff	Policy Band check Actual - Adj Policy
Tactical Cash	0.00%	0% (0-3%)	0.00%	0.00%		
Cash	1.16%	0.00%	0.00%	1.16%	394,488,175	
Interest Rate Sensitive	12.13%	11%	14.69%	-2.57%		
High Yield	3.08%	4%	5.09%	-2.01%		
Opportunistic Debt	3.44%	0%	0.00%	3.44%	$1,166,208,958	
Private Debt	5.91%	10% (8-12%)	5.91% (4-8%)	0.00%		
Total Fixed Income	**24.55%**	**25% (18-35%)**	**25.69% (19-36%)**	**-1.14%**	**-$386,528,506**	**OK**
Large Cap	23.84%	20%	21.17%	2.67%	$906,553,820	
Mid Cap	2.94%	3%	3.00%	-0.06%	-$20,870,979	
Small Cap	2.81%	3%	3.00%	-0.19%	-$65,059,944	
US Equity	**29.59%**	**26% (16-36%)**	**27.17% (17-37%)**	**2.42%**	**$820,622,898**	**OK**
Developed Large Cap	17.34%	17%	17.67%	-0.33%	-$111,994,047	
Developed Small Cap	1.98%	2%	2.00%	-0.02%	-$5,130,459	
Emerging Markets	3.13%	5%	5.00%	-1.87%	-$635,157,876	
Non-US Equity	**22.45%**	**24% (14-34%)**	**24.67% (15-35%)**	**-2.22%**	**-$752,282,382**	**OK**
Private Equity	7.73%	8% (6-10%)	7.73%	0.00%	$0	**OK**
Opportunistic Equity	1.37%	0%	0.00%	1.37%	$463,829,055	
Total Equity	**61.13%**	**58% (48-65%)**	**59.56% (50-67%)**	**1.57%**	**$532,169,571**	**OK**
Commodities	0.68%	2% (0-4%)	2.05%	-1.36%	-$462,387,071	**OK**
Real Estate	7.70%	10% (8-12%)	7.70%	0.00%	$0	**OK**
Infrastructure	0.93%	0% (0-3%)	0.00%	0.93%	$314,726,632	**OK**
Farmland & Timber	0.54%	0% (0-3%)	0.00%	0.54%	$182,866,866	**OK**
Opportunistic I/L	0.00%	0%	0.00%	0.00%	$0	
Total Inflation Linked	**9.85%**	**12% (10-16%)**	**9.75% (8-12%)**	**0.10%**	**$35,206,427**	**OK**
Multi-Asset Strategies* **	**3.30%**	**5% (0-12%)**	**5% (0-12%)**	**-1.70%**	**-$575,335,668**	**OK**
Total	**100.00%**	**100%**	**100.00%**	**0.00%**	**$0**	

Internally Managed Portfolios:		
$9,270,319,545		**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	**$1,166,208,958**	**3.4%**
Opportunistic Equity	**$463,829,055**	**1.4%**
Opoprtunistic IL	**$0**	**0.0%**
	$1,630,038,013	**4.8%**

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

NOVEMBER 2015

U.S. EQUITIES

Primary Market Metrics & Indicators:

1. Fundamentals: **POSITIVE**
   - 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.
   - At possible risk longer term due to stimulus measures, inflation remains generally subdued.
   - Liquidity remains ample; Federal Reserve policy remains accommodative without its 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 trendless since reaching highs first in March, then and again in May, apparently buffeted by mixed macro data, downward revisions to earnings estimates and anxiety over the timing and scale of the first upward reset to interest rates and more volatility in foreign exchange markets.
   - Though marginally rich, price/earnings multiples remain near historic averages: S&P 500, 15.9x-17.4x; S&P MID, 15.8x-19.1x; S&P SC600, 18.1x-21.0x.
   - Historic P/Es imply advances of 9-13% for mid and small caps; 7-10% 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**
   - Short-term caution has moved up a notch following the sustained advance of equity markets without a significant pullback throughout 2013 and 2014.
   - Lessened near-term equity market volatility (i.e., VIX Index) still reflects growing acceptance of risk-oriented assets.
   - The relative strength of the U.S. Dollar continues to encourage assets into U.S. equities.

Commentary:

Following the strong upward trade from the August low-point, the U.S. equity market, in the short run, is obviously less attractive only by a matter of degrees. The November respite is not unprecedented. While potential remains for further advancement, it most likely will be more labored in its progress. The prospect of the initial step in December by the Federal Open Market Committee (FOMC) toward normalization of the Federal Funds rate has inexplicably undermined investment sentiment despite the fact that FOMC began walking back Quantitative Easing over a year ago with no ill effects on the equity markets. Neither has the relatively stronger U.S. Dollar which has resulted from both U.S. monetary policy and the slow, but lasting economic expansion hurt overall equities until now. Valuations, in general, have for some time been ample, but not grossly overvalued. But has been experienced since the Great Recession, valuation has been outdone by liquidity, which remains abundant.

It is premature and incorrect for investors to think that an economic breakdown lies immediately ahead, barring some worldwide negative exogenous shock. Rising consumer confidence, waning levels of unemployment and rising hiring trends are markedly opposite of what is experienced prior to recessions. The equity markets have struggled of late to interpret the macroeconomic setting, as some companies, in the course of reporting 3Q2015 earnings, have suggested that a broad global industrial slowdown may have begun. Intermediate and end marketplaces of those industries sensitive to energy and mining have undergone severe retrenchments while in contrast, consumer-facing industries such as autos and housing continue to experience strong marketplaces. The Federal Reserve's most recent senior loan officers' survey displayed a degree of contraction in commercial and industrial lending terms. This is the opposite of pre-recession conditions and credit availability is still plentiful, especially for small businesses. Further, the weaknesses besetting the capital goods, mining and energy industries is being overly discounted by the capital markets; further major declines aren't likely, neutral-to-positive developments would likely be received well. The stocks are oversold, under-owned and most investors appear unwilling to buy into stocks even remotely related to energy, materials and industrials.

Market fundamentals are still supportive of a high-single digit rate of advance for the 2015 year. Conditions in 2016 seem more mixed. Earnings should continue to advance well into the year, but risk some pressures on profit margins later on; the "dividends" to operating margins derived from falling energy and industrial commodities prices will have ebbed. More problematic for sentiment will be mounting anxiety as the U.S. presidential election comes to finality.

CURRENT PORTFOLIO POSTURE: OVERWEIGHT vs. SAA target

NON – U.S. EQUITIES

Primary Market Metrics & Indicators:

1. Fundamentals: **NEUTRAL**
    - Progress of Eurozone and Japanese economic conditions plateauing; economic continues are weakening in many lesser-developed economies.
    - Although relatively inexpensive, liquidity is shifting away from these developing, US 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 U.S.; price-to-book values of 1.4x - 1.6x; P/Es of 10.8x – 15.5x on trend earnings.
    - Dividend yields are incrementally more favorable -ranging from 1.1x to 1.9x that of the S&P500.

3. Sentiment: **NEUTRAL**
    - Excepting the Emerging Markets, money flows continue toward developed market counterparts, both non-U.S. and domestic U.S. equities. The late 3Q 2015 anxiety and accompanying volatility notwithstanding, investors remain overall constructive on global equities.
    - Until recently, major non-U.S. markets performance had mostly strengthened in 2015; postponement of normalization of U.S. monetary policy is supportive for the markets.

Commentary:

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 US 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.

At the very least, 2015 has been eventful for the global capital markets; they have had to navigate through an oil plunge, a continuation of the Greek debt crisis, turmoil in the Chinese stock market and implications of evolving U.S. Federal Reserve Open Market Committee rate policy, among others. The FOMC's decision in September to leave rates near zero was followed by another mini risk-off trend, and the weak job data and subsequent release of FOMC minutes triggered a sharp risk-preference rally.

CURRENT PORTFOLIO POSTURE: UNDERWEIGHT vs. SAA target

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 as well as trading liquidity has diminished due to 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 it is likely the Federal Reserve will begin raising short-term rates in the coming months. Despite the likelihood that the Fed will raise short-term rates, 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: **NEUTRAL**
   - 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.
   - We believe the tradable, public credit markets are not particularly compelling. While valuations as measured by credit spreads in both the investment-grade and high yield bond markets have become more attractive, 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. 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; and 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. We recently expanded our commitments to take advantage of the attractive opportunities in the private debt asset class.
   - 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 may be 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: UNDERWEIGHT vs. SAA target

REAL ESTATE

Primary Market Metrics & Indicators:

1. Fundamentals: **POSITIVE**
   - Improved levels of demand and supportive credit conditions, combined with broad improvement in the economy, are supportive of continued expansion of commercial lending and building. Better levels of occupancy while there is a lack of construction has resulted in rising rents.
   - Our review of property market fundamentals leads 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.
   - There are relatively few foreclosures on high quality property, but there continues to be pressures on refinancing of legacy leverage structures and we participate in those transactions through several of our manager relationships.
   - Single family housing continues to exhibit tight supply and moderate demand driven by healing household balance sheets, improved employment conditions, and continued affordability. This should lead to reacceleration of new construction and continued moderate price increases. Recovery in construction and NOI has been led by apartments to date.

2. Valuations: **NEUTRAL**
   - On a total market basis, valuations have recovered from recession lows but are still about 5% below prior peak. However, coastal markets have rebounded more strongly than interior markets.
   - High quality coastal market properties are trading at historic low cap rates; however these cap rates still reflect approximately a normal spread to treasury. The financing market for assets of this quality has recovered and supports these valuations by providing fixed rate financing that mitigates the risk of later cap rate expansion. International investors looking for safe assets have contributed to demand in the coastal markets.
   - 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 September, REITs were trading at an average dividend yield of 3.82% (168bp above 10y treasury) and a 2% discount to NAV. The dividend yield spread is above the historical average of 111 while the historical difference to NAV is a 4% premium.

3. Sentiment: **POSITIVE**
    - U.S. focused real estate fund raising rose 13% to $76 billion per year. U.S. focused dry powder has trended down to approximately $80 billion.
    - Global commercial real estate transaction volume peaked at around $700 billion in 2007, but dropped to about a third of that during the global financial crisis. Current volume of approximately $550 billion is double the recession trough, but still well below the peak.
    - Debt availability has improved considerably since the depth of the recession, but is still tight by historic standards for all but the most desirable properties. Construction financing remains a considerable challenge, even for well justified projects.

Commentary:

IMD continues to implement its separate account real estate strategic manager program. ASRS 2016 RE Program Implementation Plan (sector valuations, pacing, etc.) is scheduled to occur in Q4-15.

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 continues to show steady improvement.
        - ◊ Oil prices have remained in the range of their 2014 price correction which will result 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 increasing 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**
    - U.S. median purchase price multiples in 2014 were 8.9x, down from the 10.0x 2013 levels (which were close to the previous peak).
    - The leveraged loan and high yield debt markets were active in 2014 but down from 2013 highs. Single B high yield spreads have widened to ~530bps.
    - The U.S. median Debt/EBITDA ratio of 5.8x in 2014 was down from 6.5X in 2013 (slightly above the previous peak).

3. Sentiment: **NEUTRAL**
   - Globally, $242B (484 funds) have closed in 2015 (as of 6/30/2015) compared to $545B (1,237 funds) for all of 2014 and $539B (1,281 funds) for all of 2013.
   - Dry powder of nearly $1.3T globally has ticked up from $1.2T for 2014 and 2013.
   - The global number of buyout deals was 1,595 (as of 6/30/2015) compared to 3,648 for all of 2014 and 3,383 for all of 2013. The aggregate value of deals was $199B (as of 6/30/2015) compared to $345B for all of 2014 and $305B for all of 2013.
   - There were 755 exits representing $219B (as of 6/30/2015). For all of 2014 there were 1,622 exits representing $448B compared to 1,583 exits representing $327B in 2013.
   - The IPO market in 2015 has softened to a level of $20B (as of 6/30/2015) versus $67B for all of 2014 and $48B for all of 2013.

Commentary:

Areas of emphasis are U.S. middle market buyout with focus on managers with strong operational capability. Vertical strategies in energy, 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 PE Program Implementation Plan (sector valuations, pacing, etc.) is scheduled to occur in Q4-15.

CURRENT PORTFOLIO POSTURE: EQUAL WEIGHT vs. SAA target

COMMODITIES

Primary Market Metrics & Indicators:

1. Fundamentals: **NEGATIVE**
   - The U.S. dollar has strengthened on a relative basis as the Fed appears poised to raise interest rates. 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 potential 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 $45. Metals have weakened as precious metals have suffered from U.S. dollar strength while industrial metals still exhibit weak demand.

2. Valuations: **NEGATIVE**
   - The Bloomberg Commodities Index is just above its 13 year low as global supplies outpace demand.
   - On a trailing twelve-month basis, commodities are down 30% with ags being the least impacted sector with a decline of 11%.

3. Sentiment: **NEGATIVE**
   - The moderate growth and weak inflation environment in the U.S. has tempered 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%, recognizing the effects of the Chinese slowdown and sufficient global supplies. As a result of the changing dynamics in the energy markets IMD reduced its exposure to commodities in December and further reduced its exposure in July as inflationary pressures are still soft.

The North American shale play has resulted in increased U.S. 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 U.S. 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 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 COMMITEE 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	4
	November	11/18	1			11/30	1	
	December							
Totals			16		1		7	24

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

- In August, the ASRS cash assetization benchmark was modified to a “risk off” composition which reflected IMD defensive Investment House Views: 1) concern that the capital markets of emerging economies most sensitive to a continuation of robust Chinese industrial growth would likely remain volatile and may weaken further; 2) that this volatility could spill over to the developed-world capital markets; and 3) should the FOMC implement increase the Fed Funds rate at the September meeting, the capital markets would react undesirably.

  Though the ASRS benefited from a further reductions in exposure to high yield and commodities (which continues to perform poorly), the rebound in the prices of equity risk assets in September that followed our repositioning resulted in an unforeseen opportunity cost as we raised cash needed to meet internal and external cash flow needs.

  Given market volatility has since subsided and IMD remains somewhat defensive, the new cash benchmark reflects a 50/50 mix of a US Treasury basket and equities that reflects IMDs house views. The equity allocation reflects a neutral view on international equity and a view that 1) large cap US equity is likely to face greater headwinds from US dollar strength as monetary policy firms in contrast to ~~vs~~ greater easing across Europe and Japan, and from continued economic slowdown across commodity producing emerging market countries; and 2) US mid and small cap companies offer better relative value and are more exposed to the strengthening US economy. The 50/50 mix of US equity exposure between S&P 500 and Russell 2000 in the Assetization allocation reflects that thinking.

- In November, 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 plan will be presented to the private markets committee in December.

- 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 66 investment managers: Private markets (RE, PE, Debt) – 41 and Public markets (Equity and Debt) – 25.

- 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 October 31, 2015, 3 of 7 met or exceeded their benchmarks, and 7 of 7 portfolios met or exceeded their benchmarks on an inception-to-date basis.