Arizona State Retirement System

Investment Committee

Investment Program Updates

October 26, 2015

Presented by:
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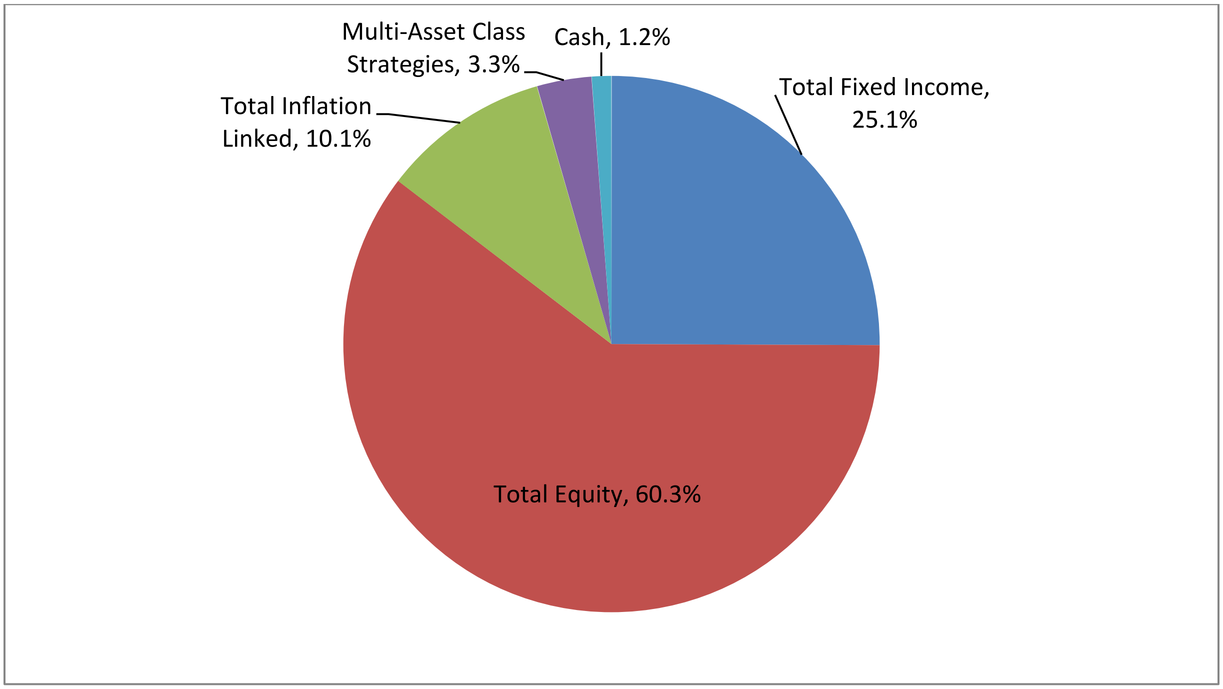
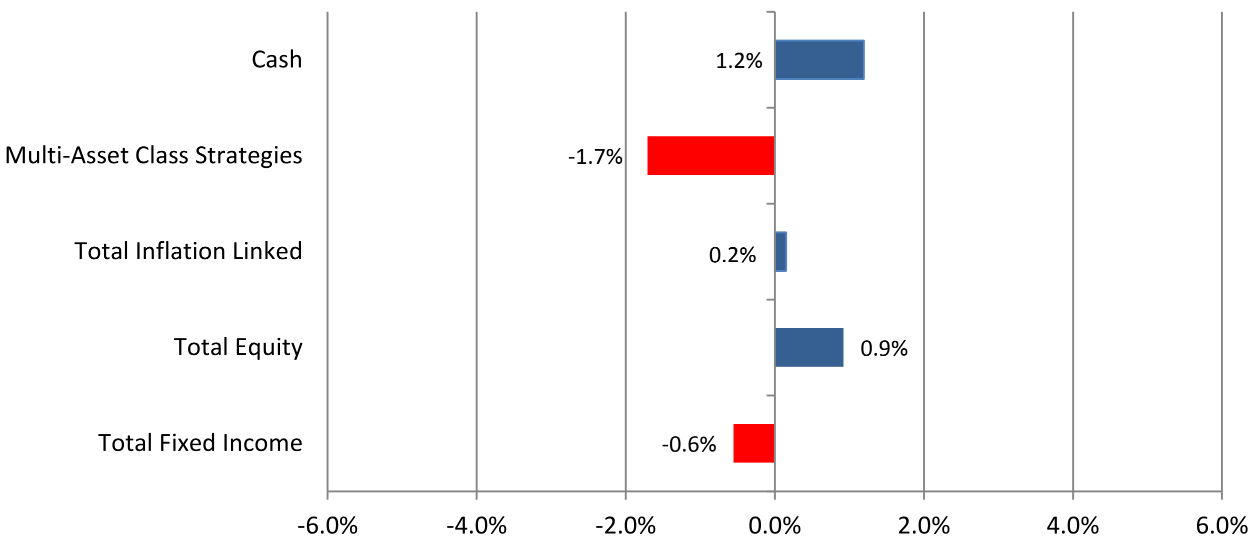
TOTAL FUND POSITIONING 9/30/2015

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 — Wednesday, September 30, 2015

Account Manager	Account Manager Style	Fixed Income Active	Fixed Income Enh/Passive	Equity Active	Equity Enh/Passive	Inflation Linked Active	Multi-Asset Active	Total	Pct of Fund
State Street B&T: Boston	Tactical Cash (non-assetized)							0	0.00%
								Tactical Cash Policy Range: 0% - 3%	0.00%
	Operating Cash (non-assetized)		28,917,423					28,917,423	0.09%
	Operating Cash (assetized)		363,086,739					363,086,739	1.10%
	Cash Total							**$392,004,163**	1.19%
								Cash Policy: 0%	0.00%
Blackrock: San Francisco	Treasuries (Long Duration)		388,053,350					388,053,350	1.18%
	Treasuries (Long Duration) Total							**$388,053,350**	1.18%
								Treasuries (Long Duration) Policy Range: 0% - 10%	**0.00%**
Blackrock: San Francisco	Passive (Intermediate Gov Credit)		24,544,795					24,544,795	0.07%
ASRS: Phoenix	Enhanced Passive F2		1,882,369,047					1,882,369,047	5.73%
Blackrock: San Francisco	Passive (US Debt Index)		1,824,160,448					1,824,160,448	5.55%
	Core Fixed Income Total							**$4,119,290,906.55**	12.53%
								Interest Rate Sensitive: 11%	11.00%
Columbia: Minneapolis	Active	667,136,852						667,136,852	2.03%
JP Morgan: Indianapolis	Active	344,810,187						344,810,187	1.05%
	High Yield Fixed Income Total							**$1,011,960,794**	3.08%
								High Yield Fixed Income Policy	**4.00%**
	Opportunistic Debt	1,130,210,914						**$1,130,210,914**	3.44%
								Opportunistic Debt Policy:	0.00%
	Private Debt Total	1,975,871,750						**$1,975,871,750**	6.01%
								Total Private Debt: 8% - 12%	10.00%
	Fixed Income Total							**$8,237,351,777**	25.06%
								Total Fixed Income Policy Range: 18% - 35%	25.00%
Intech: FL	Active (Growth)			401,193,800				401,193,800	1.22%
LSV: Chicago	Active (Value)			695,386,728				695,386,728	2.12%
ASRS: Phoenix	Passive E2				4,709,661,742			4,709,661,742	14.33%
ASRS: Phoenix	Enhanced Passive E7				619,347,929			619,347,929	1.88%
ASRS: Phoenix	Enhanced Passive E8				533,301,129			533,301,129	1.62%
ASRS: Phoenix	Risk Factor Portfolio				528,676,862			528,676,862	1.61%
	Large Cap Equity Total							**$7,487,568,191**	22.78%
								Large Cap Policy	**20.00%**
Wellington: Boston	Active (Core)			264,319,276				264,319,276	0.80%
ASRS: Phoenix	Passive E3 (Growth)				361,802,581			361,802,581	1.10%
ASRS: Phoenix	Passive E4 (Value)				314,967,234			314,967,234	0.96%
	Mid Cap Equity Total							**$941,089,091**	2.86%
								Mid Cap Policy	**3.00%**
TimesSquare: New York	Active SMID (Growth)			341,034,654				341,034,654	1.04%
DFA: Santa Monica	Active (Value)			257,502,106				257,502,106	0.78%
ASRS: Phoenix	Passive E6				306,381,961			306,381,961	0.93%
	Small Cap Equity Total							**$904,918,721**	2.75%
								Small Cap Policy	**3.00%**
	U.S. Equity Total							**$9,333,576,003**	28.40%
								US Equity Policy Range: 16% - 36%	26.00%
Brandes: San Diego	Active (Value)			541,516,738				541,516,738	1.65%
American Century	Active (EAFE)			537,383,072				537,383,072	1.64%
Trinity Street	Active (EAFE)			309,863,753				309,863,753	0.94%
Thompson Siegel Walmsley	Active (EAFE)			283,582,573				283,582,573	0.86%
Blackrock: San Francisco	Passive (EAFE)				3,741,064,555			3,741,064,555	11.38%
	Large Cap Developed Non-US Equity Total							**$5,415,582,762**	16.48%
								Large Cap Developed Policy	**17.00%**
AQR: Greenwich	Active (EAFE SC)			92,187,186				92,187,186	0.28%
DFA: Santa Monica	Active (EAFE SC)			98,397,749				98,397,749	0.30%
Franklin Templeton: San Mateo	Active (EAFE SC)			213,287,152				213,287,152	0.65%
Blackrock: San Francisco	Passive (EAFE SC)				234,113,933			234,113,933	0.71%
	Small Cap Developed Non-US Equity Total							**$637,988,483**	1.94%
								Small Cap Developed Policy	**2.00%**
William Blair: Chicago	Active (EM)			333,419,592				333,419,592	1.01%
Eaton Vance: Boston	Active (EM)			341,080,841				341,080,841	1.04%
LSV: Chicago	Active (EM)			205,834,795				205,834,795	0.63%
Blackrock: San Francisco	Passive (EM)				448,429,652			448,429,652	1.36%
	Emerging Markets Equity Total							**$1,328,764,880**	4.04%
								Emerging Markets Policy	**5.00%**
	Non-US Equity Total							**$7,382,336,124**	22.46%
								Non-US Equity Policy Range: 14% - 34%	24.00%
	Private Equity Total			2,630,103,398				**$2,630,103,398**	8.00%
								Private Equity Policy Range: 6% - 10%	8.00%
	Opportunistic Equity			479,312,489				**$479,312,489**	1.46%
								Opportunistic Equity Policy:	0.00%
	Equity Total							**$19,825,328,014**	60.32%
								Total Equity Policy Range: 48% - 65%	58.00%
Gresham: New York						232,090,430		232,090,430	0.71%
	Commodities Total							**$232,090,430**	0.71%
								Commodities Policy Range: 0% - 4%	2.00%
	Real Estate Total					2,609,887,576		**$2,609,887,576**	7.94%
								Real Estate Policy Range: 8% - 12%	10.00%
	Infrastructure Total					305,645,449		**$305,645,449**	0.93%
								Infrastructure Policy Range: 0% - 3%	0.00%
	Farmland & Timber Total					182,866,866		**$182,866,866**	0.56%
								Farmland & Timber Policy Range: 0% - 3%	0.00%
	Inflation Linked Total							**$3,330,490,320**	10.13%
								Inflation Linked Policy Range: 10% - 16%	12.00%
Bridgewater							1,081,100,289	1,081,100,289	3.29%
	Multi-Asset Class Strategies							**$1,081,100,289**	3.29%
								Multi-Asset Class Policy Range: 0% - 12%	5.00%
	TOTAL Amounts	$4,118,060,871	$4,511,295,069	$8,027,164,878	$11,798,163,136	$3,330,490,320	$1,081,100,289	**$32,866,274,564**	**Total Fund**
	TOTAL Percent	12.53%	13.73%	24.42%	35.90%	10.13%	3.29%		

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	1.19%	0.00%	0.00%	1.19%	392,004,163	
Interest Rate Sensitive	12.53%	11%	14.54%	-2.01%		
High Yield	3.08%	4%	5.06%	-1.98%		
Opportunistic Debt	3.44%	0%	0.00%	3.44%	$1,130,210,914	
Private Debt	6.01%	10% (8-12%)	6.01% (4-8%)	0.00%		
Total Fixed Income	**25.06%**	**25% (18-35%)**	**25.62% (19-36%)**	**-0.55%**	**-$182,238,828**	**OK**
Large Cap	22.78%	20%	20.80%	1.98%	$651,186,157	
Mid Cap	2.86%	3%	3.00%	-0.14%	-$44,899,146	
Small Cap	2.75%	3%	3.00%	-0.25%	-$81,069,515	
US Equity	**28.40%**	**26% (16-36%)**	**26.8% (17-37%)**	**1.60%**	**$525,217,496**	**OK**
Developed Large Cap	16.48%	17%	17.60%	-1.12%	-$367,938,480	
Developed Small Cap	1.94%	2%	2.00%	-0.06%	-$19,337,008	
Emerging Markets	4.04%	5%	5.00%	-0.96%	-$314,548,848	
Non-US Equity	**22.46%**	**24% (14-34%)**	**24.6% (15-35%)**	**-2.14%**	**-$701,824,336**	**OK**
Private Equity	8.00%	8% (6-10%)	8.00%	0.00%	$0	**OK**
Opportunistic Equity	1.46%	0%	0.00%	1.46%	$479,312,489	
Total Equity	**60.32%**	**58% (48-65%)**	**59.4% (49-66%)**	**0.92%**	**$302,705,648**	**OK**
Commodities	0.71%	2% (0-4%)	2.04%	-1.34%	-$438,769,859	**OK**
Real Estate	7.94%	10% (8-12%)	7.94%	0.00%	$0	**OK**
Infrastructure	0.93%	0% (0-3%)	0.00%	0.93%	$305,645,449	**OK**
Farmland & Timber	0.56%	0% (0-3%)	0.00%	0.56%	$182,866,866	**OK**
Opportunistic I/L	0.00%	0%	0.00%	0.00%	$0	
Total Inflation Linked	**10.13%**	**12% (10-16%)**	**9.98% (8-12%)**	**0.15%**	**$49,742,456**	**OK**
Multi-Asset Strategies* **	**3.29%**	**5% (0-12%)**	**5% (0-12%)**	**-1.71%**	**-$562,213,439**	**OK**
Total	**100.00%**	**100%**	**100.00%**	**0.00%**	**$0**	

Internally Managed Portfolios:	
$8,727,831,623	**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	**$1,130,210,914**	**3.4%**
Opportunistic Equity	**$479,312,489**	**1.5%**
Opoprtunistic IL	**$0**	**0.0%**
	$1,609,523,404	**4.9%**

ARIZONA STATE RETIREMENT SYSTEM'S INVESTMENT MANAGEMENT HOUSE VIEWS

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

OCTOBER 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, 15.8x-17.6x; S&P MID, 16.0x-19.8x; S&P SC600, 17.8x-20.9x.
   - Historic P/Es imply advances of 5-10% for mid and small caps; 9-12% 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:

The "NEUTRAL" opinions on Sentiment and Valuations are unchanged as is the "POSITIVE" opinion on Fundamentals

The moderately fluctuating values, but essentially net sideways movement of the U.S. equities markets that was experienced throughout most of 3Q2015 gave way to a broad selloff in mid-September. The markets were trendless leading up to the 17th September Federal Open Markets Committee meeting in general expectation that the committee would take the first step, albeit token, toward monetary policy normalization. When instead, the FOMC postponed that out of sensitivity to the softening economic conditions and more volatile markets abroad, many short-term participants misinterpreted it as an indication that the FOMC sensed the domestic economy was stalling. They unwound aggressively optimistic positions which resulted in a sharp correction across the global markets. Only after a series of moderating statements by Federal Reserve governors did the equities markets regain confidence and recoup a fair amount of the selloff.

Long-term prospects for the U.S. equities markets are constructive even if the current phase of price fluctuations appears to weaken that case. The major indexes of U.S. stocks have responded generally as anticipated. Robust, macro-driven momentum of the past two years was overdue for some deceleration, even a downright pause, if only to allow fundamentals time to catch up with prices. Having reached an all-time high, prices have backed off a bit, snuffing out positive year-to-date returns and eroding investor confidence.

There is a positive macro environment for domestic equities, with an essentially sound U.S. economy in a setting of unusually low interest rates. Although some stumbling is likely as the cycle of rising interest rates gets underway, and perhaps the markets have prematurely telescoped-in some of that already this year, history has shown that stocks tend to fare reasonably well as interest rates ascend. Official Federal Reserve policy remains clear in its expectation to normalize the level of the federal funds rate only gradually and reflect the slow, but continuing diminution of economic headwinds. Thus any interest rates increases will be a function of sustained improvement in the U.S. economy, not because the FOMC wants to forestall an overheated economy and induce recession. That's hardly a precursor for falling corporate earnings and stock prices.

Almost perversely, analysts have been taking down 2015 earnings estimates since last November, coinciding with a period in which the both the rise of the exchange rate of the U.S. Dollars and the decline in oil prices accelerated. Reductions in estimates for energy sector earnings and the effects of the higher USD exchange rate account for the 2015 year-on-year growth rate of S&P 500 earnings tumbling to 2%. Viewed at the index level and not necessarily from a top-down context, nor sector by sector, the markets seemed to have inferred that business was undergoing a widespread weakening. However, the benefits derived from quantitative easing provoking global reflation haven't been translated into the present cohort of non-energy corporate earnings estimates. They are apt to be meaningful catalysts to stocks as 2015 rolls on.

Misconceptions about the speed and magnitude by which the FOMC will move interest rates upward, apprehension over the direction of earnings estimates revisions, and transient anxieties about the potential impact from fluctuating Chinese equity markets have triggered these recent bouts of relatively minor volatility. This is likely to go on until visible signs appear later this year from the positive combined follow-on effects of ex-U.S. QE programs, of the favorable relative exchange rates engendered by those programs, and from low energy prices. As those signs appear, widespread U.S. corporate earnings growth rates should also turn up.

CURRENT PORTFOLIO POSTURE: OVERWEIGHT vs. SAA target

NON – U.S. EQUITIES

Primary Market Metrics & Indicators:

1. Fundamentals: **NEUTRAL (from POSITIVE)**

- 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 11.9x – 15.2x on trend earnings.
   - Dividend yields are incrementally more favorable -ranging from 1.1x to 1.9x that of the S&P500.

3. Sentiment: **NEUTRAL (from POSITIVE)**
   - 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:

The "POSITIVE" opinion on Valuations is unchanged; reflective of the IMD tactical move to reduce some exposure to risk-oriented assets, Fundamentals and Sentiment opinions have been changed to "NEUTRAL".

Consistent with a reduction in Total Fund risk assets, IMD further reduced exposure to Emerging Market equities ("EM"). EM now represents approximately 4% of compared to a target weight of 5.0%. Proceeds of the drawdown, which was borne equally by the sub-class's passive and active strategies, were reinvested in instruments replicating long-dated U.S. Treasury securities in the Total Fund Cash Assetization category.

The long-term case for global equities is still upbeat on the back of the global reflationary effort. Flow-driven major markets remain capable of posting high, single digit returns (in USD terms). Both the distant past and recent history have shown that liquidity injections, when delivered in sufficient size and duration, can greatly surpass most other market influences. ECB quantitative easing of over a trillion Euros certainly meets those criteria.

Some risks still threaten, e.g.: Investor leverage, threats to profitability, crowding of trades and some geopolitical risks. The effects of moving foreign exchange rates dominate most factors and have led to Japanese and European equities responding to profitability-driven margin expansion. The markets don't seem to have priced this in completely, yet momentum risk-on, and reflation oriented strategies, especially in the European markets, seem to be prevailing.

Support from robust liquidity in Europe, and a stronger than expected economy, are impressive enticements to under-owned, low-leverage equities. Upside potential remains, although an overly strong rise too early in the process could burn that out. The impact of quantitative and qualitative easing in Japan has effectively collared the downside of its markets even as overall returns on corporate equity are normalizing further to the upside.

That large, globally-exposed corporations now face more significant revenue and earnings headwinds is one negative consequence in the US from a stronger US Dollar (USD). In contrast, the weakening of currencies against the USD should help augment the revenues of large, multinational equities based outside the U.S. Similarly, European corporate earnings are destined to grow at a double-digit pace, despite lingering weakness in the peripheral regional economies. European equities currently benefit from three significant tailwinds: the fall in the EUR exchange rate; a reduction in borrowing costs; and the resulting boost to growth from protracting lower oil prices. The European Central Bank's quantitative easing program should continue to support the first two tailwinds in the near term, while oil prices should continue to fall in year-on-year terms for several months, even should the clearing price cease falling further, which supports the third tailwind.
UK equities have fallen out of favor since the Scottish referendum in September last year. Although, the recent UK elections outcomes aren't necessarily capital markets friendly the markets seem discounted the political risks even though the UK market faces a zero expected return in 2015.

Emerging market economies are still beset by political interference, intractable labor markets and structural problems with what drives those economies. Despite sustained liquidity coursing through their capital markets, the stocks are largely unresponsive. Moreover, capital flows into the USD will continue weighing on the EMs.

A persistently rising USD is not a common theme in markets. It appears to be less prevalent during a "risk on" trend – driven by economics and fundamentals – rather than during a "risk-off' mode. Still, the ramifications of a strong USD in 2015 will be important globally and across assets Many of the first-round consequences of a strong USD have already been felt. The strength of the USD has helped to push commodity prices and inflation down, restraining bond yields and leading to increased flows into U.S. equities and bonds. These trends should persist and even second-round influences may emerge. The latter might surface as financial conditions in some EM economies tighten further and should any further firming in U.S. consumption elevate the rate of GDP growth. Again, this bolsters the case for multinational non-U.S. companies with sizeable revenues from exports to the U.S.

Also, a rising USD has significant effect on the global flows of capital. The implications are substantial for financial conditions globally and probably felt most acutely by those countries running current account deficits and where a higher proportion of debt is issued in USD. Economic, asset price and currency outperformance in the U.S. may hinder domestic investors from aggressively deploying assets abroad. Meanwhile, investors in weak economies where currencies are depreciating and asset price performance is equally meager are apt to invest the U.S. These potential secondary forces suggest to us that the significant outperformance of U.S, and of developed non-U.S., equity markets relative to those of emerging economies is a multi-year, structural theme.

CURRENT PORTFOLIO POSTURE: UNDERWEIGHT vs. SAA target

FIXED INCOME

Primary Markets Metrics & Indicators:

1. Fundamentals: **NEGATIVE (from NEUTRAL)**
   - 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. All of these factors have contributed to increased uncertainty regarding Federal Reserve policy with respect to raising short-term interest rates. In August, due to concerns about slowing global growth, deflationary pressures, and a potential repricing of risk in the financial markets, we reduced our exposure to high yield bonds and reallocated funds to the Treasuries (Long Duration) asset class.

- 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 (from NEGATIVE)**
   - 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.
   - With a recent sell-off in the credit markets, valuations as measured by credit spreads in both the investment-grade and high yield bond markets have become more attractive. However, 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. 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 (from NEUTRAL)**

   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 remains bifurcated on their fixed income House Views: less positive on HY and interest rate sensitive core spread sectors but positive private debt

CURRENT PORTFOLIO POSTURE: SLIGHT 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 August, REITs were trading at an average dividend yield of 4.08% (186bp above 10y treasury) and a 12% discount to NAV. The dividend yield spread is above the historical average of 110 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 $50. 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 12 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 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. 4.9% 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					5
	August	08/28	1	08/14	1	08/24	1	
	September	09/15	1					
4th	October	10/15	1			10/26	1	2
	November							
	December							
Totals			15		1		6	22

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

- IMD reallocated approximately $1.2bn / 3.5% of the Total Fund from higher to lower market risk assets In August and September. This action was the result of a View that market turbulence will continue and downside risk exists in risk assets for the short-to-intermediate period and the need to "replenish" ASRS Cash Assetization fund to meet its negative external cash flow needs and larger expected private market capital call over the next 3-6 months.

  Consequently, IMD reduced:
  1) The Emerging Markets Equity class by $350 MN;
  2) The High-Yield debt class by $250MN;
  3) The Commodities class by $200MN; and
  4) The Multi-Asset Class by $420MN

  And reapportioned proceeds:
  1) $387.5MN to Fixed Income-Long Treasuries;
  2) $287MN to Private Debt capital calls;
  3) $107MN to Real Estate capital calls;
  4) $438MN to Cash Assetization program with an interim exposure to defensive longer-maturity Treasuries.

- 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 has met via conference call or in-person with a total of 123 investment managers: Private markets (RE, PE, Debt) – 57 and Public markets (Equity and Debt) – 66.

- IMD internally manages 7 public equities and fixed income portfolios which had an approximate aggregate market value of over $8.7BN or 27% of Total Fund. On a calendar quarter-to-date through September30, 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.