Arizona State Retirement System

Investment Committee

Investment Program Updates

June 22, 2015

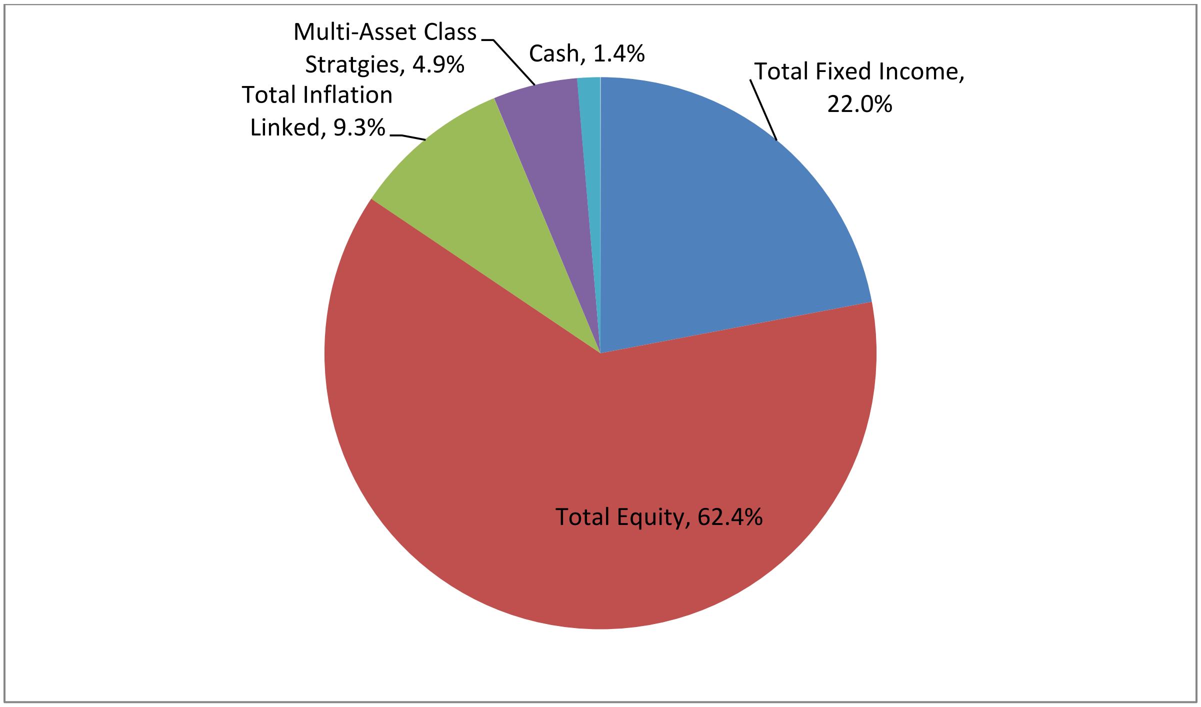
Presented by:
Gary R. Dokes, Chief Investment Officer, ASRS
David Underwood, Assistant Chief Investment Officer, ASRS
Karl Polen, Head of Private Markets Investing, ASRS
Al Alaimo, Fixed Income Portfolio Manager, ASRS
Eric Glass, Portfolio Manager of Private Markets, ASRS

TABLE OF CONTENTS

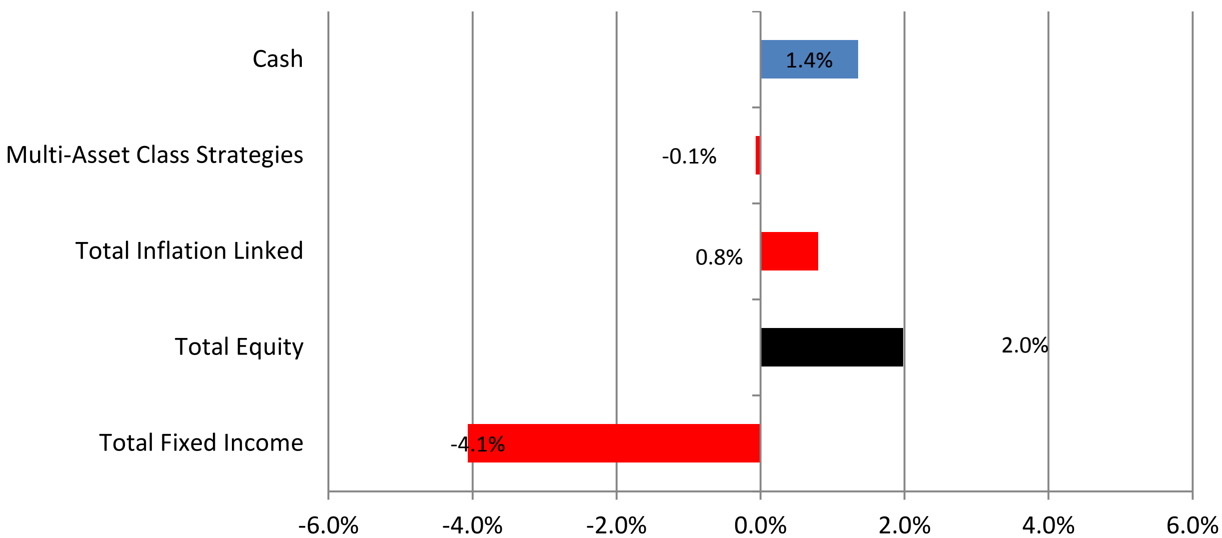
Total Fund Positioning – 5/29/2015 3
Arizona State Retirement System's Investment Management House Views 6
June 2015 6
U.S. Equities 6
Non – U.S. Equities 7
Fixed Income 9
Real Estate 11
Private Equity 12
Commodities 13
Opportunistic Investments 14
Glossary 14
2015 ASSET CLASS COMMITEE AND IC MEETINGS 15
PRIVATE MARKETS COMMITTEE (PRIVMC) 16
Tactical Portfolio Positioning 17
IMD (Investment Management Division) 17
Activities, Projects and Research Initiatives 17

TOTAL FUND POSITIONING – 5/29/2015

ACTUAL PORTFOLIO



ACTUAL PORTFOLIO (ASSUMED GTAA ALLOCATION VS. ADJUSTED SAA POLICY *)



**Real Estate and Private Equity actual weight is equal to policy weight during the implementation of the asset class.*

**Over/Underweights include both GTAA positions as well as IMD tactical considerations.*

Note: Opportunistic & Private Debt, Opportunistic Private Equity, Farmland & Timber, Real Estate and Private Equity market values are reported on a quarter-lag and adjusted to include the current quarter's cash flows. Within the Assumed GTAA Allocation vs. Adjusted SAA Policy chart, Real Estate was prorated to domestic equity, international equity and fixed income. Private Equity was prorated to domestic equity.

Pension (Plan, System, HBS Assets) — **ASRS Market Value Report** — **Friday, May 29, 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)		46,948,803					46,948,803	0.13%
	Operating Cash (assetized)		432,058,652					432,058,652	1.22%
	Cash Total							**$479,007,455**	1.35%
								Cash Policy Range: 0%	0.00%
	Treasuries (Long Duration) Total							**$0**	0.00%
								Treasuries (Long Duration) Policy	**0.00%**
Blackrock: San Francisco	Passive (Intermediate Gov Credit)		24,426,118					24,426,118	0.07%
ASRS: Phoenix	Enhanced Passive F2		1,893,920,922					1,893,920,922	5.35%
Blackrock: San Francisco	Passive (US Debt Index)		1,919,453,545					1,919,453,545	5.42%
	Core Fixed Income Total							**$3,837,962,221**	10.84%
								Interest Rate Sensitive: 11%	11.00%
Columbia: Minneapolis	Active	825,551,433						825,551,433	2.33%
JP Morgan: Indianapolis	Active	492,388,960						492,388,960	1.39%
	High Yield Fixed Income Total							**$1,317,954,147**	3.72%
								High Yield Fixed Income Policy	**4.00%**
	Opportunistic Debt	1,037,727,122						**$1,037,727,122**	2.93%
								Opportunistic Debt Policy Range: 0% - 10%	0.00%
	Private Debt Total	1,597,503,209						**$1,597,503,209**	4.51%
								Total Private Debt: 8% - 12%	10.00%
	Fixed Income Total							**$7,791,166,528**	22.01%
								Total Fixed Income Policy Range: 15% - 35%	25.00%
Intech: FL	Active (Growth)			457,549,049				457,549,049	1.29%
LSV: Chicago	Active (Value)			814,236,025				814,236,025	2.30%
ASRS: Phoenix	Passive E2				5,226,200,997			5,226,200,997	14.77%
ASRS: Phoenix	Enhanced Passive E7				721,313,352			721,313,352	2.04%
ASRS: Phoenix	Enhanced Passive E8				554,385,961			554,385,961	1.57%
ASRS: Phoenix	Risk Factor Portfolio				566,277,501			566,277,501	1.60%
	Large Cap Equity Total							**$8,339,962,884**	23.56%
								Large Cap Policy	**20.00%**
Wellington: Boston	Active (Core)			298,361,515				298,361,515	0.84%
ASRS: Phoenix	Passive E3 (Growth)				413,637,200			413,637,200	1.17%
ASRS: Phoenix	Passive E4 (Value)				379,652,430			379,652,430	1.07%
	Mid Cap Equity Total							**$1,091,708,049**	3.08%
								Mid Cap Policy	**3.00%**
TimesSquare: New York	Active SMID (Growth)			394,602,590				394,602,590	1.11%
DFA: Santa Monica	Active (Value)			313,621,907				313,621,907	0.89%
ASRS: Phoenix	Passive E6				359,029,106			359,029,106	1.01%
	Small Cap Equity Total							**$1,067,316,275**	3.02%
								Small Cap Policy	**3.00%**
	U.S. Equity Total							**$10,498,987,208**	29.66%
								US Equity Policy Range: 16% - 36%	26.00%
Brandes: San Diego	Active (Value)			608,975,308				608,975,308	1.72%
American Century	Active (EAFE)			594,234,704				594,234,704	1.68%
Trinity Street	Active (EAFE)			341,327,627				341,327,627	0.96%
Thompson Siegel Walmsley	Active (EAFE)			321,175,881				321,175,881	0.91%
Int'l Transition					609,827			609,827	0.00%
Blackrock: San Francisco	Passive (EAFE)				3,524,933,705			3,524,933,705	9.96%
	Large Cap Developed Non-US Equity Total							**$5,393,092,298**	15.24%
								Large Cap Developed Policy	**17.00%**
AQR: Greenwich	Active (EAFE SC)			187,257,231				187,257,231	0.53%
DFA: Santa Monica	Active (EAFE SC)			221,557,389				221,557,389	0.63%
Franklin Templeton: San Mateo	Active (EAFE SC)			415,593,431				415,593,431	1.17%
Blackrock: San Francisco	Passive (EAFE SC)				482,695,611			482,695,611	1.36%
	Small Cap Developed Non-US Equity Total							**$1,307,106,080**	3.69%
								Small Cap Developed Policy	**2.00%**
William Blair: Chicago	Active (EM)			486,315,374				486,315,374	1.37%
Eaton Vance: Boston	Active (EM)			481,589,296				481,589,296	1.36%
LSV: Chicago	Active (EM)			308,560,563				308,560,563	0.87%
Blackrock: San Francisco	Passive (EM)				683,967,141			683,967,141	1.93%
	Emerging Markets Equity Total							**$1,960,432,374**	5.54%
								Emerging Markets Policy	**5.00%**
	Non-US Equity Total							**$8,660,630,752**	24.47%
								Non-US Equity Policy Range: 14% - 34%	24.00%
	Private Equity Total			2,440,278,564				**$2,440,278,564**	6.89%
								Private Equity Policy Range: 6% - 10%	8.00%
	Opportunistic Equity			492,825,188				**$492,825,188**	1.39%
								Opportunistic Equity Policy Range: 0% - 3%	0.00%
	Equity Total							**$22,092,721,712**	62.42%
								Total Equity Policy Range: 48% - 68%	58.00%
Gresham: New York						558,916,732		558,916,732	1.58%
	Commodities Total							**$558,916,732**	1.58%
								Commodities Policy Range: 0% - 4%	2.00%
	Real Estate Total					2,270,794,019		**$2,270,794,019**	6.42%
								Real Estate Policy Range: 8% - 12%	10.00%
	Infrastructure Total					300,710,400		**$300,710,400**	0.85%
								Infrastructure Policy Range: 0% - 3%	0.00%
	Farmland & Timber Total					154,690,846		**$154,690,846**	0.44%
								Opportunistic I/L Policy Range: 0% - 3%	0.00%
	Inflation Linked Total							**$3,285,111,996**	9.28%
								Inflation Linked Policy Range: 8% - 16%	12.00%
Windham							590,423,033	590,423,033	1.67%
Bridgewater							1,156,348,753	1,156,348,753	3.27%
	Multi-Asset Class Strategies							**$1,746,771,786**	4.94%
								Multi-Asset Class Policy Range: 0% - 10%	5.00%
	TOTAL Amounts	$3,953,204,307	$4,316,969,676	$9,180,018,883	$12,912,702,830	$3,285,111,996	$1,746,771,786	**$35,394,779,477**	**Total Fund**
	TOTAL Percent	11.17%	12.20%	25.94%	36.48%	9.28%	4.94%		

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	1.35%	0.00%	0.00%	1.35%	479,007,455		
Interest Rate Sensitive	10.84%	11%	16.10%	-5.26%			
High Yield	3.72%	4%	5.46%	-1.74%			
Opportunistic Debt	2.93%	0%	0.00%	2.93%	$1,037,727,122		
Private Debt	4.51%	10% (8-12%)	4.51%	0.00%			
Total Fixed Income	**22.01%**	**25% (18-35%)**	**26.08% (19-36%)**	**-4.06%**	**-$1,438,133,520**	**OK**	
Large Cap	23.56%	20%	22.50%	1.06%	$374,916,462		
Mid Cap	3.08%	3%	3.00%	0.08%	$29,864,664		
Small Cap	3.02%	3%	3.00%	0.02%	$5,472,891		
US Equity	**29.66%**	**26% (16-36%)**	**28.5% (19-39%)**	**1.16%**	**$410,254,018**	**OK**	
Developed Large Cap	15.24%	17%	18.04%	-2.80%	-$991,938,553		
Developed Small Cap	3.69%	2%	2.00%	1.69%	$599,210,490		
Emerging Markets	5.54%	5%	5.00%	0.54%	$190,693,400		
Non-US Equity	**24.47%**	**24% (14-34%)**	**25.04% (15-35%)**	**-0.57%**	**-$202,034,662**	**OK**	
Private Equity	6.89%	8% (6-10%)	6.89%	0.00%	$0	**OK**	
Opportunistic Equity	1.39%	0%	0.00%	1.39%	$492,825,188		
Total Equity	**62.42%**	**58% (48-65%)**	**60.44% (50-67%)**	**1.98%**	**$701,044,544**	**OK**	
Commodities	1.58%	2% (0-4%)	2.07%	-0.49%	-$174,352,537	**OK**	
Real Estate	6.42%	10% (8-12%)	6.42%	0.00%	$0	**OK**	
Infrastructure	0.85%	0% (0-3%)	0.00%	0.85%	$300,710,400	**OK**	
Farmland & Timber	0.44%	0% (0-3%)	0.00%	0.44%	$154,690,846	**OK**	
Opportunistic I/L	0.00%	0%	0.00%	0.00%	$0		
Total Inflation Linked	**9.28%**	**12% (10-16%)**	**8.49% (6-12%)**	**0.79%**	**$281,048,709**	**OK**	
Multi-Asset Strategies* **	**4.94%**	**5% (0-12%)**	**5% (0-12%)**	**-0.06%**	**-$22,967,188**	**OK**	
Total	**100.00%**	**100%**	**100.00%**	**0.00%**	**$0**		
						Internally Managed Portfolios:	
						$9,548,139,967	**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	**$1,037,727,122**	**2.9%**
Opportunistic Equity	**$492,825,188**	**1.4%**
Opoprtunistic IL	**$0**	**0.0%**
	$1,530,552,311	**4.3%**

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

JUNE 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 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**
   - US 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, 15.7x-17.6x; S&P MID, 16.4x-19.5x; S&P SC600, 18.5x-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

We reduced the allocation of U.S. equities during 1Q2015 to align toward the newly adopted Strategic Asset Allocation Policy (SAA) and to move in concert with our tactical views. We prefer to be at, or marginally below, policy targets for the short-to-intermediate term. After reallocating nearly 4% of assets in April to the non-U.S.

Equities/EAFE sub-class, U.S. equities are now about 28.5% of Total Fund, down from 32% and in line with the "*Interim SAA"*. Another 2%-3% will move from the class once it can be absorbed by non-U.S. Equities and by other asset classes, at which point equity allocations would align with our tactical view in relation to the 27th February 2015 SAA.

Midway through 2015, long-term prospects for the U.S. equities markets remain constructive even if the current phase of price fluctuations appear 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. The Federal Reserve Open Market Committee, underscored recently in a speech by Chairperson Yellen, and echoed in June by New York Federal Reserve Bank president William Dudley, has been clear that it expects 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 compounded by apprehension over the direction of earnings estimates revisions have triggered the latest bout of relatively minor volatility in the equities markets. 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: **POSITIVE**
   - Eurozone and Japanese economic conditions are firming, if irregularly; they remain soft in lesser-developed economies.

- Relatively inexpensive and available money supports a shift toward risk assets.
- Monetary and economic policies are focused on promoting economic growth and stemming disinflation.

2. Valuations: **POSITIVE**
   - Reasonable global valuations relative to U.S.; price-to-book values of 1.4x - 1.6x; P/Es of 11.0x – 15.3x on trend earnings.
   - Dividend yields are incrementally more favorable -ranging from 1.1x to 1.9x that of the S&P500.

3. Sentiment: **POSITIVE**
   - With the exception of the emerging markets, money flows continue toward the developed counterparts, biased more toward non-U.S. equities than to domestic U.S. markets. Investors are less guarded and remain constructive on global risks despite some near tern risk aversion volatility.
   - Major non-U.S. markets performance have mostly strengthened in 2015.

Commentary:

The "POSITIVE" opinions on Fundamentals, Sentiment and Valuations are unchanged.

Staff raised the allocation to the overall Non-U.S. Equities class in April. It now essentially aligns with the ca February 2015 SAA policy target. Later in the cycle it may exceed that slightly. We are reducing both the Emerging Markets sub-class and EAFE/Small-cap asset subclasses during June to move them to the new policy target weights. Proceeds are being reapportioned to the developed markets EAFE asset subclass to also align its weight with the new policy target weight.

Overall Non-U.S. equities allocations have been more neutral to the (previous) SAA policy since late 4Q2013, awaiting sustainably stronger ex-U.S. economic growth before moving to increase the proportion relative to that of U.S. equities. These preconditions have begun to materialize.

The 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) by year- end. 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 mounting 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: SLIGHT UNDERWEIGHT vs. SAA target

FIXED INCOME

Primary Markets Metrics & Indicators:

1. Fundamentals: **NEUTRAL**
    - Over the past few years, fundamentals in the fixed income markets have been dominated by an extremely accommodative monetary policy by the Federal Reserve. This has included massive, unprecedented bond buying programs of both treasury bonds and agency MBS securities known as "quantitative easing" that began in 2009 during the credit crisis and ended for the most part in

2014. In addition, the Fed has kept the target Fed Funds rate at effectively zero for several years. With a seemingly improved economy, the bond market is facing the prospect that the accommodative Fed policy is likely near its end. Most economists believe the Fed will likely raise short-term rates in the next several months. It is possible that long-term rates may rise as well, which would be negative for the returns of core fixed income. That being said, 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 including most notably the recent adoption of quantitative easing by the European Central Bank ("ECB"), and very low competing long-term interest rates in other developed countries.

2. Valuations: **NEGATIVE**
   - The core fixed income market is likely to generate low returns due to low overall yields as Treasury rates remain at low levels and investment-grade credit and agency MBS spreads are relatively tight. 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 benign outlook for corporate defaults (excluding the energy sector of the high yield market) and an overall demand in the market for yield, the valuation of high yield bonds is much less attractive than in the immediate years after the credit crisis of 2008-2009. Despite the potential for defaults in the energy sector, the outlook for the vast majority of industries the high yield market remains quite favorable and we believe the high yield market will likely achieve low to mid-single-digit returns this year.
   - Private debt offers the most attractive opportunity in the fixed income markets with double-digit yields readily available for investors willing to accept illiquidity.
   - Select areas of opportunistic debt such as distressed debt (both corporate and structured credit) and excess mortgage-servicing rights ("MSRs") also offer opportunities to potentially achieve double-digit returns.

3. Sentiment: **NEUTRAL**
   - Following a multi-decade period of declining interest rates, IMD has modest concerns that investors sentiment is shifting away from fixed income. That being said, going forward, IMD believes demand will continue for income producing assets particularly those which offer a yield premium.

Commentary:

IMD remains underweight in Total Fixed Income relative to its SAAP policy. Core fixed income offers important defensive characteristics which help to balance out the overall risks of the total fund portfolio however the current low levels of U.S. Treasuries and tight spreads in the investment-grade bond markets are relatively unattractive compared to other select credit markets -- particularly private debt and opportunistic debt -- where compelling yield and total return opportunities exist. Opportunistic debt includes a number of mandates mostly in distressed debt and that are not included in SAAP.

CURRENT PORTFOLIO POSTURE: UNDERWEIGHT vs. SAA target

REAL ESTATE

Primary Market Metrics & Indicators:

1. Fundamentals: **POSITIVE**
   - Improved levels of demand and easing 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.
   - At Mid-June, REITs are trading at an average dividend yield of 4.06% (156bp above 10 yr treasury) and price to book of 2.34. Both are in line with historic norms.

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 2015 real estate pacing plan called for $700 million to $1.2 billion in new commitments; including $500 to $750M allocated to new managers, $100M to $200M in closed-end funds, and $100M to $300M to existing separate account managers.

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 has recently undergone a significant price correction which will reduce service costs and temper 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**
   - US 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 US 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, $495B (994 funds) have closed in 2014 compared to $528B (1,187 funds) in 2013. Dry powder of nearly $1.2T globally has remained flat.
   - The global number of buyout deals rose from 3,260 in 2013 to 3,423 in 2014 while the aggregate value of deals increased from $302B to $332B.
   - Exits were up in 2014 to 1,691 from 1,622 in 2013 while the 2014 aggregate value of $441B was considerably higher than the $330B in 2013.
   - The IPO market in 2014 remained strong ($87B) but was down slightly from the 2013 level ($91B).

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. IMD's pacing plan called for $600M in commitments for 2015.

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

COMMODITIES

Primary Market Metrics & Indicators:

1. Fundamentals: **NEGATIVE**
   - The Fed ended its tapering program in November but reiterated that inflation continues to run below the FOMC's long-term objective. As Europe has begun to deal with its economic weakness with stimulus, the US dollar has strengthened on a relative basis.
   - Most commodity sectors appear well supplied, particularly for the current global growth environment.
   - The decision by Saudi Arabia not to reduce production in spite of increased global supply growth has roiled the energy markets with the short term effect of rig lay downs in the US while the budgetary impacts globally begin 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 US production as WTI and Brent prices have fallen by more than $50 from their June highs. Metals have weakened as precious metals have suffered from US dollar strength while industrial metals still exhibit weak demand.

2. Valuations: **NEUTRAL**
   - The Bloomberg Commodities Index improved from lows in March, 2015 influenced by some strengthening in energy markets.
   - On a trailing twelve-month basis, commodities are down 23% with precious metals being the least impacted sector with a decline of 9%.

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.
   - Exogenous geopolitical shocks have not resulted in price spikes. Looking across the individual commodities, most remain well supplied, which has been reflected in prices as inflationary fears have abated.

Commentary:

IMD has maintained a tactical underweight relative to the SAAP in 2013 and so far in 2014 after recognizing the potential effects of Fed tapering and Chinese transition. IMD recognizes that Fed's actions will be data dependent but the QE program has ended. As a result of the changing dynamics in the energy markets IMD reduced its exposure to commodities in December and will continue to monitor the situation closely.

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

IMD will maintain a tactical underweight relative to the new SAAP while closely monitoring the growth and inflation dynamics globally. 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. 5.5% 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	4
	May	05/18	1					
	June	06/04	1					
3rd	July							
	August							
	September							
4th	October							
	November							
	December							
Totals			9				3	11

PRIVATE MARKETS COMMITTEE (PRIVMC)

04/21/2015

- **Private Equity**

  - The Committee approved a 50 million Euro commitment to a European private equity investor. Legal negotiations are pending.

  - The Committee approved a $50 million commitment to an operationally focused private equity investor. Legal negotiations are pending.

  - The Committee confirmed the following future meeting date: June 23, 2015.

05/18/2015

- **Real Estate**

  - The Committee approved an increase to $400 million from $200 million to an existing real estate manager. Legal negotiations are pending.

- **Private Equity**

  - The Committee reviewed a revised private equity pacing analysis and approved a target of $700 million in new commitments to private equity during the calendar year 2015.

06/04/2015

- **Ad-Hoc Private Debt**

  - The Committee approved up to $10 million co-investment for the Highbridge Mezzanine Private Debt Partnership. Legal negotiations are pending.

TACTICAL PORTFOLIO POSITIONING

IMD continues to migrate ASRS Total Fund Portfolio consistent with the Board approved Strategic Asset Allocation (SAAP) Policy and ASRS Investment House Views. The new SAAP became effective April 1, 2015 and was incorporated in Fund positioning, performance/attribution and risk reports. In short, most or all public asset classes (equities, fixed income and commodities) have been repositioned and the unfunded private market policy commitments prorated to appropriate public asset classes which are reflected in the interim SAAP policy. The interim SAAP changes over time as private investment capital are called which is anticipated to be invested over the next 2 years.

From an Investment House Views perspective and post-new SAAP transition, the Fund remains net underweight in total fixed income vs policy with a bias to private/opportunistic over public debt; net overweight in total equity; slightly underweight net inflation-linked; and hold a policy weight in the multi-asset strategies.

The CIO will discuss the implementation of the SAAP and Investment House Views is more detail at the IC meeting.

Note: tactical portfolio positioning is captured in the ASRS Asset Allocation report; the performance results of tactical positioning (vs. policy targets) are reflected in the ASRS Quarterly Total Fund Performance Attribution Analysis.

IMD (INVESTMENT MANAGEMENT DIVISION) ACTIVITIES, PROJECTS AND RESEARCH INITIATIVES

- Dave Underwood received an Investor Intelligence Innovator Award for his work on equity risk factors and their implementation within ASRS equity portfolio. Use of equity risk factors help to manage various systemic risks, which reside in the public equity markets. Investor Intelligence awards are granted by Institutional Investor, a leading international business-to-business publisher that recognizes significant accomplishments made by organizations and individuals in the field of finance.

- IMD continues to manage ASRS Securities Lending Program (base and opportunistic) consistent with a risk/return profile and parameters reflecting IMD's assessment of the securities lending opportunities and of the condition that exist in the market. IMD anticipates that ASRS securities lending program will earned approximately $6.4 million for FY2015

- The Director initiated an informational session called Breakaway Republics: A New Normal in Eastern Europe with the objective to discuss political and historic considerations and, to what extent, they may be successfully utilized to consider investment opportunities by the ASRS in Eastern Europe. This session will be hosted by DelMar L. Beene, a Senior Fulbright Scholar in Eastern Europe and a former faculty at Arizona State University.

- In June, IMD refined some of the procedures of the ASRS Cash Management "Assetization" Program to address some operational issues that surfaced since the Program's January inauguration. The goals of Program are to provide Fund liquidity, mitigate cash drag, minimize transaction costs and optimize manager portfolios rebalancing. Rather than raising cash frequently from across the Fund to cover internal and external cash flow needs, a pool of monies are maintained that approximates cash requirements for a 3-6 month period. Until drawn, those monies are assetized, i.e., exposed to the capital markets via index futures in proportions that reflect ASRS SAAP/Investment House Views.

- Effective June 1, ASRS engaged State Street's Premium Compliance System to assist in monitoring ASRS public equity and fixed income portfolios (separate account, non-commingled). The system applies investment guidelines set forth in a manager's Investment Management Agreement, Letters of Direction and Clarification and incorporates applicable AZ State statutes and Federally-mandated investment rules (CFTC, SEC, U.S. Treasury Department, etc.).

- 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 90 investment managers: Private markets (RE, PE, Debt) – 64 and Public markets (Equity and Debt) – 26.

- IMD internally manages 7 public equities and fixed income portfolios which had an approximate aggregate market value of over $10 billion or 30% of Total Fund. On a calendar YTD through May 29, 2015 6 of 7 met or exceeded their benchmarks, and 7 of 7 portfolios met or exceeded their benchmarks on an inception-to-date basis.