Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

NOVEMBER 24, 2015

Investment Solutions for

City of San Jose Retirement Services

Item #2a JOINT IC Mtg 11-24-2015

Table of contents

Verus

VERUSINVESTMENTS.COM

SEATTLE 206-622-3700
LOS ANGELES 310-297-1777

Our firm TAB I

Our approach to working with you TAB II

Investment strategy development TAB III

Risk management, infrastructure TAB IV

Your plans TAB V

Appendix I: Hedge fund capabilities TAB VI

Appendix II: Risk capabilities TAB VII

Appendix III: Biographies TAB VIII

Appendix IV: Quarterly Investment Landscape TAB IX

Past performance is no guarantee of future results. *This document is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and is not intended for retail investors. Nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security or pursue a particular investment vehicle or any trading strategy. This document may include or imply estimates, outlooks, projections and other "forward-looking statements." No assurance can be given that future results described or implied by any forward looking information will be achieved. Investing entails risks, including possible loss of principal. Verus Advisory Inc. and Verus Investors, LLC ("Verus") file a single form ADV under the United States Investment Advisors Act of 1940, as amended.*

Our firm

Perspectives that drive enterprise success

Verus provides research-driven investment solutions that enable institutional investors to prudently discharge their fiduciary responsibility.

Through independent, impartial advice and investment expertise, our professionals strive to be the driving force that empowers clients to achieve their enterprise objectives.

Verus firm overview

ESTABLISHED

Founded in 1986
77 employees across two regional offices
60 investment professionals (78%)

EXPERIENCED

Established reputation for research
19+ years average consultant experience

VESTED

100% employee-owned; impartial business philosophy and structure

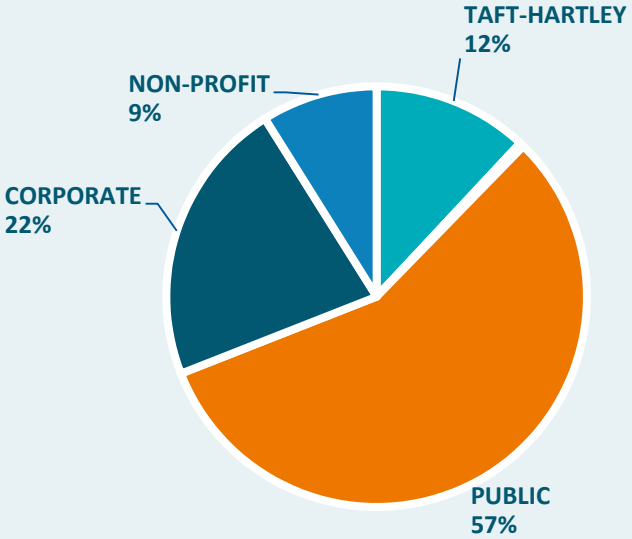
INDUSTRY LEADING

Global thought leadership on risk allocation, risk management and capital markets

BOUTIQUE CULTURE

Personalized and well-resourced

$118 billion in assets under advisement



(Preliminary as of 10/01/15.; pie chart depicts client breakdown by value of assets)

SIS firm overview

ESTABLISHED

Founded in 1994
23 employees in San Francisco office
21 investment professionals (91%)

EXPERIENCED

Established reputation for research
21+ years average consultant experience

VESTED

100% employee-owned; impartial business philosophy and structure

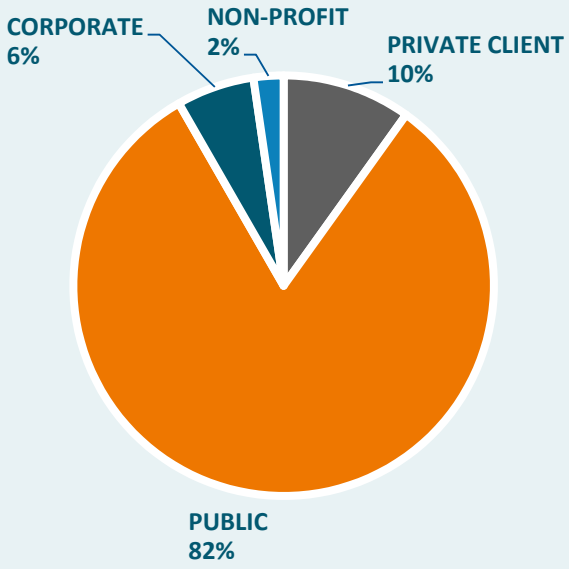
INDUSTRY LEADING

Large plan consulting experience; dedicated private equity capabilities; quantitative manager research processes

BOUTIQUE CULTURE

Personalized and well-resourced

$267 billion in assets under advisement



(Preliminary as of 10/01/15.; pie chart depicts client breakdown by value of assets)

Pro forma combined overview

- 101 employees, 86 investment professionals
- Retainer clients > $360 billion assets under advisement, plus $300 billion in “pool” assignments
- 27 consulting professionals located in Seattle, San Francisco, Los Angeles, and Portland
- Investment team led by Jeff Scott
  - Nine risk professionals
  - Nine capital markets professionals
  - 18 manager research professionals
- Public plan clients including:
  - Alameda County
  - California (Pool, Projects)
  - Fresno County
  - Imperial County
  - Indiana
  - Kern County
  - Merced County
  - North Carolina
  - Oklahoma
  - Sacramento County
  - San Mateo
  - Stanislaus County
  - Tennessee
  - Tulare County
  - West Virginia

Representative clients

PUBLIC

- Fresno County Employees' Retirement Association
- Contra Costa County Employees' Retirement Association
- Imperial County Employees' Retirement System
- Indiana Public Retirement System
- Kern County Employees' Retirement Association
- Los Angeles Metropolitan Transportation Authority
- Pasadena Fire and Police Retirement System
- San Diego County Employees Retirement Association
- San Luis Obispo County Pension Trust
- Stanislaus County Employees' Retirement Association
- Tulare County Employees' Retirement Association

CORPORATE

- Allergan, Inc.
- Apria Healthcare 401K Savings Plan
- Avista Corporation
- Barrick Gold Corporation
- Carnival Corporation
- Castle & Cooke
- Eastside Retirement Association
- Forever Living Products
- Group Health Cooperative
- Hanford Site
- Harnish Group
- Jack in the Box, Inc.
- Karsten Manufacturing
- Kinross Gold Corporation
- LaCrosse Footwear
- Moss-Adams LLP
- Mutual of Enumclaw Insurance Company
- Plum Creek Timberlands
- The Seattle Times
- Southwest Airlines Pilots' Association

NOT-FOR-PROFIT

- Allergan Foundation
- Blood Centers of the Pacific Pension Plan
- Blood Systems Inc.
- Community Foundation for Monterey County
- Diocese of San Bernardino
- Diocese of San Diego
- Foundation for CSU Monterey Bay
- Gonzaga University
- Group Health Foundation
- Huntington Memorial Hospital
- Providence Portland Medical Foundation
- Puget Sound Energy Foundation
- Riverside Community Foundation
- University of Colorado Hospital
- University Child Development School
- Virginia Mason Medical Center
- Whitworth University

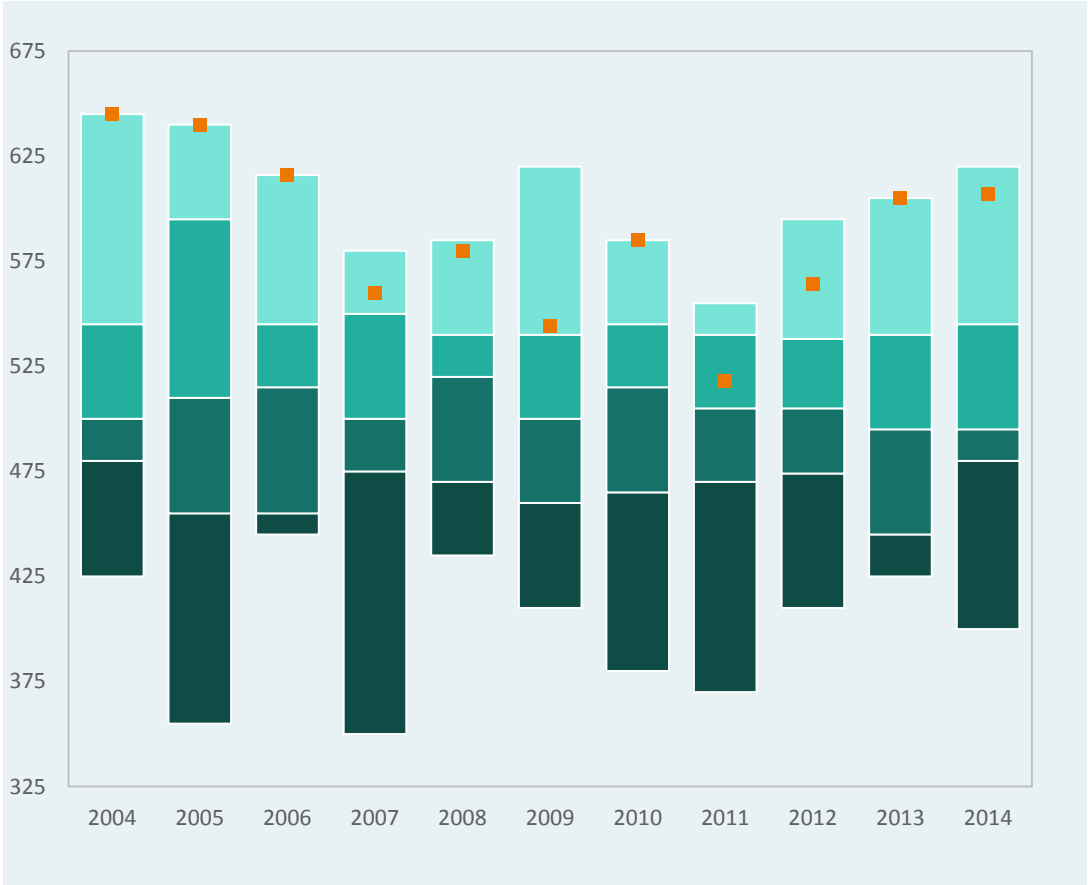
MULTI-EMPLOYER

- Arizona Bricklayers' Pension Trust Fund
- Golden Valley Electric Association
- IATSE Local 720 Pension Trust and Wage Disability Trust
- IBEW #100 Pension Trust Fund
- IBEW #1710 Pension Trust Fund
- Inlandboatmen's Union
- Juan de la Cruz Farm Workers Pension Plan
- Laborers Pension Trust Fund for N. California
- Montebello Teachers Association Supplemental Health Plan
- NECA Puget Sound
- Northern California Pipe Trades
- Oregon Retail Employees Pension Trust
- Puget Sound Electrical Workers
- San Diego County Cement Masons
- San Diego Theatrical
- Solano and Napa Counties Electrical Workers Benefit Funds
- Sound Retirement Trust
- Southern CA Cement Masons Trust Funds
- Washington State Plumbers
- Western Washington Laborers - Employers

As of October 1, 2015. Note: It is not known whether the listed clients approve or disapprove of Verus or the advisory services provided. There is no objective criteria used in determining which clients have been included on this list

“Greenwich Quality Index” over time

Consistently highly rated by our clients



Topics considered in determining score:

- Our understanding of client goals
- Innovative and proactive investment advice and ideas
- Capability of consultants
- Investment manager knowledge
- Satisfaction with manager recommendations
- Extent of client-service capabilities
- Responsiveness to clients

Verus was known as “Wurts & Associates” at the time of the survey. This data reflects the results as shown by Greenwich Associates, in which Verus is compared to the top 15 consultants by number of client citations. Bounds of first and fourth quartile may not be representative.

Research oversight and guidance

INVESTMENT COMMITTEE

Shelly Heier, CFA, CAIA*
President

Jeffrey Scott, CFA
Chief Investment Officer

Scott Day, CFA
Managing Director

Brent Nelson
Managing Director

Anne Westreich, CFA
Managing Director

Ed Hoffman, CFA, FRM
Managing Director

ALTERNATIVE INVESTMENTS COMMITTEE

Jeffrey MacLean
Chief Executive Officer

Kraig McCoy, CFA*
Chief Financial Officer

Omer Tareen, CFA
Managing Director

GUIDANCE

OVERSIGHT

APPROVAL

Strategic research

Ian Toner, CFA
Managing Director

Traditional manager research

Marianne Feeley, CFA
Director

Alternative manager research

Brian Rowe, CFA, CAIA
Managing Director

Aksia, LLC
Hedge fund operational and investment due diligence support

**Committee Chair*

Comprehensive market coverage

RISK

- **Max Giolitti** Managing Director
- **Ruth Danner, CIPM** Director Risk
- **Ling Zhang, CFA, Ph.D.** Sr. Risk Analyst
- **Stefan Myers, CFA** Risk Analyst
- **Danny Sullivan, CAIA** Risk Analyst
- **Tri Nguyen** Risk Analyst
- **Shang Gao** Risk Analyst
- **Zoey Yan** Risk Analyst

CAPITAL MARKETS

- **Scott Day, CFA** Managing Director
- **Ian Toner, CFA** Managing Director
- **Matt Brady, CFA** Assistant Portfolio Manager
- **Andy Berner, Ph.D.** Research Analyst
- **Annika Westre** Research Analyst
- **Thomas Garrett, CAIA** Research Analyst

EQUITY

- **Vincent Francom, CFA, CAIA** Sr. Research Analyst
- **Elena Solovyeva, CFA** Research Analyst
- **Omer Tareen, CFA** Managing Director
- **Shaharyar Asaf, CFA** Sr. Portfolio Mgr.
- **Annika Westre** Research Analyst
- **Riley Dinnison** Consulting Associate
- **Ryland Sukola** Sr. Analyst
- **Kiran Malik** Sr. Analyst
- **Dylan Salay** Analyst
- **John Crosbie** Analyst

FIXED INCOME

- **Philip Schmitt, CIMA** Sr. Research Analyst
- **Marianne Feeley, CFA** Director
- **Scott Day, CFA** Managing Director
- **Matt Brady, CFA** Assistant Portfolio Manager
- **Kevin Tjernberg** Sr. Consulting Associate
- **Sam Hodge** Analyst
- **Gunnar Ildhuso** Analyst

REAL ASSETS

- **John Wasnock** Sr. Research Analyst
- **Noah Schmidt** Research Analyst
- **Colton Loder, CFA, CAIA** Sr. Portfolio Mgr.
- **Eric Crowder** Consulting Associate
- **Scott Curry, CFA** Analyst

HEDGE FUNDS

- **Brian Rowe, CFA, CAIA** Managing Director
- **Wilson Ma, CFA, FRM** Portfolio Manager
- **Thomas Winkler, CAIA** Sr. Consltng. Assoc.
- **Brian Kwan, CFA** Sr. Consulting Associate
- **Zeca Cardoso** Sr. Analyst
- **Andrew Akers** Analyst

PRIVATE ASSETS

- **Louis Kleist** Sr. Research Analyst
- **Trevor Parmelee** Research Analyst
- **Herbert Nishii** Sr. Consulting Associate
- **Austin Vierra** Consulting Associate
- **Nick Pursley** Analyst
- **Justin Hatley** Analyst

- Manager research and analytics
- Capital markets and portfolio management
- Consulting team
- Risk allocation and asset management

Firm leadership

Jeffrey MacLean
Chief Executive Officer

Jeffrey Scott, CFA
Chief Investment Officer

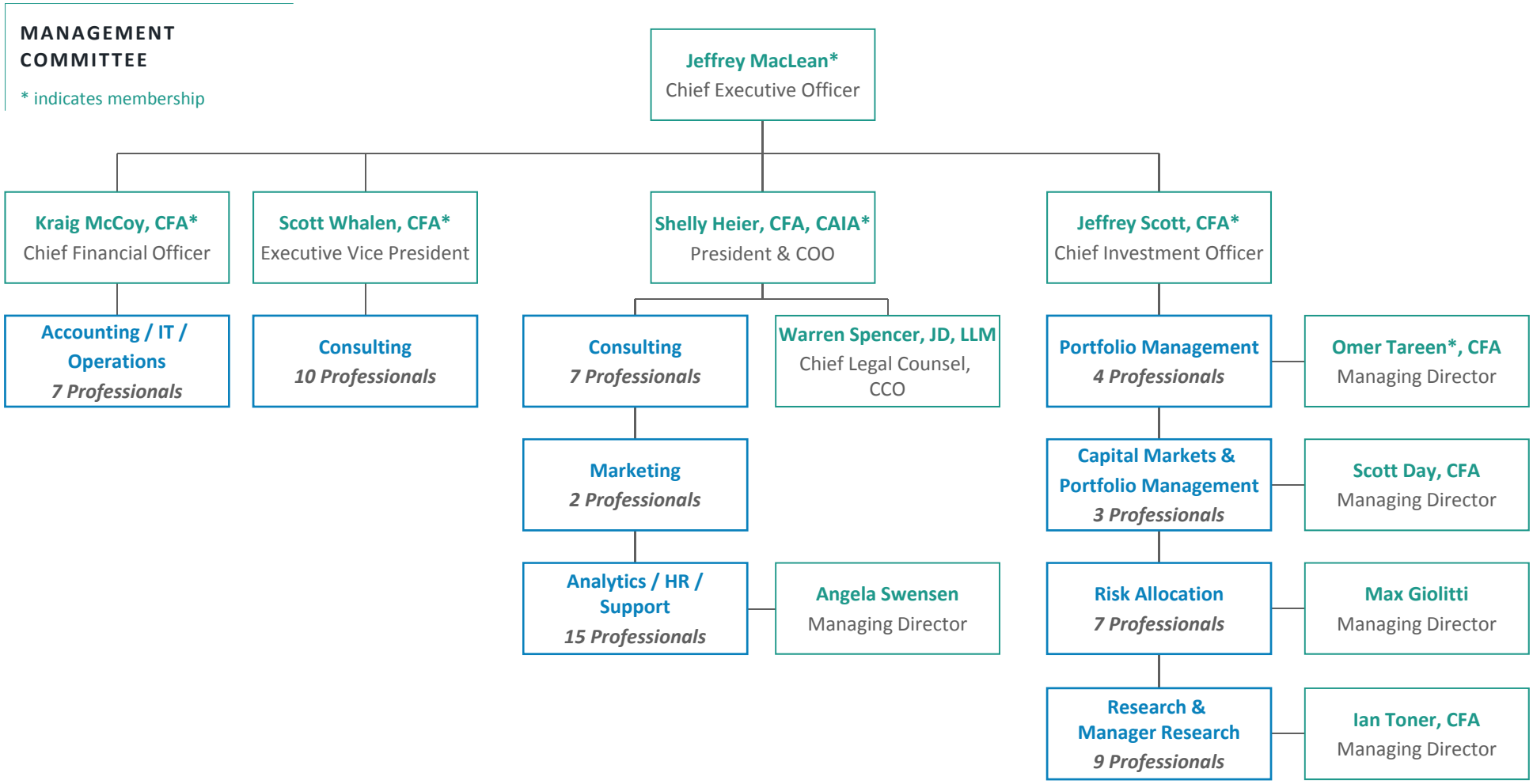
Shelly Heier, CFA, CAIA
President & Chief Operating Officer
Chair - Investment Committee

Scott Whalen, CFA
Executive Vice President

Kraig McCoy, CFA
Chief Financial Officer
Chair - Alternative Investments Committee

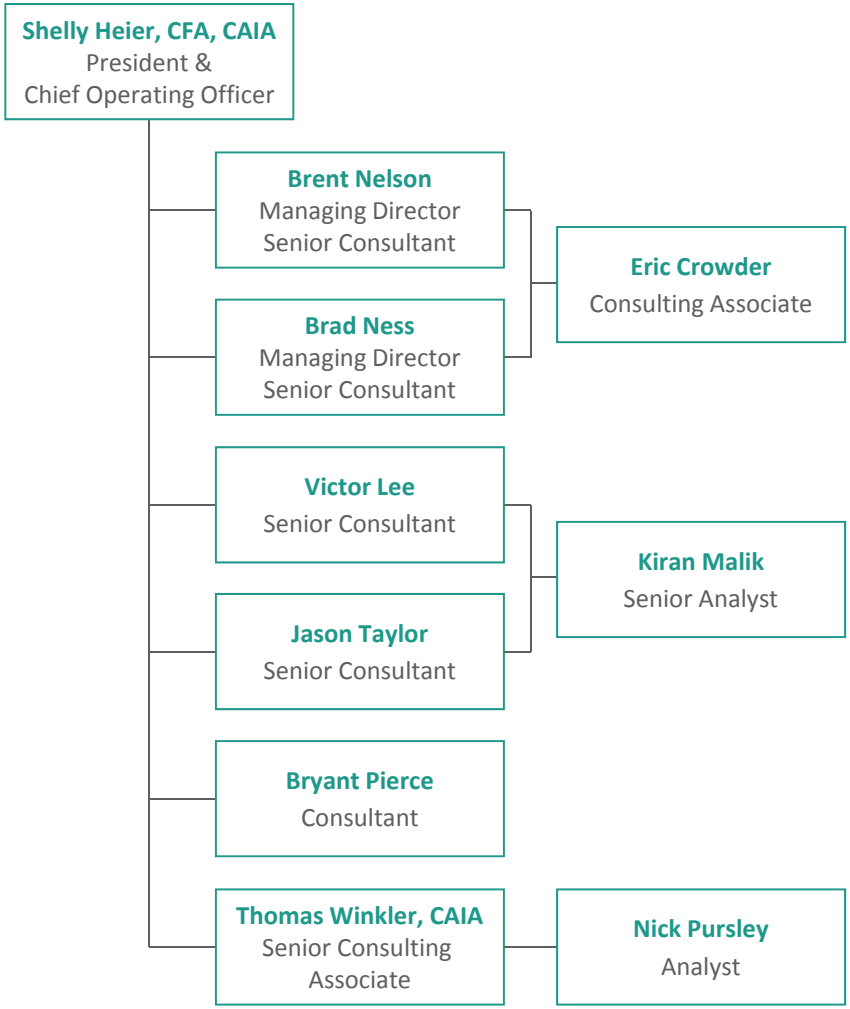
Omer Tareen, CFA
Managing Director

Organizational chart – leadership

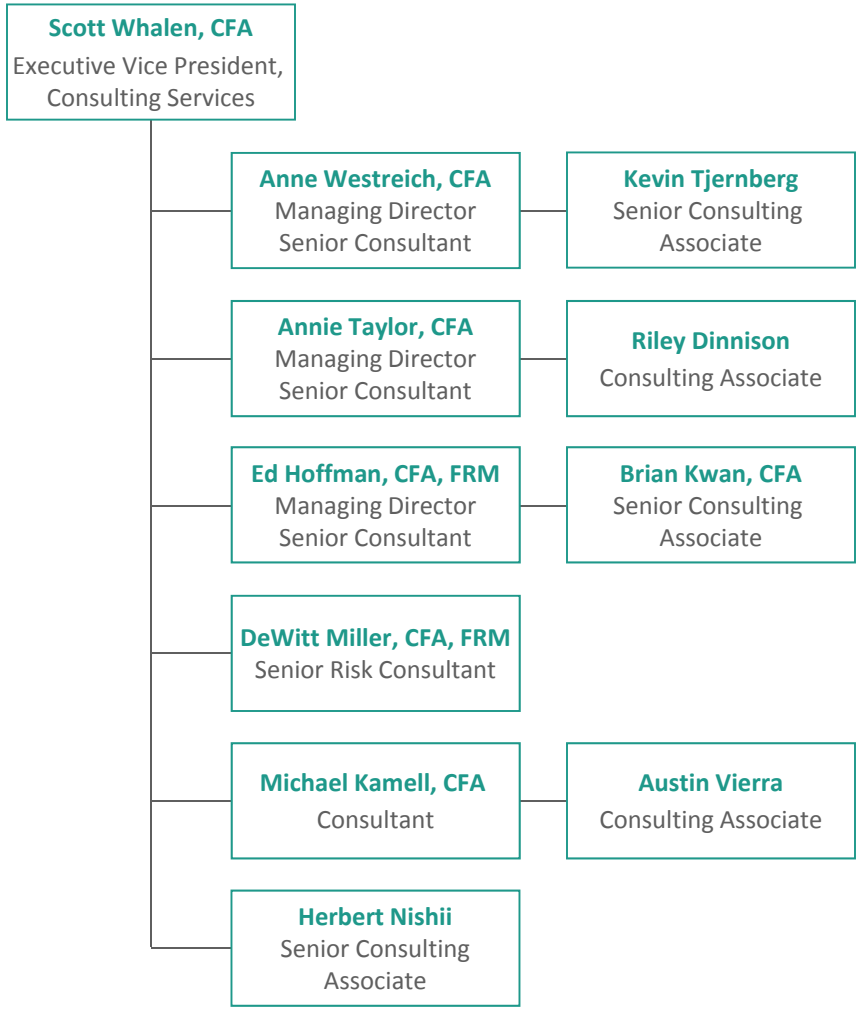


Organizational chart – consulting

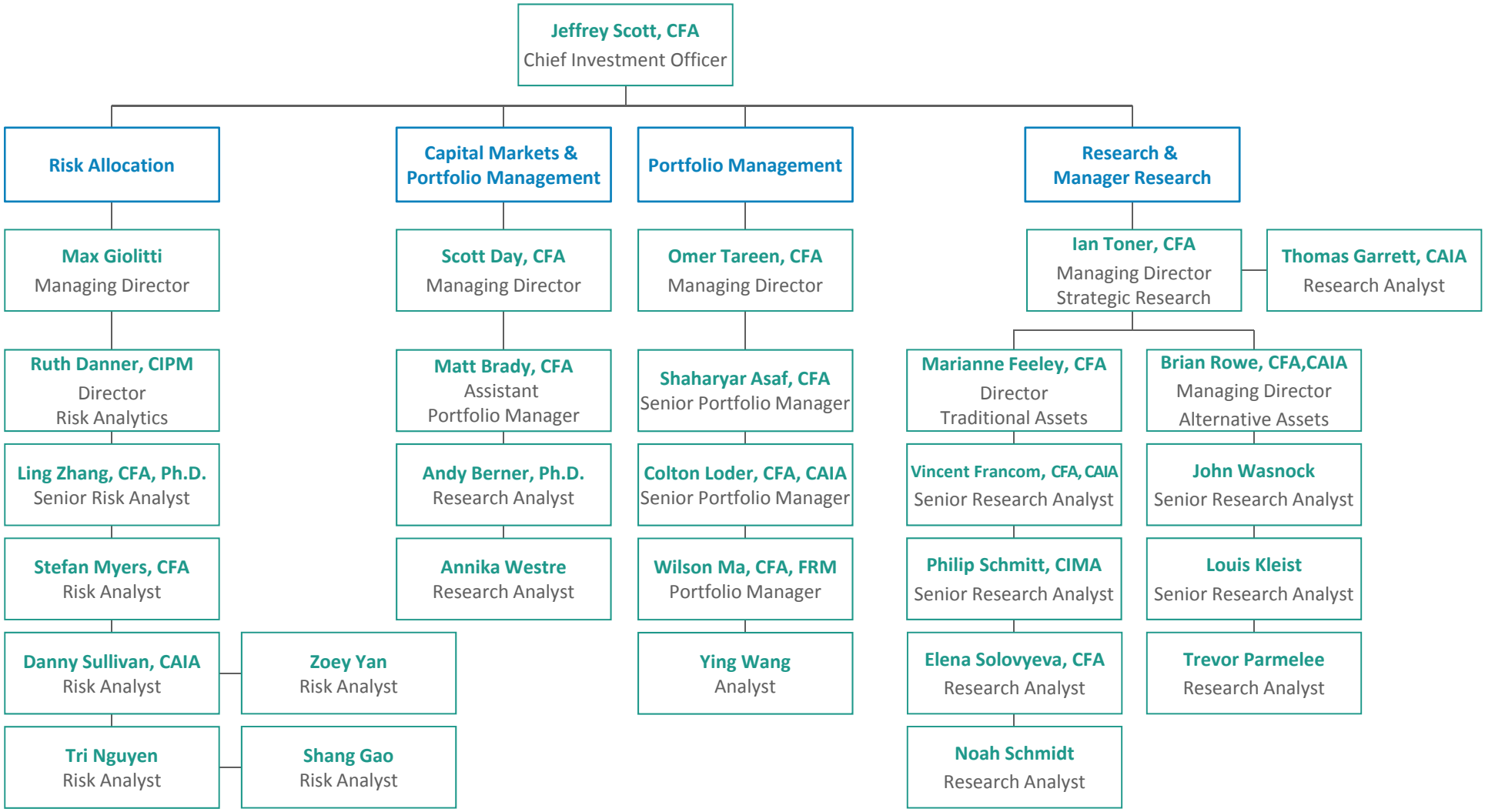
Seattle



Los Angeles



Organizational chart – research



Our approach to working with you

Your consulting team

ED HOFFMAN, CFA, FRM

Lead Consultant for San Jose
Senior Consultant, Managing Director
MBA, Harvard Business School

BS, Carnegie Mellon University

18 years experience

Mr. Hoffman joined the firm in 2011, providing strategic investment advice to ensure his clients meet their long-term investment objectives. Mr. Hoffman serves on the firm's Investment Committee.

JEFFREY MACLEAN

Backup Consultant for San Jose
Senior Consultant, CEO
MBA, Darden School of Business

BA, University of Washington

27 years experience

Mr. MacLean joined the firm in 1992 and is primarily responsible for managing the firm and providing investment advice to several clients. Mr. MacLean chairs the firm's Management Committee and serves on the Investment Committee.

The proposed well-credentialed team has extensive experience working with similarly sized public funds

MICHAEL KAMELL, CFA

Consultant
BA, UC Santa Barbara

7 years experience

Mr. Kamell will serve in a support capacity for the San Jose relationship, assisting in the delivery of regular materials and conducting ad hoc analysis as necessary. Mr. Kamell joined the firm in 2010 and is primarily responsible for providing consulting support.

IAN TONER, CFA

Managing Director, Strategic Research
MA (Hons) Jurisprudence,

University of Oxford

23 years experience

Joining the firm in 2013, Mr. Toner has responsibility for Manager Research & Capital Markets Research. Specifically, his function is to ensure the firm's extensive resources are being devoted to meeting our clients' objectives.

Our guiding principles

A clear and consistent approach to investing, guidance, and service

FUNDAMENTAL PRINCIPLES

Diversification

Valuation

Risk

Humility

+

FUNCTIONAL PRINCIPLES

Plan objectives should guide all decision making

Asset allocation & risk exposures drive portfolio results

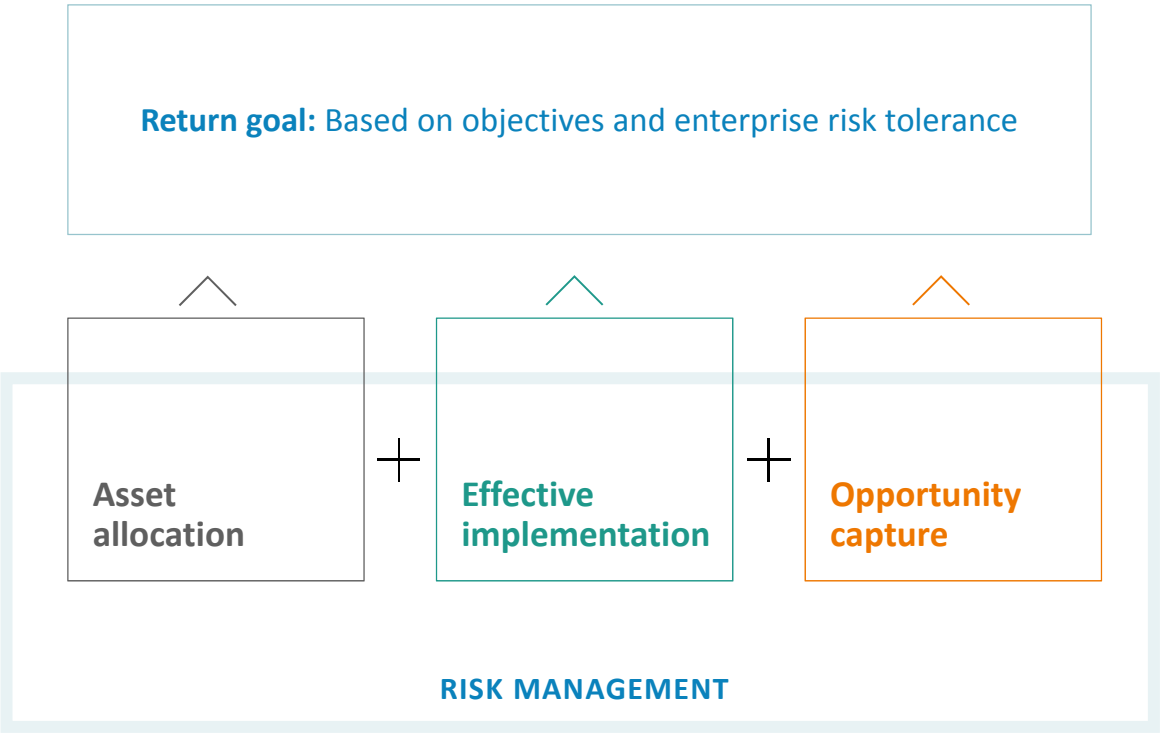
Economic factors & valuation drive long-term asset class returns

Risk & diversification must be viewed through multiple lenses

Fees & costs should be minimized, and justified

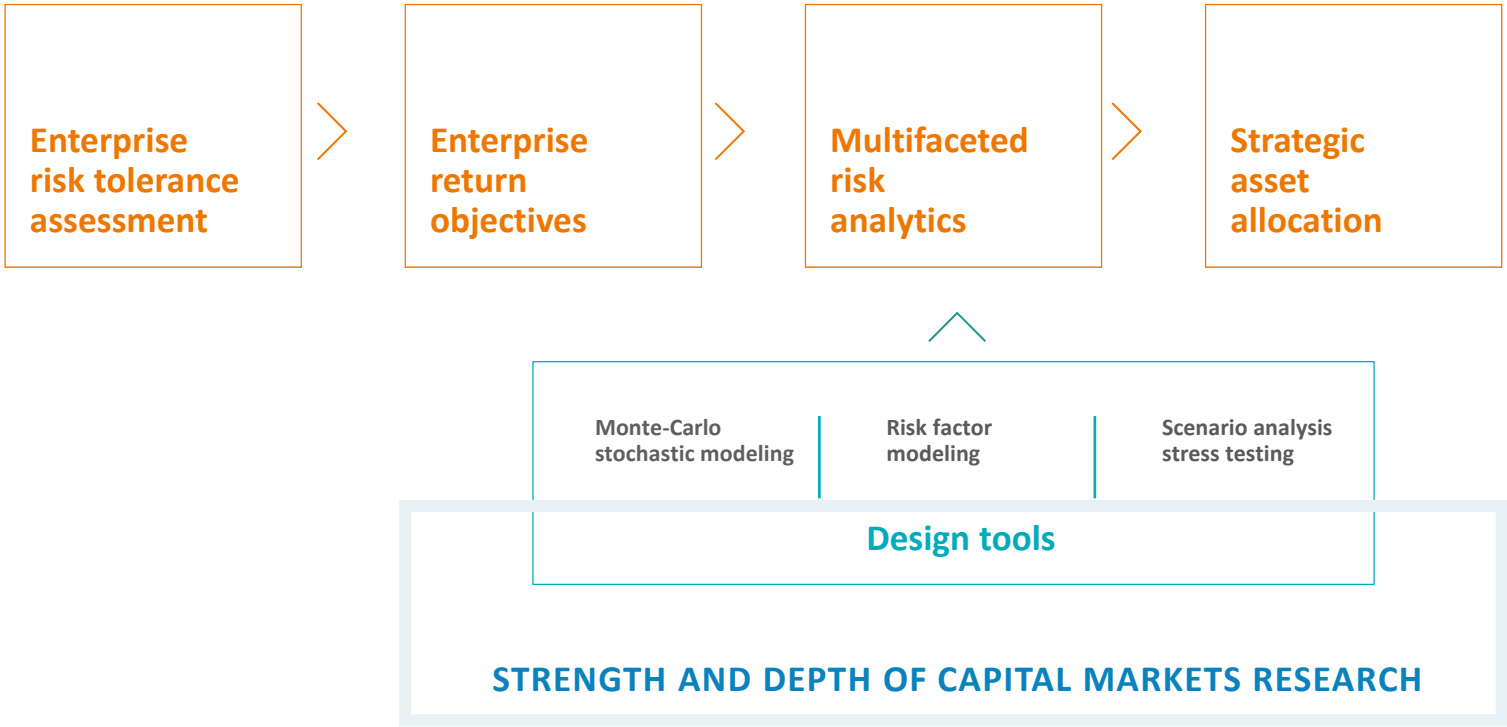
Achieving your return goal one step at a time

- Develop a thoughtful **strategic asset allocation** based on your enterprise objectives and risk tolerance
- Effective and efficient implementation, combining **best-in-class investment managers**, low-cost passive exposures, and appropriate operations
- Identify and **capture attractive** valuation-based **market opportunities**
- Apply **risk management best practices** across the portfolio to **maximize risk-adjusted return**



Asset allocation designed to your enterprise objectives

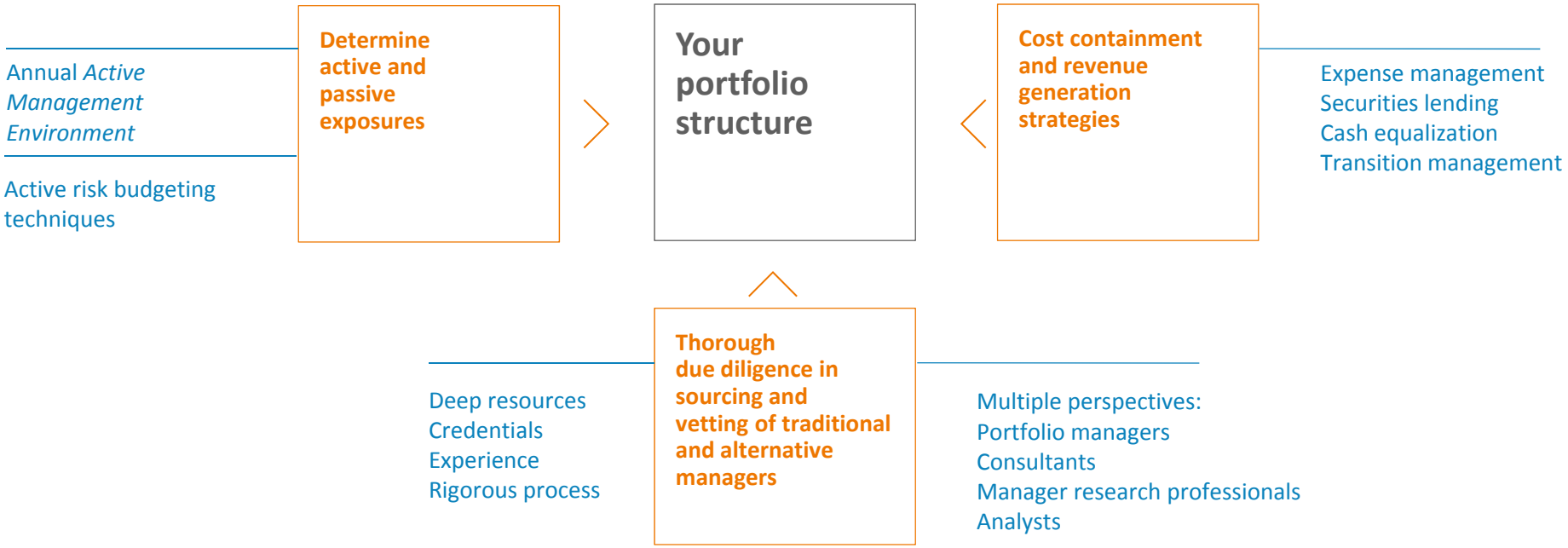
Asset allocation and risk exposures drive portfolio results



Team members have significant hands-on money management experience.

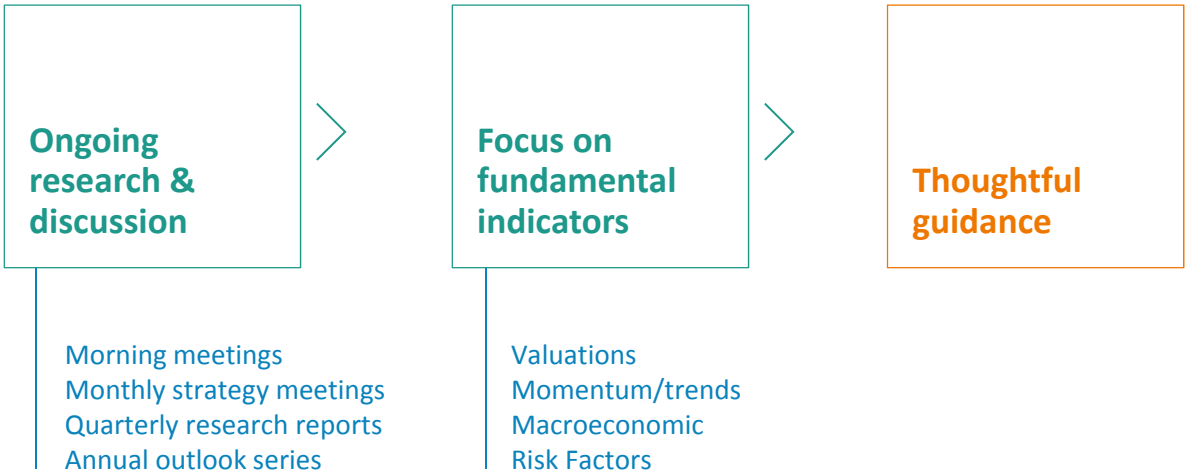
Our asset allocation approach is informed by their unique perspectives and depth of resources.

Efficient implementation is critical to success



Seeking investment opportunities

Market inefficiencies create opportunities (and threats) for long-term investors. Real opportunities may be infrequent but can have a substantial impact. The key to finding opportunities is to look for them.



The price paid for an investment is the strongest determinate of future return

DEEP RESEARCH CAPABILITIES, STRUCTURED TO FIND INEFFICIENCIES

The right consultant for your plan

STRATEGIC FIT

- High touch client service model designed to extend the capabilities of the Staff in serving the needs of the Board
- Well versed in the unique challenges of public pension plans
- Industry leading perspectives on risk management, education, communication, and customization

ESTABLISHED RECORD OF SUCCESS

- Successfully serving our clients since 1986
- Over 130 relationships across all sponsor segments and plan types
- Consistent top quartile ranking in industry survey of investment consulting firms

UNPARALLELED STABILITY

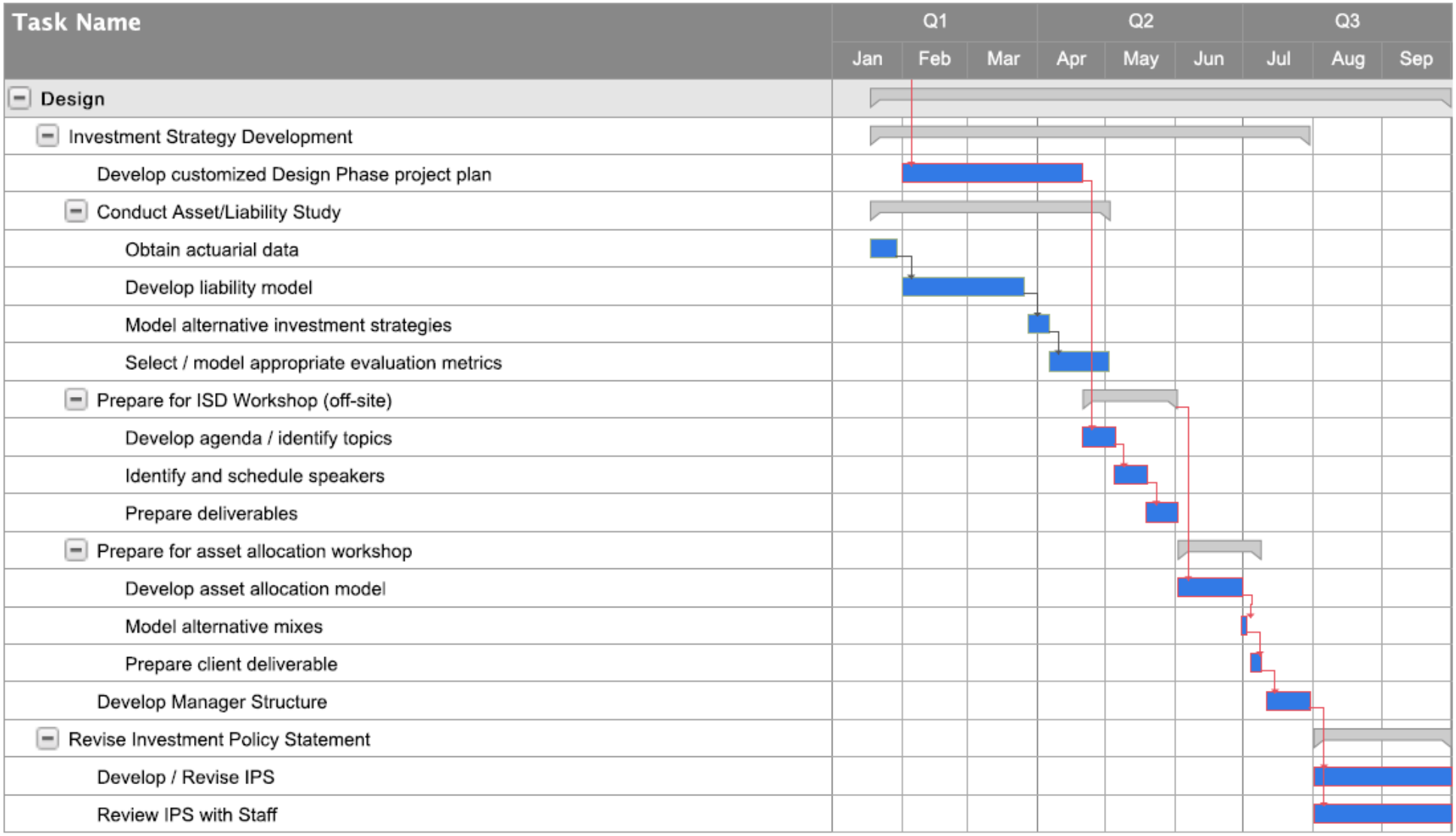
- Distributed ownership with next generation leadership in place
- 100% employee-owned
- Very low investment professional and client turnover
- Culture of collaboration and partnership – both internally and externally – for the benefit of clients

SUPERIOR SERVICE

- The City of San Jose would be served by a highly experienced consulting team
- Consulting team is conveniently located in Los Angeles
- "Client first" culture contributes to low client-to-consultant ratio

Project plan

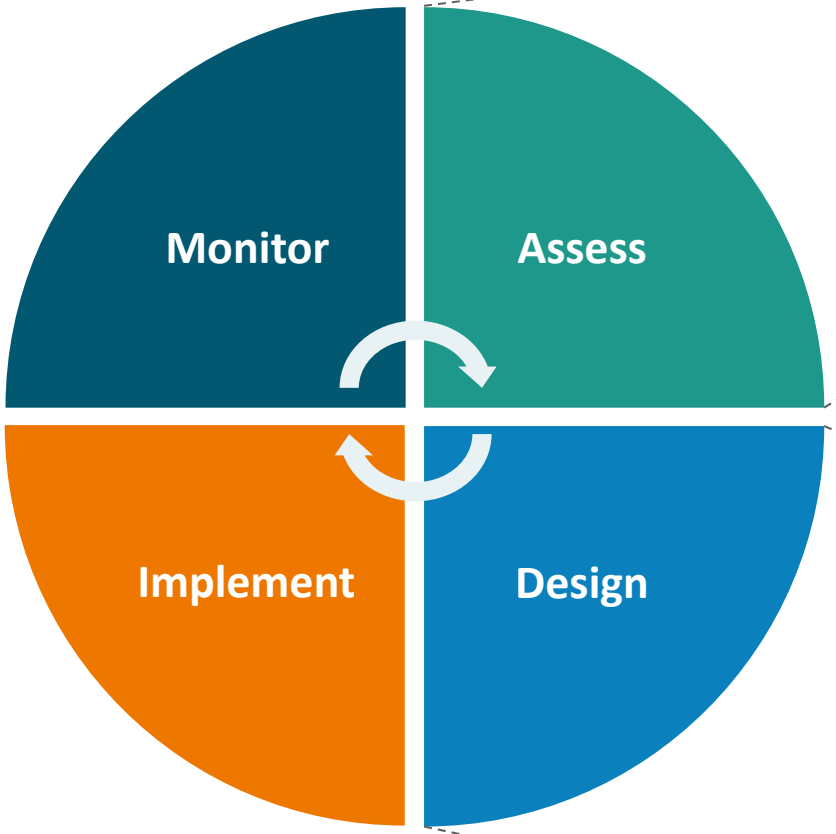
Project plan (continued)



Investment strategy development

Investment strategy development

Integrated consulting process

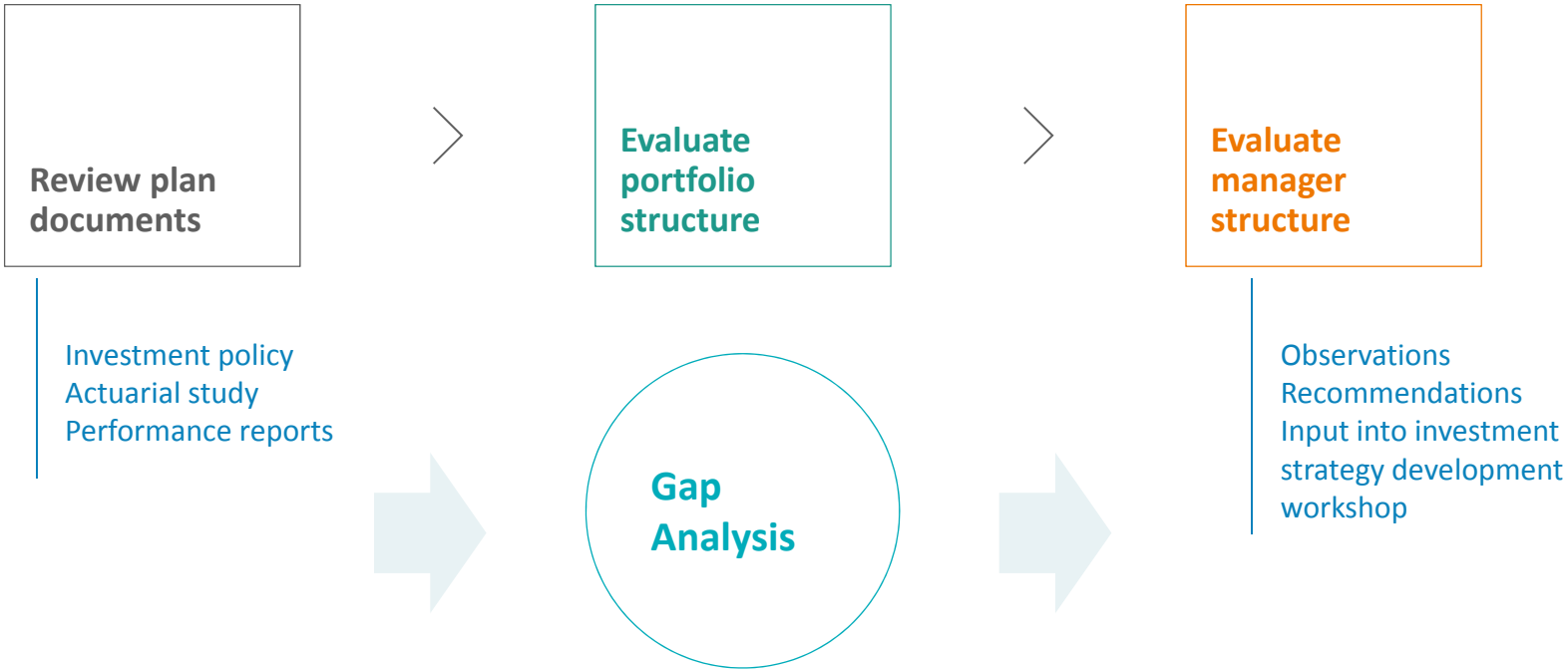


- Current State Assessment
- Enterprise Risk Tolerance Assessment
  - One-on-One Trustee and Staff Interviews
  - Plan Sponsor Review

- ISD Workshop
  - Targeted Education
  - Asset/Liability Study
  - Governance Best Practices
- Asset Allocation Workshop
- Investment Policy Statement

Investment strategy development

Current state assessment



Investment strategy development

Enterprise risk tolerance

Trustee & staff interviews

Investment philosophy
Educational opportunities

Economic environment review

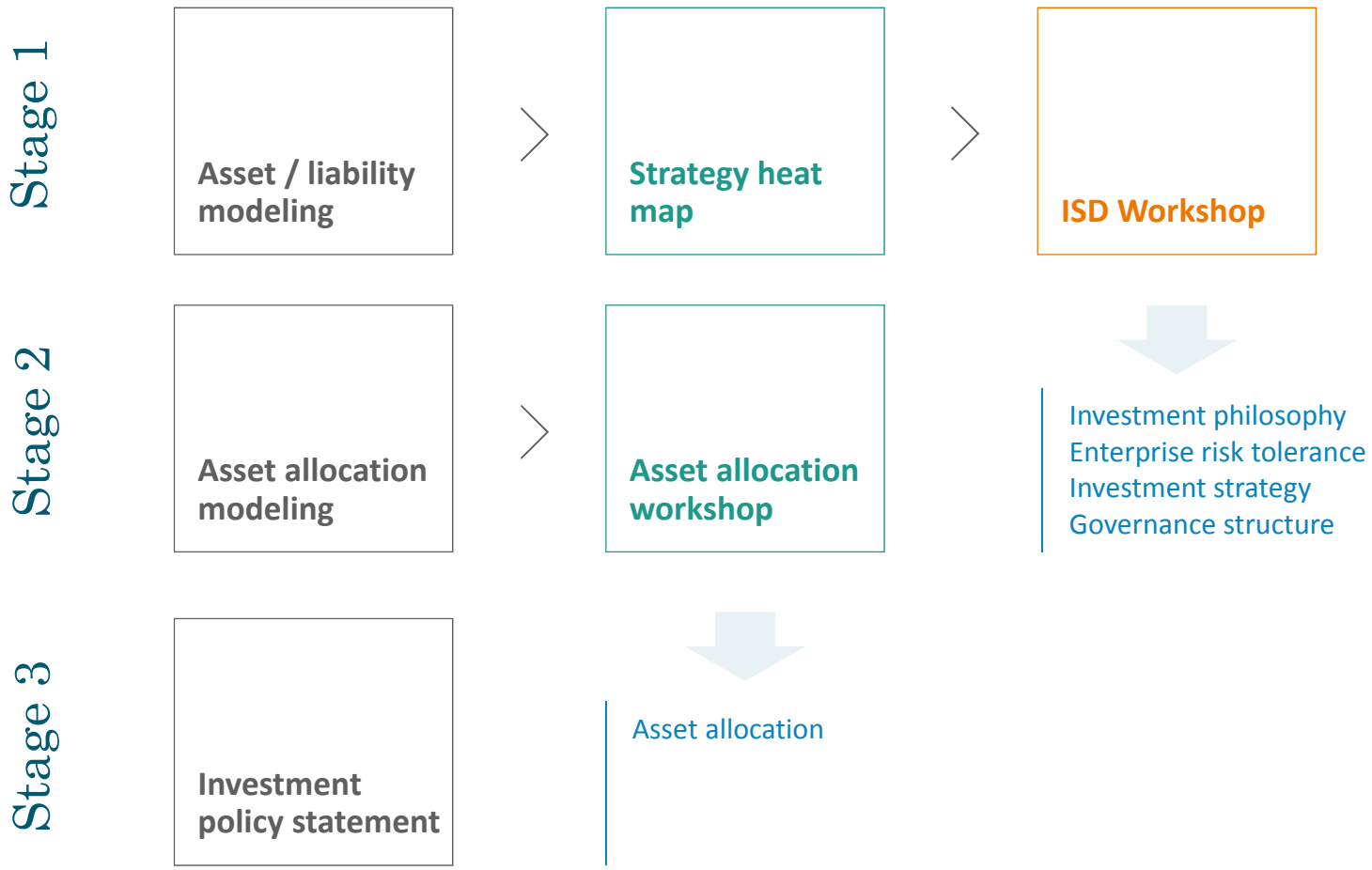
Plan sponsor flexibility

Board review / reconciliation

Input into Investment Strategy Development Workshop

Investment strategy development

Bringing it all together



Risk management, infrastructure

Manage risk, not return

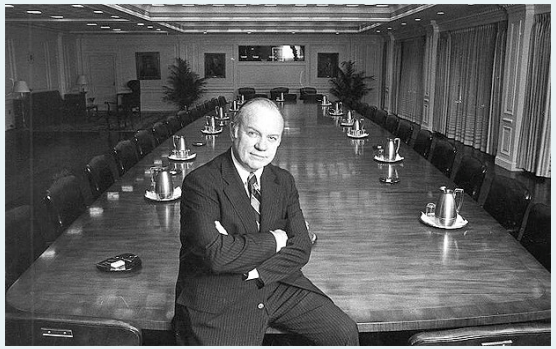
Why focus on RISK rather than RETURN?

— Risk is not inherently bad; it is the means by which investors achieve their target return objectives

— Risk is a more stable characteristic than return – it is easier to understand on a forward looking basis

"The essence of investment management is the management of risk, not the management of return."

Benjamin Graham

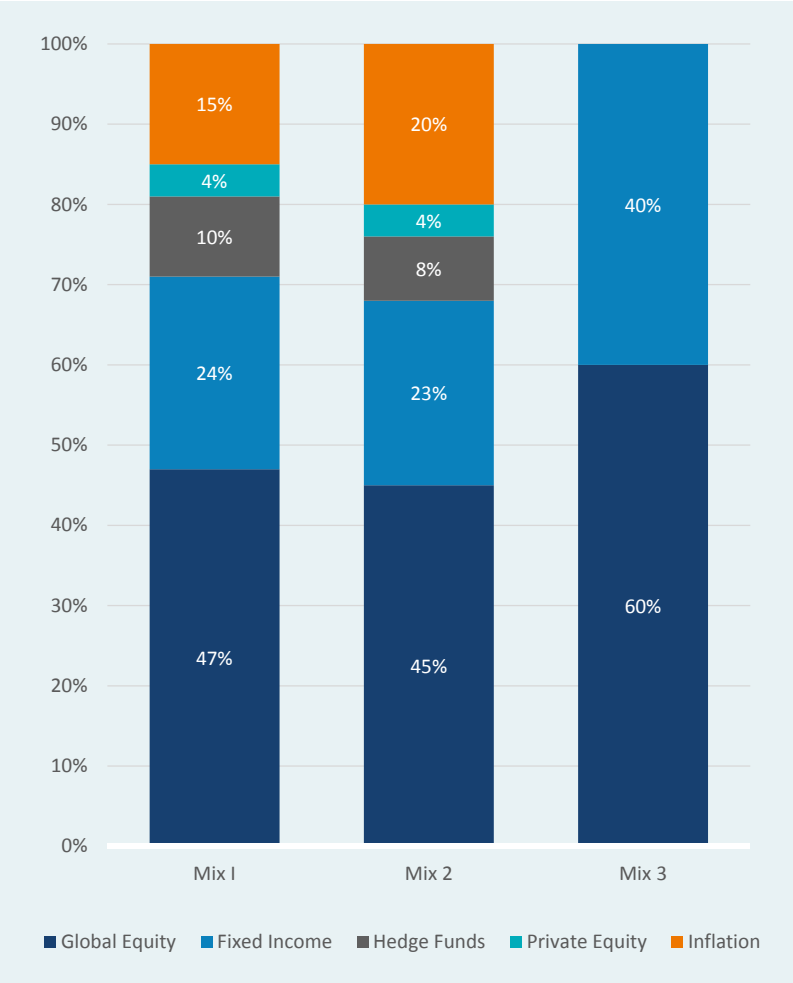


"Life wasn't designed to be risk-free. *The key is not to* eliminate risk*, but to estimate it* accurately *and manage it* wisely*."*

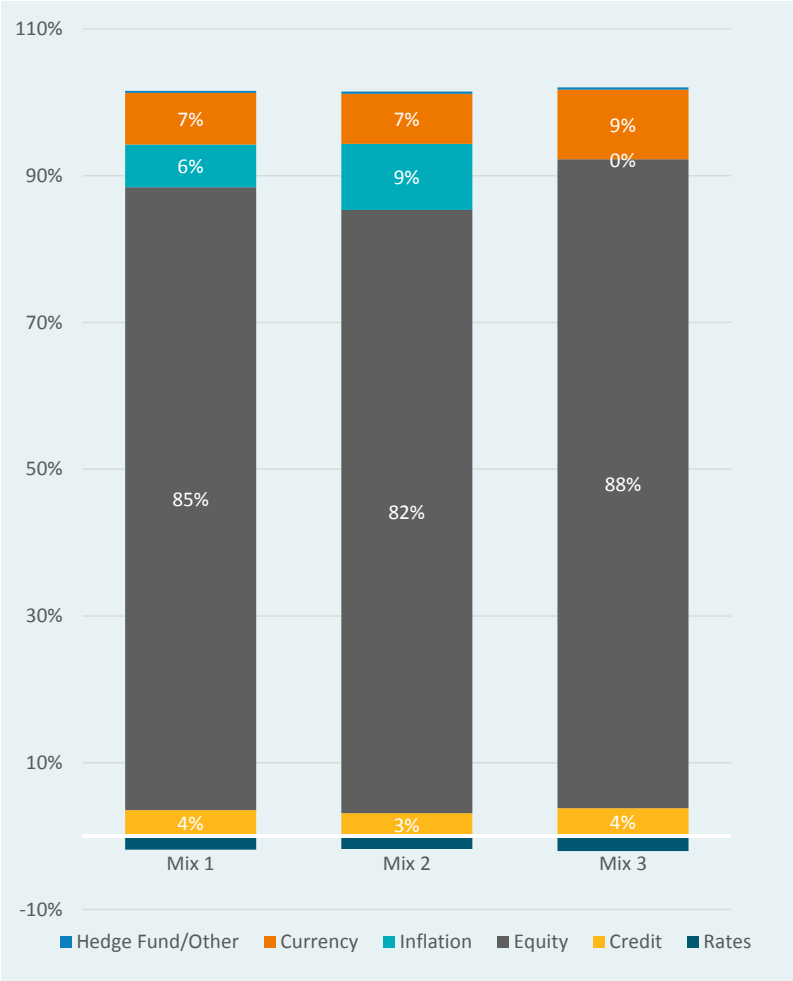
William A. Schreyer
Former Chairman & CEO
Merrill Lynch

Asset allocation ≠ risk allocation

ASSET ALLOCATION MIXES



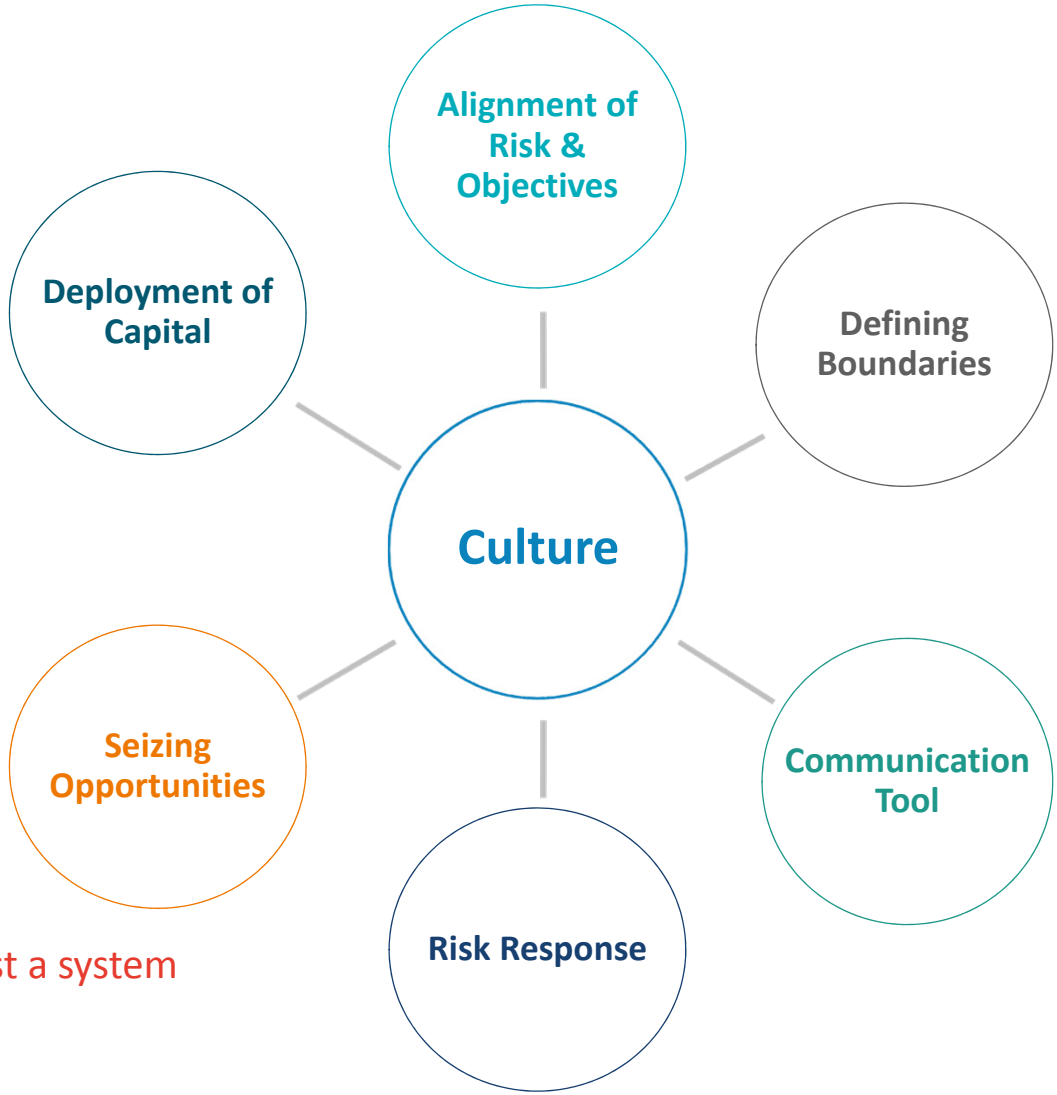
RISK CONTRIBUTION BY RISK FACTOR



Traditional asset allocation methodologies do not take into account that different asset classes contain the same risk factors

What is risk management?

- Risk is NOT just the standard deviation of returns!
- Risk is first and foremost the risk of losing principal. At what point is the drawdown too deep?
- Risk is failing to meet the demands of the organization.
- Risk is an unexpected negative event.



A risk culture is much more than just a system

Seeking answers through risk

- Risk exposures are the key driver of portfolio results.
- Risk can be managed easier than returns.
- Fiduciaries should understand what risks they own, and the biggest risks in the portfolio.
- The goal is to knowingly take risks and avoid unintended exposures with investments.

Risk management requires building a culture around risk.

Knowing portfolio exposures

- What is the overall risk exposure of the portfolio?
- What are the underlying exposures of the portfolio?
- Are we achieving the diversification we expect from the various asset classes?
- Do we have any unintended exposures?
- How should we expect the portfolio to perform in different environments?

Measuring appropriately

- Are we using appropriate benchmarks?
- Are there any unintended exposures versus our benchmark?
- How do we compare versus our peers?

Understanding manager performance

- How is the manager generating alpha?
- Is the alpha generation in line with the manager's philosophy?

Using risk to manage plan assets

STRATEGIC ASSET ALLOCATION

Assessment & modeling

- Reconcile to enterprise aims
- Employ multiple lenses of risk
- Evaluate risk tradeoffs
- Dimension sources of returns
- Utilize a holdings based correlation matrix
- Evaluate allocation to risk factors
- Understand sensitivities to market risk at policy formation

MANAGE TOTAL PLAN RISK

Comparison & analysis

- Your portfolio
- Strategic benchmark/Policy
- Peer group
- Liabilities

- Total risk
- Active risk
- Equity beta
- Interest Rate risk
- Spread duration
- Exposure allocation
- Tail risk
- Risk contribution by risk factor

MANAGER OVERSIGHT

Risk decomposition

- Sources of total risk
- Active risk budgeting
- Factor allocation
- Performance attribution
- Environmental, Social, Corporate Governance (ESG)

Spectrum of risk in policy development

Traditional Investment Policy

- Fund objectives
- Asset allocation
- Investment manager selection and monitoring
- Investment guidelines

Risk-Aware Investment Policy

- Incorporate risk metrics to monitor and measure
- Assign roles and responsibilities

Risk-Based Investment Policy

- Define bands for portfolio managers
- Assign accountabilities to various parties
- Revise philosophy to reflect risk approach

Robust, multifaceted toolset

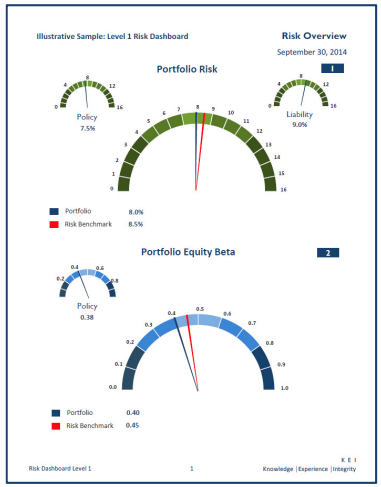
MSCI BarraOne
Risk Factor Analytics

MSCI Analytics
SRI Screens
Manager Analytics

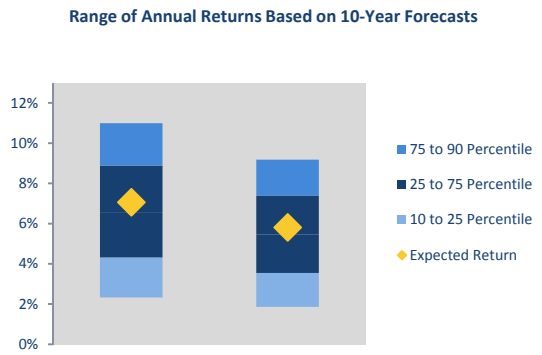
MPI Stylus Pro S
Mean Variance Modeling
Manager Analytics

InvestorForce
Quarterly Reporting
Performance Analytics

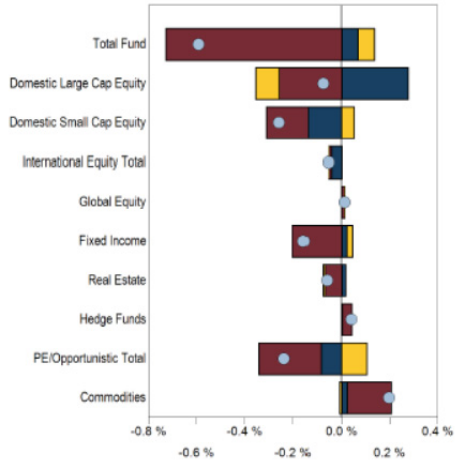
Risk dashboards



Mean variance modeling



Asset class attribution



Sample Report Components

Risk dashboard

— Risk Allocation
Allocations by risk buckets and asset class analysis

— Risk Diversification
Diversification: risk factors, geographic, economic sensitivity, and ex-ante returns

— Active Risk Budgeting
What and where are the active risks

— Primary Risk Factor Analysis
Attributes of Rates, Credit, Equity, Inflation and Currency risk buckets

— Performance Review
Did the portfolio meet the objectives?

— Performance Attribution
Positive and negative contributions to absolute and relative returns

"Although risk measurement is difficult, risk is ignored at one's peril, as many investors discovered in 2008 and 2009."

-World Economic Forum; Measurement, Governance, and Long-term Investing, 2012

Active management for the CIO

Implementing risk budgeting for a typical pension

— Use risk measurement infrastructure to make decisions

— Establish cultural beliefs: risks can be managed, returns cannot

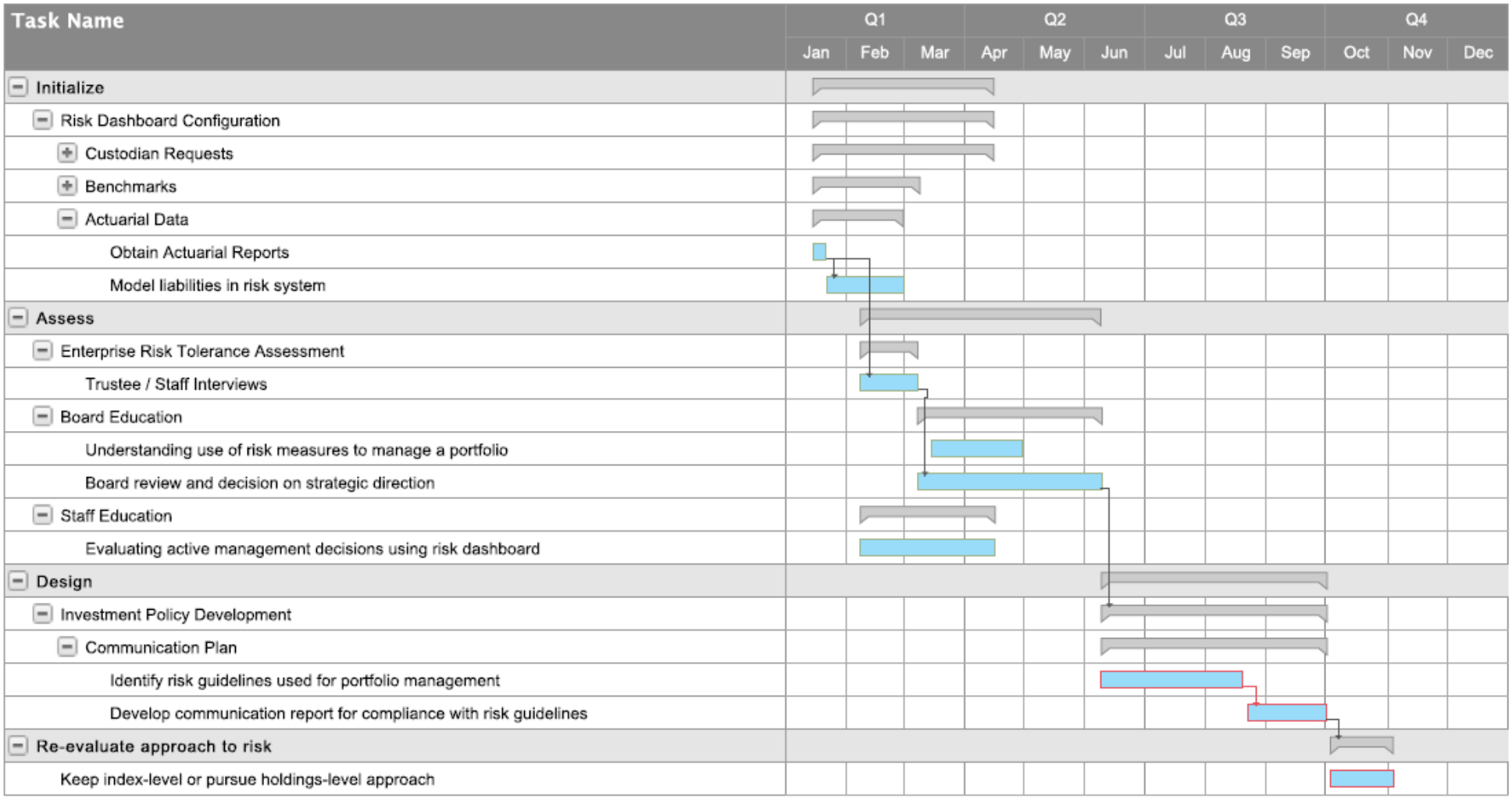
— Setting asset allocation is Board led process

— Implementing asset allocation is a Staff led process

— Allocating risk is driven by an active risk budget

- Requires attributing active risk and return to asset allocation and manager selection decisions

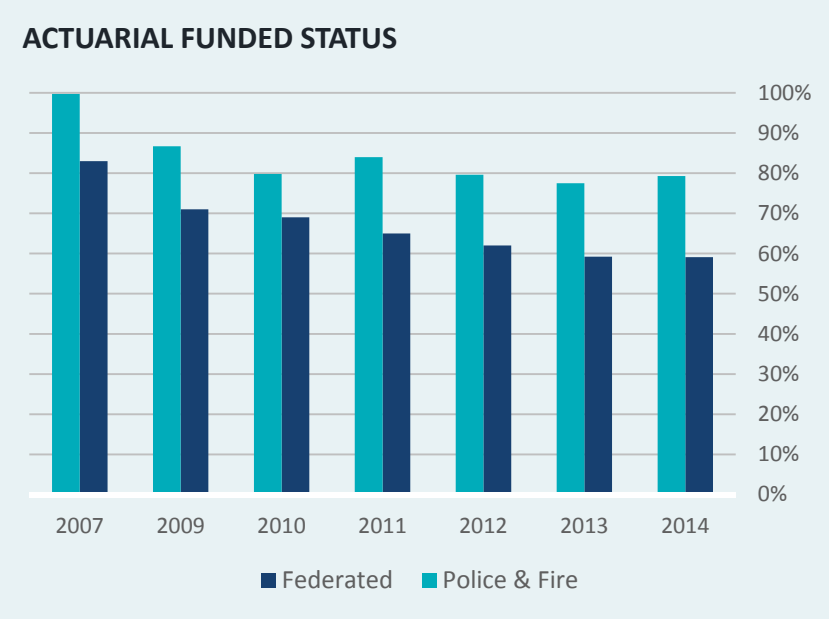
Project plan

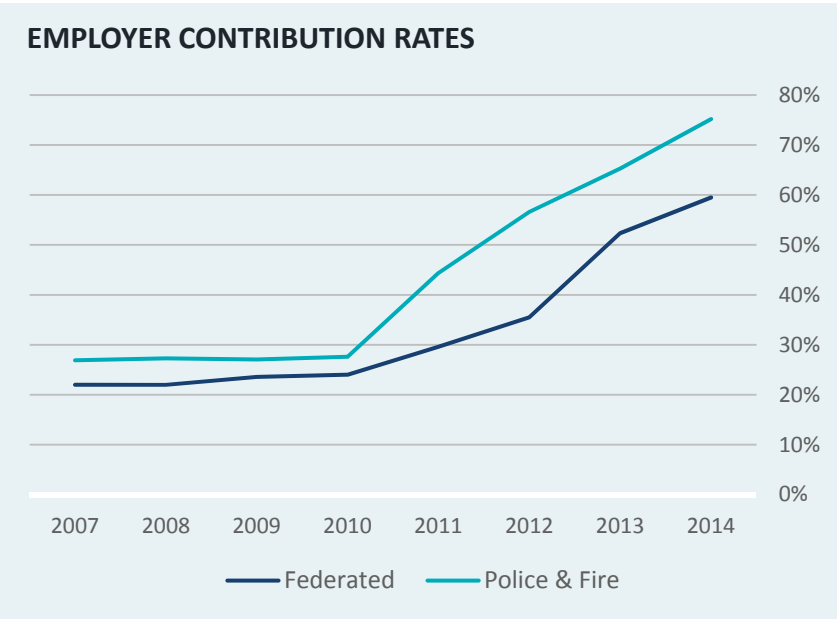


Your plans

Asset-liability analysis

- Losses from 2008/2009 combined with more conservative assumptions has driven funded status lower.
- Employer contribution rates are at elevated levels.
  - Employee contribution rates have also doubled.
  - May be mitigated in the future through Tier 2.

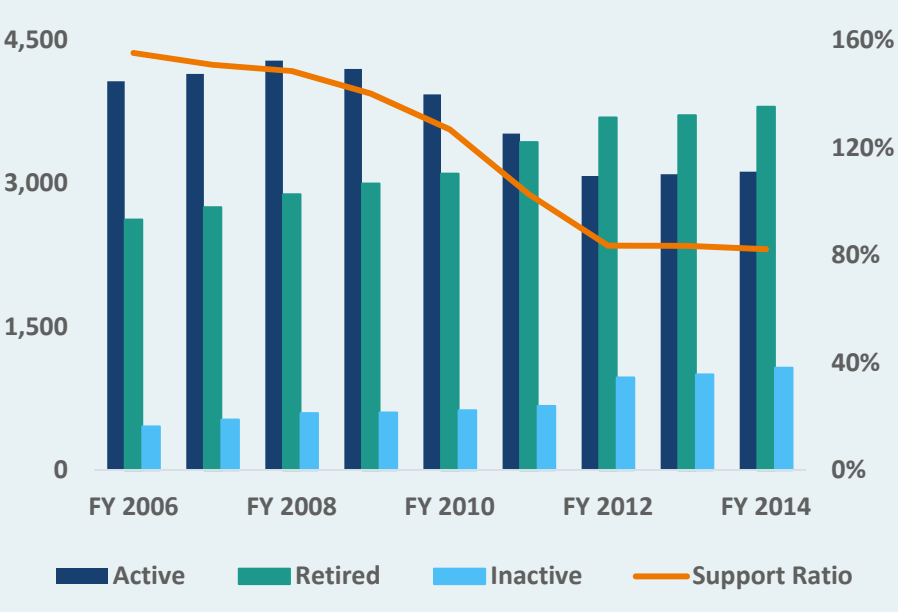


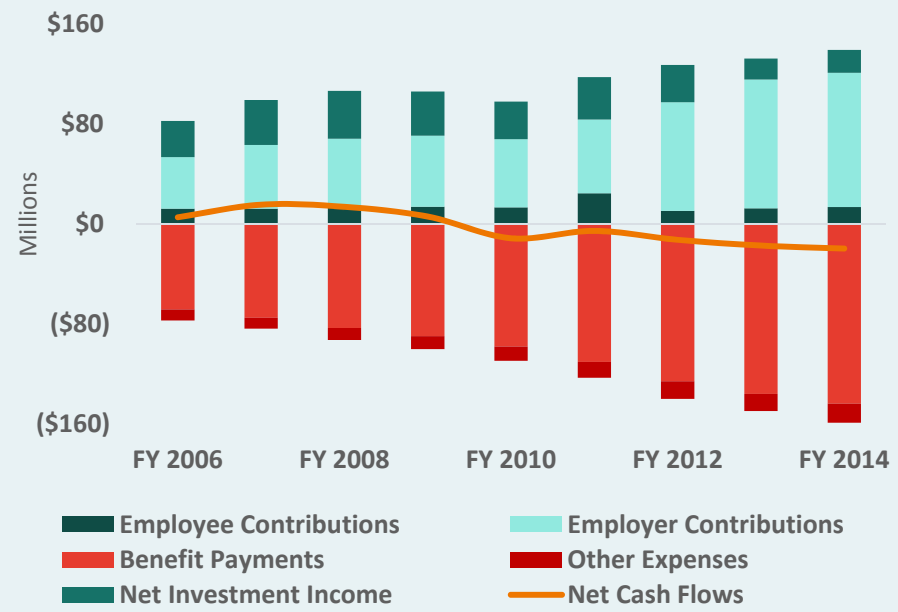


Source: Actuarial Reports. Represents fiscal year ending 6/30. Contribution rates exclude tier 2.

Support ratios & cash flows

Federated



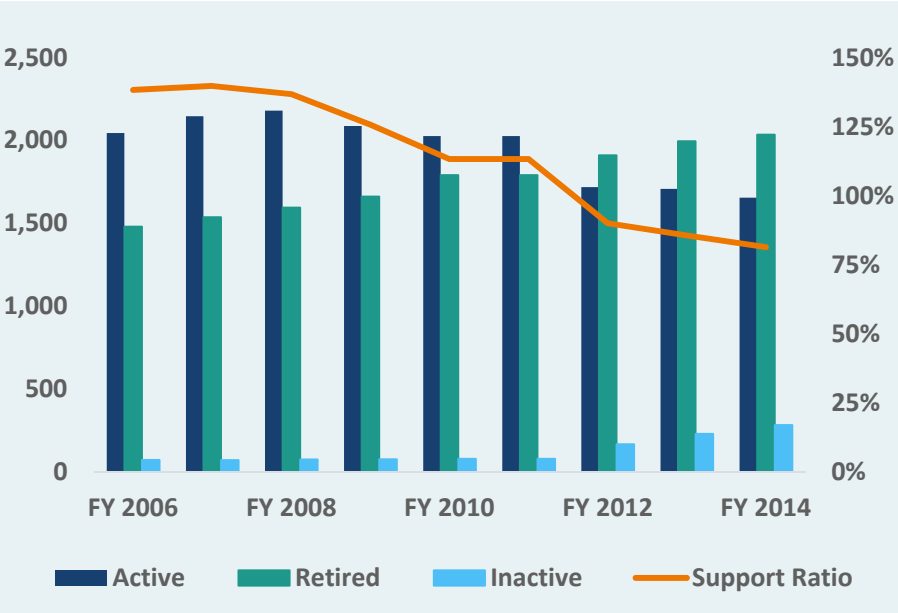


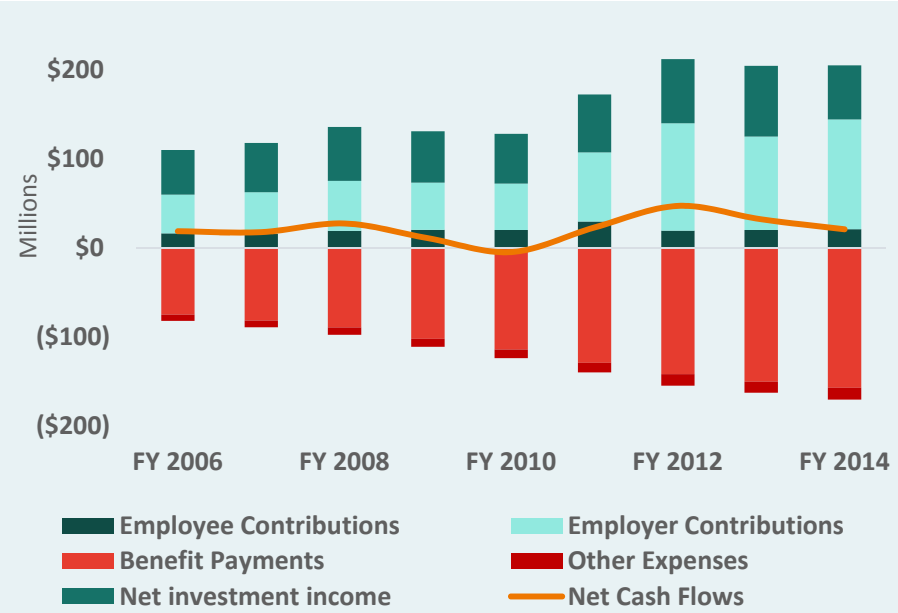
As a maturing pension plan, Federated is experiencing:

- A declining support ratio that fell below 100% in 2012 and was at 82% for FY 2014
- Negative net cash flows with net investment income less than operating cash outflows

Support ratios & cash flows

Police & Fire





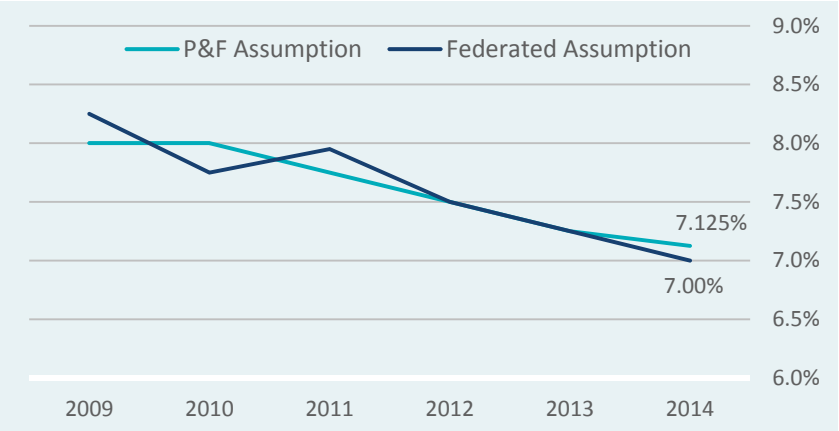
As a maturing pension plan, Police & Fire is experiencing:

- A declining support ratio that fell below 100% in 2012 and was at 81% for FY 2014
- Positive net cash flows with net investment income exceeding operating cash outflows

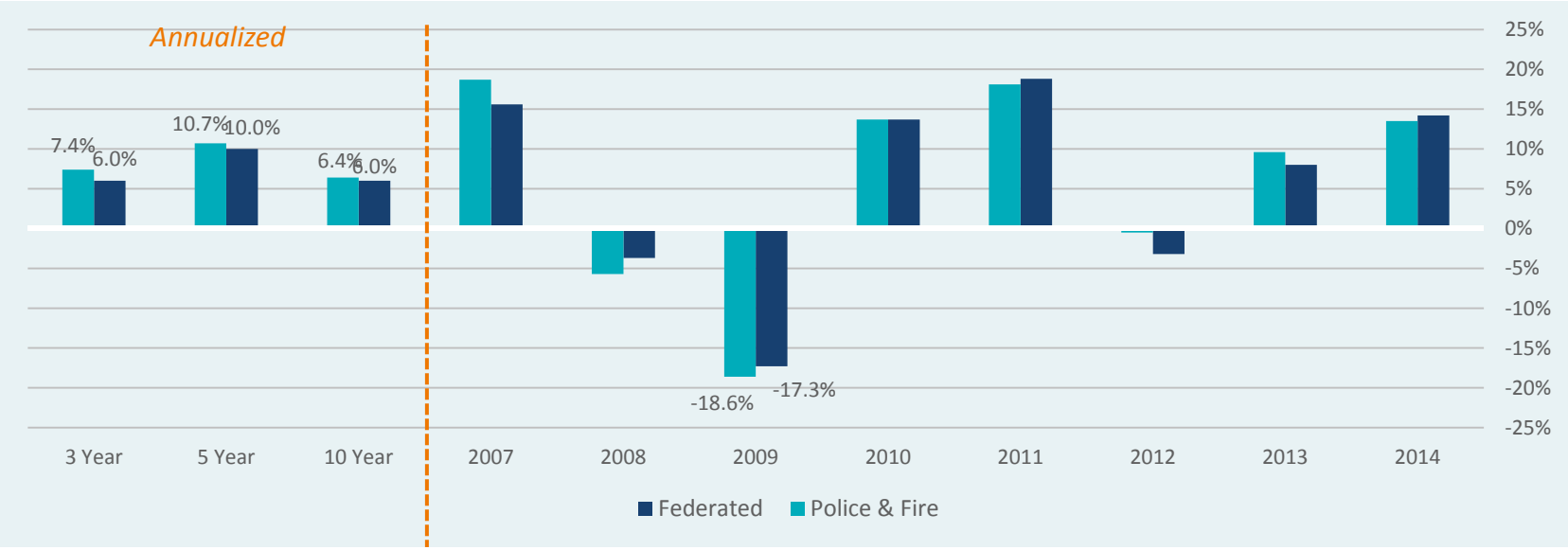
Historical returns & assumptions

- Neither plans has achieved its' assumed rate of return over the last 10 years.
- Return assumptions have decreased since 2009.

HISTORICAL RETURN ASSUMPTIONS



NET OF FEE HISTORICAL RETURNS BY PLAN



Returns net of fees for fiscal years as indicated above. Obtained from CAFRs.

Asset class exposures

APPROXIMATE EXPOSURE BY PLAN: 6/30/15

The Federated Plan has allocated more to hedge fund strategies and real assets.

Both Plans appear well diversified among sub-asset classes.

Hedge funds includes L/S equity and L/S credit strategies. Real estate includes infrastructure. Commodities include natural resources. Private assets includes PE and private credit. Overlay exposure estimated. GTAA classified as 60/40 mix of equity and fixed income.

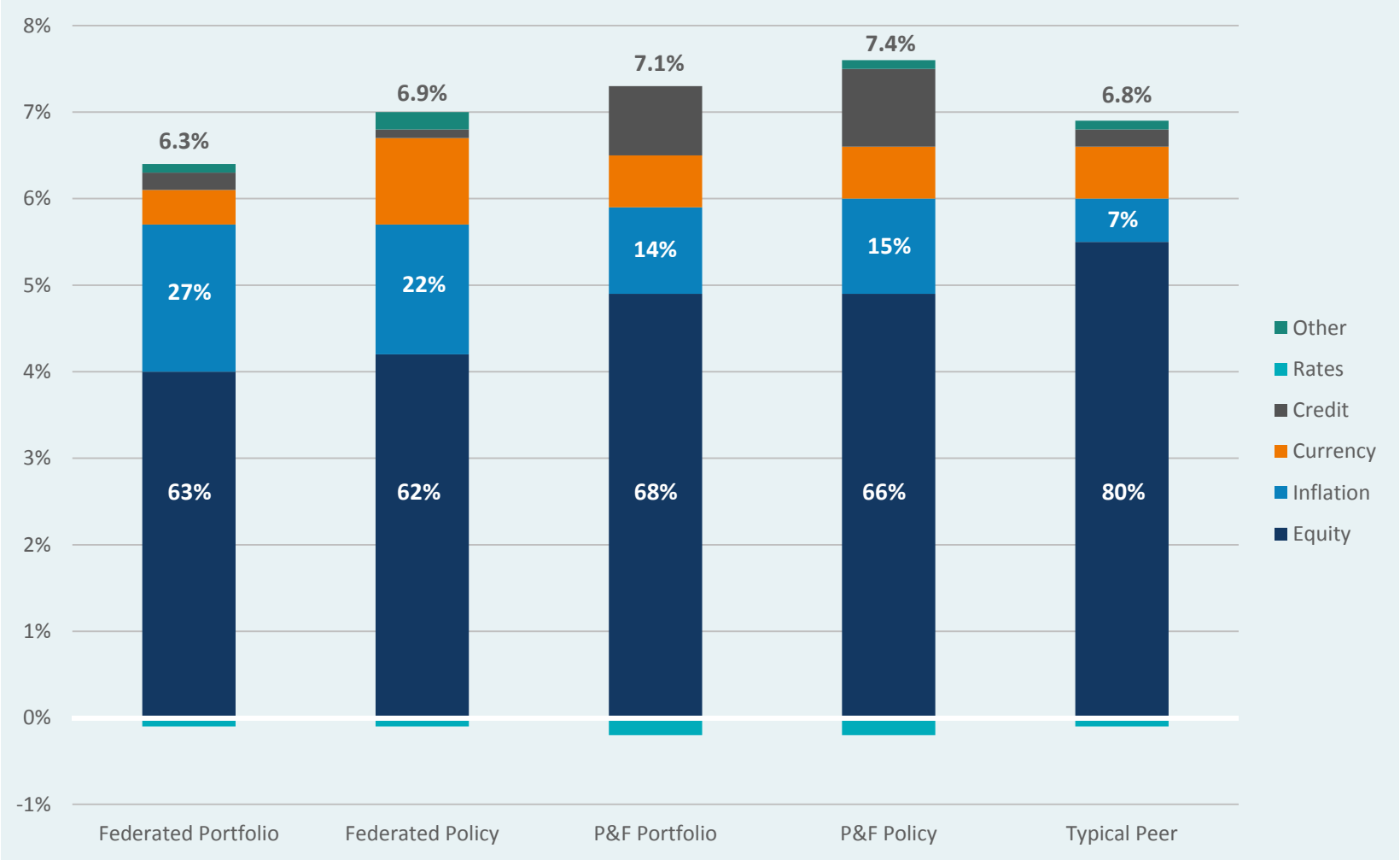
Asset allocation analysis

	Federated Policy	Federated Actual	P&F Policy	P&F Actual
Mean Variance Optimization				
Forecast 10 Year Return	**5.9**	**6.1**	***6.6***	***6.4***
Standard Deviation	10.5	9.8	11.6	11.4
Return/Std. Deviation	0.6	0.6	*0.6*	*0.6*
1st percentile ret. 1 year	-26.6	-24.5	*-28.9*	*-28.3*
Sharpe Ratio	0.41	0.45	0.44	0.43
Verus Economic Scenario Analysis				
10 Year Return Forecast				
Stagflation	6.8	7.6	6.7	6.5
Weak Economy	4.1	4.1	4.6	4.4
Base CMA	**5.4**	**5.3**	***5.7***	***5.6***
Strong	6.7	6.6	6.8	6.7
Range of Scenario Forecast	2.7	3.5	*2.2*	*2.3*

10-year return projections are modest, driven by a capital markets line that has been influenced lower by central bank intervention

Actual allocations as of June 30, 2015. See appendix for Verus' CMAs
Sources: San Jose Federated City Employees' Retirement Systems investment performance report; City of San Jose Police and Fire Department Retirement Plan investment performance reports

Relative risk decomposition



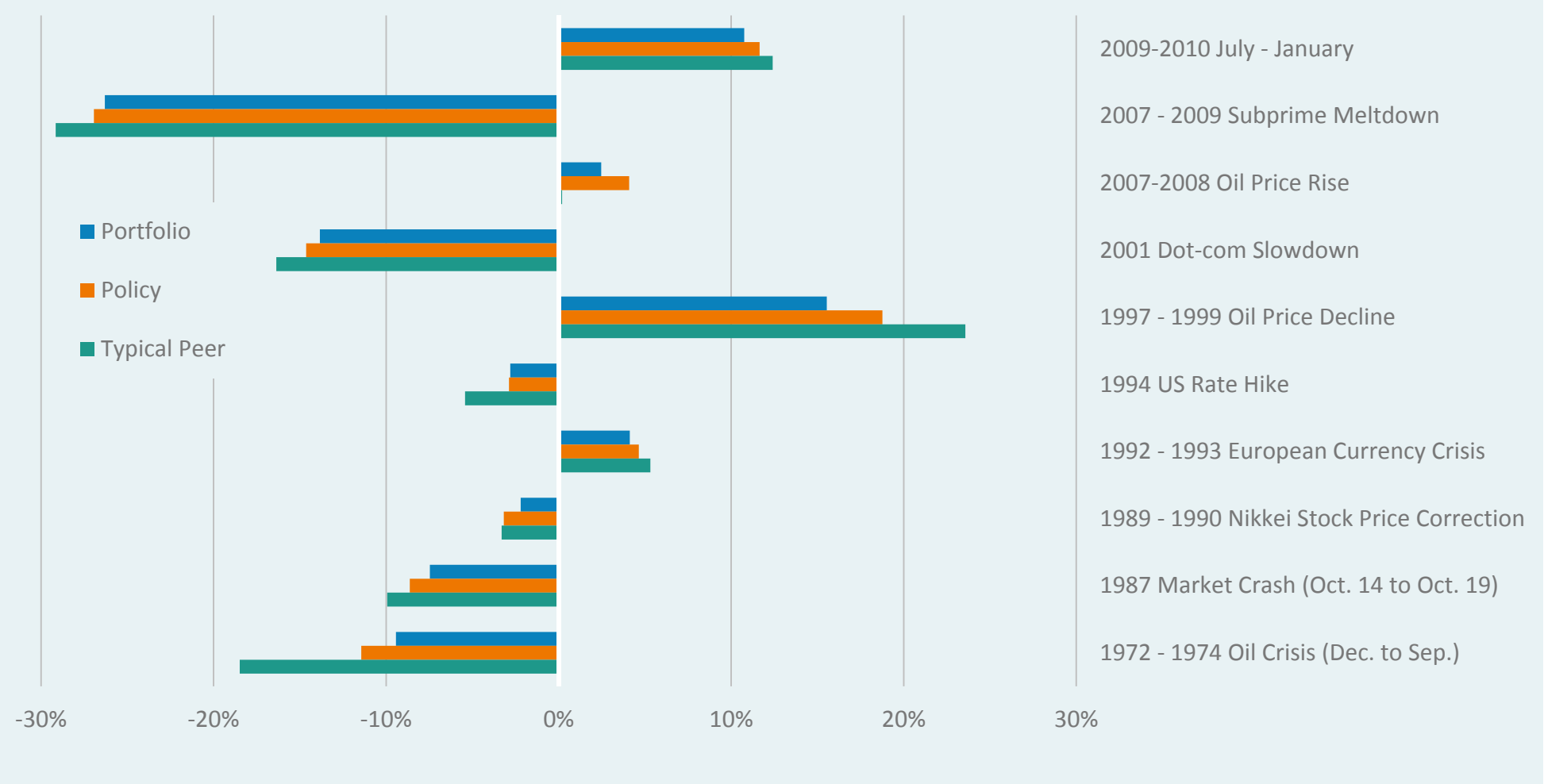
Source: MSCI BARRA. "Other" includes private equity, hedge fund, and selection

Both portfolios are taking less risk than their policy benchmarks, and doing so more efficiently than the typical peer.

Noticeable inflation exposures vs typical peer.

Historical scenario analysis

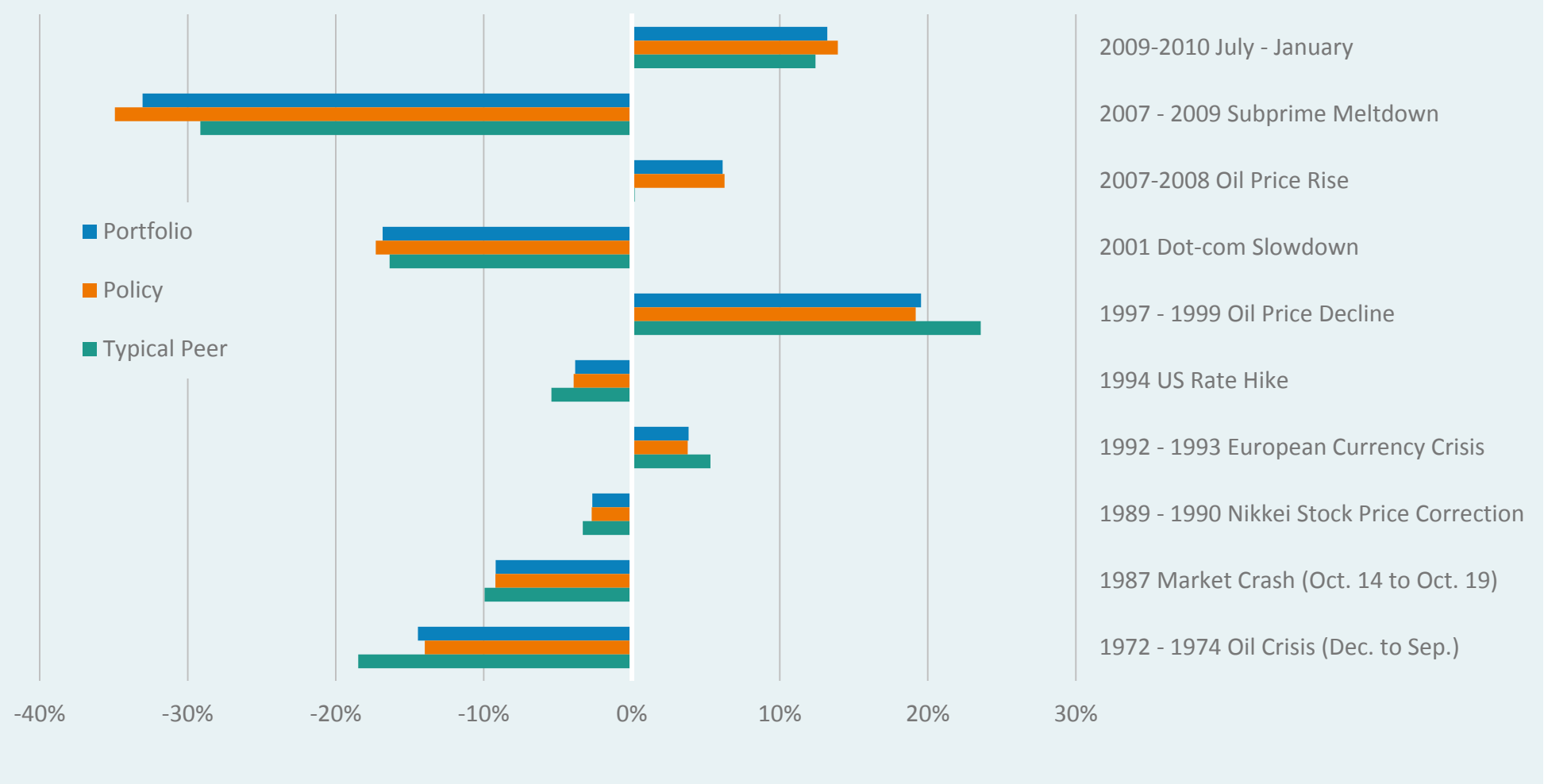
FEDERATED PLAN



MSCI BARRA

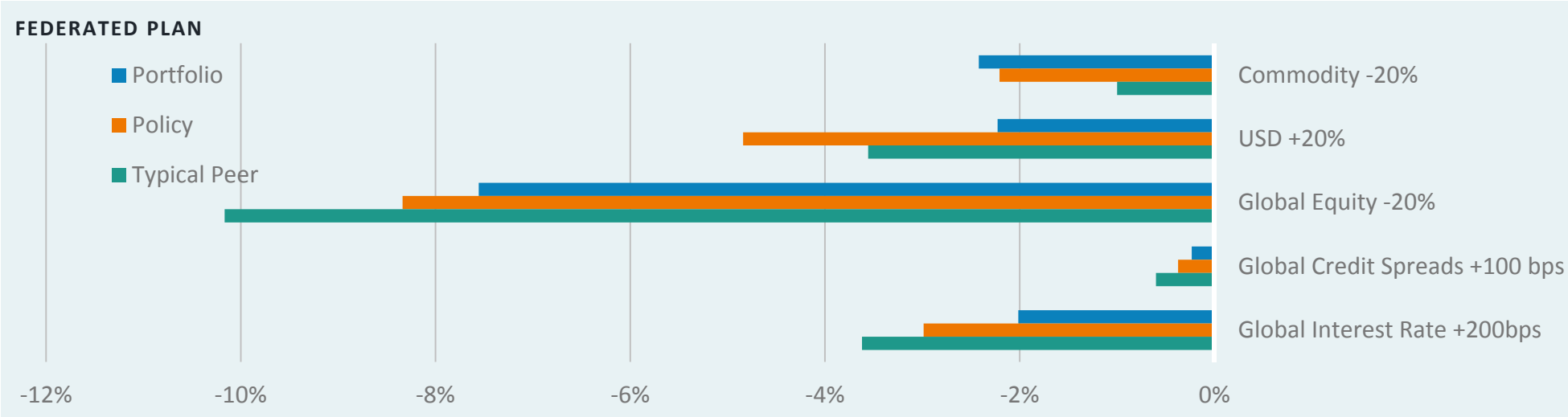
Historical scenario analysis

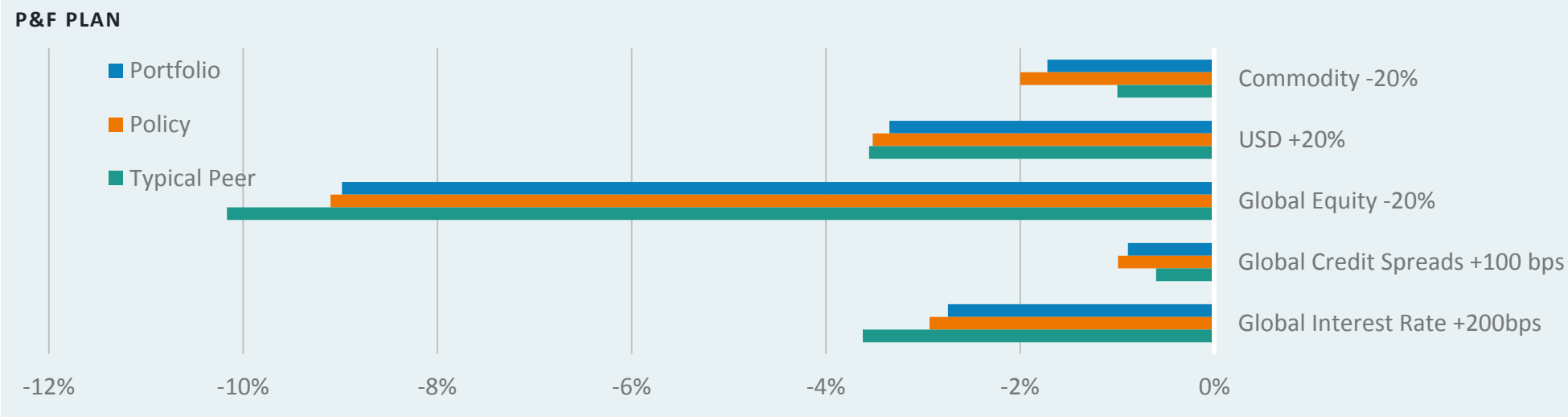
P&F PLAN



MSCI BARRA

Stress tests





MSCI BARRA

Investments: Police and Fire

Manager	Benchmark	6/30/15	
Total Equity		**$958.9**	**32.1%**
Public Equity		**958.9**	**32.1%**
Global Equity		**197.9**	**6.6%**
Artisan Global Opportunities	MSCI ACWI IMI (net)	101.7	3.4%
Artisan Global Value	MSCI ACWI IMI (net)	96.2	3.2%
Domestic Equity		**248.2**	**8.3%**
NT Russell 1000 Index Fund	Russell 1000	206.1	6.9%
RBC Small Cap Core	Russell 2000	42.1	1.4%
International Equity		**453.7**	**15.2%**
NT Russell MSCI World ex US	MSCI World ex-US	232.6	7.8%
Oberweis	MSCI World ex-US SCG	50.0	1.7%
MSCI EM ETF	MSCI Emerging Markets	34.0	1.1%
Vontobel Emerging Markets	MSCI Emerging Markets	82.9	2.8%
Dimensional Fund Advisors	MSCI Emerging Markets	33.5	1.1%
Aberdeen Frontier Markets	MSCI Frontier Markets	20.7	0.7%
Alternative Equity		**59.1**	**2.0%**
Amici	HFRI Equity Hedge (Total)	10.7	0.4%
Marshall Wace	HFRI Equity Hedge (Total)	11.8	0.4%
Horizon	HFRI Equity Hedge (Total)	11.8	0.4%
Sandler	HFRI Equity Hedge (Total)	11.8	0.4%
Senator	HFRI Event-Driven (Total)	13.0	0.4%

Manager	Benchmark	6/30/15	
Private Equity		**265.8**	**8.9%**
57 Stars Global Opportunity Fund 3	SJ Custom Total/Blended PE	11.6	0.4%
TCW/Crescent Mezzanine Partners V	SJ Custom Total/Blended PE	6.0	0.2%
CCMP Capital Investors III	SJ Custom Total/Blended PE	8.2	0.3%
Crescent Mezzanine Partners VI	SJ Custom Total/Blended PE	13.0	0.4%
Francisco Partners IV	SJ Custom Total/Blended PE	2.9	0.1%
HarbourVest Fund Funds	SJ Custom Total/Blended PE	28.7	1.0%
Industry Ventures III	SJ Custom Total/Blended PE	6.7	0.2%
Pantheon USA Fund VI	SJ Custom Total/Blended PE	25.1	0.8%
Portfolio Advisors Private Equity Fund III	SJ Custom Total/Blended PE	11.6	0.4%
Siguler Guff DOF III	SJ Custom Total/Blended PE	14.8	0.5%
TPG Opportunity Partners II	SJ Custom Total/Blended PE	12.2	0.4%
TPG Opportunity Partners III	SJ Custom Total/Blended PE	2.5	0.1%
Warburg Pincus Private Equity XI	SJ Custom Total/Blended PE	15.5	0.5%
NT Russell 3000 Index Fund	SJ Custom Total/Blended PE	107.1	3.6%

Investments: Police and Fire (cont.)

Manager	Benchmark	6/30/15	
Fixed Income		**$ 762.6**	**25.5%**
Global Fixed Income		**181.8**	**6.1%**
Claren Road	Barclays Global Agg	25.0	0.8%
Colchester Global Fixed Income	Barclays Global Agg	86.7	2.9%
Frank. Temp. Glbl Multi-Sect Plus	Barclays Global Agg	70.1	2.3%
Corporate Credit		**159.6**	**5.3%**
Beach Point Total Return	Barclays High Yield	79.9	2.7%
Symphony L/S Credit Fund	Barclays High Yield	79.6	2.7%
Opportunistic Credit		**258.8**	**8.7%**
Davidson Kempner	HFRI Event-Driven (Total)	22.9	0.8%
Marathon European Credit	ML Euro HY Constrained	11.9	0.4%
GSO Direct Lending Fund	3-Month LIBOR +5%	18.6	0.6%
Medley Opportunity Fund II	3-Month LIBOR +5%	54.4	1.8%
White Oak Direct Lending Fund	3-Month LIBOR +5%	41.3	1.4%
Capula European Special Sits	3-Month LIBOR +5%	74.8	2.5%
Park Square	3-Month LIBOR +5%	18.6	0.6%
Shoreline China Value III	3-Month LIBOR +5%	16.3	0.5%
Emerging Market Debt		**162.5**	**5.4%**
BlueBay EM Select Debt	JP Morgan Blended EMD	107.1	3.6%
Iguazu Partners	JP Morgan Blended EMD	55.4	1.9%

Manager	Benchmark	6/30/15	
Inflation Real Assets		**$ 522.5**	**17.5%**
Real Estate		**251.8**	**8.4%**
American Realty Sep Acct		24.5	0.8%
American Realty Core Fund	SJ Custom Total Real Estate	129.4	4.3%
BlackStone RE Debt Strategies II	SJ Custom Total Real Estate	4.6	0.2%
Brookfield Strategic RE Partners	SJ Custom Total Real Estate	9.5	0.3%
Och Ziff Real Estate	SJ Custom Total Real Estate	2.3	0.1%
Orion European RE Fund IV	SJ Custom Total Real Estate	4.2	0.1%
TA Realty Fund X	SJ Custom Total Real Estate	10.3	0.3%
Tristan EPISO 3	SJ Custom Total Real Estate	5.1	0.2%
Russell Real Estate	SJ Custom Total Real Estate	61.9	2.1%
Commodities		**191.1**	**6.4%**
CS Balanced Risk Commodity	Custom Commod Risk Parity	191.1	6.4%
Multi-Asset Inflation-Linked Assets		**79.6**	**2.7%**
Wellington Div'd Inflation Hedges	CPI +5% (unadjusted)	79.6	2.7%

Investments: Police and Fire (cont.)

Manager	Benchmark	6/30/15	
Absolute Return		**635.1**	**21.2%**
Hedge Funds		**189.4**	**6.3%**
Arrowgrass	HFRI Relative Value (Total)	24.1	0.8%
BlueTrend	Barclay BTOP50	9.2	0.3%
Brevan Howard	HFRI Macro (Total)	21.2	0.7%
DE Shaw	HFRI Fund Weighted Composite	27.2	0.9%
Hudson Bay	HFRI Relative Value (Total)	20.6	0.7%
Kepos	HFRI Macro: Systematic Diversified	11.7	0.4%
Pine River	HFRI Relative Value (Total)	24.0	0.8%
Russell Hedge Funds	Russell Hedge Fund Index	51.4	1.7%
Global Asset Allocation		**335.3**	**11.2%**
GMO Benchmark-Free Allocation Fund	CPI +5% (Seasonally Adjusted)	99.2	3.3%
PIMCO All Asset All Authority Fund	CPI +6.5% (Seasonally Adjusted)	94.8	3.2%
Standard Life GARS Fund	91 Day T-Bill +5%	141.3	4.7%
Cash	91 Day T-Bill	**41.1**	**1.4%**
Russell Overlay		**69.3**	**2.3%**
TOTAL		**2,989.6**	**100%**

Investments: Federated

Manager	Benchmark	9/30/15	
Equity		**$ 673.2**	**34.1%**
Global Equity		**471.7**	**23.9%**
Artisan Global Value	MSCI ACWI Value	159.3	8.1%
Northern Trust MSCI EAFE Index-NL	MSCI EAFE	126.3	6.4%
Vontobel Emerging Markets Equity	MSCI Emerging Markets	64.8	3.3%
Northern Trust Russell 3000 Index	Russell 3000	51.4	2.6%
Cove Street Small Cap Value	Russell 2000 Value	28.5	1.4%
Northern Trust EAFE Small Cap-NL	MSCI EAFE Small Cap	23.2	1.2%
Aberdeen Frontier Markets Equity	MSCI Frontier Markets	17.8	0.9%
Russell Currency Hedge	MSCI Frontier Markets (ex-GCC)	0.4	0.0%
Long-Short Equity Composite		**114.7**	**5.8%**
Senator Global Opportunity Offshore	HFRI Event Driven	24.0	1.2%
Sandler Plus Offshore Fund	HFRI Equity Hedge	24.3	1.2%
Marshall Wace MW Eureka	HFRI Equity Hedge	23.9	1.2%
Horizon Portfolio I	HFRI Equity Hedge	23.8	1.2%
Amici Offshore	HFRI Equity Hedge	18.7	0.9%
Private Equity		**86.8**	**4.4%**
Pantheon USA Fund VII	Cambridge Private Equity	32.0	1.6%
Pathway Private Equity Fund VIII	Cambridge Private Equity	15.5	0.8%
Pantheon Global Secondary Fund III 'B'	Cambridge Private Equity	14.0	0.7%
Partners Group Secondary 2011	Cambridge Private Equity	14.6	0.7%
Partners Group Secondary 2008	Cambridge Private Equity	6.7	0.3%
Great Hill Equity Partners IV	Cambridge Private Equity	4.0	0.2%

Manager	Benchmark	9/30/15	
Fixed Income		**$ 532.9**	**27.0%**
Investment Grade Bonds		**136.3**	**6.9%**
NT 1-10 Year Int Gov't Bond Index-NL	Barclays Int Gov't Bond	136.3	6.9%
Inflation Linked Bonds		**108.6**	**5.5%**
NT 0-5 Year TIPS	Barclays U.S. TIPS 0-5 Years	108.6	5.5%
Global Credit		**288.0**	**14.6%**
Voya Securitized Credit	Barclays U.S. Securitized	55.8	2.8%
BlueBay Emerging Market Select Bond	50% JPM EMBI GD 50% JPM GBI-EM	46.5	2.4%
Long-Short Credit		**75.9**	**3.8%**
Claren Road Credit Fund	HFRI RV Fixed Income-Corporate	41.6	2.1%
Davidson Kempner Instl Partners	HFRI Event Driven	34.3	1.7%
Private Debt		**109.8**	**5.6%**
Medley Opportunity Fund II	3 Month Libor +5%	55.0	2.8%
White Oak Direct Lending	3 Month Libor +5%	34.7	1.8%
GSO Direct Lending	3 Month Libor +5%	20.1	1.0%

Investments: Federated (cont.)

Manager	Benchmark	9/30/15	
Real Assets		**$ 441.2**	**22.4%**
Core Real Estate		**84.9**	**4.3%**
PRISA I	NCREIF ODCE Equal Weighted (net)	43.7	2.2%
American Core Realty Fund	NCREIF ODCE Equal Weighted (net)	41.2	2.1%
Private Real Estate		**33.7**	**1.7%**
DRA G&I Fund VII	NCREIF Property	14.3	0.7%
DRA G&I Fund V	NCREIF Property	5.9	0.3%
Fidelity R/E Growth Fund III	NCREIF Property	3.2	0.2%
DRA G&I Fund VIII	NCREIF Property	5.4	0.3%
DRA G&I Fund VI	NCREIF Property	3.2	0.2%
GEAM Value Add Ptnrs	NCREIF Property	1.7	0.1%
Natural Resources		**85.4**	**4.3%**
Rhumbline S&P Global Large MidCap Commodity & Natural Resources	S&P Global Lg MidCap Commod & Resource S&P Global Natural Resources	85.3	4.3%
NT Global LargeMid NR	S&P Global Lg MidCap Commod & Resource S&P Global Natural Resources	0.1	0.0%
Infrastructure		**124.3**	**6.3%**
Rhumbline DJ Brookfield Global Infrastructure	DJ Brookfield Global Infrastructure	124.3	6.3%
Commodities		**112.9**	**5.7%**
First Quadrant Balanced Risk Parity Commodity Fund	Custom Risk Parity Commodity Bloomberg Commodity	57.8	2.9%
Credit Suisse Risk Parity Commodity Fund	Custom Risk Parity Commodity Bloomberg Commodity	55.1	2.8%

Manager	Benchmark	9/30/15	
Absolute Return		**$ 238.9**	**12.1%**
Relative Value		**141.8**	**7.2%**
DE Shaw	HFRI Fund Weighted Composite	41.4	2.1%
Arrowgrass International	HFRI Relative Value	35.8	1.8%
Pine River Fund	HFRI Relative Value	34.0	1.7%
Hudson Bay Fund	HFRI Relative Value	30.6	1.6%
Global Macro		**97.1**	**4.9%**
Brevan Howard Multi-Strat	HFRI Macro	30.7	1.6%
BlueTrend	Barclay BTOP50	20.1	1.0%
Dymon Asia Macro	HFRI Macro Index	20.0	1.0%
Kepos Alpha Fund	HFRI Macro Systematic Diversified	19.4	1.0%
MKP Opportunity Offshore	HFRI Macro: Discretionary Thematic	6.9	0.3%
Cash (incl. Russell Overlay Assets)		**87.6**	**4.4%**
TOTAL		**$ 1,973.8**	**100%**

Appendix I: Hedge fund capabilities

Classic hedge fund strategies

Arbitrage Strategies

Capture relative mispricing between two related assets.

Equity Oriented Strategies

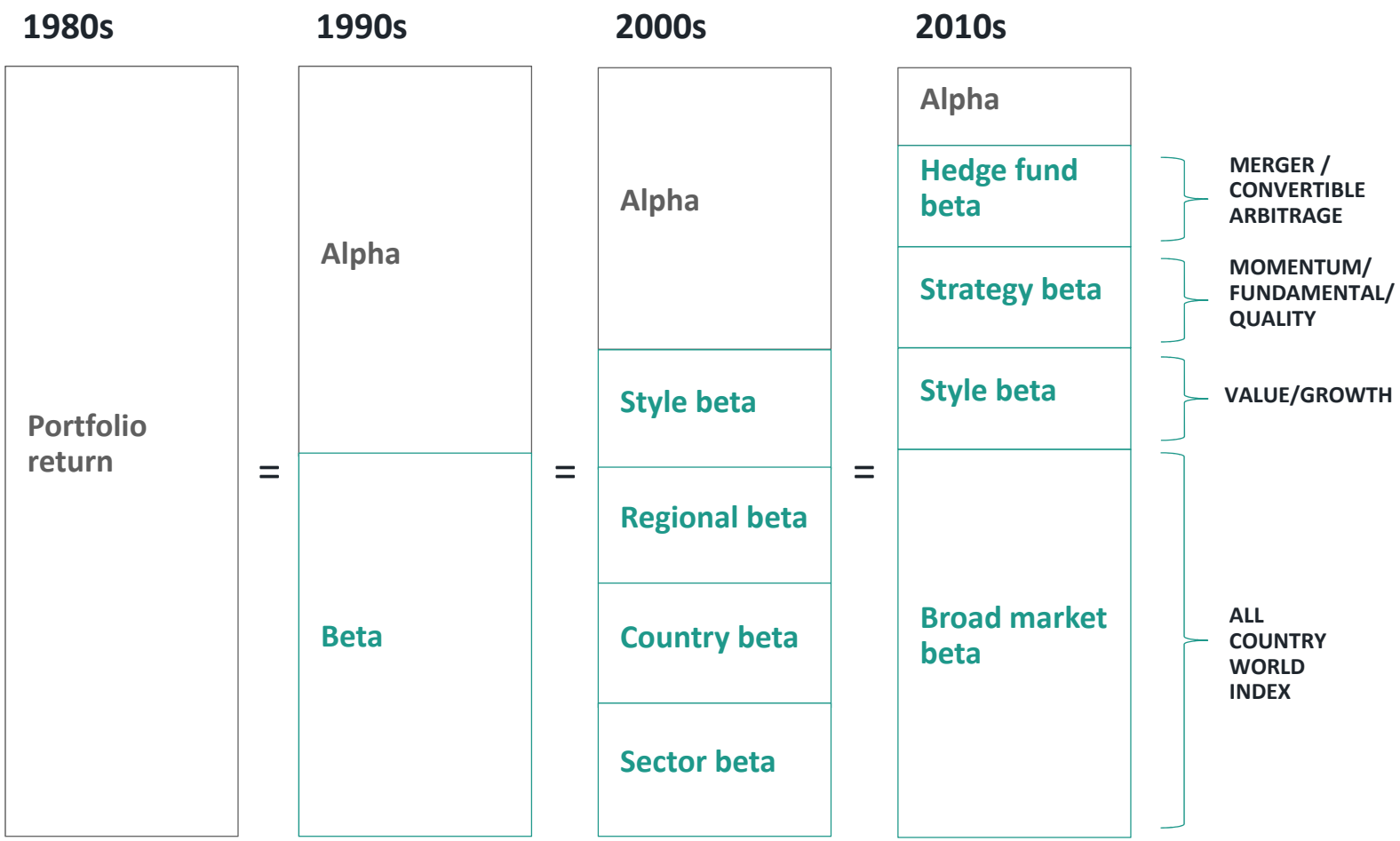
Take advantage of market inefficiencies that cause specific stocks to be under- or over-priced.

Macro Strategies

Profit from dislocations in global equity, bond, currency and commodity markets, including those driven by investors' behavioral biases.

Source: AQR

Evolving hedge fund beta and alpha



Our philosophy is rooted in healthy skepticism, with a focus on ensuring the returns are justified by the risks and costs, both explicit and implicit

Verus' hedge fund solution

Verus Alternatives Investment Committee

Oversight, review, and monitoring

Verus Portfolio Managers, Consultants & Clients

Portfolio design & client communication

Verus hedge fund research staff

Risk-based evaluation & analysis
Tailored portfolio design
Formal focus list

Aksia

Investment due diligence
Operational due diligence
Comprehensive modeling & analytics

Appendix II: Risk capabilities

Local currency bond fund holdings

505 Securities:

— 283 Sovereign Bonds / Short-term notes

— 71 Currency FX Forward Contracts

— 53 Single Currency Vanilla Interest Rate Swaps

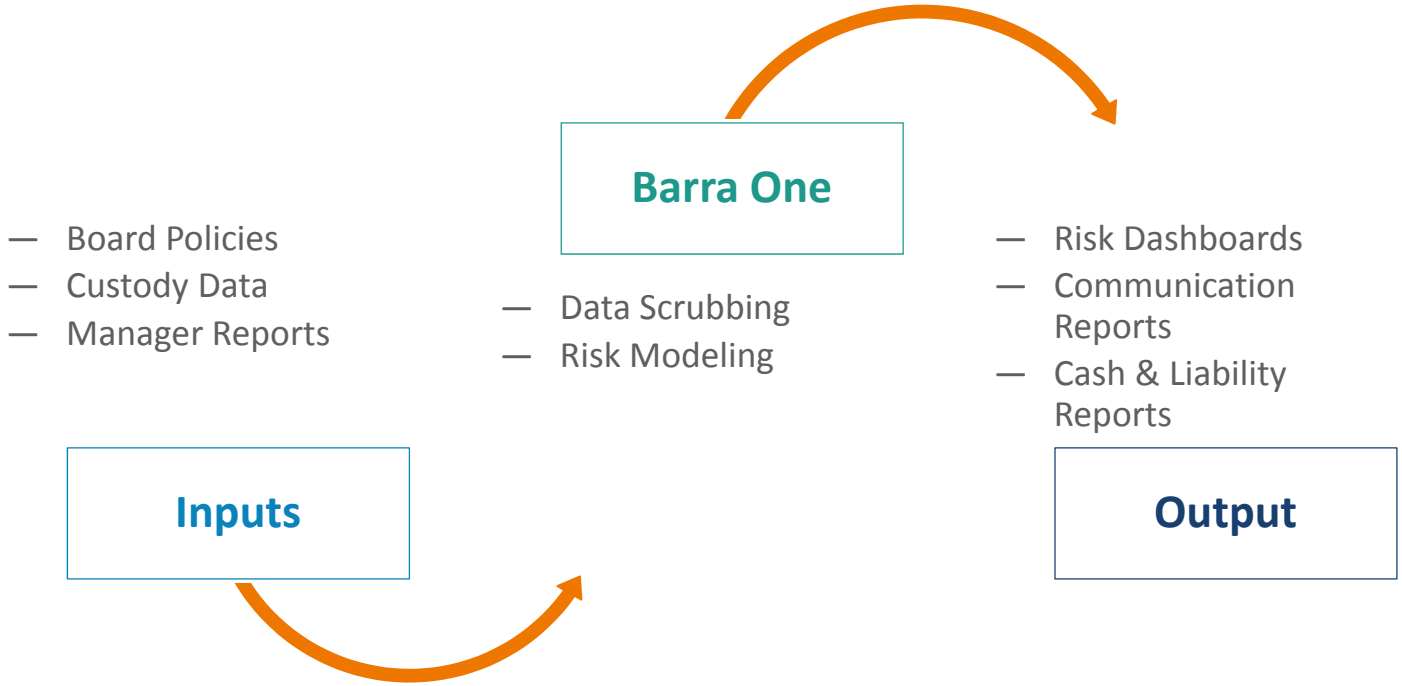
— 15 Swaptions

— 20 Brazilian Zero Coupon Interest Rate Swaps

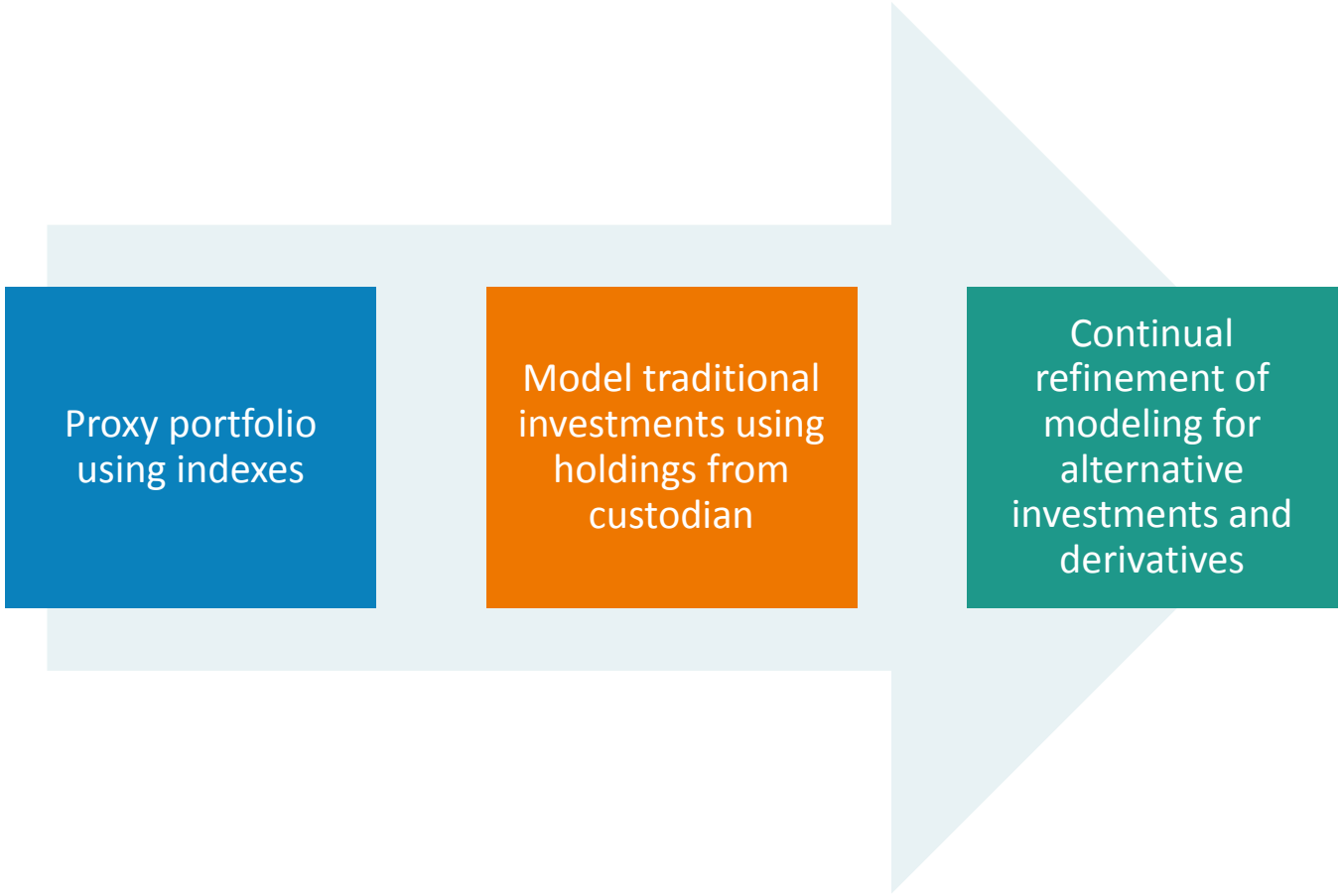
— 8 Credit Default Swaps (Sell protection)

— 55 Misc. Cash / Equivalents

Process work flow



Data modeling as a process



Example pension portfolio

Asset Class	Policy Benchmark	Portfolio Weight (%)	Benchmark Weight (%)	Active Weight (%)
Equity	MSCI ACWI	54	50	4
Fixed	BarCap Agg	41	40	1
Real Estate	NCREIF ODCE	5	10	-5
Total Fund	**Target-weighted Average**	**100**	**100**	**0**

Manager	Manager Benchmark	Manager Weight (%)
EQ Mgr I	S&P 500	57
EQ Mgr II	MSCI EAFE	28
EQ Mgr III	MSCI EM	15
Fixed Mgr	BarCap Agg	100
RE Mgr	NCREIF ODCE	100

Asset class over/underweights

Managers' weight within asset classes

Example pension portfolio

Contribution to Active Risk (bps)

Asset Class	Allocation Contribution
Equity	13
Fixed	-2
Real Estate	31
Total Fund	**42**

Manager	Selection Contribution
EQ Mgr I	29
EQ Mgr II	16
EQ Mgr III	15
Fixed Mgr	13
RE Mgr	21
	93

Benchmark Misfit Contribution
24
-11
-10
0
0
3

Total Contribution
75
10
53
138

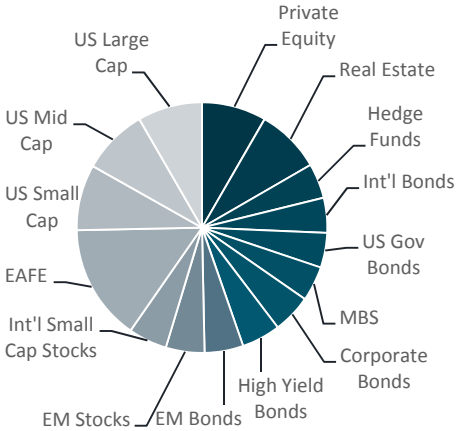
Asset allocation decisions + Manager tilts vs. manager benchmark + Manager benchmark tilts vs. policy benchmark = Total active risk

The world of risks

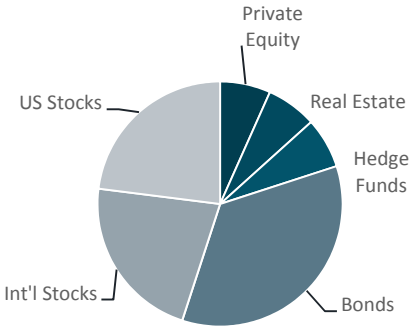
"True" diversification

TRADITIONAL DIVERSIFICATION

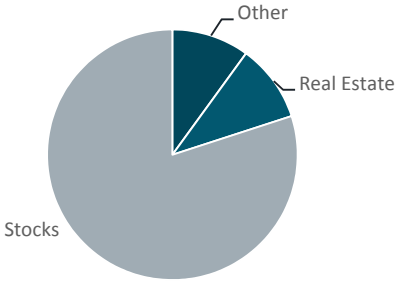
Sub-Asset Class Allocation



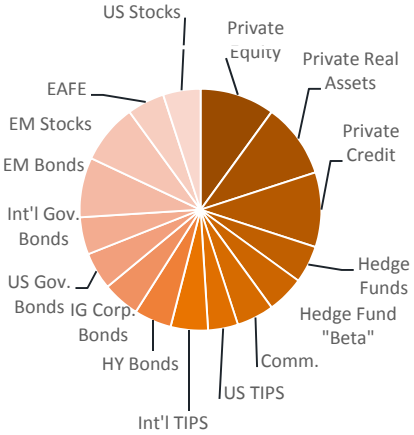
Group Asset Class Allocation

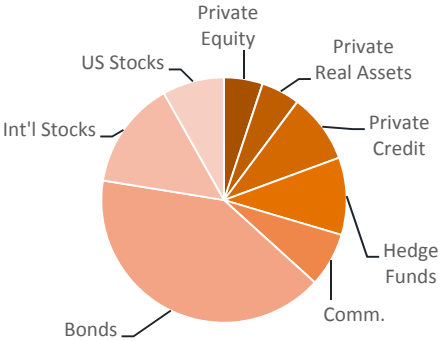


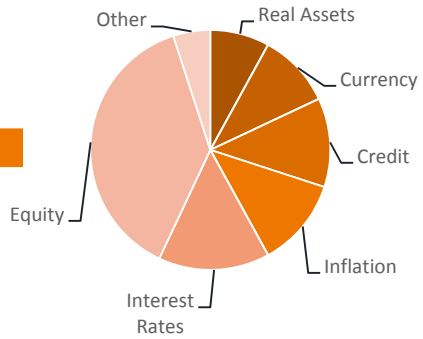
Risk Allocation



"TRUE" DIVERSIFICATION







Board education topics

1. Role of Risk Management in the Investment Policy Statement
2. Leverage in the Investment Process
3. Risk Management and Investment Policy
4. Risk Operating Zones
5. IPS Design and Risk Dashboard discussion
6. Policy Benchmark Transition Update

Being more proactive with risk

1. **Defining risk guidelines in the IPS, Governance and Communication:**
   - Clear investment philosophy and beliefs
   - Clear articulation of risk metrics
   - Use of risk dashboard to communicate risk position relative to targets
2. **Modeling Policy changes**
   - Pro-forma evaluation of portfolio exposures before implementation
3. **Private Asset Modeling**
4. **Understanding exposures in BarraOne**
   - What is the weight of a swap?
5. **Effective Tail Risk Measurement**
   - Creating customized stress tests
   - MCVaR, Expected Shortfall (CVaR) and Historical VaR
6. **A Risk Component to Manager Selection**
   - Separate smart beta from stock-picking
7. **Risk Parity Modeling**

Risk service offerings

- Risk Reporting
  Monthly Risk Dashboard and consultation. Ad-hoc, on demand support for BarraOne usage, training and communication
- Integrating Risk Decision-Making into Investment Policy
  Strong governance is made stronger with specific, measureable and value-creating risk management goals for the portfolio
- Pro-forma Analysis
  Policy changes, benchmark transitions, manager assessment and selection
- Private Asset Modeling
  Leverage portfolio company and property-level data to understand drivers of risk and performance within private asset classes
- Hedge Fund Modeling
  Leverage access to fund transparency directly or via third parties
- Risk Parity
  Gain insight on the market price of risk by measuring exposures and risk contributions within Risk Parity portfolios
- Risk Infrastructure Management
  BarraOne project management experience deployed to ensure successful implementation

Risk allocation process

Diversification

- Economic sensitivity
- Risk factor modeling
- Mean-variance analysis
- Return contribution

Risk Testing

- Scenario analysis
- Stress testing

Valuations

- Valuation assessment
- Risk-factor tilts
- Relative risks assessment

Implementation

- Smart cost-effective allocation to beta exposures
- Judicious allocation to alpha sources

Appendix III: Biographies

Biographical information

Contact:
T: 310.297.1777
F: 310.297.0878

jmaclean@verusinvestments.com

Mr. Jeffrey MacLean

Chief Executive Officer

Mr. MacLean joined Verus in 1992 and is primarily responsible for managing the firm and providing investment advice to several clients. He has over 25 years of investment and consulting experience, working with all asset classes for a range of clients including corporate defined benefit plans, public institutions, multi-employer trusts, endowments, and foundations. He also chairs the firm's management committee and is a member of the alternative investments committee.

Mr. MacLean often speaks at investment forums regarding the macro-economic environment, asset allocation, risk management, alternative investments, and industry trends. Prior to joining Verus, Mr. MacLean was Vice President of Shurgard Realty Group, a real estate advisory firm, and a consultant for Arthur Andersen & Company.

Mr. MacLean currently volunteers for Children’s Hospital of Los Angeles and he serves on the advisory board for the University of Washington Foster School of Business. He holds a masters degree in business administration (MBA) from the Darden School of Business and a bachelors degree in business administration (BBA) from the University of Washington, where he served as student body president in his senior year.

Biographical information

Contact:
T: 415.362.3484
F: 415.362.2752
sheier@verusinvestments.com

Ms. Shelly Heier, CFA, CAIA

President | Chief Operating Officer | Senior Consultant

A shareholder of the firm since 2007, Ms. Heier is an integral part of the firm's leadership, serving on the Verus management committee, chairing the investment committee, and heading the Seattle-based consulting staff. In addition, Ms. Heier provides investment consulting services to a handful of clients, including charitable organizations, corporate retirement plans, and healthcare organizations. Ms. Heier is a frequent speaker at industry conferences, where she has presented on a broad range of topics including capturing alpha from quantitative strategies and portfolio operations efficiencies.

As chair of the investment committee, Ms. Heier provides strategic guidance to the firm's research staff on the important issues affecting clients and vetting the research department's initiatives. Ms. Heier joined Verus (previously known as Wurts & Associates) in 2000 as a member of the manager research group and was responsible for investment manager and market research. She served as director of manager research from 2002 to 2005. Prior to joining the firm, she worked as an analyst for a financial planning firm specializing in high net worth individuals.

Ms. Heier is active in numerous civic and industry groups, including the CFA Institute, CFA Society of Seattle, CAIA Association, Western Pension & Benefit Conference, and the Fred Hutchinson Cancer Research Center's Innovators Network. In 2012, the Puget Sound Business Journal recognized Ms. Heier's accomplishments by selecting her as a "40 Under 40" honoree.

Mr. Heier graduated from the University of Puget Sound with a bachelor of arts (BA) in business and public administration with an emphasis in finance and a minor in economics. She earned the Chartered Financial Analyst (CFA) designation in 2001 and the Chartered Alternative Investment Analyst (CAIA) designation in 2011.

Biographical information

Contact:
T: 310.297.1777
F: 310.297.0878
ehoffman@verusinvestments.com

Mr. Edward Hoffman, CFA, FRM

Managing Director | Senior Consultant

Mr. Hoffman brings more than 18 years of experience to his clients, providing strategic investment advice to ensure that clients meet their long-term investment objectives.

Before joining Verus (previously known as Wurts & Associates) in 2011, Mr. Hoffman served institutional clients at Legg Mason and Prudential. In addition to his client service responsibilities at Legg Mason, he served on the asset management operating committee and Legg Mason Funds valuation committee, led corporate development initiatives including several related to the 2005 acquisition of Citigroup's asset management division, and managed mutual fund product development projects. While at Prudential, he led client service teams dedicated to 401k plan sponsors. Today, his work in risk-based asset allocation services provides an additional and valuable perspective on the needs of our non-discretionary clients.

Mr. Hoffman earned a bachelor of science (BS) in industrial management with college and university honors from Carnegie Mellon University and a master's degree in business administration (MBA) from the Harvard Business School. He has earned the Chartered Financial Analyst (CFA) designation and is certified as a Financial Risk Manager (FRM). He is a member of the CFA Society of Los Angeles and the Global Association of Risk Professionals (GARP).

Biographical information

Contact:
T: 415.362.3484
F: 415.362.2752
itoner@verusinvestments.com

Mr. Ian Toner, CFA

Managing Director | Strategic Research

Mr. Toner is responsible for ensuring that the research resources at the firm are focused on solving the real problems faced by the firm's clients, and on maintaining an appropriate balance between academic rigor and practical real-world client solutions. He has responsibility over all research, including manager research, capital markets research, and topics of interest, and is a key contributor to the investment committee. He is particularly engaged in finding ways to ensure that new insights created at the firm are used across the whole range of clients of the firm, whether those clients are large or small, and whether the services those clients consume are discretionary or non-discretionary.

He joined the firm in late 2013 from Russell Investments in Seattle, where he was most recently Director, capital markets research in the Investment Division. He was at Russell for 7 years, and was particularly focused on two key areas: understanding the effect of currency risk on client portfolios, and understanding and managing the complex range of risks that clients and investors experience when interacting with Wall Street. Before Russell Investments he was an Executive Director at UBS Investment Bank in London, and a Vice President at both Schroder Salomon Smith Barney and InterSec Research Corp. Earlier in his career he worked on the sell-side of the institutional markets in London, focused on European Equity markets.

Mr. Toner has a degree in Law from the University of Oxford in the United Kingdom and holds the Chartered Financial Analyst (CFA) designation. He is a regular author and speaker on a range of investment topics. He is a member of the CFA Institute and the CFA Society of Seattle. He is a board member at the Seattle Metropolitan Chamber of Commerce, where he also sits on the Finance & Audit Committee. He is a member of the Advisory Board of the Washington Council on International Trade.

Biographical information

Contact:
T: 310.297.1777
F: 310.297.0878
dmiller@verusinvestments.com

Mr. DeWitt Miller, CFA, FRM

Senior Risk Consultant

Mr. Miller is primarily responsible for providing risk management-focused consulting services to clients. This includes advising clients on the objectives, governance, implementation and execution of effective risk management as part of their overall investment process.

Prior to joining Verus (previously known as Wurts & Associates) in 2013, Mr. Miller was a vice president and consultant at MSCI, where he managed relationships with institutional investors using Barra risk management and portfolio management analytics. In this role, his clients included public and corporate plan sponsors, endowments and sovereign wealth funds.

In addition to his primary focus on risk advisory clients, Mr. Miller provides guidance on incorporating risk management into the investment process for all institutions. He has spoken at industry events on measuring, attributing and managing investment risk.

Mr. Miller graduated from Vanderbilt University with a bachelor of engineering (B.Eng) in biomedical engineering and a minor in mathematics. He holds the Chartered Financial Analyst (CFA) designation and the Financial Risk Manager (FRM) designation and is a member of the CFA Society of San Francisco.

Biographical information

Contact:
T: 310.297.1777
F: 310.297.0878
mkamell@verusinvestments.com

Mr. Michael Kamell, CFA, CAIA

Consultant

Mr. Kamell provides a broad range of tailored investment consulting solutions to institutional clients in order to assist them in achieving their long-term investment goals. Prior to joining Verus (formerly Wurts & Associates) in 2010, Mike began his career in assurance services at PriceWaterhouseCoopers in San Francisco. As a senior associate, he worked to provide assurance over financial reporting for a wide variety of investment management clients ranging from mutual funds and fixed income managers to hedge funds and private equity funds. Additionally, Mr. Kamell has extensive experience with performance reporting in accordance with Global Investment Performance Standards (GIPS®).

Mr. Kamell graduated from the University of California at Santa Barbara with a bachelor of arts (BA) in business economics with an emphasis in accounting. He holds the Certified Public Accountant (CPA) license (inactive) and the Chartered Financial Analyst (CFA) designation, and is a member of the CFA Institute and the CFA Society of Los Angeles. Mr. Kamell also holds the Chartered Alternative Investment Analyst (CAIA) designation.

Appendix IV: Quarterly Investment Landscape

Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

4TH QUARTER 2015

Investment Landscape

Table of contents

Economic environment 4

Fixed income rates & credit 15

Equity 22

Other assets 36

Appendix 41

Verus

VERUSINVESTMENTS.COM

SEATTLE 206-622-3700
LOS ANGELES 310-297-1777

4th quarter summary

THE ECONOMIC CLIMATE

— The U.S. economy continues at a lukewarm pace, with improvement in employment rates but lackluster participation and wage growth. ***p.5***

— Inflation remains near zero, but is in a normal range if the effects of food and energy are excluded. Inflation rests near zero in developed countries. ***p.11, 13***

— Decelerating growth in China has had far reaching impacts. However, milder growth and decreasing fiscal stimulus are in line with China's hoped-for transition to a consumption-oriented economy. ***p.34***

MARKET PORTFOLIO IMPACTS

— The U.S. dollar further appreciated against emerging market currencies – particularly against the "fragile five" currencies. ***p.35, 40***

— Developed economy 10-year yields broadly declined. Global FX reserves fell as central banks made efforts to support currency values in the face of falling oil price and weakening demand from China. ***p.16***

THE INVESTMENT CLIMATE

— Risk markets remain expensive relative to history, though August's selloff resulted in improved valuations. ***p.30***

— The Federal Reserve left rates unchanged in September. It remains uncertain whether the Fed will move rates by year-end. ***p.16***

ASSET ALLOCATION ISSUES

— Credit spreads widened substantially across the board, with energy leading the way. It is essential for investors to understand the extent of credit risk exposure in portfolios. ***p.20***

— Recent market behavior reminds us of the need to pause and assess the investment landscape objectively and dispassionately. ***p.28***

— Inflation-hedging assets have realized significant volatility and are increasingly difficult to own. It is important to remember that inflation sensitive assets also provide exposure to downward inflation movement. ***p.39***

We are tactically slightly underweight in risk terms, and watchful of China and commodity-producing economies

Economic progress continues slowly in the developed markets

Economic environment

U.S. economics summary

- U.S. GDP YoY growth remains in the 2% to 3% range, and is flat from the previous 12 month figure. The Atlanta Fed GDPNow model forecasts third quarter GDP growth of approximately 1%.
- Both realized inflation and expected inflation have dropped further. This continues to imply lower nominal asset returns in the future.
- The Federal Reserve left rates unchanged in September. It remains uncertain whether the Fed will move rates by year-end.
- Employment rates continue to improve, as demonstrated by U6 (broader definition) and by U3 (stricter definition). However, the participation rate declined further and is now at a rate not seen since 1977.
- Consumer credit growth showed further improvement, and auto sales growth is very strong relative to history.

	Most Recent	12 Months Prior
GDP *(Annual YoY)*	2.7% *6/30/15*	2.6% *6/30/14*
Inflation *(CPI)*	0.2% *8/31/15*	1.7% *8/31/14*
Expected Inflation *(5yr-5yr forward)*	1.9% *9/1/15*	2.5% *9/2/14*
Fed Funds Rate	0.07% *9/30/15*	0.07% *9/30/14*
10 Year Rate	2.0% *9/30/15*	2.5% *9/30/14*
U-3 Unemployment	5.1% *9/30/15*	5.9% *9/30/14*
U-6 Unemployment	10.0% *9/30/15*	11.7% *9/30/14*

Higher employment but participation remains low

GDP remains in 2-3% range

Inflation still low, but in normal range ex-Food & Energy

U.S. economics – GDP growth

U.S. GDP has continued to grow and there has been an evident rebound from the slightly weaker Q1 number. However, the Atlanta Fed GDPNow model estimates real GDP growth for Q3 to be approximately 1% - lower than current market expectations. This forecast is driven by weaker export data.

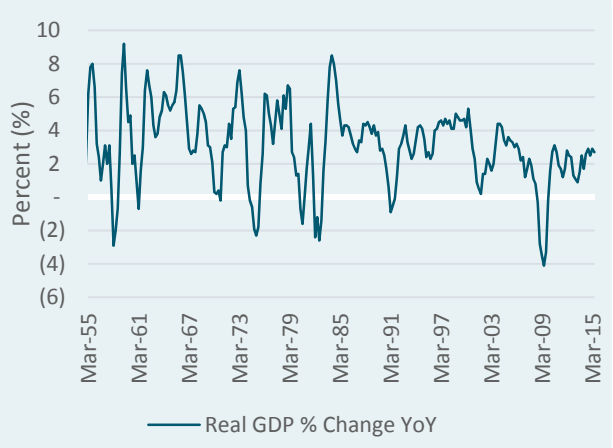
The U.S. economy faces headwinds in the form of a strong dollar, troubles in energy prices, and trade deficit. It is important to note that the U.S. economy continues to exhibit stronger growth than many other developed markets, which may help explain the policy differences across nations.

Despite this potential slowing, it is important to remember that real GDP growth rates around 2% while somewhat low, do still represent an expansion of the economy and the continuing working out of some of the problems accumulated over the last 10 years.

Strong Q2 rebound, but weaker expected Q3

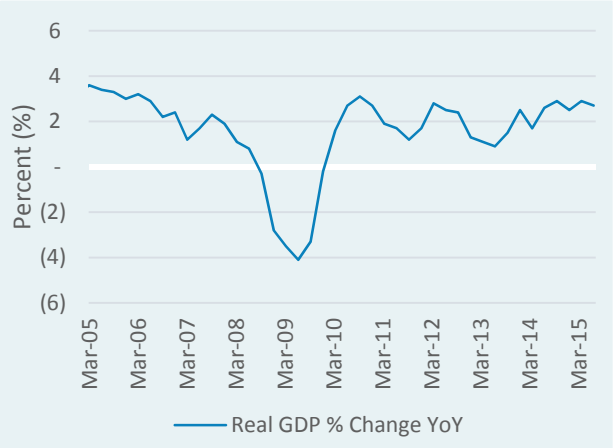
Strong U.S. dollar proving headwind for export growth

LONG TERM U.S. GDP GROWTH



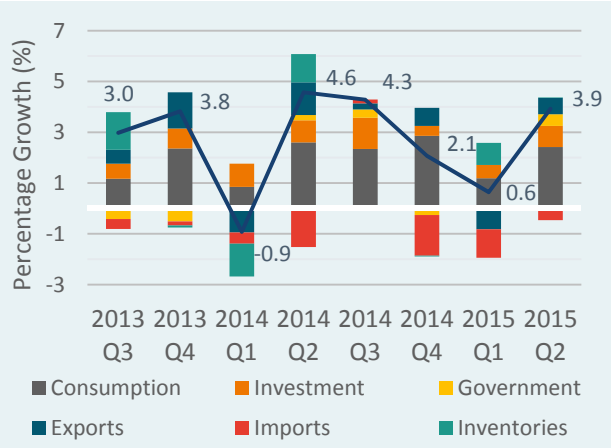
Source: FRED, as of 6/30/15

MEDIUM TERM U.S. GDP GROWTH



Source: FRED, as of 6/30/15

GDP COMPONENTS



Source: FRED

U.S. economics – unemployment

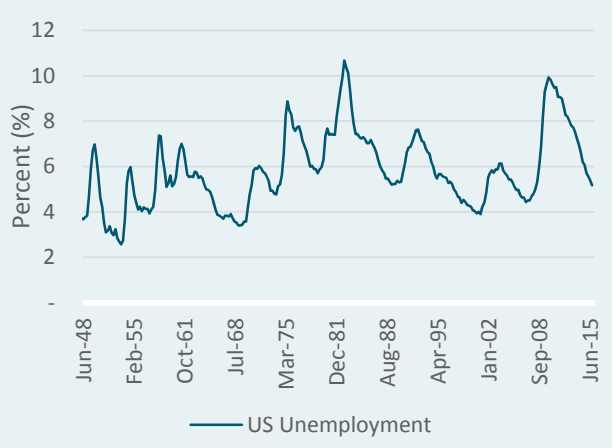
U.S. unemployment has been dropping steadily since the peak in late 2009, with U6 unemployment (broader definition) and U3 unemployment (stricter definition) standing at 10.0% and 5.1% in September, respectively.

Nonfarm payrolls missed expectations in September at 142,000 vs 203,000 expected. Fed Chair Janet Yellen and other senior economists have noted disappointing labor productivity growth despite overall improving employment data.

U6 unemployment includes discouraged and underemployed workers, and includes people unemployed for a short time. Despite improvement, U6 remains elevated relative to history, which is indicative of structural issues in the economy. The drops in U6 may be more indicative of the nature of types of jobs available rather than aggregate job openings. It remains to be seen whether these discouraged workers entering the workplace will find long-term sustainable employment, and begin to move up the job value chain.

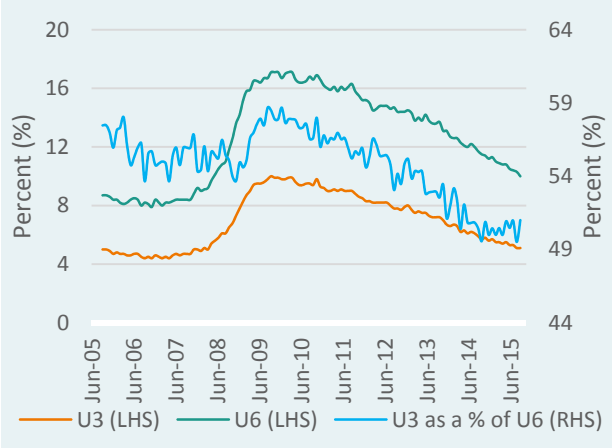
Continuing improvement in broad employment measures, but structural concerns persist

UNEMPLOYMENT SINCE 1948



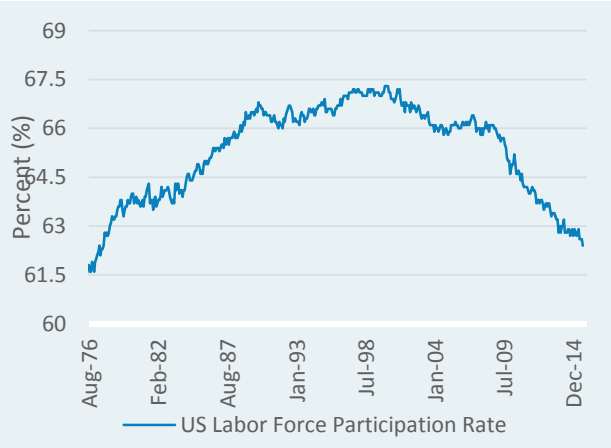
Source: Bloomberg, as of 9/30/15

MORE RECENT UNEMPLOYMENT & U6



Source: FRED, as of 9/1/15

LABOR FORCE PARTICIPATION RATE



Source: FRED, as of 9/30/15

U.S. economics – the consumer

Consumer spending continues to show improvement, but credit expansion is muted. Auto sales continue to show strong growth.

While the decline in the oil price was originally expected to flow through to lower gas prices and therefore greater consumer discretionary income, this effect has been lackluster as gas prices remain stubbornly high.

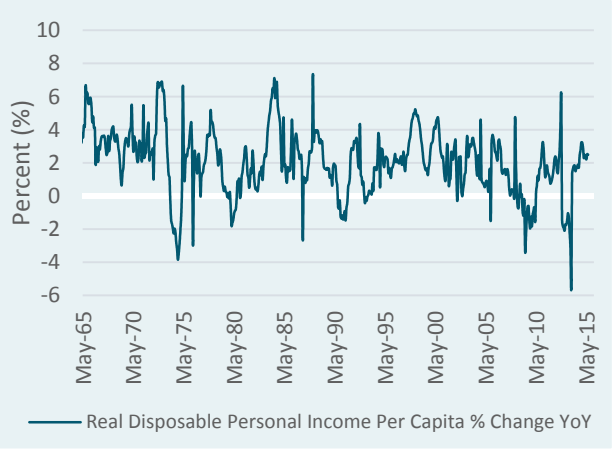
Real disposable income growth remains at a normal level as of August, at 2.5%, up from 1.9% one year prior. Personal savings rates remain at a normal level of 4.6% after spiking during the 2008-2009 crisis.

Consumer behavior appears conservative, but further wage increases could be realized as the job market tightens, which may drive stronger spending and credit expansion. Continuing increases in student loan debt could remain a drag on spending for younger consumers.

Consumer spending continues to improve

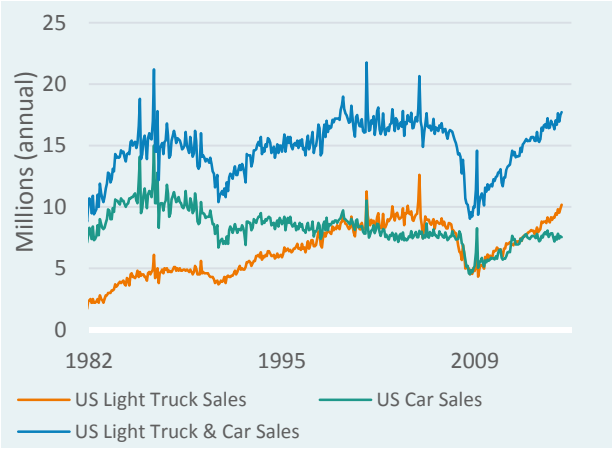
Credit expansion remains muted but auto sales are strong

GROWTH OF DISPOSABLE INCOME



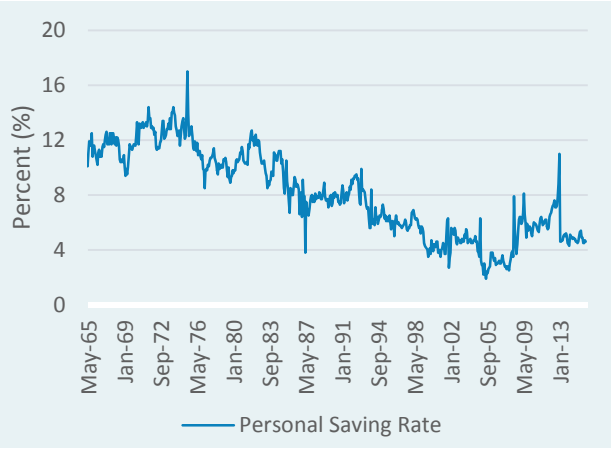
Source: FRED, as of 8/1/15

AUTO SALES



Source: FRED, as of 8/31/15

SAVINGS RATE



Source: FRED, as of 8/1/15

U.S. economics – sentiment

Consumer and market sentiment surveys remain mixed, but appear to be leaning more positive than negative.

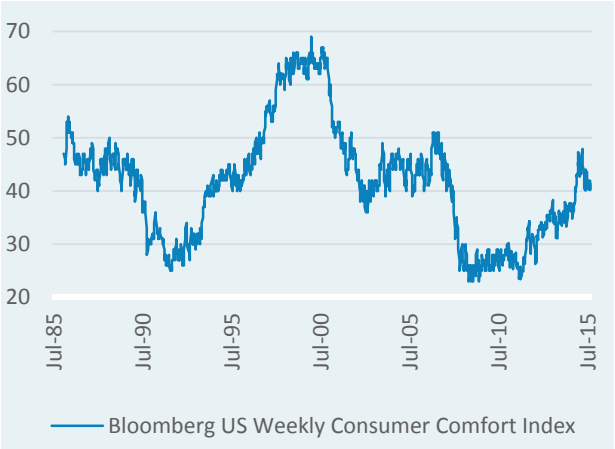
The Bloomberg consumer comfort index had been significantly below average since December 2007. This index now sits at the bottom end of a normal range. The University of Michigan Consumer Sentiment Survey dipped in September, but remains near average levels.

The Citi Economic Surprise index recently dropped into levels not seen since 2012, but has bounced back to an average range.

According to sentiment indicators, the U.S. consumer has been on a steady recovery since the great recession, although spending behavior has not yet fully reflected this change. In the recent quarter we have seen indicators turn to the downside, but absolute levels are healthy. We continue to believe sentiment may be vulnerable to a stream of bad news.

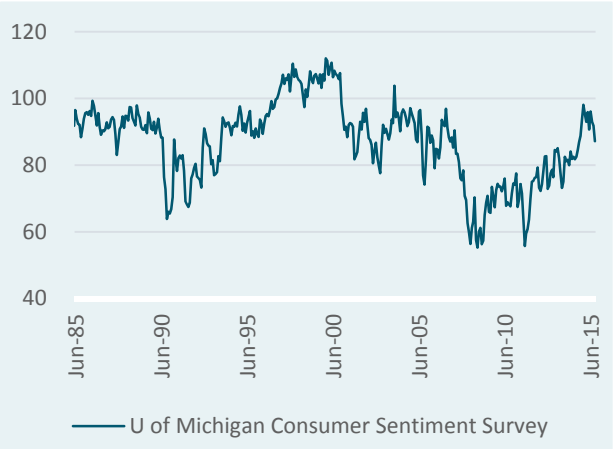
Sentiment and comfort indices in average range, but slightly down in Q3

CONSUMER COMFORT INDEX



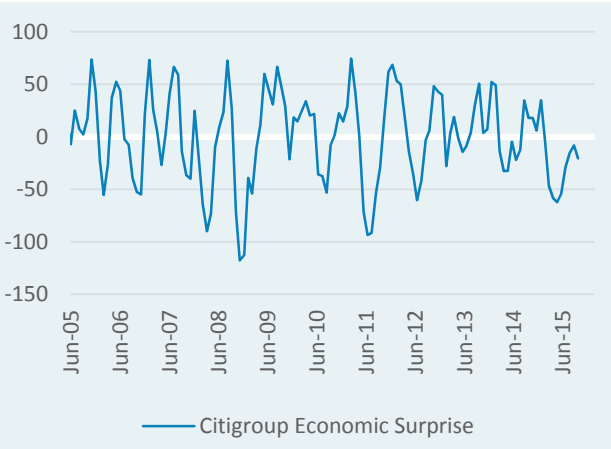
Source: Bloomberg, as of 9/20/15 (see Appendix)

CONSUMER SENTIMENT



Source: University of Michigan, as of 9/30/15 (see Appendix)

ECONOMIC SURPRISE



Source: Bloomberg, as of 9/30/15 (see Appendix)

U.S. economics – housing

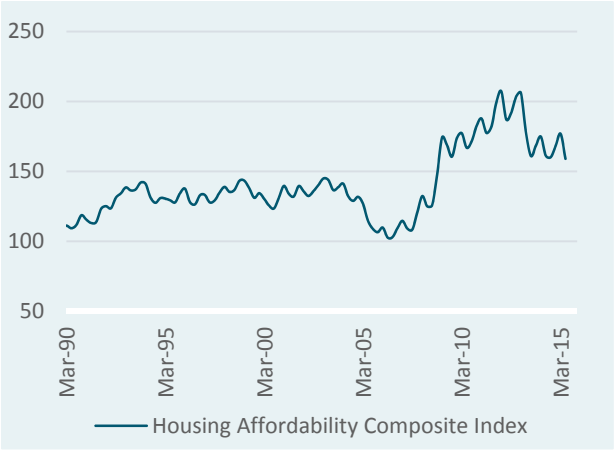
The U.S. housing market has normalized in terms of pricing, rate of new home construction, and rate of home sales. The home affordability index remains higher (homes more affordable) than average. This index measures how easily a typical family with a median income is able to qualify for a mortgage on a typical median-priced home. Low interest rates have increased affordability while rising home prices have decreased affordability.

There continues to be potential pent up demand for homes, as indicated by the considerably low homeownership rate. At 63.5%, this is the lowest level on record (the data series began in 1980). Though home affordability influences ownership rates, other factors such as mediocre wage growth, rising student loan debt, changing demographics, and propensity to borrow also affect rates.

Monthly home sales for both existing and new housing have continued a steady upward climb since the crisis, although remain far from previous high levels.

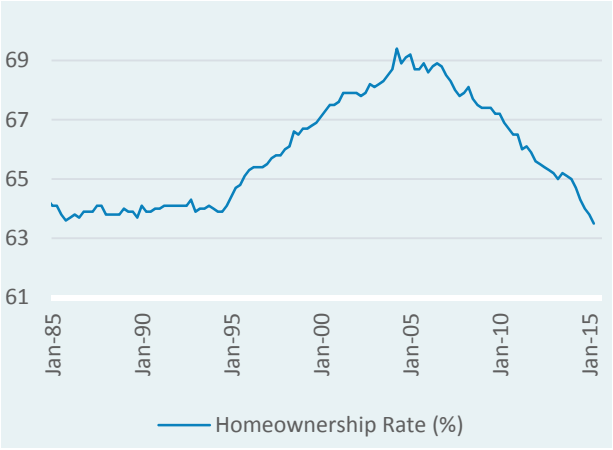
Continued improvement in U.S. housing market is consistent with continuing slow economic recovery

HOME AFFORDABILITY



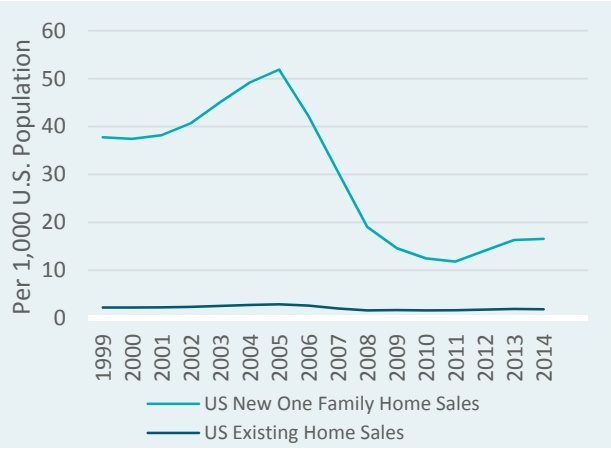
Source: National Association of Realtors, as of 6/30/15

HOMEOWNERSHIP RATE



Source: FRED, as of 4/1/15

ANNUAL HOME SALES



Source: FRED

U.S. economics – inflation

Long-term U.S. inflation expectations declined slightly in the 3rd quarter, as indicated by the 10 Year TIPS Breakeven Rate. Headline inflation rests at 0.2%, while Core CPI, which excludes food and energy prices, remains in a normal range (Core CPI of 1.8%).

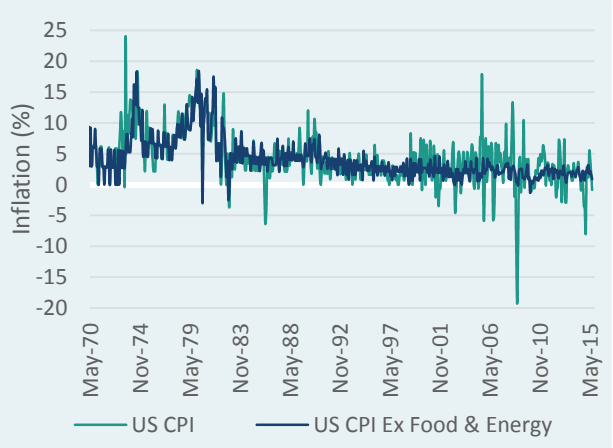
The decline in oil price is expected to translate to lower gas prices – a major part of the CPI calculation. However, gas prices do not yet fully reflect the movement in oil price. Lower oil price has also flowed through to other areas of the CPI calculation, such as shipping and air transportation.

Domestic inflation is an input to Federal Reserve policy, and continued disinflation will certainly influence rate hike decisions. However, even in a low inflation environment interest rates could reasonably be at a modestly higher level than they are today. Lowered inflation expectations suggest a reduction in expected future nominal returns.

Lower than target U.S. inflation

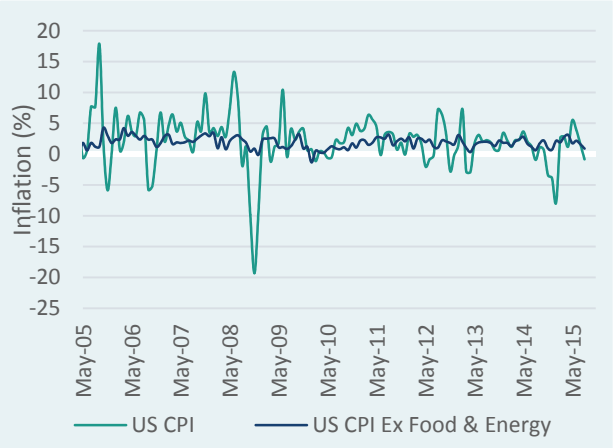
Energy prices have been a driver of CPI change

LONG TERM U.S. CPI



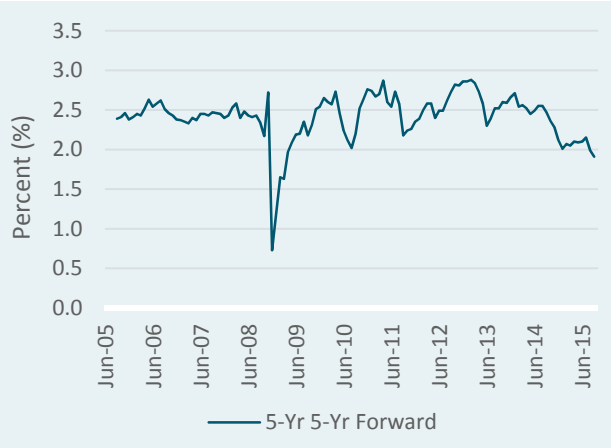
Source: FRED, as of 8/1/15

MEDIUM TERM U.S. CPI



Source: FRED, as of 8/1/15

MARKET EXPECTATIONS OF INFLATION



Source: FRED, as of 9/1/15

International economics – current

- GDP growth remains muted. The IMF cut global growth expectations once again, from July's forecast of 3.3%, to 3.1%.
- U.S. GDP growth continues to outpace many other developed economies.
- Easy monetary policy continues in Europe and Japan.
- Currency movement was a major factor in Q3. Specifically, the "fragile five" emerging market currencies fell sharply against the U.S. dollar.
- Commodities remain volatile, and this uncertainty has affected across commodity-producing nations.
- Emerging markets struggle with concerns over China's growth, choppiness of commodity prices, and currency volatility. GDP expectations continue to be adjusted downwards.
- Global unemployment is slowly decreasing, but the BRIC nations experienced an uptick. Unemployment in Europe remains high, though disparate.
- Decelerating growth in China has had far reaching impacts. However, milder growth and decreasing fiscal stimulus are in line with China's hoped-for transition to a consumption-oriented economy.

Area	GDP (Real, YoY)	Inflation (CPI)	Unemployment
United States	2.7% 6/30/15	0.2% 8/31/15	5.1% 9/30/15
Western Europe	1.8% 6/30/15	0.2% 6/30/15	9.2% 6/30/15
Japan	0.8% 6/30/15	0.2% 8/31/15	3.3% 6/30/15
BRIC Nations	4.7% 6/30/15	4.2% 6/30/15	5.0% 3/31/15
Brazil	(2.6%) 6/30/15	9.5% 8/31/15	6.7% 6/30/15
Russia	(4.6%) 6/30/15	15.7% 9/30/15	5.3% 8/31/15
India	7.0% 6/30/15	5.9% 6/30/15	8.6% 12/31/14
China	7.0% 6/30/15	2.0% 8/31/15	4.0% 6/30/15

High level of central bank involvement

Some nations dialing back QE programs

Structural employment issues remain a concern

International economics

Economies across the globe broadly exhibit slowing to flat growth, improving employment (since the financial crisis), and subdued inflation.

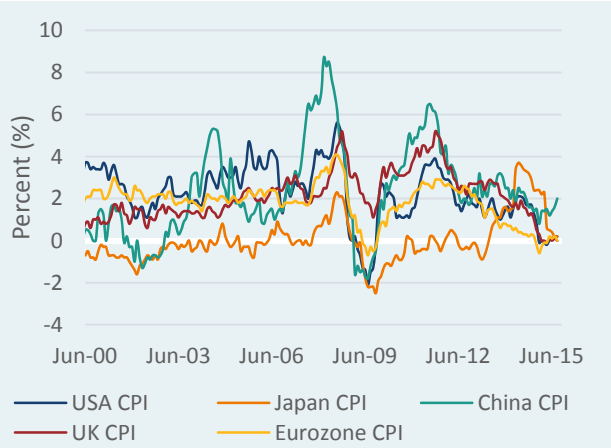
Inflation levels continue to hover around zero. Inflation in the Eurozone dipped into negative territory, while Japan faced further disinflation.

Real GDP growth remains moderate, while BRIC nations experienced further slowing. Core economies in the Eurozone displayed modest growth, while certain periphery nations experienced great difficulties.

Unemployment across the globe has come back to normal levels, with the exception of Europe where aggregate unemployment is high and conditions vary significantly. BRIC nations recently experienced a slight uptick in unemployment.

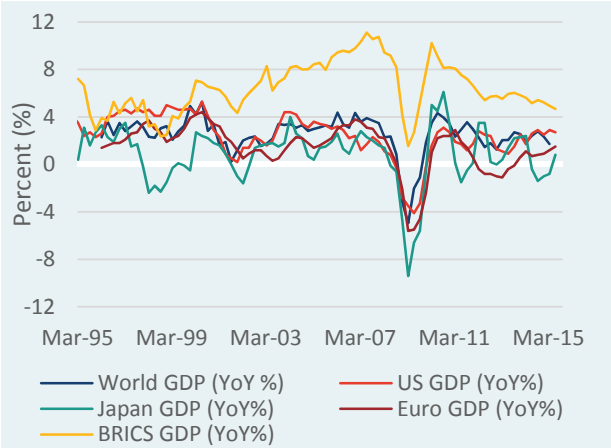
Economies around the global exhibit slowing to flat growth, improving employment, and low inflation

INTERNATIONAL INFLATION (CPI)



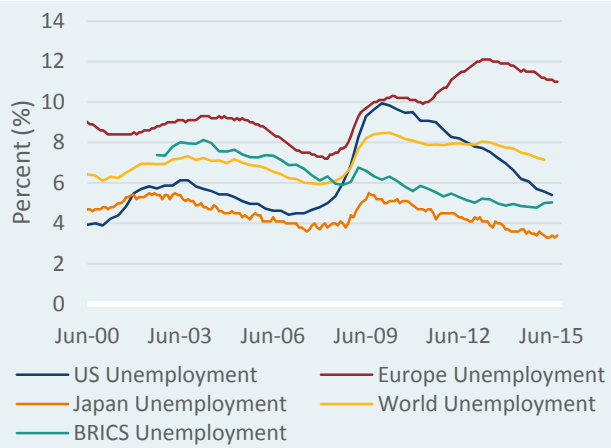
Source: Bloomberg, as of 8/31/15

REAL GDP GROWTH



Source: Bloomberg, as of 6/30/15

UNEMPLOYMENT



Source: Bloomberg, as of 8/31/15

What do you mean "Europe"?

The investment community often refers to economic health and attractiveness of "Europe". "Europe", however, is in fact a combination of developed, less developed, and emerging markets. This spectrum of economies possesses widely different characteristics.

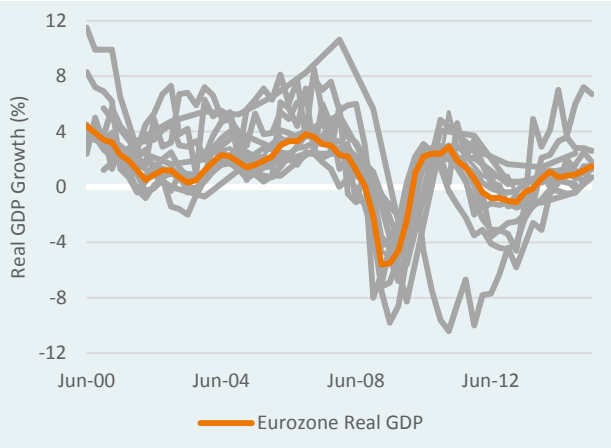
Bright spots exist on the Euro stage, including Germany, the United Kingdom, and Switzerland, while other countries face severe economic problems or stagnation following the financial crisis.

This affects the political conversation underway in Europe. The difference in viewpoints expressed are often due to the wide range of experiences endured by the populations of the countries concerned. This may act as a continuing barrier to eventual solution of the economic issues. Solutions that could be easier to implement in a more integrated economy, or with more integrated political systems, may be harder to achieve, and risk tolerances should reflect that reality.

European economic behavior remains divergent

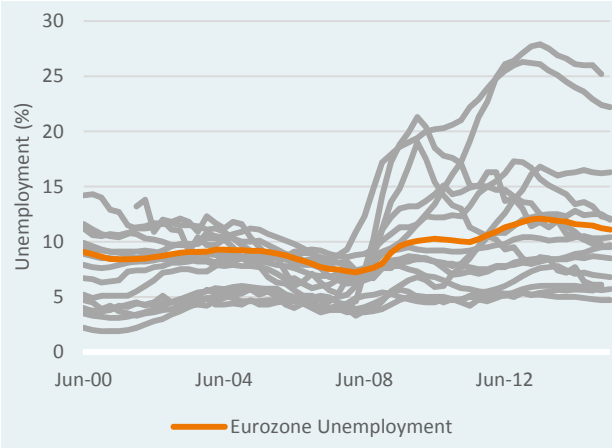
European equity remains attractive

REAL GDP GROWTH (%YOY)



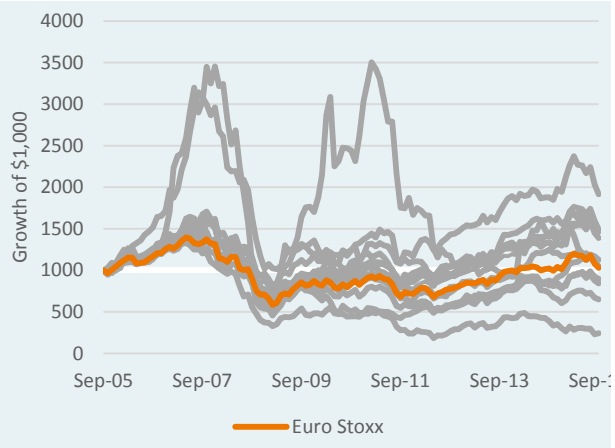
Eurozone member nations, as of 6/30/15

UNEMPLOYMENT RATES



Eurozone member nations, as of 6/30/15

CUMULATIVE EQUITY PERFORMANCE



Eurozone member nations, as of 9/30/15

Fixed income rates & credit

Interest rate environment

- The Federal Reserve left rates unchanged in September. It remains uncertain whether the Fed will move rates by year-end.
- Interest rates decreased broadly in Q3 across developed markets, with the exception of Japan.
- U.S. interest rates remain high relative to other developed markets, which may provide ongoing support for U.S. Treasury prices.
- The falling oil price in conjunction with slowing global economic growth has resulted in downward pressure on emerging market currencies.
- Central banks have sold considerable amounts of FX reserves to support their currencies, which may place upward pressure on interest rates. Some have referred to this effect as "quantitative tightening".
- China sold billions in reserve assets (U.S. Treasuries) to support the value of the yuan.
- Future rate rises in developed markets could have implications for emerging market economies and nations with high debt-to-GDP ratios.
- The market is pricing in slow and moderate interest rate rises.

Area	Short Term	10 Year
United States	(0.03%)	2.03%
Germany	(0.34%)	0.54%
France	(0.25%)	0.93%
Spain	(0.06%)	1.82%
Italy	(0.05%)	1.68%
Greece	4.79%	8.14%
UK	0.55%	1.74%
Japan	(0.02%)	0.33%
Australia	2.01%	2.62%
China	2.30%	3.27%
Brazil	14.19%	15.40%
Russia	10.01%	10.91%

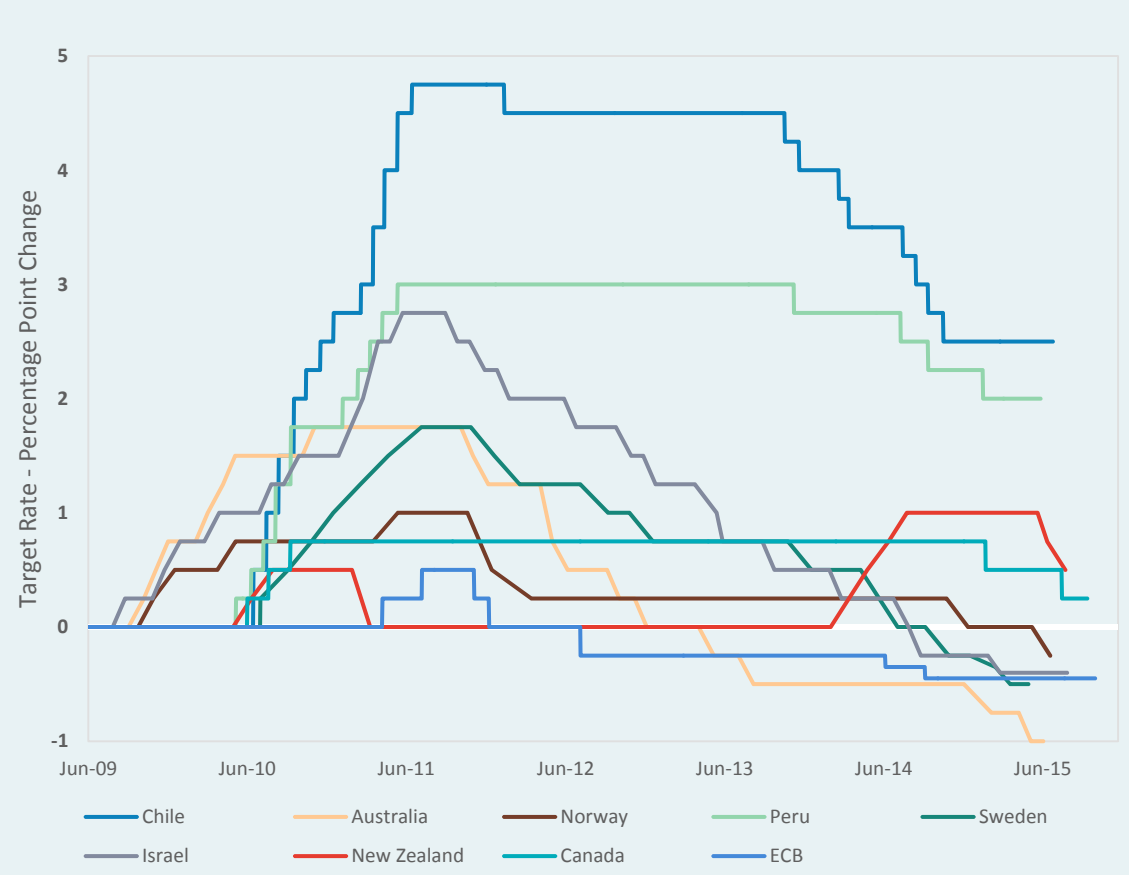
Interest rates decreased across the developed markets in Q3

Negative nominal interest rates continue to persist

Source: Bloomberg, as of 9/30/15

Central bank behavior

- Central banks have held interest rates at historic lows around the globe for a significant period. While necessary, there has been increasing understanding that a move to more normalized rates would be helpful, if only to reset the interest rate tool in the central bank toolkit.
- Despite this being a valuable goal this return to more normal rate levels has been difficult to achieve.
- Many central banks have been forced to back off in recent years due primarily to concerns over slowing economic growth. They have opted to (or been pressured to) move rates downward once again.

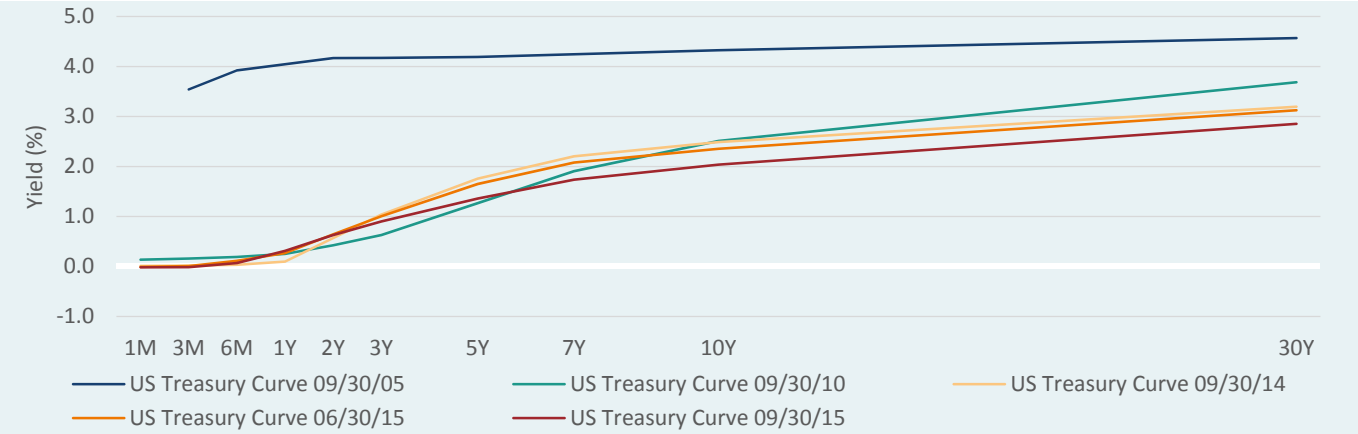


Rate rises appear fragile where they happen, and may be derailed by continuing economic weakness

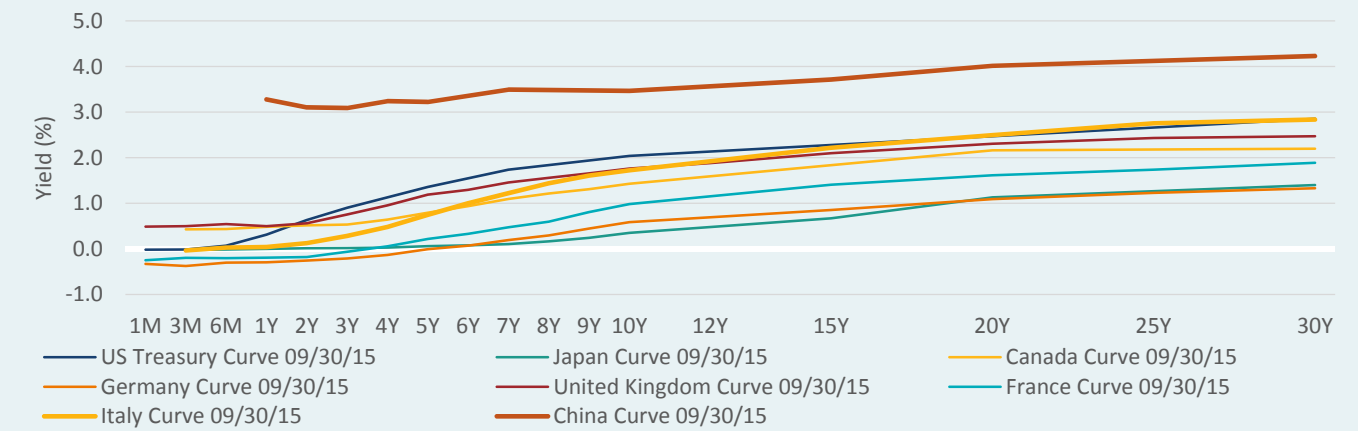
Source: Bloomberg, as of 9/30/15

Global yield curve

U.S. YIELD CURVE



GLOBAL GOVERNMENT YIELD CURVES



The middle of the U.S. yield curve flattened upon expectations of "lower for longer"

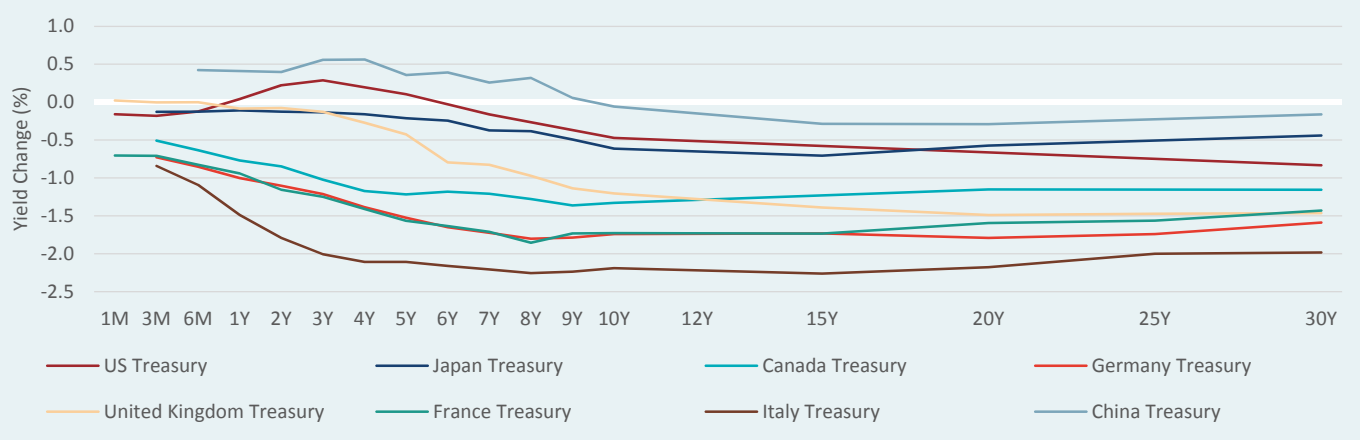
Interest rates decreased across major markets in Q3

Negative nominal interest rates persist

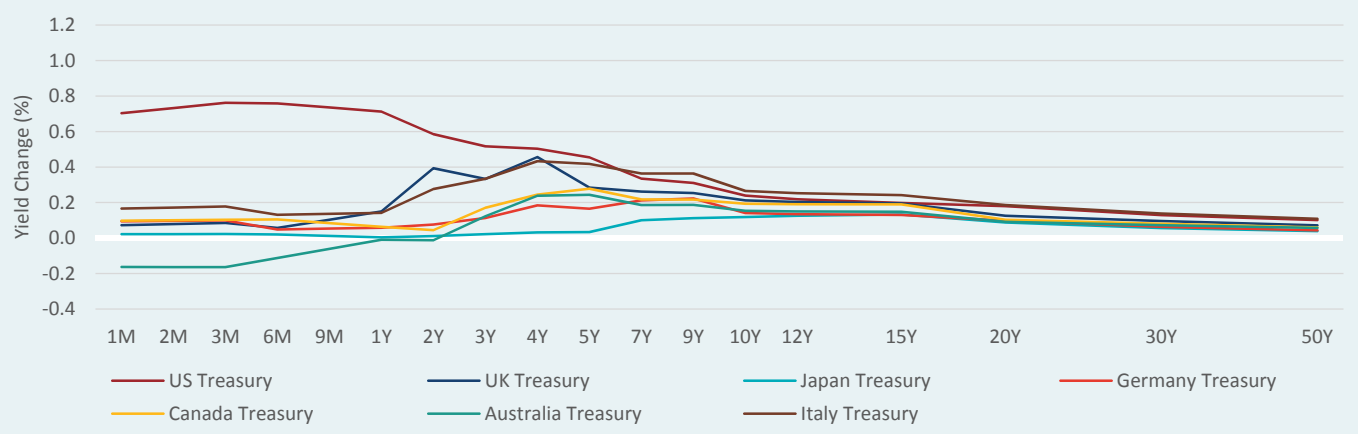
Source: Bloomberg

Global yield curve changes

INTERNATIONAL YIELD CURVE CHANGES OVER LAST FIVE YEARS



EXPECTED INTEREST RATE CHANGES ONE YEAR FORWARD IMPLIED BY MARKET PRICING



Source: Bloomberg, as of 9/30/15

Major rates yield curves have moved lower and flatter, with the exception of China

Forward curves imply flat or modestly higher rates in most countries

Credit environment

Domestic credit spreads widened across the board in Q3, led by the energy sector. However, spreads broadly remain in a normal range.

Widening of spreads, and a deceleration of borrowing (though still high historically), may suggest we are at or nearing a peak in the borrowing cycle. Although spreads have widened, we believe credit risk remains less attractive relative to history.

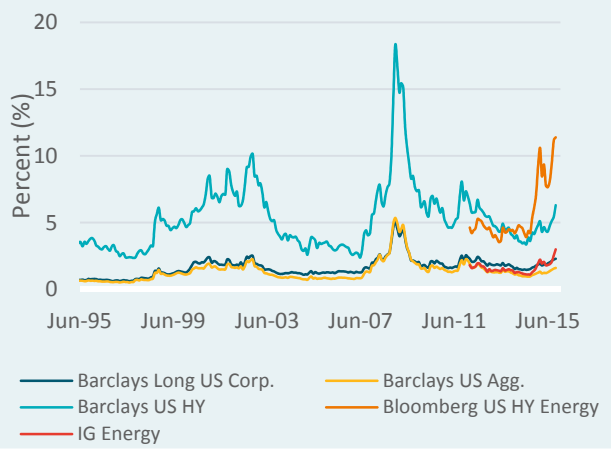
Borrowing is becoming tighter for lower-quality borrowers, especially for those linked to commodities. Energy spreads have widened further on continued volatility and uncertainty surrounding the price of oil. Emerging market economies are increasingly feeling this pain, with emerging market CDS spreads widening to significant levels.

Investors should be cognizant of the nature and size of their exposure to credit risk to ensure that it matches their broader views.

Credit spreads widening across the board

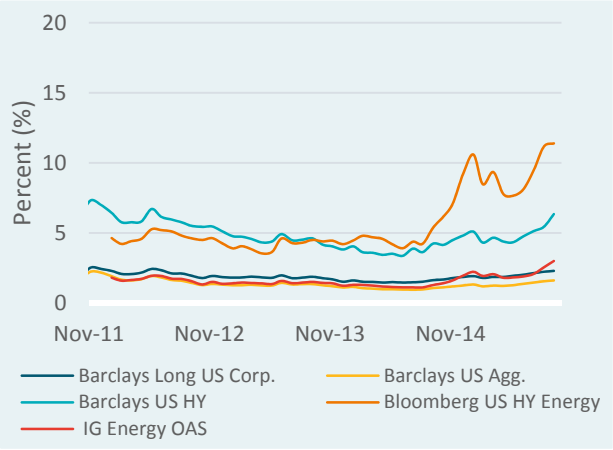
Energy spreads continue higher

LONG TERM CREDIT SPREADS



Source: Barclays Capital Indices, Bloomberg, as of 8/31/15

SHORT TERM CREDIT SPREADS



Source: Barclays Capital Indices, Bloomberg, as of 8/31/15

SPREADS

Market	Credit Spread (9/30/2015)	Credit Spread (1 Year Ago)
Long US Corporate	2.12%	1.52%
US Aggregate	1.17%	1.08%
US High Yield	6.84%	4.80%
US High Yield Energy	11.38%	5.38%
US Bank Loans	3.86%	3.84%

Source: Barclays, Credit Suisse, Bloomberg, as of 9/30/15

Issuance and default

Debt issuance has continued at a substantial pace, particularly in the high yield market.

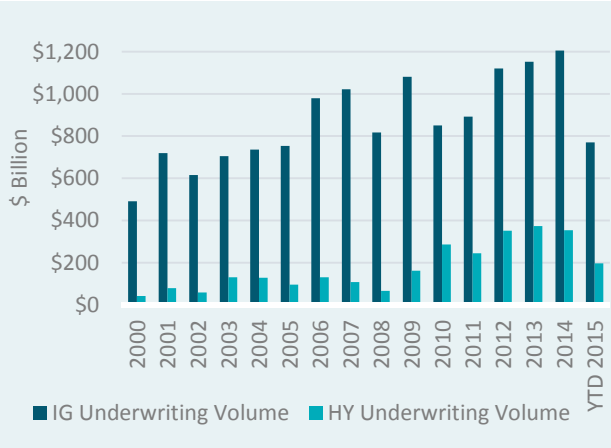
Despite the lower creditworthiness of firms accessing these markets over the last few years, there remain few signs of inability to pay amongst these issuers. However, those that believe we are further along in the economic cycle may decide against taking on new exposure to credit risk.

Default rates remain low, but if they were to rise suddenly, investors basing their expectations of return from credit portfolios on a continuation of the current low default rate environment could well be disappointed.

Issuance continues at a record pace

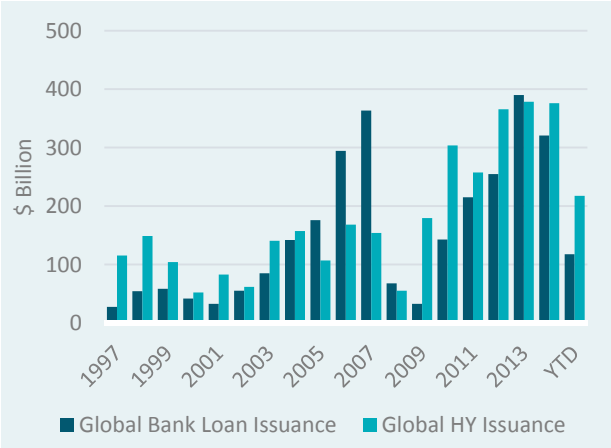
The default rate remains low

IG & HIGH YIELD ISSUANCE



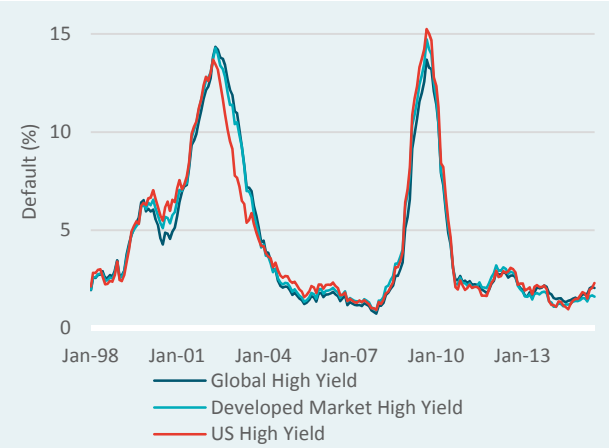
Source: Bloomberg, as of 6/30/15

BANK LOAN & GLOBAL HY ISSUANCE



Source: BofA Merrill Lynch Global Research, as of 7/31/15

DEFAULT TRENDS (ROLLING 12 MONTH)



Source: Credit Suisse, BofA, as of 6/30/15

Equity

Equity environment

- Domestic equity markets experienced a 10% correction in August, but have retraced most of the loss.
- Volatility picked up substantially from previously low levels, but now remains in a normal range. Increased price uncertainty follows large fluctuations in commodities and lowered expectations of Chinese economic growth.
- U.S. small cap equities felt greater pain than large cap equities in Q3.
- Currency movement has generally caused unhedged international equity investors to underperform those with hedging programs.
- Japan rallied during H1 but experienced a selloff in Q3. Signs of weakness appeared in August's industrial output and export data. Continuing monetary easing, coupled with new corporate governance and social initiatives may provide further tailwinds for Japan equities.
- Emerging markets experienced significant volatility and losses. Currency depreciation has amplified these effects for those with unhedged currency exposure. Uncertainty surrounding oil price, and Fed comments on global growth, weigh on valuations.

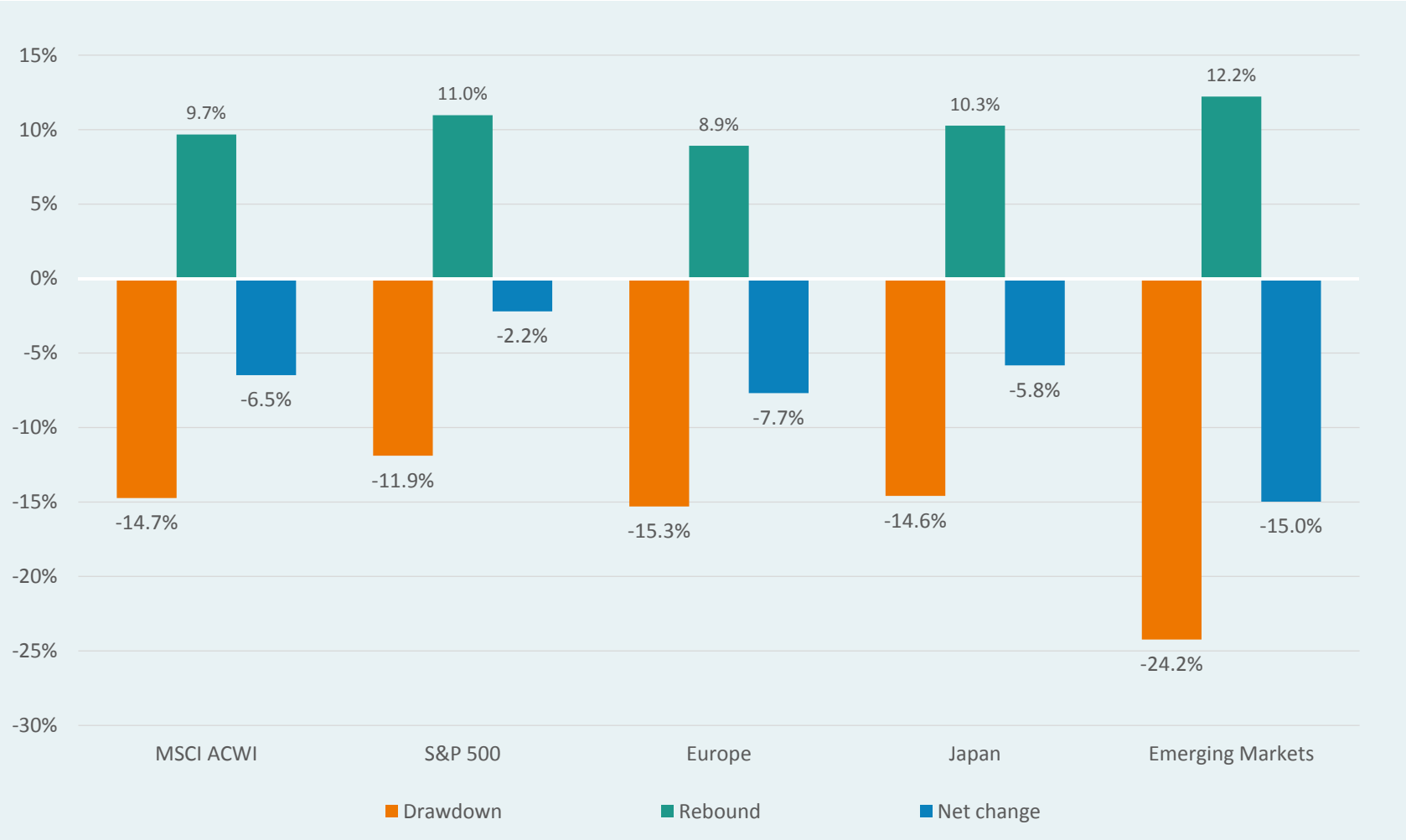
	QTD Total Return (unhedged)	QTD Total Return (hedged)	YTD Total Return (unhedged)	YTD Total Return (hedged)	1 Year Total Return (unhedged)	1 Year Total Return (hedged)
US Large Cap (Russell 1000)	(6.8%)		(5.2%)		(0.6%)	
US Small Cap (Russell 2000)	(11.9%)		(7.7%)		1.2%	
US Large Value (Russell 1000 Value)	(8.4%)		(9.0%)		(4.4%)	
US Large Growth (Russell 1000 Growth)	(5.3%)		(1.5%)		3.2%	
International Large (MSCI EAFE)	(10.2%)	(4.4%)	(5.3%)	3.7%	(8.7%)	5.5%
Eurozone (Euro Stoxx 50)	(9.1%)	(9.3%)	(7.1%)	0.7%	(12.9%)	(1.3%)
UK (FTSE 100)	(8.6%)	(5.5%)	(5.4%)	(4.4%)	(10.2%)	(4.7%)
Japan (NIKKEI 225)	(11.7%)	(14.2%)	(1.1%)	(0.6%)	0.2%	6.9%
Emerging Markets (MSCI Emerging Markets)	(17.9%)	(10.9%)	(15.5%)	(7.2%)	(19.3%)	(12.0%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/15

Small cap performance reversed in Q3 and now trails large cap equities

Currency effects remain important for unhedged equity investors

Close look at recent correction



Equity markets have retraced much of their losses from earlier in the year

These markets are still below May levels

Source: Bloomberg, as of 10/27 Returns are for the drawdown and rebound observed during the 5/21/15 thru 10/27/15 period. Indices are stated in USD and returns are gross.

Domestic equity historical return

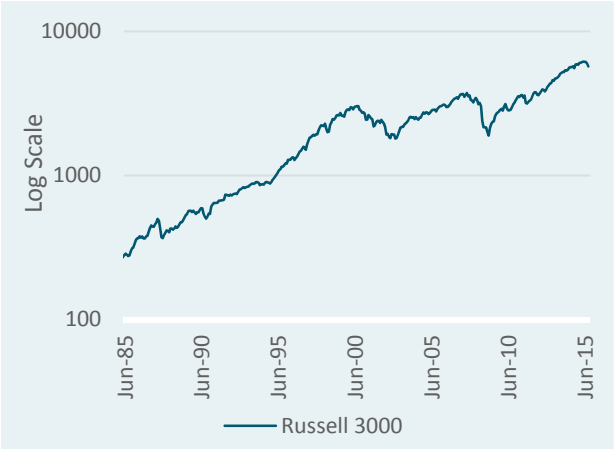
The U.S. equity market has performed exceptionally well since the global financial crisis, but experienced a correction in Q3. Equity exposure remains an integral part of the portfolio as the primary means for investors to access long term productive capacity of the economy.

It is important to keep in mind the long-term nature of equity behavior, and to resist short-term attempts at market timing. A systematic rebalancing policy can be very helpful to long-term performance by avoiding emotional buying or selling which can damage long-term returns. The recent equity bull market has been strong but is certainly not anomalous relative to history. Arguments that the behavior of the last six years are unprecedented should be placed in their true historical context. Market corrections can be frequent and may allow rebalancing opportunities for the patient investor.

Domestic equities fundamentals have shown slight weakening as of late. Other developed equity markets may provide better opportunity.

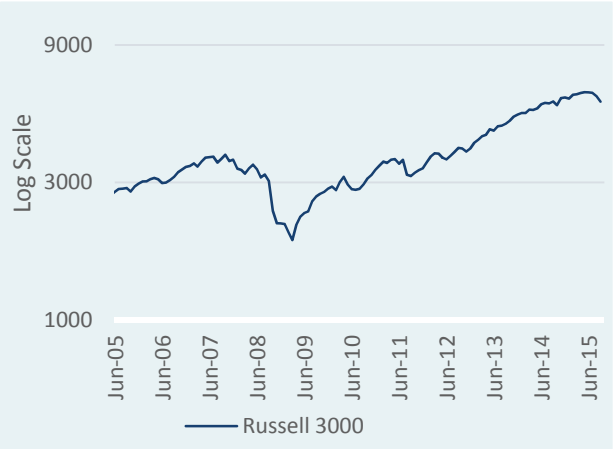
Recent strong market returns are somewhat extended, but not unheard of historically

LONG TERM PERFORMANCE



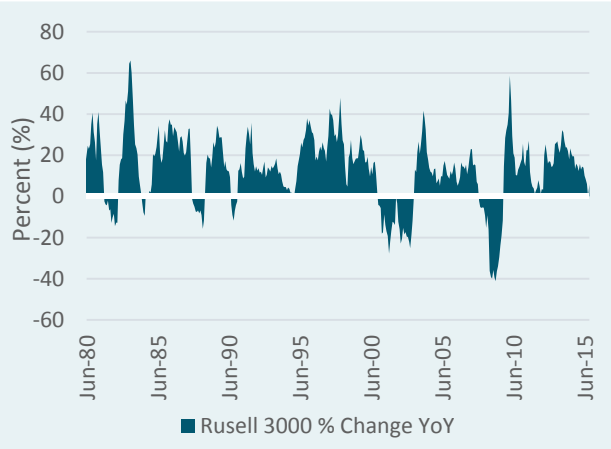
Source: FRED, as of 9/1/15

INTERMEDIATE RETURN



Source: FRED, as of 9/1/15

DOWNSIDE EVENTS



Source: FRED, as of 10/1/15

Domestic equity recent

Domestic equities flattened out in 2015 and then exhibited a correction in Q3. The domestic market has likely been affected by normalizing monetary policy, heightened valuations, and concerns over decelerating growth abroad. Earnings growth for 2015 is expected to be negative after poor Q1 and Q2 performance, though Q4 is expected to be positive. Weakness in the energy sector has driven underperformance, as 2015 earnings have been positive on an ex-energy basis. Even despite the effects of the energy sector, 2016 earnings growth is expected to be positive.

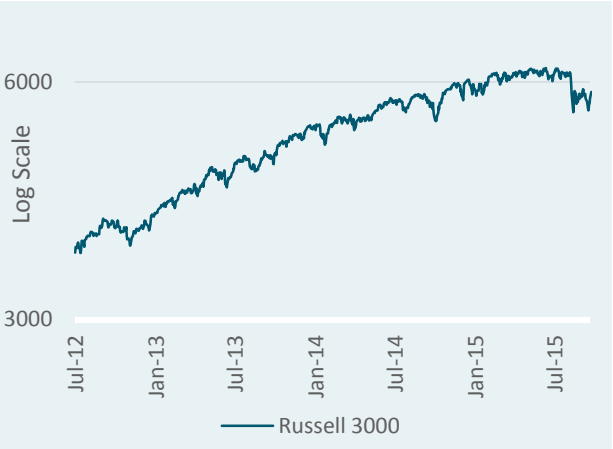
Small cap equities experienced a reversal in Q3, underperforming large cap. Large cap growth outperformed large cap value in Q3.

Recent weak economic news, along with negative earnings growth, have led us to be happy with a short-term underweight in U.S. domestic equity allocations relative to policy.

Equity corrections often present rebalancing opportunities

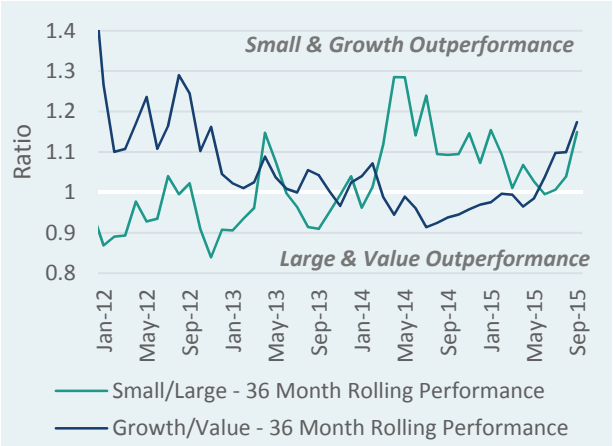
Recent weakness in earnings should be monitored

SHORT TERM PERFORMANCE (3YR)



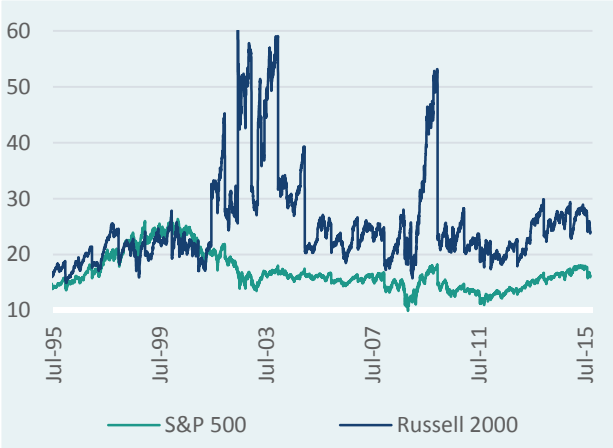
Source: Russell Investments, as of 9/30/15

SMALL/LARGE & GROWTH/VALUE



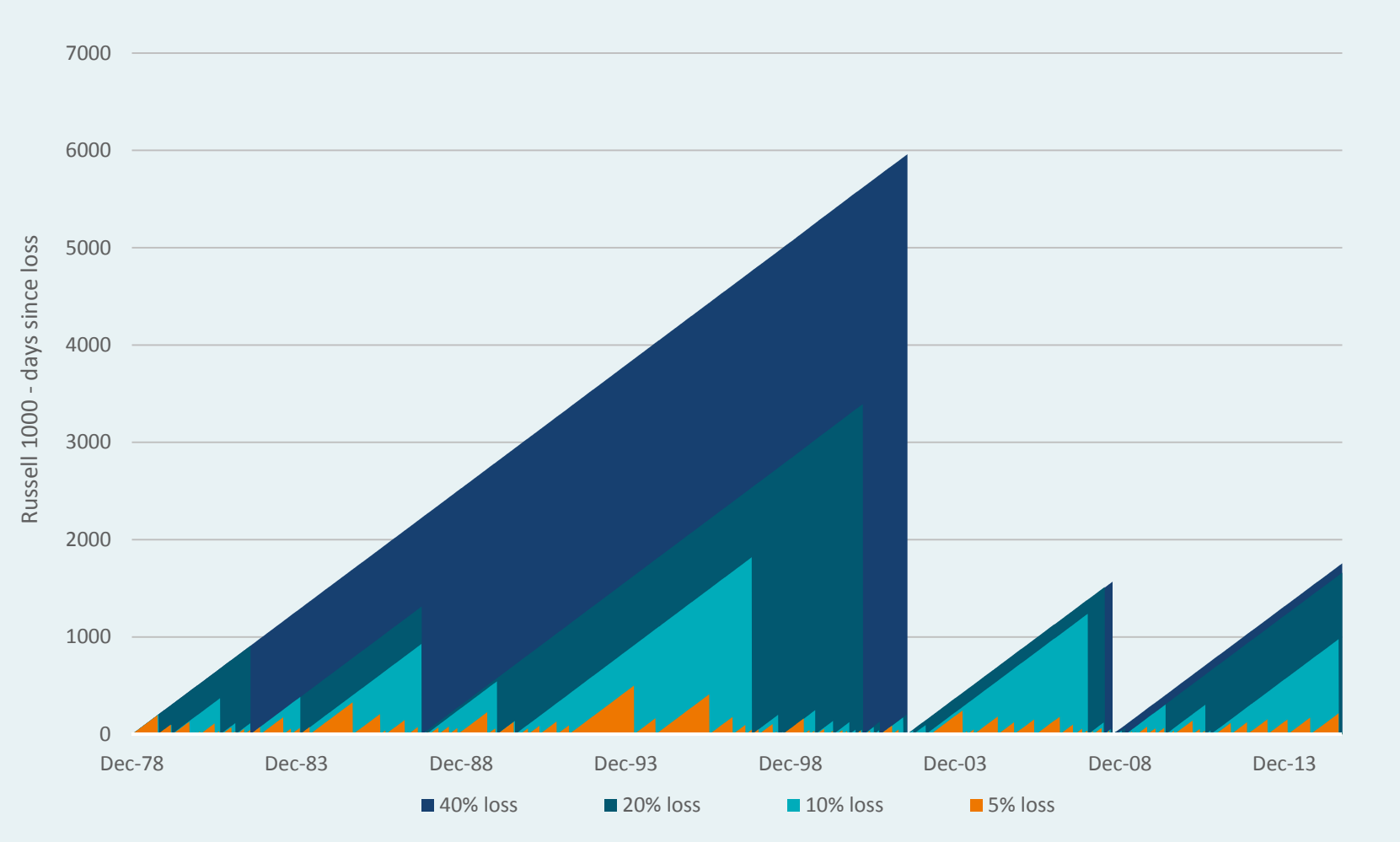
Source: Russell Investments, as of 9/30/15

FORWARD P/E



Source: Standard & Poor's, Russell Investments, as of 9/30/15

Drawdowns happen more than you think



The recent drawdown when examined over a 30 year period appears relatively normal

Source: Russell Investments, as of 9/30/15

Equity volatility

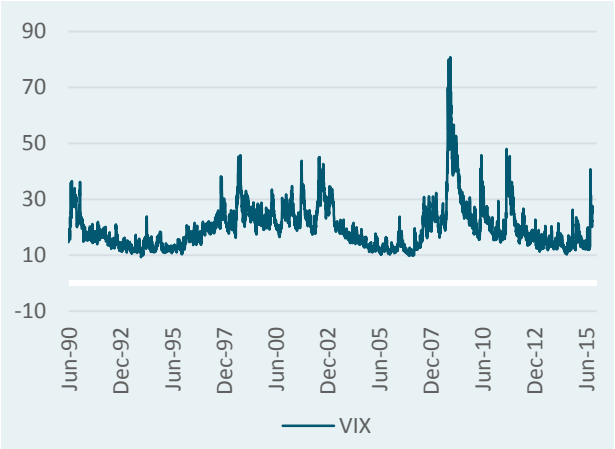
During August's sell-off, domestic equity volatility spiked but then returned to an average range. Disparate views relating to the impact and magnitude of a decelerating China, and falling oil price, has contributed to greater price uncertainty.

As mentioned previously, VIX is not a perfect proxy for true equity volatility. This index is prone to properties of the options market, including dealer activity and the premium built into options prices (which changes over time). It is possible that investor use of options instruments is changing, and this could mean that VIX currently reflects other factors unrelated to true equity volatility levels.

Volatility levels typically exhibit muted behavior during bull markets and spike during market downturns, which makes it important to monitor volatility. The current spike in volatility should be watched, but is not necessarily cause for action.

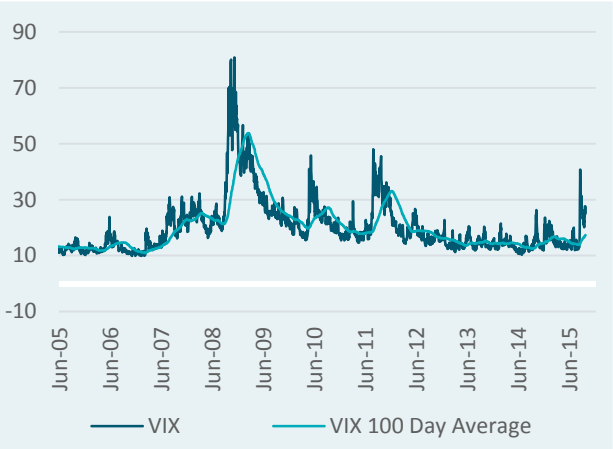
Equity volatility spiked in Q3 but then returned to normal level

LONG TERM VOLATILITY %



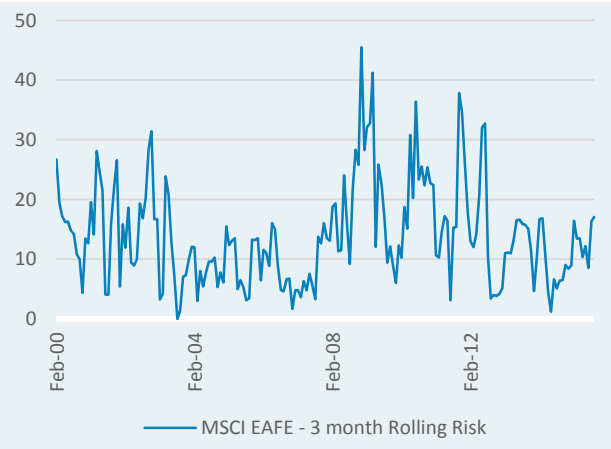
Source: CBOE, as of 9/30/15

INTERMEDIATE TERM VOLATILITY %



Source: CBOE, as of 9/30/15

INTERNATIONAL EQUITY VOLATILITY %



Source: MSCI, as of 9/30/15

Domestic equity size and style

The long-term trend of small cap outperformance reversed in Q3, with small cap underperforming by 5%. Growth continues to beat value, with large cap growth outperforming large cap value by 3% during Q3.

Although the long term cumulative difference is important, it is necessary to take note of the degree of periodicity in these returns. Recent small cap outperformance reversed sharply in Q3 and now trails large cap.

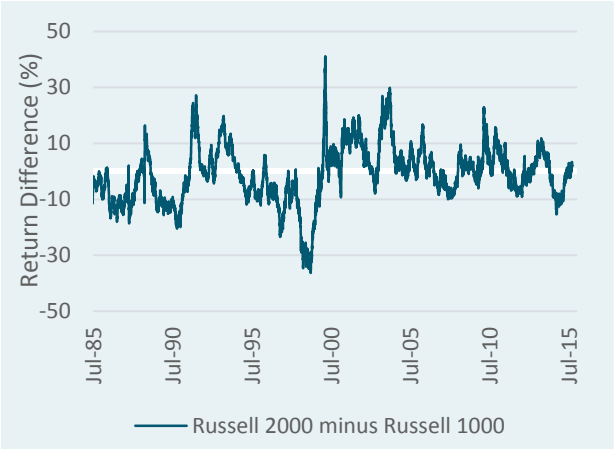
Similar behavior can be seen in style terms, with a significant move over the last two years towards growth and away from value.

On an underlying factor basis it should be noted that most of the risk embedded in each of these exposures is primarily equity risk – however factor awareness and potentially management in certain portfolio structures can be important.

Small cap trailed large cap in Q3

Growth continues to beat value

SMALL CAP VS LARGE CAP (% YOY)

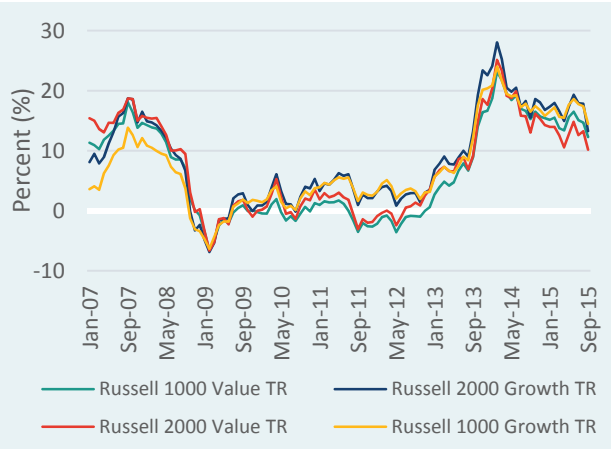


Source: Russell Investments, as of 9/30/15

VALUE VS GROWTH (% YOY)

Source: Russell Investments, as of 9/30/15

ROLLING 5 YEAR RETURN



Source: Russell Investments, as of 9/30/15

Domestic equity valuations

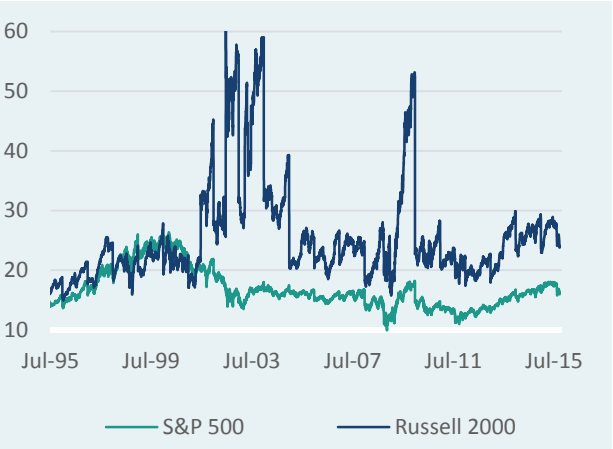
Domestic equity valuations remain relatively high, but were brought down by the Q3 correction. A decrease in inflation and global growth expectations may justify the valuation adjustment. Appropriateness of valuations ultimately depends on the accuracy of earnings forecasts.

Strong profit margins and growing earnings of recent years have justified expanding valuations, but earnings growth is now expected to be negative for the next year. This should be monitored to determine whether it is a short-term fluctuation or a long-term trend, particularly as negativity appears concentrated in the energy sector. Current valuations do not seem cause for immediate concern but a trend towards negative earnings could be expected to affect valuations.

A continued rise in interest rates would bring the equity/debt yield relationship back closer to the long-term average.

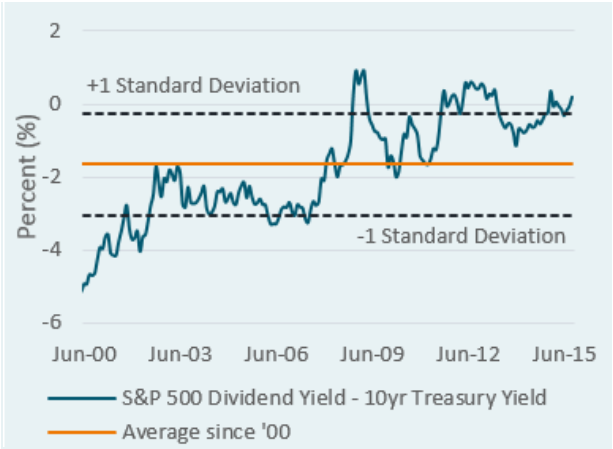
Growth concerns and an indecisive Fed have brought equity valuations down slightly

12 MONTH FORWARD P/E



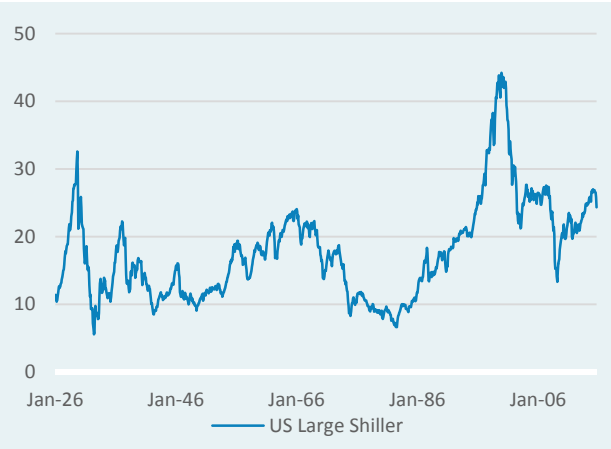
Source: Standard & Poor's, Russell Investments, as of 9/30/15

EQUITY YIELD LESS BOND YIELD



Source: Standard & Poor's, Bloomberg, as of 9/30/15

SHILLER P/E LONG-TERM



Source: Shiller, as of 9/30/15

International equity historical return

Investors with international developed equity exposure (MSCI EAFE) have realized losses year-to-date, though positive if the effects of currency are removed. International developed equities have underperformed both U.S. and emerging market equities on a 10-year basis.

Emerging markets were relatively range bound in recent years, but exhibited losses in Q3. Growth concerns in China, and the depressed price of oil, have contributed to currency and equity volatility. Volatility is likely to continue, but with significant disparities between markets. Active management may be preferable.

These recent results reiterate the importance of understanding the currency exposures that are implicit in taking on unhedged equity exposure to international markets. At times the return from the currency portfolio involved can be as large or larger than the equity return. Where possible investors should think of these two exposure sets as separate investment decisions.

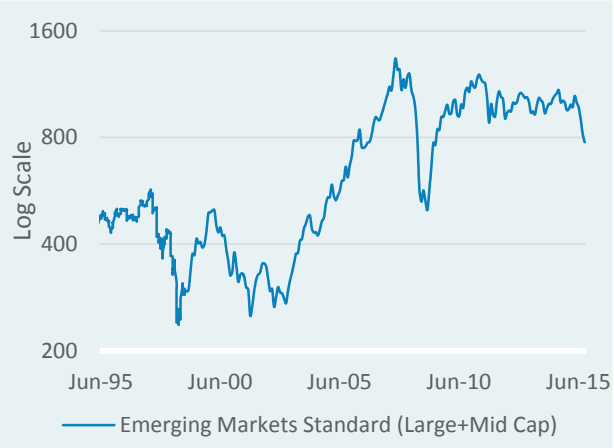
Emerging market currencies saw broad sell-off in Q3

Currency remains an important decision

EAFE LONG TERM (USD)

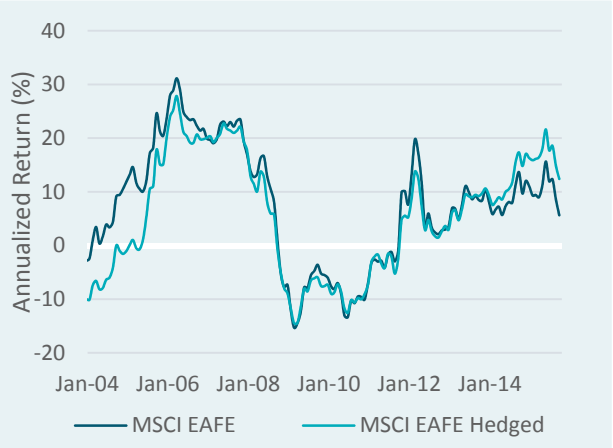
Source: MSCI, as of 9/30/15

EMERGING MARKETS LONG TERM (USD)



Source: MSCI, as of 9/30/15

HEDGED VS UNHEDGED - 3YR ROLLING



Source: MSCI, as of 9/30/15

International equity valuations

The equity market drawdown in Q3 increased the attractiveness of international equity valuations. In contrast to Q2, Europe now appears slightly cheap relative to history. Japan valuations are at the low end of the historical range, further contributing to our belief that Japan deserves a neutral or perhaps overweight position in portfolios.

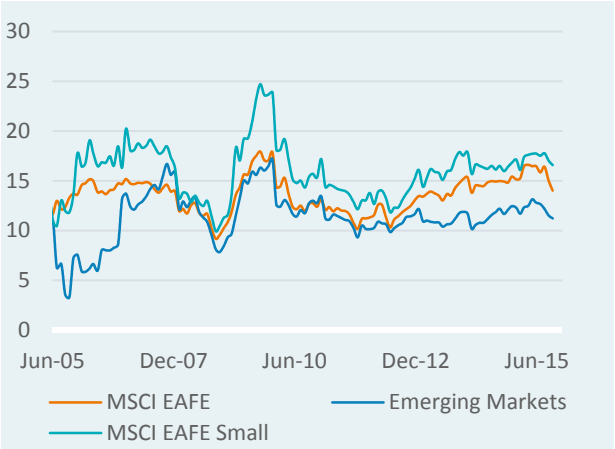
Continued ECB intervention has helped keep deflation at bay, depreciation of the Euro has helped exports, and corporate earnings are improving. However, large valuation differences exist between individual countries in Europe.

Emerging market general valuation levels remain very cheap on an historical basis, and have become cheaper following the Q3 selloff. There are well known underlying quality concerns relating to emerging markets, but investors prepared to accept the volatility involved have the opportunity to selectively buy at attractive valuations.

Valuations more in line with history

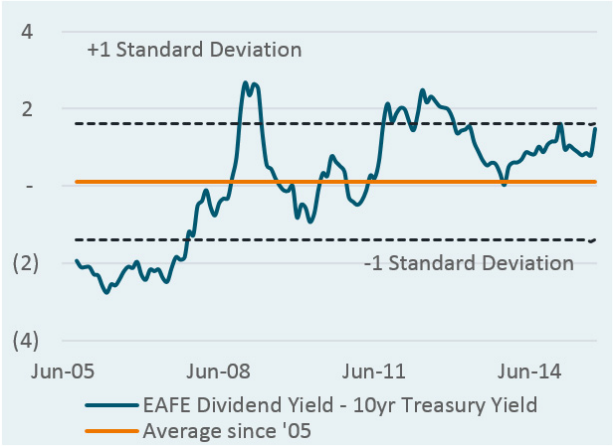
Though very volatile, select EM countries may offer value

12 MONTH FORWARD P/E



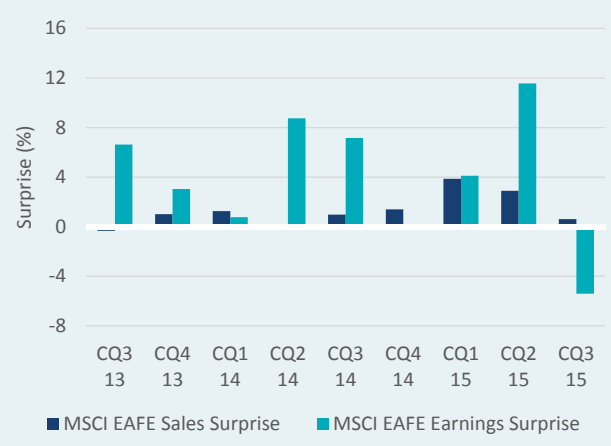
Source: MSCI, as of 9/30/15

EQUITY YIELD LESS BOND YIELD



Source: MSCI, as of 9/30/15

HISTORICAL EARNINGS SURPRISE



Source: Bloomberg, as of 9/30/15

International equity recent

International equity markets are broadly positive YTD on a currency hedged basis, but negative on an unhedged currency basis. Currency fluctuations have overwhelmed positive equity returns in many markets.

Japan's fundamentals have been trending up over the medium term, but signs of weakness appeared in August's industrial output and export data. Continued monetary easing, coupled with new corporate governance and social initiatives may provide further tailwinds for Japan equities.

The European Central Bank continues accommodative monetary policy, and Mario Draghi expressed willingness to provide further quantitative easing if necessary.

Emerging markets experienced significant volatility and losses. Many markets have been positive in local terms, but currency movements have pushed returns to the downside. India continues to exhibit strong economic progress and equity returns.

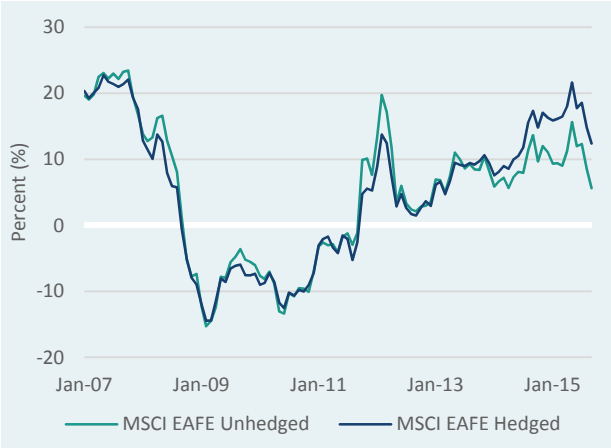
Broad sell-off during Q3

Currency a negative impact for U.S. investors with unhedged exposure

SHORT TERM PERFORMANCE

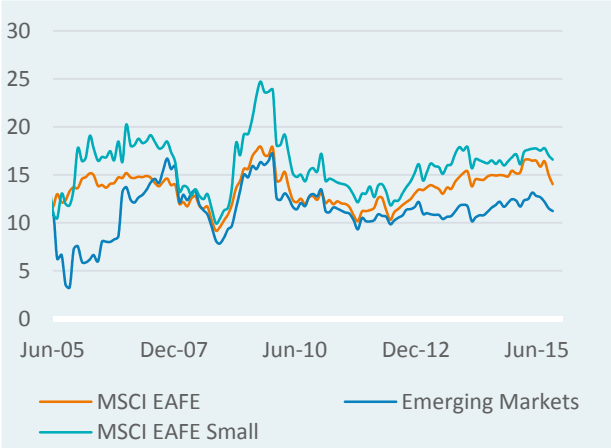
Source: MSCI, as of 9/30/15

ROLLING 3 YEAR RETURN



Source: MSCI, as of 9/30/15

FORWARD P/E



Source: MSCI, as of 9/30/15

China – from a sprint to a jog

Over recent years China has remained a global driver of growth, although in part due to extensive government-sponsored investment. In recent quarters we have seen a moderating of Chinese growth expectations and government spending, along with a devaluation of the yuan – the effects of which have been felt across the economies of China's trading partners.

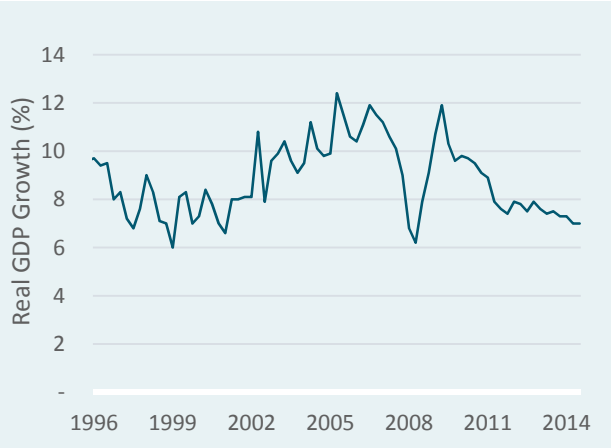
Emerging market commodity producers have felt much pain from both lower commodity prices and from lower go-forward demand from China.

However, these developments may be expected to have positive long-term effects on the Chinese economy, through containment of public and private debt growth (which expanded drastically after '09) and a reduction in industrial excess capacity. These changes are consistent with China's progression towards becoming a consumption-oriented rather than export-oriented nation, and a transition to a service-based economy.

China has been the largest contributor to global growth

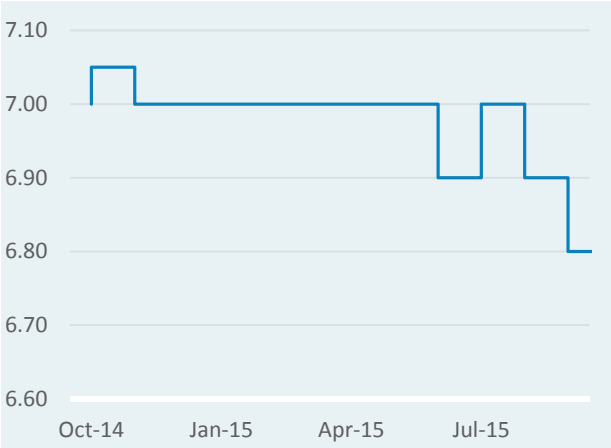
Slowing and changing composition

CHINA REAL GDP



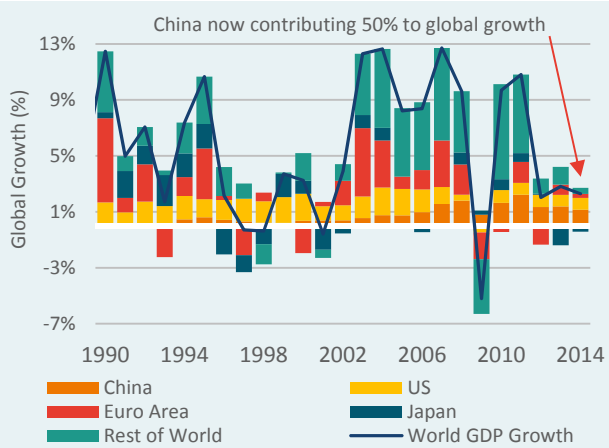
Source: Bloomberg, as of 6/30/15

CHINA REAL GDP FORECAST



Source: Bloomberg, as of 9/30/15

DRIVERS OF GLOBAL GROWTH



Source: Bloomberg

Emerging market equity

Emerging markets continue to feel the effects of decelerating Chinese growth and oil volatility. Lessened demand has negatively impacted currency values in many nations, and central banks are spending down FX reserves to support their currencies. The movement in oil has also helped those economies which rely more on oil usage than oil production. For example, the Indian equity market has demonstrated strong relative returns on the back of oil price moves.

"Risk-on / risk-off" behavior continues, as can be seen in recent large price moves. However, volatility is an expected characteristic of the emerging markets, and its occurrence should not alter the role of this asset class.

Wide disparity in country-to-country performance may make active management particularly attractive.

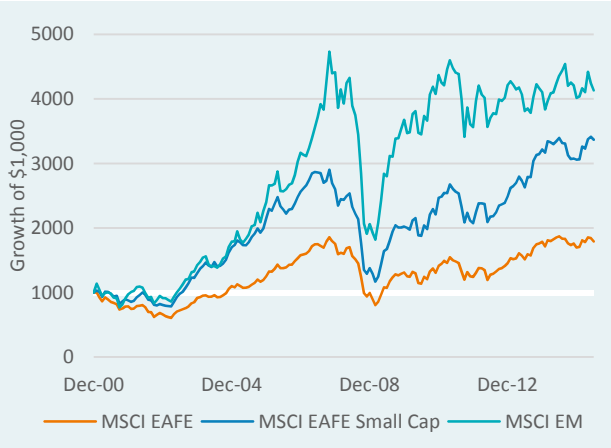
Eventual interest rate rises in developed economies may pose problems for emerging market economies if current exchange rates have not fully discounted this change.

Volatility and currency moves continue

The role of EM has not changed

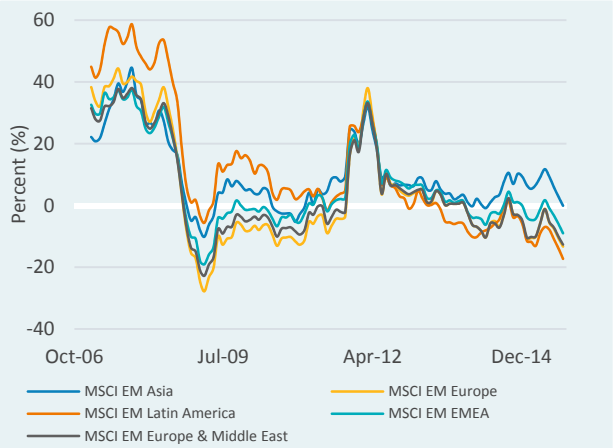
Valuations appear normal

LONG TERM PERFORMANCE



Source: MSCI, as of 9/30/15

ROLLING 3 YEAR RETURN



Source: MSCI, as of 9/30/15

FORWARD P/E

Source: MSCI, as of 9/30/15

Other assets

Other asset volatility

Rates volatility continues to be range-bound between 50 and 100, which is low relative to history.

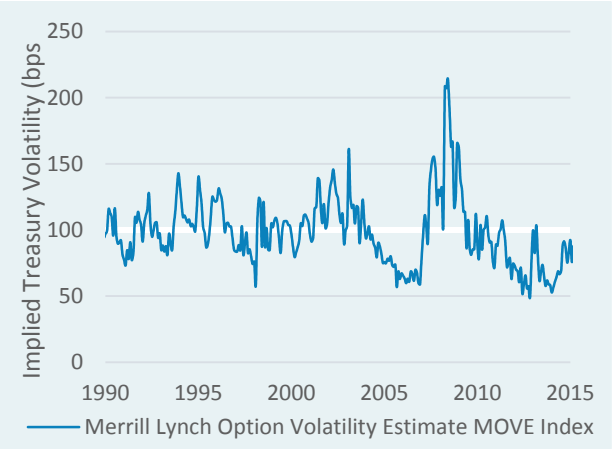
The JP Morgan G7 volatility index captures the volatility of a basket of currencies, representing significant FX moves over the past year, but remaining at a normal level. An alternative approach is to calculate the volatility of the RCCI currency beta index, which spiked in Q1 but has since come back to a normal level.

Commodity volatility remains above average, driven in large part by volatility in the oil price. This can be seen by contrasting broad commodity index volatility and the volatility of the energy component.

Spikes in volatility in these markets, even if to higher but normal levels, should be watched carefully in case they act as a sign of a broader phase shift in the markets.

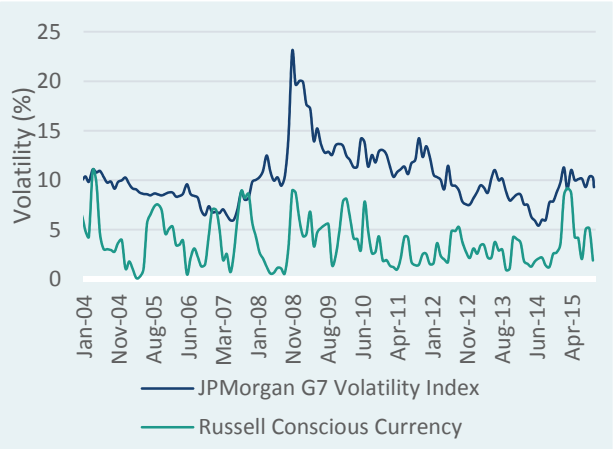
Volatility generally within normal ranges across asset classes

FIXED INCOME VOLATILITY



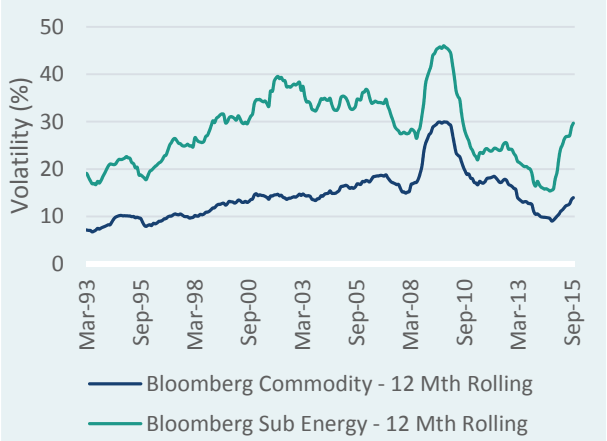
Source: Merrill Lynch, as of 9/30/15 (see Appendix)

FX VOLATILITY %



Source: JP Morgan, Russell Investments, as of 9/30/15

COMMODITY VOLATILITY %



Source: Bloomberg, as of 9/30/15

Real estate & REITs

Real estate assets provide high exposure to the general business cycle. The recovery from the economic crisis has benefited the real estate market, which has shown significant recovery.

Real estate fundamentals remain strong with continued low and declining vacancy rates across all property types. NOI is strongest in apartments and office. Low commodity prices may act as a tailwind for real estate, as lower inflation expectations encourages dovish monetary policy (lower interest rates help real estate returns).

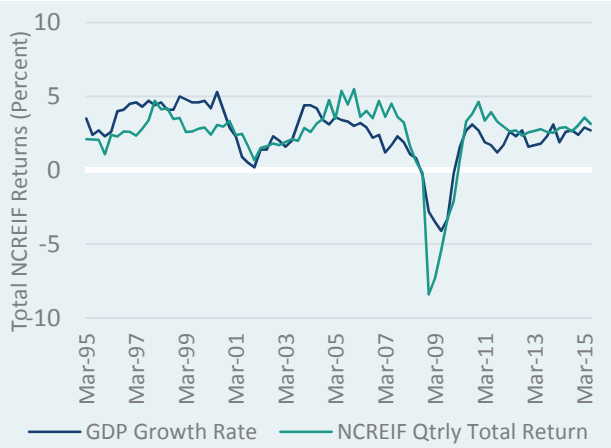
A variety of opportunities in this space have attracted investors, and the long term allocations required to access these returns have led to significant levels of dry powder. Picking the correct fund remains important.

REITs have been volatile, trading down with the uncertainty of potential rate rises and resulting in a discount to fund NAV. This discount to NAV disappeared following the Fed decision to leave rates unchanged.

Provides broad exposure to economic cycle

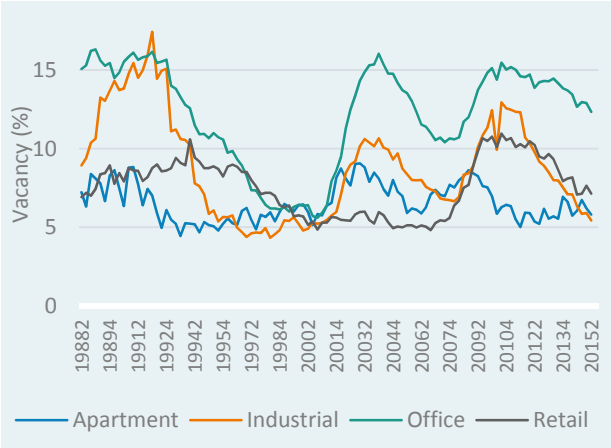
Some opportunities but careful selection needed

REAL ESTATE & THE BUSINESS CYCLE



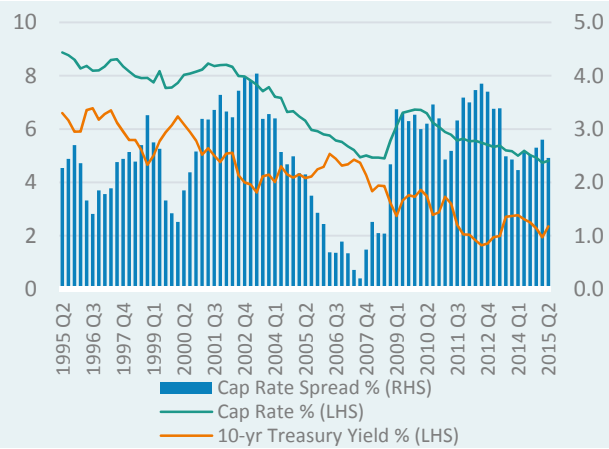
Source: NCREIF, as of 6/1/15

REAL ESTATE VACANCY BY TYPE %



Source: NCREIF, as of 6/30/15

CAP RATE SPREADS



Source: NCREIF, as of 6/1/15

Commodities – inflation beta works both ways

The Bloomberg Commodity Index returned -14.5% in Q3, with energy and agriculture leading the way. Oil continues to exhibit strong volatility.

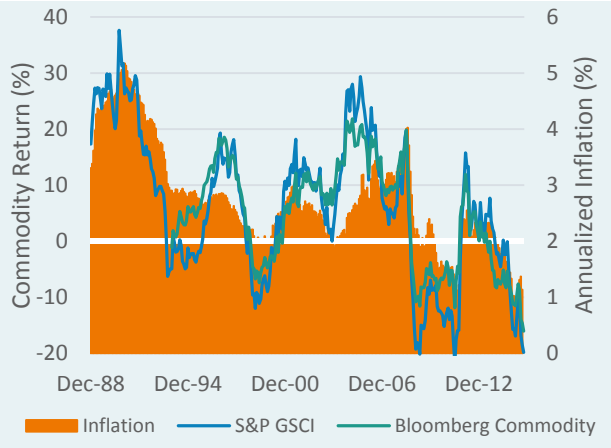
Commodities are typically held in portfolios to provide inflation sensitivity. Inflation sensitivity translates to strong performance during inflation *shocks* and negative performance during inflation *drops*. As shown in the bottom-left chart, commodities continue to fulfill their role of providing inflation sensitivity.

Commodities exposure aims to provide strong returns during inflation shocks, provide high medium-term correlation to inflation, and potentially boost portfolio returns. It may be tempting to forego inflation protection when the market's fear of inflation is dampened, but inflation forecasts have been very inaccurate and inflation shocks often occur from a low-inflation starting point.

Commodities continue to correlate with inflation

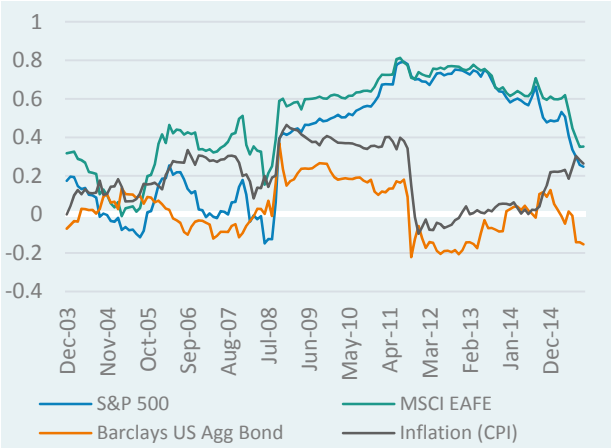
Oil has been volatile and somewhat range-bound

3 YR ROLLING RETURNS



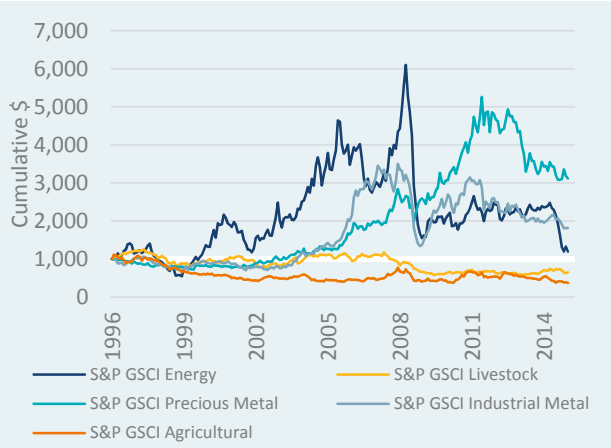
Source: Standard & Poor's, Bloomberg, as of 9/30/15

COMMODITY CORRELATION (3YR ROLLING)



Source: MPI, as of 9/30/15 - correlation to Bloomberg Commodity

COMMODITY CUMULATIVE RETURNS



Source: S&P Dow Jones, as of 9/30/15

Currency

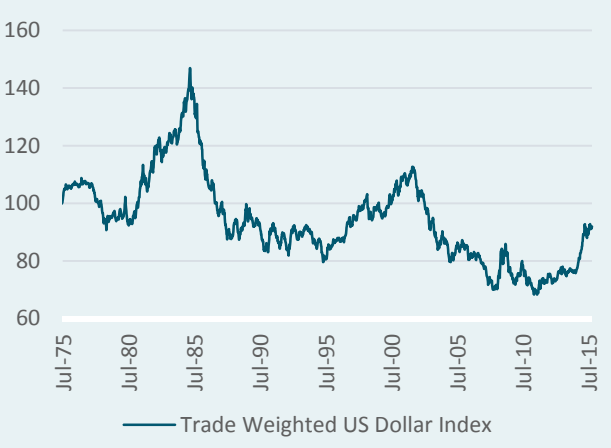
Investors can look at the behavior of the currency markets from the standpoint of a U.S. investor on a trade-weighted or similar basis. The U.S. dollar had been depreciating fairly steadily since the mid 1980s, but the recent reversal has caused losses across various unhedged international asset exposures.

When measured and managed using unhedged benchmarks, international equity portfolios hold significant exposure to a currency portfolio derived from the size and structure of the equity markets concerned. Despite recent dollar moderation, the trend towards U.S. dollar strength has made this a negative contribution for investors over the short and medium term.

Treating currency as an independent market allows investors additional insight. Although typically return from this exposure has been positive, recent price movements have tipped rolling one year return from currency beta into slightly negative territory.

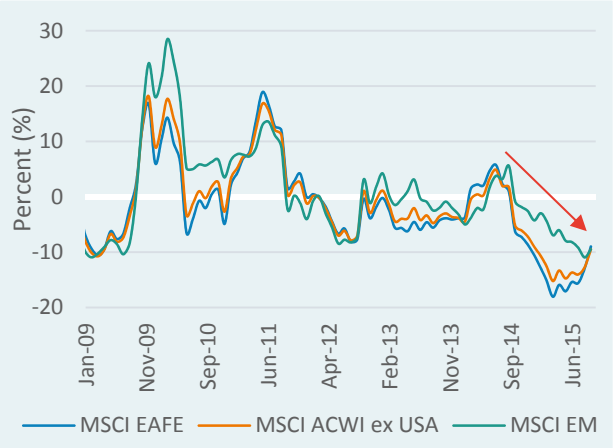
Recent dollar strength likely to continue, though sensitive to timing of fed rate hikes

LONG TERM TRADE WEIGHTED USD



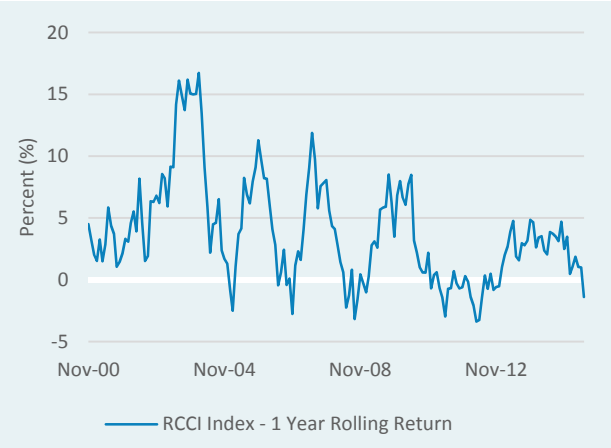
Source: FRED, as of 10/2/15

EFFECT OF CURRENCY (1YR ROLLING)



Source: FRED, as of 9/30/15

CURRENCY MARKET BEHAVIOR



Source: Russell Investments, as of 9/30/15

Appendix

Periodic table of returns - September 2015

BEST ↑ ↓ WORST

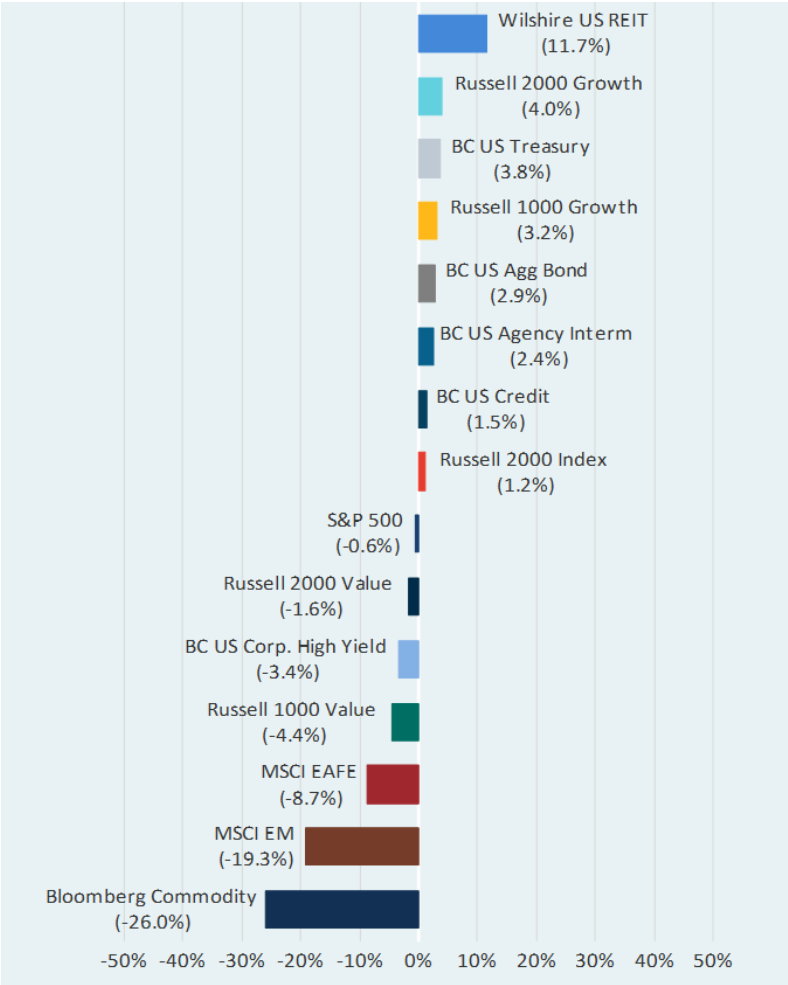
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	YTD	5-Year	10-Year
Emerging|Markets|Equity	74.8	16.6	38.4	23.2	35.2	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	10.1	14.5	8.1
International|Equity	32.9	8.1	37.8	23.1	32.9	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	1.1	13.4	8.0
Hedge|Funds of|Funds	26.3	6.4	37.2	22.4	31.8	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.0	13.3	7.7
Small|Cap|Value	23.8	4.4	31.0	21.6	30.5	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	-0.7	12.5	7.0
60/40 Global Portfolio	19.3	3.2	28.5	21.4	22.4	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	-1.5	12.3	6.5
Small|Cap|Equity	18.9	2.6	25.7	16.5	16.2	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-5.0	11.7	5.7
Large|Cap|Value	18.1	0.4	19.6	14.4	13.9	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-5.2	10.2	5.3
Small|Cap|Growth	13.4	-1.5	18.5	11.3	12.9	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-5.3	4.6	4.6
Large|Cap|Equity	10.2	-1.8	15.2	10.3	10.6	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-5.5	4.0	4.5
US|Bonds	9.7	-2.0	11.6	9.9	9.7	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-7.7	3.1	4.3
Cash	3.1	-2.4	11.1	6.4	5.2	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-9.0	2.7	3.0
Large|Cap|Growth	2.9	-2.9	7.5	6.0	2.1	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-10.1	0.1	2.4
Real|Estate	1.4	-3.5	5.7	5.1	-3.4	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-15.5	-3.6	1.3
Commodities	-1.1	-7.3	-5.2	3.6	-11.6	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-15.8	-8.9	-5.7

- Large Cap Equity
- Large Cap Value
- Large Cap Growth
- Small Cap Equity
- Small Cap Value
- Small Cap Growth
- International Equity
- Emerging Markets Equity
- US Bonds
- Cash
- Commodities
- Real Estate
- Hedge Funds of Funds
- 60% MSCI ACWI/40% BC Global Bond

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BC Agg, T-Bill 90 Day, Bloomberg Comm Index, NCREIF Property, HFRI FOF, MSCI ACWI, BC Global Bond.

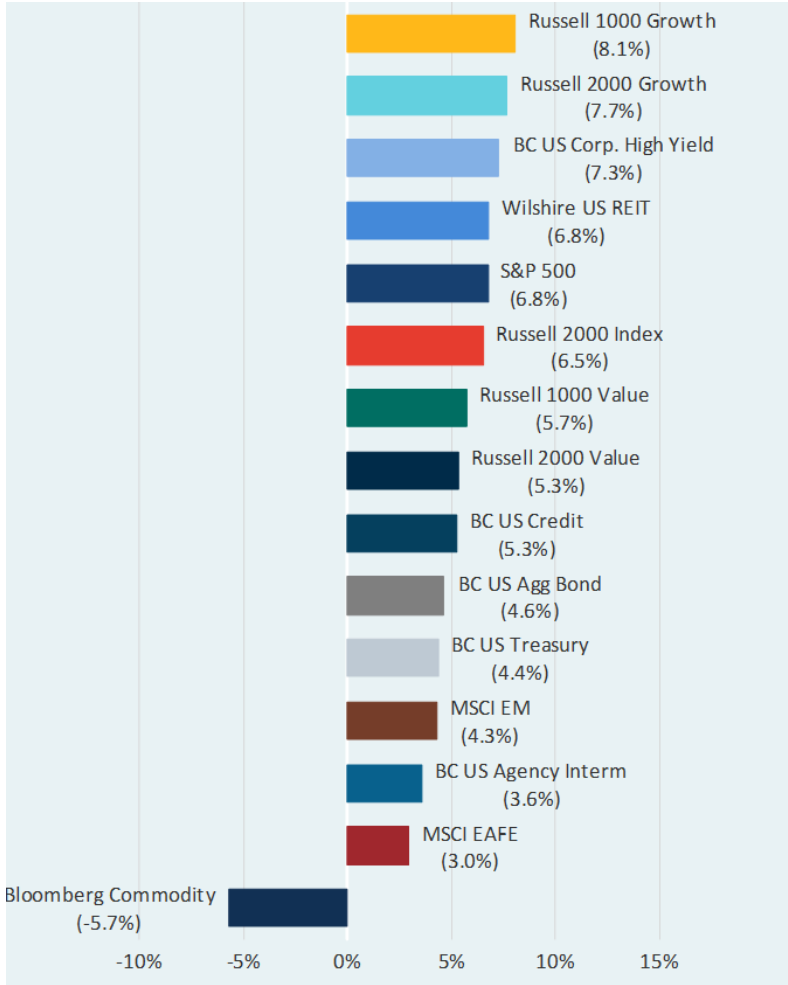
Major asset class returns

ONE YEAR ENDING SEPTEMBER 2015



Source: MPI, as of September 30, 2015

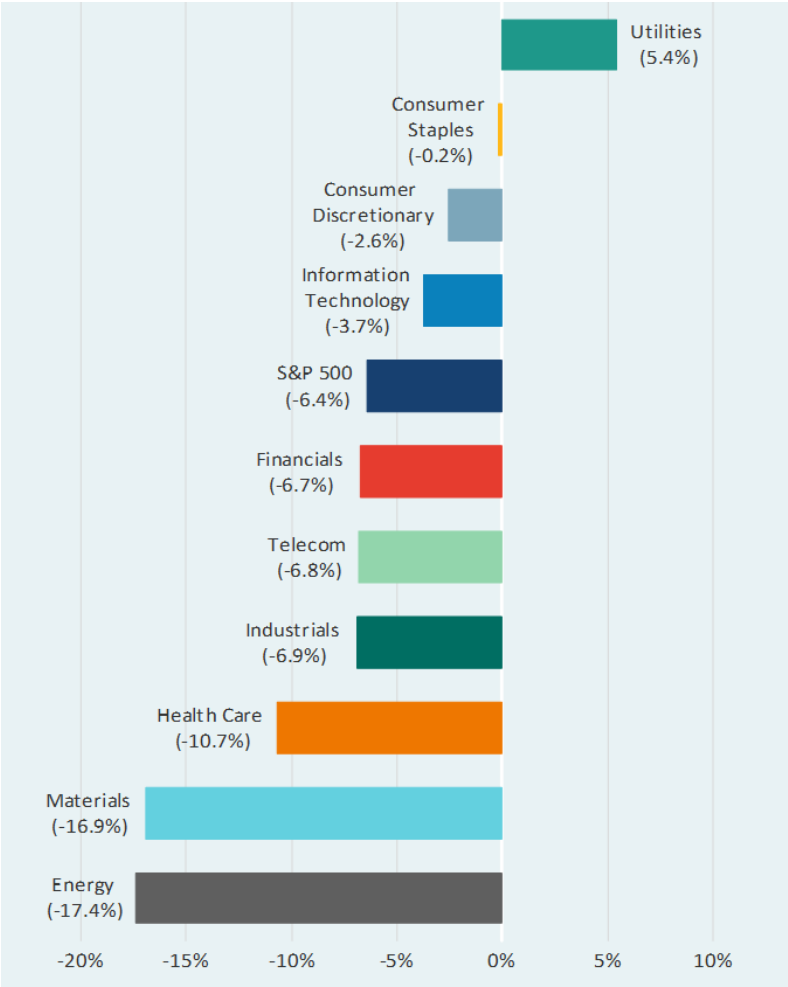
TEN YEARS ENDING SEPTEMBER 2015



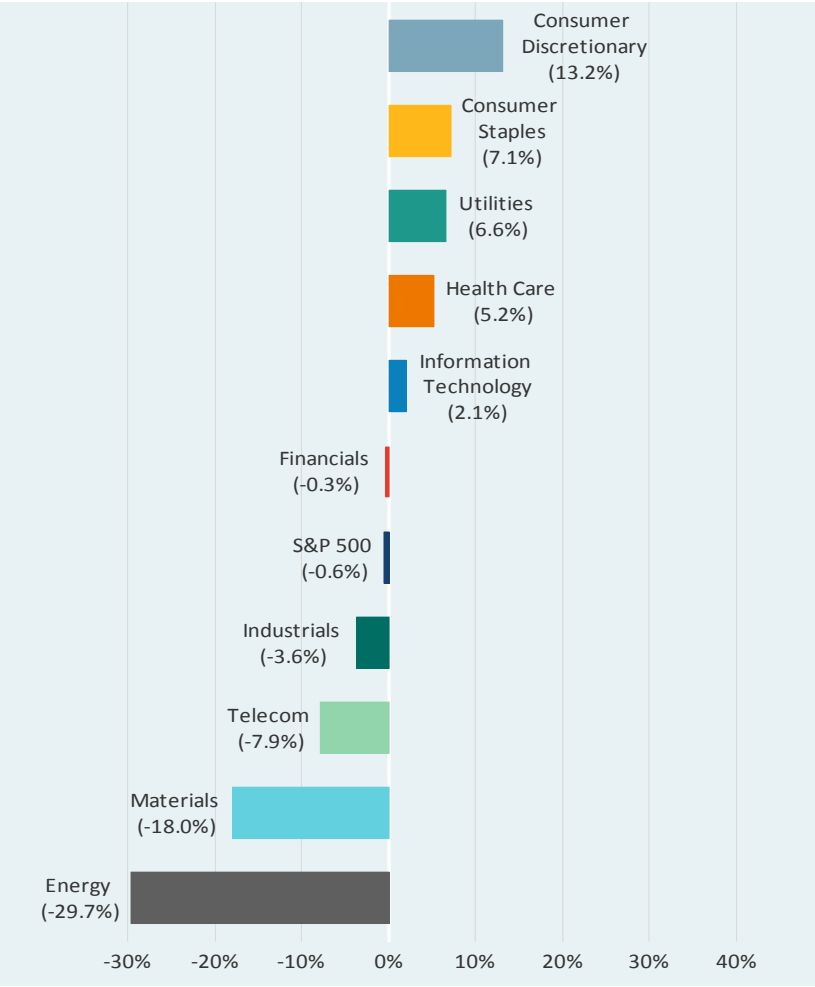
Source: MPI, as of September 30, 2015

S&P 500 and S&P 500 sector returns

QTD ENDING SEPTEMBER 2015



ONE YEAR ENDING SEPTEMBER 2015



Source: MPI, as of 9/30/15

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	(2.5)	(6.4)	(5.3)	(0.6)	12.4	13.3	6.8
S&P 500 Equal Weighted	(3.2)	(7.5)	(6.9)	(1.2)	14.3	13.8	8.3
DJ Industrial Average	(1.4)	(7.0)	(7.0)	(2.1)	9.3	11.4	7.2
Russell Top 200	(2.4)	(6.3)	(5.0)	(0.8)	12.1	13.4	6.6
Russell 1000	(2.7)	(6.8)	(5.2)	(0.6)	12.7	13.4	7.0
Russell 2000	(4.9)	(11.9)	(7.7)	1.2	11.0	11.7	6.5
Russell 3000	(2.9)	(7.2)	(5.4)	0.5	12.5	13.3	6.9
Russell Mid Cap	(3.6)	(8.0)	(5.8)	0.2	13.9	13.4	7.9
Style Index							
Russell 1000 Growth	(2.5)	(5.3)	(1.5)	3.2	13.6	14.5	8.1
Russell 1000 Value	(3.0)	(8.4)	(9.0)	(4.4)	11.6	12.3	5.7
Russell 2000 Growth	(6.3)	(13.1)	(5.5)	4.0	12.8	13.3	7.7
Russell 2000 Value	(3.5)	(10.7)	(10.1)	(1.6)	10.2	10.2	5.3

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BC US Treasury US TIPS	(0.6)	(1.1)	(0.8)	(0.8)	(1.8)	2.5	4.0
BC US Treasury Bills	0.0	0.0	0.1	0.1	0.1	0.1	1.4
BC US Agg Bond	0.7	1.2	1.1	2.9	1.7	3.1	4.6
Duration							
BC US Treasury 1-3 Yr	0.3	0.3	1.0	1.2	0.7	0.8	2.6
BC US Treasury Long	1.5	5.1	0.2	8.8	2.8	6.2	7.0
BC US Treasury	0.9	1.8	1.8	3.8	1.3	2.5	4.4
Issuer							
BC US MBS	0.6	1.3	3.4	2.7	2.0	3.0	4.7
BC US Corp. High Yield	(2.6)	(4.9)	(3.4)	(2.9)	3.5	6.1	7.3
BC US Agency Interm	0.5	0.8	2.4	1.8	1.1	1.6	3.6
BC US Credit	0.5	0.5	1.5	(0.4)	2.0	4.1	5.3

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI EAFE	(5.1)	(10.2)	(5.3)	(8.7)	5.6	4.0	3.0
MSCI AC World ex US	(4.6)	(12.2)	(8.6)	(12.2)	2.3	1.8	3.0
MSCI EM	(3.0)	(17.9)	(15.5)	(19.3)	(5.3)	(3.6)	4.3
MSCI EAFE Small Cap	(3.4)	(6.8)	2.6	0.3	10.2	7.3	4.7
Style Index							
MSCI EAFE Growth	(4.0)	(8.7)	(2.4)	(4.7)	6.5	4.8	3.8
MSCI EAFE Value	(6.2)	(11.8)	(8.2)	(12.6)	4.7	3.1	2.1
Regional Index							
MSCI UK	(4.5)	(10.0)	(8.2)	(12.1)	3.0	4.5	3.0
MSCI Japan	(6.8)	(11.8)	0.2	(2.2)	9.0	4.9	1.1
MSCI Euro	(5.3)	(8.9)	(6.0)	(10.8)	6.7	2.6	2.2
MSCI EM Asia	(1.5)	(17.0)	(12.8)	(13.1)	(0.4)	(0.1)	6.3
MSCI EM Latin American	(7.7)	(24.3)	(29.1)	(38.7)	(17.5)	(12.9)	1.8

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Comm. Index	(3.4)	(14.5)	(15.8)	(26.0)	(16.0)	(8.9)	(5.7)
Wilshire US REIT	3.3	2.9	(3.0)	11.7	10.1	12.5	6.8
Regional Index							
JPM EMBI Global Div	(1.3)	(1.7)	(0.1)	(0.6)	1.5	4.7	6.9
JPM GBI-EM Global Div	(3.0)	(10.5)	(14.9)	(19.8)	(8.7)	(3.6)	4.5

Source: Morningstar, as of 9/30/15

Definitions

Bloomberg US Weekly Consumer Comfort Index *- tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. (www.langerresearch.com)*

University of Michigan Consumer Sentiment Index *- A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conditions conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. (www.Bloomberg.com)*

Citi Economic Surprise Index *- objective and quantitative measures of economic news. Defined as weighted historical standard deviations of data surprises (actual releases vs Bloomberg survey median). A positive reading of the Economic Surprise Index suggests that economic releases have on balance been beating consensus. The indices are calculated daily in a rolling three-month window. The weights of economic indicators are derived from relative high-frequency spot FX impacts of 1 standard deviation data surprises. The indices also employ a time decay function to replicate the limited memory of markets. (www.Bloomberg.com)*

Merrill Lynch Option Volatility Estimate (MOVE) Index *– a yield curve weighted index comprised of a weighted set of 1-month Treasury options, including 2.5.10 and 30 year tenor contracts. This index is an indicator of the expected (implied) future volatility in the rate markets.*

Notices & Disclosures

Past performance is no guarantee of future results. *This report or presentation is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and should not be relied upon by retail investors. Nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security or pursue a particular investment vehicle or any trading strategy. The opinions and information expressed are current as of the date provided or cited only and are subject to change without notice. This information is obtained from sources deemed reliable, but there is no representation or warranty as to its accuracy, completeness or reliability. Verus Advisory Inc. and Verus Investors, LLC expressly disclaim any and all implied warranties or originality, accuracy, completeness, non-infringement, merchantability and fitness for a particular purpose. This report or presentation cannot be used by the recipient for advertising or sales promotion purposes.*

The material may include estimates, outlooks, projections and other "forward-looking statements." Such statements can be identified by the use of terminology such as "believes," "expects," "may," "will," "should," "anticipates," or the negative of any of the foregoing or comparable terminology, or by discussion of strategy, or assumptions such as economic conditions underlying other statements. No assurance can be given that future results described or implied by any forward looking information will be achieved. Actual events may differ significantly from those presented. Investing entails risks, including possible loss of principal. Risk controls and models do not promise any level of performance or guarantee against loss of principal.

"VERUS ADVISORY™ and VERUS INVESTORS™ and any associated designs are the respective trademarks of Verus Advisory, Inc. and Verus Investors, LLC. Additional information is available upon request.