UTIMCO BOARD OF DIRECTORS
MEETING AGENDA
September 26, 2019

UTIMCO
210 West 7th Street, Suite 1700
Austin, Texas 78701

Time Begin	Time End	Item #	Agenda Item
			OPEN MEETING:
9:30 a.m.	9:35 a.m.	1	Call to Order of the Meeting/Discussion and Appropriate Action Related to Minutes of June 27, 2019 Meeting*
9:35 a.m.	9:40 a.m.	2	Discussion and Appropriate Action Related to Corporate Resolutions: - Election of Corporate Officer* - Designation of Plan Administrative Committee*
9:40 a.m.	10:20 a.m.	3	Presentation by Mr. Bob Prince, Co-Chief Investment Officer for Bridgewater Associates
10:20 a.m.	10:45 a.m.	4	UTIMCO Performance Report and Market Update
10:45 a.m.	11:10 a.m.	5	Risk Management Presentation
11:10 a.m.	11:40 a.m.	6	Strategic Partnerships Update
11:40 a.m.	11:45 a.m.	7	Report from Audit and Ethics Committee
11:45 a.m.	11:50 a.m.	8	Report from Risk Committee
11:50 a.m.	11:55 a.m.	9	Report on 2020 Meeting Dates
11:55 a.m.	12:00 p.m.	10	Discussion and Appropriate Action Related to Employee's Service as a Director on an UTIMCO Investee Company*
12:00 p.m.			**Adjourn followed by Lunch**

* Action by resolution required
** Resolution requires further approval from the Board of Regents of The University of Texas System

Next Regularly Scheduled Meeting: December 5, 2019

RESOLUTION RELATED TO MINUTES

RESOLVED, that the minutes of the Meeting of the Board of Directors held on **June 27, 2019,** be, and are hereby, approved.

MINUTES OF MEETING
OF THE BOARD OF DIRECTORS OF
THE UNIVERSITY OF TEXAS/TEXAS A&M INVESTMENT MANAGEMENT COMPANY

The Board of Directors (the "Board") of The University of Texas/Texas A&M Investment Management Company (the "Corporation") convened in an open meeting on **June 27, 2019,** in person at the corporate headquarters located at 210 West 7th Street, Suite 1700 in Austin, said meeting having been called by the Acting Chairman, Ray Rothrock, with notice provided to each member in accordance with the Bylaws. The audio portion of the meeting was electronically recorded and broadcast over the Internet. Participating in the meeting were the following members of the Board:

Ray Rothrock, Acting Chair
Robert Gauntt
Janet Handley
R. Steven Hicks
Jeffery D. Hildebrand
Janiece Longoria
Ray Nixon
Clifton L. Thomas, Jr.
James C. "Rad" Weaver

thus constituting a majority and quorum of the Board. Employees of the Corporation attending the meeting were Britt Harris, President, CEO and Chief Investment Officer; Rich Hall, Deputy Chief Investment Officer; Joan Moeller, Secretary and Treasurer; Cecilia Gonzalez, Corporate Counsel and Chief Compliance Officer; Ken Standley, Chief of Staff; Eddie Lewis, Managing Director – Real Return; Billy Prather, Senior Director – Real Return; Mukund Joshi, Senior Director – Real Return; Patrick Pace, Senior Director – Private Equity; Richard Rincon, Senior Director – Private Equity; Bradford Thawley, Senior Director – Private Equity; Gary Hill, Senior Director - Accounting; and other team members. Other attendees were Keith Brown of the McCombs School of Business at UT Austin; Jerry Kyle of Orrick, Herrington & Sutcliffe LLP; Tyler Somes of Vinson & Elkins LLP; David Rejino of Texas A&M University System; Allen Hah, Karen Adler, and Eric Polonski of The University of Texas System ("UT System"); and Susan Lemke of Mercer. Acting Chairman Rothrock called the annual meeting to order at 9:00 a.m. Copies of materials supporting the Board meeting agenda were previously furnished to each member of the Board.

Acting Chairman Rothrock welcomed Director Janiece Longoria. She replaced Director Jeffery D. Hildebrand as Regental Director, and Director Hildebrand replaced Director J. Kyle Bass as an outside director.

Minutes

The first item to come before the Board was approval of the Minutes of the Board of Directors Meetings held on February 21, 2019. Upon motion duly made and seconded, the following resolution was unanimously adopted by the Board:

> RESOLVED, that the minutes of the Meeting of the Board of Directors held on February 21, 2019, be, and are hereby, approved.

Corporate Resolutions

Election of Officers

Acting Chairman Rothrock nominated Director Hildebrand to serve as Chairman of the Board and Director Hicks to serve as Vice Chairman for Policy. He then requested nominations for the office of Vice Chairman. Director Hildebrand nominated Director Rothrock to serve as Vice Chairman of the Board. There being no other nominations, Acting Chairman Rothrock then requested a motion to approve the corporate resolution designating the officers for the Corporation. As stated in the Bylaws, Officers for the ensuing year are to be elected at the Annual Meeting. Employees that are designated as Officers by the Board meet the definition of Key Employees in the Corporation's Code of Ethics. Upon motion duly made and seconded, the following resolution was unanimously adopted:

> RESOLVED, that the following persons are hereby appointed to the respective office or offices of the Corporation set forth opposite their names, to serve until the next Annual Meeting of the Corporation or until their resignation or removal.

Name	Office or Offices
Jeffery D. Hildebrand	Chairman
Ray Rothrock	Vice Chairman
R. Steven Hicks	Vice Chairman for Policy
Britt Harris	President, Chief Executive Officer and Chief Investment Officer
Rich Hall	Deputy Chief Investment Officer
Joan Moeller	Senior Managing Director, Treasurer and Secretary
Susan Chen	Managing Director
Russ Kampfe	Managing Director
Edward Lewis	Managing Director
Ryan Ruebsahm	Managing Director
Scott Slayton	Managing Director
Uzi Yoeli	Managing Director

At this time, Acting Chairman Rothrock turned the conduct of the meeting over to the newly elected chairman, Director Hildebrand ("Chairman.")

Committee Assignments

Chairman Hildebrand then nominated the directors to serve as the members of the Risk Committee and nominated Robert Gaunt to serve as chairman of the Risk Committee. There being no other nominations, upon motion duly made and seconded, the following resolution was unanimously adopted:

> BE IT RESOLVED, that the following Directors of the Corporation are hereby designated as the Risk Committee of the Board of Directors:
>
> Robert Gauntt
> Janiece Longoria
> Ray Rothrock
> James C. "Rad" Weaver
>
> to serve until the expiration of their term, or until their successor has been chosen and qualified, or until their earlier death, resignation or removal; and

FURTHER RESOLVED, that Robert Gauntt is hereby designated the Chair of the Risk Committee and shall preside at its meetings.

Investment Review

Chairman Hildebrand asked Britt Harris to present a review of the Funds for the ten years ending March 31, 2019. Mr. Harris discussed the markets since the last economic recession. He said that U.S. Global Equity had been the best performing sector with 16.9% returns. That sector has had the longest market increase in history. While the U.S. Markets have fully recovered, the same cannot be said for markets outside the U.S. UTIMCO did well over the same period, growing the endowment from $13 billion to $34 billion with low standard deviation. The Permanent University Fund ("PUF") grew from $8.3 Billion to $22.0 billion, the General Endowment Fund ("GEF") grew from $4.6 billion to $11.9 billion, and the Intermediate Term Fund ("ITF") grew from $3.0 billion to $9.3 billion. Mr. Harris said it had been a glorious ten years but he did not expect similar returns over the next ten year period. He discussed the Team's plan to deal with a recession and bubble monitoring activities that have been implemented recently to try and forecast the market's shift.

Real Return Presentation

Chairman Hildebrand asked Mr. Lewis, Mr. Joshi, and Mr. Prather to present the update on the Real Return program. Mr. Lewis told the Directors that the Real Estate and Natural Resources Teams were combined into a Real Return Team in the last year, resulting in streamlined management, improved communication, and a unified investment process. The goals of this newly formed team include reducing the Natural Resources portfolio, growing the Infrastructure portfolio, and focusing on stable cash flow real estate capable of weathering an economic downturn. Mr. Prather provided an update on the Natural Resources and Infrastructure portfolios' performance over the last year. He noted that the energy portion of the portfolio had underperformed and the metals and mining portion of the portfolio had provided strong results. Next, Mr. Joshi provided an overview of Real Estate portfolio's performance. Real Estate outperformed its one-year, three-year and five-year benchmarks. Mr. Lewis also discussed with the Directors the Team's action plan goals both met and planned for the rest of the calendar year of 2019. Mr. Lewis, Mr. Joshi, and Mr. Prather answered the Directors' questions.

Private Equity Presentation

Chairman Hildebrand asked Dr. Pace, Mr. Rincon, and Mr. Thawley to update the Board on the Private Equity Team and their current work. The presentation covered the members of the Private Equity Team, the current market conditions for private equity investments, the portfolio performance summary, and the top priorities for the team over the next year. The Private Investments portfolio is $6.9 Billion or 20% of the endowments. The goal of the Private Equity Team is to increase that percentage to 25% over the long term. The portfolio is divided among four types of investments: Private Equity, Venture Capital, Emerging Markets, and Private Credit. The presenters answered the Directors' questions.

Strategic Partnerships Update

Chairman Hildebrand asked Ken Standley to update the Directors on the Strategic Partnerships program. Mr. Standley stated that Phase 1 of the Strategic Partnership program was complete. Phase 2 will be completed in July and presented to the Board at a future meeting. He discussed the goals, selection criteria and process used to identify potential strategic partners. Mr. Standley stated that the strategic partnership program will be brought to the Board for approval. Mr. Standley and Mr. Harris answered the Directors' questions and Mr. Harris gave additional explanation about his experience with strategic partnerships in his past leadership positions.

<u>Five Year Strategic Plan Presentation</u>

Chairman Hildebrand asked Mr. Hall to review the Corporation's five year strategic plan with the Directors. Mr. Hall discussed the approval of last year's budget, and how the Board had asked for a longer projection of budget and employee requirements. First, a benchmark of peer educational endowments and large private funds was identified to compare availability of resources and allocation of those resources. With this information and input from the Team about expected growth of the Funds and the personnel that will be needed to handle that growth, the Team built the five-year strategic plan. He presented this information to the Directors and answered their questions about the five year budget and expected employee growth.

<u>Report from Audit and Ethics Committee</u>

Chairman Hildebrand asked Director Handley to provide a report on behalf of the Audit and Ethics Committee (the "Committee"). Director Handley reported that the Committee met via teleconference on June 20, 2019. The Committee's agenda included approval of Committee minutes; discussion and appropriate action related to engaging corporate external auditor; discussion and appropriate action related to Master Custodian; an update on UTIMCO's compliance, reporting, and audit matters; a presentation of unaudited financial statements as of February 28, 2019 for the Investment Funds and the Corporation; and discussion and appropriate action related to the base salary for the Corporate Counsel and Chief Compliance Officer for the 2019-2020 Fiscal Year. The Committee also met in Executive Session for the purpose of deliberating individual personnel compensation and evaluation matters, to receive an update on computer security assessments related to information resources technology, and to consult with legal counsel regarding legal matters and pending and/or contemplated litigation.

Director Handley reported that the Committee had approved the hiring of Deloitte and Touche LLP as the corporate auditor and requested that the Board take appropriate action related to hiring Deloitte and Touche LLP as the corporate auditor. Estimated fees for the FY 2019 audit services are $45,000 plus out-of-pocket expenses. This is a $1,500 increase over the FY 2018 fee. Upon motion duly made and seconded, the following resolution was unanimously adopted by the Board:

> RESOLVED, that the firm of Deloitte & Touche LLP be, and is hereby, engaged as the independent auditor of the Corporation for the year ended August 31, 2019.

Director Handley continued by reporting that the Committee approved the retention of Bank of New York Mellon ("BNY Mellon") as the master custodian for the Investment Funds under the fiduciary care of the Board of Regents of UT System and requested that the Board take appropriate action to retain BNY Mellon as master custodian, subject to approval by the Board of Regents of UT System. The current contract with BNY Mellon was effective March 30, 2007, and the last master custodian review was conducted in 2012. Upon motion duly made and seconded, the following resolution was unanimously adopted by the Board:

RESOLVED, that the UTIMCO Board approves the selection of Bank of New York Mellon ("BNY Mellon") as the master custodian for the investment assets under the fiduciary care of Board of Regents of The University of Texas System and directs UTIMCO to renegotiate or extend the existing contract with BNY Mellon, as considered necessary, subject to approval of the Board of Regents of The University of Texas System.

Director Handley also noted Ms. Gonzalez had reported to the Committee that there were no contracts, leases, or other commercial arrangements of $250,000 or more entered into during the quarter that needed to be reported. Ms. Gonzalez also reported on the UTIMCO Director Co-Investment Log.

Report from Risk Committee

Chairman Hildebrand asked Director Gauntt to provide a report from the Risk Committee. Director Gauntt reported that the Risk Committee met jointly with the Policy Committee and separately via teleconference on June 20, 2019. The Committee's agenda for the joint meeting included a discussion and appropriate action related to proposed amendments to the Investment Policy Statements. Its separate meeting included discussion and approval of the minutes of its February 19, 2019 meeting; review and discussion of compliance reporting; and a market and portfolio risk update.

Report from Policy Committee

Chairman Hildebrand asked Director Hicks to provide a report from the Policy Committee. Director Hicks reported that the Policy Committee met separately and jointly with the Risk Committee on June 20, 2019. The Joint Committee meeting agenda included discussion and appropriate action related to proposed amendments to the Investment Policy Statements. The Committee's separate meeting agenda included approval of the minutes of the November 29, 2018 meeting and discussion and appropriate action related to amendments to the Bylaws of the Corporation.

The Investment Management Services Agreement (IMSA) requires that UTIMCO review the current Investment Polices for each Fund at least annually. The review includes long-term investment return expectations and expected risk levels, strategic asset allocation targets and ranges, expected returns for each Asset Class and Fund, designated performance benchmarks for each Asset Class and such other matters as the UT Board or its staff designees may request. At the joint meeting, the Policy and Risk Committees approved the amendments to the Investment Policy Statements for the PUF, GEF, Long Term Fund ("LTF"), Permanent Health Fund ("PHF"), and ITF as proposed by the Team, subject to approval by the Board and the Board of Regents of UT System. No changes were proposed to the Investment Policy Statements of the Separately Invested Funds, Short Term Fund, or the Liquidity and Derivative Investment Policies. Upon motion duly made and seconded, the following resolution was unanimously adopted by the Board:

RESOLVED, that amendments to the Investment Policy Statements of the Permanent University Fund, General Endowment Fund, Permanent Health Fund, Long Term Fund, and Intermediate Term Fund, as presented be, and are hereby approved, subject to approval by the Board of Regents of The University of Texas System.

At the separate meeting of the Policy Committee, the Committee approved the Team's proposed amendments to the Corporation's Bylaws, subject to approval by the Board and the Board of Regents of UT

System. The proposed amendment to the Corporation's Bylaws eliminate term limits for the Chairman and Vice Chairman of the Board. Upon motion duly made and seconded, the following resolution was unanimously adopted by the Board:

> RESOLVED, that amendments to the UTIMCO Bylaws, as presented be, and are hereby, approved, subject to approval by the Board of Regents of The University of Texas System.

Executive Session

Prior to going into executive session, Chairman Hildebrand announced that, "The Board of Directors of The University of Texas/Texas A&M Investment Management Company having been duly convened in Open Session and notice of this meeting having been duly given, I hereby announce the convening of a closed meeting as an Executive Session to deliberate individual personnel compensation matters, including the CEO and Chief Investment Officer, pursuant to Texas Government Code Sections 551.074 and to consult with legal counsel regarding legal matters and pending and/or contemplated litigation pursuant to Section 551.071, Texas Government Code. The date is June 27, 2019, and the time is now 11:03 a.m." Except for Mr. Harris, Mr. Hall, Ms. Moeller, Ms. Gonzalez, and Mr. Somes, all others left the meeting at this time. Ms. Gonzalez and Mr. Somes left, and Ms. Lemke and Mr. Kyle joined, the meeting during the deliberation of individual personnel compensation matters. Mr. Harris, Mr. Hall and Ms. Moeller left the meeting during discussion of Mr. Harris' compensation.

Reconvene in Open Session

The Board reconvened in open session and Chairman Hildebrand announced that, "The Open Session of the Board of Directors of The University of Texas/Texas A&M Investment Management Company is now reconvened. The date is June 27, 2019, and the time is now 11:35 a.m. During the Executive Session, the Board deliberated individual personnel compensation matters, including the CEO and Chief Investment Officer, and consulted with legal counsel, but no action was taken nor decisions made, and no vote was called for or had by the Board in Executive Session."

Report from Compensation Committee

Chairman Hildebrand asked Director Rothrock to provide a report from the Compensation Committee. Director Rothrock stated that the Compensation Committee met on June 20, 2019. The agenda included approval of the minutes of the December 6, 2018 meeting; discussion and appropriate action related to the base salaries for the UTIMCO officers and other UTIMCO Compensation Program ("Plan") Participants for the 2019-2020 Fiscal Year, the CEO's Qualitative Performance Standards for the Plan for the Performance Period ending June 30, 2020, the Compensation Committee's recommendation for the base salary for the CEO for the 2019-2020 fiscal year, and the amendment of Table 1 of the Plan, effective July 1, 2019. The Compensation Committee also met in Executive Session for the purpose of deliberating individual personnel compensation matters. Upon motion duly made and seconded, the following resolutions were unanimously adopted by the Board:

> RESOLVED, that the Board of Directors of UTIMCO hereby approves the Base Salary of the Corporation's CEO for the Fiscal Year 2019-2020 in the amount of $828,000.

And

WHEREAS, Section 5.4(b) of the UTIMCO Compensation Program (the "Plan") provides that the Board will determine the Performance Standards of the CEO for each Performance Period; and

WHEREAS, the Board has reviewed the CEO's Qualitative Performance Standards for the Performance Period ending June 30, 2020, as prepared by the CEO, and recommended by the Compensation Committee and set forth in the document presented to the Board.

NOW, THEREFORE, be it:

RESOLVED, that the Board approves the Qualitative Performance Standards for the CEO for the Performance Period ending June 30, 2020, as set forth in the document presented to the Board.

And

WHEREAS, Section 7.2. of the UTIMCO Compensation Program (the "Plan") provides that UTIMCO, by action of its Board of Directors (the "Board"), has the right in its discretion to amend the Plan or any portion thereof from time to time; and

WHEREAS, the Plan requires Table 1 to be revised as necessary, for subsequent Performance Periods to set forth any changes or additions to the Eligible Positions, the Weightings for the Eligible Positions, the Award Opportunities, and any Applicable Deferral Percentage for each Eligible Position, for that Performance Period as soon as administratively practicable after confirmation of such Eligible Positions by the Board for such Performance Period and to be attached as Table 1 to the Plan; and

WHEREAS, the Board has reviewed the updated and amended Table 1 and approves the amendments as recommended by the Compensation Committee.

NOW, THEREFORE, be it:

RESOLVED, that the updated and amended Table 1, a copy of which is attached hereto, is hereby adopted and approved to replace the current Table 1, effective as of July 1, 2019.

Corporation Budget

Chairman Hildebrand asked Mr. Harris and Mr. Hall to discuss the Corporation's budget for the next fiscal year. Mr. Harris and Mr. Hall explained the changes to the proposed budget compared to the prior year's budget and actual for the last fiscal year. The Corporation's budget is subject to approval by the Board and the Board of Regents of UT System. Upon motion duly made and seconded, the following resolution was unanimously adopted by the Board:

RESOLVED, that the UTIMCO Management Fee of $49,868,696 and the Other Direct Fund Costs of $7,101,269 resulting in Total Fees of $56,969,965, Capital Budget of $536,000 and the Allocation Schedule; as provided to the Board for the period beginning September 1, 2019 through August 31, 2020, be, and are hereby, approved, subject to approval by the Board of Regents of The University of Texas System.

Adjourn

There being no further business to come before the Board, the meeting was adjourned at approximately 11:53 a.m.

Secretary: ___________________________
Joan Moeller

Approved: _____________________________ Date: _______________
Jeffery D. Hildebrand,
Chairman, Board of Directors of
The University of Texas/Texas A&M Investment Management Company

Table 1

Eligible Positions, Weightings, Award Opportunities, and Percentage of Award Deferred for each Eligible Position (for the Performance Periods Beginning After June 30, 2019)

	Weighting		Quantitative Weightings: Benchmark Performance: Entity				Award Opportunity (% of Base Salary)		
Eligible Position	**Quantitative**	**Qualitative**	**TEA**	**ITF**	**Asset Class**	**Peer Group**	**Threshold**	**Maximum**	**Percentage of Award Deferred**
Investment Professionals									
CEO & Chief Investment Officer	80%	20%	51.2%	12.8%	0.0%	16.0%	0%	450%	50%
Deputy Chief Investment Officer	80%	20%	51.2%	12.8%	0.0%	16.0%	0%	450%	50%
Senior Managing Director - Investments	70%	30%	31.4%	7.8%	16.8%	14.0%	0%	300%	45%
Managing Director - Investments	65%	35%	29.1%	7.3%	15.6%	13.0%	0%	250%	40%
Managing Director - Fixed Income	65%	35%	29.1%	7.3%	15.6%	13.0%	0%	200%	40%
Managing Director - TAA	65%	35%	41.6%	10.4%	0.0%	13.0%	0%	250%	40%
Managing Director - Risk Management	65%	35%	41.6%	10.4%	0.0%	13.0%	0%	200%	40%
Senior Director - Investments	60%	40%	26.9%	6.7%	14.4%	12.0%	0%	185%	35%
Senior Director - TAA	60%	40%	38.4%	9.6%	0.0%	12.0%	0%	185%	35%
Senior Director - Risk Management	60%	40%	38.4%	9.6%	0.0%	12.0%	0%	185%	35%
Senior Investment Counsel	50%	50%	32.0%	8.0%	0.0%	10.0%	0%	80%	25%
Director - Investments	50%	50%	22.4%	5.6%	12.0%	10.0%	0%	175%	30%
Director - TAA	50%	50%	32.0%	8.0%	0.0%	10.0%	0%	175%	30%
Director - Risk Management	50%	50%	32.0%	8.0%	0.0%	10.0%	0%	175%	30%
Director - Chief of Staff	50%	50%	32.0%	8.0%	0.0%	10.0%	0%	175%	30%
Investment Counsel	40%	60%	25.6%	6.4%	0.0%	8.0%	0%	60%	25%
Associate Director - Investments	40%	60%	17.9%	4.5%	9.6%	8.0%	0%	155%	20%
Associate Director - TAA	40%	60%	25.6%	6.4%	0.0%	8.0%	0%	155%	20%
Associate Director - Risk Management	40%	60%	25.6%	6.4%	0.0%	8.0%	0%	155%	20%
Associate - Investments	35%	65%	15.7%	3.9%	8.4%	7.0%	0%	145%	15%
Associate - TAA	35%	65%	22.4%	5.6%	0.0%	7.0%	0%	145%	15%
Associate - Risk Management	35%	65%	22.4%	5.6%	0.0%	7.0%	0%	145%	15%
Senior Analyst - Investments	30%	70%	13.4%	3.4%	7.2%	6.0%	0%	110%	0%
Senior Analyst - TAA	30%	70%	19.2%	4.8%	0.0%	6.0%	0%	110%	0%
Senior Analyst - Risk Management	30%	70%	19.2%	4.8%	0.0%	6.0%	0%	110%	0%
Analyst - Investments	20%	80%	9.0%	2.2%	4.8%	4.0%	0%	75%	0%
Analyst - TAA	20%	80%	12.8%	3.2%	0.0%	4.0%	0%	75%	0%
Analyst - Risk Management	20%	80%	12.8%	3.2%	0.0%	4.0%	0%	75%	0%
Support and Control Professionals									
Senior Managing Director	20%	80%	12.8%	3.2%	0.0%	4.0%	0%	90%	40%
Chief Technology Officer	20%	80%	12.8%	3.2%	0.0%	4.0%	0%	70%	30%
Corporate Counsel & Chief Compliance Officer	0%	100%	0.0%	0.0%	0.0%	0.0%	0%	70%	30%
Managing Director	20%	80%	12.8%	3.2%	0.0%	4.0%	0%	70%	30%
Senior Director	20%	80%	12.8%	3.2%	0.0%	4.0%	0%	60%	25%
Director	20%	80%	12.8%	3.2%	0.0%	4.0%	0%	60%	25%
Director - Security; Information Technology	20%	80%	12.8%	3.2%	0.0%	4.0%	0%	50%	20%

Agenda Item
UTIMCO Board of Directors Meeting
September 26, 2019

Agenda Item:	Discussion and Appropriate Action Related to Corporate Resolutions: Election of Corporate Officer and Designation of Plan Administrative Committee
Developed By:	Moeller, Gonzalez
Presented By:	Harris
Type of Item:	Action required by UTIMCO Board
Description:	Mr. Harris will request that Patrick Pace, M.D. be appointed an officer of the Corporation. Managing Directors are considered officers of the Corporation and Dr. Pace was appointed Managing Director - Private Equity, effective September 1, 2019. Mr. Harris will also recommend appointments to the Plan Administrative Committee. The Corporation maintains two deferred compensation plans for employees, the UTIMCO 403(b) Tax Sheltered Annuity Plan available to all employees and the UTIMCO 457(b) Deferred Compensation Plan for a select group of management and highly compensated employees (the “Plans”). General administration of the Plans is vested in a Plan Administrative Committee (“Committee”) of UTIMCO employees appointed by the UTIMCO Board. Due to the retirement of a current member of the Committee, Melynda Shepherd who also served as the Committee Chair, a replacement member will be appointed. Michael Dean was recently hired as the new Senior Director – Human Resources and he will replace Ms. Shepherd as a member and as the designated Chair. Rich Hall is also being recommended as a new member of the Committee. Mr. Harris and Joan Moeller are currently members of the Committee and will remain on the Committee.
Recommendation:	Mr. Harris will request that the Board approve Patrick Pace’s appointment as a corporate officer and the designation of a Plan Administrative Committee for both Plans.
Reference:	None

RESOLUTION RELATED TO CORPORATION OFFICER

RESOLVED, that Patrick Pace, M.D. is hereby appointed to the office of Managing Director of the Corporation to serve until the next Annual Meeting of the Corporation or until his resignation or removal.

RESOLUTION RELATED TO PLAN ADMINISTRATIVE COMMITTEE

RESOLVED, that the following employees be designated as the Plan Administrative Committee, responsible for general administration of both the 403(b) Tax Sheltered Annuity Plan and 457(b) Deferred Compensation Plan of the Corporation.

Britt Harris	President, CEO and Chief Investment Officer
Rich Hall	Deputy Chief Investment Officer
Joan Moeller	Senior Managing Director and Chief Operating Officer
Michael Dean	Senior Director – Human Resources

Agenda Item
UTIMCO Board of Directors Meeting
September 26, 2019

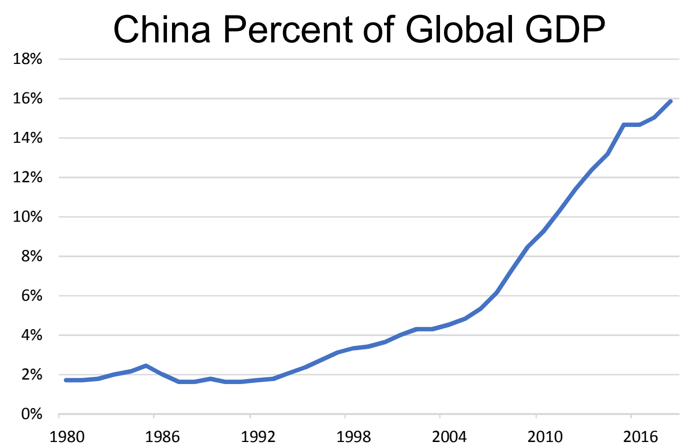
Agenda Item:	Presentation by Mr. Bob Prince, Co-Chief Investment Officer for Bridgewater Associates
Developed By:	Team
Presented By:	Prince, Harris
Type of Item:	Information Item
Description:	Mr. Harris will introduce Mr. Bob Prince, Co-Chief Investment Officer for Bridgewater Associates. Mr. Prince will present an overview of investing in China.
Reference:	*Investing in China Strategic Considerations* presentation

Bob Prince
Bridgewater Associates

1

UTIMCO's China History

US GDP	**$20.5 Trillion**
China GDP	**$13.6 Trillion**



UTIMCO Investments

- First investment in 2007
- Over $2 Billion Current Exposure
  - Public Equity: $1.6 B
  - Private Equity: $0.8 B
- Eight in-country relationships
- Returns Since Inception
  - Public: +18 – 22%
  - Private: +17 – 28%

As of December 2018
Source: World Bank, UTIMCO Calculations

BRIDGEWATER

Presented to: UTIMCO Board

Investing in China

Strategic Considerations

Bob Prince, Co-Chief Investment Officer

September 2019

One Glendinning Place
Westport, CT 06880
(203) 226-3030
www.bridgewater.com

STRATEGIC MAP

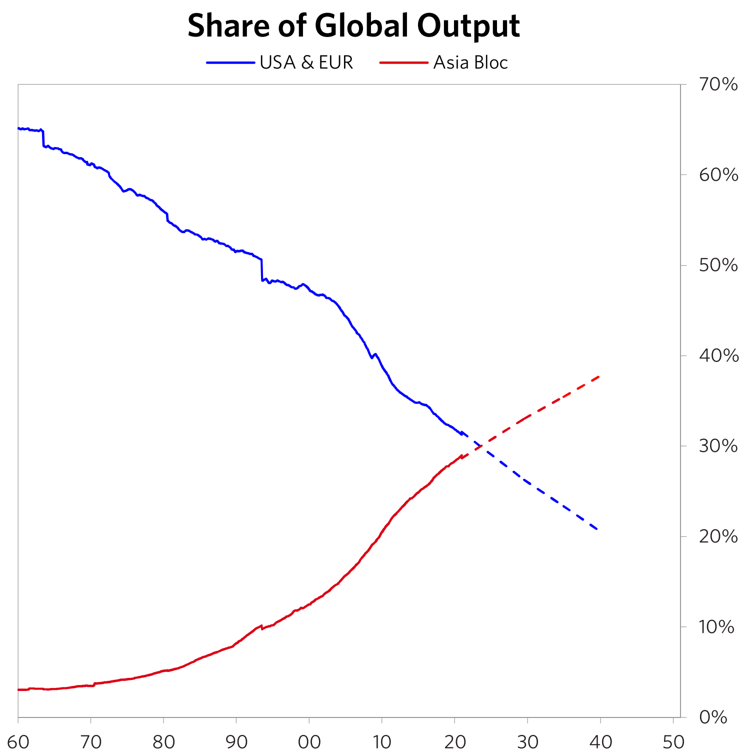
Topical Issues	Geographic Orientation	Assets Held
Economics	China	Private Assets
Policy	Asia Bloc	Public Securities
Ethics	The East	Asset Classes
	Global	Global Assets

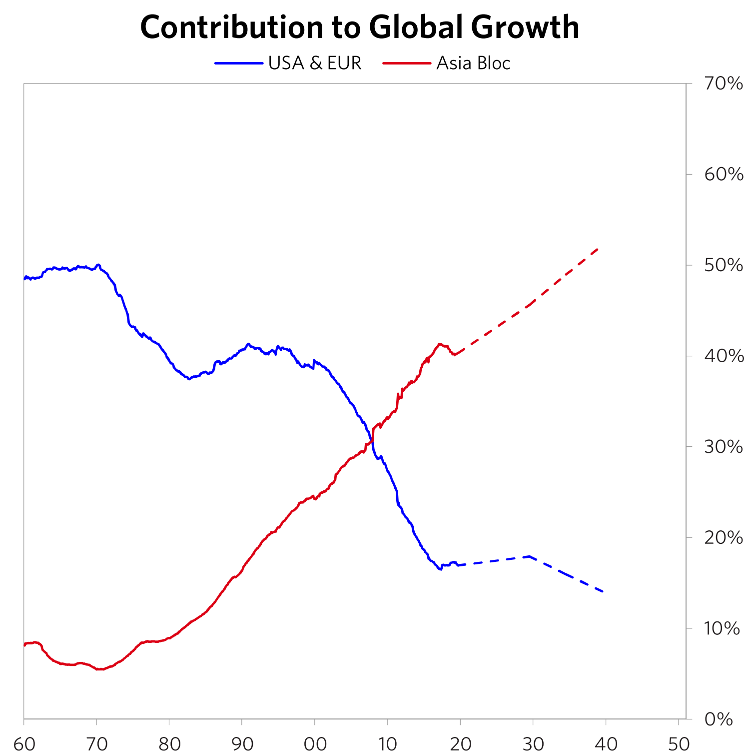
"Cross the river by feeling the stones." Chinese proverb

"Measure twice, and cut once." English proverb

"The prudent sees danger and hides himself, but the simple go on and suffer for it." Proverbs 27:12

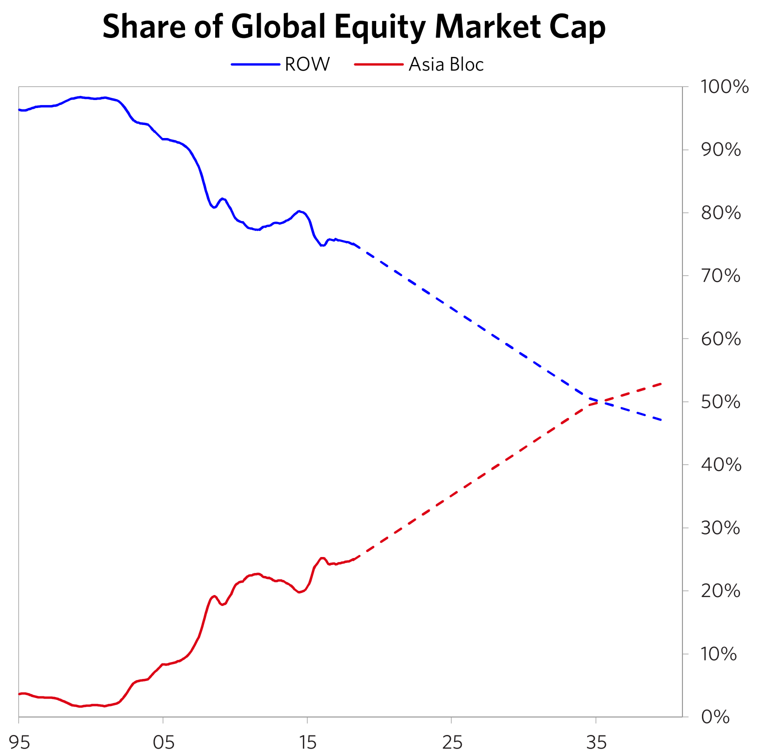
THE RISE OF AN INCREASINGLY POWERFUL ASIA ECONOMIC BLOC

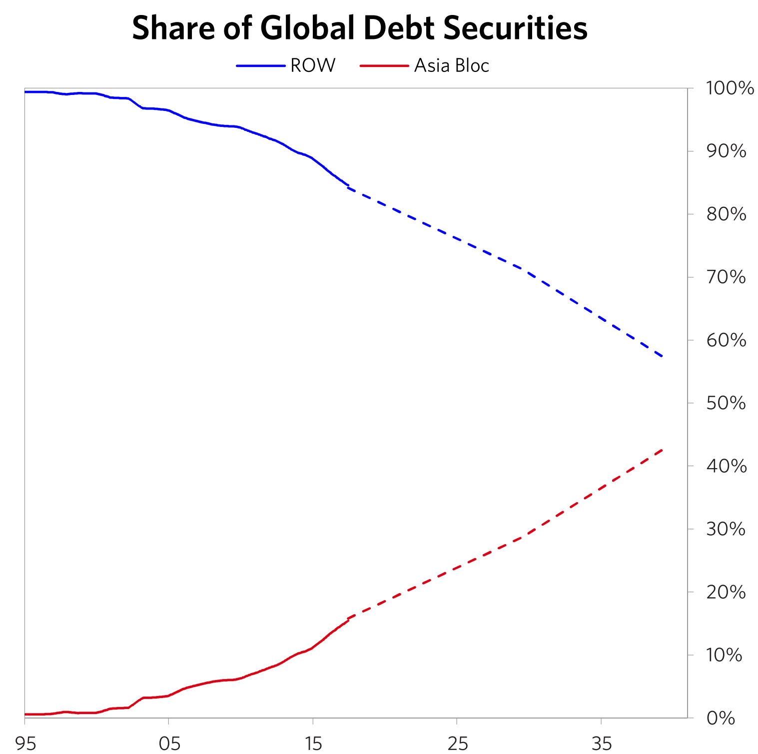




Asia Bloc includes the following regions: China, Hong Kong, Korea, Malaysia, Singapore, Taiwan, and Thailand. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

FINANCIAL MARKETS ARE LAGGING BUT CATCHING UP TO THE MAGNITUDE OF UNDERLYING ECONOMIC CASHFLOWS





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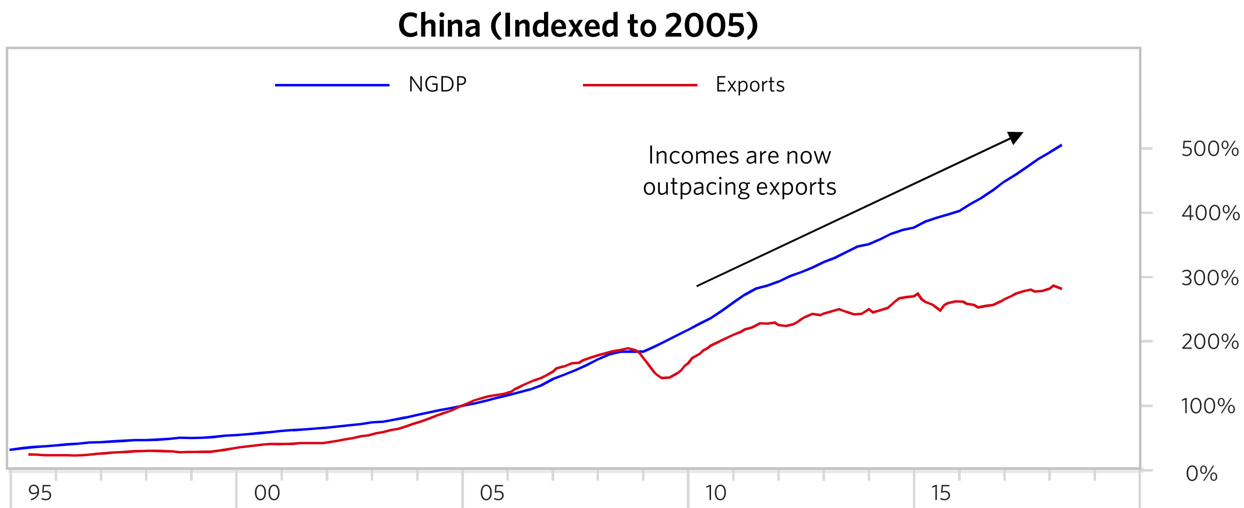
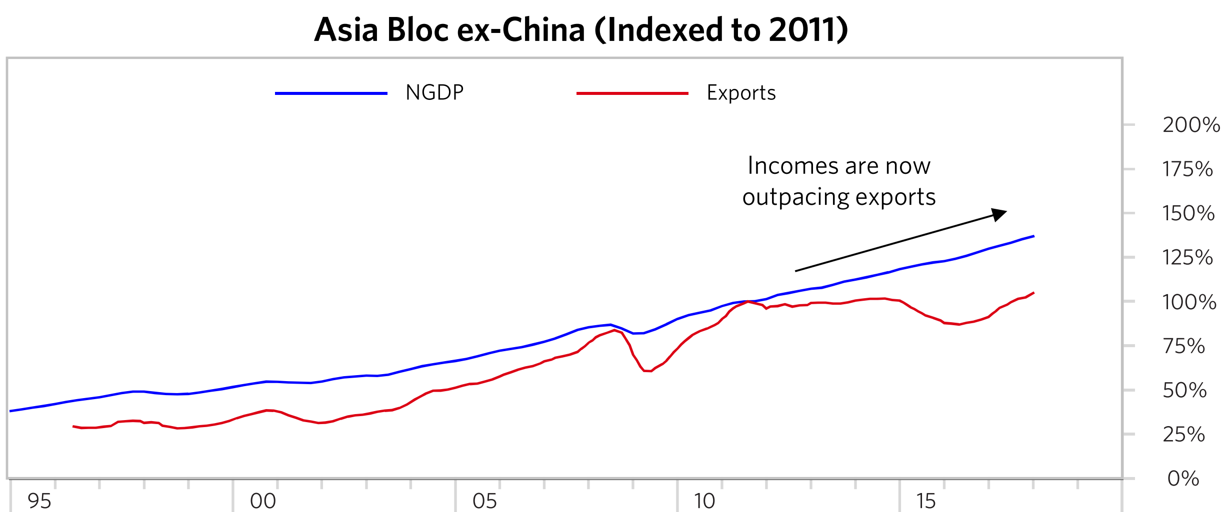
Assessing the Economics

INCREASINGLY INDEPENDENT AND INWARDLY FOCUSED

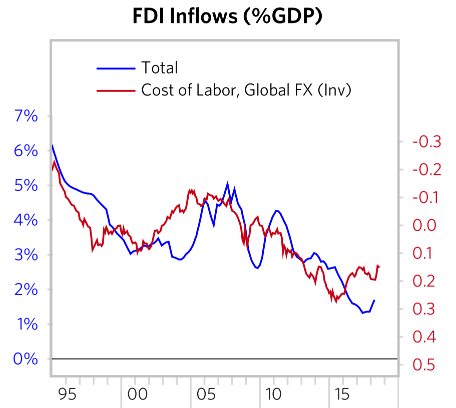


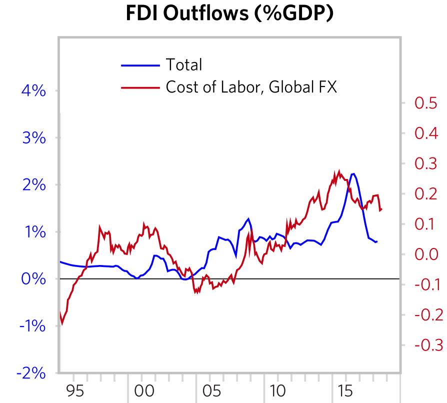


Asia Bloc includes the following regions: China, Hong Kong, Korea, Malaysia, Singapore, Taiwan, and Thailand. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

AS THE COST OF CHINA LABOR HAS RISEN, INVESTMENT AND PRODUCTION HAVE SPREAD TO OTHER ASIAN ECONOMIES

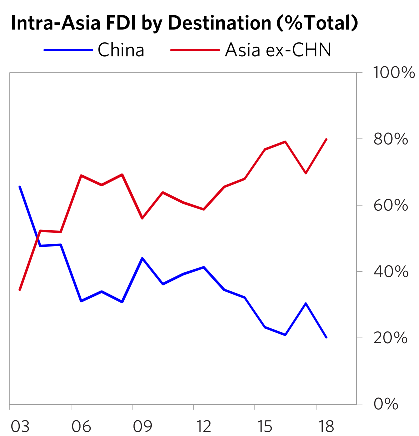
Less China FDI inflow

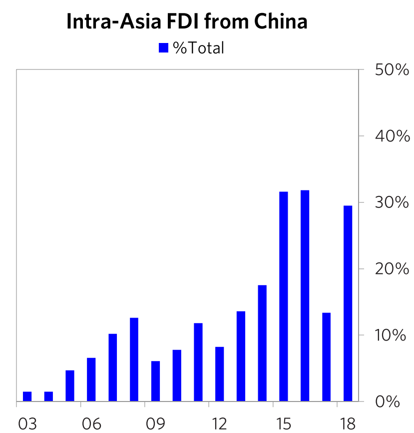




More China FDI outflow

More FDI to Asia ex-China



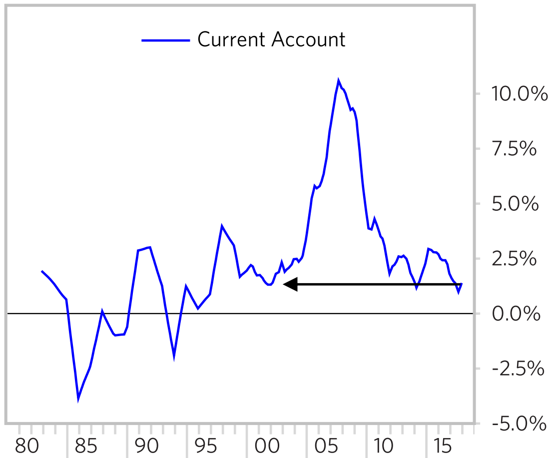


More China FDI to Asia ex-China

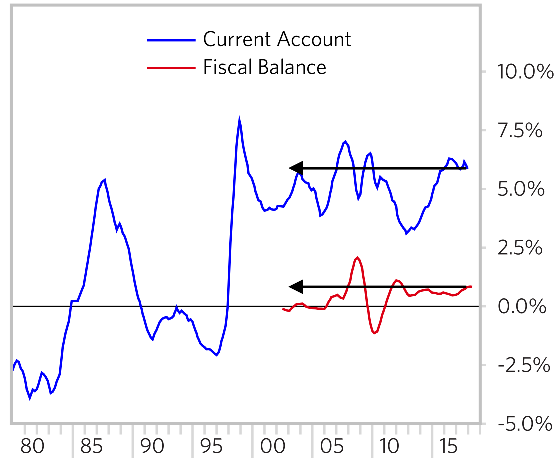
Asia Bloc includes the following regions: China, Hong Kong, Korea, Malaysia, Singapore, Taiwan, and Thailand. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

HIGH SAVINGS AND HIGH ROI FUEL INWARD INVESTMENT, RAISING INCOMES AND INCREASING INDEPENDENCE

China (%GDP)



Asia Bloc ex-China (%GDP)



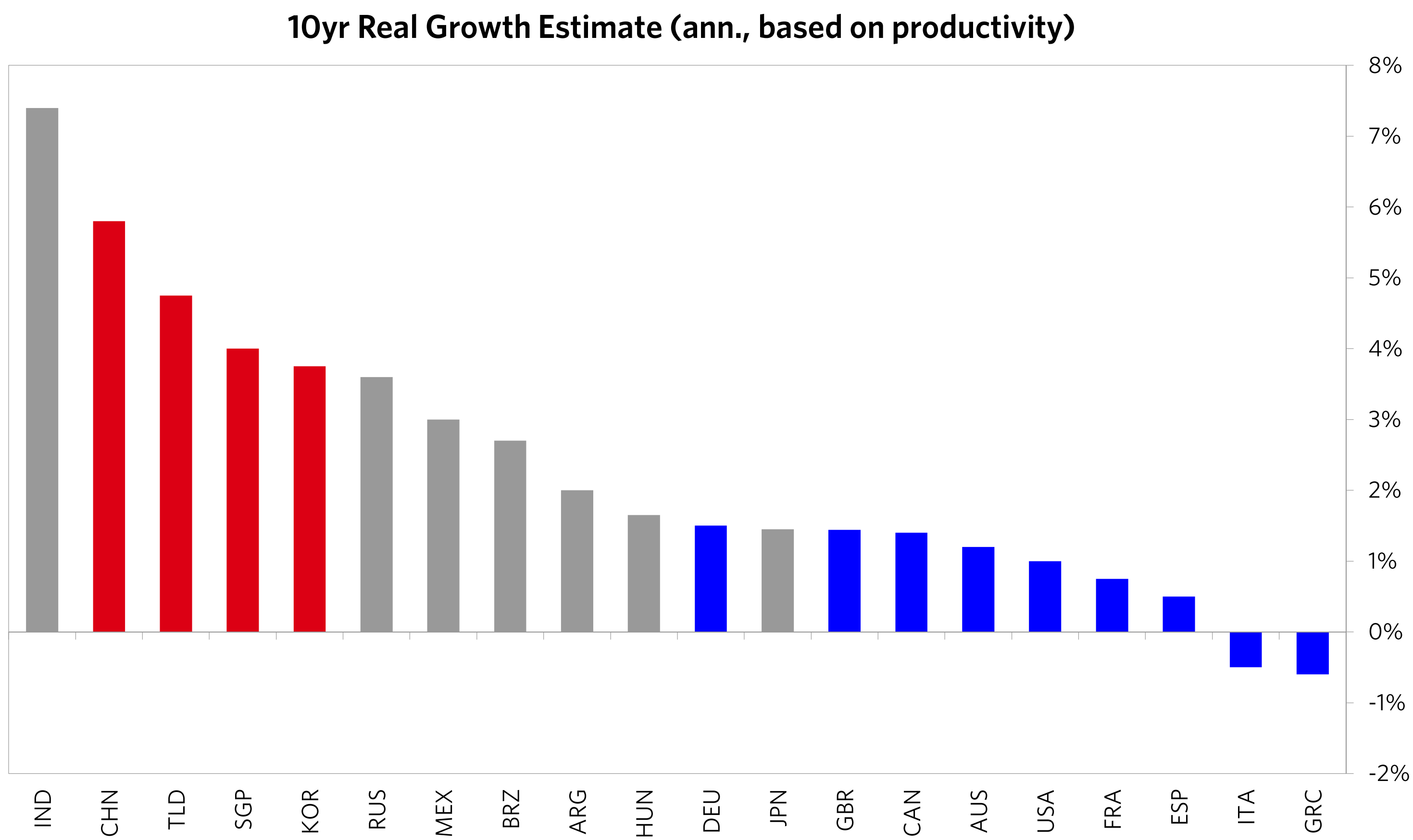
Inward FDI Rates of Return (2012-2017, Ann)

	2012	2013	2014	2015	2016	2017
Developed World	6.7%	6.3%	6.6%	5.7%	6.2%	5.7%
Asia	10.5%	10.8%	10.6%	9.9%	9.5%	9.1%
Asia Bloc	11.5%	11.8%	11.7%	11.0%	10.3%	10.1%
Latin America	7.9%	6.7%	6.6%	5.2%	5.3%	5.6%

Strong return on investment

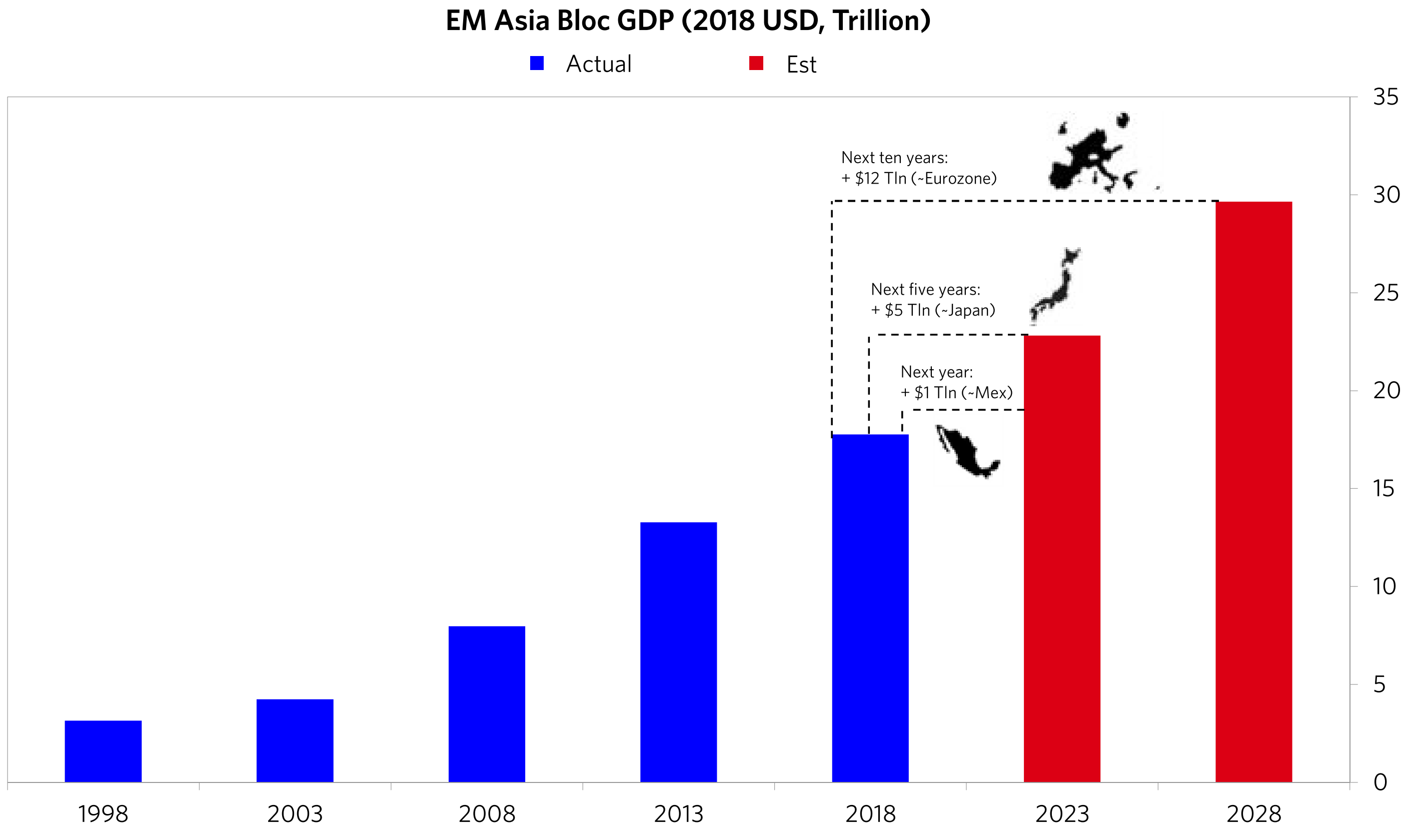
Asia Bloc includes the following regions: China, Hong Kong, Korea, Malaysia, Singapore, Taiwan, and Thailand. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

LONG TERM PROSPECTS ARE FAVORABLE



Please review the "Important Disclosures and Other Information" located at the end of this presentation.

COMPOUNDING HIGH GROWTH RATES FROM HIGH LEVELS OF OUTPUT IMPLIES HUGE IMPACTS IN COMING YEARS



Asia Bloc includes the following regions: China, Hong Kong, Korea, Malaysia, Singapore, Taiwan, and Thailand. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

CHINA CASH FLOWS ARE BIG AND GROWING FAST

	2007		2017		2027 (Est)	
USD (Trillions)	**USA**	**China**	**USA**	**China**	**USA**	**China**
Nominal GDP	$15	$4	$19	$13	$28	$25
Capital Expenditure	$2	$1	$2	$4	$4	$5
Exports	$2	$3	$2	$5	$3	$9
Personal Consumption	$10	$1	$13	$5	$19	$12

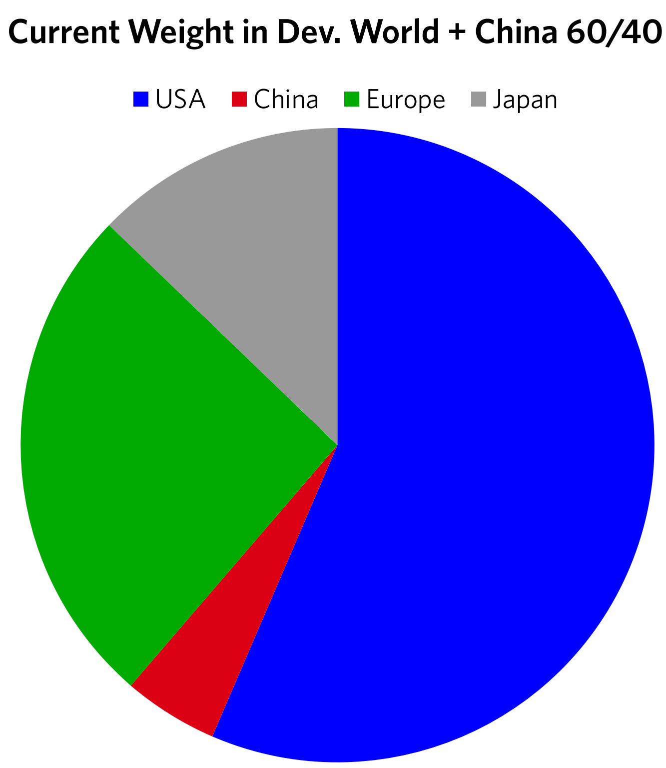
THE SECURITIZATION OF CHINA CASH FLOWS IS GROWING RAPIDLY

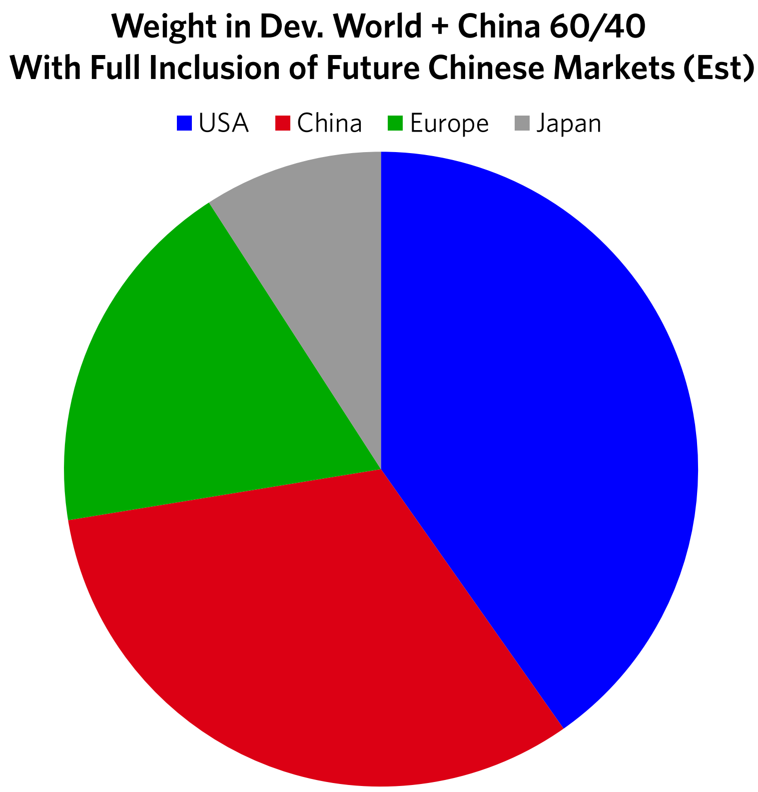
Value of Securitized Assets as Percent of Nominal GDP

	2013	2017	2021 (Est)
USA	230%	250%	270%
China	100%	160%	220%

Please review the "Important Disclosures and Other Information" located at the end of this presentation.

CHINESE MARKETS WILL SOON BE AS IMPORTANT AS THE U.S.





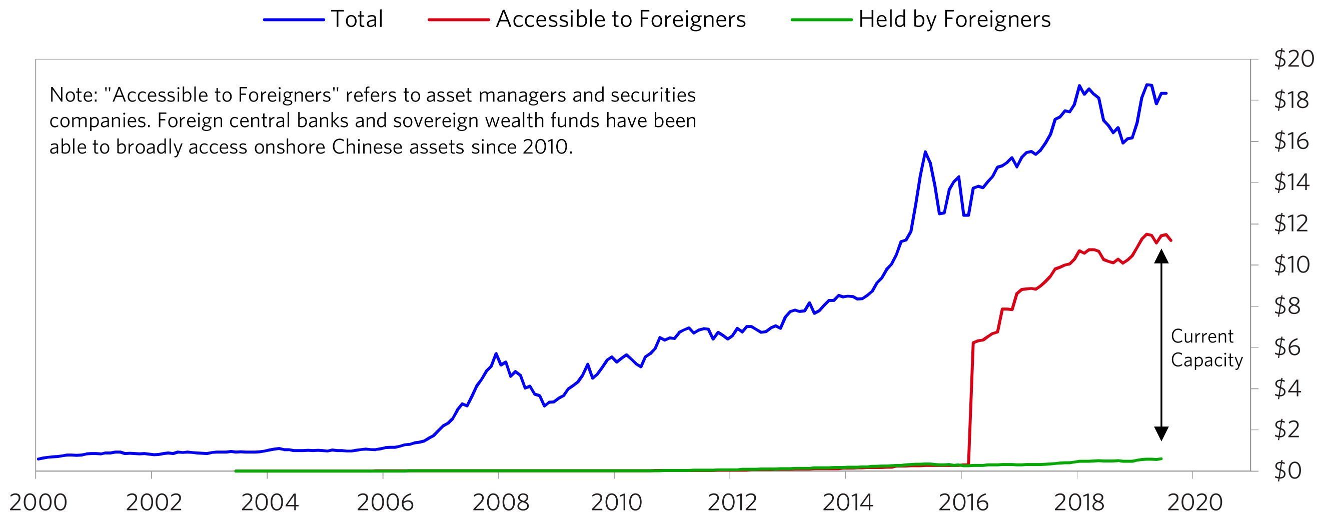
Dev. World + China 60/40 refers to a portfolio consisting of a 60% equities and 40% nominal bonds investment in the shown regions. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

OPENING UP IS GOING FASTER THAN UTILIZATION

Global Rankings of Asset Markets (USD, Bln)

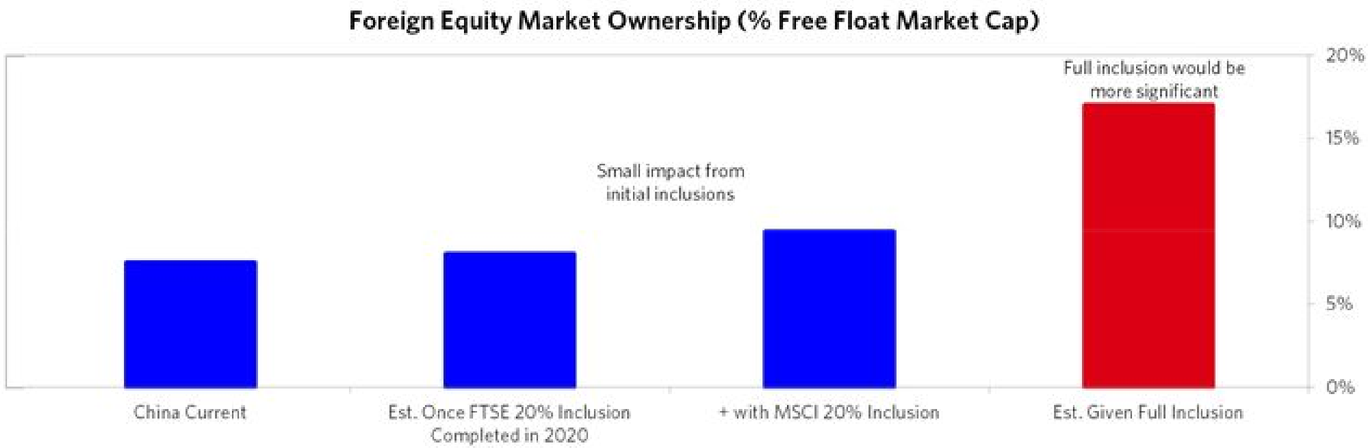
Rank	Equity Market Cap		Gov't Bonds Outstanding	
1	United States	$31,422	United States	$12,373
2	China	$8,897	Japan	$8,410
3	Japan	$5,478	China	$7,546
4	United Kingdom	$2,725	United Kingdom	$2,651
5	France	$2,451	France	$2,173

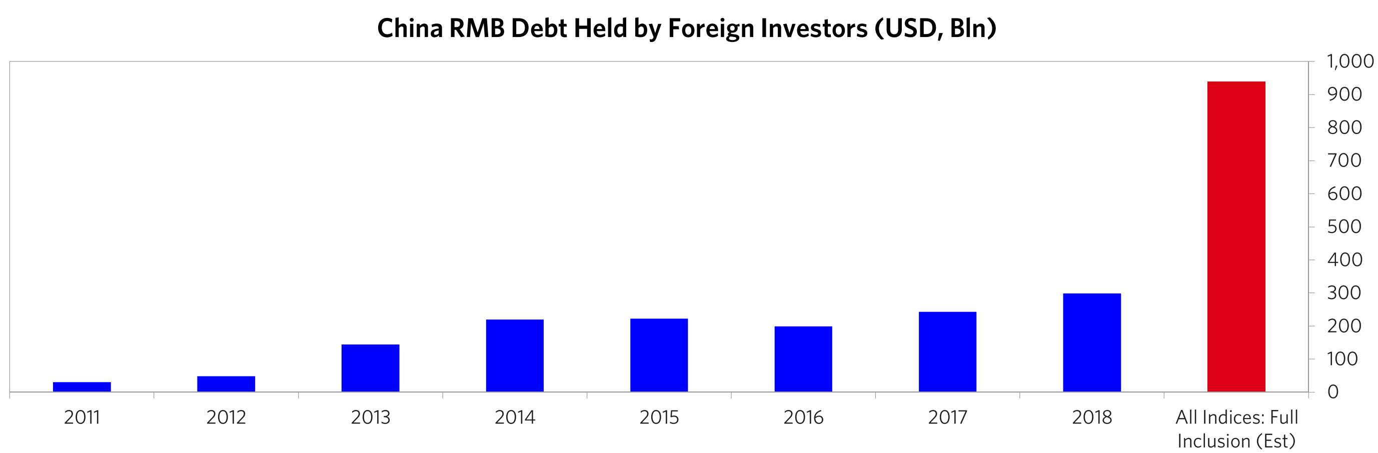
Chinese Domestic Bond/Equity Markets (USD, Tln)



Updated through August 2019. Foreign ownership of onshore Chinese equities (A-shares) is limited to 30% of the market cap of any individual stock. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

A POTENTIAL $1.5 TRILLION SHIFT AS INDICES INCLUDE CHINA



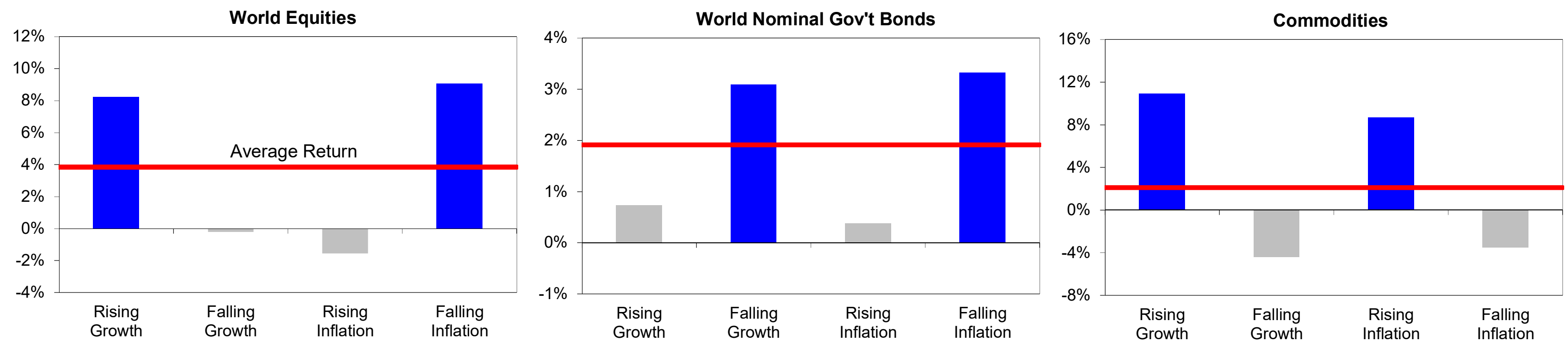


Data through 2018. Estimates are based on Bridgewater analysis. Please review the “Important Disclosures and Other Information” located at the end of this presentation.

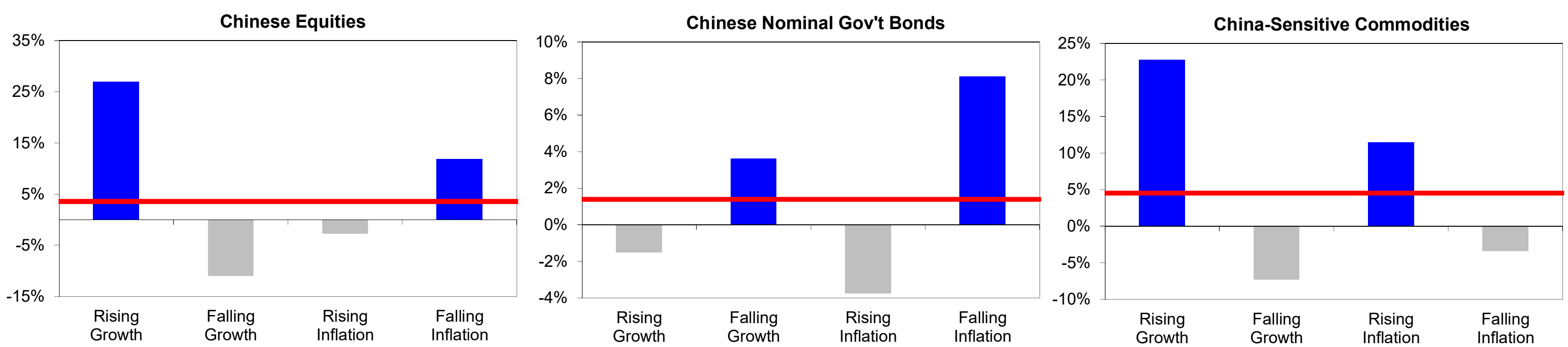
The Workings of Chinese Markets

CHINESE ASSETS HAVE SIMILAR MACRO ENVIRONMENTAL BIASES AS GLOBAL ASSETS

Global Asset Class Annual Excess Returns in Economic Environments (1970 – Present)



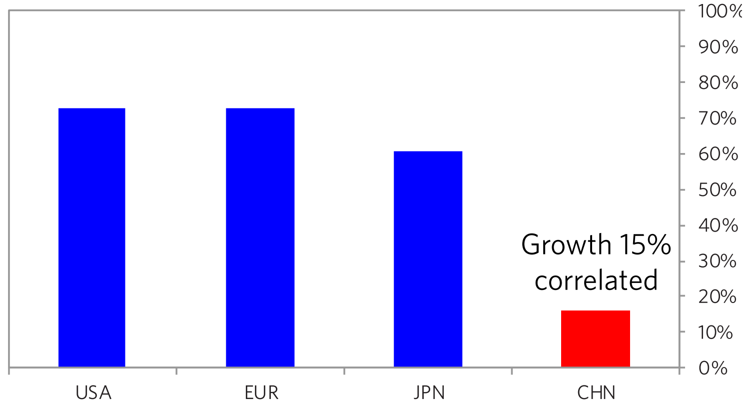
Chinese Asset Class Annual Excess Returns in Economic Environments (2002 – Present)



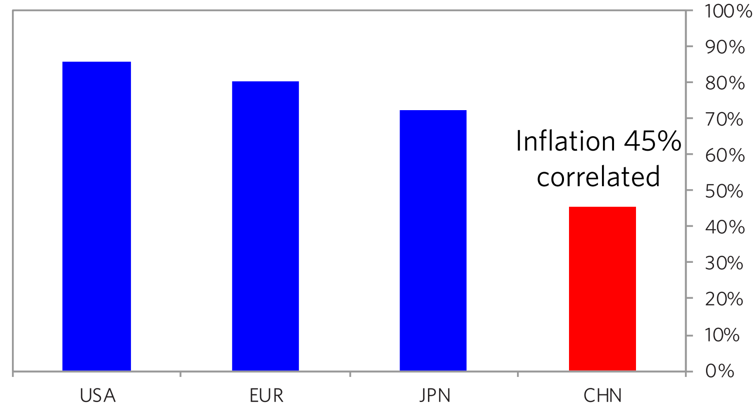
Data for global assets from Jan 1970 - Mar 2019, and Chinese assets from Aug 2002 - Mar 2019. A rising (falling) inflation month is defined as a month in which the current rate of inflation is greater (lower) than the 12-month moving average rate of inflation. A rising (falling) growth month is defined as a month in which the current rate of real GDP growth is greater (lower) than the 12-month moving average rate of real GDP growth. Analysis uses world growth and inflation except for Chinese Equities, Chinese Bonds, and China-Sensitive Commodities which use Chinese growth and inflation. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

A LARGE, INDEPENDENT MONETARY AND CREDIT SYSTEM OFFERS TRUE GLOBAL DIVERSIFICATION POTENTIAL

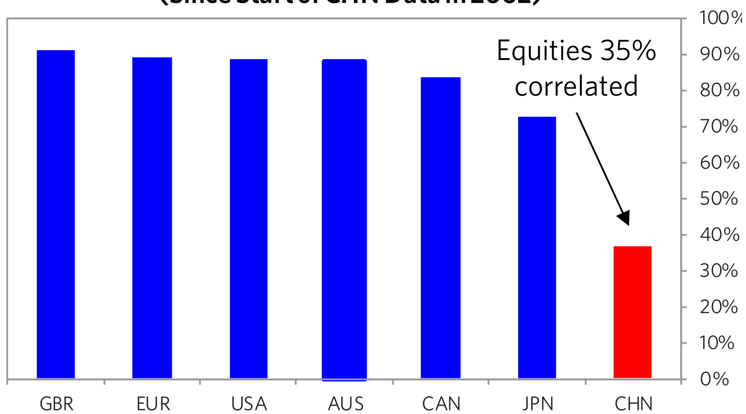
Growth: Correlation to Dev World (Since Start of CHN Data in 1991)



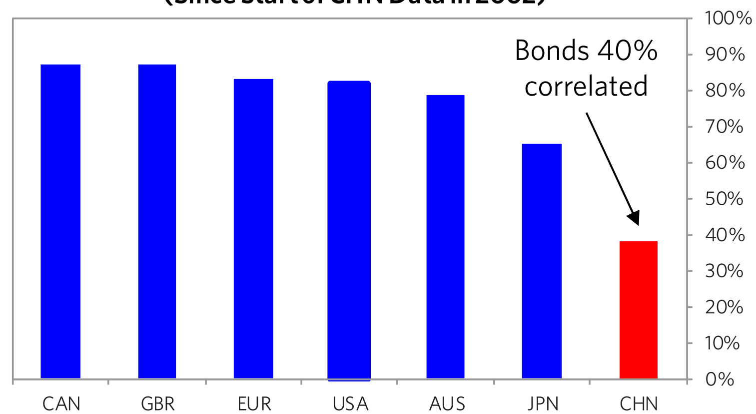
Inflation: Correlation to Dev World (Since Start of CHN Data in 1985)



Equity Returns: Correlation to Dev World (Since Start of CHN Data in 2002)

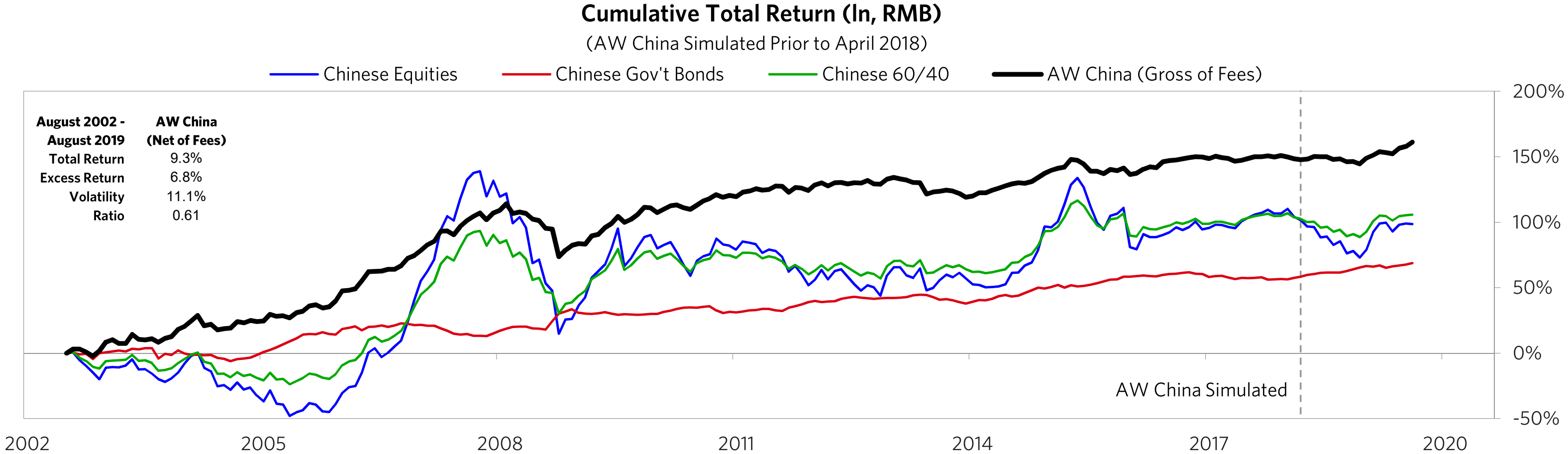


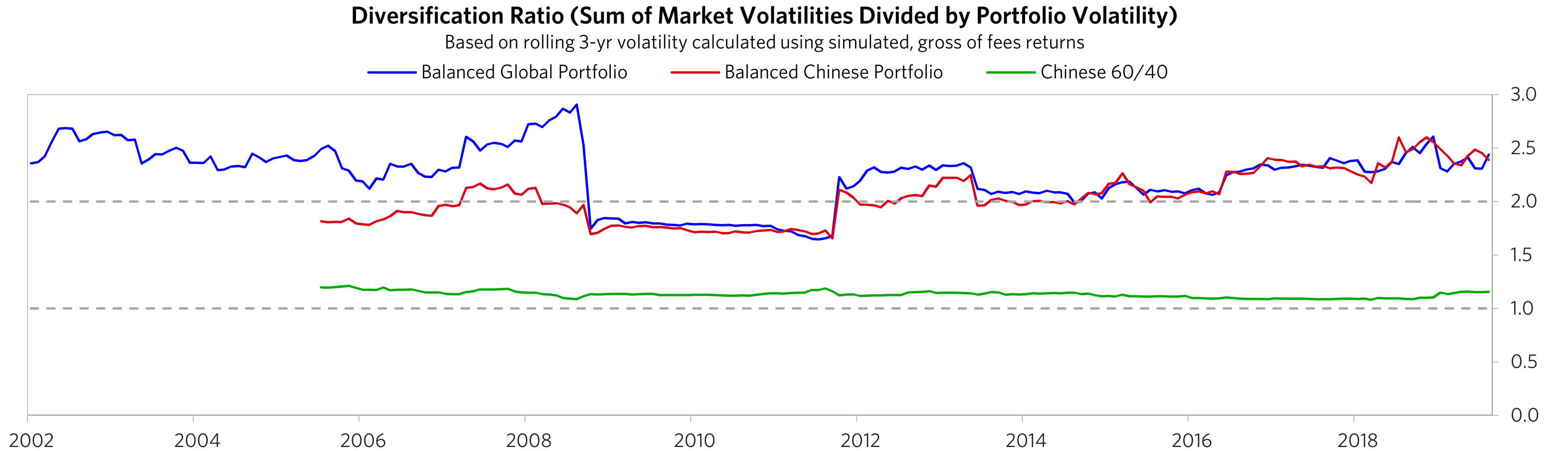
Sov Bond Returns: Correlation to Dev World (Since Start of CHN Data in 2002)



Updated as of data available through July 2019. "Correlation to Dev World" refers to the correlation of growth, inflation or returns in that country to the developed world, excluding the referenced country when that country is part of the developed world. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

GOOD DIVERSIFICATION POTENTIAL WITHIN CHINESE MARKETS



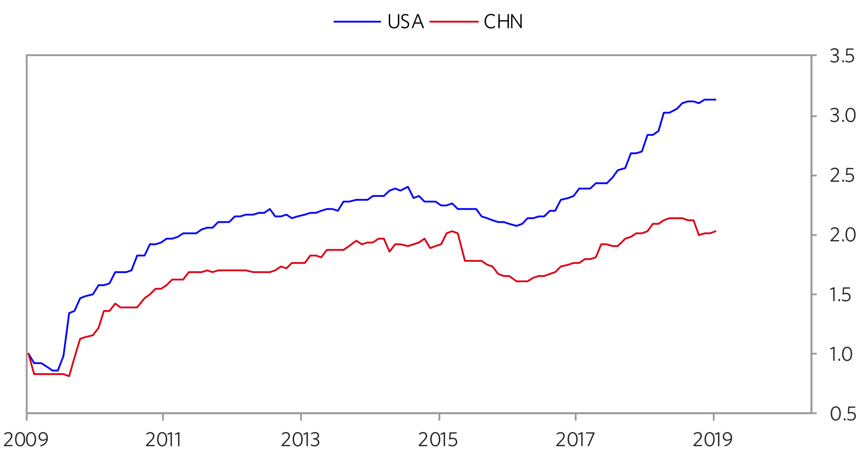


Performance from August 2002 through August 2019. The "Chinese 60/40" refers to 60% capital weight in Chinese equities and 40% capital weight in Chinese nominal bonds. "Balanced Chinese Portfolio" and, prior to April 2018, All Weather China are simulated using an All Weather-like asset allocation in Chinese terms using Chinese assets and global assets where necessary for diversification (please see "All Weather China Asset Mix Disclosure"). "Balanced Global Portfolio" is simulated using the All Weather Asset Mix as described in the "All Weather Asset Mix Disclosure." It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology and the underlying market data. HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING OR THE COSTS OF MANAGING THE PORTFOLIO. ALSO, SINCE THE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THE RESULTS MAY HAVE UNDER OR OVER COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. Past performance is not indicative of future results. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

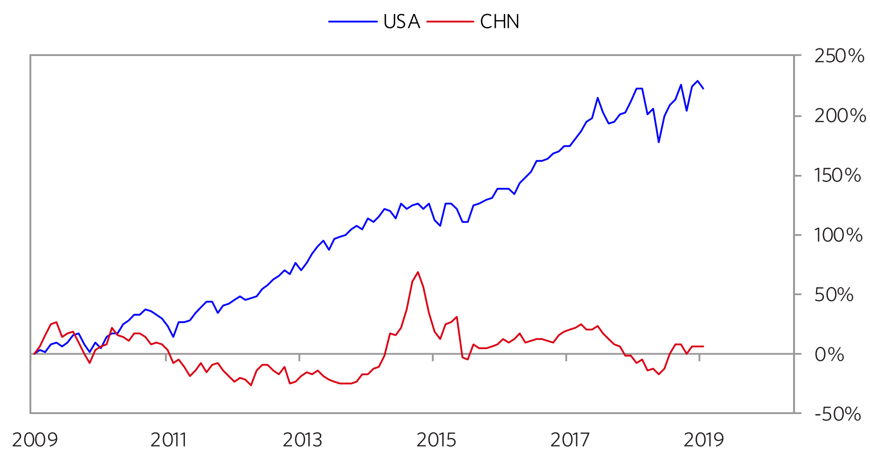
RETURNS: LOOKING BACK AND LOOKING FORWARD

	Equities		Bonds		Currency (Cumulative Change)	
	U.S.	China	U.S.	China	U.S. (vs. TWI)	China (vs. USD)
Last 10 Years (Total Return, local FX, ann.)	13%	3%	5%	4%	6%	5%
Expected 10-year Return (Based on Current Valuations)	1-3%	8-10%	1-3%	2-4%	At Fair Value	At Fair Value

EPS (Last 10 Years)

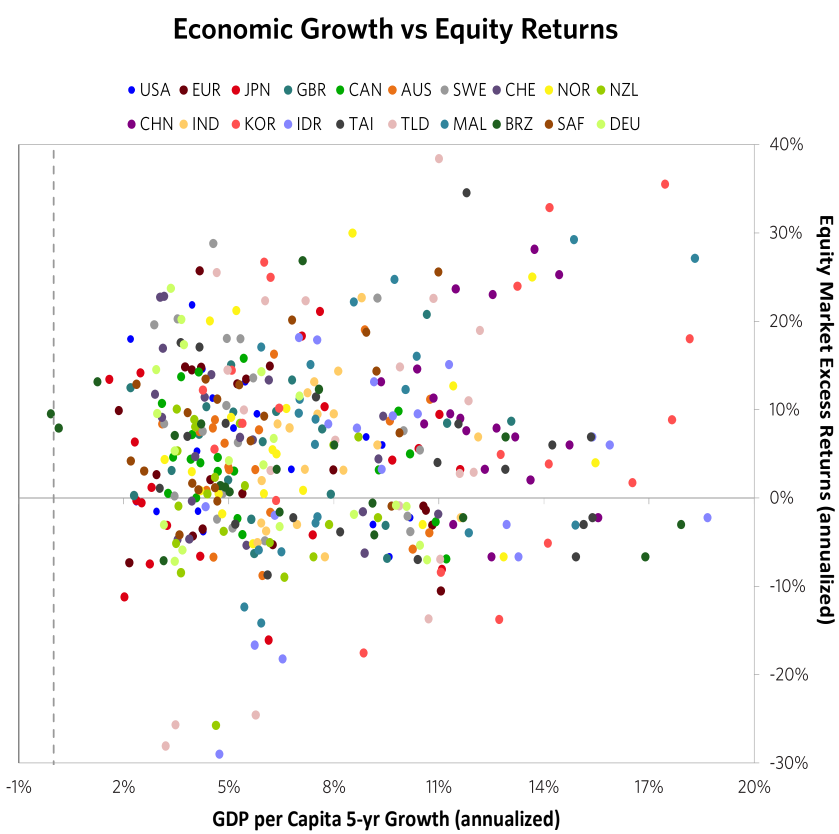


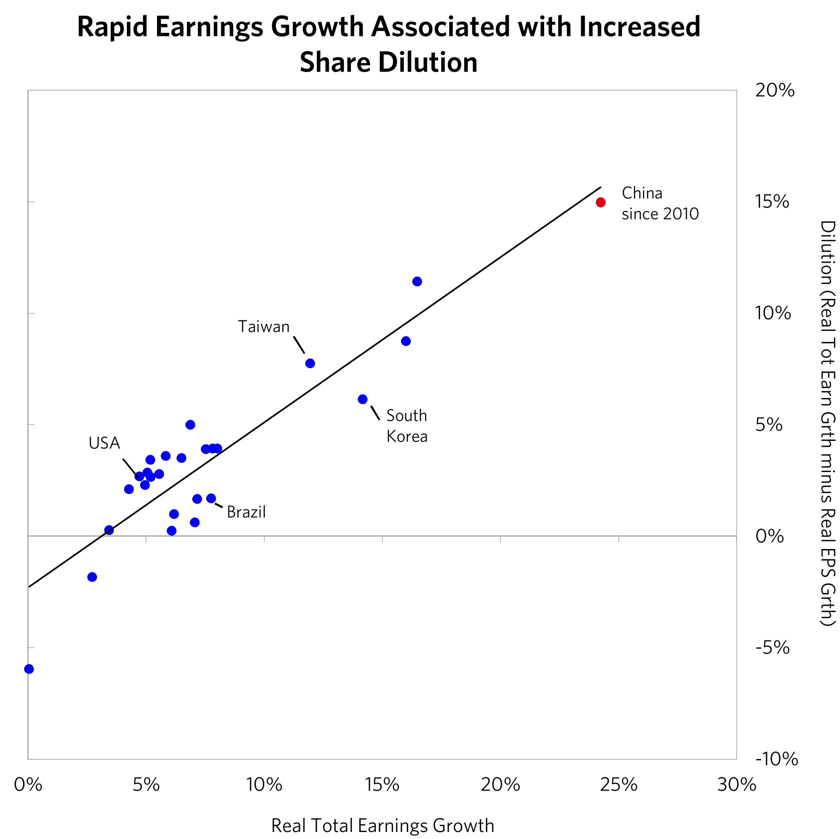
Cumulative Excess Returns (Last 10 Years)



Data through August 2019. Realized returns are shown in local currency terms. Expected 10–year returns are based on Bridgewater estimates. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

HIGH GROWTH RATES DO NOT NECESSARILY IMPLY HIGH RETURNS





Please review the "Important Disclosures and Other Information" located at the end of this presentation.

Government Policy

SAME ECONOMIC MACHINE, BUT GREATER COORDINATION OF MONETARY AND FISCAL POLICY

- Same drivers of growth:
  1) Productivity
  2) Short-term debt cycle
  3) Long-term debt cycle

- Same two policy levers:
  1) Monetary policy
  2) Fiscal policy

- To achieve same three equilibriums:
  1) Debt vs. income
  2) Operating rate
  3) Sustainable asset pricing

CHINA'S FOUR BIG DOMESTIC CHALLENGES (PLUS A TRADE WAR)

So far, they have effectively managed:

- Debt restructuring
- Economic restructuring
- Capital markets restructuring
- Balance of payments

See appendix for our *Observations*, "Why We Think Chinese Economic Leadership is Very Capable," which gives more detail on the specific actions of policy makers to manage these challenges.

THEY TELL YOU WHAT'S COMING OVER TIME

Long-term plans are communicated and implemented:

- "Reform and opening up" has been a consistent intention since 1979
- 5-year plans lay out near-term goals
- Made in China 2025
- "Dream of national rejuvenation" 2049

A GOOD TRACK RECORD OF DEVELOPMENT AND POLICY IMPLEMENTATION

China's Development since 1978

	1978	1998	2018
RGDP per Capita*	650	3,244	15,309
Share of World GDP	2%	7%	22%
Population Below the Poverty Line ($1.90/day*)	88.3%	41.0%	0.7%
Life Expectancy	66	71	76
Infant Mortality Rate (per 1000 births)	53	33	8
Urbanization	18%	34%	57%
Literacy	70%	93%	96%
Average Years of Education	4.4	6.6	7.7

Five Year Plans scoreboard:**

80% of 2006 goals achieved through 2011.

90% of 2011 goals achieved through 2016.

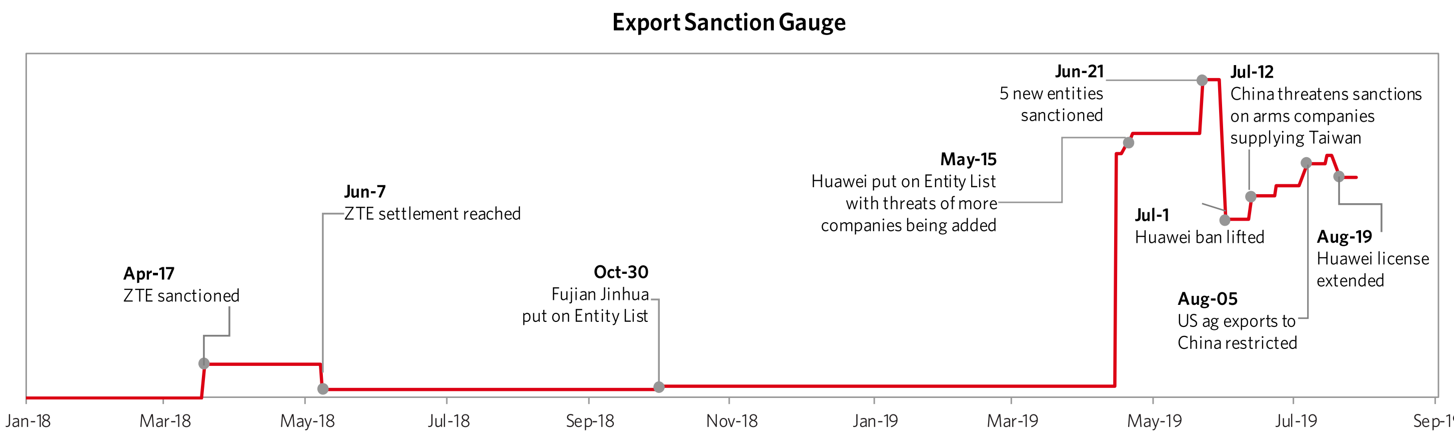
Pursuing 2016 goals with metrics to assess achievement.

*2011 USD, PPP Adjusted. Please review the "Important Disclosures and Other Information" located at the end of this presentation.
**Score was measured as the percentage of high level goals completed, with high level goals defined on slide 36. Goals that were either clearly achieved or mostly achieved were counted as completed. Difficult to measure goals were excluded in this calculation.

Unique Risks

GEOPOLITICAL CONFLICT IS NOT GOING AWAY

- A near-term trade war: tariffs and sanctions are used as weapons (e.g. Huawei, sanctioning parties doing business with Russia, etc.)



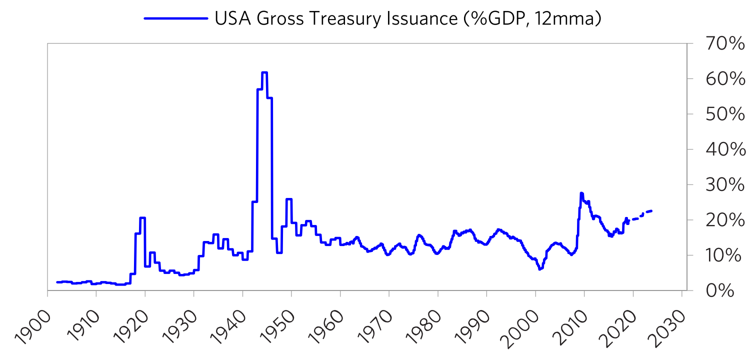
China Tit-for-Tat Gauge based on Bridgewater analysis. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

MIGHT THE TRADE WAR LEAD TO CAPITAL WARS, OTHER WARS?

Holdings of U.S. Treasury Debt

Country	Jun 2019
Japan	1122.9
China, Mainland	1112.5
United Kingdom	341.1
Brazil	311.7
Ireland	262.1
Switzerland	232.9
Luxembourg	231.0
Cayman Islands	226.6
Hong Kong	215.6
Belgium	203.6
Saudi Arabia	179.6
Taiwan	175.1
India	162.7
Singapore	139.6
France	131.6
Korea	115.2
Canada	111.6
Norway	99.3
Thailand	83.8
Germany	79.2
Bermuda	73.9
United Arab Emirates	51.5
Sweden	49.4
Mexico	49.0
Netherlands	47.9
Italy	45.4
Kuwait	44.4
Spain	42.6
Israel	39.5
Australia	39.2
Iraq	34.7
Philippines	32.2
Colombia	31.1
All Other	517.7
Grand Total	6636.3
Of which:	
For. Official	4141.7
Treasury Bills	284.9
T-Bonds & Notes	3856.8

Heavy Treasury Issuance Ahead



USA Gross Issuance by 2023 Projections (%GDP)

Avg Growth Rate \ Avg Deficit Size	0%	-2%	-4%	-6%	-8%
6%	11%	15%	18%	21%	25%
4%	12%	16%	19%	23%	26%
2%	14%	17%	21%	24%	28%
0%	15%	19%	22%	26%	30%
-2%	17%	20%	24%	28%	32%

Data from Department of the Treasury. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

STRUCTURAL CONFLICT WILL BE DIFFICULT TO MANAGE

- Conflict between US and China is an ideological conflict of comparable powers in a small world.
- The two countries have two different systems – the US is bottom-up and China is top-down.
- "Thucydides Trap": An upstart to challenge the incumbent.
  - 12 of the last 16 instances of a Thucydides trap led to war, but this time all are aware.
- In a win-lose situation, picking a winner will not be obvious.

COMMON QUESTIONS

- Money leaving the side door?
- Affiliated companies getting the best pieces of business?
- What should I think of state-owned enterprises?
- Equitable treatment of all shareholders?
- Can I trust an audit?
- Reliability of rule of law?
- Can I get my money out?
- Government intervention in markets?
- How do you trade through market freezes and interventions?
- Etc.

APPENDIX

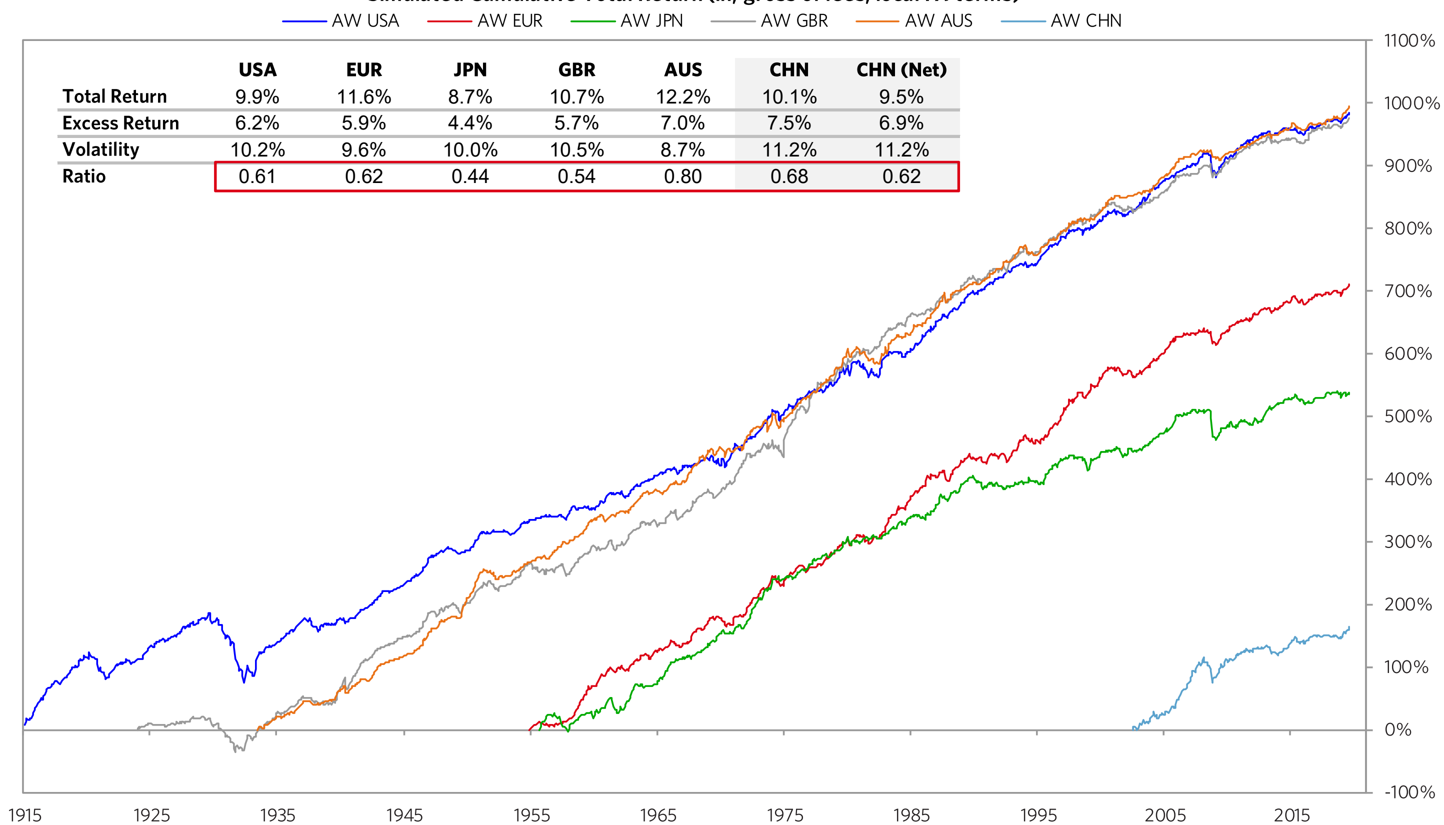
ALL WEATHER CHINA CAPTURES THE RISK PREMIUM IN CHINESE ASSETS WITHOUT MANY OF THE RISKS

	Growth	Inflation
Rising	25% Risk	25% Risk
Falling	25% Risk	25% Risk
	Risk Premiums & Discount Rates	

A CHINA ALL WEATHER MIX HAS PERFORMED AS WELL AS AN ALL WEATHER MIX OF ASSETS IN ANY OTHER COUNTRY

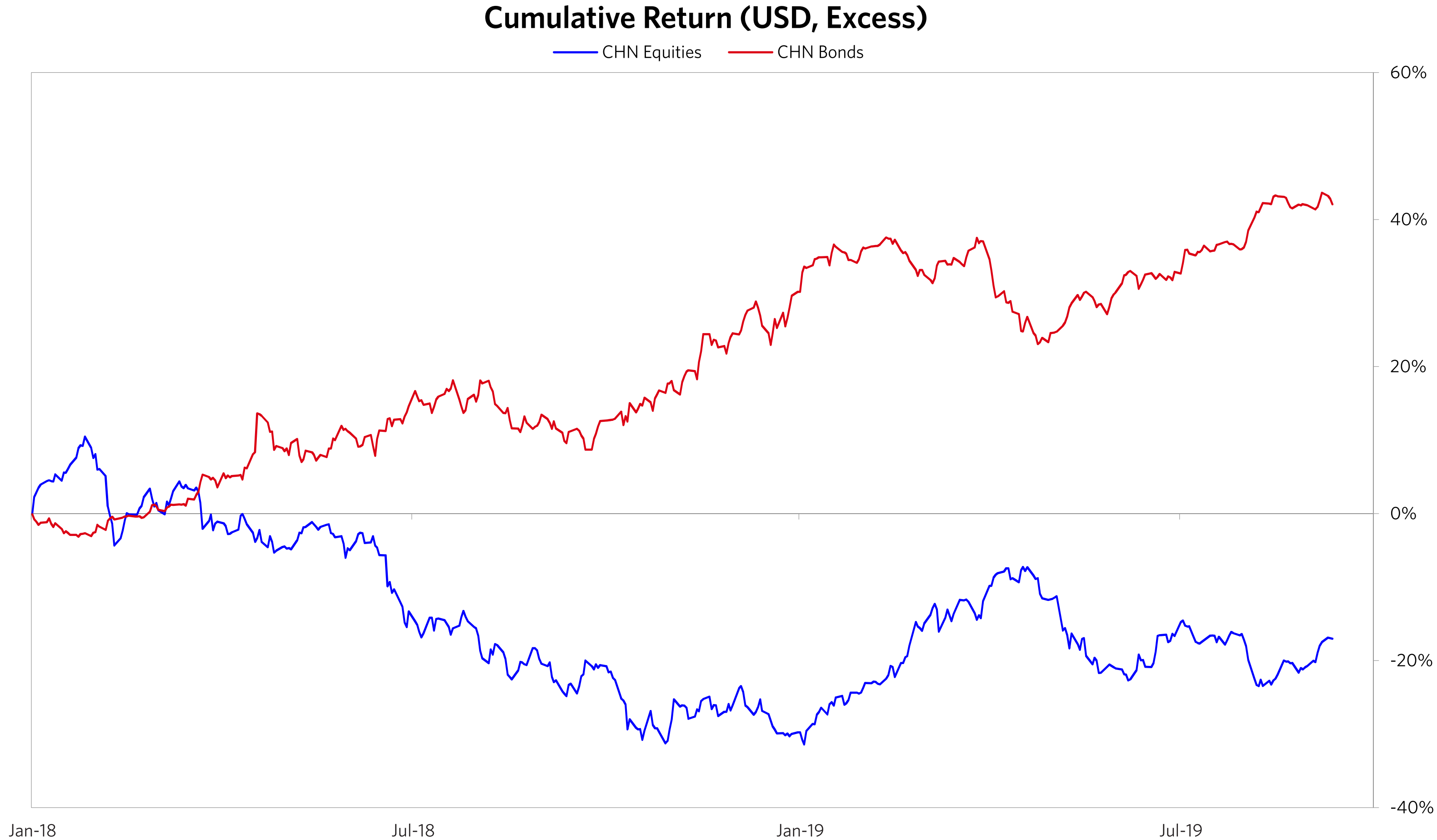
Simulated Cumulative Total Return (ln, gross of fees, local FX terms)

	USA	EUR	JPN	GBR	AUS	CHN	CHN (Net)
Total Return	9.9%	11.6%	8.7%	10.7%	12.2%	10.1%	9.5%
Excess Return	6.2%	5.9%	4.4%	5.7%	7.0%	7.5%	6.9%
Volatility	10.2%	9.6%	10.0%	10.5%	8.7%	11.2%	11.2%
Ratio	0.61	0.62	0.44	0.54	0.80	0.68	0.62



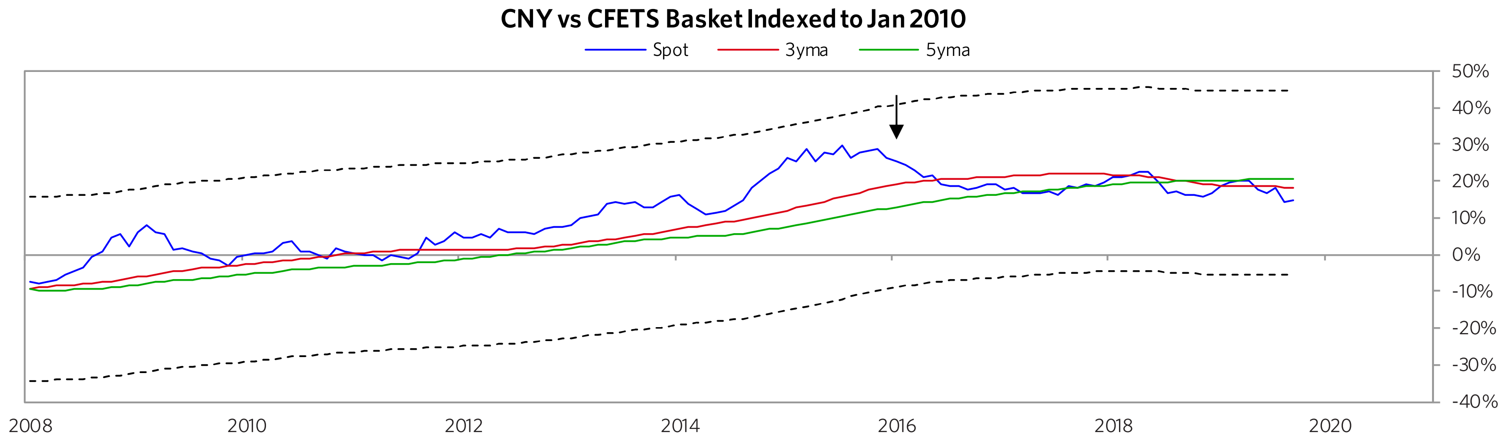
Data through August 2019. Single country All Weather simulates an All Weather-like asset allocation in regional terms using local assets (please see "All Weather Asset Mix Disclosure"). All Weather China also uses global assets where necessary to achieve diversification (please see "All Weather China Asset Mix Disclosure"). It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology and the underlying market data. HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING OR THE COSTS OF MANAGING THE PORTFOLIO. ALSO, SINCE THE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THE RESULTS MAY HAVE UNDER OR OVER COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. Past performance is not indicative of future results. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

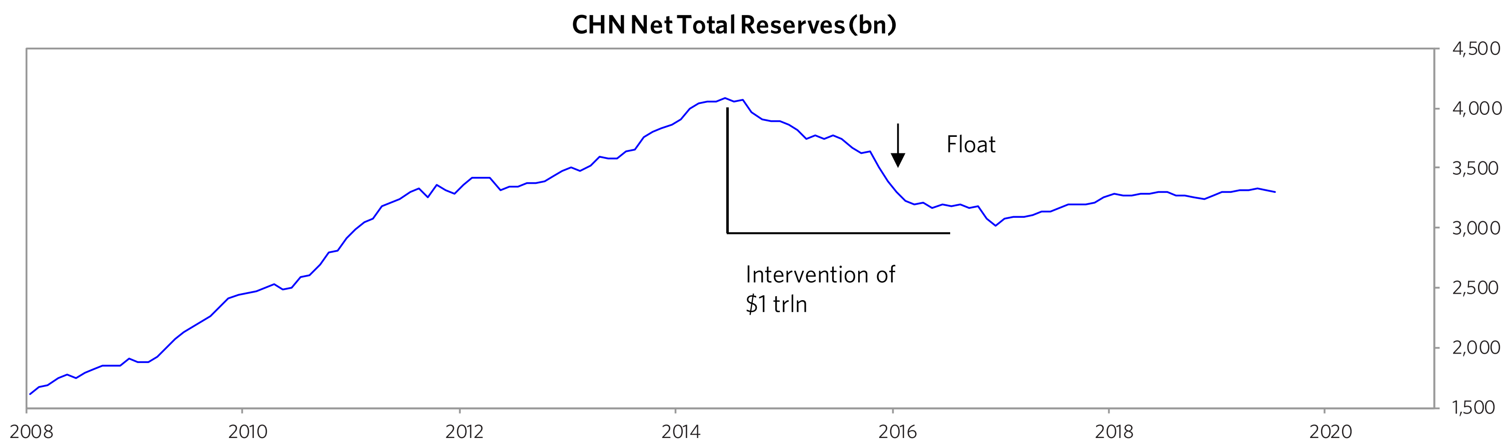
RECENTLY, BOND GAINS HAVE OFFSET STOCK LOSSES



Bonds are shown at equity volatility. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

CHINA'S CURRENCY POLICY HAD GLOBAL MARKET IMPACTS





CFETS refers to China Foreign Exchange Trade System. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

CHINA POLICY GOALS AND IMPLEMENTATION SCOREBOARD

- Per metrics, overall achieved majority of goals set out in 5 year plans
  - 2016 (13th Plan): In progress
  - 2011 (12th Plan): ~90% of goals
  - 2006 (11th Plan): ~80% of goals

Plan	Theme	Policy/Target	Clear Tgt?	Rating
13th Plan (2016-2020)	"Development is still the top priority"	-	No	N/A
	"Economy maintains medium to high speed growth"	6.5% growth	Yes	Yellow (roughly on track)
	Close urban-rural divide & speed urbanization	Agricultural modernization, regional development policies, rural infrastructure	No	Yellow (would require further rsch to verify)
	Innovation and rebalancing, incl. moving up the value chain	Made in China 2025, science investment in key areas, internet/big data, service industry support, broad marketization	No	Green (clear progress but unclear targets, some trade war-related backtracking)
	Conserving natural resources and the environment	Land management, low-carbon energy w/ targets, resource conservation, reduce energy intensity of growth, emissions trading	Yes	Green (on track)
	Open-up and integrate into world economy	Global economic governance, international cooperation, free trade, Belt and Road, domestic reforms to encourage capital to enter	No	Green (lots of progress, despite indefinite goals)
	Development is for the people	Poverty alleviation, public services, improve education, promote employment, entrepreneurship, and labor market reforms, social security reform, health system reforms, all w/ targets	Yes	Yellow (would require further rsch to verify)
	"Two Child Policy"	-	Yes	Yellow (birthrate didn't change that much)
12th Plan (2011-2015)	Growth and inflation	7% growth, 4% inflation	Yes	Green
	Rebalancing toward consumer-driven demand from exports	-	No	Green (~5% share of GDP moved to new economy)
	Raising standard of living, reducing inequality, promote rural development	Raise HH income 7% annually	Yes	Green (7.7% growth)
	Environmental issues and climate change	International cooperation, climate adaptation, reduce energy intensity, CO2 emissions, and other specific targets	Yes	Green (met numerical targets)
	Support seven Strategic Emerging Industries	Energy saving/environmental protection, IT, biotech, high-end equipment manufacturing, "new energy," new materials, NEVs	No	Yellow (clear progress but unclear targets)
11th Plan (2006-2010)	"Scientific Concept of Development"	-	No	N/A
	Building a socialist harmonious society	-	No	N/A
	Energy reform	Reduce reliance on coal and oil, enforce pollution laws, implement fuel tax, sustainable development rather than rapid growth	Yes	Green (met majority of goals)
	Close urban-rural divide & speed urbanization	Invest in rural infrastructure and ag technology, cut taxes, promote rural education, rural land rights, public services (pensions, rural medical care)	No	Yellow (clear progress but unclear targets)
	Growth	7.5% growth	Yes	Green (met, although included 2008 recession)
	Rebalancing toward consumer-driven demand and service sector	Optimizing industrial structure, balance btwn manufacture an services, support for agriculture, reduce resource-intensivity of growth	No	Green (meaningful rebalancing during period)
	Innovation as driver of growth	Support science and technology rather than resource-intensive growth or pure labor arbitrage	No	Yellow (meaningful rebalancing during period)
	"People-centered approach"	Improvement of living standard as key priority, quality of life rather than purely growth	No	N/A

Score was measured as the percentage of high level goals completed, with high level goals defined above. Goals that were either clearly achieved or mostly achieved were counted as completed. Difficult to measure goals were excluded in this calculation. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

2011/12th and 2016/13th FIVE YEAR PLAN TRACK RECORD

Note: Targets in red are new targets in the 13th Five-Year Plan not included in the previous plan.

Indicator	12th FYP Target (2015)	12th FYP Target Change (2011-2015)	12th FYP Achievement (2015)	12th FYP Achieved Annual Change	13th FYP Target (2020)	13th FYP Target Change (2016-2020)
Economic Development						
GDP (RMB trillion)	-	7% (annual)	67.7	7.8% (annual)	> 92.7	>6.5% (annual)
Overall productivity of labor (RMB 10,000/ person)	-	-	8.7	-	>12	>6.6% (annual)
Service industry added value to GDP	47%	-	50.5%	-	56%	5.5%
Permanent resident population urbanization rate	51.5%	-	56.1%	-	60%	3.9%
Household registration population urbanization rate	-	-	39.9%	-	45%	5.1%
Innovation and Technology						
Nine-year compulsory education retention rate	93%	-	93%	-	-	-
High school enrollment rate	87%	-	87%	-	-	-
Expenditure on research and development to GDP	2.2%	-	2.1%	-	2.5%	0.4%
Quantity of patents per 10,000	3.3	-	6.3	-	12	5.7
people						
Contribution rate of scientific and technological progress to economic growth	-	-	55.3%	-	60%	4.7%
Internet penetration rate (Fixed Broadband)	-	-	40%	-	70%	30%
Internet penetration rate (Mobile Broadband)	-	-	57%	-	85%	28%
Resources and Environment						
Cultivated land preserve (Mu)	1.82 billion	-	1.87 billion	-	1.87 billion	0
Efficiency rate of farm land water usage	0.53%	-	0.53%	-	-	-
New construction land scale (Mu)	-	-	-	-	-	<32.56 million
Water consumption reduction per ten thousand units of GDP	-	-	-	-	-	23%
CO2 emission reduction per unit of GDP	-	17%	-	20%	-	18%
Water consumption reduction in per unit industrial value added output	-	30%	-	35%	-	-
Non-fossil fuel to primary energy use	11.4%	-	12%	-	15%	3%
Energy consumption reduction per unit of GDP	-	16%	-	18.2%	-	15%
Major pollutants emission reduction targets						
➢ Chemical oxygen demand	-	8%	-	12.9%	-	10%
➢ Sulphur dioxide	-	8%	-	18.0%	-	15%
➢ Ammonia nitrogen	-	10%	-	13.0%	-	10%
➢ Nitrogen oxide	-	10%	-	18.6%	-	15%
Forest coverage	21.66%	-	21.66%	-	23.04%	1.38%
Forest stock volume (m^3)	14.3 billion	-	15.1 billion	-	16.5 billion	1.4 billion
Rate of days with superior air quality of cities at prefecture level or above	-	-	76.7%	-	>80%	-
PM 2.5 concentration reduction for cities at prefecture level or above which fail to meet the PM 2.5 standards	-	-	-	-	-	18%
Proportion of water at or better than class III	-	-	66%	-	>70%	-
Proportion of water worse than class V	-	-	9.7%	-	<5%	-
Livelihood						
Construction of affordable housing projects in cities and towns	-	36 million	-	40.13 million	-	-
Urban shantytown redevelopment	-	-	-	-	-	20 million
Average growth of per capita disposable income of urban residents	-	>7% (annual)	-	7.7% (annual)	-	-
Average growth of per capita income of rural residents	-	>7% (annual)	-	9.6% (annual)	-	-
Average growth of per capita disposable income	-	-	-	-	>6.5%	-
Average years of education of the working class	-	-	10.23	-	10.8	0.57 year
Number of rural poor above the poverty line	-	-	-	-	-	55.75 million
Urban population with basic pension insurance	357 million	-	377 million	-	-	-
Rate of basic pension insurance coverage	-	-	82%	-	90%	8%
Rural and urban insurance coverage rate of basic medical care	-	3%	-	>3%	-	-
Urban registered unemployment rate	<5%	-	4.05%	-	-	-
Average new urban employment	-	45 million	-	64.31 million	-	>50 million
Total population	<1.39 billion	-	1.38 billion	-	-	-
Average life expectancy	74.5	-	76.34	-	-	1 year

Source: US-China Business Council. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

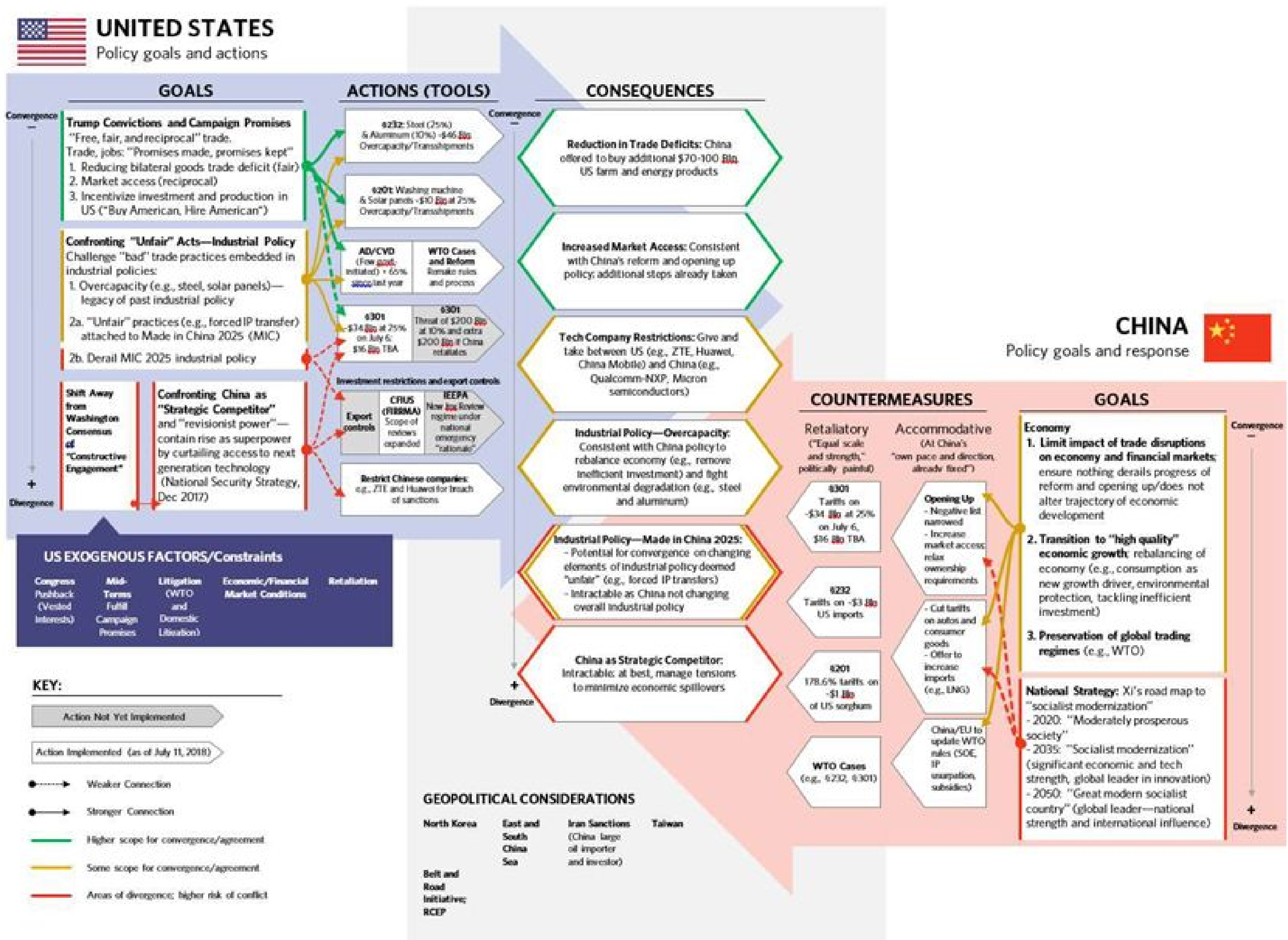
2006/11th FIVE YEAR PLAN TRACK RECORD

Table 1: 11th Five-Year Plan Targets and Realizations

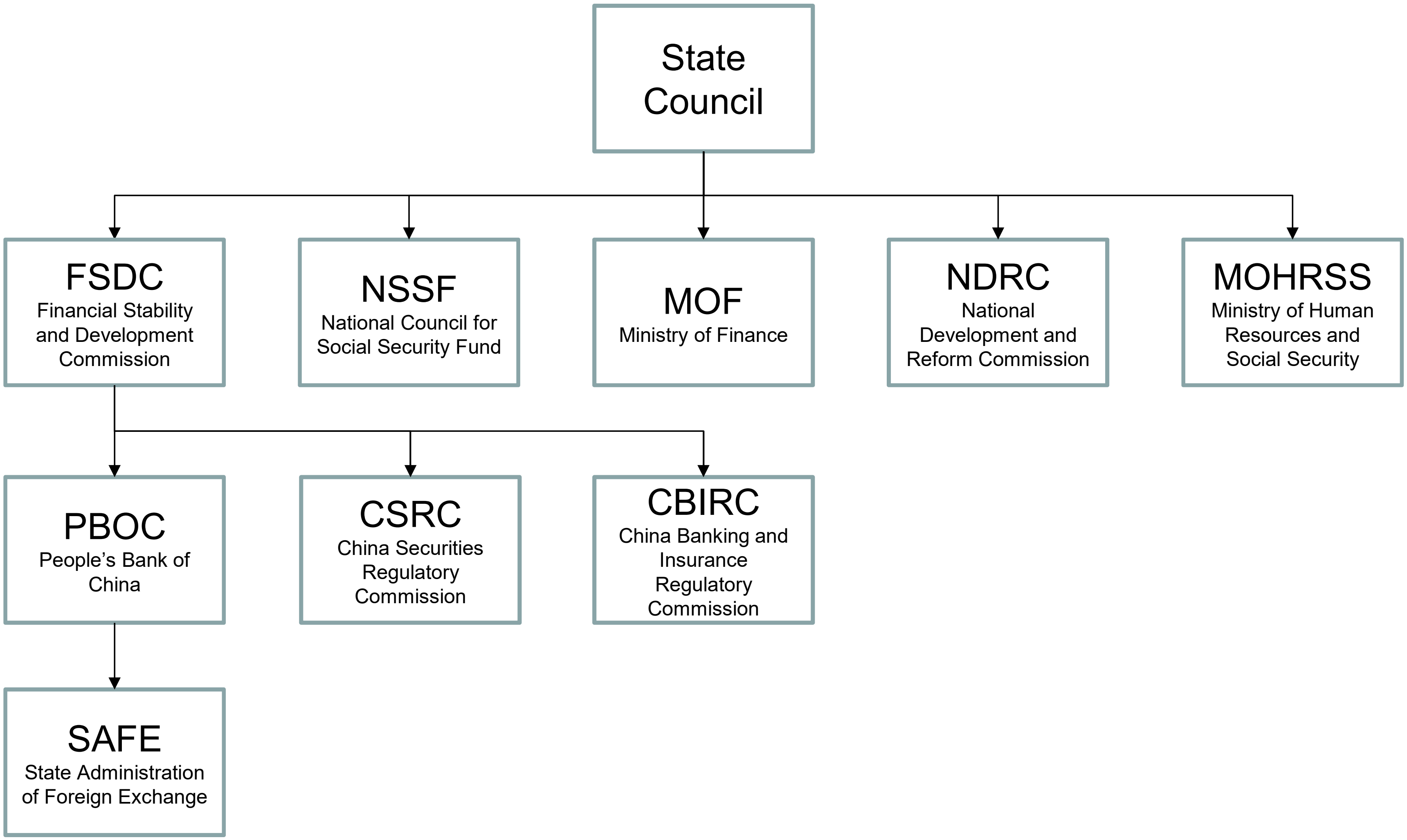
	2005	Target 2010	Target increase	Realized 2010	Realized increase
GDP (trillion)	18.5		7.5 %/year	39.8	11.2%/year E
Per capita GDP	14185		6.6%/year	29748	10.6%/year E
Increase in service sector (% of output)	40.5%		3%	43.0%	2.5% N
Increase in service Employment (% of total)	31.3%		4%	34.8%	3.5% N
Expenditure on research (% of GDP)	1.3%	2%	0.7%	1.75%	0.45% N
Urbanization rate	43%	47%	4%	47.5%	4.5% E
Population (10,000)	130756	136000	<8%	134100	5.1%
Reduction in Energy use			20%		19.1% N
Cultivated Land (100 million hecters)	1.22	1.2	−0.3%/year	1.212	−0.13%/year E
Carbon emission reduction			10%/year		14.29%/year E
Years of schooling (mean for population)	8.5	9	0.5%/year	9	0.5%/year E
Urban retirement insurance coverage (100 million)	1.74	2.23	5.1%/year	2.57	8.1%/year E
Rural health insurance coverage	23.5%	>80%	>56.5%/year	96.3%	>72.8%/year E
Increase in urban employment (10,000)			4500		5771 E
Urban unemployment rate	4.2%	5%		4.1%	E
Urban disposable income per capita	10493		5%/year	19109	9.7%/year E
Rural net income per capita	3255		5%/year	5919	8.9%/year E

Source: Gregory Chow. “Economic Planning in China.” 2011. Please review the “Important Disclosures and Other Information” located at the end of this presentation.

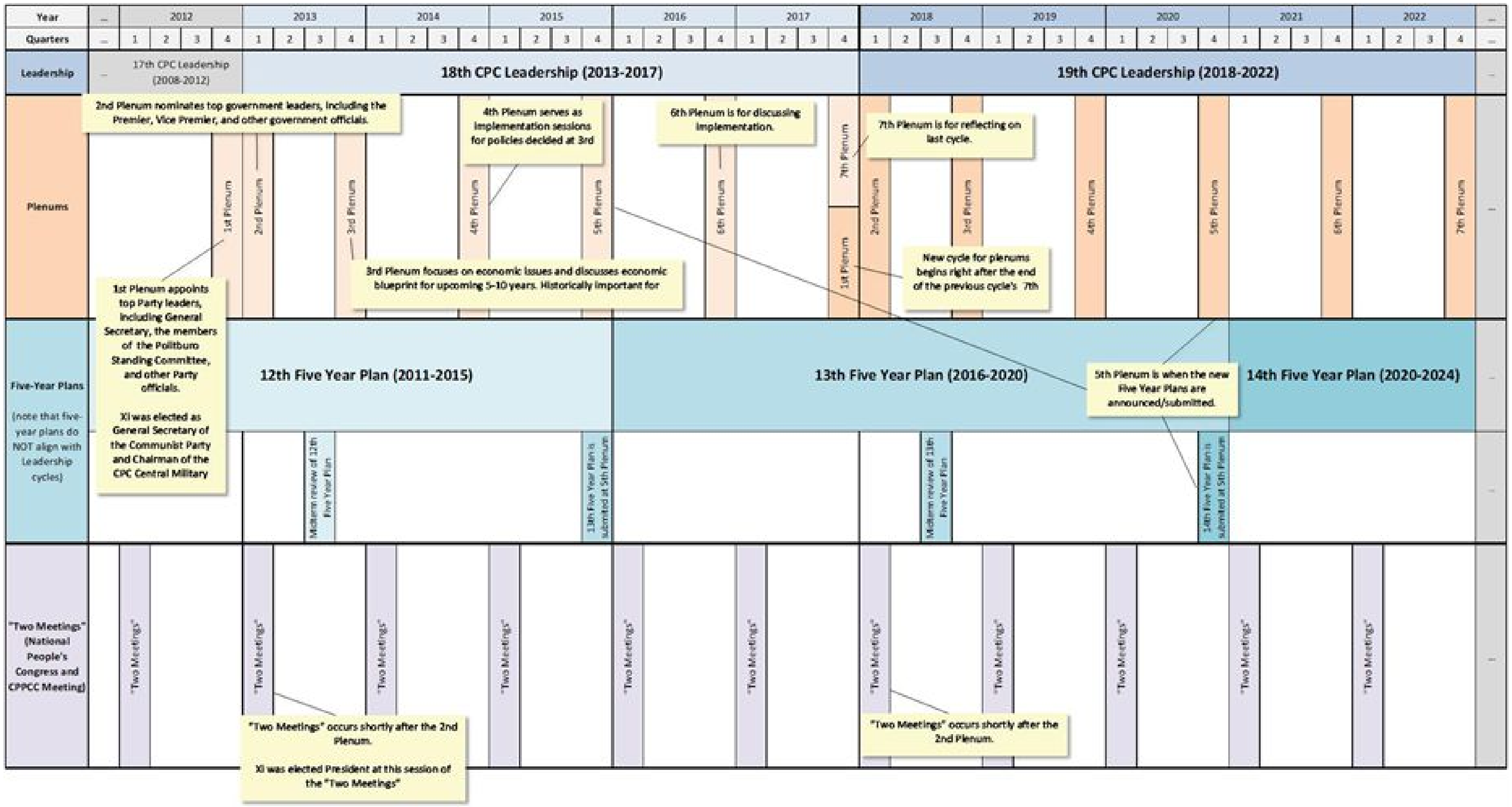
US–China Trade Tensions



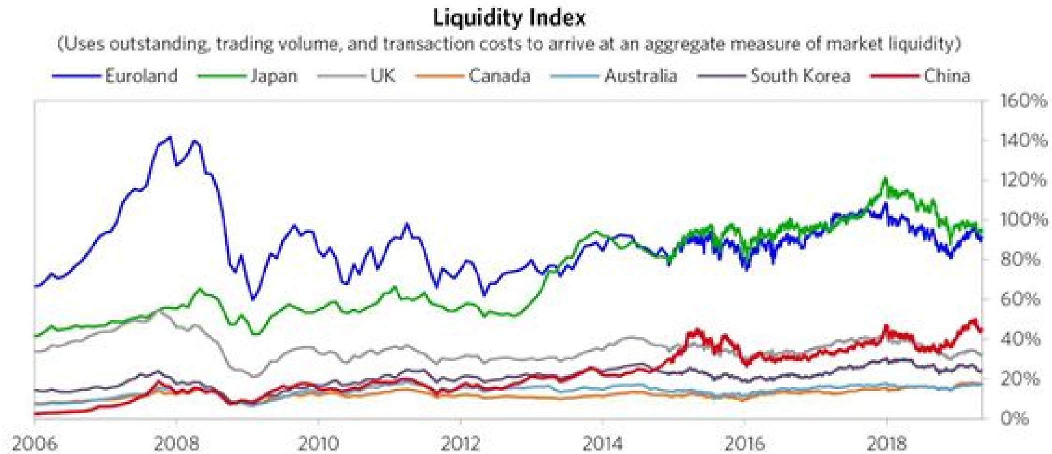
ECONOMIC/FINANCIAL INSTITUTIONS REPORTING TO STATE COUNCIL



PRE-SET TIMELINE FOR CHINA'S LEADERSHIP AND CORE EVENTS

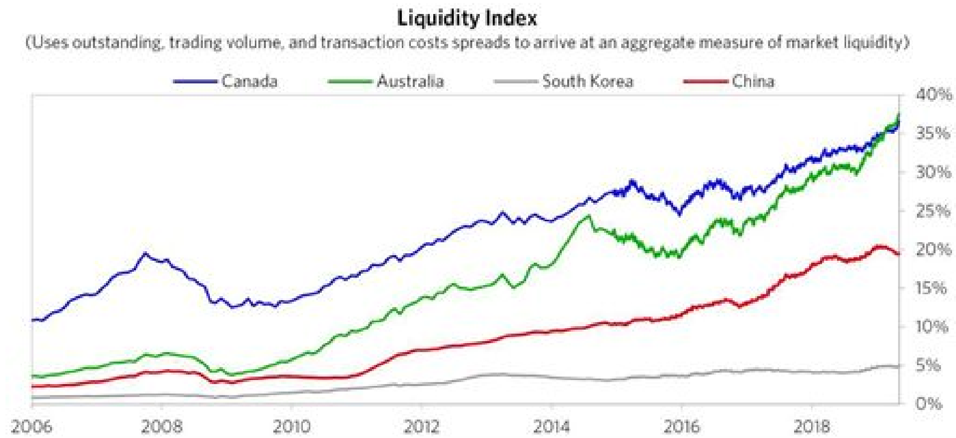


CHINA EQUITY MARKET LIQUIDITY



Data through 2019. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

CHINA BOND MARKET LIQUIDITY



	Average Bid/Ask Spread (Yield, bps)	Benchmark Piece Size (USD, Mln)
China Government Bonds	1.0 - 3.0bps	10 - 15
China Policy Bank Bonds	1.0 - 2.0bps	15 - 20
Korea Government Bonds	1.0 - 1.5bps	15 - 20
India Government Bonds	0.75 - 3.0bps	10 - 15
Brazil Government Bonds	1.5 - 2.0bps	20 - 25
Mexico Government Bonds	1.5 - 2.0bps	20 - 25
US Treasuries	0.2 - 0.3bps	150 - 200
German Bunds	0.25 - 1.0bps	75 - 125
UK Gilts	0.4 - 0.6bps	25 - 75

Data through 2019. Please review the "Important Disclosures and Other Information" located at the end of this presentation.

TECHNOLOGY CATEGORIES UNDER CONSIDERATION FOR US NATIONAL SECURITY BY BUREAU OF INDUSTRY AND SECURITY

1. **Biotechnology**, such as:
   - i. Nanobiology;
   - ii. Synthetic biology;
   - iii. Genomic and genetic engineering; or
   - iv. Neurotech.

2. **Artificial intelligence (AI) and machine learning technology**, such as:
   - i. Neural networks and deep learning (e.g., brain modeling, time series prediction, classification);
   - ii. Evolution and genetic computation (e.g., genetic algorithms, genetic programming);
   - iii. Reinforcement learning;
   - iv. Computer vision (e.g., object recognition, image understanding);
   - v. Expert systems (e.g., decision support systems, teaching systems);
   - vi. Speech and audio processing (e.g., speech recognition and production);
   - vii. Natural language processing (e.g., machine translation);
   - viii. Planning (e.g., scheduling, game playing);
   - ix. Audio and video manipulation technologies (e.g., voice cloning, deepfakes);
   - x. AI cloud technologies; or
   - xi. AI chipsets.

3. **Position, Navigation, and Timing (PNT) technology.**

4. **Microprocessor technology**, such as:
   - i. Systems-on-Chip (SoC); or
   - ii. Stacked Memory on Chip.

5. **Advanced computing technology**, such as:
   - i. Memory-centric logic.

6. **Data analytics technology**, such as:
   - i. Visualization;
   - ii. Automated analysis algorithms; or
   - iii. Context-aware computing.

7. **Quantum information and sensing technology**, such as:
   - i. Quantum computing;
   - ii. Quantum encryption; or
   - iii. Quantum sensing.

8. **Logistics technology**, such as:
   - i. Mobile electric power;
   - ii. Modeling and simulation;
   - iii. Total asset visibility; or
   - iv. Distribution-Based Logistics Systems (DBLS).

9. **Additive manufacturing (e.g., 3D printing)**.

10. **Robotics**, such as:
    - i. Micro-drone and micro-robotic systems;
    - ii. Swarming technology;
    - iii. Self-assembling robots;
    - iv. Molecular robotics;
    - v. Robot compilers; or
    - vi. Smart Dust.

11. **Brain-computer interfaces**, such as:
    - i. Neural-controlled interfaces;
    - ii. Mind-machine interfaces;
    - iii. Direct neural interfaces; or
    - iv. Brain-machine interfaces.

12. **Hypersonics**, such as:
    - i. Flight control algorithms;
    - ii. Propulsion technologies;
    - iii. Thermal protection systems; or
    - iv. Specialized materials (for structures, sensors, etc.).

13. **Advanced materials**, such as:
    - i. Adaptive camouflage;
    - ii. Functional textiles (e.g., advanced fiber and fabric technology); or
    - iii. Biomaterials.

14. **Advanced surveillance technologies**, such as:
    - i. Faceprint and voiceprint technologies.

Bridgewater®
Daily Observations
September 21, 2016

(203) 226-3030
Ray Dalio

Why We Think Chinese Economic Leadership is Very Capable

While the Bank of Japan and Fed meetings are taking most of the headlines this week, it is worth remembering the importance of the transition occurring in China given the outsized impacts it has on the global economy and markets.

For the past few years we have said that 1) China has four major economic challenges (debt restructuring, economic restructuring, capital markets restructuring, and the balance of payments), 2) all countries have been through such challenges before and that these sorts of challenges are manageable, though they are risky, and 3) we judge the Chinese economic leadership to be very capable. We judge China's economic leadership to be very capable a) because we have gotten to know how they think about these issues and b) because of what they have done. Probably, of all the assessments we make about many things, the one about China's leadership being capable is most doubted, so it warrants an explanation. That is the purpose of today's *Daily Observations*.

An Overview

To convey all that China has done to deal with its four challenges would be impossible because they have done so much. Frankly, we have had to stretch hard to follow and assess what they have done over the last couple of years, so we won't be able to fully explain it all in today's *Observations*. But we can give you lists with brief explanations of what they have done. We have organized them according to the challenges facing China. We hope that you will go into them, examine them, and ask yourself if they are thoughtful or naive.

Challenge 1: Debt Restructuring

As you know, we believe that China's debts are manageable because of their size relative to the government's "balance sheet" and because they are primarily denominated in local currency. We have studied similar debt restructurings in over 100 countries and see clear paths for handling such problems, which the Chinese authorities are largely following. It is not surprising that they are capable, as many of the same leaders who managed through China's last debt cycle are still in place in China today, so they can draw on this experience as a guide, and because they are well acquainted with global best practices for handling such things. Chinese policy makers are using a combination of debt restructuring, debt forbearance, and debt defaults (primarily in the banks), combined with a sensible monetary policy, to handle these problems in a balanced way that spreads out their consequences. In addition, policy makers are improving transparency and regulation around the growing shadow banking industry. China is simultaneously using targeted fiscal stimulus and monetary policy to improve the debt service capacity of some of the most indebted sectors, all of which is helping to spread out losses and make for a more orderly credit loss cycle. Below is a partial list of policy shifts. Please scan it over to get the picture.

Off-Balance Sheet Banking and Shadow Banking Reform

1. March 2013: CBRC Document 8—WMP regulations ordering banks to cap combined amount of products invested in nonstandard credit assets (e.g., credit loans, trust loans, bankers' acceptance bills, letters of credit, receivables, equity financed by repos) to 35% of total WMP funds, 4% of total assets.
2. December 2013: State Council Document 107—Broad set of shadow banking rules meant to improve lending transparency and to bring liabilities back on balance sheet. The document defined the relevant regulatory bodies that will oversee each area of the shadow banking sector and gave guidance on risk controls and timelines for meeting requirements.
3. April 2014: CBRC Document 99—Broadly tightening rules for trusts. The regulation laid out rules requiring shareholders to provide liquidity or capital in the event the trust comes under stress, limiting trust companies from directly bearing risks, requiring more transparency in sales practices, and forbidding new asset-pool trust products from investing in nonstandard credit assets. It also required new trust products to be reported to regulators 10 days prior to issuance.
4. November 2014: State Council meeting reiterates "10 measures" for lowering corporate financing costs:
   i. Increase loan-to-deposit ratio flexibility and encourage NPL write-offs
   ii. Speed up private bank development and internet finance
   iii. Support the development of guarantee and re-guarantee institutions and introduce pilot programs for small loan guarantees
   iv. Adjust the assessment mechanism for commercial banks in order to prevent the problems of favoring big companies over small ones and charging unreasonably high rates and fees when lending
   v. Use credit asset securitization to simplify bond issuance for SMEs

vi. Remove continuous profit requirements on IPOs and lower listing threshold for SMEs
vii. Support cross-border financing and connect more companies with cheap funding globally. Create new ways of using currency reserves to support the development of the economy and facilitate the "going out" strategy.
viii. Improve the credit system and increase transparency on SMEs' creditworthiness
ix. Speed up interest rate reform to let the market play a greater role
x. Improve the supervision and accountability mechanism, stop nonstandard charges and illegal fund-raising from pushing up financing costs. Create a good financing environment to enhance business confidence and level the playing field.

5. January 2015: CBRC issues new regulations clamping down on a range of entrusted loan lending practices and, in particular, their use as a WMP channel lending instrument. The regulations state that entrusted loans may not be funded using bank loans, bonds, or WMPs and are prohibited from being used to invest in financial products (bonds, futures, financial derivatives, WMPs, or equities). Financial asset management companies and institutions already qualified to grant regular loans can no longer use entrusted loans.
6. April 2015: CSRC reiterated risk control measures aimed at better regulating the growth of leverage in the stock market. Brokers were prohibited from participating in OTC leverage tools.
7. April 2015: Regulators crack down on umbrella trusts, a trust product that was being used to provide investors with leverage for equity market purchases.
8. March 2016: Trusts are prohibited from setting up new fund-pooling trust products and selling trust products via third-party online and offline platforms to unqualified customers. Leverage ratio for stock structured products should be lower than 3x.
9. April 2016: P2P lending programs forbidden from running fund pools, self-insurance, products with duration mismatch, and offline selling.
10. April 2016: Asset Management Association of China released regulations on fundraising activities of privately raised funds, including banning the funds from selling products to the public.
11. April 2016: Banks are required to charge full risk weights for capital calculation if they transfer credit assets (or beneficiary rights) to other parties. For NPL transfer, banks need to account for the part of the NPLs that they are still responsible for in the NPL ratio and provision coverage ratio calculation. Banks are prohibited from selling WMPs backed by NPLs to retail customers.
12. April 2016: Banks banned from renting, lending, or outsourcing their interbank accounts and from transacting with bills agents.
13. May 2016: CBRC now requires many commercial banks to stop selling structured WMPs mainly backed up by non-standardized credit assets or levered bond investment.
14. May 2016: CSRC sets the leverage of broker equity-centered asset management schemes, is lowered to 1-3x based on the underlying assets, against 10x previously required. It also prohibits multiple intermediations in investing in structured products.
15. May 2016: CSRC draft capital rules for mutual fund subsidiaries, requiring net capital to be higher than total risk capital and the lowest risk weight for channel business AUM is 15bps.
16. May 2016: The CIRC suspends insurance asset management subsidiaries' channel business, starting from end of May, and requires self-check on such business regarding investment, credit, and operational risks.
17. June 2016: Shanghai, Guangdong, and other local CBRC require banks to conduct self-examination of on- and off-balance-sheet exposure, including WMPs backed by non-standardized credit, credit guarantee, credit line, and financial derivatives and to report off-balance sheet credit exposure.
18. July 2016: The CSRC says the size of the senior tranche of fixed-income products should not be more than three times that of the junior tranche, but the statement didn't specify the previous figure. Senior portions of such products are usually bought by banks' WMPs, which help brokerages and asset management firm subsidiaries boost their buying in the bond market.
19. July 2016: Release of a large set of new bank WMP regulations governing the use of WMPs:

    a. It prevents small Chinese banks (anyone smaller than the joint-stock banks) from issuing WMPs with nonstandard assets, making it easier to monitor those products.
    b. It places restrictions on the amount of duration mismatch that the WMPs can have, lowering the risk of a funding squeeze by preventing banks from buying longer-duration, less-liquid securities in shorter-term WMPs.
    c. It creates a 1.4x gross leverage cap on WMPs as a way to control their risk.
    d. It requires banks to set up a loss reserve of about 1% of outstanding WMP assets. For new WMPs that have a target return, banks also have to set aside 50% of their management fee.

20. August 2016: CIRC tightens regulations on insurance companies operating as wealth managers: 1) tighter rules to prevent life insurance from being used as WMPs; 2) annuities with interest rates >3.45% will require CIRC's approval.

Transforming the Monetary Policy Framework and Interest Rate Deregulation

1. June 2012: PBoC allows banks to hike their deposit rates to 1.1x PBoC benchmark.
2. March 2013: Short-Term Lending Facility (SLF) launched to help provide targeted short-term liquidity to targeted banks. The rate is set, and along with the rate paid on excess deposits (lower bound), helps range bound the cost of short-term liquidity in the banking system.
3. July 2013: PBoC removes lending rate floor, fully liberalizing lending rates in the economy.
4. December 2013: PBoC Governor Zhou Xiaochuan says that interest rate deregulation will be completed within two years.
5. January 2014: PBoC allows bank branches to issue negotiable certificates of deposit.
6. August 2014: Deposit Deviation Ratio—the CBRC, MoF, and PBoC issue joint new regulations on banks' deposits to stem the quarter-end rush and accompanying liquidity and interest rate volatility. Banks typically try to increase their period-end deposits by offering higher interest rates and deliberately timing bank-sponsored WMPs to expire at period end to bring funds on balance sheet as client

deposits. Regulators introduce a Deposit Deviation Ratio requiring banks to keep their month-end deposit size/daily average deposit size during the same month < 103%.

7. September 2014: China establishes and starts using the Medium-Term Lending Facility (MLF) to inject 3-6 month liquidity to targeted financial institutions in order to better manage liquidity. The rate is set and, along with the SLF, helps policy makers increase their control over the short end of the curve particularly across these durations.
8. November 2014: PBoC allows banks to hike their deposit rates to 1.2x PBoC benchmark.
9. March 2015: PBoC allows banks to hike their deposit rates to 1.3x PBoC benchmark.
10. April 2015: State Council approves new deposit insurance plan, which includes setting up a deposit insurance fund managed by PBoC. The scheme came into effect on May 1, 2015.
11. May 2015: PBoC allows banks to hike their deposit rates to 1.5x PBoC benchmark.
12. August 2015: PBoC shifts its RMB/USD fixed peg regime to a managed peg by moving to fix the RMB with a more market-based rate.
13. August 2015: PBoC removes deposit rate ceiling for time deposits with maturity exceeding one year.
14. October 2015: PBoC removes the deposit rate ceiling for commercial banks and rural cooperative financial institutions.
15. February 2016: PBoC begins conducting open market operations (OMO) on a daily basis.
16. 2H2015 - 1H2016: PBoC increasingly moving away from managing liquidity through quantity-oriented tools (RRR) toward more interest rate-oriented management via OMO and lending facilities (SLF, MLF, and PSL).

Dealing with Bad Debt

1. February 2012: PBoC, CBRC, and the MoF approve one asset management company (AMC) per province to engage in the transfer of distressed assets from financial institutions within their jurisdiction.
2. Mid-2012: Regulations established, laying out framework for NPL sales from banks to AMCs. Mainly SOE banks must sell NPLs to a local or national AMC (no other buyers), and local AMCs may only buy NPLs from their home province.
3. December 2013: Cinda (one of four national AMCs) IPOs in Hong Kong, raising $2.5 billion of new equity capital.
4. July 2014: Five new regional AMCs created to manage bad assets in Shanghai, Guangdong, Zhejiang, Jiangsu, and Anhui provinces. Anhui claims China Orient AMC as a founding partner (one of the Big 4 AMCs) and has local company shareholder participation.
5. 1H15: Trust Security Fund—14 trust companies inject a total of RMB 12 billion to establish a security fund to monitor industry risks and manage the disposal of assets and/or assist with trust company restructurings.
6. 2H15: Significant policy moves aimed at restructuring of local government debts through a rapid acceleration of the municipal bond program. Local governments allowed to swap existing, generally shorter-duration, higher-cost debt for longer-duration, cheaper debt. In 2015, RMB 3.1 trillion of municipal bonds were issued with the intention to swap out existing debt. So far in 2016, RMB 3.6 trillion have been issued.
7. August 2015: Three national AMCs given licenses to purchase distressed assets directly off of corporate balance sheets (previously they had to purchase assets from banks).
8. October 2015: Huarong (the biggest of the four national AMCs by total assets) raises $2.3 billion of equity capital in Hong Kong IPO.
9. February 2016: According to unidentified sources, China will allow domestic banks to issue up to RMB 50 billion ($7.7 billion) of asset-backed securities based on stock of non-performing loans in the first half of 2016 at the earliest.
10. March 2016: Qingdao (Shandong province) becomes the first city to receive approval from CBRC to establish a city-level AMC to acquire and dispose bad assets of financial institutions. Wenzhou (Zhejiang province) follows suit.
11. April 2016: *Caixin* reports a plan for a RMB 1 trillion debt-to-equity swap to be carried out via market pricing to help support companies that are still productive but need to restructure. Additionally, up to RMB 4 trillion has been approved in 2016 for loans-to-bonds swap.
12. May 2016: 25 provinces have announced targets to securitize 50+% of SOE assets, which could help SOEs raise funds to deal with bad debts.
13. August 2016: The CBRC announces that they will convert over RMB 400 billion of loans from Shanxi's top seven coal miners, including short-term loans, into longer-duration loans. Moreover, the regulatory body circulates a draft policy targeting qualified steel and coal companies involved in overcapacity elimination for assistance 1) rolling over loans and 2) getting partial loan forgiveness (both principal and interest).
14. August 2016: Chinese regulators consider launching CDS market to help price credit risk efficiently and support the market clearing of bad debt.
15. August 2016: 29 local AMCs have been established (18 in 2015) modeled after the Big 4 national AMCs, but with a targeted focus on regional issues with fewer investment options.
16. September 2016: CBRC issues a notice asking banks to set up creditor committees to coordinate lenders' approaches to handling borrowers struggling to pay back their debt.

Challenge #2: Economic Restructuring

Old industries must be wound down and new industries must be built up. That has always been true for all countries. The question is how that is done to make the pain of the winding down tolerable and to make the quality of the new industries and the pace of building them up well done. During this rebalancing process, meaningful, ongoing fiscal and monetary support is necessary in order to maintain acceptable rates of growth. In China's case, old sources of growth such as investment in heavy industry (where state-owned enterprises play a significant role) are declining rapidly, export growth has slowed as rapid gains in export market share are behind them, and local governments face challenges as they adjust their funding models and investment plans. New sources of growth—government-supported new industries (e.g., technology), increased household consumption, higher value-added manufacturing, and services that are supported by government regulations and fiscal programs—are replacing them. Below is a list of relatively recent reforms bucketed into four categories to show how Chinese policy makers are developing new growth opportunities and dealing with overcapacity issues, countercyclical and targeted infrastructure spending, and tax and business reforms. Look these over to assess their quality and quantity and ask yourself if these compare with those of other governments.

Developing New Growth Opportunities

1. December 2014: Policy makers pledge $40 billion to create an investment fund for the "One Belt, One Road" initiative aimed at increasing connectivity to nearby markets in Eurasia through land and sea.
2. May 2015: The State Council announces $182 billion spending plan to boost internet speeds and connectivity through the end of 2017.
3. May 2015: China releases "Made in China 2025" plan, which targets 10 priority sectors for Chinese manufacturing through targeted fiscal support, lowering business costs, improving intellectual property protections, building new manufacturing innovation zones, and improving SME conditions. The sectors mentioned are as follows:

    a. New advanced information technology
    b. Automated machine tools and robotics
    c. Aerospace and aeronautical equipment
    d. Maritime equipment and high-tech shipping
    e. Modern rail transport equipment
    f. New-energy vehicles and equipment
    g. Power equipment
    h. Agricultural equipment
    i. New materials
    j. Bio-pharma and advanced medical products

4. June 2015: Articles of Agreement signed for the Asian Infrastructure Investment Bank with $100 billion in initial capital of which China contributed 30%. The goal of the bank is to help develop countries across the world using the Chinese infrastructure-driven economic development framework pursued by China first under Deng Xiaoping as a guide. The bank announced that it would be spending almost $1 trillion on projects on One Belt, One Road projects over the next several years.
5. March 2016: Chinese media report that state-backed venture capital funds raised $231 billion, mostly from tax revenues and state-backed loans, in a bid to help boost innovation.
6. March 2016: Policy makers release their 13th Five-Year Plan, which outlines the top-down shift toward innovation and indigenous technological development:

    a. Support six key strategic economic industries through fiscal support and stimulus. This includes setting up venture funds, megaprojects to build out manufacturing infrastructure across major centers, and supporting R&D in the following sectors: next-generation IT, biotech, spatial information and intelligent perception, energy storage and distribution, advanced materials, and new-energy vehicles.
    b. Create an environment of innovation: promote R&D and national research centers, improve access to funding for entrepreneurs, make it easier for China to grow talent internally and keep talent from moving abroad, reform SOEs to be more market-oriented, strengthen property rights (including intellectual property), foster competition by lowering regulatory barriers to entry, simplify government regulation, reform the tax system, and develop and liberalize the financial system.

Policies Regarding Overcapacity Industries

1. January 2016: The State-owned Assets Supervision and Administration Commission (SASAC) launches programs to better handle zombie companies. For "strategically important" sectors, including power equipment, rail transport, aviation, high-tech IT, new-energy vehicles, marine equipment, and biology sectors, officials emphasize the use of restructuring and consolidation (M&A) as their preferred path to increase competitiveness. In particular, the new pilot programs will include:

    a. Allowing private investment in power and oil in 2016
    b. Restructuring and consolidating strategically important SOEs
    c. Managing defaults of zombie firms
    d. Establishing national funds targeted at investments in high-tech industries and pushing for international M&A
    e. Adjusting SOE pay to increase performance incentives

2. February 2016: China announces the closing of 1,000 coal mines this year. In order to deal with the associated unemployment, the government also announces that they will be allocating RMB 100 billion to a fund to help manage unemployment and place workers in new jobs over the next two years, to be allocated to the provinces making the most progress. Policy makers plan to eliminate as much as 500 million tons of coal production capacity, consolidate a further 500 million tons, and cut as much as 150 million tons of steelmaking capacity by 2020. China is still targeting 1.8 million in total job cuts for both industries over three to five years.
3. April 2016: China's coal industry lowers statutory working days from 330 to 276 to help eliminate overcapacity, with adjusted production caps to ensure effectiveness.
4. July 2016: Provincial governments must set capacity reduction targets by July 15 and submit detailed phase-out plans by the end of the month to the NDRC. Central policy makers also emphasize that they will double the pace of capacity cuts to meet 2016 targets by the end of the year.

5. August 2016: Local governments' capacity cut targets for steel and coal actually surpass central government's targets set for 2020 based on announcements aggregated from 16 provinces.
6. August 2016: SASAC orders central SOEs to cut 10% of capacity targets over the next two years, will seek to eliminate 345 central SOE zombies over the next three years.
7. August 2016: Shanxi grants RMB 1 billion subsidy to top six SOE coal mines to support overcapacity elimination, first use of local government subsidies.
8. September 2016: SASAC to help eight SOEs transfer assets and increase cooperation to increase efficiency of SOE assets in overcapacity industries.

Policies for Countercyclical and Targeted Infrastructure Spending

1. November 2014: MoF releases 30 model public private partnership projects worth RMB 180 billion to help incorporate market influences on fiscal spending allocations.
2. January 2015: Premier Li Keqiang announces RMB 7 trillion of approved projects concentrated in seven major industries: oil and gas pipelines, healthcare, clean energy, transportation, water conservancy, internet connectivity, and mining. This is part of a larger RMB 10 trillion infrastructure push through the end of 2016.
3. March 2015: Policy makers cut the minimum down payment for second-home buyers who have an outstanding first-home mortgage to 40%, down from 60-70% previously.
4. March 2015: Homeowners exempted from a 5.5% sales tax if they sell after holding a property for two years or more (previously, homeowners needed to hold the property for at least five years).
5. 1H 2015: Wide range of targeted infrastructure programs announced, including investment in mega-regions, power grid infrastructure, and water conservancy.
6. August 2015: Homes purchased through the Housing Provident Fund need 20% down payment for first homes (or second homes where the first home's mortgage is fully paid) and 30% for second homes where there is an outstanding mortgage for the first home.
7. August 2015: China will spend at least RMB 2 trillion to improve its power grid infrastructure from 2015 to 2020 to reduce coal consumption and provide markets for energy producers.
8. September 2015: Policy makers cut the minimum down payments for first-time home buyers to 25% from 30%.
9. December 2015: Second batch of PPP projects released with an investment composed of about 1,500 projects with an investment value of around RMB 2.3 trillion.
10. January 2016: Premier Li reiterates countercyclical infrastructure spending plans concentrated in water treatment, internet infrastructure, and transportation.
11. February 2016: Policy makers cut the minimum down payment for first-time home buyers to 20% (lowest level since 2008) and the minimum down payment for buyers with an existing mortgage to 30% (from previous 40%). This relaxation only applies to cities without home purchase restrictions (so it excludes mostly first-tier cities such as Beijing, Shanghai, Shenzhen, and Guangzhou).
12. February 2016: MoF says it will cut deed and business taxes for home purchases in most cities (e.g., those without restrictions).
13. March 2016: Policy makers launch a RMB 180 billion fund to help finance PPP projects. The fund will be led by the MoF and will be jointly launched with 10 financial institutions, with each of them contributing between RMB 5 billion and RMB 30 billion.
14. May 2016: The Ministry of Transport announces a joint action plan with the NDRC to provide RMB 4.7 trillion over the next three years for 300 projects including railways, roads, waterways, airports, and metro systems (infrastructure). It is unclear how many of these projects are new spending goals versus projects previously announced through other forums.
15. 1H 2016: Select cities with skyrocketing home prices implement targeted tightenings, part of an effort to clamp down on bubbly property activity while allowing destocking of broader national housing inventory to continue.
16. August 2016: Policy makers announce a RMB 1.6 trillion support package over three years to the northeast regions of China most impacted by overcapacity and the economic restructuring. This package will not be funded exclusively by the central government but also through a combination of local government and company funds augmented with central government subsidies.

Tax and Business Reforms

1. July 2014: Utility Tax—Utility companies (including hydroelectric and water treatment facilities) VAT rate reduced to 3% down from a previous range of 3% to 6%.
2. August 2015: Policy makers extend previous tax break to SMEs to apply to SMEs with up to RMB 300,000 of taxable revenue (up from 200,000). This is estimated by the tax ministry to provide about RMB 10 billion of tax relief. The tax break lowers these companies' effective tax rate from 25% to 20% by cutting the business tax component by 50%.
3. September 2015: China introduces new measures to reduce taxes for light industry, automotive, textile, and machinery industries by allowing the acceleration of depreciation. The State Council expects this to result in a tax savings of RMB 5 billion.
4. September 2015: Authorities announce a reduction of the purchase tax on small cars from 10% to 5% between now and the end of 2016. This is roughly the same tax cut that was implemented for small car purchases in 2009. Over 60% of the passenger market in China is for vehicles in this category.
5. December 2015: Policy makers announce subsidies for rural car purchases, which are expected to increase sales by a small amount but are targeted at helping struggling rural sectors.
6. January 2016: Policy makers implement VAT reforms, with an estimated flow-through to increased spending of roughly 0.3% of GDP.
7. February 2016: Policy makers lower the business and deed tax for some first- and second-home properties, mostly located outside of tier 1 cities, to stimulate demand.
8. March 2016: Premier Li reiterates importance of structural tax reductions and cutting fees across the board to lighten the burden on enterprises, particularly small and micro businesses.

9. May 2016: Policy makers lower social security contributions for business to help them save an estimated RMB 100 billion over the next year.
10. August 2016: Policy makers announce further business cost reductions by lowering administrative burdens and deregulating prices to create a roughly RMB 100 billion support over the next year or so.

Challenge #3: Capital Market Reforms

How well money and credit circulate in an economy is probably the most important determinant of how well an economy lives up to its potential. A country's markets for money, credit, and investments—starting with the central bank's monetary policy, continuing through its banking, and extending through its investment and markets—make up its circulatory system. Because this system brings resources to all parts of the country, where it flows and how efficiently it flows will determine how resources are allocated. In a market-based economy, prices are determined by supply and demand and resources are allocated by people pursuing profits. In the recent past, China has taken dramatic strides to improve the efficiency of its capital markets through significant regulatory reforms, opening its markets to global institutional investors and building out an institutional investor base to add depth and breadth to its equity and credit markets. While this reform process has not been perfect, its pace, breadth, and depth have been very impressive. Here are some of the more important specific changes that have been made.

Changing Capital Market Regulations

1. January 2014: IPOs start again after 14 months of hiatus, with some stops and starts following the initial IPOs in January and February.
2. April 2014: State Council announces several supplementary measures to improve capital markets. The measures are:

    i. Reform of registration system
    ii. Developing private placement market
    iii. Refinancing
    iv. Promoting mergers and acquisitions
    v. Standardizing the bond market
    vi. Developing the futures market
    vii. Promoting innovation and development of market intermediaries
    viii. Continuing to expand capital market liberalization

3. May 2014: State Council New Guidelines for Capital Market Reforms—announces reforms making it easier to issue bonds, IPO, and transfer capital, but it also demands more rigorous reporting of those activities and promises future regulation of the internet finance industry.
4. November 2014: PBoC releases a consultative draft for the deposit insurance system:

    a. Covers all domestic banking entities (SOE, commercial, rural, and coop)
    b. Covers RMB 500,000 per depositor per bank
    c. PBoC expects it can provide insurance to 99.63% of depositors
    d. The fee structure is split between a flat fee and a risk-based fee. Fees will be paid biannually. Details of fee structure unreleased.
    e. Deposit insurance funds should be parked at the central bank, invested in government bonds, central bank bills, and/or high-grade bonds

5. 1H15: CSRC announces new regulations tightening the range of corporate bonds that can be accepted for repo collateral. The rules disqualify exchange-traded enterprise bonds rated less than AAA (encapsulating many LGFV issues) or any bonds rated less than AA from being used as collateral for new repo transactions.
6. January 2015: CSRC expands corporate bond market to allow all companies rather than those that are listed to sell notes (both exchange-traded and privately issued bonds).
7. May 2015: The central government determines that local government bonds will be eligible collateral for central bank lending facilities.
8. June 2015: PBoC introduces Certificates of Deposit (and interim rules for their administration), expanding the range of market-priced debt products and improving the market-oriented interest rate formation mechanism.
9. June 2015: PBoC allows eligible private equity funds to invest in the interbank bond market.
10. August 2015: Pilot program launched to allow farmers in select regions to borrow against land-use rights. An impediment to credit for rural farmers has been the lack of available collateral for borrowing.
11. September 2015: PBoC allows foreign central banks and other official reserve management institutions, international financial organizations, and sovereign wealth funds to participate in the interbank foreign exchange market.
12. November 2015: After suspending IPOs in July, IPOs restart alongside new rules to help modernize the listing process. IPOs will have significantly decreased deposit requirements, which were causing short-term dislocation of liquidity. Also, policy makers streamline the listing process for IPOs with less than 20 million shares (helping smaller firms list), eliminate some criteria for IPO approvals, and strengthen requirements for information disclosure.
13. November 2015: China raises limits on margin financing by increasing margin requirements to 100%, allowing only 1x turn of leverage rather than the previous 2x turn of leverage.
14. November 2015: Regulators drop the AA requirement for companies issuing super short-term and normal commercial paper. Previously the market was only open to AAA and AA rated companies.
15. November 2015: Chinese regulators open bond issuance to companies that are not listed or SOEs.

16. November 2015: PBoC opens RQFII pilot area to Malaysia with investment amount of RMB 50 billion.
17. December 2015: Chinese regulators remove the rating limits for bond issuance. Previously, only companies with AA ratings or above were allowed to issue bonds without limits.
18. December 2015: China announces plans to implement stock market circuit breaker starting in 2016. The plan will mean that a move of 5% in the CSI 300 index would trigger a 30-minute halt in the trading of stocks, options, and index futures.
19. December 2015: *China Securities Journal* reports that China will set up pilot zones to quicken the pace of financial reform. The pilot zones will be launched in three main areas: 1) Taizhou city in Zhejiang province, with the intention to develop "innovative and online financial institutions to help small- and medium-sized enterprises to tap onshore and offshore funds," 2) northeast province Jilin, with a focus on easing access to finance for the agricultural sector, and 3) new pilot zones in the existing Guangdong, Tianjin, and Fujian free-trade zones to develop cross-strait financial cooperation with a focus on cross-border use of RMB and cross-border investment and financing.
20. December 2015: Policy makers lay out plans to offer a fully convertible yuan-denominated crude oil contract without quota or size restrictions open to both domestic and foreign investors.
21. January 2016: Authorities announce several measures to increase access to the bond market. First, the MoF will now allow the Social Security Fund, housing funds, and corporate annuities to invest in muni bonds. Second, the PBoC announced that individuals with annual incomes of more than RMB 500K, RMB 3 million of financial assets, and over two years of securities investment experience can now buy any bonds they like over the counter. Previously, only certificate treasury bonds were available to individuals.
22. March 2016: NDRC announces a fast-track scheme for corporate bond sales procedures. Qualified companies in 40 cities and counties are allowed to file bond issuance applications directly to NDRC. Previously they had to submit applications to provincial branches.
23. June 2016: NDRC changes the offshore bond issuance regulations for 21 onshore companies from approval-based to registration-based. The release specifically states that companies will be encouraged to use this channel to increase lending to the real economy and priority investments. The group includes the Big 4, the development banks, and other large central SOEs.

Opening Markets Up to Foreigners

1. December 2013: PBoC publishes plans to loosen capital account control in Shanghai free-trade zone (FTZ): 1) Qualified institutions/individuals can invest in onshore/offshore capital accounts freely, to override QFII/QDII quotas; 2) qualified institutions, when investing overseas, do not have to receive government approval for currency settlement; 3) qualified institutions/individuals can set up free-trade accounts in the zone, funds in which can be transferred freely across the border.
2. January 2014: Shanghai FTZ largely removes quota control on RMB cross-border flow under trading accounts in 2013. They announce this may apply to capital accounts in 2014 (capital flows still heavily regulated between the FTZ and the rest of the mainland).
3. April 2014: Stock Exchange Reform—Premier Li announces the linking of the Hong Kong and Shanghai exchanges.
4. June 2014: Cap on FX deposit rates removed in Shanghai.
5. November 2014: Launch of Shanghai-Hong Kong Stock Connect.
6. November 2014: Announcement that global investors entering Chinese markets through the stock connect program will not be subject to Chinese capital gains tax.
7. April 2015: Mainland mutual funds allowed to invest in H-Shares via SH-HK Stock Connect without requiring QDII approval.
8. May 2015: Qualified Domestic Individual Investor pilot scheme announced, which will allow some domestic individual investors access to foreign markets. Pilot will launch in six cities; individuals apply to join.
9. July 2015: China to ease restrictions on certain foreign institutional investors' (central banks, sovereign wealth funds, large international financial organizations) access to the interbank market by no longer requiring approval and also allowing these institutions to trade bonds, swaps, and conduct bond repo.
10. September 2015: The NDRC announces a simplification of the process for companies to raise funds through offshore loans and RMB bonds. Previously, each instrument would have to be approved by the NDRC, but the new policy will only require one-time registration with the regulator, giving companies more control over the timing and amount of capital raises.
11. September 2015: PBoC announces RMB sovereign bonds to be sold in London. First bonds sold in June 2016.
12. September 2015: China's central bank raises the ceiling on cross-border yuan fund flows for multinationals. The cap on the net inflow is raised to 50% from 10% of the total shareholders' equity in the cash pool.
13. December 2015: South Korea and Russia announce their intentions to sell RMB denominated sovereign bonds.
14. December 2015: PBoC opens RQFII pilot area to UAE and Thailand with investment amount of RMB 50 billion.
15. January 2016: First foreign banks (HSBC and BoC HK) allowed to issue yuan-denominated bonds in the Chinese interbank market (RMB 11 billion collectively)
16. January 2016: The PBoC changes regulations to allow non-residents to invest in RMB as time deposits.
17. February 2016: SAFE relaxes rules on the QFII (capital inflows) program. The main changes are 1) increased quota allocation to all existing participants (minimum $20 million, max $5 billion) 2), open-ended mutual funds will be allowed daily rather than weekly liquidity, and 3) lock-up period changes from one year to three months.
18. February 2016: PBoC opens the onshore interbank bond market to qualified foreign institutional investors (all fund types outside of hedge funds) that are 1) incorporated outside of China and in compliance with their local laws, 2) have not been subject to major penalties related to bond investments in the past three years, and 3) have appropriate risk management controls. These investors will no longer be subject to quota limits.
19. April 2016: Regulators are planning on opening up iron ore futures to foreign participation. The Dalian exchange is the world's most liquid market for iron ore and steel.
20. April 2016: The PBoC says foreign central banks and other "similar" institutions investing in the domestic bond market will be able to freely remit funds without regulatory approval. This follows on the announcement late last year that they could invest with no

quota. With regard to engaging in currency transactions, institutions will reportedly have access to "all listed products, including spots, forwards, swaps, and options."

21. May 2016: The first batch of foreign commercial banks (four of them) allowed to begin direct trading of the onshore RMB (CNY).
22. June 2016: China gives US a RMB 250 billion RQFII quota, second only to Hong Kong.
23. August 2016: Shenzhen-Hong Kong connect to launch in November: aggregate quotas changed. Chinese investors now have access to ETFs, which could give them new foreign asset exposures.
24. September 2016: RQFII quotas no longer based on opaque application process. New registration scheme that will allocate quotas based on AUM, with opportunity for larger quotas through further applications. Also shortens investment lock-up periods from 12 months to 3.
25. September 2016: Domestic firms registered in the Shanghai FTZ will start to issue RMB bonds for qualified offshore investors registered with Chinabond and with a dedicated fund within the FTZ.

Challenge #4: The Balance of Payments

Going from a closed and tightly controlled foreign exchange market to a more open and market-driven one for any economy is never easy, but it is especially challenging for China now because of the other challenges that it is having to deal with at this time, and because of the size and complexity of China's foreign exchange market. The new leadership has moved at a relatively fast and orderly pace in this direction, all things considered. In 2014, the leadership announced that they would allow a much greater range of movement for the RMB, which would increasingly be driven within some measure of fair value by market forces. This adjustment is part of the PBoC's continued push to balance the tradeoffs related to exchange rate management, domestic monetary policy, and the capital account. What follows is a list of relevant reforms.

1. April 2012: China widens the RMB trading band to +/-1% from +/-0.5%, the first such move since 2007.
2. March 2014: PBoC widens RMB daily trading band from +/-1% to +/-2%.
3. June 2014: Direct trading starts between the yuan and the pound. Previously, direct trading only existed between the RMB and USD.
4. September 2014: Direct trading between the euro and yuan begins in the Chinese interbank forex market.
5. March 2015: PBoC Governor Zhou Xiaochuan states an intention to improve convertibility and reach the standards of a freely convertible currency in 2015.
6. August 2015: The PBoC allows more market forces to flow through to the RMB, moving further toward a "dirty float" and letting the currency depreciate about 3.5% over three days of trading. The PBoC also changes its policy for setting the daily fix to set it mostly in line with the previous day's close so that the fix is more representative of the price of the currency.
7. August 2015: PBoC requires banks engaging in currency forwards (derivatives, futures, swaps, and options) businesses to deposit 20% of their sales at the PBoC starting in October 2015. These deposits will be held for a year with no interest.
8. September 2015: SAFE issues new rules requiring banks to scrutinize FX conversions of individuals and enforce stricter standards for clients engaging in FX transactions.
9. September 2015: China clamps down on forwards trading to curb yuan pressures by requiring 20% reserves (in the form of USD) for every nominal FX forwards transaction they hold, increasing transaction costs significantly.
10. November 2015: IMF decides to include the RMB in the SDR currency basket.
11. December 2015: PBoC announces it will allow non-financial companies in Shanghai's FTZ to freely convert foreign debt into RMB. Previously, there was an extensive approval process to convert foreign debts into RMB for onshore usage.
12. December 2015: The PBoC suspends the approval of new RQDII quotas, concerned that it is aiding offshore RMB short selling.
13. December 2015: PBoC clarifies it will manage the RMB against a set of baskets.
14. January 2016: The PBoC indicates they may slow the pace of capital account deregulation. 1) If the interest rate surges, the focus will be on liberalizing the exchange rate and capital account; 2) if the surge is in the exchange rate, the focus will be on interest rates and capital accounts; 3) if capital outflows are excessive, the focus will be on interest rates and the exchange rate.
15. January 2016: Policy makers tighten control over ODI in the Shanghai FTZ. If an ODI deal is more than $30 million, the company and bank must be reviewed by SAFE; the previous threshold was $300 million.
16. January 2016: PBoC changes regulations to allow nonresidents to invest their RMB as time deposits.
17. January 2016: PBoC instructs mainland banks to require more detailed documentation and increase scrutiny when corporates remit profits back to their home countries.
18. January 2016: PBoC stipulates companies can only buy FX to settle current account transactions a maximum of five days in advance. Previously, companies had been free to make their own decisions on timing.
19. February 2016: Regulators move to limit purchases of offshore insurance policies. In addition, regulators engage in window guidance for banks to discourage their customers' purchases (or risk the consequences). Insurance purchases will now also be subject to the new $5K transaction limit on UnionPay cards, the most common way of paying for policies.
20. March 2016: SAFE announces they will cancel any QDII quota that has not been used for more than a year, compared to two years previously.
21. April 2016: New regulations by SAFE and PBoC announced to encourage more FX borrowing (and thus capital inflows). By and large, it seems that 1) banks will be allowed to be more net short FX on their balance sheets and 2) onshore companies will have easier access to FX borrowing as the requirement for preapproval will be removed.
22. June 2016: CFETS (the FX trading system operator) announces that it is preparing to open branches in London and New York as part of efforts to promote the RMB's global status. It states the intent is to further cooperate with foreign trading platforms and eventually support 24/7 trading.
23. June 2016: SAFE announces all issuers of FX debt are allowed to convert to RMB at their preferred timing and loosens control on the use of funds raised by basing it on a negatives rather than a positives list.
24. June 2016: SAFE reduces limits on converting for FDI and offshore IPOs.

25. July 2016: PBoC sets new reserve requirements on onshore RMB forward settlement. Foreign banks will now have to hold 20% reserves against onshore forward settlement, bringing them in line with already existing regulations on onshore banks (enacted September 2015).
26. September 2016: Starting October 1, there will be a "negative list" that states the industries foreign investors are not allowed to invest in. Anything not on this list will be entered into the registration system with no approval needed. This is an expansion of the pilot test in several FTZs.
27. September 2016: CIRC approves domestic insurers' ability to buy stocks on the Shanghai-Hong Kong Stock Connect, providing additional avenue for capital outflow.

Having followed most economies and policy makers in the world for decades, we can make comparisons and assure you that these are among the most capable.

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This presentation and the OM will only be made available to persons or entities who are “accredited investors” under the Securities Act of 1933, as amended, and “qualified purchasers” under the Investment Company Act of 1940, as amended. The distribution of this presentation and the OM may be restricted by law in certain jurisdictions, and it is the responsibility of persons into whose possession this presentation or the OM comes to inform themselves about, and observe, any such restrictions.

Certain information contained herein constitutes forward-looking statements (including projections, targets, hypotheticals, ratios, estimates, returns, performance, opinions, activity and other events contained or referenced herein), which can be identified by the use of terms such as “may,” “will,” “should,” “expect,” “anticipate,” “project,” “estimate,” “intend,” “continue” or “believe” or other variations (or the negatives thereof) thereof. Due to various risks, assumptions, uncertainties and actual events, including those discussed herein and in the OM, actual results, returns or performance may differ materially from those reflected or contemplated in such forward-looking statements. As a result, prospective investors should not rely on such forward-looking statements in making their investment decisions. Any forward-looking statements contained herein reflect Bridgewater’s current judgment and assumptions which may change in the future, and Bridgewater has no obligation to update or amend such forward-looking statements.

Bridgewater’s investment process seeks to understand the cause and effect linkages that drive markets over time. To assess and refine its understanding of these linkages, Bridgewater performs historical stress tests across a wide range of timeframes and market environments. From these stress tests, Bridgewater is able to simulate how its strategies would have performed prior to their inception. For strategies that include active decision making, Bridgewater often “humbles” its simulated alpha returns (by systematically adjusting downward the simulated results that Bridgewater’s current alpha investment logic produces) to account for the possibility that it could be wrong. Because this stress testing is a core component of Bridgewater’s investment process, it shares these simulations with current and prospective investors to demonstrate its thinking. However, because they do not demonstrate actual results, these simulations are inherently limited and should not be relied upon to make an investment decision.

HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM.

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Bridgewater believes that a particular return stream should be evaluated against its expected performance or its benchmark. To that end, Bridgewater demonstrates whether its strategies are operating as expected via a cone chart, which shows the performance of a particular strategy over time relative to the strategy’s benchmark and also within bands of standard deviation from that benchmark. Separately, to demonstrate the impact of market conditions on the strategies it manages, Bridgewater explains the macro-economic pressures and market conditions that effected performance in the context of client letters, account reviews, or other publications that Bridgewater provides to each current and prospective investor on a regular basis. Additional information about how Bridgewater thinks about setting expectations for its strategies via a benchmark is available upon request.

IMPORTANT DISCLOSURES

Any tables, graphs or charts relating to past performance, whether hypothetical, simulated or actual, included in this presentation are intended only to illustrate the performance of indices, strategies, or specific accounts for the historical periods shown. When creating such tables, graphs and charts, Bridgewater may incorporate assumptions on trading, positions, transactions costs, market impact estimations and the benefit of hindsight. For example, transaction cost estimates used in simulations are based on historical measured costs and/or modeled costs, and attribution is derived from a process of attributing positions held at a point in time to specific market views and is inherently imprecise. Such tables, graphs and charts are not intended to predict future performance and should not be used as a basis for making any investment decision. Bridgewater has no obligation to update or amend such tables, graphs or charts.

Statements regarding target performance or target ratios related to assumed risk budgets, liabilities, volatility, target volatility, tracking error or other targets should not be considered a guarantee that such results can or will be achieved. For example, Bridgewater may adjust returns to match, for instance, the annualized standard deviation of two or more return series but this adjustment does not suggest that the returns or assets are similar with respect to other aspects of the risk such as liquidity risk. Any statements with respect to the ability to risk match or risk adjust in the future are not a guarantee that the realized risks will be similar and material divergences could occur. All performance and risk targets contained herein are subject to revision by Bridgewater and are provided solely as a guide to current targets.

Discussions related to the risk controlling capabilities of low risk portfolios, diversification, passive investing, risk management, risk adjusting, and any other risk control theories, statements, measures, calculations and policies contained herein should not be construed as a statement that Bridgewater has the ability to control all risk or that the investments or instruments discussed are low risk. Active trading comes with a monetary cost and high risk and there is no guarantee the cost of trading will not have a materially adverse impact on any account, fund, portfolio or other structure. Bridgewater manages accounts, funds and strategies not referred to herein. Additionally, even where accounts, funds or strategies are traded similarly, performance may materially diverge based on, among other factors, timing, the approved instruments, markets, and target risk for each strategy or market. The price and value of the investments referred to in this presentation and the income, if any, derived therefrom may fluctuate.

Statistical and mathematical measures of performance and risk measures based on past performance, market assumptions or any other input should not be relied upon as indicators of future results. While Bridgewater believes the assumptions and possible adjustments it may make in making the underlying calculations are reasonable, other assumptions, methodologies and adjustments could have been made that are reasonable and would result in materially different results, including materially lower results. Where shown, targeted performance and the abilities and capabilities of the active and passive management approaches discussed herein are based on Bridgewater's analysis of market data, quantitative research of the underlying forces that influence asset classes as well as management policies and objectives, all of which are subject to change. The material contained herein may exhibit the potential for attractive returns, however it also involves a corresponding high degree of risk. Targeted performance, whether mathematically based or theoretical, is considered hypothetical and is subject to inherent limitations such as the impact of concurrent economic or geo-political elements, forces of nature, war and other factors not addressed in the analysis, such as lack of liquidity. There is no guarantee that the targeted performance for any fund or strategy shown herein can or will be achieved. A broad range of risk factors, individually or collectively, could cause a fund or strategy to fail to meet its investment objectives and/or targeted returns, volatilities or correlations.

Where shown, information related to markets traded may not necessarily indicate the actual historical or current strategies of Bridgewater. Markets listed may or may not be currently traded and are subject to change without notice. Markets used for illustrative purposes may not represent the universe of markets traded or results available and may not include actual trading results of Bridgewater. Other markets or trading, not shown herein, may have had materially different results. Attribution of performance or designation of markets and the analysis of performance or other performance with respect to scenario analysis or the determination of biases is based on Bridgewater's analysis. Statements made with respect to the ability of Bridgewater, a fund, a strategy, a market or instrument to perform in relation to any other market, instrument or manager in absolute terms or in any specific manner in the future or any specified time period are not a guarantee of the desired or targeted result.

Bridgewater research utilizes data and information from public, private and internal sources, including data from actual Bridgewater trades. Sources include, the Australian Bureau of Statistics, Barclays Capital Inc., Bloomberg Finance L.P., CBRE, Inc., CEIC Data Company Ltd., Consensus Economics Inc., Corelogic, Inc., CoStar Realty Information, Inc., CreditSights, Inc., Credit Market Analysis Ltd., Dealogic LLC, DTCC Data Repository (U.S.), LLC, Ecoanalitica, EPFR Global, Eurasia Group Ltd., European Money Markets Institute – EMMI, Factset Research Systems, Inc., The Financial Times Limited, GaveKal Research Ltd., Global Financial Data, Inc., Haver Analytics, Inc., The Investment Funds Institute of Canada, Intercontinental Exchange (ICE), International Energy Agency, Lombard Street Research, Markit Economics Limited, Mergent, Inc., Metals Focus Ltd, Moody's Analytics, Inc., MSCI, Inc., National Bureau of Economic Research, Organisation for Economic Cooperation and Development, Pensions & Investments Research Center, Renwood Realtytrac, LLC, RP Data Ltd, Rystad Energy, Inc., S&P Global Market Intelligence Inc., Sentix Gmbh, Spears & Associates, Inc., State Street Bank and Trust Company, Sun Hung Kai Financial (UK), Thomson Reuters, Tokyo Stock Exchange, United Nations, US Department of Commerce, Wind Information (Shanghai) Co Ltd, Wood Mackenzie Limited, World Bureau of Metal Statistics, and World Economic Forum. While we consider information from external sources to be reliable, we do not assume responsibility for its accuracy.

None of the information related to a fund or strategy that Bridgewater may provide is intended to form the basis for any investment decision with respect to any retirement plan's assets. Any information Bridgewater provides should be independently and critically evaluated based on whatever other sources deemed appropriate, including legal and tax advice; it is also not intended to be impartial investment information or advice as Bridgewater may recommend one or more Bridgewater products in connection with such information, which would result in additional fees being paid to Bridgewater. Bridgewater's status as an ERISA fiduciary with respect to the management of any existing or future Bridgewater product(s) in which you invest would be (or continue to be) set forth in that product's applicable governing instruments. You are responsible for ensuring that your decision to invest in any Bridgewater product does not violate the fiduciary or prohibited transaction rules of ERISA, the U.S. Internal Revenue Code or any applicable laws or regulations that are similar. On and after June 9, 2017, the information provided herein is being made available only to "independent fiduciaries with financial expertise" (within the meaning of the Definition of the Term "Fiduciary"; Conflict of Interest Rule – Retirement Investment Advice, 81 Fed. Reg. 20,946 (Apr. 8, 2017), available at https://www.gpo.gov/fdsys/pkg/FR-2016-04-08/pdf/2016-07924.pdf), and this presentation should not be accepted by any person who does not meet such requirements.

This presentation was written in connection with the promotion or marketing of a Bridgewater fund or strategy, and it was not intended or written to be used and cannot be used by any person for the purpose of avoiding penalties that may be asserted under the U.S. Internal Revenue Code.

In certain instances amounts and percentages in this presentation are approximate and have been rounded for presentation purposes. Statements in this presentation are made as of the date appearing on this presentation unless otherwise indicated. Neither the delivery of this presentation or the OM shall at any time under any circumstances create an implication that the information contained herein is correct as of any time subsequent to such date. Bridgewater has no obligation to inform potential or existing investors when information herein becomes stale, deleted, modified or changed.

ALL WEATHER CHINA STRATEGY – RMB SHARE CLASS PERFORMANCE DISCLOSURE

All Weather China: Class RMB Performance (Net of Fees)

	China All Weather Total Return in RMB
Last 1 Year	13.6%
Last 3 Years	--
Last 5 Years	--
Last 7 Years	--
Last 10 Years	--

Annualized Returns (Apr-18 through Aug-19)

Net Since Inception Apr-18 through Aug-19

	Total Return in RMB
Return	9.5%
Standard Deviation	7.2%
Sharpe Ratio	0.97

Past results are not necessarily indicative of future results.

Standard deviation is calculated using gross of fees performance.

Bridgewater All Weather China Strategy Performance Disclosure:
Performance from April 2018 to present represents the actual returns of the All Weather China account for the Renminbi Share class. The returns shown are for accounts hedged to the Chinese Renminbi.

Gross of fees performance is gross of management fees and includes reinvestment of interest, gains, and losses. Returns will be reduced by the investment advisory fees and any other expenses that may be incurred in the management of the account.

Net of fees performance has been calculated by applying our standard All Weather China strategy fee schedule for a minimum size account, which are the highest fees charged as disclosed in the offering documents. Investment advisory fees are described in Bridgewater's ADV Part 2A.

No representation is being made that any account will or is likely to achieve returns similar to those shown. Trading in futures is risky and can result in losses as well as profits. PAST RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. Performance as of the current month is estimated and subject to change.

ALL WEATHER CHINA ASSET MIX DISCLOSURE

All Weather China Asset Mix (Net of Fees)

	Hedged to USD Total Return in USD	Hedged to RMB Total Return in RMB
Last 1 Year	16.0%	17.6%
Last 3 Years	2.3%	5.1%
Last 5 Years	3.4%	6.5%
Last 7 Years	1.4%	4.5%
Last 10 Years	3.3%	6.1%

Annualized Returns (Aug-02 through Aug-19)

Net Since Inception Aug-02 through Aug-19

	Hedged to USD Total Return in USD	Hedged to RMB Total Return in RMB
Annualized Return	7.9%	9.5%
Standard Deviation	11.2%	11.2%
Sharpe Ratio	0.58	0.73

Standard deviation is calculated using gross of fees performance. Past results are not necessarily indicative of future results. HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM.

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All Weather China Asset Mix Simulation Performance Disclosure

Where shown all performance of the All Weather China Asset Mix is based on simulated, hypothetical performance and not the returns of any Bridgewater strategy. Bridgewater's investment selection and trading strategies are systematic and rules-based. However, they are not fully automated and they do include human input. As a result, back-tested returns are designed based on assumptions about how Bridgewater would have implemented the All Weather China Strategy prior to its existence. These assumptions are intended to approximate such implementation, but are inherently speculative.

The simulated performance for the All Weather China Asset Mix was derived by applying Bridgewater's current investment systems and portfolio construction logic to historical market returns across the markets currently selected to be included in the All Weather China Strategy. A list of the markets used appears below. We use actual market returns when available as an input for our hypothetical returns and otherwise use Bridgewater Associates' proprietary estimates, based on other available data and our fundamental understanding of asset classes. In certain cases, market data for an exposure which otherwise would exist in the simulation may be omitted if the relevant data is unavailable, deemed unreliable, immaterial or accounted for using proxies. Proxies are assets that existed and for which data is available, which Bridgewater believes would approximate returns for an asset that did not exist or for which reliable data is not available. For example, in the All Weather China Strategy we hold bonds across the yield curve, but we use an index of 7-10 year maturity bond returns for the purpose of simulation. Examples of omitted markets or accounted for using proxies include, but are not limited to, certain nominal bonds, equities, and commodities. We simulate as far back as we can based on the availability of reasonable data and proxies. Additionally, the mix and weightings of markets traded for the All Weather China Strategy are subject to change in the future.

Simulated asset returns are subject to considerable uncertainty and potential error, as a great deal cannot be known about how assets would have performed in the absence of actual returns. The All Weather China Asset Mix is an approximation of our intended process but not an exact replication and may have differences including but not limited to the precise mix of markets used and the weights applied to those markets. It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology (including the addition/removal of asset classes) and the underlying market data. There is no guarantee that previous results would not be materially different. Future strategy changes could materially change previous simulated returns in order to reflect the changes accurately across time.

Transaction costs are accounted for and are estimates themselves based on historical measured costs and/or modeled costs. Actual transaction costs experienced could have been higher or lower than those reflected. Where noted, the All Weather China Asset Mix net of fees returns have been calculated using our standard fee schedule for a minimum size account, which are the highest fees we have or would currently charge an account. Investment advisory fees are described in Bridgewater's ADV Part 2A. Gross of fees performance (i) excludes the deduction of management fees, and other operating expenses (the "fees and expenses") and (ii) includes the reinvestment of interest, gains and losses. Including the fees and expenses would lower performance. There is no guarantee regarding the All Weather China Strategy's ability to perform in absolute returns or relative to any market in the future, during market events not represented or during market events occurring in the future. Market conditions and events vary considerably, are unpredictable and can have unforeseen impacts resulting in materially adverse results.

Markets included in the All Weather China Asset Mix

The All Weather China Asset Mix includes returns from the following markets: Chinese nominal interest rates, global inflation-linked bonds, Chinese equities, gold, and other commodities.

ALL WEATHER ASSET MIX DISCLOSURE

All Weather Asset Mix Performance (Net of Fees)

	Total Return in USD
Last 1 Year	11.6%
Last 3 Years	7.2%
Last 5 Years	4.9%
Last 7 Years	5.4%
Last 10 Years	8.4%

Annualized Returns (Jan-70 through Aug-19)

Net Since Inception Jan-70 through Aug-19

	Total Return in USD
Annualized Return	12.0%
Standard Deviation	10.5%
Sharpe Ratio	0.66

Standard deviation is calculated using gross of fees performance. Past results are not necessarily indicative of future results. HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN HYPOTHETICAL PERFORMANCE RESULTS AND THE ACTUAL RESULTS SUBSEQUENTLY ACHIEVED BY ANY PARTICULAR TRADING PROGRAM.

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All Weather Asset Mix Simulation Performance Disclosure

Where shown all performance of the Bridgewater All Weather Asset Mix is based on simulated, hypothetical performance and not the returns of Bridgewater's All Weather strategy. Bridgewater's investment selection and trading strategies are systematic and rules-based. However, they are not fully automated and they do include human input. As a result, back-tested returns are designed based on assumptions about how Bridgewater would have implemented the All Weather Asset Mix, prior to its existence. These assumptions are intended to approximate such implementation, but are inherently speculative.

The simulated performance for the All Weather Asset Mix was derived by applying Bridgewater's current investment systems and portfolio construction logic to historical market returns across the markets selected for the All Weather Asset Mix. A table of the markets used appears below. We use actual market returns when available as an input for our hypothetical returns and otherwise use Bridgewater Associates' proprietary estimates, based on other available data and our fundamental understanding of asset classes. In certain cases, market data for an exposure which otherwise would exist in the simulation may be omitted if the relevant data is unavailable, deemed unreliable, immaterial or accounted for using proxies. Proxies are assets that existed and for which data is available, which Bridgewater believes would approximate returns for an asset that did not exist or for which reliable data is not available. For example, before reliable commodity futures returns data can be found Bridgewater estimates futures returns by using the spot commodity returns and their typical relationship to futures returns. Examples of omitted markets or accounted for using proxies include, but are not limited to, emerging market equities, emerging market debt, and certain commodities. The mix and weightings of markets traded for All Weather Asset Mix are subject to change in the future.

The All Weather Asset Mix maintains the desired strategic asset allocation and level of risk regardless of market conditions. Accordingly, the All Weather Asset Mix does not alter the desired strategy asset allocation and level of risk based on the strategic management process employed in the All Weather Strategy.

Simulated asset returns are subject to considerable uncertainty and potential error, as a great deal cannot be known about how assets would have performed in the absence of actual returns. The All Weather Asset Mix is an approximation of our current process but not an exact replication and may have differences including but not limited to the precise mix of markets used and the weights applied to those markets. It is expected that the simulated performance will periodically change as a function of both refinements to our simulation methodology (including the addition/removal of asset classes) and the underlying market data. There is no guarantee that previous results would not be materially different. Future strategy changes could materially change previous simulated returns in order to reflect the changes accurately across time.

Transaction costs are accounted for and are estimates themselves based on historical measured costs and/or modeled costs. Actual transaction costs experienced could have been higher or lower than those reflected. Where noted, the All Weather Asset Mix net of fees returns have been calculated using our standard fee schedule for a minimum size account, which are the highest fees we have or would currently charge an account. Investment advisory fees are described in Bridgewater's ADV Part 2A. Gross of fees performance (i) excludes the deduction of management fees, and other operating expenses (the "fees and expenses") and (ii) includes the reinvestment of interest, gains and losses. Including the fees and expenses would lower performance. There is no guarantee regarding the All Weather Asset Mix's ability to perform in absolute returns or relative to any market in the future, during market events not represented or during market events occurring in the future. Market conditions and events vary considerably, are unpredictable and can have unforeseen impacts resulting in materially adverse results.

Markets included in the All Weather Asset Mix Simulation

The All Weather Asset Mix Simulation includes returns from the following markets: global nominal interest rates, global inflation linked bonds, emerging market credit spreads, corporate credit spreads, global equities, and commodities.

Agenda Item
UTIMCO Board of Directors Meeting
September 26, 2019

Agenda Item: UTIMCO Performance Report and Market Update

Developed By: Harris

Presented By: Harris

Type of Item: Information Item

Description: Mr. Harris will present on performance and provide a market update.

Reference: *UTIMCO Update* presentation

The University of Texas/Texas A&M Investment Management Company

UTIMCO Update

September 2019

Britt Harris

President, CEO and Chief Investment Officer

Today's Topics

I. China / Global (Bob Prince)

II. Market and Funds Performance

III. Risk Management

IV. Strategic Partnership

V. Other

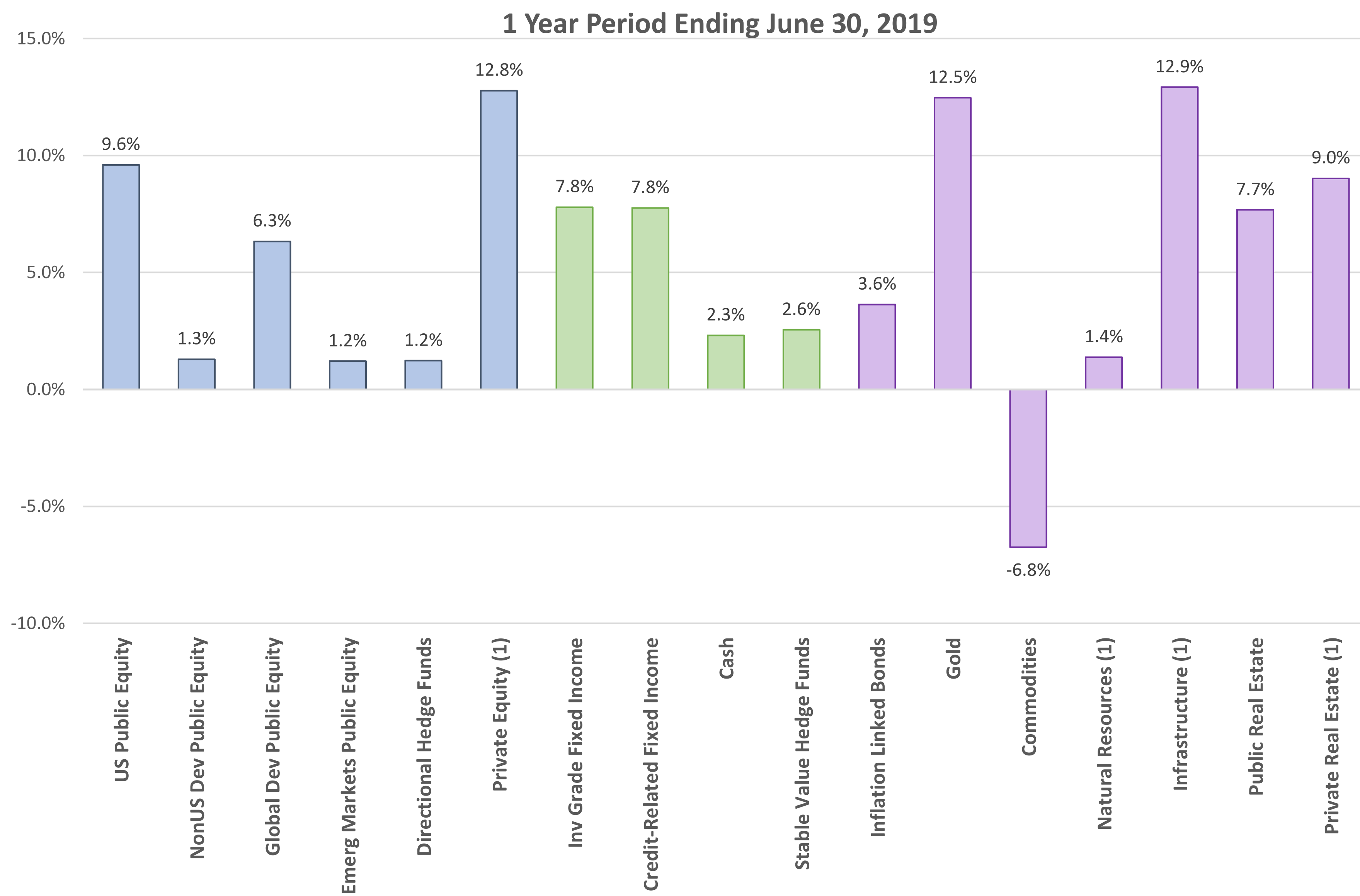
Summary of UTIMCO Report to UT Regents

- Results since March 2009
  - AUM up from $17 Billion to $47 Billion
  - Endowment return (annualized) was 9.9%
  - Top Quartile on risk adjusted results
- Five-year Strategic Plan approved
  - Head count and budget
  - Total Direct and Service Costs up 3% (2020)
  - Service Cost at 10.7 basis points (among lowest across peers)

Market and Funds Overview

Benchmark Performance

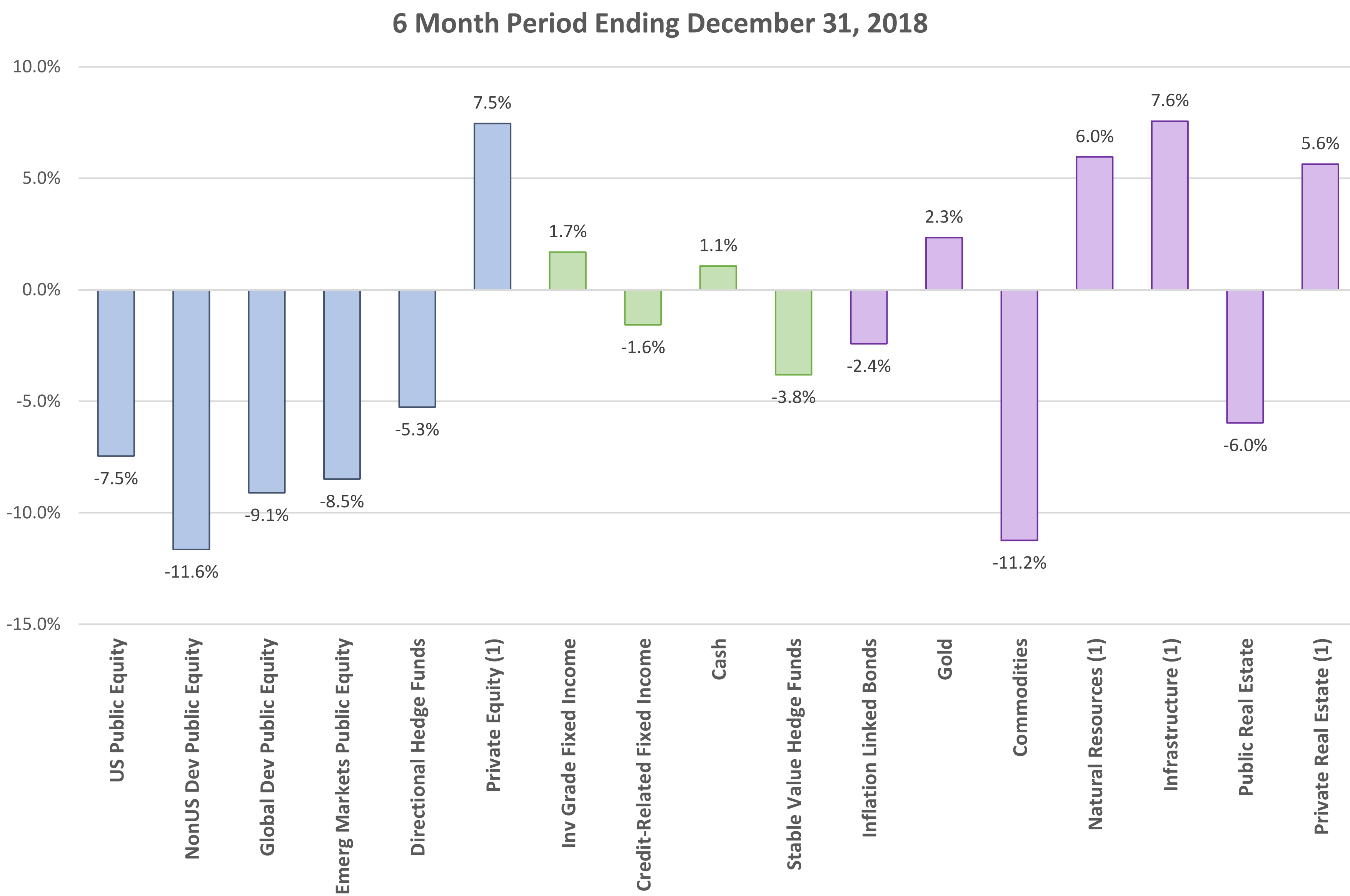
One Year Ending June 30, 2019



(1) The Cambridge benchmarks should be considered preliminary as they currently contain 3 quarters of actual data from Cambridge through March 31, 2019. An estimate based on the actual return of the respective UTIMCO portfolio for the 4th quarter of the three year period ending June 30, 2019 is currently being used as a proxy until Cambridge publishes their final benchmarks for the quarter in October or November.

Benchmark Performance

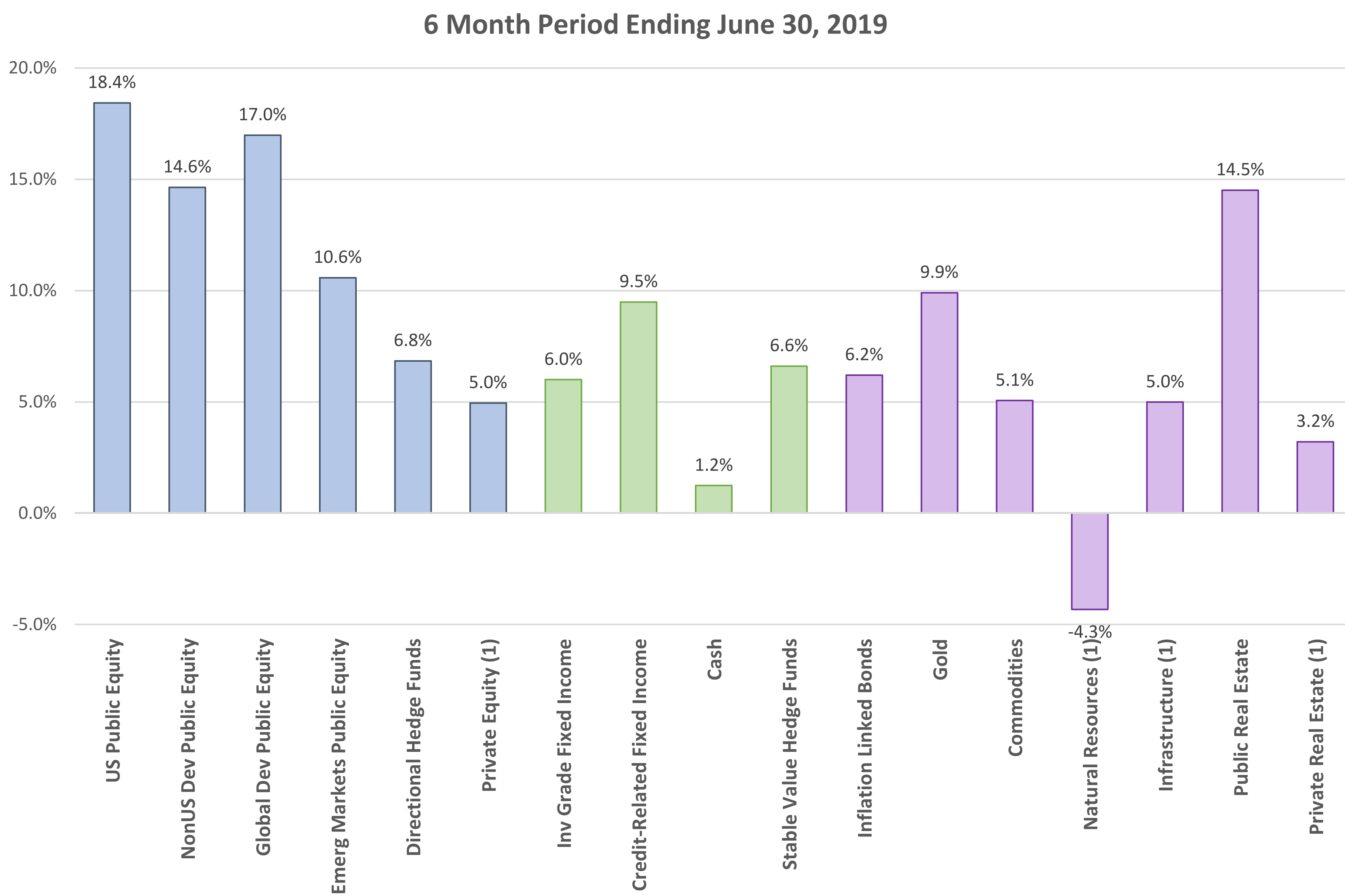
Six Months July 1, 2018 - December 31, 2018



(1) The Cambridge benchmarks should be considered preliminary as they currently contain 1 quarter of actual data from Cambridge through March 31, 2019. An estimate based on the actual return of the respective UTIMCO portfolio for the quarter ending June 30, 2019 is currently being used as a proxy until Cambridge publishes their final benchmarks for the quarter in October or November.

Benchmark Performance

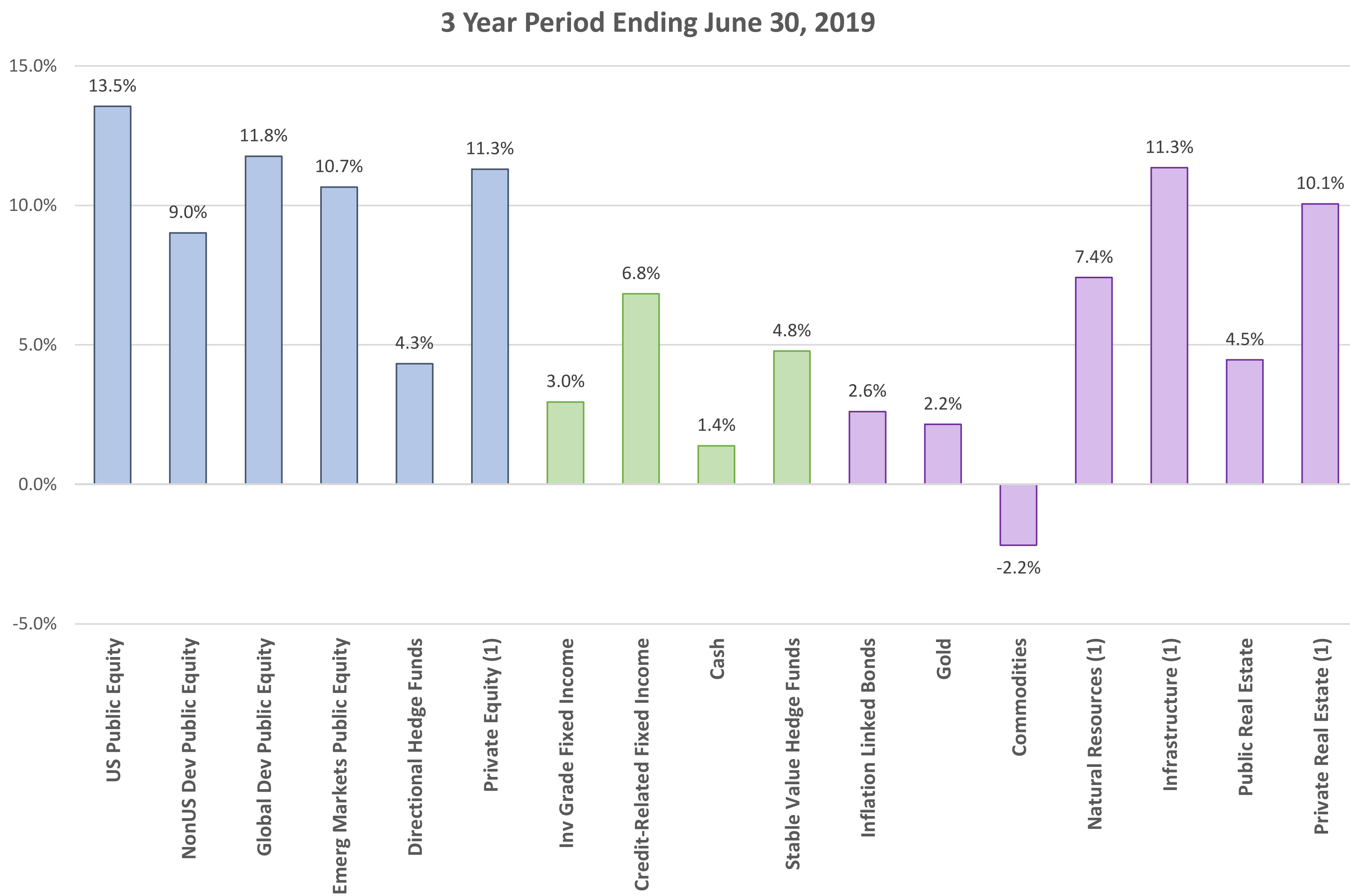
Six Months Ending June 30, 2019



(1) The Cambridge benchmarks should be considered preliminary as they currently contain 1 quarter of actual data from Cambridge through March 31, 2019. An estimate based on the actual return of the respective UTIMCO portfolio for the quarter ending June 30, 2019 is currently being used as a proxy until Cambridge publishes their final benchmarks for the quarter in October or November.

Benchmark Performance

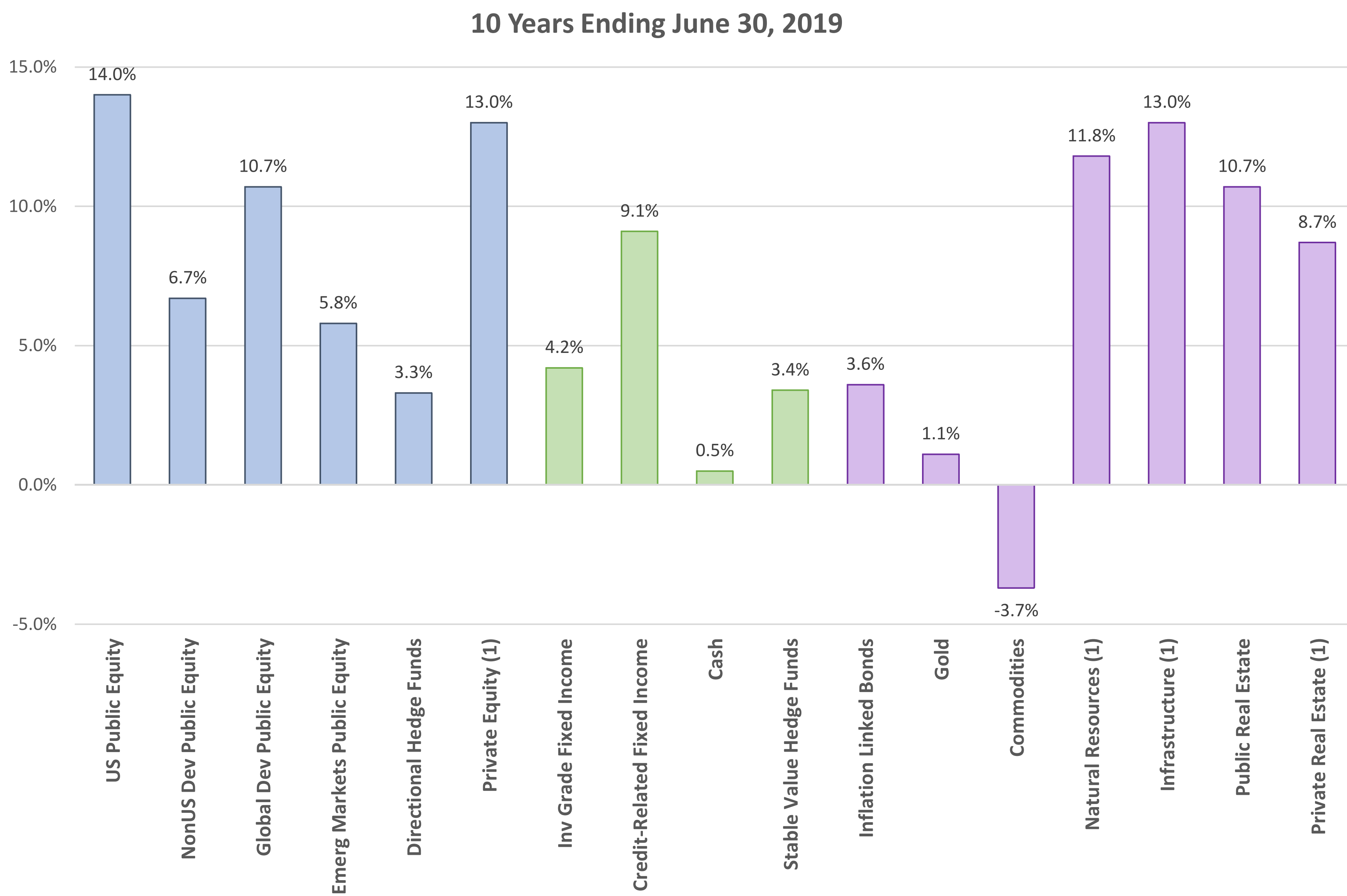
Three Years Ending June 30, 2019



(1) The Cambridge benchmarks should be considered preliminary as they currently contain 11 quarters of actual data from Cambridge through March 31, 2019. An estimate based on the actual return of the respective UTIMCO portfolio for the 12th quarter of the three year period ending June 30, 2019 is currently being used as a proxy until Cambridge publishes their final benchmarks for the quarter in October or November.

Benchmark Performance

Ten Years Ending June 30, 2019



(1) The Cambridge benchmarks should be considered preliminary as they currently contain 39 quarters of actual data from Cambridge through March 31, 2019. An estimate based on the actual return of the respective UTIMCO portfolio for the quarter ending June 30, 2019 is currently being used as a proxy until Cambridge publishes their final benchmarks for the quarter in October or November.

Overview of Funds

Periods Ending June 30, 2019

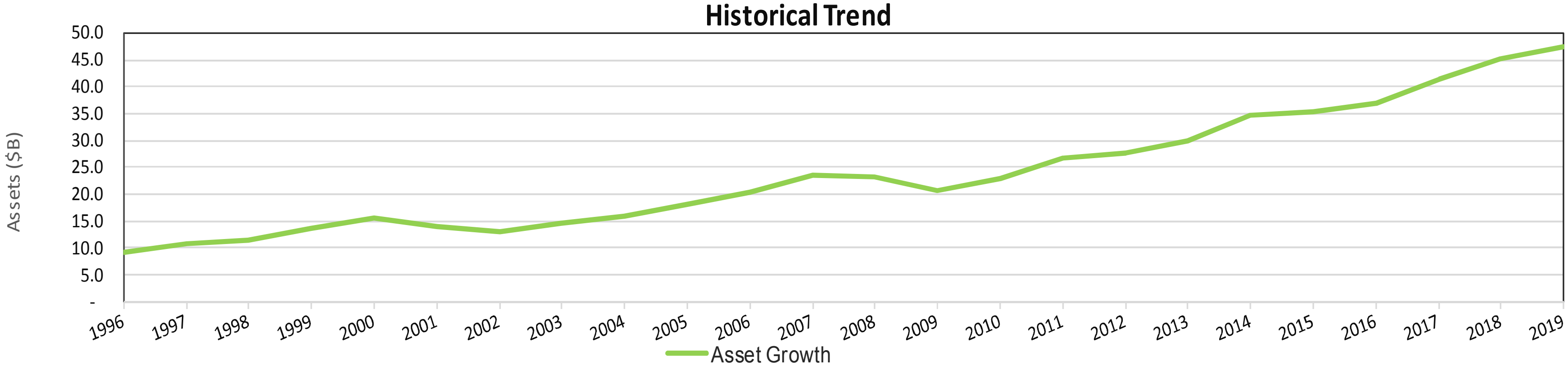
Overview of Funds
Periods Ending June 2019
Preliminary

		Returns					Alpha				
Endowment Funds	**$B**	**YTD**	**1Y**	**3Y**	**5Y**	**10Y**	**YTD**	**1Y**	**3Y**	**5Y**	**10Y**
PUF	$ 22.6	7.83	5.00	9.83	6.16	9.04	0.28	(1.79)	1.34	0.79	1.41
PHF	$ 1.2	7.79	5.03	10.01	6.40	9.10	0.24	(1.76)	1.52	1.03	1.47
LTF	$ 11.5	7.80	5.04	10.02	6.40	9.11	0.25	(1.75)	1.53	1.03	1.48
Other	$ 0.2	-	-	-	-	-	-	-	-	-	-
TOTAL	**$ 35.5**										
Operating Funds											
ITF	$ 9.2	9.38	5.17	6.27	3.27	6.34	1.00	0.82	1.26	0.81	1.57
Debt Proceeds	$ 0.4	1.25	2.37	1.58	1.03	N/A	0.01	0.06	0.20	0.16	N/A
STF	$ 2.2	1.23	2.34	1.48	0.94	0.55	(0.01)	0.03	0.10	0.07	0.06

		Increase
All Assets	**$ 47.3**	$ 1.4
March 2019	$ 45.9	$ 1.9
December 2018	$ 44.0	$ (1.4)
September 2018	$ 45.4	$ 0.8
June 2018	$ 44.6	

Income & Distributions ($M)	**Projected 8/31/2019**	**8/31/2018**	**8/31/2017**	**8/31/2016**
PUF Land Contributions	$ 1,015	$ 1,032	$ 689	$ 512
PUF Distribution	(1,014)	(887)	(839)	(773)
Net Payout ($M)	$ 1	$ 145	$ (150)	$ (261)

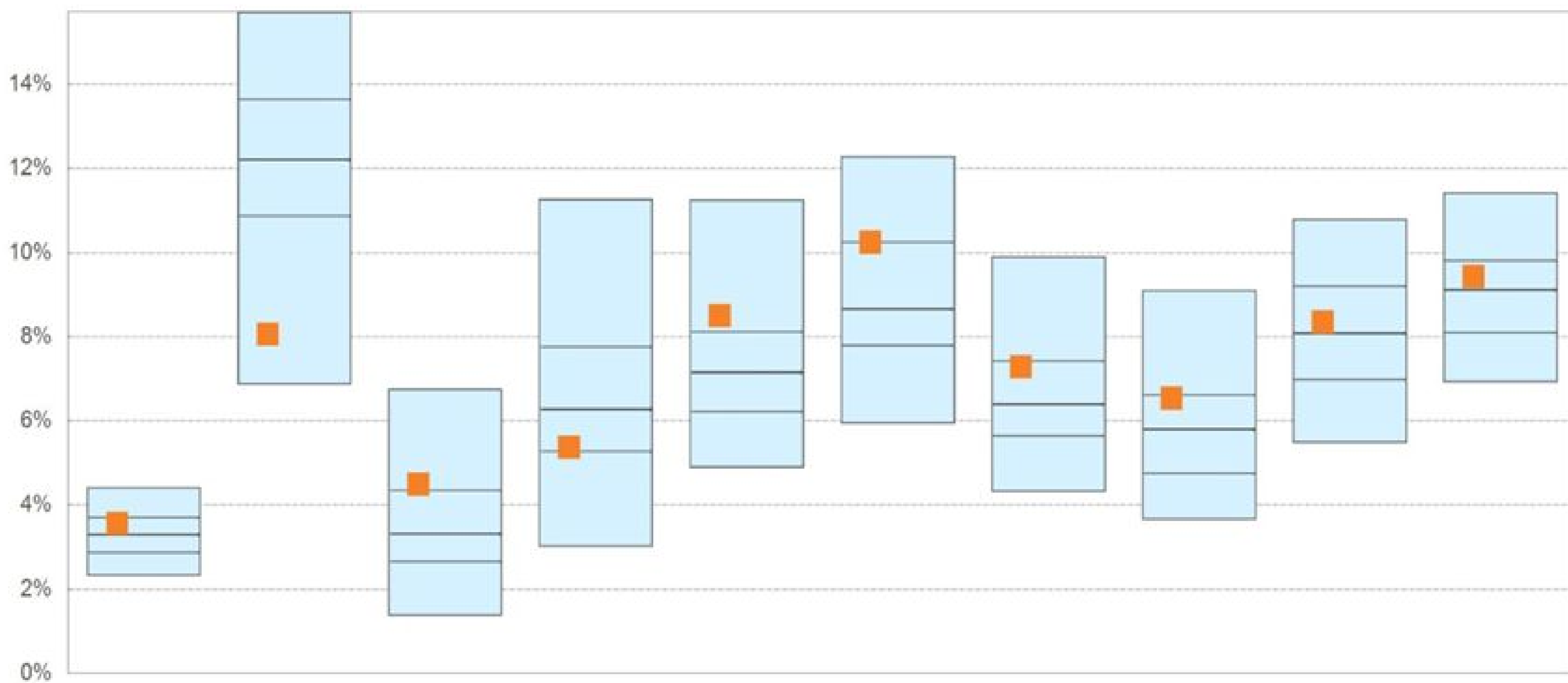
Historical Trend



Performance Comparison

Cumulative Periods Ending June 30, 2019

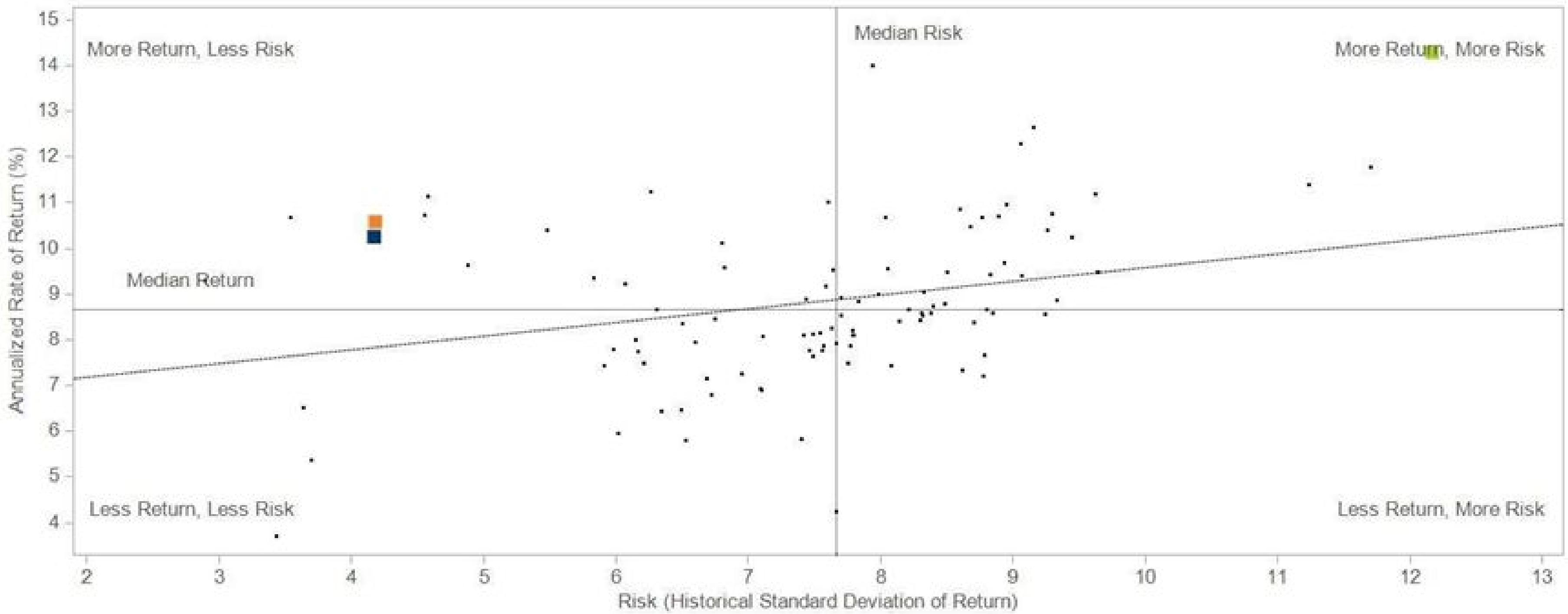
Total Returns of Master Trusts – Foundation & Endowment



Percentile Rankings	1 Qtr	2 Qtrs	3 Qtrs	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5th	4.42	15.71	6.74	11.26	11.24	12.28	9.90	9.10	10.79	11.41
25th	3.70	13.64	4.34	7.77	8.11	10.24	7.42	6.62	9.20	9.81
50th	3.29	12.21	3.32	6.27	7.16	8.66	6.40	5.80	8.09	9.11
75th	2.87	10.88	2.66	5.27	6.22	7.79	5.64	4.76	6.99	8.10
95th	2.33	6.88	1.39	3.02	4.90	5.95	4.33	3.67	5.49	6.94
No. Of Obs	111	110	109	108	101	100	97	97	88	71
PUF TOTAL FUND	3.46 (36)	7.96 (92)	4.39 (22)	5.27 (75)	8.41 (19)	10.14 (26)	7.18 (29)	6.44 (32)	8.25 (45)	9.34 (37)

Wilshire Trust Universe Comparison Service® (TUCS®)

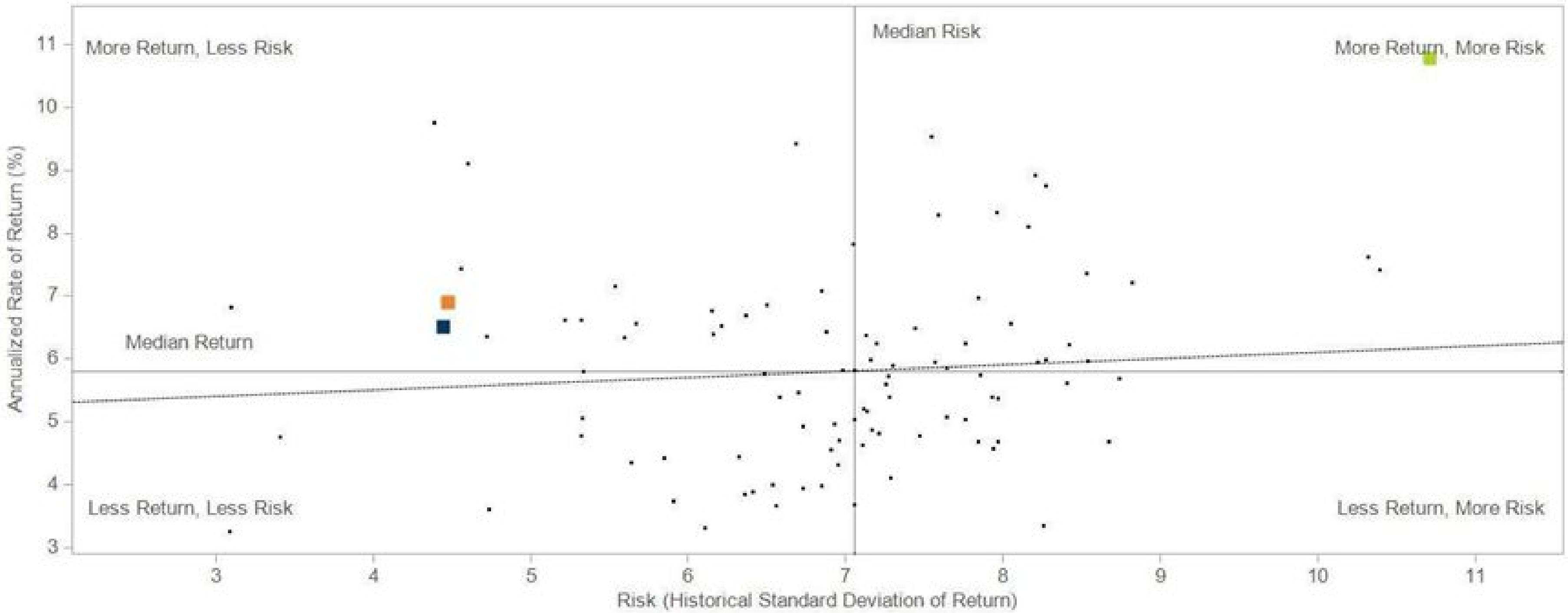
For past three years, PUF and GEF have generated more returns for less risk



Alpha: 6.58
Beta: 0.3
R-Squared: 0.08

3 Years Ending 6/30/19	Risk Value	Risk Rank	Return Value	Return Rank
GEF TOTAL FUND	4.22	92	10.48	22
PUF TOTAL FUND	4.21	93	10.14	26
S&P 500	12.21	1	14.19	2
Median	7.67		8.66	

Wilshire Trust Universe Comparison Service®(TUCS®)



Alpha: 5.11
Beta: 0.1
R-Squared: 0.01

5 Years Ending 6/30/19	Risk Value	Risk Rank	Return Value	Return Rank
GEF TOTAL FUND	4.51	93	6.83	22
PUF TOTAL FUND	4.48	94	6.44	32
S&P 500	10.74	1	10.71	1
Median	7.06		5.80	

Asset Allocation

As of June 30, 2019

		% of Fund	Over / (Under)
Public Equity	Public Equity	30.2%	1.2%
	Directional Hedge Funds	12.6%	0.6%
	Total Private Equity	20.6%	-1.4%
	Total Global Equity	**63.4%**	**0.4%**
Stable Value	Investment Grade Fixed Income	8.6%	-0.9%
	Credit Related Fixed Income	0.1%	0.1%
	Cash	2.1%	1.1%
	Stable Value Hedge Funds	7.0%	0.0%
	Total Stable Value	**17.8%**	**0.3%**
Real Return	Gold	1.6%	0.1%
	Natural Resources	7.3%	-0.7%
	Infrastructure	2.1%	0.1%
	Real Estate - Public	0.1%	0.1%
	Total Private Real Estate	7.7%	-0.3%
	Total Real Return	**18.8%**	**-0.7%**
	Total Fund	**100.0%**	**0.0%**

Explanation of Three-Year Alpha

Positive Contributors

July 2016 to June 2019	Tactical Allocation/ Benchmark Variance	Interactive Effect	Active Management	Total
HF Directional	0.01%	-0.01%	0.48%	0.48%
Total Private Equity	-0.10%	0.02%	0.51%	0.43%
PE Real Estate	0.00%	0.02%	0.36%	0.38%
Commodities	-0.05%	0.02%	0.18%	0.15%
Global Dev Public Equity	-0.04%	-0.02%	0.17%	0.11%
PE Infrastructure	0.01%	0.03%	0.06%	0.10%
HF Stable Value	0.01%	-0.06%	0.13%	0.08%
Inv Grade Fixed Income	0.04%	-0.01%	0.03%	0.06%
Public Real Estate	0.01%	-0.01%	0.05%	0.05%
PE Natural Resources	-0.04%	0.09%	-0.02%	0.03%
Non-US Public Equity	-0.04%	-0.01%	0.06%	0.01%
Credit Rel Fixed Income	0.00%	0.00%	0.00%	0.00%
				1.88%

Detractors

July 2016 to June 2019	Tactical Allocation/ Benchmark Variance	Interactive Effect	Active Management	Total
Cash	-0.14%	-0.09%	-0.04%	-0.27%
US Public Equity	-0.09%	0.00%	-0.12%	-0.21%
Tactical Asset Allocation	0.01%	-0.04%	0.00%	-0.03%
Emerging Markets Public Equity	-0.07%	0.01%	0.04%	-0.02%
Gold	0.02%	0.01%	-0.04%	-0.01%
				-0.54%
			Total	**1.34%**

UTIMCO Performance versus Peers

Five Years Ending June 30, 2019

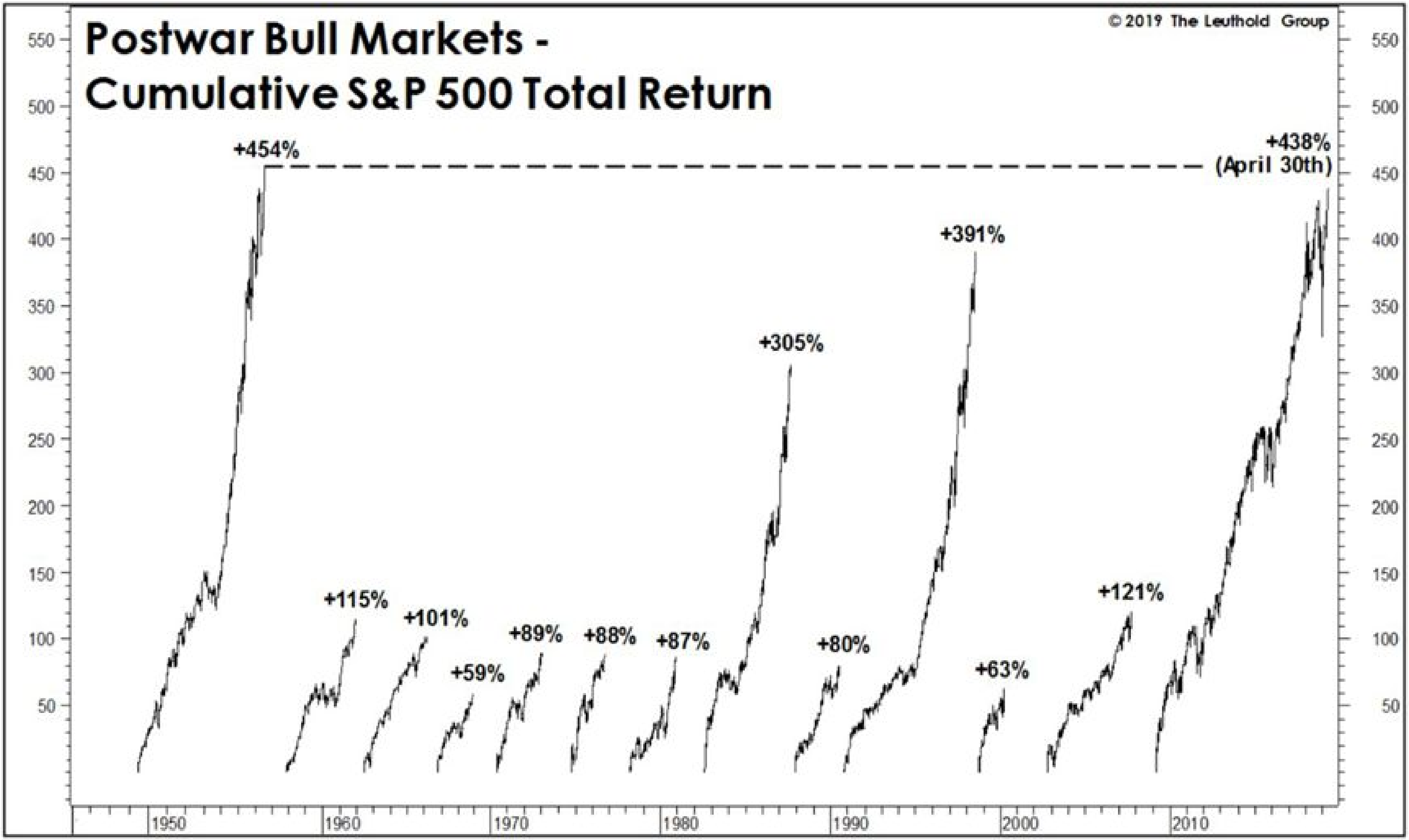
	UTIMCO Performance	Percentile Rank
Venture Capital	16.9%	12th
Private Real Estate Portfolios	15.5%	1st
US Private Equity Portfolios	13.2%	32nd
Global Equity Portfolios	13.1%	30th
Emerging Markets	12.3%	24th
US Equity Portfolios	11.8%	64th
NonUS Equity Portfolios	10.8%	29th
Hedge Fund Portfolios	6.9%	34th
Private Natural Resources	6.6%	N/A
Global Fixed Income (Unhedged)	2.6%	N/A

Note: Peer universe is approximately 250 institutions.

Wilshire Trust Universe Comparison Service® (TUCS®)

History of Expansions

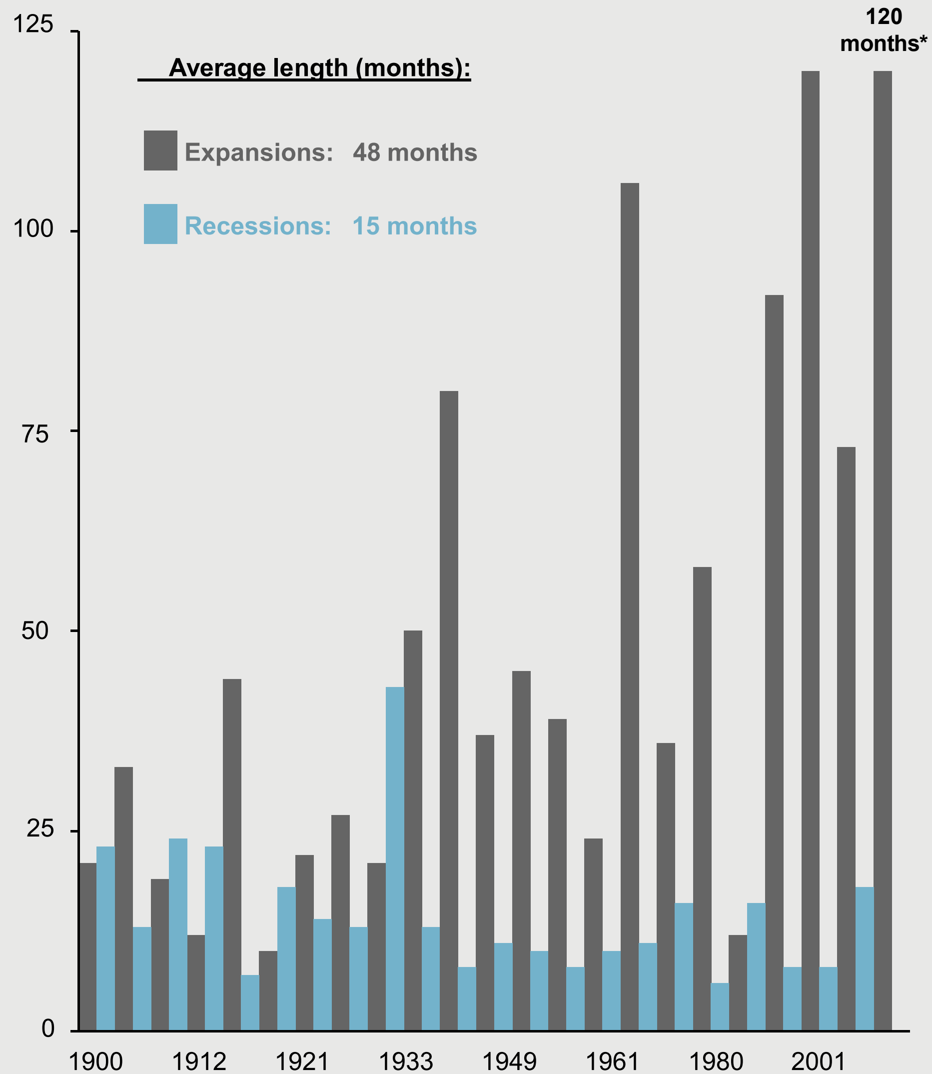
As of April 30, 2019



The Leuthold Group

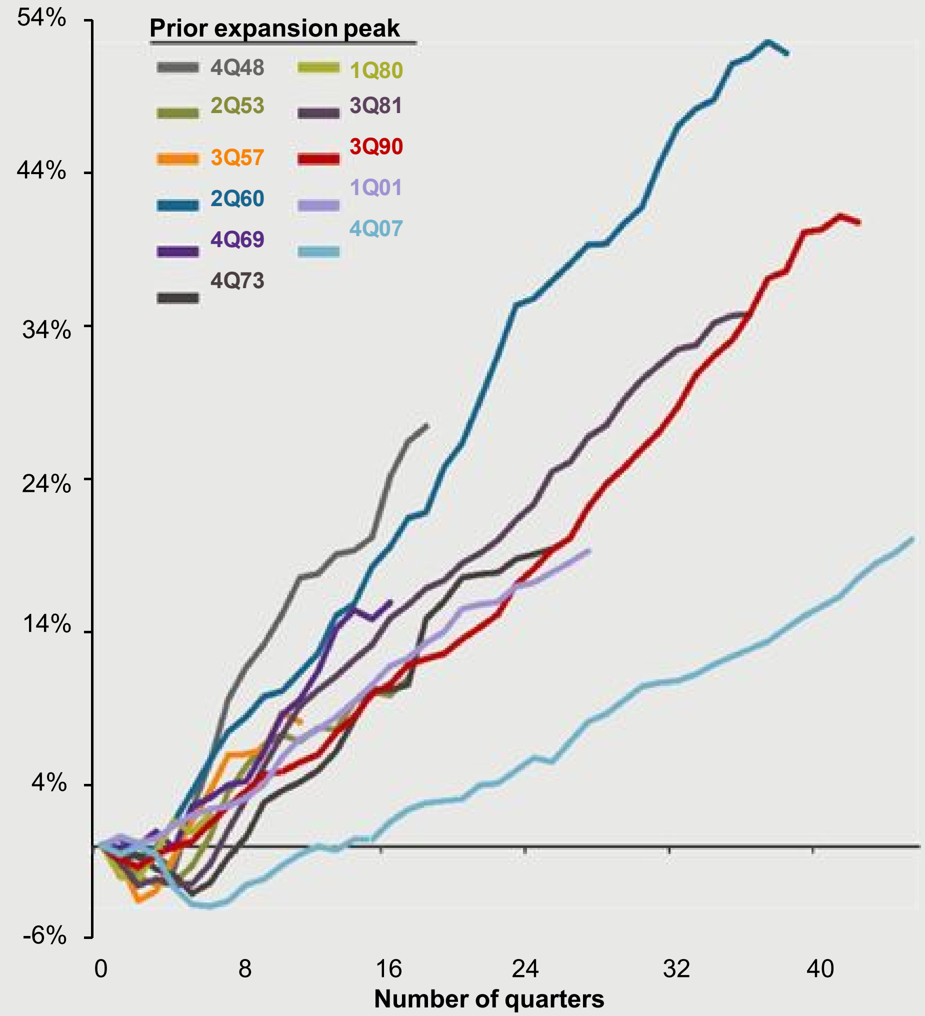
The Length and Strength of Expansions

Length of economic expansions and recessions



Strength of economic expansions

Cumulative real GDP growth since prior peak, percent



Source: BEA, NBER, J.P. Morgan Asset Management. *Chart assumes current expansion started in July 2009 and continued through June 2019, lasting 120 months so far. Data for length of economic expansions and recessions obtained from the National Bureau of Economic Research (NBER). These data can be found at www.nber.org/cycles/ and reflect information through June 2019. Past performance is not a reliable indicator of current and future results.
Guide to the Markets – U.S. Data are as of June 30, 2019.

History of Bull and Bear Markets

S&P 500 Bull Markets: 1928-2019					
Start Date	End Date	S&P 500 Price Start	S&P 500 Price Finish	Change (%)	Calendar Days
1/2/1928	4/10/1930	17.66	25.92	46.8	829
3/14/1935	3/10/1937	8.06	18.67	131.6	727
3/31/1938	11/9/1938	8.5	13.79	62.2	223
4/11/1939	10/25/1939	10.42	13.21	26.8	197
4/28/1942	5/29/1946	7.47	19.25	157.7	1492
5/19/1947	6/15/1948	13.77	17.06	23.9	393
6/13/1949	8/2/1956	13.55	49.74	267.1	2607
10/22/1957	12/12/1961	38.98	72.64	86.4	1512
6/26/1962	2/9/1966	52.32	94.06	79.8	1324
10/7/1966	11/29/1968	73.2	108.37	48.0	784
5/26/1970	1/11/1973	69.29	120.24	73.5	961
10/3/1974	11/28/1980	62.28	140.52	125.6	2248
8/12/1982	8/25/1987	102.42	336.77	228.8	1839
12/4/1987	3/24/2000	223.92	1527.46	582.1	4494
7/23/2002	10/9/2007	797.7	1565.15	96.2	1904
3/9/2009	**6/30/2019**	**676.53**	**2941.76**	**334.8**	**3765**

Average				**148.2**	**1581.2**
Average Months					**53**

S&P 500 Bear Markets: 1928-2019					
Start Date	End Date	S&P 500 Price Start	S&P 500 Price Finish	Change (%)	Calendar Days
4/9/1930	3/14/1935	25.87	8.06	-68.8	1800
3/9/1937	3/31/1938	18.54	8.5	-54.2	387
11/7/1938	4/11/1939	13.43	10.42	-22.4	155
10/24/1939	4/28/1942	13.02	7.47	-42.6	917
5/28/1946	5/19/1947	19.2	13.77	-28.3	356
6/14/1948	6/13/1949	16.97	13.55	-20.2	364
8/1/1956	10/22/1957	49.42	38.98	-21.1	447
12/11/1961	6/26/1962	72.39	52.32	-27.7	197
2/8/1966	10/7/1966	93.55	73.2	-21.8	241
11/27/1968	5/26/1970	107.76	69.29	-35.7	545
1/10/1973	10/3/1974	119.43	62.28	-47.9	631
11/26/1980	8/12/1982	140.17	102.42	-26.9	624
8/24/1987	12/4/1987	333.33	223.92	-32.8	102
3/23/2000	7/23/2002	1527.35	797.7	-47.8	852
10/8/2007	3/9/2009	1552.58	676.53	-56.4	518

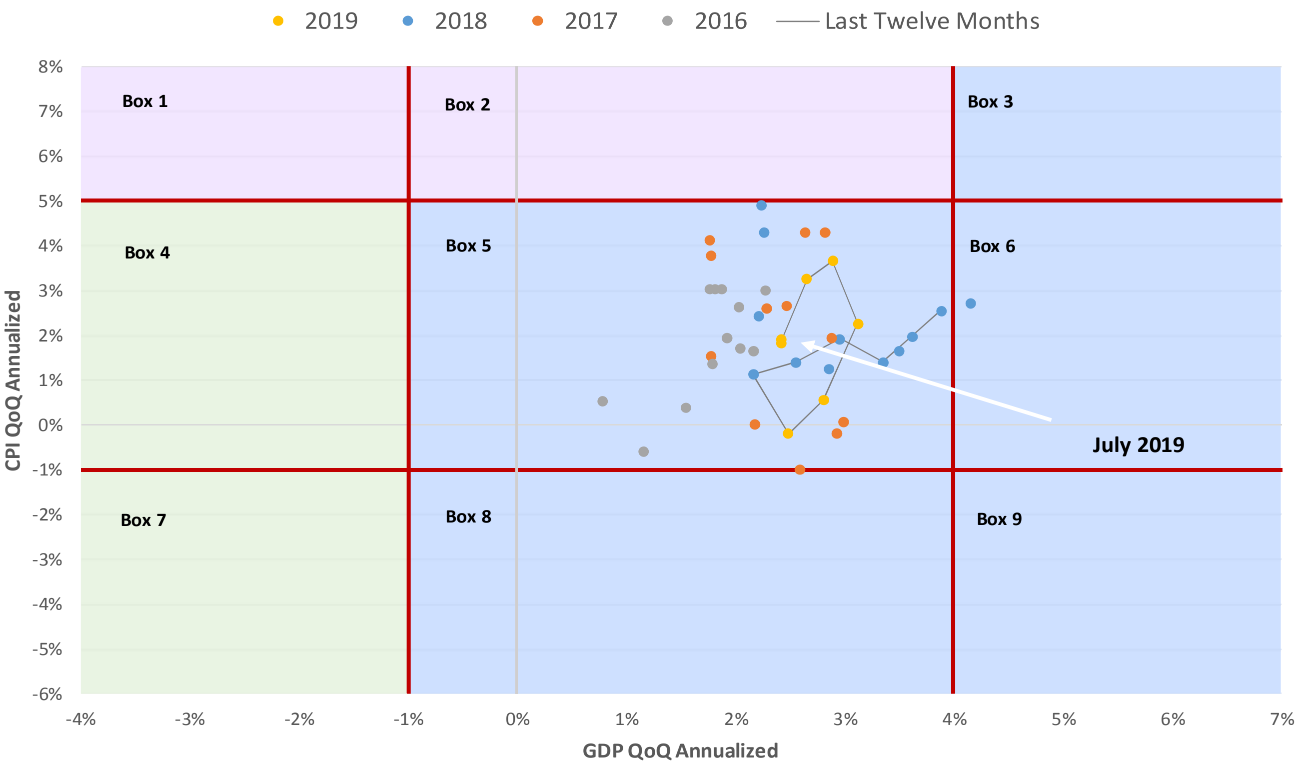
Average				**-32.8**	**542.4**
Average Months					**18**

Environmental Backdrop

Periods Ending July 31, 2019

Continue to reside in Global Equity Zone

US Policy Signal Chart



Guide:
- Green: Stable Value
- Blue: Global Equity
- Purple: Real Return

Historical UTIMCO Returns

*Box returns may vary significantly depending on if we just moved into a new environment/box or if we remained in the same box. Thus, returns are separated in that manner below:

Box #	Move	Stay	Total
1	-	-	-
2	12.6%	-14.9%	-0.4%
3	-	-	-
4	-37.9%	54.5%	-15.8%
5	14.7%	7.6%	9.4%
6	13.7%	12.3%	12.9%
7	-73.5%	-24.0%	-41.6%
8	18.4%	20.2%	19.1%
9	-	-	-

Global Policy Signals Summary

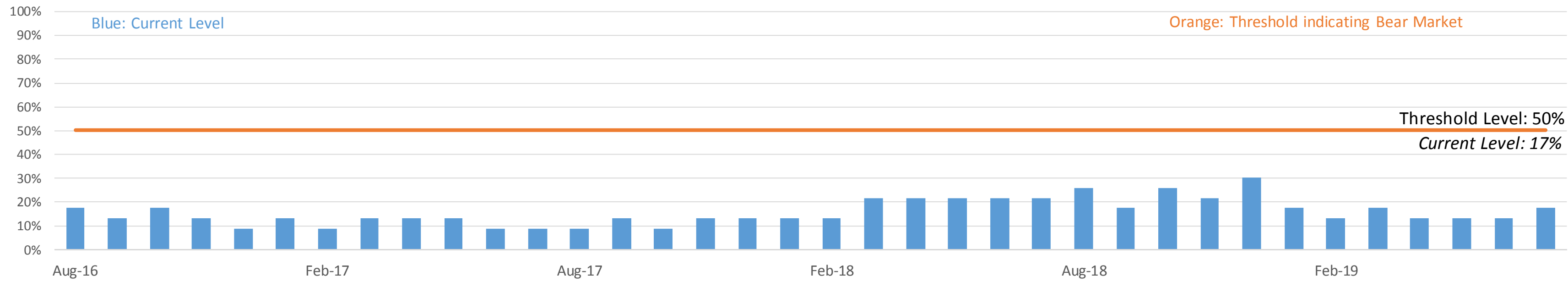
Quarterly Signals	6/30/2019	3/31/2019	12/31/2018
US	5	5	5
Europe	5	5	5
Japan	5	5	8
China	6	6	6

US Bear Market Indicators

Periods Ending July 31, 2019

July 2019

Percentage of Bear Market Indicators On



Type	Indicator	On/Off	Indicator Level: Current	Indicator Level: Threshold	Last 36 Months	% On Last 36 Months
Inflation	5yr Breakeven Inflation < 1.25%	Off	1.5%	1.3%		0%
Inflation	10yr Breakeven Inflation > 3%	Off	1.7%	3.0%		0%
Inflation	YoY Inflation > 12m Moving Avg	On	2.2%	2.1%		44%
Inflation	YoY CPI Energy > 20%	Off	-2.0%	20.0%		0%
Inflation	YoY PCE Deflator > 3%	Off	1.4%	3.0%		0%
Employment	Employment Growth < 0%	Off	1.8%	0.0%		0%
Employment	YoY Avg. Hourly Earnings > 3%	On	3.2%	3.0%		31%
Employment	YoY NonFinc Labor Costs > 3.5%	Off	1.4%	3.5%		25%
Employment	Consumer Confidence Spread < -20%	Off	3.8%	-20.0%		0%
Employment	Unemployment 3mo MA > .33% off lows	Off	3.7%	4.0%		0%
Growth	Inventory/Sales > Long-term Avg.	On	39.0%	33.1%		100%
Growth	YoY Leading Economic Indicator < 0%	Off	1.6%	0.0%		0%
Growth	Leading/Coincident Ratio Drawdown > 26 months	Off	10.0	26.0		0%
Growth	Fed Recession Probability > 10%	On	31.5%	10.0%		58%
Growth	Residential Construction (% of GDP) > 5%	Off	2.4%	5.0%		0%
Growth	Total Investment (% of GDP) > 18.5%	Off	15.5%	18.5%		0%

Type	Indicator	On/Off	Indicator Level: Current	Indicator Level: Threshold	Last 36 Months	% On Last 36 Months
Credit	US HY Yield > Long-term Avg.	Off	5.9%	10.0%		0%
Credit	Non-Mortgage Delinquency Rate > 3.5%	Off	2.4%	3.5%		0%
Credit	Real Rates < 0%	Off	0.3%	0.0%		75%
Market	YoY Equity Markets < -5%	Off	7.0%	-5.0%		3%
Market	Investment Banks < 12m Moving Avg. - 1 SD	Off	10.9%	0.0%		14%
Market	Cons. Discretionary < 12m Moving Avg. - 1 SD	Off	13.2%	0.0%		3%
Market	US Dollar 24m Change > 10%	Off	6.3%	10.0%		8%

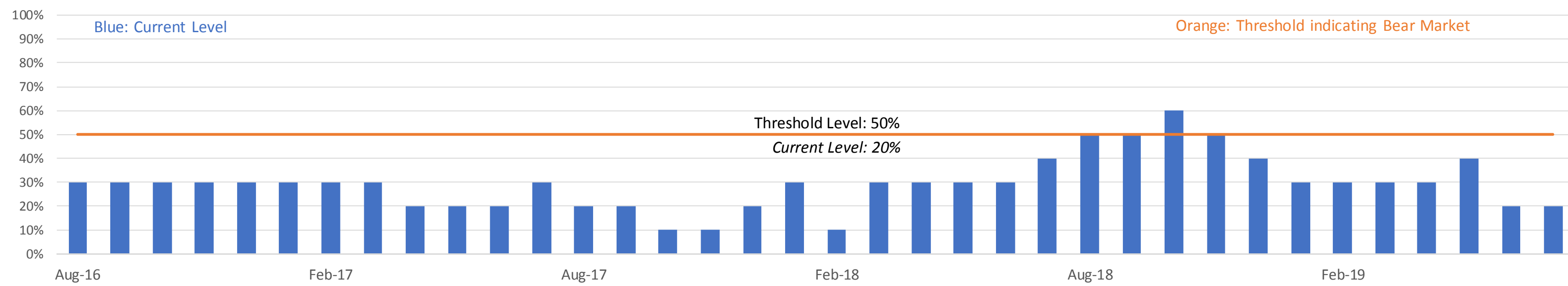
4/22 Indicators "On"

Global ex. US Bear Market Indicators

Periods Ending July 31, 2019

July 2019

Percentage of Global ex. US Bear Market Indicators On

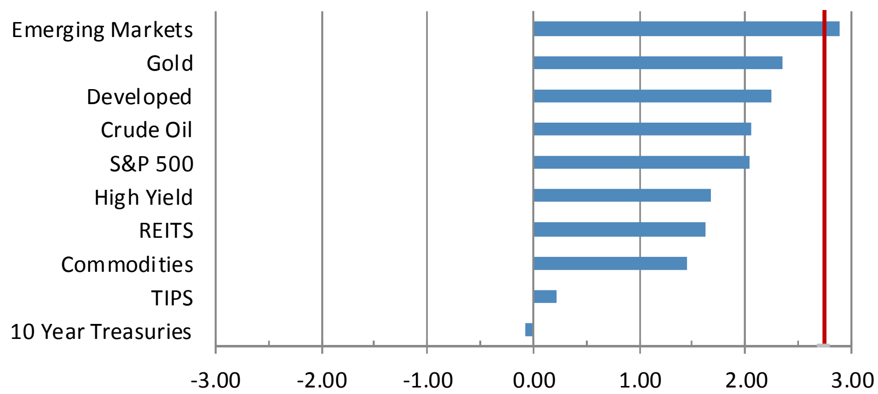


Type	Indicator	On/Off	Indicator Level Current	Indicator Level Threshold	Last 36 Months	% On Last 36 Months
Inflation	5Y Breakeven Inflation < 1.25%	Off	1.5%	1.3%		0%
Inflation	YoY Inflation > 12m MA	Off	2.0%	2.2%		69%
Inflation	Oil Prices > 20%	Off	-14.8%	20.0%		39%
Employment	Employment Growth < 0%	Off	0.3%	0.0%		0%
Employment	Consumer Confidence < -20%	Off	-0.9%	-20.0%		0%
Growth	YoY Leading Economic Indicator < 0%	On	-1.0%	0.0%		47%
Growth	Recession Probability > 10%	On	25.4%	10.0%		100%
Credit	HY Yield > Long Term Average	Off	5.2%	9.0%		0%
Market	ACWI ex. US YoY < -5%	Off	-5.0%	-5.0%		22%
Market	ACWI ex. US Cons Discretionary < 12MA - 1 SD	Off	8.4%	0.0%		17%

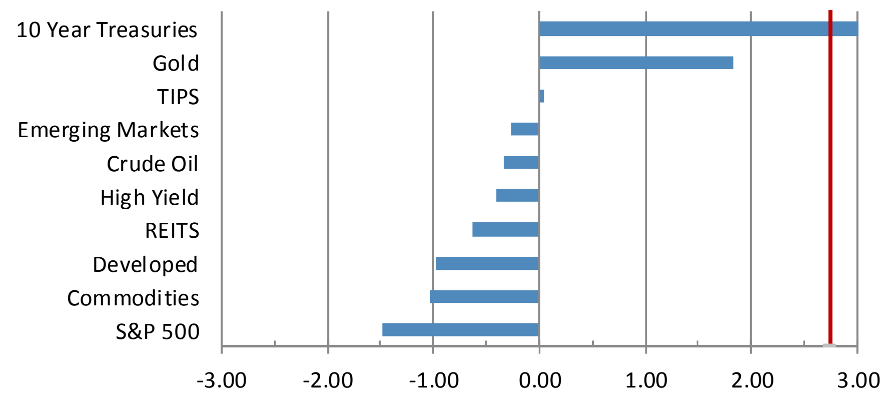
2/10 Indicators "On"

Bubble Monitor
Periods Ending July 31, 2019

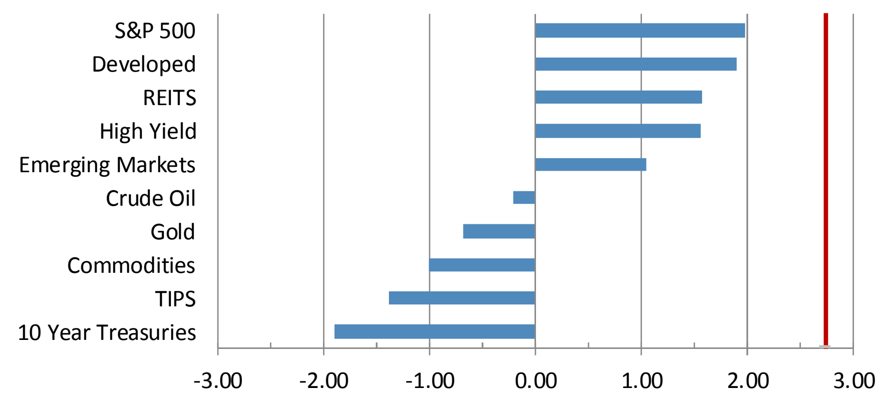
Bubble Level Monitor: September 2007



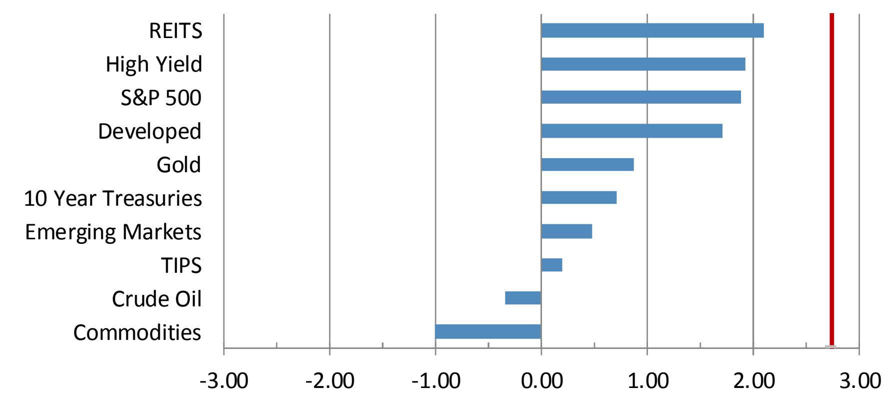
Bubble Level Monitor: December 2008



Bubble Level Monitor: July 2018



Bubble Level Monitor: July 2019



Summary

- AUM at $47 Billion (increased by $30 Billion since March 2009)
- PUF funding at $1 Billion (up from $500 Million in 2016)
- Long expansion (but weak)
- Positive alpha for all time periods, except one year
- System remains strong

Appendix

Explanation of One-Year Alpha

Positive Contributors

July 2018 to June 2019	Tactical Allocation/ Benchmark Variance	Interactive Effect	Active Management	Total
HF Directional	-0.03%	0.02%	0.51%	0.50%
Emerging Markets Public Equity	-0.04%	0.00%	0.33%	0.29%
Global Dev Public Equity	0.00%	0.00%	0.12%	0.12%
PE Real Estate	0.00%	0.00%	0.10%	0.10%
				1.01%

Detractors

July 2018 to June 2019	Tactical Allocation/ Benchmark Variance	Interactive Effect	Active Management	Total
PE Natural Resources	-0.14%	-0.02%	-1.10%	-1.26%
US Public Equity	-0.07%	-0.04%	-0.35%	-0.46%
Total Private Equity	-0.14%	0.01%	-0.20%	-0.33%
PE Infrastructure	0.00%	0.00%	-0.24%	-0.24%
Non-US Public Equity	-0.04%	0.01%	-0.20%	-0.23%
Inv Grade Fixed Income	-0.01%	0.00%	-0.08%	-0.09%
Tactical Asset Allocation	0.01%	-0.07%	0.00%	-0.06%
				-2.67%
			Total	**-1.79%**

Agenda Item
UTIMCO Board of Directors Meeting
September 26, 2019

Agenda Item:	Risk Management Presentation
Developed By:	Risk Management Team
Presented By:	Yoeli
Type of Item:	Information Item
Description:	Dr. Yoeli will lead the presentation on Risk Management, discussing several initiatives of the Risk Management Team, and some unique aspects of Risk Management at UTIMCO.
Reference:	*Risk Management* presentation

The University of Texas/Texas A&M Investment Management Company

Risk Management Presentation

September 2019

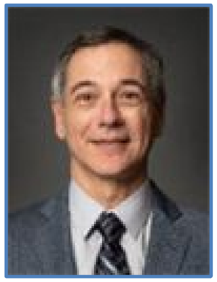
Uzi Yoeli

Managing Director

Key Responsibilities of Risk Management

- Key role in establishing Strategic Asset Allocation, Investment Policy and Risk Parameters
- Maintaining Early Warning Systems:
  - Economic Environment, Bear Markets, Bubbles and Recession
  - Providing Support on all CuSum Alarms
- Monitoring Inflows and Outflows
- Establishing Capital Commitment Plan
- Establishing a monthly “Practical Neutral” allocation vs Policy
- Monitoring and maintaining risk limits for Liquidity, Leverage and Concentration
- Monitoring and helping to optimize Active Risk
- Support Investment Teams: Portfolio Structure, Help Optimize Principal Investing
- Leading UTIMCO in Maintaining a Sound Risk Culture

Risk Team Structure



Uzi Yoeli
Managing Director

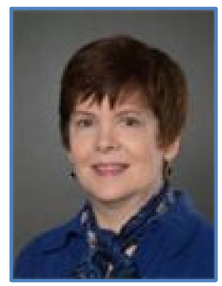
15 years with UTIMCO
PHD, UT Austin

Tim Jones
Director

1 Year with UTIMCO
PHD, UT Austin

Anson Chuah
Associate

3 Years with UTIMCO
BBA, UT Austin



Lori Shaver
Executive Assistant

3 Years with UTIMCO
BS, Sam Houston State

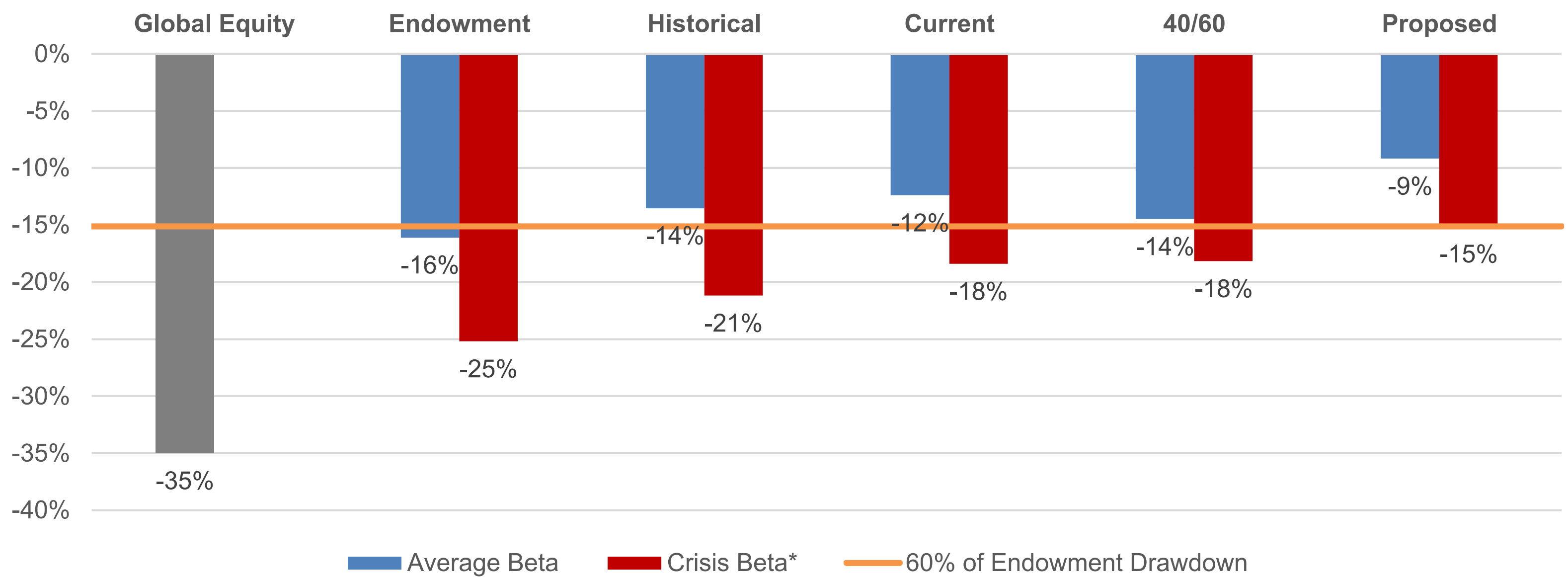
Endowments Path to LTSAA

- Left column is where we are; far right column is where we agreed to go
- Black numbers across:
  - Regime levels held constant at LTSAA levels
  - Private Investments targets taken from commitment model
- Blue numbers to get to LTSAA mostly in 3 years, and to make the totals work

Asset Class	FY2019 Policy	FY2020	FY2021	FY2022	FY2023	FY2024	FY2025	SAA	FY2019 to SAA Δ
U.S. Public Equity	7.0%	7.5%	9.0%	10.0%	10.0%	10.0%	10.0%	10.0%	3.0%
Non-U.S. Developed Public Equity	4.0%	4.5%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	1.0%
Global Developed Public Equity	8.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	2.0%
Total Developed Public Equity	19.0%	22.0%	24.0%	25.0%	25.0%	25.0%	25.0%	25.0%	6.0%
Emerging Markets Public Equity	10.0%	9.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	-2.0%
Total Public Equity	29.0%	31.0%	32.0%	33.0%	33.0%	33.0%	33.0%	33.0%	4.0%
Directional Hedge Funds	12.0%	11.2%	9.6%	7.8%	6.7%	5.7%	5.0%	5.0%	-7.0%
Private Equity	22.0%	20.8%	21.4%	22.2%	23.3%	24.3%	25.0%	25.0%	3.0%
Total Global Equity	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	63.0%	0.0%
Total Fixed Income	9.5%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	-2.5%
Cash	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%
Stable Value Hedge Funds	7.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	10.0%	3.0%
Total Stable Value	17.5%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%	0.5%
Private Real Estate	8.0%	8.2%	8.7%	9.1%	9.5%	9.8%	10.0%	10.0%	2.0%
Natural Resources	8.0%	6.6%	5.9%	5.6%	5.4%	5.2%	5.0%	5.0%	-3.0%
Infrastructure	2.0%	2.9%	3.2%	3.5%	3.7%	3.8%	4.0%	4.0%	2.0%
TIPS	0.0%	1.3%	1.2%	0.8%	0.4%	0.2%	0.0%	0.0%	0.0%
Total Commodities	1.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-1.5%
Total Real Return	19.5%	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%	19.0%	-0.5%

ITF SAA to Achieve Stated Goal

- Stated Goal: 60% of Endowment Returns with 60% of Risk



- The proposed SAA will:
  - Increase the ITF's hedge fund allocation to 50% (43% directional, 7% Stable Value)
  - Increase Fixed Income to 35%, with another 2% in cash
  - Decrease Public Equity exposure to 13%

* Expected beta to global equities during a drawdown period. Crisis beta is expected to be higher than the average beta, as correlations of asset classes move towards one during drawdowns

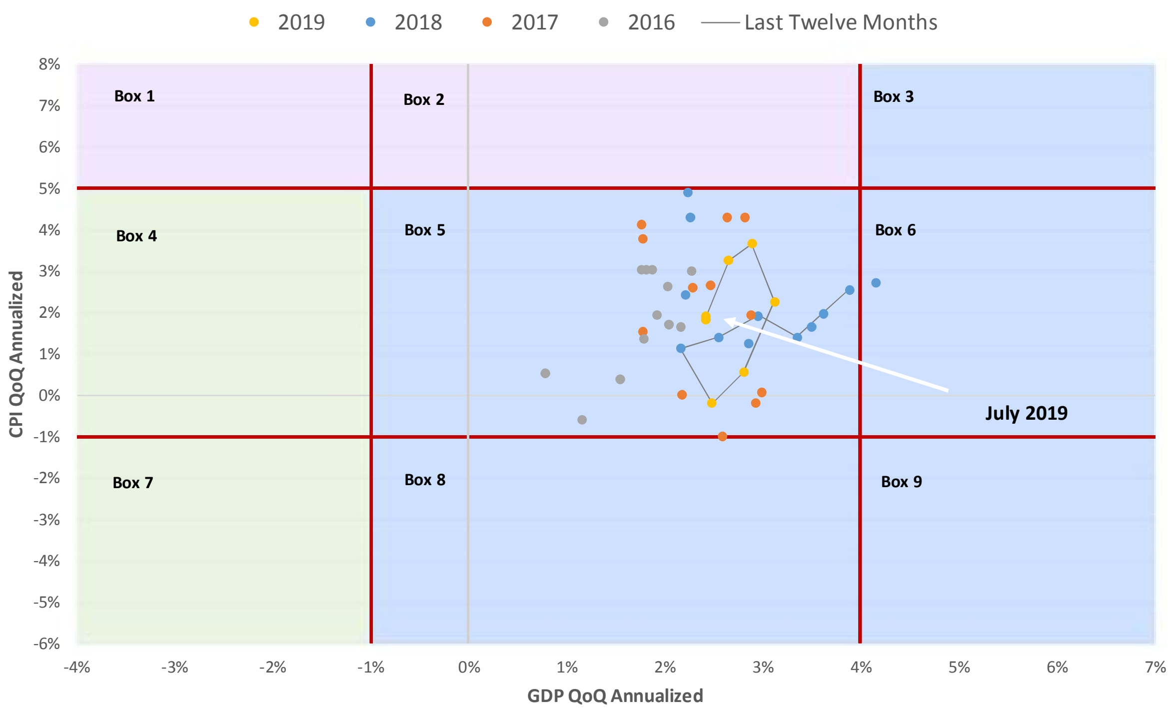
Early Warnings Systems

- The goal is to create a window of time between “too early to tell” and “too late to do something about it” that allows us to adjust proactively and provides us the data to make good and timely decisions on positioning
- Economic/Market Related:
  - US Bear Market Indicator
  - Non-US Bear Market Indicator
  - Bubble Monitor
  - Recession Indicator
- Public Markets: CUSUM

Economic Environment

Periods Ending July 31, 2019

US Policy Signal Chart



Historical UTIMCO Returns

*Box returns may vary significantly depending on if we just moved into a new environment/box or if we remained in the same box. Thus, returns are separated in that manner below:

Box #	Move	Stay	Total
1	-	-	-
2	12.6%	-14.9%	-0.4%
3	-	-	-
4	-37.9%	54.5%	-15.8%
5	14.7%	7.6%	9.4%
6	13.7%	12.3%	12.9%
7	-73.5%	-24.0%	-41.6%
8	18.4%	20.2%	19.1%
9	-	-	-

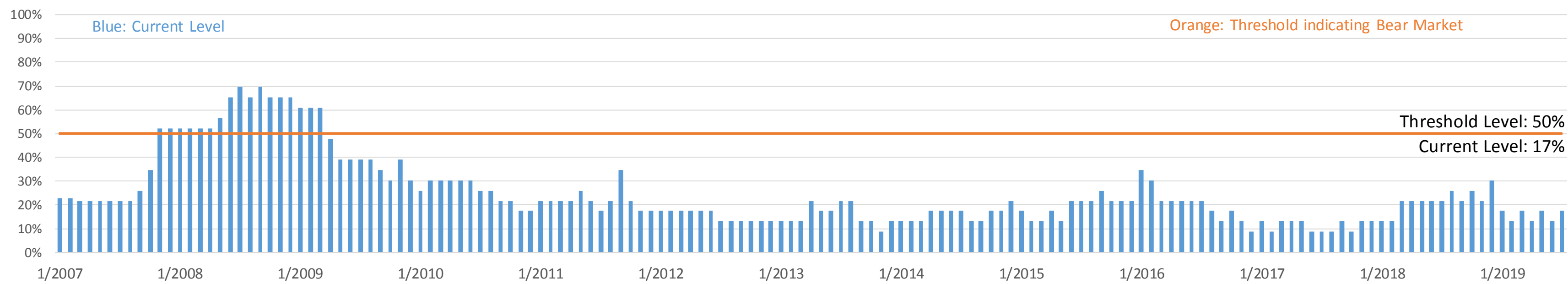
Global Policy Signals Summary

Quarterly Signals	6/30/2019	3/31/2019	12/31/2018
US	5	5	5
Europe	5	5	5
Japan	5	5	8
China	6	6	6

US Bear Market Indicators

July 2019

Percentage of Bear Market Indicators On



Type	Indicator	On/Off	Indicator Level: Current	Indicator Level: Threshold	Last 36 Months	% On Last 36 Months
Inflation	5yr Breakeven Inflation < 1.25%	Off	1.5%	1.3%		0%
	10yr Breakeven Inflation > 3%	Off	1.7%	3.0%		0%
	YoY Inflation > 12m Moving Avg	On	2.2%	2.1%		44%
	YoY CPI Energy > 20%	Off	-2.0%	20.0%		0%
	YoY PCE Deflator > 3%	Off	1.4%	3.0%		0%
Employment	Employment Growth < 0%	Off	1.8%	0.0%		0%
	YoY Avg. Hourly Earnings > 3%	On	3.2%	3.0%		31%
	YoY NonFinc Labor Costs > 3.5%	Off	1.4%	3.5%		25%
	Consumer Confidence Spread < -20%	Off	3.9%	-20.0%		0%
	Unemployment 3mo MA > .33% off lows	Off	3.7%	4.0%		0%
Growth	Inventory/Sales > Long-term Avg.	On	39.0%	33.1%		100%
	YoY Leading Economic Indicator < 0%	Off	1.6%	0.0%		0%
	Leading/Coincident Ratio Drawdown > 26 months	Off	10.0	26.0		0%
	Fed Recession Probability > 10%	On	31.5%	10.0%		58%
	Residential Construction (% of GDP) > 5%	Off	2.4%	5.0%		0%
	Total Investment (% of GDP) > 18.5%	Off	15.4%	18.5%		0%

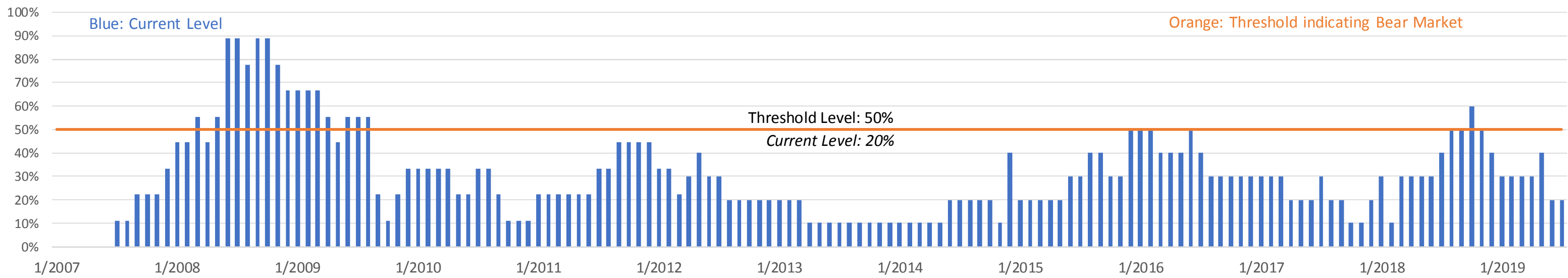
Type	Indicator	On/Off	Indicator Level: Current	Indicator Level: Threshold	Last 36 Months	% On Last 36 Months
Credit	US HY Yield > Long-term Avg.	Off	5.9%	10.0%		0%
	Non-Mortgage Delinquency Rate > 3.5%	Off	2.4%	3.5%		0%
	Real Rates < 0%	Off	0.3%	0.0%		75%
Market	YoY Equity Markets < -5%	Off	7.0%	-5.0%		3%
	Investment Banks < 12m Moving Avg. - 1 SD	Off	9.0%	0.0%		14%
	Cons. Discretionary < 12m Moving Avg. - 1 SD	Off	15.6%	0.0%		3%
	US Dollar 24m Change > 10%	Off	6.3%	10.0%		8%

4/22 Indicators "On"

Global ex. US Bear Market Indicators

July 2019

Percentage of Global ex. US Bear Market Indicators On

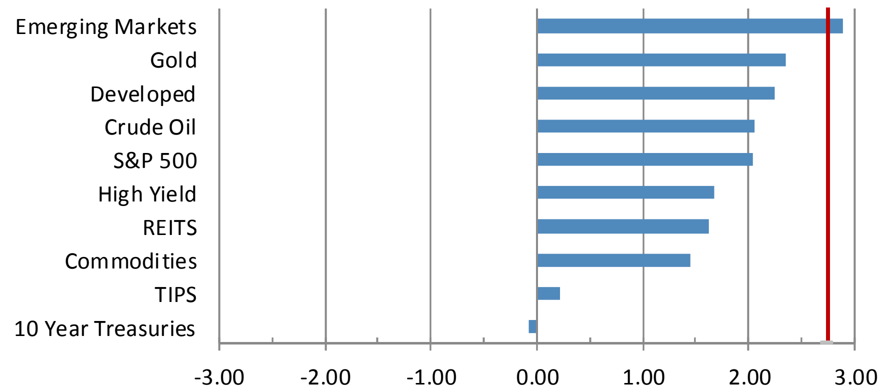


Type	Indicator	On/Off	Indicator Level Current	Indicator Level Threshold	Last 36 Months	% On Last 36 Months
Inflation	5Y Breakeven Inflation < 1.25%	Off	1.5%	1.3%		0%
Inflation	YoY Inflation > 12m MA	Off	2.0%	2.2%		69%
Inflation	Oil Prices > 20%	Off	-14.8%	20.0%		39%
Employment	Employment Growth < 0%	Off	0.3%	0.0%		0%
Employment	Consumer Confidence < -20%	Off	-0.9%	-20.0%		0%
Growth	YoY Leading Economic Indicator < 0%	On	-1.0%	0.0%		47%
Growth	Recession Probability > 10%	On	25.4%	10.0%		100%
Credit	HY Yield > Long Term Average	Off	5.2%	9.0%		0%
Market	ACWI ex. US YoY < -5%	Off	-5.0%	-5.0%		22%
Market	ACWI ex. US Cons Discretionary < 12MA - 1 SD	Off	8.4%	0.0%		17%

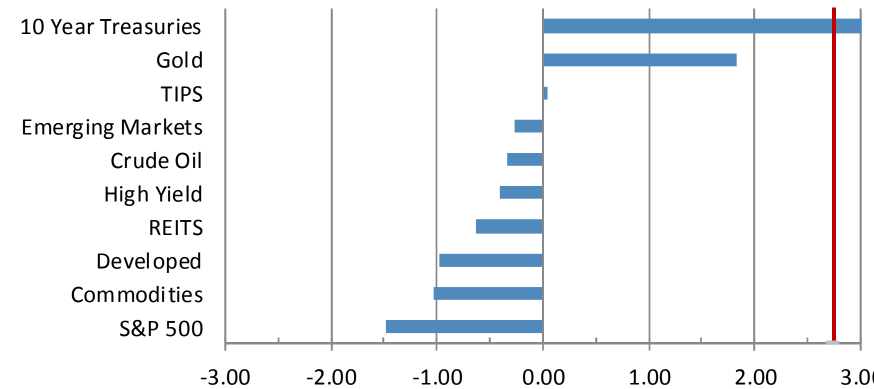
2/10 Indicators "On"

Bubble Monitor

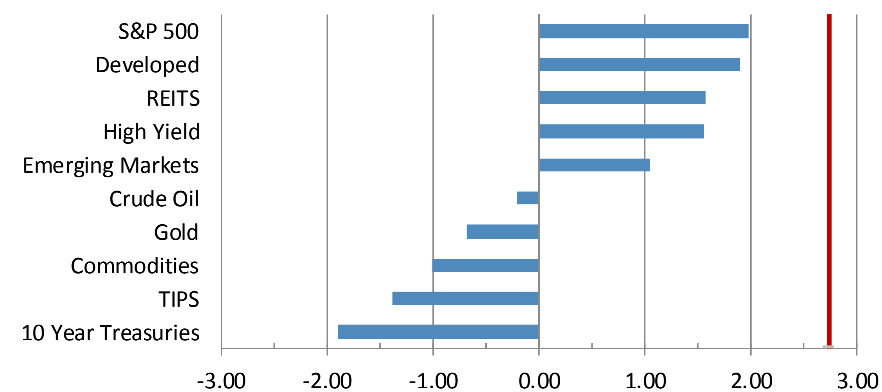
Bubble Level Monitor: September 2007



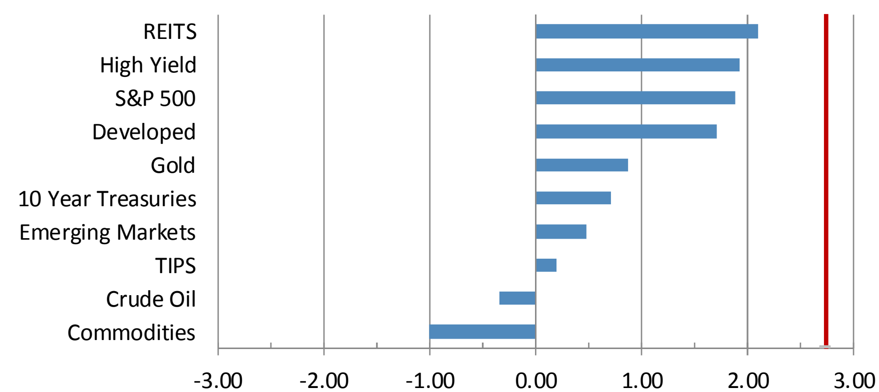
Bubble Level Monitor: December 2008



Bubble Level Monitor: July 2018



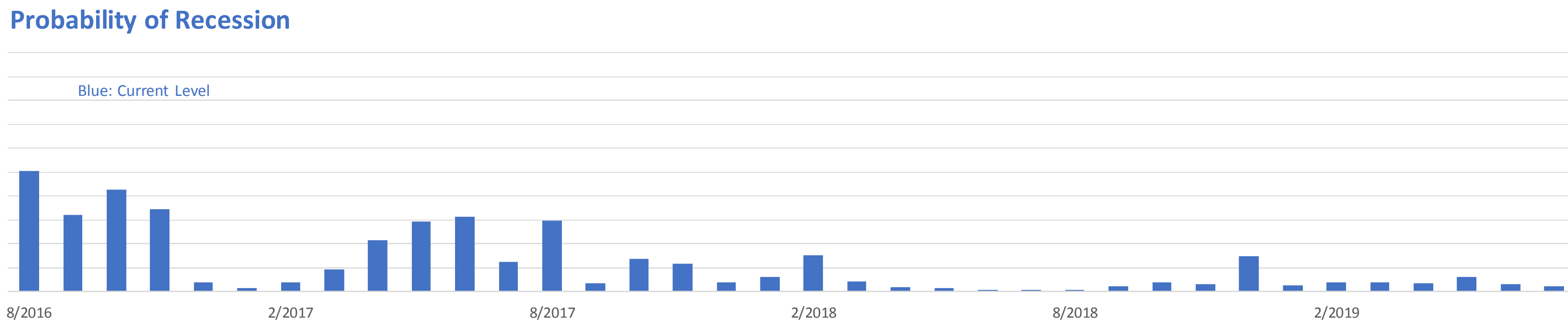
Bubble Level Monitor: July 2019



Fixed Income Recession Indicator

- Based on multiple indicators, the probability of a recession seems low – we continue to monitor this indicator as well as other recession estimates (consensus economists, NY Fed, etc.)

July 2019: Six Month Logit Indicator



Individual Indicators

Avg Hourly Earnings	High Yield Spreads	Payroll Diffusion	Oil Price Change
Unemployment Gap	Real Retail Sales	9m Chng in U3	Fiscal Deficit
Real Funds vs r*	9w Chng in Claims	Inflation	New Orders
Yield Curve	26w Chng in Claims	ACWIxUS Diffusion	Capex
Chng in LEI			

Public Market Managers: CUSUM

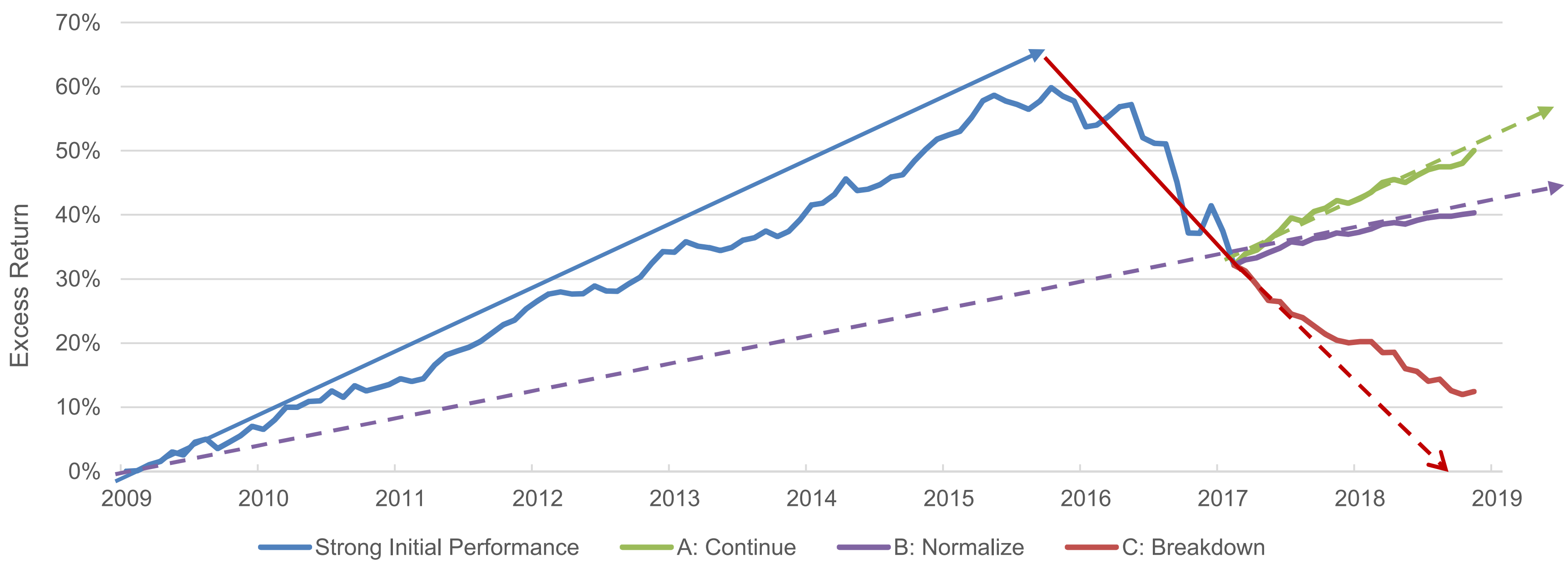
When a long period of outperformance is followed by a shorter period of underperformance, it is necessary to identify underlying causes of underperformance and develop a forward-looking view on how performance will be going forward. It could be that:

A. Underperformance is driven by bad luck – future performance will be similar to the strong initial performance

B. We over-estimated how good the manager is – future performance will be similar to the average so far

C. While good performance was justified, something has changed and has hindered the investment process to perform well – future performance is likely to be more similar to recent performance

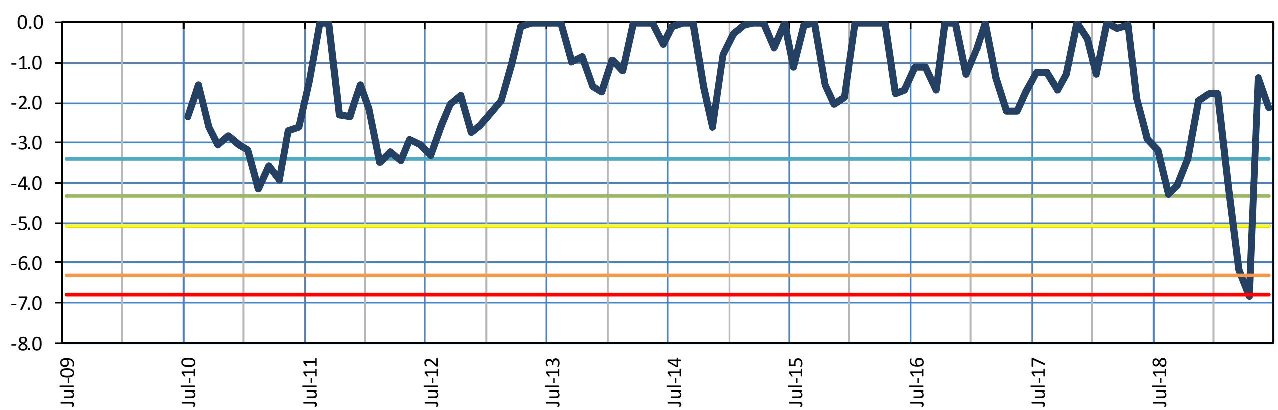
Hypothetical Manager Performance



Public Market Managers: CUSUM

- CUSUM is a statistical method used to monitor actively managed portfolios
- The signal is dynamic to risk levels (adapts to changes in tracking error) and quickly detect a transition from outperformance to underperformance
- CUSUM does not provide an explanation for manager's performance but raises an alarm to focus time and resources on identifying underlying causes of the performance problem
- While investment teams are following their processes, Risk is looking to add value by:
  - Leveraging the CUSUM process to be a second set of eyes on managers that are flagged
  - Protecting against groupthink by challenging assumptions
  - Catching problems early– force hard conversations earlier
  - Allowing for good cop/bad cop with manager on terms

Public Manager Example: CUSUM Information Ratio Risk Signal



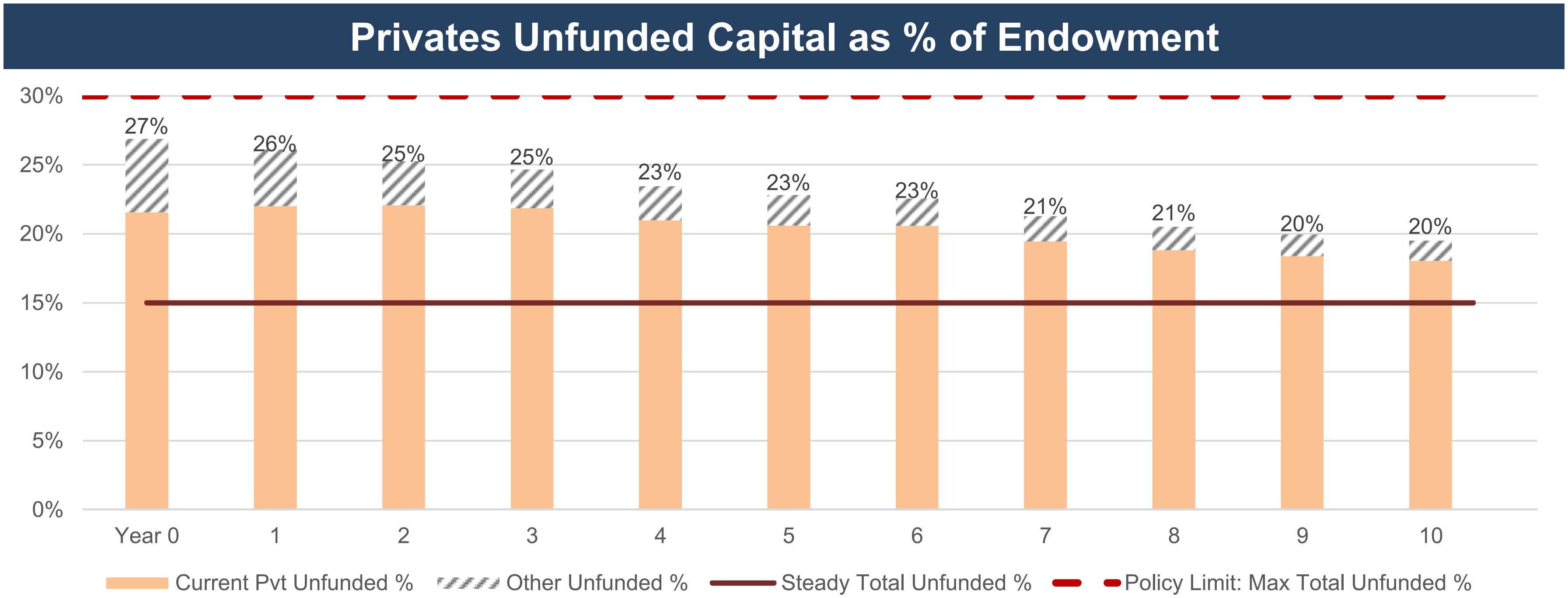
Current CUSUM Value: -2.13, Last CUSUM: 4/30/2019

Managing Inflows and Outflows

- Fortunate to have unique funding source in University Lands
- University Lands and the ITF→LTF flows are large drivers of why the Endowments are expected to grow \$20bn over the next five years to \$57bn
- Large inflows cause stress (risk) and prudent management is required to plan investments and ensure ample liquidity
- For example, private investments are expected to grow significantly over this time period
  - Proper risk management involves developing commitment pacing plans required to reach SAA targets in collaboration with private teams
  - Commitment pacing feeds into the FY2020 and future policy portfolios
  - Growing commitment budgets inherently lead to growing unfunded commitments
  - Prudent liquidity management is required to ensure commitments can be funded in times of market distress, as we want to be able to play a “strong hand” and not be a forced seller of public assets at bargain prices

Impact of Inflows on Private Investments

- The chart below gives a visual to the liquidity management required as 1) privates grow to 44% of the Endowments and 2) large inflows increase the overall NAV

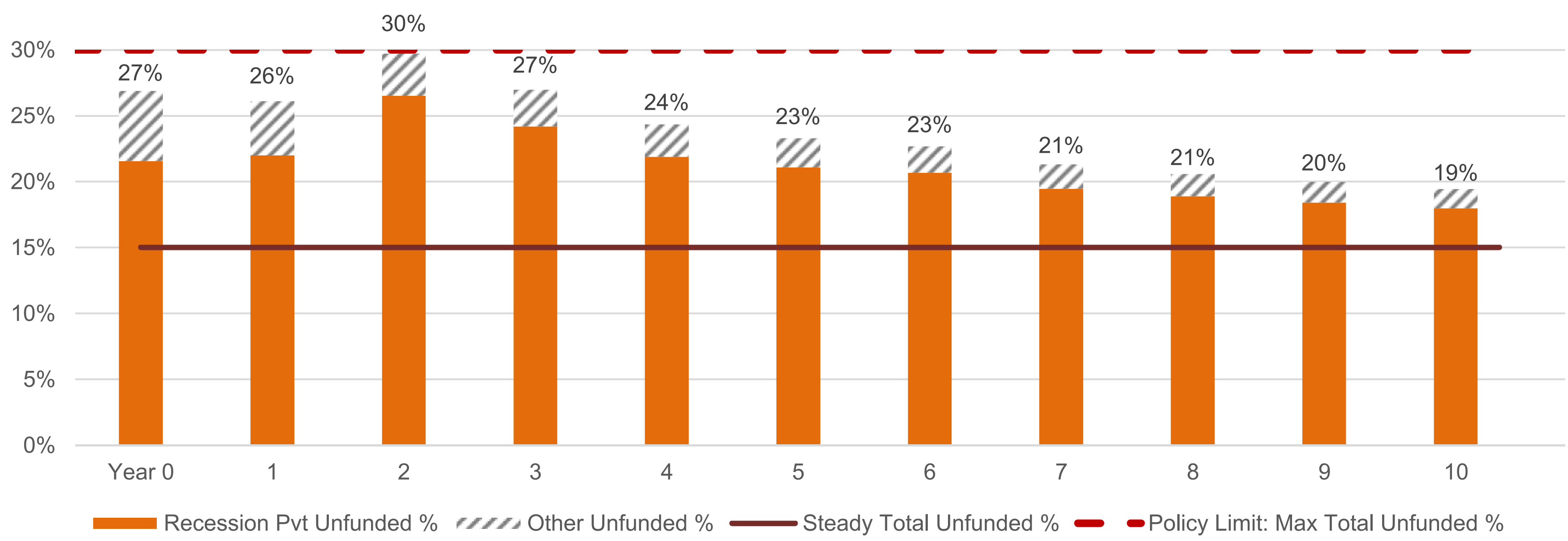


- Given this backdrop, the average required commitments and therefore average unfunded commitments as a percentage of NAV is much larger than that of a steady state environment
- With the large number of required commitments, the total unfunded % is projected to be greater than 25% for the next few years (but within current policy limits). As shown on the next slide, the unfunded % could hit the policy limit in a market downturn.

Capital Planning and Liquidity Management

- To better understand liquidity needs, we model various assumptions to provide visibility in different scenarios (strategic partners, secondary sales, recessions, etc.)
- In a recession scenario, total unfunded capital as a percent of Endowments is expected to hit 30% ($10.7bn)
  - Of this $10.7bn, we expect some capital to be called at the trough (credit, stable value funds)
  - Liquidity management requires having a plan on funding sources in times of market distress

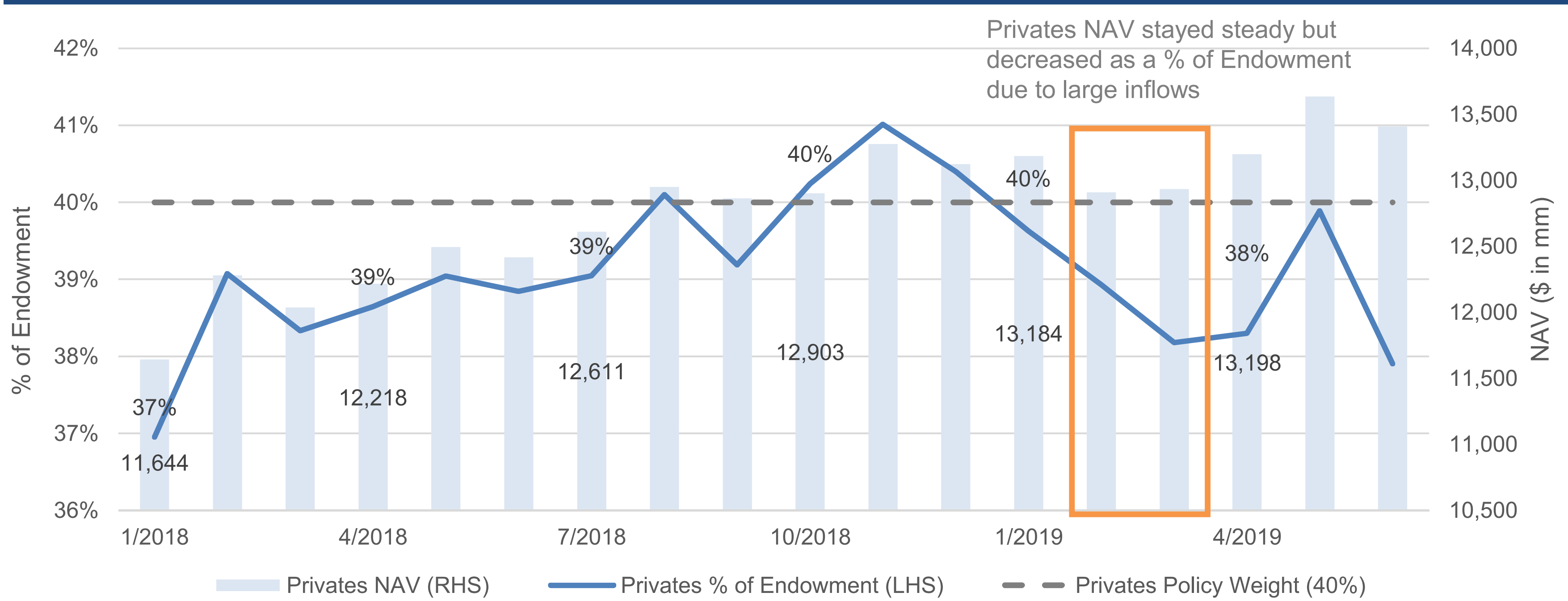
Privates Unfunded Capital as % of Endowment: Recession Scenario



Practical Neutral Asset Allocation

- Objectives:
  - Minimize unintended asset allocation tracking error
- Benchmark weights imply perfect and continuous rebalancing to target weights
- In practice, asset allocators have much less control on rebalancing due to lagged reporting, irregular cash flows, and the illiquid nature of private investments
  - Leads to periods of unintended private investment overweights/underweights (heightened by large inflows)
- “Practical Neutral” mitigates unintended tracking error by using public equities to offset inevitable overweights and underweights

Privates Allocation Over Time

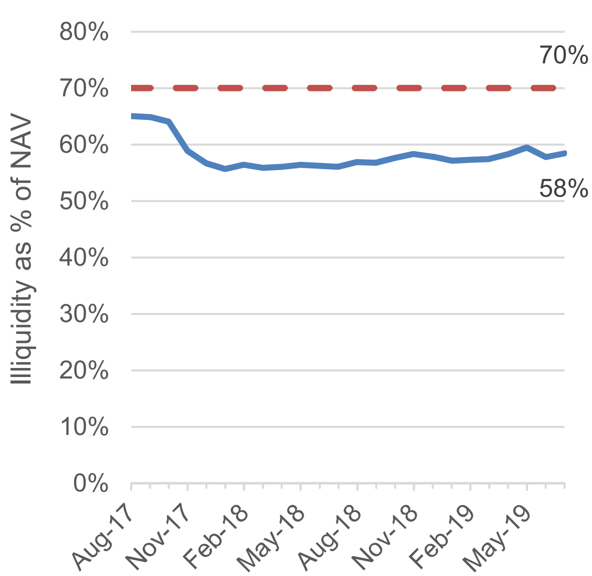


Liquidity Metrics

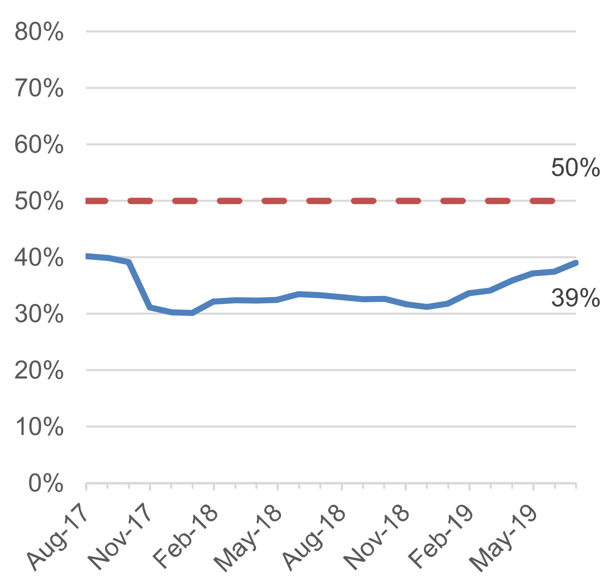
- Liquidity Management
  - Policy: Illiquidity maximum of 70% for the Endowments and 50% for the ITF
    - Current illiquidity of Endowments and ITF at 58.4% and 39.0%, respectively
  - Policy: Unfunded commitments must be less than or equal to 30% of NAV (Endowments only)
    - Current unfunded commitments of Endowments at 24.4%
  - Top Priority: Leading project to assure we will have adequate liquidity in the next bear market

Illiquidity Maximum

Endowments

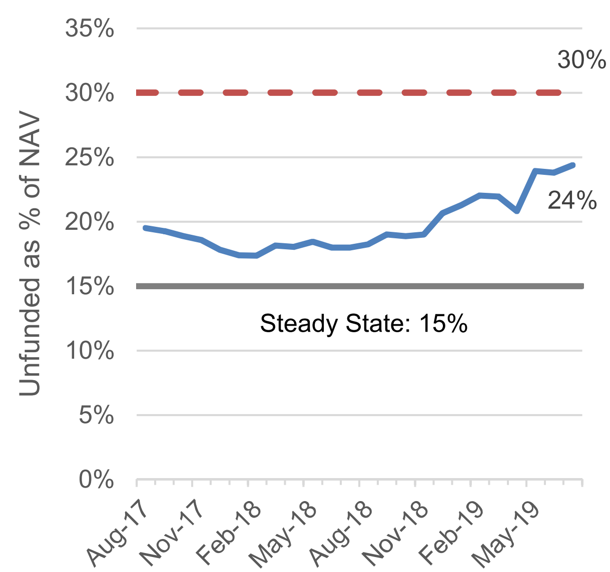


ITF



Unfunded Commitments

Endowments



Leverage and Concentration

- In addition to managing liquidity, we also manage fund level leverage and concentration
- Fund Level Leverage
  - Leverage is very minimal and will not compound liquidity issues
  - Policy: Fund leverage is limited to 105% for the Endowments and 100% for the ITF
    - Currently, there is no leverage taken in the Endowments nor the ITF
- Concentration Limits
  - Policy: We report to the Risk Committee any manager exceeding 3% NAV exposure; managers resulting in 6% or more exposure require a recommendation regarding an appropriate course of action
    - Currently, there are three managers exceeding 3% NAV exposure and zero exceeding 6%
  - We also monitor managers by risk allocation; we currently have three managers with over 3% of total risk each

Monitoring and Helping Optimize Active Risk

- Absolute risk is dominated by equity risk and will not change unless we adopt a different investment strategy such as risk parity
- However, that does not mean that equities dominate active risk. How does each asset class impact the ability to deliver the required alpha over most three-year time periods?
- One way to view the impact is by comparing what the overall alpha would have been had we not invested in an asset class – how would this change the number of periods that we achieve an alpha target (220bps[1])?
- Analysis shows that investing in the following asset classes increase the number of periods that we achieve the alpha target:
  - Venture Capital
  - Private Infrastructure
  - Directional Hedge Funds
  - Emerging Markets Public Equity
  - Private Natural Resources
- Important to note that this does not mean that other asset classes are not positive alpha generators

[1] 220bps chosen as it best illustrates the effect of removing an individual asset class

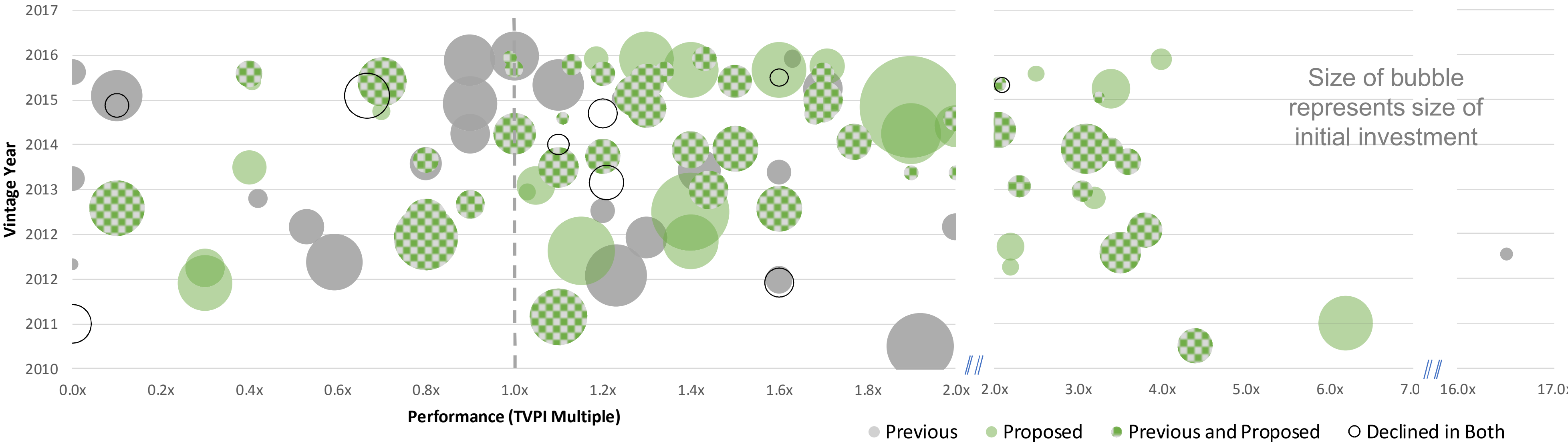
Help Optimize Principal Investing

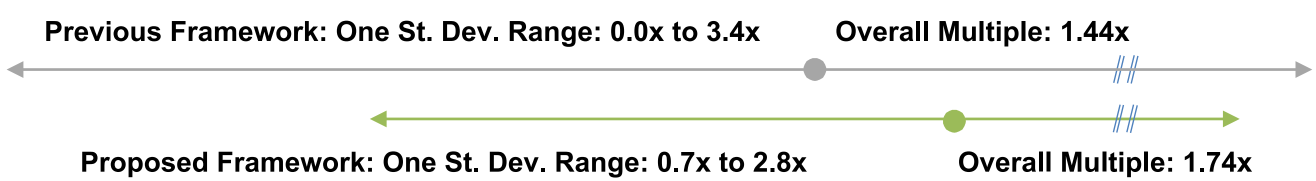
- After some mixed performance in realized co-investments, the Risk Team was asked to evaluate ways to reduce risk in the overall program by avoiding left tail outcomes (bad) and improving risk-adjusted returns. Such an approach could possibly eliminate some of the upside and hurt overall (i.e., non risk-adjusted) returns.
- The process was to agree on some criteria (strong alignment, overall manager quality and competence in specific deals) and find quantitative metrics to measure the impact of these criteria on investment outcomes.
- The analysis indicated that applying these criteria would have significantly reduced risk and improved both overall and risk-adjusted performance:
  - Dispersion reduced by 45% (1.98x to 1.08x)
  - Loss Ratio reduced by 30% (26% to 18%)
  - Bottom Decile performance improved by 55% (0.45x to 0.70x)
  - Overall Returns improved by 21% (1.44x to 1.74x)
  - Risk Adjusted Returns[1] improved by 100% (0.66x to 1.33x)

[1] Defined as the median multiple divided by dispersion

Help Optimize Principal Investing

UTIMCO Co-Investments





Portfolio	Count	$ Invested ($mm)	TVPI[1]	St. Dev	Total Value ($mm)[1]	Value Generated ($mm)[1]
Previous	72	1,570	1.44x	1.98x	2,263	693
Proposed	72	1,861	1.74x	1.08x	3,233	1,372

[1] Returns as of 12/31/2018

Maintaining a Sound Risk Culture

- Going out on the risk spectrum does not guarantee higher returns; higher risk also means higher probability of a bad outcome

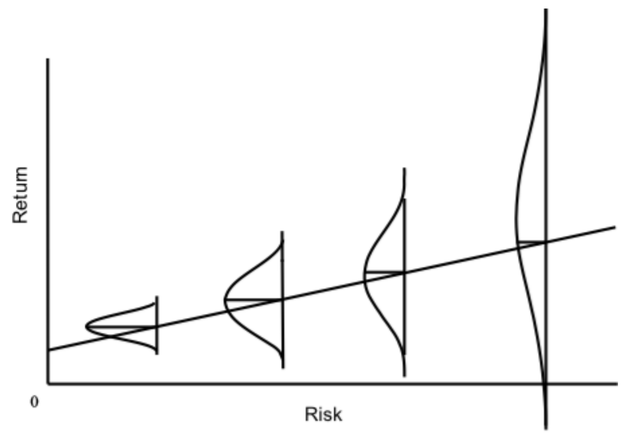


Chart from Howard Marks, Oaktree Capital Management; not drawn to scale – actual dispersion increases much more for incremental returns

- Let's be humble: Markets rise when more market participants want to buy, and markets fall when more market participants want to sell; being counter-cyclical means disagreeing with many very smart people who make a living from these markets

Agenda Item
UTIMCO Board of Directors Meeting
September 26, 2019

Agenda Item:	Strategic Partnerships Update
Developed By:	Standley
Presented By:	Standley
Type of Item:	Information Item
Description:	Mr. Standley will provide an update to the Board on the Public Strategic Partnerships selection process.
Recommendation:	None
Reference:	*Public* S*trategic Partnerships* presentation

The University of Texas/Texas A&M Investment Management Company

Public Strategic Partnerships

Ken Standley, Chief of Staff

Executive Summary

- **Recommend forming a $3 Billion Public Strategic Partnership Program across three finalist firms**

- Public Strategic Partners are an efficient way to manage fresh capital coming into the Endowments while…
  - Improving returns
  - Reducing risk
  - Lowering fees
  - Accessing additional resources
  - Benefiting from high degree of customization to UTIMCO goals

- Next steps include determining fees, terms, and structure

- Will bring for final approval at the December Board Meeting alongside proposed changes to investment policy

Agenda

- Strategic Partnership Process Overview
- Proposed Portfolio and Program Overview
- Expected UTIMCO Impact
- Next Steps

Overview of Strategic Partnerships

Goals of Strategic Partnerships

- ***Investment Alpha***: achieve UTIMCO objectives and add value
- ***Organizational Alpha***: training, resources, deliver full value of the firm
- ***Relationship Alpha***: "positive peer pressure", mutual commitment

Public

- Targeting 2-4 partners with $500 M – 1.5 Bn per partner
- Public multi-asset portfolios with value-added through strategy selection and tactical asset allocation
- Performance-based fees

Private

- Targeting 2-4 partners with $1 – 2 Bn per partner
- Private Equity, Real Estate, Natural Resources, Credit
- Fee-advantaged investment in funds, access to co-investment

Criteria for Selecting a Strategic Partner

1. Delivers Full Range of Valuable Investment Products and Services
2. Customize Products and Services to Specific UTIMCO Requirements
3. Operate Globally With a Sustainable Business Model
4. Produce Proprietary and Value-Added Investment Research
5. Share Significant Resources When Appropriate
6. Share Our Long-Term Compensation Philosophy
7. Senior Management Makes a Full Commitment to the Partnership

Public SPN Team

Amanda Hopper
Public Equity

Courtney Powers
Hedge Funds

Ken Standley
Chief of Staff

Rich Hall
Deputy CIO

Russ Kampfe
Fixed Income

Ryan Ruebsahm
Hedge Funds

Scott Slayton
Tactical Asset Allocation

Susan Chen
Public Equity

Tony Caruso
Hedge Funds

Uzi Yoeli
Risk Management

Selection Process

Phase 1 *Screen*	Phase 2 *Deep DD*	Phase 3 *Final Selection*
• Articulate investment objectives and specify mandate • Construct DDQ • Go out to broad set of prospective Strategic Partners • Systematically score responses across 7 key criteria	• Conduct in-depth due diligence on focal points • ***Publics:*** TAA, Research, Risk Management • ***Privates:*** *Performance, Alignment, Terms, Strategy, Coinvestments*	• Deliver proposed terms to finalists • Determine fees and agree to terms • Bring to UTIMCO board for final approval
Publics: Complete	**Publics:** Complete	**Publics:** December
Privates: Complete	**Privates:** H1 2020	**Privates:** Late 2020

Public SPN Process Review

Phase 1 – Narrowing the Field

- Systematically scored managers across 7 criteria
- Focus on track record of success, ability to add value to UTIMCO across multiple dimensions
- Narrowed field down from 11 firms to 5 firms

Phase 2 – Cost of Capital and Proposed Portfolios

- To be accretive, Public SPs must exceed the "opportunity cost" of allocation
  - 100-140 basis points of Alpha
  - Information Ratio of 0.4-0.7
- Explicitly defined our cost of capital based on expectations for current managers within the target policy portfolio
- Prospective SPs built 3 portfolios across each of two possible benchmarks

	Option A	*Option B*
US Equity	41%	35%
Non-US Developed	21%	14%
Emerging Markets	20%	13%
Fixed Income	18%	11%
Directional HF		9%
Stable Value HF		18%
Baseline Alpha	100 bps	140 bps
Baseline TE	250 bps	200 bps
Baseline Info Ratio	0.4	0.7
Baseline Exp Return	6.6%	5.8%
Baseline Exp Risk	13.1%	10.4%
Baseline Sharpe	0.5	0.6

Phase 3: 5 Levers of Value Creation

- Assigned accountability for underwriting to Team's resident experts on each lever
- Each team produced two outputs
  - Forced Rank of each Prospective Partner for their lever
  - Expected Information Ratio for each Partner's proposed implementation

Lever	Owner	Definition
Tactical Asset Allocation	Courtney/ Scott	Short-Medium term tilts vs. policy
Active Equity Selection	Susan/ Amanda	Security selection in stocks
Fixed Income Selection	Russ	Security selection in Fixed Income
Absolute Return	Tony/ Ryan	Hedge-fund style strategies
SAA/ Leverage	Uzi/ Ken	Persistent/structural tilts vs. policy

Phase 3: Key Conclusions

Output 1: Force Rank

	RANK	SAA	TAA	Equity	FI	AR	Average
Firm 1	1	2	1	3	1	1	1.6
Firm 2	2	3	2	1	3	2	2.2
Firm 3	3	1	3	2	4	3	2.6
Firm 4	4	4	4	5	2	4	3.8
Firm 5	5	5	5	4	5	5	4.8

- Key Conclusions from the Forced Rank exercise
  1. Team supports moving forward with Managers 1, 2, and 3
  2. Determined that Hedge Fund strategies offered by prospective partners not sufficiently attractive to warrant including in the Strategic Partnerships at this time
- No one manager the best at every lever, but clear differentiation between the top three and bottom two
- Specific scorecards available in the appendix

Aggregating Expectations by Lever

Output 2: Expected Information Ratios

	TAA	*Equity*	*FI*	*Portfolio*	*Humbled*
Firm 1	0.60	0.50	1.30	1.00	0.76
Firm 2	0.69	0.70	0.50	0.82	0.62
Firm 3	0.50	0.60	0.30	0.98	0.83

- Generated go-forward expectations by combining team expectations and Prospective Partner proposals
- Humbled our estimates with statistical techniques for modelling purposes

Product-level build up also indicates low correlation across Prospective Partner Alphas

	Firm 1	Firm 2	Firm 3
Firm 1	1.0	0.2	0.1
Firm 2	0.2	1.0	0.3
Firm 3	0.1	0.3	1.0

Base Case Expectations

On a gross basis, Strategic Partnership Alpha is expected to be up to two-times greater than our opportunity cost at almost half the risk

	Expectations (Gross)			
Prospective Partner	***Alpha***	***Tracking Error***	***Info Ratio***	***Proposed Weight***
Firm 1	2.2%	2.9%	0.76	33%
Firm 2	2.2%	2.6%	0.83	33%
Firm 3	1.7%	2.7%	0.63	33%

Portfolio Exp. Alpha (gross)	2.00%
Portfolio Exp. Tracking Error	1.80%
Portfolio Exp. Info Ratio (gross)	1.10

Total UTIMCO Impact

	Current Public Portfolio	With $3 Bn to SPNs	Change	% Change
Alpha (bps)	100	110	+7-10	10%
TE (bps)	250	230	-20	-8%
IR	0.4	0.5	+0.1	25%

- **Investment Alpha**
  - Expect that allocating $3 Bn to Strategic Partners will increase Alpha production on the Total Public Portfolio by up to 10 basis points, or 10% of existing alpha target
  - Diversification benefits would also reduce tracking error 8%, from 250 to 230 basis points
  - Risk-reducing increase in alpha grows the expected portfolio Information Ratio by 25%

- **Organizational Alpha**
  - Networks of senior thought-leaders, policy makers, and investors who can build UTIMCO team's market awareness and perspective via ongoing engagement and Strategic Partner Summits
  - Extensive research resources brought to bear on UTIMCO's business priorities
  - Cutting-edge technology tools and expertise in sophisticated asset allocation and portfolio modelling analytics that can augment UTIMCO's existing framework

Next Steps

- UTIMCO team determining fees, terms, and structure for approval at the December board meeting
- Completing documentation and full Investment Committee write-up consistent with UTIMCO's process
- Finalizing proposed policy changes
  - Designate a separate policy asset class for Strategic Partnerships
  - Benchmarks identical to slice of current public portfolio
- Begin Knowledge Sharing Strategy Planning
  - Work with teams on 2020 business planning to identify opportunities for collaboration
  - Ongoing process that changes with organizational priorities

Appendix

Scorecards

Tactical Asset Allocation

	Firm 1	Firm 2	Firm 3	Firm 4	Firm 5
Rank	***1***	***2***	***3***	***4***	***5***
Exp. IR	***0.6***	***0.8***	***0.52***	***0.53***	***-0.11***
Scorecard					
Hist. IR	2	1	4	3	5
Alpha	3	2	4	1	5
Equity Corr.	2	4	3	5	1
Process	2	3	1	4	5
TOTAL	9	10	12	13	16

Equity Selection

	Firm 2	Firm 3	Firm 5	Firm 1	Firm 4
Rank	***1***	***2***	***3***	***3***	***4***
Exp. IR	***0.7***	***0.6***	***0.5***	***0.5***	***0.6***
Scorecard					
Excess Return	1.6	2.1	3.1	1	2.1
Info Ratio	3.9	3.6	3.1	2.1	2.7
Strat & Proc	4	3.5	3.1	4	3.6
Team	3.5	3.9	3.4	4	3.4
Total	3.8	3.6	3.2	3.2	3.1

Scorecards

Fixed Income

	Firm 1	Firm 4	Firm 2	Firm 3	Firm 5
Rank	***1***	***2***	***3***	***4***	***5***
Exp. IR	***1.3***	***0.4***	***0.5***	***0.3***	***0.1***

Absolute Return

	Firm 1	Firm 2	Firm 3	Firm 4	Firm 5
Rank	***1***	***2***	***3***	***4***	***5***
Exp. IR	***0.6***	***0.5***	***0.4***	***0.4***	***0.1***
Scorecard					
Firm-Wide Platform	7	5	4.1	2	1
Proposed Offering	4.2	3.6	4	2	2
Overall Score	5.6	4.3	4.2	2	1.5

Agenda Item
UTIMCO Board of Directors Meeting
September 26, 2019

Agenda Item: Report from Audit and Ethics Committee

Developed By: Team

Presented By: Handley

Type of Item: Information item

Description: The Audit and Ethics Committee (the "Committee") met on September 19, 2019. The Committee's agenda included (1) discussion and appropriate action related to the Committee minutes; (2) an update on UTIMCO's compliance, reporting, and audit matters; and (3) a presentation of the unaudited financial statements for the nine months ended May 31, 2019 for the Investment Funds and the Corporation.

Discussion: The Committee reviewed the unaudited financial statements for the second quarter for the Funds and UTIMCO Corporation and the quarterly compliance reports. In addition to the routine update on compliance, reporting, and audit issues, Ms. Gonzalez presented an update on the 2019 assessment and evaluation of the Fraud Prevention and Detection Program. The Fraud Prevention and Detection Program was adopted in 2004 and the last update was presented to the Committee in 2014.

Eric Polonski, Director of Audits for the UT System Audit Office, provided an update on the agreed upon procedures engagement related to the Risk Team's monitoring plan and activities used to monitor key risks identified for Investment Risk Management as part of the Institutional Compliance Program.

The Committee also reviewed the Contracts Report. In accordance with the Delegation of Authority Policy, UTIMCO reports any new contracts, leases or other commercial arrangements of $250,000 or more to the UTIMCO Board at its next regularly scheduled meeting, and annually, all existing contracts, leases, or other commercial arrangements of $250,000 or more. There were no new contracts reported for the period.

Recommendation: None

Reference: Quarterly Compliance Reports

The University of Texas/Texas A&M Investment Management Company
Institutional Compliance Program Report
for the Quarter Ended May 31, 2019

Section I – Organizational Matters

- One meeting of the Ethics and Compliance Committee was held during the quarter: April 10, 2019.
- Two new directors were appointed during the quarter: Janiece Longoria was appointed on May 22, 2019, as a Regental Director to replace Jeffery Hildebrand; Jeffery Hildebrand was appointed on May 23, 2019, as an independent director to replace J. Kyle Bass.
- Ray Nixon and Rad Weaver were reappointed to their positions as independent director and Regental Director, respectively.
- Uche Abalogu, Chief Technology Officer, terminated employment on May 10, 2019. A CTO search is underway.

Section II - Risk Assessment, Monitoring Activities and Specialized Training (Performed by Responsible Party)

High-Risk Area #1: Investment Due Diligence
Responsible Party: Managing Director – Public Equity; Managing Director – Hedge Funds; Managing Director – Real Return; Managing Director - Fixed Income; Senior Director – Private Equity
Key "A" risk(s) identified:

- *Organization could fail to adequately conduct due diligence on prospective managers.*
- *Organization could fail to adequately conduct continual review and evaluation of external managers hired to manage UT System investment funds.*

Key Monitoring Activities:
Public Equity: The Public Equity Team participated in 82 meetings/calls with potential managers. Serious due diligence was initiated on 1 mandate. No new mandates were completed. Ongoing review of active external managers included 67 meetings/calls. Additional efforts included monthly performance tracking, reviews and analyses by the team and participation in four annual meetings.

Fixed Income: The Fixed Income Team participated in two meetings/calls with potential managers. Ongoing review of active external managers included six meetings/calls. No serious due diligence was initiated on any mandates. No new mandate was completed.

Hedge Funds: The Hedge Funds Team participated in 60 meetings/calls with potential managers. Serious due diligence was not initiated on any new mandate. No new mandates were completed. Ongoing review of active external managers was conducted in the form of 63 meetings/calls/site visits. Additional efforts included monthly performance tracking, reviews and analyses by the team.

Private Credit: The Private Credit Team participated in seven meetings/calls with potential managers. Serious due diligence was not initiated on any new mandate. Four new mandates were completed. No addition to an existing mandate was completed. Ongoing review of active external managers included 15 meetings/calls. Additional efforts included participation in one annual meeting.

Private Equity: The Private Equity Team participated in 27 meetings/calls with potential managers. Serious due diligence was initiated on three new mandates and two existing mandates. Four new mandates were completed. There were three additions to existing mandates. Ongoing review of active external managers included 23 meetings/calls. Additional efforts included participation in ten annual meetings.

Healthcare: The Healthcare Team participated did not participate in any meetings/calls with potential managers. No serious due diligence was initiated on any new mandate or existing mandate. No new mandates were completed. There were no additions to existing mandates. Ongoing review of active external managers included one meeting/call. Additional efforts included participation in one annual meeting.

Technology: The Technology Team participated in 12 meetings/calls with potential managers. Serious due diligence was initiated on four new mandates. One new mandate was completed. Two additions to existing mandates were completed. Ongoing review of active external managers included 31 meetings/calls. Additional efforts included participation in seven annual meetings.

Natural Resources Infrastructure: The Natural Resources Infrastructure Team participated in 55 meetings/calls with potential managers. Serious due diligence was initiated on one new mandate and three existing mandates. No new mandates were completed. There were additions to six existing mandates. Ongoing review of active external managers included 103 meetings/calls. Additional efforts included participation in nine annual meetings.

Emerging Markets: The Emerging Markets Team participated in 20 meetings/calls with potential managers. No serious due diligence was initiated on any new mandate. No new mandate was completed. There were no additions to existing mandates. Ongoing review of active external managers included 12 meetings/calls. Additional efforts included participation in one annual meeting.

Real Estate: The Real Estate Team participated in 17 meetings/calls with potential managers. Serious due diligence was initiated on five new mandates. Five new mandates were completed. There was one addition to an existing mandate. Ongoing review of active external managers included 26 meetings/calls. Additional efforts included participation in seven annual meetings.

Specialized Training: The Investment Team attended 19 industry-related conferences/functions and meetings.

High-Risk Area #2: Investment Risk Management
Responsible Party: Managing Director - Risk Management
Key "A" risk(s) identified:

- *Organization could fail to accurately perform its assessment of risk due to data and investment instrument modeling error.*
- *Organization could fail to respond to risk levels (manage risk budget).*

Key Monitoring Activities:

- Risk Team continued to enhance its understanding and reporting of macro risks and market risks. This currently includes tracking and reporting a bubble monitor, a US bear market monitor, a non-US bear market monitor, an environment monitor, and factor data.

- Risk Team reviewed five due-diligence questionnaires during the quarter.
- Five managers triggered CUSUM this quarter – three in Pubic Markets and two hedge funds. Of the four reviews completed, the decisions were to terminate one, hold one, and add to two.
- Risk Team continued to evaluate potential Unified Risk Systems, with the goal to have a unified risk language across UTIMCO, be able to aggregate all exposures across the endowment into a single framework, and to offer advanced insights into private markets.
- Risk Team continued to analyze the dispersion of returns in the co-investment program and is currently discussing with the investment teams and the co-investment committee ways to reduce this dispersion, while maintaining or improving overall average returns.
- Risk Team led an in-depth review of the ITF asset mix, with the goal of reducing the ITF's tail risk to match its mandate of having up to 60% of the Endowments' risk.
- During the quarter, Risk Team reconciled accounting records' market value with market values modeled by IFS; reconciled month end values from IFS to accounting records and identified reasons for all discrepancies. Compared each month's downside volatility with both prior month results and with market activity to determine consistency and identified reasons for all changes; performed analysis of managers' portfolio-level risks and performance.
- Risk Team continued to monitor sources and uses of cash and the sources and uses of illiquid capital; prepared projections on portfolio downside volatility utilization, country exposure, liquidity, and asset allocations; updated projections on a weekly basis.
- All internal derivatives were reviewed and analyzed in detail prior to initiation.
- External managers that may use derivatives are monitored daily for spikes in returns or in volatility. Effects of derivatives on the overall portfolio are monitored monthly. Fixed income duration and tracking error is being monitored on an ongoing basis. Managers' use of margin and leverage is monitored on an ongoing basis. Risk Team confirmed each month downside volatility and VaR calculations.

Specialized Training: Risk Team participated in three conferences during the quarter.

High-Risk Area #3: Information Technology and Security
Responsible Party: Chief Information Security Officer (CISO)
Key "A" risk(s) identified:

- *Organization could fail to adequately secure networks and data to prevent abuse, destruction, and/or theft.*

Key Monitoring Activities:

- Thirty-two open security items remain at end of this reporting period. Subsequent to the closing of the reporting period, significant progress has been made to close out these items. Management is working with the CISO and the Information Services Team on a statement of work to resolve all the remaining open items.
- CISO continues to identify unapproved software installations by the Information Services Team that had not been submitted for legal or security review.
- CISO identified increasing fourth-party attacks against business partners and services providers; Intralinks and Microsoft OneDrive accounts owned by vendors were compromised and phishing emails were sent to UTIMCO in an attempt to steal credentials or data or install malware.

- CISO identified the continued use of Information Services administrator credentials for system service accounts.
- Two Windows 2008 servers remain in production environments even though Windows 2008 is no longer under mainstream support from Microsoft; all support, including security updates, will end January 2020.
- Multi-factor authentication is not configured for multiple user and system accounts and network infrastructure devices.
- Multiple alerts were sent to the firm covering various topics including viruses, malware, phishing scams, securely sending credit card and social security numbers and updates for mobile devices.
- CISO identified lack of adherence to published naming standards, which makes tracking rogue devices more difficult and can lead to missed rogue devices remaining on the network for an extended period.
- CISO adopted the NIST CVSS scoring system as the standard for measuring risk to systems and software.
- Annual employee security training was completed for all team members.

Specialized Training: Security team members attended the RSA Security Conference and the UT Information Security Conference along with multiple webinars.

Responsible Party: Chief Technology Officer (position is currently vacant)
Key "A" risk(s) identified:

- *Organization could fail to manage computer software and hardware resulting in internal and external users unable to perform necessary job duties.*

Key Monitoring Activities:

- User workstation patching and updates (ongoing)
- Server patching and updates (ongoing)
- Firewall rules audit, modifications and patching (ongoing)
- Switch and router patching and updates (ongoing)
- Citrix Remote Access environment patching (ongoing)
- Network documentation improvements (ongoing)
- Helpdesk process documentation and improvements (ongoing)
- Decommission of Windows Server 2008 servers in progress
- Denim security assessment findings and InfoSec security remediation (ongoing)
- Laptops deployed to over 30 users to enhance the ability to perform job duties more productively from any location
- File consolidation in progress and ongoing to enhance anytime/anywhere access to UTIMCO data
- Virtual Phone Switch installed to enhance call reliability
- Network and system monitoring tool deployment (in-process)
- New inventory management system deployed to production

Specialized Training: None.

High-Risk Area #4: Investment Compliance
Responsible Party: Senior Director - Accounting and Chief Compliance Officer
Key "A" risk(s) identified:

- *Organization could fail to comply with investment policies, applicable laws and regulations, and other policies.*
- *Organization could fail to detect non-compliance with applicable policies, etc.*

Key Monitoring Activities:

- Verified that investments are in compliance with rules and guidelines in policies, rules and regulations utilizing custodian's software and in-house developed databases and reports.
- Review of monthly and quarterly investment compliance reports prepared by employees continues.
- Information regarding the categorization of mandates is included in the Certificates of Compliance mailouts and Monthly Transparency report sent to UTIMCO Directors and the investment memos reviewed by the Internal Investment Committee.
- Continued participation by the Accounting and Operations employees in prospective and active external manager investment due diligence.
- Derivative Investment Controls and Processes are being followed and work continues to improve them.
- Testing was performed on all new commitments and funding made to ensure compliance with the Delegation of Authority.

Specialized Training: None

High-Risk Area #5: Conflicts of Interest
Responsible Party: Chief Compliance Officer
Key "A" risk(s) identified:

- *Organization could fail to comply with conflicts of interest provisions in Code of Ethics and Texas Education Code section 66.08.*

Key Monitoring Activities:

- All but two Certificates of Compliance were received timely from all Directors and Key Employees for all investment managers hired and funded. A new director was provided with Certificates of Compliance for investments in process; however, certificates of compliance were not sent for two investments that had been scheduled to close prior to the director's appointment to the board. The Investment Team did not advise the Legal and Compliance Team that the investments had not closed as expected thus no certificates of compliance were sent for those two investments. No conflicts of interests were noted, i.e. no pecuniary interests were identified.
- All Directors were required to submit compliance statements during the quarter. Two directors requested 60 day extensions to file their statements. All other directors filed their statements timely. One new director was provided with compliance statements for completion.
- Three full-time employees, one temporary worker, and 10 interns were hired during the quarter. One previously hired intern was also converted to a full-time employee. New hire compliance statements were received timely from the new employees and interns. The temporary worker was excused as he was only hired for a two week engagement.

- One annual compliance training session and two makeup sessions were held during the quarter. New hires received training within a reasonable time after hire. The temporary worker was excused as he was only hired for a two week engagement.
- Effective April 1, 2013, a new procedure regarding the periodic review of public resources for comparison with financial disclosure statement information provided by Directors and Key Employees was adopted, which requires review of these statements within 90 days after the deadline for filing the statements. No review was required during the quarter.
- List of publicly traded securities of all publicly traded companies in which a Director or employee has a pecuniary interest (the "restricted list") was maintained. Internal managers and external managers operating under agency agreements are provided the restricted list to prevent the violation of UTIMCO Code of Ethics and Texas Education Code Section 66.08. No new security was added to the list. One new manager operating under an agency agreement that funded a mandate was provided the restricted list during the quarter.
- Daily, the Chief Compliance Officer designee reviewed security holdings of internal and external managers operating under agency agreements for compliance with the restricted list. No exceptions were noted.
- Of 55 employee securities transactions during the quarter, one required preclearance. All were precleared as required. No transactional disclosure forms were filed late during the quarter.
- One employee requested CEO approval for outside employment during the quarter.
- Beginning with the fourth quarter 2015, the Finance and Administration travel review process was modified to require testing of a sample of expense reports only and no longer provide a review of all reimbursement requests. As a result, compliance reporting is now limited to information obtained from the sample tested during each quarter. Of the 26 expense reports tested during the quarter, five included third party paid expenses. One of the expense reports tested included a sponsored entertainment event. Approval was obtained as required for all.
- Two employees requested approval for private air travel due to expected route termination by the commercial airline and lack of availability of alternative commercial flights in time frame needed.
- Effective September 1, 2017, employees must submit sponsored entertainment requests for approval to the CCO. During the quarter, 14 employees requested and received approval for sponsored entertainment events.

Specialized Training: None

<u>Section III – Monitoring and Assurance Activities (Performed by Compliance Office)</u>

High-Risk Area #1: Investment Due Diligence
Assessment of Control Structure: *Well controlled*
Assurance Activities Conducted: CCO reviewed results of quarterly due diligence monitoring plans for each Investment Team. Ongoing due diligence efforts on multiple managers continue.
Significant Findings: None.

High-Risk Area #2: Investment Risk Management
Assessment of Control Structure: *Well controlled*
Assurance Activities Conducted: CCO continues to review documentation maintained by the Risk Team evidencing risk monitoring performed by the Risk Team.
Significant Findings: None

High-Risk Area #3: Information Technology & Security
Assessment of Control Structure: *Opportunity for enhancement*
Assurance Activities Conducted: CCO continues to meet with CISO regarding information technology and security practices. Organizational reporting for the Information Services team has been restructured and the team is now reporting to the both the Deputy CIO and Chief Operating Officer. The Security and Information Services teams continue to meet bi-weekly to track and monitor the status of identified areas of vulnerability and required improvement in UTIMCO's information resources.
Significant Findings: None

High-Risk Area #4: Investment Compliance
Assessment of Control Structure: *Well controlled*
Assurance Activities Conducted: CCO continues to review investment and fund compliance reports to determine that policy requirements have been maintained based on the activity performed by employees. CCO reviewed the documentation and workpapers supporting the various compliance reports prepared by the Responsible Parties.
Significant Findings: None

High-Risk Area #5: Conflicts of Interest
Assessment of Control Structure: *Well controlled*
Assurance Activities Conducted: CCO reviewed the completed sign-offs for completeness for all certificates of compliance received. Monitoring for potential conflicts of interest in the areas of personal securities transactions, outside employment and business activities, and manager/third party-paid travel, entertainment and gifts is ongoing.
Significant Findings: None

Section IV – General Compliance Training Activities

One annual training session and two makeup sessions were held during the quarter.

Section V – Action Plan Activities

See updated Institutional Compliance Action Plan Fiscal Year 2019.

Section VI – Confidential Reporting

UTIMCO maintains a Compliance Hotline to receive and process complaints. UTIMCO has contracted with an outside vendor to provide the service. The chart below summarizes the calls received during the **FISCAL YEAR**:

Type	FYTD Number	% of Total
Employment Related	1	50.00%
Policy Issues	0	0.00%
Hang ups or wrong numbers	1	50.00%
Total	2	100.00%

All calls are accepted by the hotline and reported to the UTIMCO Compliance Office. All reports are handled by a 5-person team comprised of the Corporate Counsel and Chief Compliance Officer, the Compliance Specialist, the Senior Director – Human Resources, the Executive Assistant to the President, CEO and Chief Investment Officer, and David Givens from The University of Texas Systemwide Compliance Office.

The University of Texas Investment Management Company
Institutional Compliance Action Plan
Fiscal Year 2019

#	ACTION ITEM	TARGET COMPLETION DATE	STATUS
A. RISK ASSESSMENT			
1.	Complete detailed review of Enterprise Risk Management Framework; update risk assessments, including mapping of controls in conjunction with updated investment and operations processes under new CEO, if any; prepare new/updated monitoring plans for high risk areas and update Fraud Program as needed	12/31/2018; revised to 08/31/19	*ERM, risk assessments and updated monitoring plans in progress (holdover from FY 2018)* *Update to Fraud Program near completion, currently with COO for review; work continues on ERM*
B. MONITORING ACTIVITIES / ASSURANCE			
2.	Revise Responsible Party Monitoring Plan documentation for high risk areas A in conjunction with updated investment and operations processes under new CEO, if any	12/31/2018; revised to 08/31/19	*Monitoring plans revisions in progress (holdover from FY 2018)*
3.	Continual enhancement of compliance monitoring and reporting	Ongoing	*Ongoing*
C. COMPLIANCE TRAINING / AWARENESS			
4.	Increase personal training and awareness related to cybersecurity risks	Ongoing	*Ongoing*
5.	Provide new employee and annual Code of Ethics training and information to improve employee awareness of compliance program	04/30/2019	*New Employee training session held 01/09/19; Annual training session held 04/01/19; makeup sessions held 4/25/19 and 4/29/19*
6.	Identify and network with similarly situated compliance professionals	Ongoing	*Council of Public Funds Compliance Officers 11/27/18 and 02/26/19; Meeting with Travis County Compliance Officer 12/03/18; ACC-Austin Small Law CLE 02/13/19*
D. REPORTING			
7.	Work with Information Technology Team to automate Code of Ethics forms	06/30/2019	*No activity*
8.	Conduct quarterly meetings with the internal ethics and compliance committee	Ongoing	*Quarterly meeting held 11/12/18, 01/22/19 and 4/10/19*
9.	Provide quarterly/annual reports to the Audit and Ethics Committee and System-wide compliance office	Ongoing	*Quarterly reporting to A&E and Risk Committees: 11/29/18,*

Updated 07/10/2019

#	ACTION ITEM	TARGET COMPLETION DATE	STATUS
			02/14/19, 02/19/19, and 6/20/19 Quarterly reporting to Systemwide Compliance: 01/16/19, 03/11/19, and 7/8/19
E. OTHER / GENERAL COMPLIANCE			
10.	Update/Revise Institutional Compliance Program Manual	09/30/2019	*In process; OFAC Compliance Procedure incorporated into manual*
11.	Continual update of compilation of all laws and regulations applicable to UTIMCO and to the extent necessary, modify compliance processes and reporting	Ongoing	*Ongoing*
12.	Update Business Continuity Plan due to move to new office space	11/30/2018; revised to 8/31/19	*Mission critical contact lists have been updated. IT disaster recovery plan was received 03/12/19 and incorporated into BCP document; however, Information Services team wants to revisit and possibly amend*
13.	Supervise and manage work of Compliance Specialist	Ongoing	*Ongoing*
14.	UT Systemwide Compliance Office activities participation: annual compliance officers' forum and other activities	Ongoing	*Jason King, Executive Director of Systemwide Compliance & Ethics Officer for the U.T. System attended EECC meeting held on 01/22/2019; Spring ICAC meeting held 03/26/2019*
15.	Hotline reporting	Ongoing	*One anonymous report and one hangup received by the hotline in April*

Updated 07/10/2019

Agenda Item
UTIMCO Board of Directors Meeting
September 26, 2019

Agenda Item:	Report from Risk Committee
Developed By:	Gonzalez, Moeller
Presented By:	Gauntt
Type of Item:	Information item
Description:	The Risk Committee ("Committee") met on September 19, 2019. The Committee's agenda included (1) discussion and appropriate action related to the approval of minutes of its June 20, 2019 meeting and June 20, 2019 joint meeting with the Policy Committee; (2) review and discussion of compliance reporting; and (3) a market and portfolio risk update.
Discussion	Ms. Gonzalez reviewed the quarterly compliance reporting with the Committee and Dr. Yoeli presented an update on the market and portfolio risk.
Recommendation:	None
Reference:	None

Agenda Item
UTIMCO Board of Directors Meeting
September 26, 2019

Agenda Item:	Report on 2020 Meeting Dates
Developed By:	Harris
Presented By:	Harris
Type of Item:	Information item
Description:	This agenda item presents the 2020 UTIMCO Board Meeting schedule and the Committee meetings schedule.
Recommendation:	None
Reference:	UTIMCO 2020 Meeting Dates

UTIMCO Meeting Dates

Meetings are held at the Corporate Offices:
210 W. Seventh Street, Suite 1700
Austin, TX 78701

2020							
	Audit & Ethics Committee	Compensation Committee	Policy Committee	Risk Committee	UTIMCO Board of Directors	UT System Board of Regents	TAMU System Board of Regents
January							
February						2/26-27	2/5-7
March	3/5	3/5	3/5	3/5	3/26		
April							
May						5/6-7	5/13-15
June (Annual)	6/4	6/4	6/4	6/4	6/11		
July						7/15-16	
August						8/19-20	8/26-28
September	9/3	9/3	9/3	9/3	9/10		
October							
November	11/17	11/17	11/17	11/17		11/18-19	11/11-13
December		12/3			12/3		

Agenda Item
UTIMCO Board of Directors Meeting
September 26, 2019

Agenda Item: Discussion and Appropriate Action Related to Employee's Service as a Director on an UTIMCO Investee Company

Developed By: Gonzalez, Moeller

Presented By: Harris

Type of Item: Action required by UTIMCO Board (the Board)

Description: Mr. Harris is recommending that Patrick Pace M.D., Managing Director – Private Equity be appointed to serve as a Series B/C Manager of the Board of Managers for AgBiome, LLC. The appointment was previously held by William Prather III, who resigned from the Board of Managers concurrent with his resignation from the Corporation. UTIMCO made a co-investment in AgBiome, LLC in 2015. In accordance with the UTIMCO Code of Ethics, an employee, with the prior approval of the Board, may serve as a director of a company in which UTIMCO has directly invested its assets. The Board's approval must be conditioned on the extension of UTIMCO's Directors and Officers Insurance Policy coverage to the Employee's service as director of the investee company. All compensation paid to an Employee for service as director of an investee company shall be endorsed to UTIMCO and applied against UTIMCO's fees.

Upon approval by this Board and with the written consent of the Board of Managers for AgBiome, LLC, Dr. Pace will join the Board of Managers, effective October 1, 2019. Dr. Pace's appointment is for the duration of UTIMCO's investment as long as Dr. Pace remains an employee of UTIMCO. UTIMCO's Directors and Officers Insurance Policy coverage has been extended to cover Mr. Prather's service as a director. There is no compensation associated with this position.

Recommendation: Mr. Harris will recommend approval of Dr. Pace's service as a Series B/C Manager of the Board of Managers for AgBiome, LLC.

Reference: None

RESOLUTION RELATED TO EMPLOYEE'S SERVICE AS A DIRECTOR ON AN UTIMCO INVESTEE COMPANY

RESOLVED, that the Board of Directors hereby approves Patrick Pace's service as a Series B/C Manager of the Board of Managers for AgBiome, LLC.

FURTHER RESOLVED, that this board service on an UTIMCO investee company will meet all requirements of the Code of Ethics for the Corporation applicable to board service on an UTIMCO investee company.