

**UTIMCO BOARD OF DIRECTORS
MEETING AGENDA
September 16, 2021**

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

Time	Item #	Agenda Item
Begin	End	
		OPEN MEETING:
9:00 a.m.	9:05 a.m.	1 Call to Order of the Meeting/Discussion and Appropriate Action Related to Minutes of June 29, 2021 Meeting*
9:05 a.m.	9:10 a.m.	2 Discussion and Appropriate Action Related to Corporate Resolutions: - Election of Corporate Officers* - Consideration of Renaming Risk Committee*
9:10 a.m.	9:15 a.m.	3 Discussion and Appropriate Action related to Proposed Amendment of the Public Real Estate Investments Benchmark of the Investment Policy Statements' Exhibits*,**
9:15 a.m.	9:35 a.m.	4 UTIMCO and Market Update
9:35 a.m.	10:20 a.m.	5 Future Macro Trends Report
10:20 a.m.	10:35 a.m.	6 Tactical Asset Allocation Presentation
10:35 a.m.	10:50 a.m.	7 Fixed Income Presentation
10:50 a.m.	11:30 a.m.	8 Risk Management Presentation and Risk System Demonstration
11:30 a.m.	11:35 a.m.	9 Report from Audit and Ethics Committee: - Discussion and Appropriate Action Related to Proposed Amendments to the Charter of the Audit and Ethics Committee*
11:35 a.m.	11:40 a.m.	10 Report from Risk Committee: - Discussion and Appropriate Action Related to Proposed Amendments to the Charter of the Risk Committee*
11:40 a.m.	11:45 a.m.	11 Report from Cyber Risk Committee
11:45 a.m.	11:50 a.m.	12 Report on 2022 Meeting Dates
11:50 a.m.	12:10 p.m.	Executive Session Pursuant to Section 551.074 <i>Texas Government Code</i> , the Board of Directors may convene in Executive Session to deliberate individual personnel matters. Reconvene into Open Session
12:10 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 9, 2021

RESOLUTION RELATED TO MINUTES

RESOLVED, that the minutes of the Meeting of the Board of Directors held on **June 29, 2021**, 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 29, 2021**, in person and by means of video and telephone conference enabling all persons participating in the meeting to hear each other, at the offices of the Corporation located at 210 West 7th Street, Suite 1700 in Austin, said meeting having been called by the Chairman, Jeffery D. Hildebrand ("Chairman"), 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:

Jeffery D. Hildebrand
Ray Rothrock
Robert Gauntt
Janet Handley
Jodie L. Jiles
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; Carolina de Onis, General Counsel and Chief Compliance Officer; Mike Sjolander, Chief Technology Officer ("CTO"); Uzi Yoeli, Managing Director – Risk Management; and other team members as well as our Growing Investment Leaders ("GIL") Interns. Other attendees were James B. Milliken, Chancellor of The University of Texas ("UT System") System; Jerry Kyle of Orrick, Herrington, & Sutcliffe LLP; and Keith Brown of the McCombs School of Business at UT Austin. Chairman Hildebrand called the 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.

Minutes

The first item to come before the Board was approval of the Minutes of the Board of Directors Meeting held on March 11, 2021. 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 March 11, 2021, be, and are hereby, approved.

Corporate Resolutions

Chairman Hildebrand nominated Director Rothrock to serve as Vice Chairman of the Board and Director Jiles to serve as Vice Chairman for Policy. He then requested nominations for the office of Chairman. Director Rothrock nominated Chairman Hildebrand to serve as Chairman of the Board. There being no other nominations, Chairman Hildebrand 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. Chairman Hildebrand also presented a recommendation for new Board committee assignments. Upon motion duly made and seconded, the following resolutions were 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.

<u>Name</u>	<u>Office or Offices</u>
Jeffery D. Hildebrand	Chairman
Ray Rothrock	Vice Chairman
Jodie L. Jiles	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
Carolina de Onis	Managing Director, General Counsel and Chief Compliance Officer
Mike Dean	Managing Director
Russ Kampfe	Managing Director
Edward Lewis	Managing Director
Pat Pace	Managing Director
Ryan Ruebsahm	Managing Director
Mike Sjolander	Managing Director and Chief Technology Officer
Scott Slayton	Managing Director
Uzi Yoeli	Managing Director

And

BE IT RESOLVED, that the following Directors of the Corporation are hereby designated as the Audit and Ethics Committee of the Board of Directors:

- Janet Handley
- Jodie L. Jiles
- Clifton L. Thomas, Jr.
- James C. "Rad" Weaver

subject to approval by the Board of Regents of The University of Texas System at a future meeting, 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 Janet Handley is hereby designated the Chair of the Audit and Ethics Committee and shall preside at its meetings.

BE IT RESOLVED, that the following Directors of the Corporation are hereby designated as the Compensation Committee of the Board of Directors:

Robert Gauntt
Janet Handley
Ray Nixon
Ray Rothrock

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 Ray Nixon is hereby designated the Chair of the Compensation Committee and shall preside at its meetings.

BE IT RESOLVED, that the following Directors of the Corporation are hereby designated as the Policy Committee of the Board of Directors:

Robert Gauntt
Jodie L. Jiles
Ray Nixon
Clifton L. Thomas, Jr.

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 Policy Committee and shall preside at its meetings.

BE IT RESOLVED, that the following Directors of the Corporation are hereby designated as the Risk Committee of the Board of Directors:

Janet Handley
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 James C. "Rad" Weaver is hereby designated the Chair of the Risk Committee and shall preside at its meetings.

BE IT RESOLVED, that the following Directors of the Corporation are hereby designated as the Cyber 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 Ray Rothrock is hereby designated the Chair of the Cyber Risk Committee and shall preside at its meetings.

Performance and Market Update

Chairman Hildebrand asked Mr. Hall to present the Corporation's performance and market update. Mr. Hall reported that as of March 31, 2021, the Corporation had around \$60 billion of assets under management; a \$14 billion increase over a 12-month period. Mr. Hall reviewed the AUM by institution as well as the UTIMCO diversification framework. Next, he discussed endowment returns and alpha detail and risk and return. He also discussed ITF returns and alpha detail. He then turned the presentation over to Mr. Harris for a UTIMCO update. Mr. Harris started with a highlight of recent public listings. He then introduced the 2021 summer interns and discussed the UTIMCO Scholars program. Next, Mr. Hall reviewed the year-to-date market dashboard and provided an economic forecast. He also discussed dispersions as well as P/E vs. operating margin and concluded with a Federal Reserve Update. Mr. Hall answered questions from the Board.

Real Return Presentation

Chairman Hildebrand asked Mr. Lewis to present the update on the Real Return program. Mr. Lewis began with a few key highlights and an overview of the Real Return team. He then discussed the role in the total portfolio as well as investment results and exposure as of 4/30/21. Mr. Lewis reported that Total Real Return is generating positive alpha across all time periods measured. He shared that the Real Return portfolio faced a steep decline followed by a recovery in 2020. Next, he discussed the Covid-19 impact on commercial real estate as well as unlevered return expectations. Mr. Lewis then reviewed oil and gas market conditions and discussed energy transitions and the restructuring of the Natural Resources portfolio. He concluded with an overview of the teams' key accomplishments and top priorities going forward. Mr. Lewis answered the Directors' questions.

Private Equity Presentation

Chairman Hildebrand asked Dr. Pace to update the Board on the Private Equity Team and their current work. Dr. Pace began by stating that Private Equity generated a 30.4% Internal Rate of Return ("IRR") over the past 12 months. Over the past 10 years, Private Equity generated a 14.4% IRR contributing 218 basis points of alpha when compared to the same benchmark. Dr. Pace recognized the team for their efforts and discussed Private Equity's role in the endowments. He covered performance and key highlights as well as priorities for 2021. Dr. Pace discussed the current market conditions and commitment plan before concluding his presentation. He then answered the Directors' questions.

Strategic Asset Allocation Review

Chairman Hildebrand asked Britt Harris, Rich Hall, Uzi Yoeli and Ken Standley to present an update on the Strategic Asset Allocation ("SAA"). Mr. Harris gave a brief introduction before turning the presentation over to Mr. Hall who began by acknowledging the teams' efforts. Mr. Hall then reviewed the summary recommendations and discussed the investment framework including asset diversification, returns, role of bonds and future funding. Mr. Harris added some points on the UTIMCO conclusions for the ITF as well as

contribution analysis. Next, Mr. Stanley discussed capital market assumptions and expectations vs. 2018 as well as the role of bonds and declining yields. Mr. Harris reviewed the overshoot with the Board, noting that market performance has generally exceeded 2018 assumptions. He briefly reviewed margin of safety before turning the presentation over to Dr. Yoeli. Dr. Yoeli concluded the presentation with a discussion on risk of regime change, expected states of economy and recommended portfolios. The team then answered questions from the Board. Mr. Harris made a recommendation that the UTIMCO Board approve the proposed amendments to the Investment Policy Statements and associated Exhibits for the PUF, GEF, PHF, LTF and ITF for the fiscal year beginning September 1, 2021.

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

Report from Policy Committee

Chairman Hildebrand asked Director Gauntt to provide a report from the Policy Committee. Director Gauntt reported that the Policy Committee met jointly with the Risk Committee via teleconference on June 17, 2021. The Joint Committee meeting agenda included the discussion and appropriate action related to proposed amendments to the Investment Policy Statements. The Committee also received an update on the Strategic Asset Allocation. A recommendation was made, but no decision was made and the topic was tabled for further discussion.

Report from Audit and Ethics Committee

Chairman Hildebrand asked Director Handley to provide a report on behalf of the Audit and Ethics Committee. Director Handley reported that the Committee met via teleconference on June 17, 2021. The Committee's agenda included approval of Committee minutes; discussion and appropriate action related to engaging corporate external auditor; a report from UT System Audit Office; an update on UTIMCO's compliance, reporting, and audit matters; a presentation of unaudited financial statements for the Investment Funds and the Corporation; discussion and appropriate action related to the Chief Executive Officer's Nominee for Chief Compliance Officer; and discussion and appropriate action related to the base salary for the Corporate Counsel and Chief Compliance Officer for the 2021-2022 Fiscal Year. The Committee also met in Executive Session for the purpose of deliberating individual personnel compensation and evaluation matters.

The Committee received a report from J. Michael Peppers and Eric Polonski from the UT System Audit Office on the completed audit of UTIMCO's Compliance Program. Director Handley noted that Mrs. de Onis reported on the annual disclosure statements filed by outside financial advisors and service providers that were filed with the State Auditor's Office on April 15th and the annual report on Director Co-Investments. Mrs. de Onis also reported to the Committee on contracts, leases, or other commercial arrangements of \$250,000 or more entered into during the quarter.

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 2021 audit services are \$48,000 plus out-of-pocket

expenses. This is a \$1,700 increase over the FY 2020 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, 2021.

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 via teleconference on June 17, 2021. The Committee considered one action item: the minutes of its March 4, 2021 meeting were approved as drafted. The Committee also met jointly with the Policy Committee to discuss appropriate action related to proposed amendments to the Investment Policy Statements. The Risk Committee received a report on compliance matters for the quarter ended February 28, 2021, and a market and portfolio risk update.

Report from Cyber Risk Committee

Chairman Hildebrand asked Director Rothrock to provide a report from the Cyber Risk Committee. Director Rothrock reported that the Cyber Risk Committee met via teleconference on June 17, 2021. The Committee approved the minutes of its March 4, 2021 meeting. The Committee also met in Executive Session to receive an update on computer security assessments related to information resources technology, including security assessments.

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* Section 551.074. The date is June 29, 2021, and the time is now 11:08 a.m."

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 29, 2021, and the time is now 11:50 a.m. During the Executive Session, the Board deliberated individual compensation matters, including the CEO and Chief Investment Officer, 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 17, 2021. The agenda included

approval of the minutes of the March 4, 2021 meeting; discussion and appropriate action related to the base salaries for the UTIMCO officers and other UTIMCO Compensation Program ("Plan") Participants for the 2021-2022 Fiscal Year, discussion and appropriate action related to the CEO's Qualitative Performance Standards for the Plan for the Performance Period ending June 30, 2022. The Committee also met in Executive Session for the purpose of deliberating individual personnel compensation matters. Director Rothrock requested the Board take appropriate action on two resolutions, the base salary for the Corporation's CEO, and the CEO's qualitative performance standards. 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 2021-2022 in the amount of \$870,000.

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, 2022, 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, 2022, as set forth in the document presented to the Board.

Corporation Budget

Chairman Hildebrand asked Mr. Harris, Mr. Hall, and Ms. Moeller to discuss the Corporation's budget for the next fiscal year. The Corporation's budget is subject to approval by the Board and the Board of Regents of UT System. Mr. Hall explained the changes to the proposed budget compared to the prior year's budget and actual for the last fiscal year. Ms. Moeller concluded the presentation with a review of the annual fee and allocation schedule and cash reserves. The team answered questions from the Board. Upon motion duly made and seconded, the following resolution was unanimously adopted by the Board:

RESOLVED, that the UTIMCO Management Fee of \$60,631,074 and the Other Direct Fund Costs of \$8,058,631 resulting in Total Fees of \$68,689,705, Capital Budget of \$135,000 and the Allocation Schedule; as provided to the Board for the period beginning September 1, 2021 through August 31, 2022, be, and are hereby, approved, subject to approval by the Board of Regents of The University of Texas System.

Discussion Related to CEO's Speaker Role at Various Engagements

Chairman Hildebrand asked Mr. Harris to present his recommendation. Mr. Harris recommended approval of his external employment as a speaker at various functions. The Board requested more time to consider any action and no resolution was made.

Adjourn

There being no further business to come before the Board, the meeting was adjourned at approximately 12:07 p.m.

Secretary: _____
Joan Moeller

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

Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Agenda Item: Discussion and Appropriate Action Related to Corporate Resolutions:
- Election of Corporate Officers
- Consideration of Renaming Risk Committee

Developed By: Moeller, de Onis

Presented By: Hildebrand, Harris

Type of Item: Action required by UTIMCO Board

Description: Mr. Harris will request that Courtney Powers, Amanda Hopper and Gary Hill be appointed officers of the Corporation. Managing Directors are considered officers of the Corporation. Effective September 1, 2021, Mr. Powers was appointed Managing Director – Hedge Funds, Ms. Hopper was appointed Managing Director – Public Markets, and Mr. Hill was appointed Managing Director – Operations, Accounting and Reporting.

Chairman Hildebrand will also request the name of the Risk Committee be changed to the Investment Risk Committee.

Recommendation: Mr. Harris will request that the Board approve the appointment of Mr. Powers, Ms. Hopper and Mr. Hill as corporate officers, and Chairman Hildebrand will request Board approval for the renaming of the Risk Committee to the Investment Risk Committee.

Reference: None

RESOLUTION RELATED TO CORPORATION OFFICER
--

RESOLVED, that Courtney Powers, Amanda Hopper and Gary Hill are hereby appointed to the office of Managing Director of the Corporation to serve until the next Annual Meeting of the Corporation or until his or her resignation or removal.

RESOLUTION RELATED TO RENAMING RISK COMMITTEE

RESOLVED, that the Directors of the Corporation hereby rename the Risk Committee to the Investment Risk Committee.

Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Agenda Item:	Discussion and Appropriate Action related to Proposed Amendment of the Public Real Estate Investments Benchmark of the Investment Policy Statements' Exhibits
Developed By:	Team
Presented By:	Hall
Type of Item:	Action Item; Action required by UTIMCO Board and by the Board of Regents of The University of Texas System (UT Board)
Description:	Mr. Hall will request that the UTIMCO Board approve an administrative correction to the Exhibits of the Investment Policy Statements for the PUF, GEF, PHF, LTF and ITF which will change the benchmark for public real estate investments from the MSCI US REIT Index (RMZ) to the MSCI US REIT Gross Total Return Index (RMSG).
Discussion:	Upon subsequent review of benchmarks approved by the UTIMCO Board during its June meeting, UTIMCO determined that the MSCI US REIT Index (RMZ) is a price only REIT benchmark which neglects to include the impact of dividends received from REIT investments. Historically, REIT dividends have been meaningful positive component of an investor's return associated with REIT holdings. As such, UTIMCO is recommending that the Board approve a correction to the real estate benchmark by changing it to the MSCI US REIT Gross Total Return Index (RMSG) which measures the total return comprised of price movements and dividends received.
Recommendation:	UTIMCO recommends changing the benchmark for public real estate investments in the PUF, GEF, PHF, LTF and ITF Investment Policy Statements to the MSCI US REIT Gross Total Return Index (RMSG) effective September 1, 2021.
Reference:	None

**RESOLUTION RELATED TO PUBLIC REAL ESTATE INVESTMENTS
BENCHMARK**

RESOLVED, that amendment of the Public Real Estate Investments Benchmark of the Exhibits of the Investment Policy Statement of the Permanent University Fund, General Endowment Fund, Permanent Health Fund, Long Term Fund, and Intermediate Term Fund to the MSCI US REIT Gross Total Return Index (RMSG) is hereby approved, effective September 1, 2021, subject to approval by the Board of Regents of The University of Texas System.

Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Agenda Item: UTIMCO and Market Update

Developed By: Hall

Presented By: Hall

Type of Item: Information Item

Description: Rich Hall will review UTIMCO's performance and provide an update on the financial markets.

Reference: *UTIMCO and Market Update* presentation



UTIMCO and Market Update

Rich Hall, Deputy Chief Investment Officer

September 16, 2021

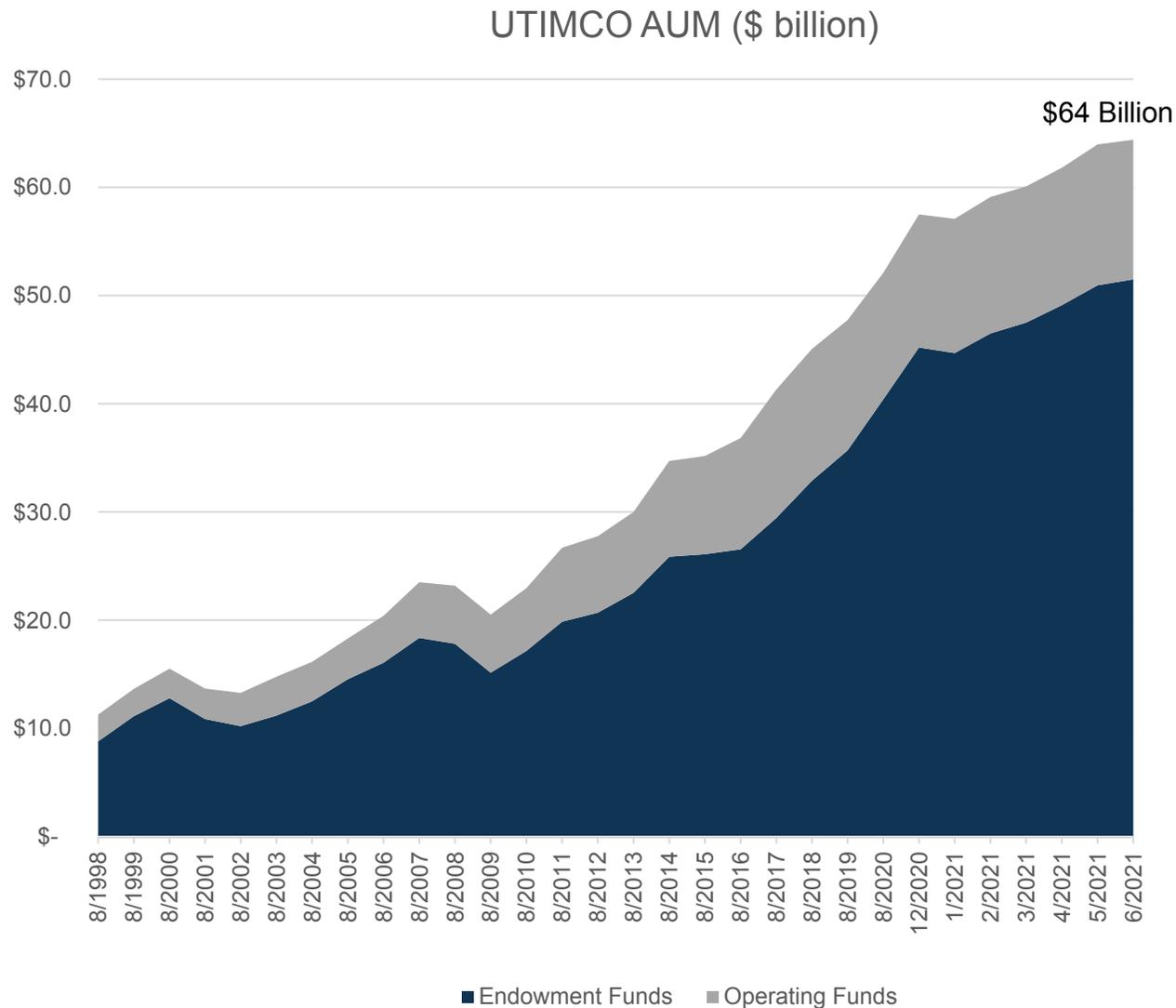
UTIMCO Performance





Growth in Assets Under Management

Total Assets through June 30, 2021



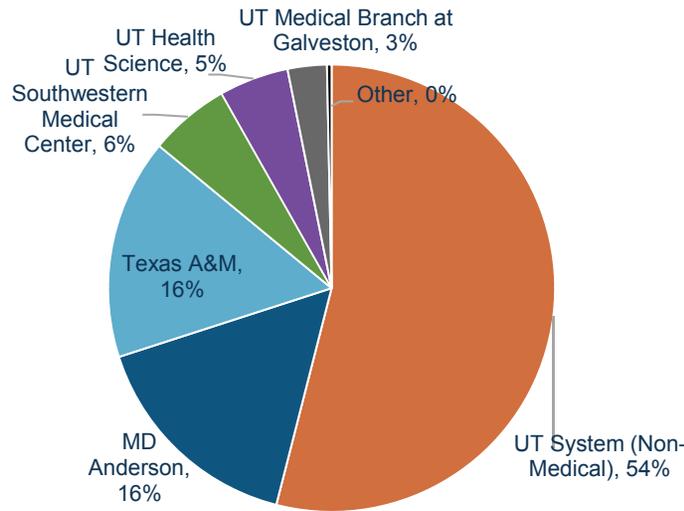
12 Month Change in AUM

	\$ Billion
Beginning NAV	48.9
Contributions	2.8
Net Investment Income	14.5
Distributions	-1.8
Ending NAV	64.4

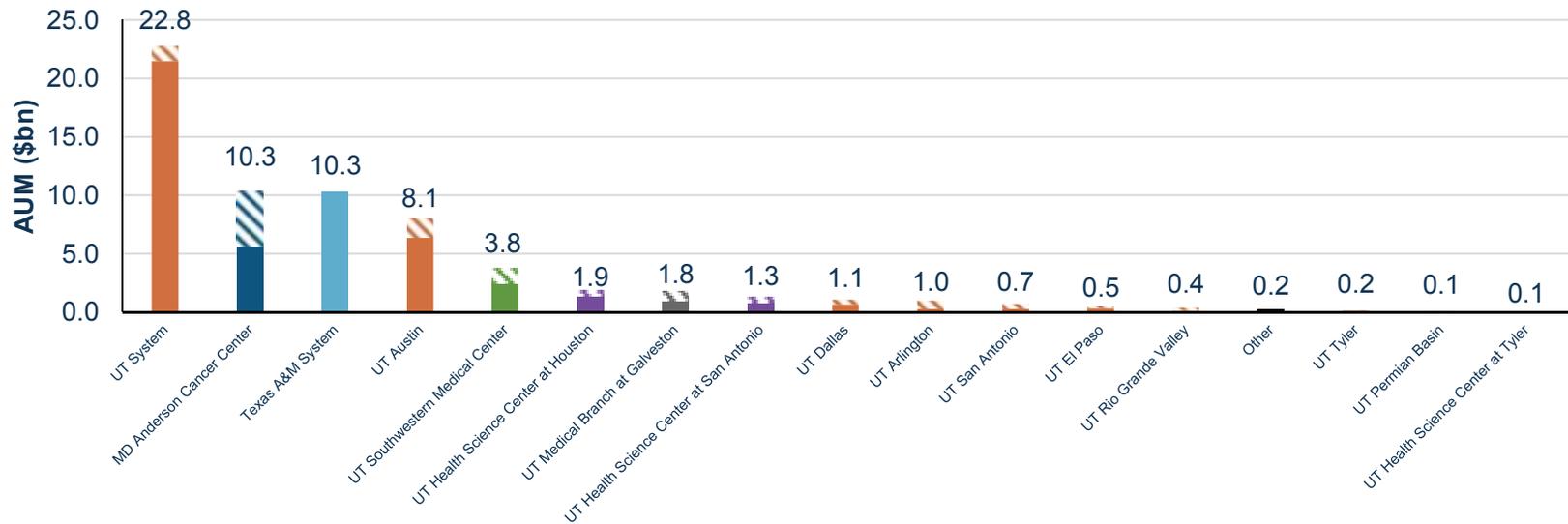
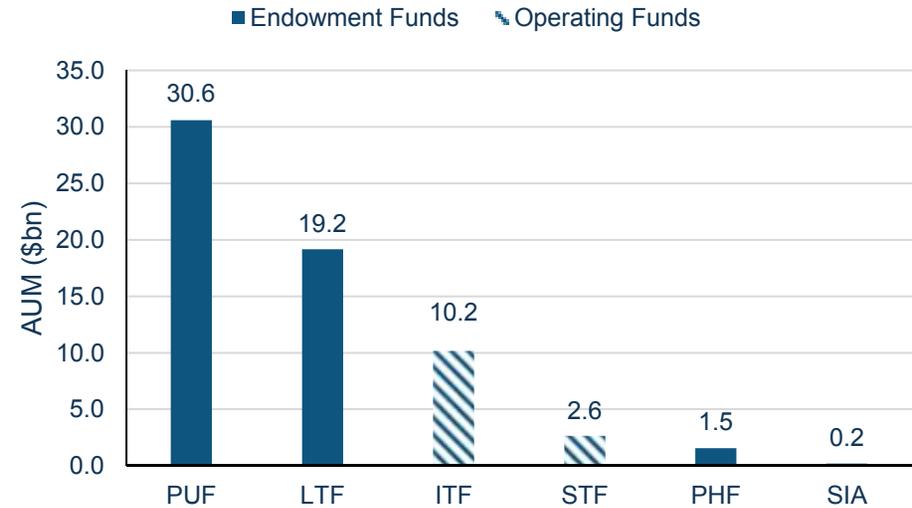


AUM by Institution

As of June 30, 2021

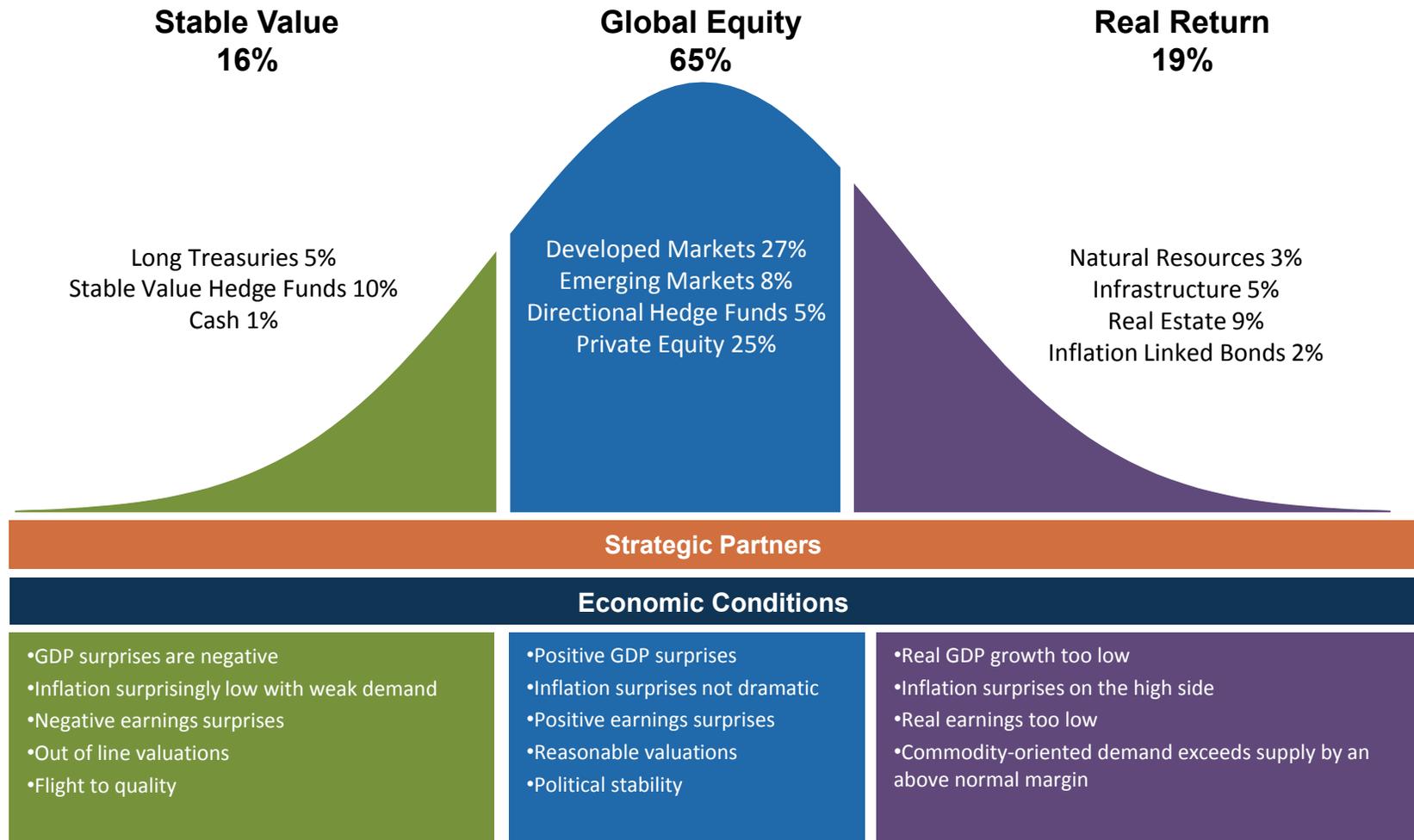


AUM by Fund





UTIMCO Diversification Framework



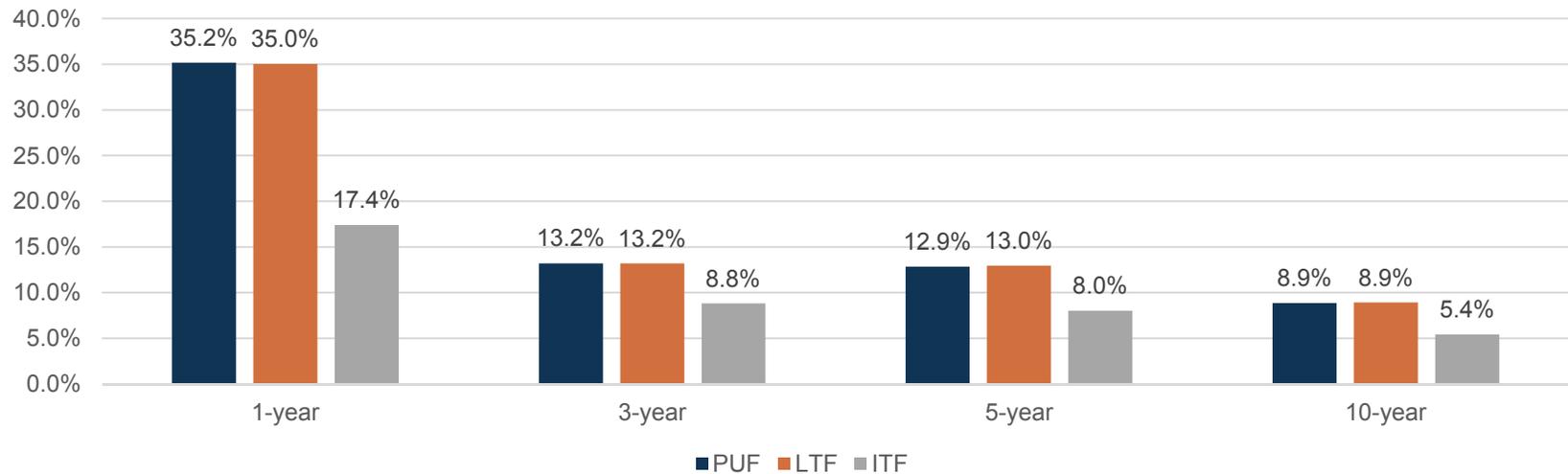
*LTSAA Policy Weights



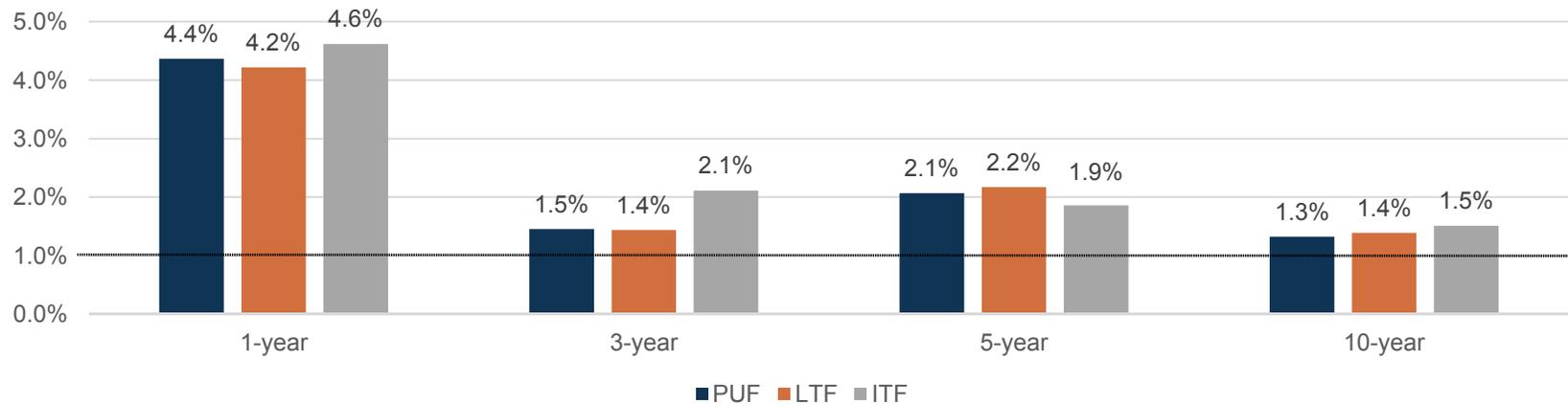
UTIMCO Returns and Alpha

As of June 30, 2021 (preliminary)

Total Net Returns



Outperformance vs. Benchmarks





Endowment Returns and Alpha Detail

As of June 30, 2021 (preliminary)

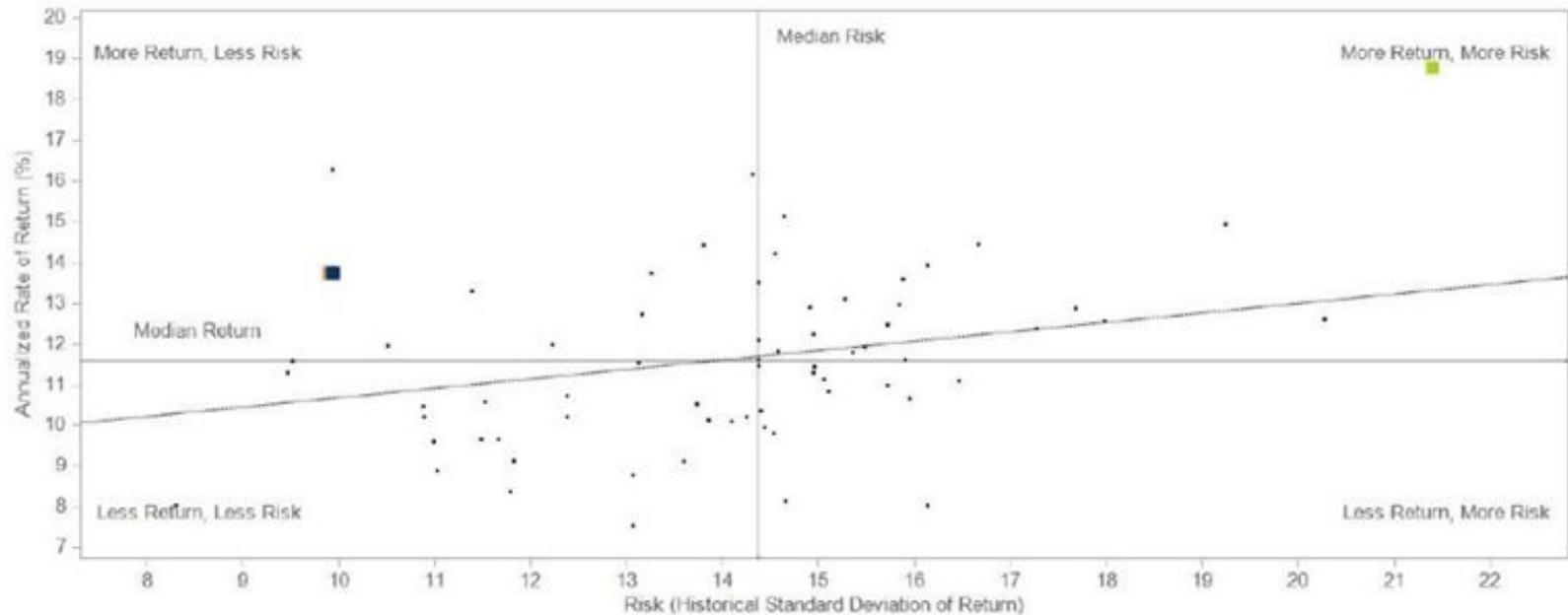
		1-Year		3-Year		Asset Allocation		
		Return	Alpha	Return	Alpha	\$ Invested	% of Fund	Over / (Under)
Global Equity	Public Equity	43.6%	3.8%	16.7%	2.9%	16,303	31.7%	1.5%
	Directional Hedge Funds	25.6%	9.1%	10.2%	3.9%	4,036	7.9%	(1.7%)
	Total Private Equity	61.1%	1.5%	23.6%	1.1%	12,419	24.2%	0.2%
	Total Global Equity	47.0%	4.6%	18.1%	2.2%	32,757	63.8%	(0.0%)
Stable Value	Investment Grade Fixed Income	3.0%	2.9%	5.4%	0.9%	4,432	8.6%	1.5%
	Cash	0.1%	(0.0%)	1.3%	(0.1%)	726	1.4%	0.4%
	Stable Value Hedge Funds	13.4%	(0.0%)	7.0%	1.8%	4,124	8.0%	(1.6%)
	Total Stable Value	6.5%	(0.7%)	4.9%	(0.2%)	9,236	18.0%	0.2%
Real Return	Inflation Linked Bonds	6.3%	(0.2%)	0.0%	0.0%	797	1.6%	(0.1%)
	Gold	N/A	N/A	-	-	0	0.0%	0.0%
	Natural Resources	26.0%	6.9%	(5.2%)	(0.5%)	2,617	5.1%	(0.1%)
	Infrastructure	75.7%	53.8%	19.0%	8.7%	1,130	2.2%	0.0%
	Total Private Real Estate	14.6%	2.6%	7.7%	1.2%	3,034	5.9%	(0.1%)
	Total Real Return	26.5%	10.5%	4.8%	1.5%	7,578	14.8%	-0.2%
Strategic Partnerships	Total Strategic Partnerships	37.9%	6.1%	N/A	N/A	1,787	3.5%	0.0%
TAA	TAA	0.2%	0.2%	0.0%	0.0%	5	0.0%	0.0%
Total Fund	Endowment Total	35.2%	4.4%	10.9%	1.2%	51,364	100.0%	0.0%



Endowment Risk / Return

Three Years Ending June 30, 2021

Trust Universe Comparison Service Risk vs Total Returns of Master Trusts - Foundation & Endowment 3 Years Ending June 30, 2021



	Risk Value	Risk Rank	Return Value	Return Rank
GEF TOTAL FUND	9.96	93	13.62	15
PUF TOTAL FUND	9.99	91	13.61	16
S&P 500	21.45	1	18.67	1
Median	14.38		11.60	

Wilshire Trust Universe Comparison Service (TUCS)



ITF Returns and Alpha Detail

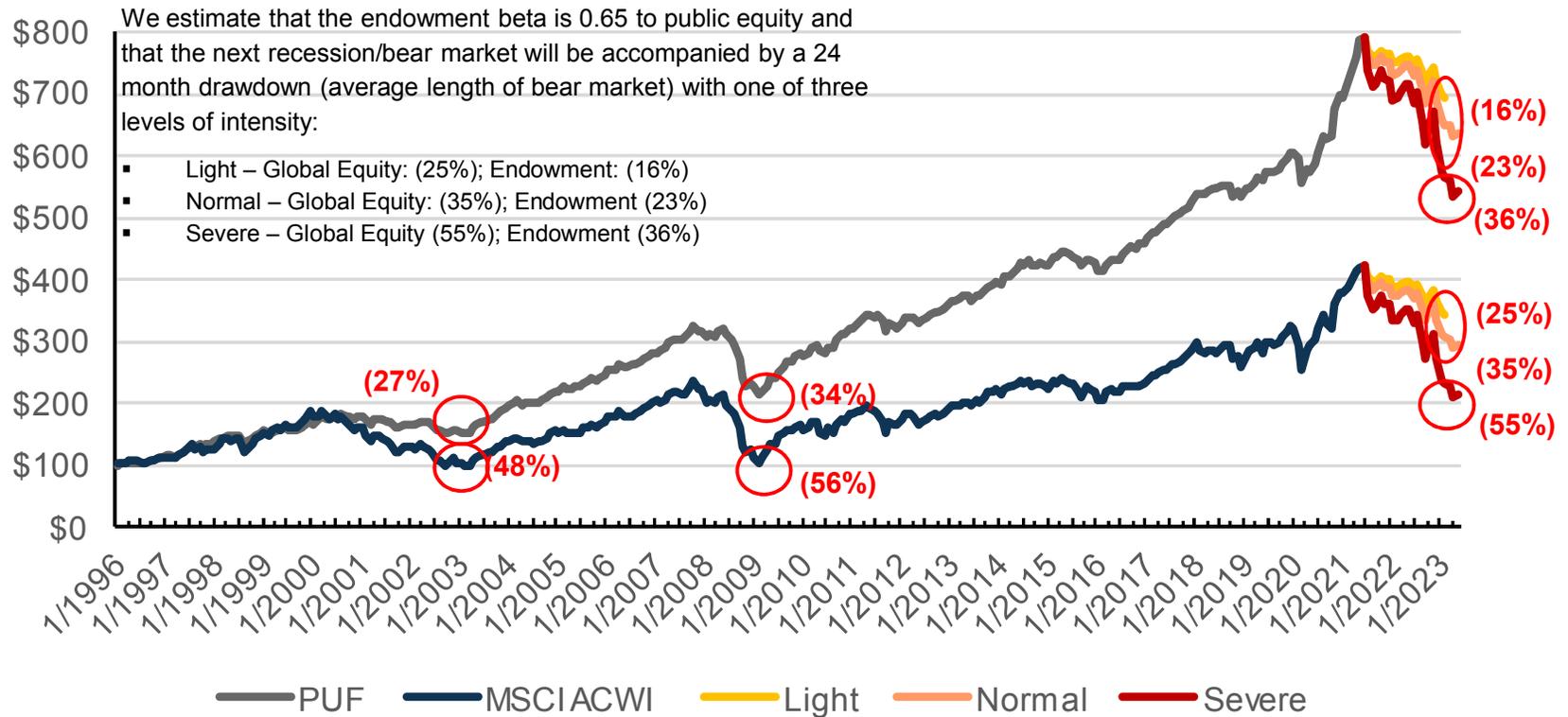
As of June 30, 2021

		1-Year		3-Year		Asset Allocation		
		Return	Alpha	Return	Alpha	\$ Invested	% of Fund	Over / (Under)
Global Equity	Public Equity	42.7%	3.0%	16.4%	2.5%	1,295	12.7%	(0.3%)
	Directional Hedge Funds	25.6%	9.1%	10.2%	3.9%	4,388	43.2%	0.2%
	Total Global Equity	29.5%	7.8%	11.8%	3.4%	5,682	55.9%	(0.1%)
Stable Value	Investment Grade Fixed Income	3.0%	3.0%	5.4%	0.9%	3,408	33.5%	(1.5%)
	Cash	0.1%	(0.0%)	1.3%	(0.1%)	320	3.2%	1.2%
	Stable Value Hedge Funds	13.4%	0.0%	7.2%	2.0%	773	7.6%	0.6%
	Total Stable Value	4.1%	2.0%	4.9%	0.7%	4,468	44.0%	(0.0%)
TAA	TAA	0.1%	0.1%	0.0%	(0.0%)	3	0.0%	0.0%
Total Fund	ITF Total	17.4%	4.6%	8.8%	2.1%	10,165	100.0%	0.0%



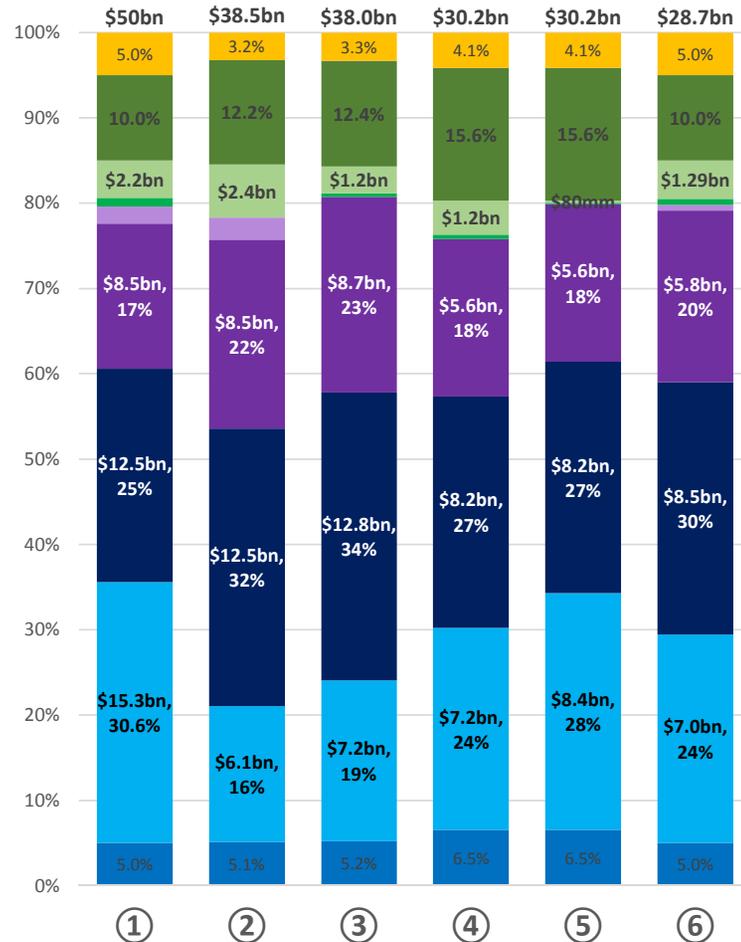
Historical and Projected PUF Drawdowns

Historical and Projected PUF Drawdowns June 2021





Liquidity Planning for a Rapid 60% Market Decline



- Start** with a \$50bn Endowment at LTSAA weights
- Rapid market decline by 60%**, resulting in \$11.5bn loss: \$9bn in public markets, \$1.25bn in SPN, \$0.75bn in HF and \$0.75bn in TAA
- Rebalance using only “first responders”**, and adhering to the floating weights in Policy:
 - Assume \$500mm of capital calls
 - Make \$500mm quarterly distributions
 - Buy \$1.0bn of public equities
 - Sources:** \$1.0bn from Treasuries and all \$1.0bn of TIPS
- Privates are marked down (typically with a delay), showing another ~\$7.8bn of loss
- Rebalance again using only “first responders”**, and adhering to the floating weights in Policy:
 - Buy another \$1.2bn of public equities
 - Sources: most of remaining Treasuries and cash
- Rebalance using hedge funds** (takes 3-6 months) and continue making the annual distribution
 - Redeem \$2.4bn from hedge funds
 - Re-establish positions in treasuries, TIPS, and cash at Policy levels
 - Make another \$1.5bn of distributions as needed, mostly by selling equities



Bottom Line: we can fully rebalance the Endowments even after a rapid market decline of 60% with no recovery, and continue making distributions as needed – all without using any derivatives or leverage

- In practice, we might decide to use derivative and conserve cash to be on the safe side; these derivatives will be fully backed by cash – no leverage, and will not limit TAA’s ability to go on the offense as needed

Market Update





Market Dashboard: Year to Date

As of August 31, 2021

Rates

	12/31/2020	Today 8/31/2021	Change
Fed Funds	0.25	0.25	0.00
10-yr Treasury	0.91	1.31	0.40
30-yr Treasury	1.64	1.93	0.29
Investment Grade Bonds	1.83	1.97	0.14
High Yield	4.59	4.22	-0.37

Equities

	12/31/2020	8/31/2021	Change
S&P 500	3,756	4,523	22%
Forward P/E	22.7x	21.1x	-1.6x
Trailing P/E	30.5x	27.1x	-3.4x
Shiller P/E	30.8x	36.8x	6.0x
Forward Earnings Yield	4.4%	4.7%	0.3%
Developed: MSCI World	8,008	9,445	18%
Emerging: MSCI EM	624	642	3%
Global: MSCI ACWI	328	380	16%

Inflation

	12/31/2020	8/31/2021	Change
5-yr TIPS	-1.63	-1.78	-0.15
5-yr TIPS Breakeven	2.0	2.6	0.6
10-yr TIPS	-1.09	-1.03	0.06
10-yr TIPS Breakeven	2.0	2.3	0.3

Commodities

	12/31/2020	8/31/2021	Change
Gold	1,898	1,814	-4%
Oil	49	69	41%
Copper	352	436	24%
Bloomberg Commodities Index	167	205	23%

Source: Bloomberg



Economic Forecasts

As of August 31, 2021

Estimates as of 8/31/21

	Quarterly Real GDP		Real GDP		S&P 500 EPS		Unemployment		Core PCE	
	Q3	Q4	2021	2022	2021	2022	2021	2022	2021	2022
AGMR	6.1%	7.8%	6.7%	4.7%	\$198	\$210	4.2%	3.1%	2.7%	2.4%
Barclays	6.5%	6%	6.1%	4.1%	\$200		4.4%	3.9%	3.1%	2.6%
BofA	4.5%	6%	5.9%	5.2%	\$204	\$215	4.5%	3.5%	2.9%	2.3%
Citi	6.2%	4.6%	6.0%	3.6%	\$198	\$216	4.3%	3.7%	3.2%	2.7%
Credit Suisse	4.3%	6.4%	5.9%	4.3%	\$210	\$230	4.8%	4.0%	3.0%	2.5%
Goldman	5.5%	6.5%	6.0%	4.5%	\$207	\$212	4.1%	3.5%	3.8%	2.0%
ISI	7%	5%	6.4%	4.0%	\$226	\$240	4.0%	3.2%	4.0%	3.0%
JP Morgan	8.3%	3%	6.1%	3.9%	\$205	\$230	5.0%	4.2%	3.2%	2.8%
Morgan Stanley	6.9%	6.7%	6.2%	4.5%	\$205	\$209	4.5%	3.3%	3.0%	2.3%
UBS	8%	8.9%	7.4%	3.8%	\$206	\$232	4.9%	4.2%	3.9%	1.5%
Yardeni	4%	3%	5.0%	2.5%	\$205	\$215	4.8%		3.2%	

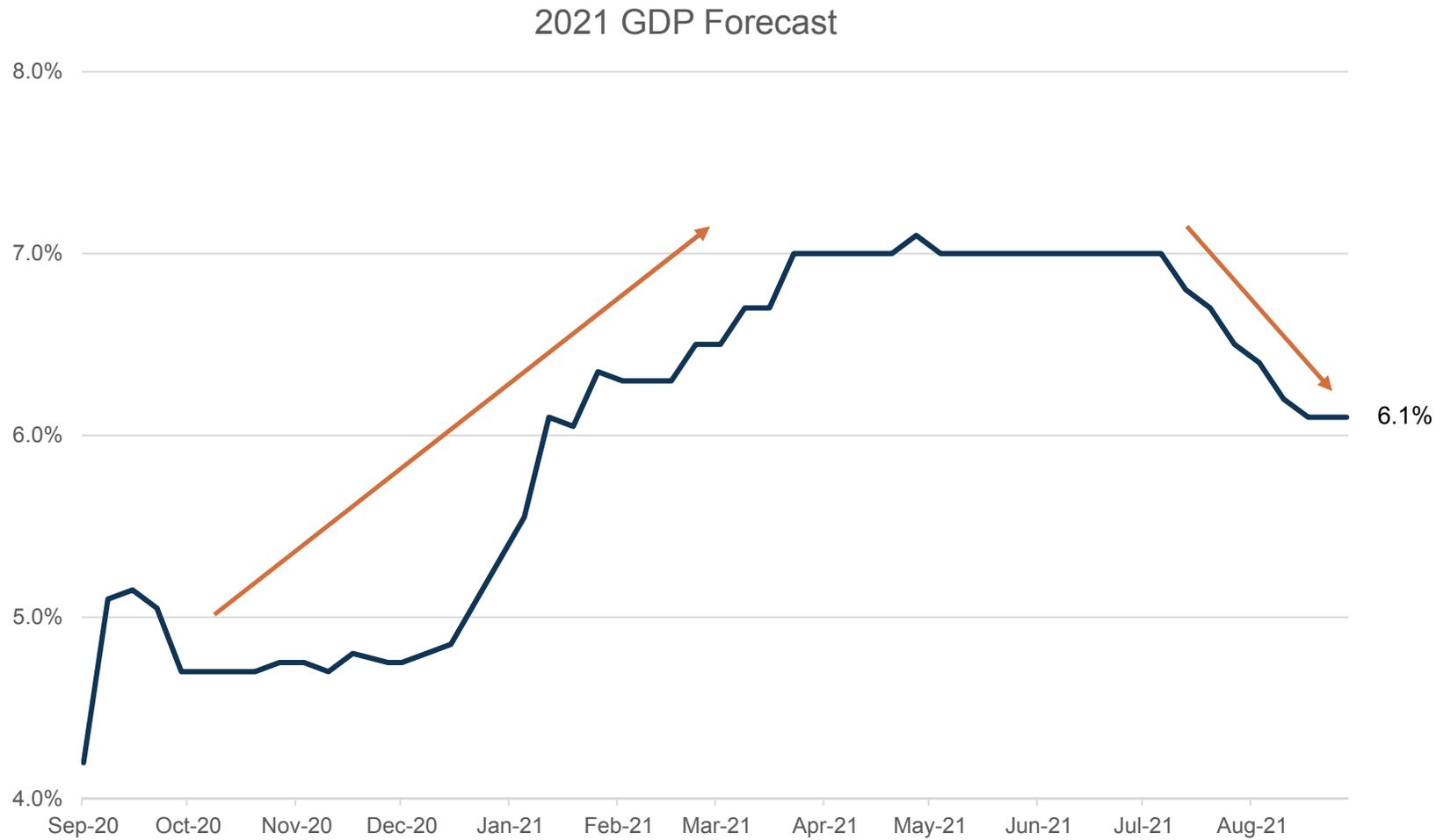
Median	6.2%	6.0%	6.1%	4.1%	\$205	\$216	4.5%	3.6%	3.2%	2.5%
Average	6.1%	5.8%	6.2%	4.1%	\$206	\$221	4.5%	3.7%	3.3%	2.4%
FOMC			7.0%	3.3%			4.5%	3.8%	3.0%	2.1%

Prior Years	2019	2020	2019	2020	2019	2020	2019	2020
		2.2%	-3.5%	\$163	\$140	3.6%	6.7%	1.6%



2021 GDP Forecast

As of August 31, 2021





Sector Return Dispersion

As of August 31, 2021





Market Cap & Style Return Dispersion

As of August 31, 2021

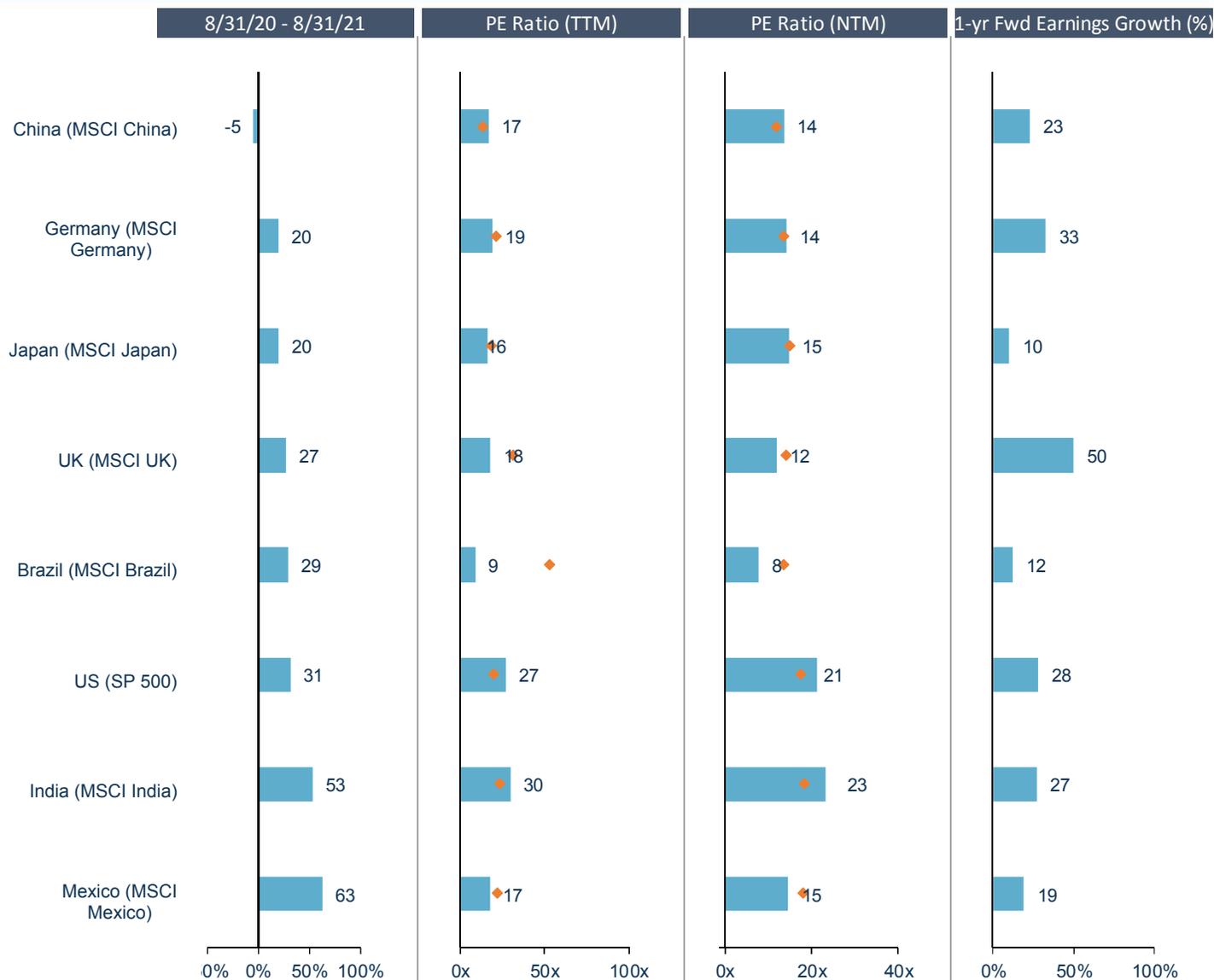


◆ 10-year Average P/E Ratios



Country Return Dispersion

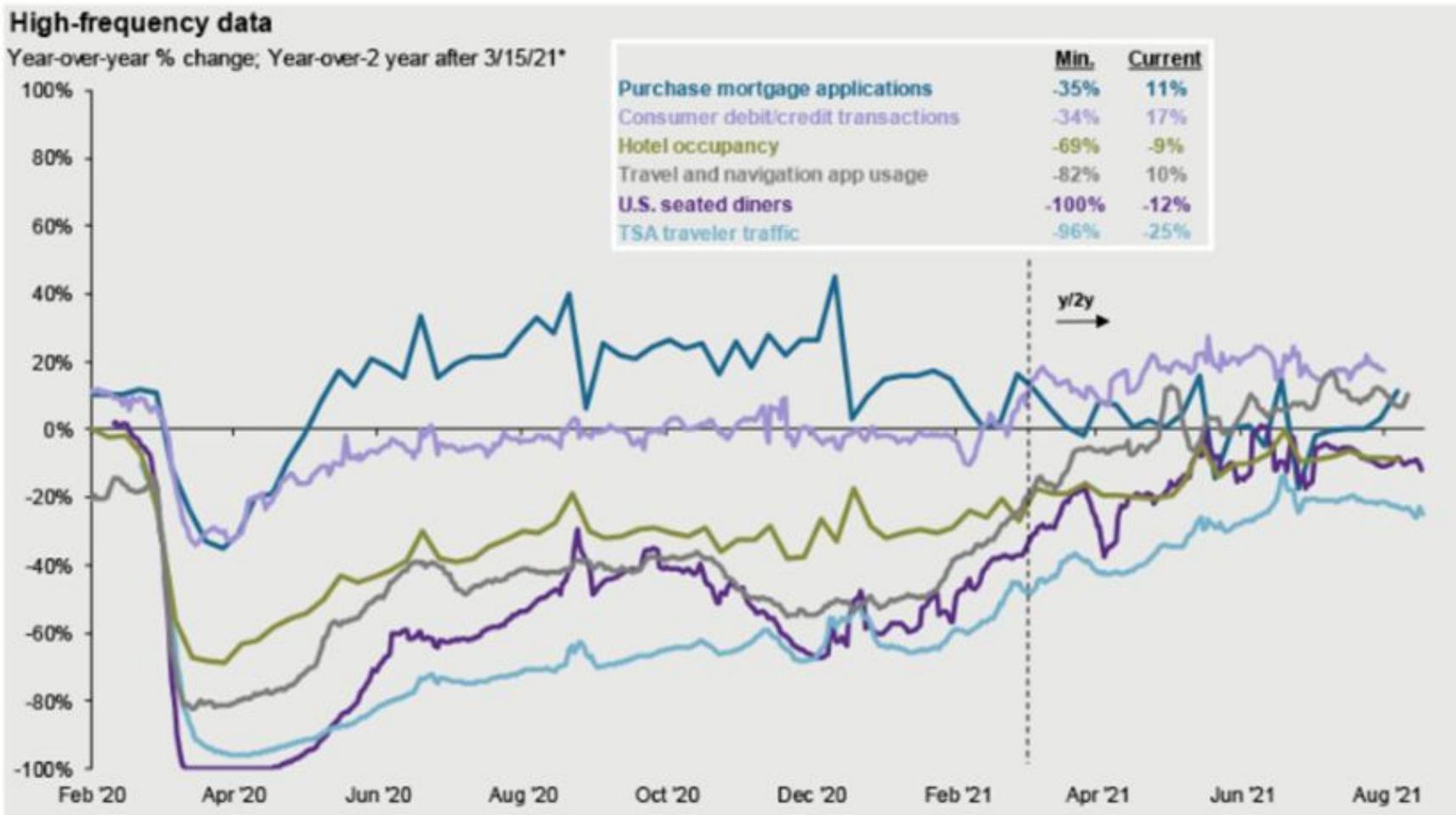
As of August 31, 2021



◆ 10-year Average P/E Ratios



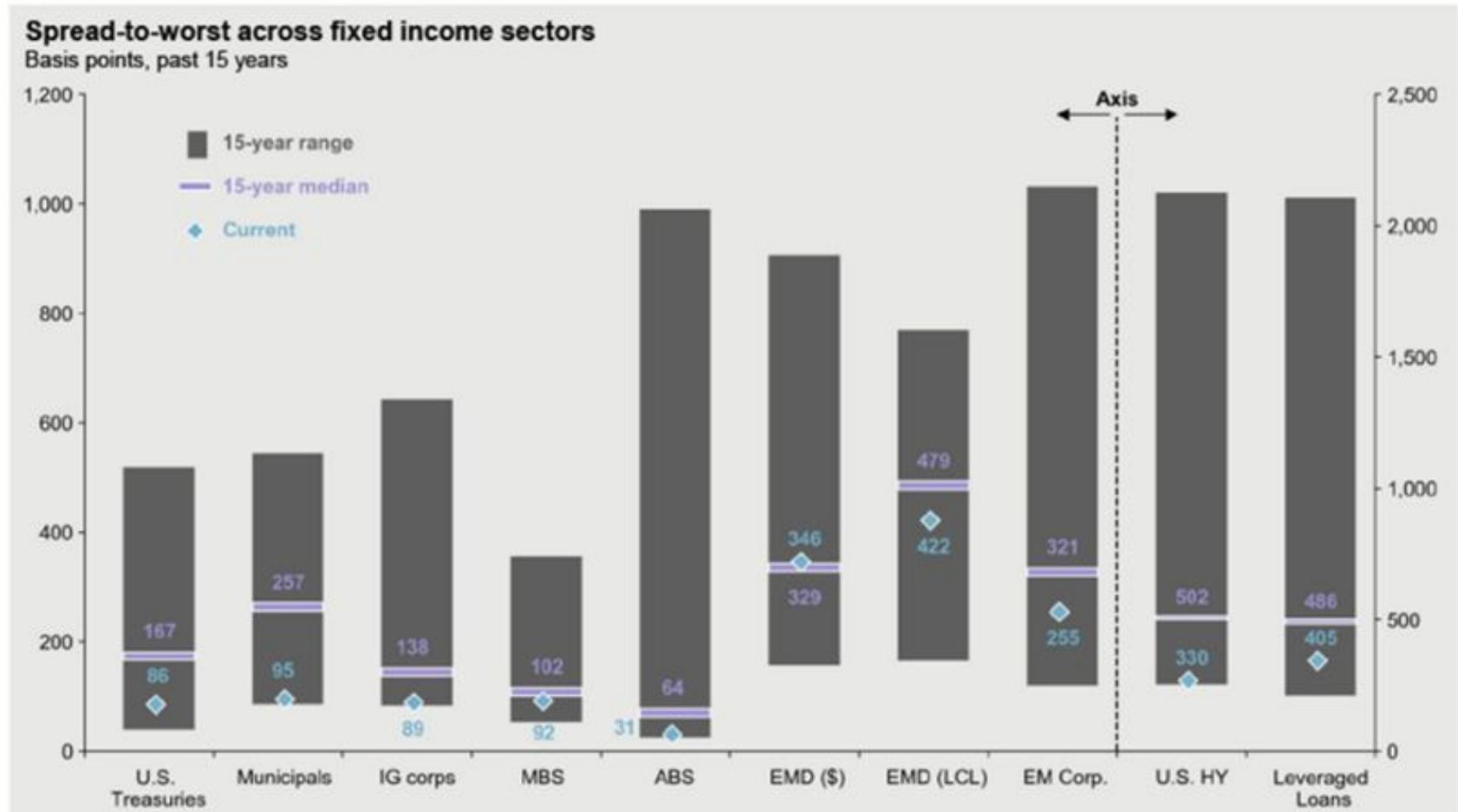
Tracking the Reopening



Source: JP Morgan



Tight Credit Spreads



Source: JP Morgan



Federal Reserve Update

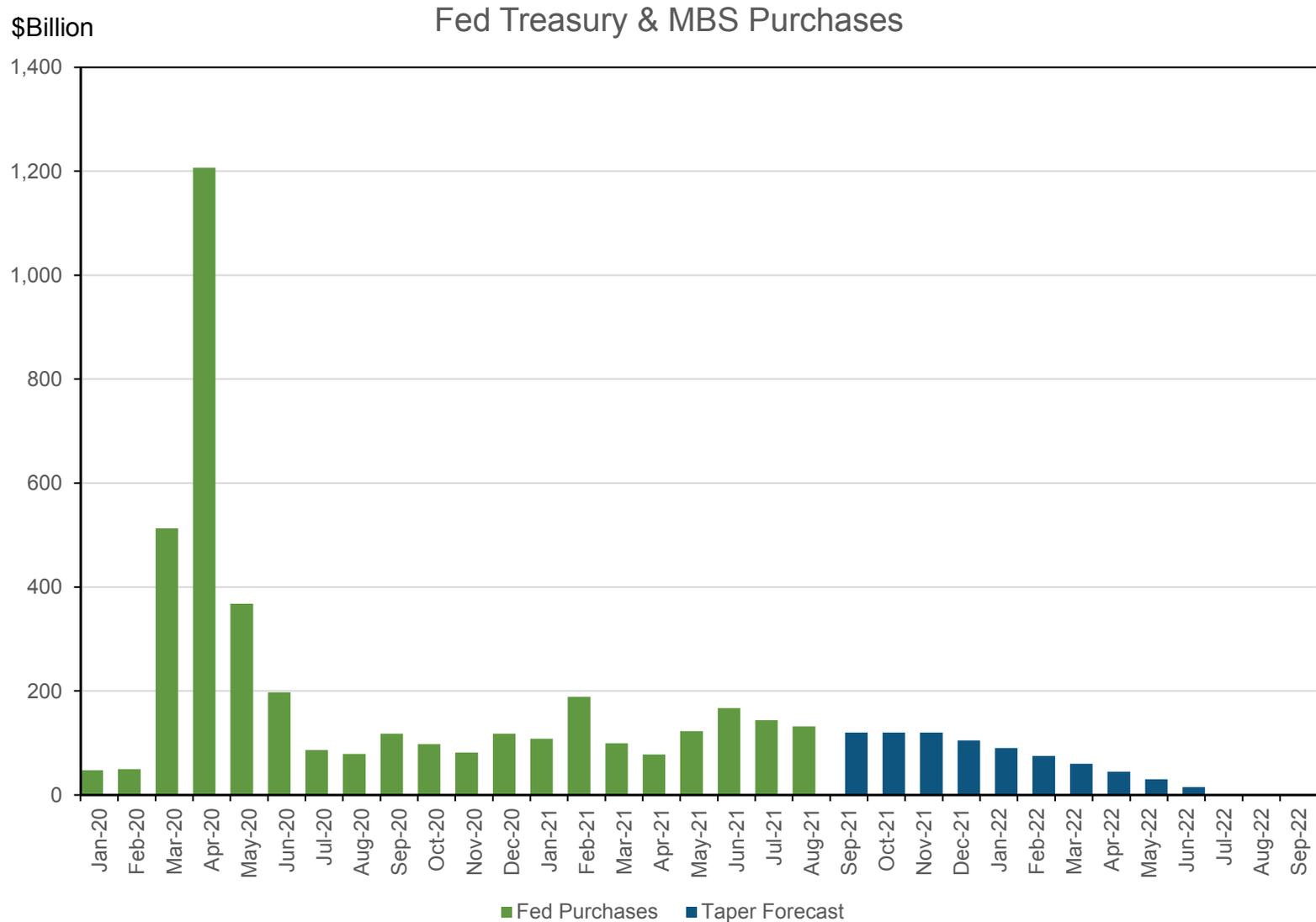
Jackson Hole Symposium, August 2021

- **“We have said that we would continue our asset purchases at the current pace until we see substantial further progress toward our maximum employment and price stability goals [...] My view is that the "substantial further progress" test has been met for inflation. There has also been clear progress toward maximum employment”**
- **“The timing and pace of the coming reduction in asset purchases will not be intended to carry a direct signal regarding the timing of interest rate liftoff, for which we have articulated a different and substantially more stringent test”**
- Powell indicated that the Central Bank is likely to be tapering before the end of 2021 as substantial progress has been made towards price stability and employment goals
- Tapering announcement could come as soon as the meeting later in September
- But Powell “de-coupled” tapering from rate hikes, being clear that rate hikes are not likely to occur anytime soon even if the Fed begins to taper



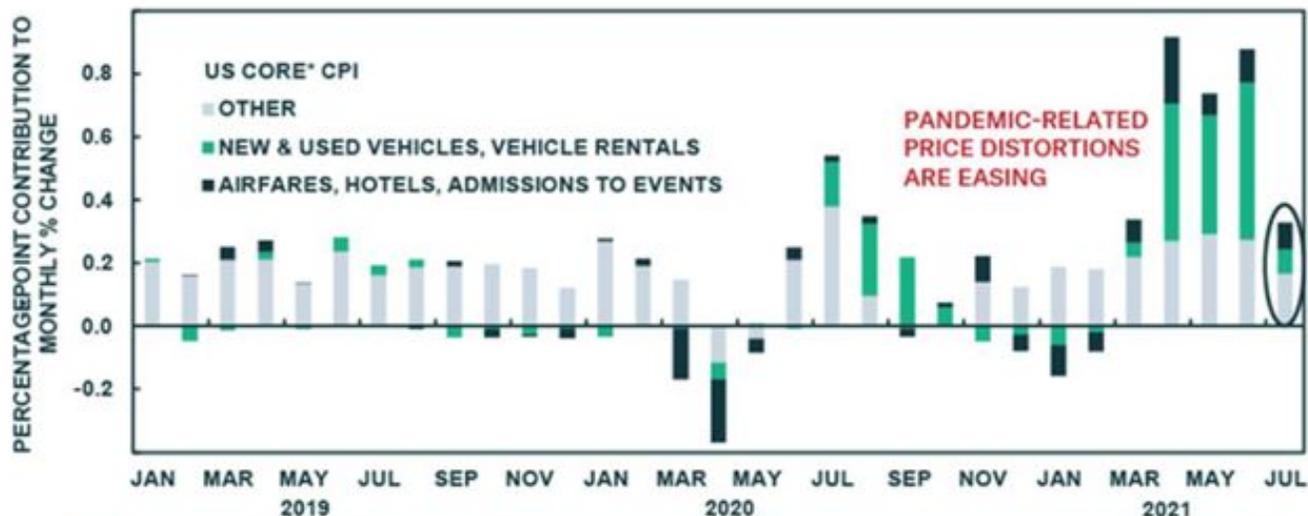


What Tapering Could Look Like



Source: US Treasury, UTIMCO Estimates

Inflation Update



* EXCLUDES FOOD AND ENERGY.
 ** SOURCE: FEDERAL RESERVE BANK OF CLEVELAND.
 *** SOURCE: FEDERAL RESERVE BANK OF ATLANTA.
 NOTE: CORE EXCLUDES FOOD AND ENERGY.
 SHADING DENOTES NBER-DESIGNATED RECESSIONS.

Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Agenda Item: Future Macro Trends Report

Developed By: Harris

Presented By: Harris

Type of Item: Information Item

Description: Mr. Harris will present an overview of future market trends.

Reference: *Future Macro Trends* presentation



Future Macro Trends

Britt Harris, CEO, Chief Investment Officer, President

September 16, 2021



Sept 2020: Nine “Super Factors” for the Future

- New Paradigm ✓
- Fixed Income ✓
- Zero Bound ✓
- Index Concentration ✓
- US vs. Non-US ?
- US Dollar ?
- US / China Relationship ✓
- Energy Transition ✓
- Millennials ✓



Super Factor Updates

Super Factor Updates

- Passive / Index Concentration
- US / China Relationship
- Energy Transition

Future Trends

- Real Estate Dispersion
- The Second Machine Age

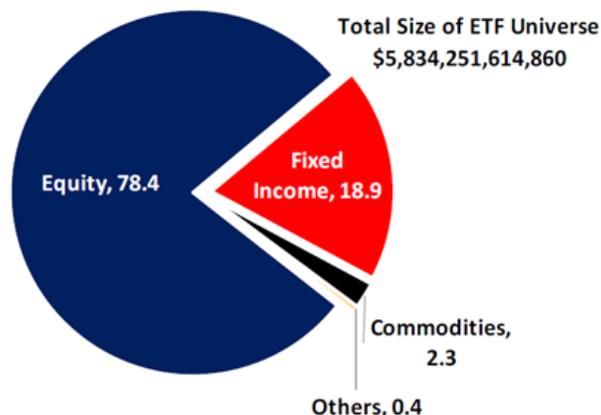
Passive & Index Concentration





Indexation / Proxy Vote

ETF AUM By Asset Class



Source: Bespoke ETF Presentation, March 2021, ETF.com

ETF Issuers With the Most AUM

Issuer	Number of ETFs	AUM (\$, bln)	Percent of Total
Blackrock	383	2120.7	36.3
Vanguard	81	1627.1	27.9
State Street	142	885.7	15.2
Invesco	226	308.4	5.3
Charles Schwab	25	216.8	3.7
First Trust	168	113.6	1.9
JPMorgan Chase	34	54.5	0.9
VanEck	57	53.8	0.9
ProShares	133	51.7	0.9
ARK	7	47.3	0.8
WisdomTree	67	41.5	0.7
Mirae Asset	79	27.4	0.5
PIMCO	24	26.3	0.4
Fidelity	39	25.5	0.4
Goldman Sachs	24	22.5	0.4

Source: Bespoke ETF Presentation, March 2021, ETF.com

- **ETF assets have grown rapidly in recent years (close to \$6 trillion in AUM)**
- **Three issuers control almost ~80% of the market and \$4.6 trillion of AUM**
- The number and type of available ETFs has also accelerated and growth has been driven by broad equity, factor and fixed income ETFs



Corporate Governance Experts: Growing Influence of the “Big Three”

The Specter of the Giant Three

Lucian A. Bebchuk, Scott Hirst
European Corporate Governance Institute, 2019



“We estimate that the Big Three [BlackRock, Vanguard and State Street] could well cast as much as 40% of the votes in S&P 500 companies within two decades. Policymakers and others must recognize—and must take seriously—the prospect of a Giant Three scenario.”

The Future of Corporate Governance Part I: The Problem of Twelve

John C. Coates
Harvard Law School, 2018



“It is not an exaggeration to say that even if this mega-trend begins to taper off, the majority of the 1,000 largest U.S. companies will be controlled by a dozen or fewer people over the next ten to twenty years”



Growing Influence of the “Big Three”

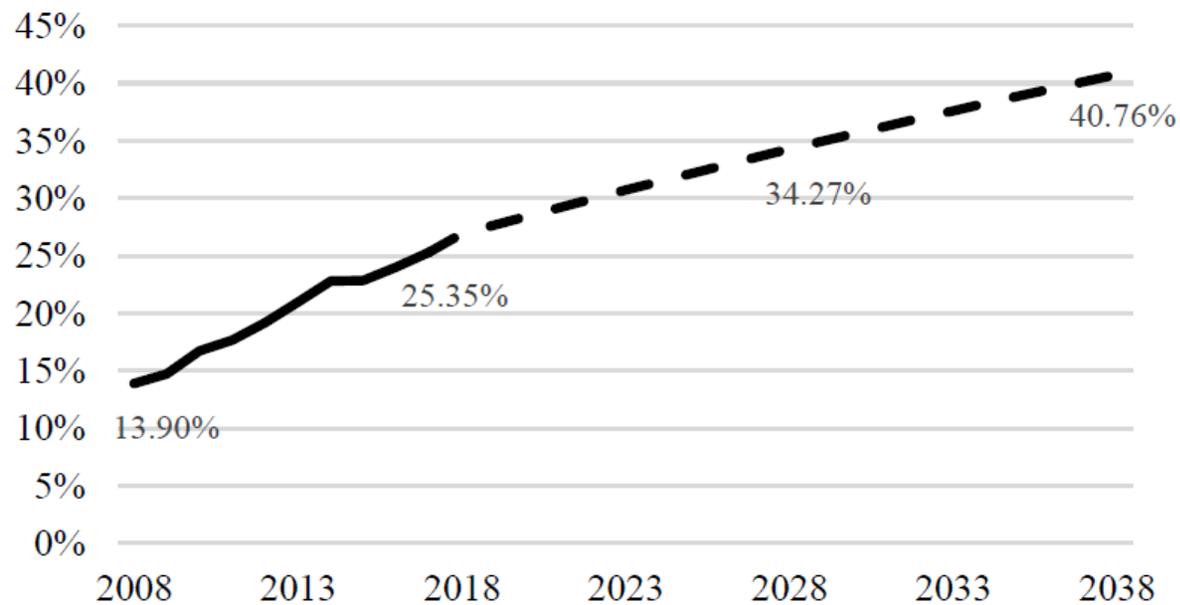
BlackRock

Vanguard



STATE STREET

Expected Future Growth—Big Three Combined Voting Stake



Source: The Specter of the Giant Three, ECGI, July 2019



The Tiny Engine That Could

**ENG
INE
NO.1**

\$40m stake in Exxon
\$250m in AUM
80 Page PowerPoint
40 employees

Founded 2020

ExxonMobil

\$180B in Revenue
\$330B in Assets
\$250B Market Cap
72,000 employees

Descended from Standard Oil,
which was founded in 1870



The Tiny Engine That Could

The New York Times

Exxon's Board Defeat Signals the Rise of Social-Good Activists

The energy giant's stunning loss was the work of a tiny hedge fund that believes investing for social good is also good for the bottom line.

"Wall Street has seen its share of strange bedfellows, but a recent alliance of investors that took on Exxon Mobil was unprecedented.

Last week, an activist investor successfully waged a battle to install three directors on the board of Exxon with the goal of pushing the energy giant to reduce its carbon footprint. The investor, a hedge fund called Engine No. 1, was virtually unknown before the fight.

The tiny firm wouldn't have had a chance were it not for an unusual twist: the support of some of Exxon's biggest institutional investors. BlackRock, Vanguard and State Street voted against Exxon's leadership and gave Engine No. 1 powerful support. These huge investment companies rarely side with activists on such issues.

The stunning result turned the sleepy world of boardroom elections into front-page news as climate activists declared a major triumph, and a blindsided Exxon was left to ponder its defeat."

Energy Transition

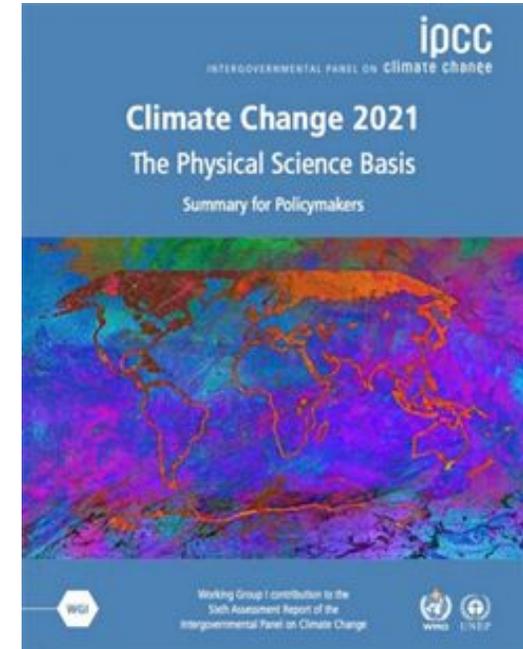




IPCC Sixth Assessment Report

Endorsed by 195 countries, 234 Authors, 14,000 scientific papers cited

- Increases in greenhouse gas concentrations since 1750 **are unequivocally** caused by human activities
- Each of the last four decades has been successively warmer than any decade that preceded it since 1850
- Surface temperatures over the last 20 years were 1°Celsius higher than 1850-1900
- Human influence is **very likely** the main driver of the global retreat of glaciers since the 1990s and the decrease in Arctic sea ice area between 1979–1988 and 2010–2019
- It is **virtually certain** that the global upper ocean has warmed since the 1970s and **extremely likely** that human influence is the main driver
- The average rate of sea level rise 1.9mm per year between 1971 and 2006 and increased to 3.7mm per year between 2006 and 2018. Human influence was **very likely** the main driver of these increases.



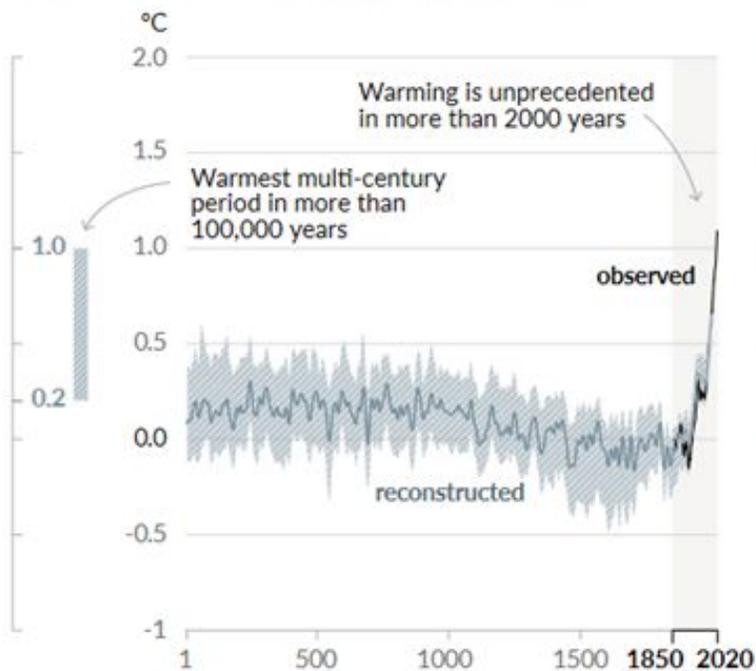


IPCC Sixth Assessment Report

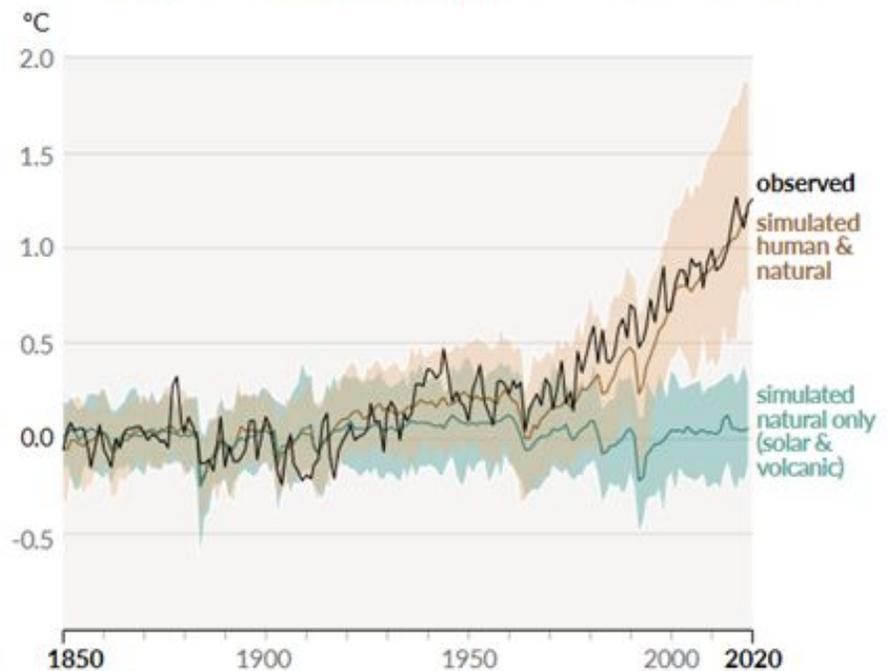
Human influence has warmed the climate at a rate that is unprecedented in at least the last 2000 years

Changes in global surface temperature relative to 1850-1900

a) Change in global surface temperature (decadal average) as reconstructed (1-2000) and observed (1850-2020)



b) Change in global surface temperature (annual average) as observed and simulated using human & natural and only natural factors (both 1850-2020)





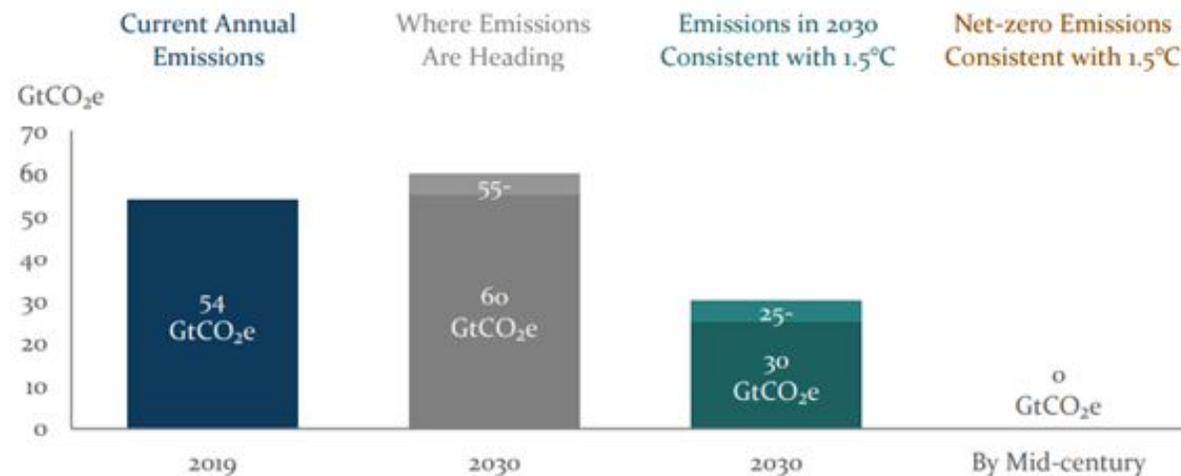
How To Meet Paris Agreement Goals

Goal of Paris Agreement: “Keep increase in temperature to well below two degrees Celsius vs. pre-industrial levels.”

Translation: Reduce emissions to net zero by 2050 to keep temperature increases below 1.5 degrees Celsius

Cost Estimates: \$100 - \$130 Trillion¹

Global Coordination: Key players include: US, Europe, China and India.



(Source: World Resources Institute, IPCC)

1) IEA and Drawdown Report.



Transition Options & Impact

ANNUAL GREENHOUSE GAS EMISSIONS (GHG) REDUCTION POTENTIAL

To achieve the Paris Agreement, GHG emissions need to be between (or lower than) 25 – 41 GtCO₂e by 2030 and near zero by 2050. We were at ~54 GtCO₂e globally as of 2019 and under current policies are on track to reach 60 GtCO₂e by 2030.

Key Options to Reduce Emissions	Potential Annual GtCO ₂ e reduction by 2050 by Category
Renewable Energy Electricity Expansion	12.1 (<i>67% from power sector</i>)
Decarbonize Transport	6.1 (<i>Primarily Light Duty Vehicles</i>)
Decarbonize Industry	4.8 (<i>Circular Economy + Efficiency</i>)
Coal Phase Out	3.6 – 4.4 (<i>~75% Non-OECD</i>)
TOTAL	~27 GtCO₂e (<i>~42% of 2050 requirement</i>)

Source: Derived From United Nations Emissions Gap Report - 2019.



Drawdown Report – Other Solutions

Other solutions proposed by the Drawdown Report can get us another ~40% of the way to net zero emissions for a total of 82% reduction

Potential Solution	Cumulative Reduction (GtCO ₂ e)	Annualized Reduction (GtCO ₂ e)
Refrigeration	89.7	3.0
Reduced Food Waste	70.5	2.4
Plant-Rich Diet	66.1	2.2
Regenerative Agriculture	23.2	0.5
Conservation Agriculture	17.4	0.5
Clean Cookstoves	15.8	0.5
Improved Rice Cultivation	11.3	0.4
Methane Digestors	8.4	0.4
LED Lighting - Household	7.8	0.3
Biomass	7.5	0.3
TOTAL (10 of 80 Solutions)	317.7	10.6
TOTAL (80 Solutions)	~764	~25.5

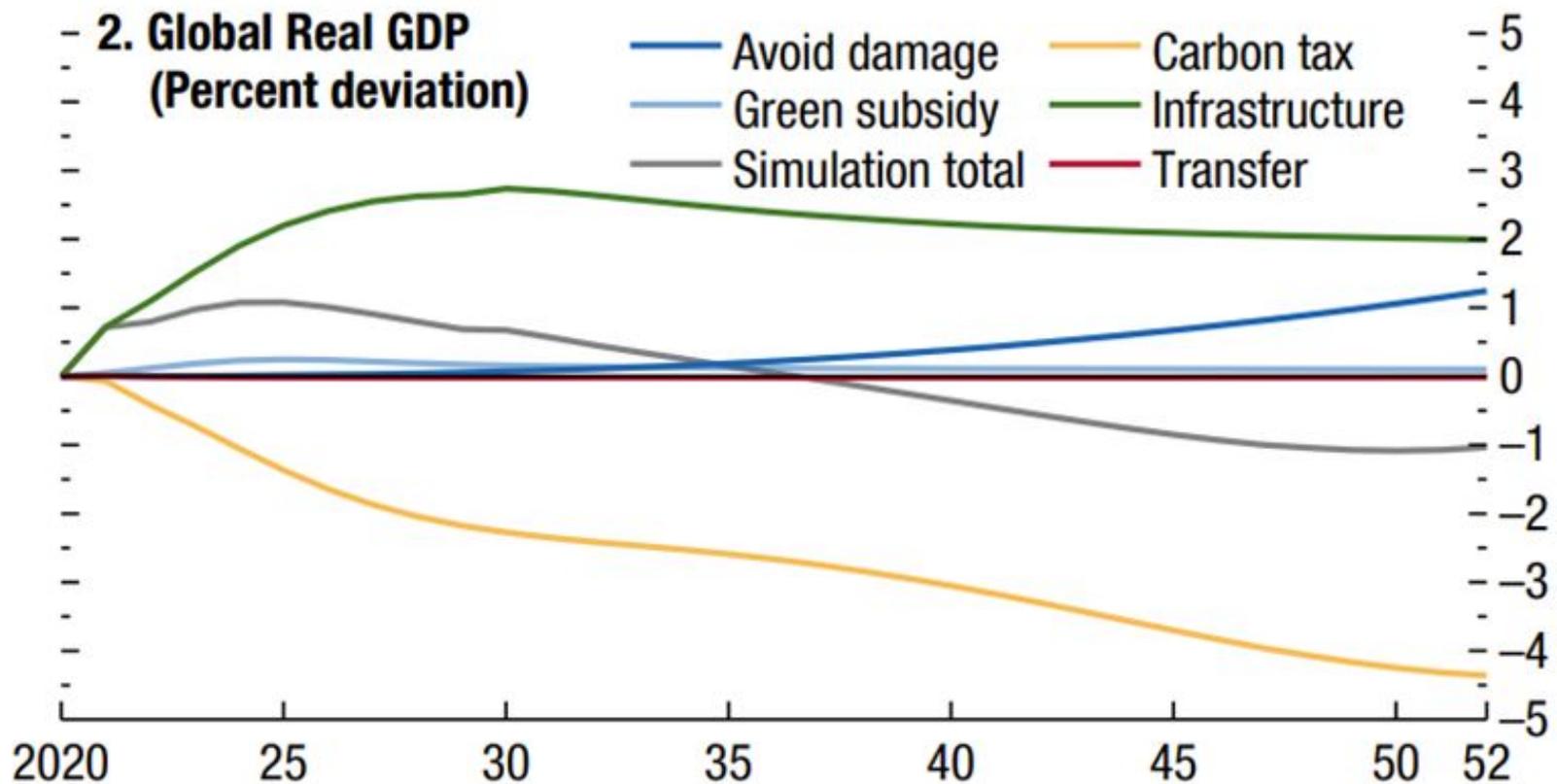
~17% of 2050 req.

~40% of 2050 req.



How \$100T+ Spending Affects Economy

IMF ESTIMATES INCREASED GLOBAL GROWTH OVER NEXT 15 YEARS, BUT A DECLINE OVER THE LONG RUN



Source: IMF.



Super Polluters



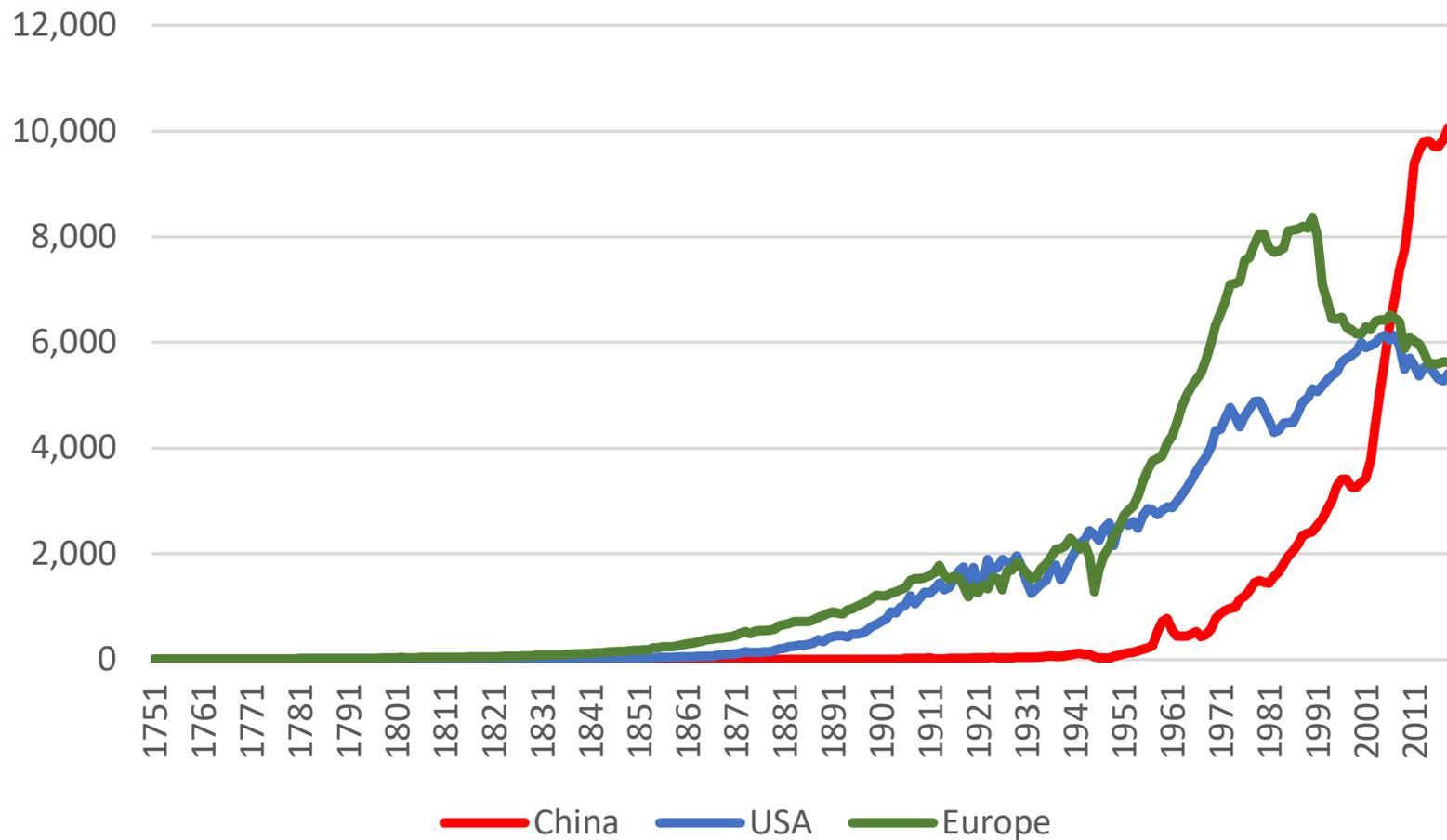
Just 5 percent of all power plants globally — all of them coal-fired — are responsible for 73 percent of electricity-sector carbon emissions, according to a new study that calls for cutting emissions from “hyper-polluting” power plants.

Six of the 10 highest-emitting plants are in China and East Asia; two are in India; and two in Europe.



Largest Emitters by Region

Annual CO2 Emissions (Billion Tons)

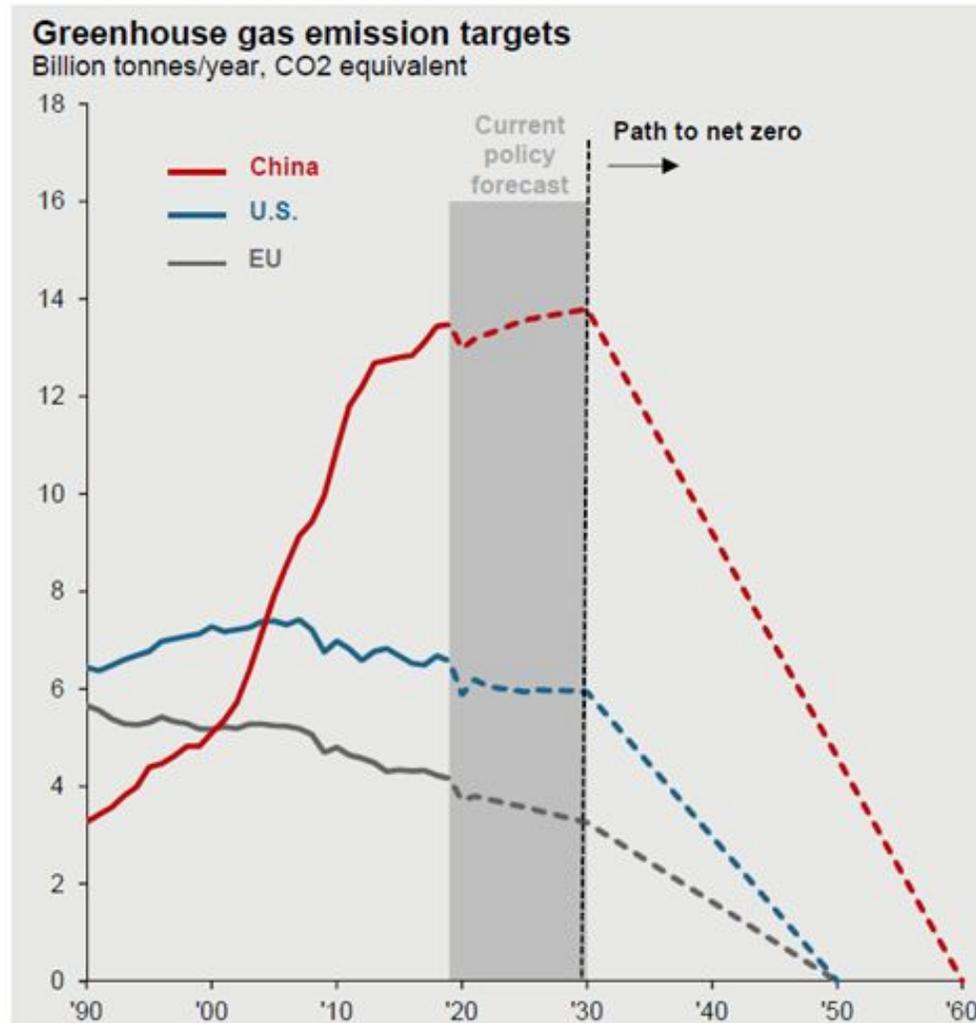


Source: Our World in Data



US, Europe & Chinese Emissions

US and Europe Targeting Net Zero Emissions by 2050, China Targeting 2060



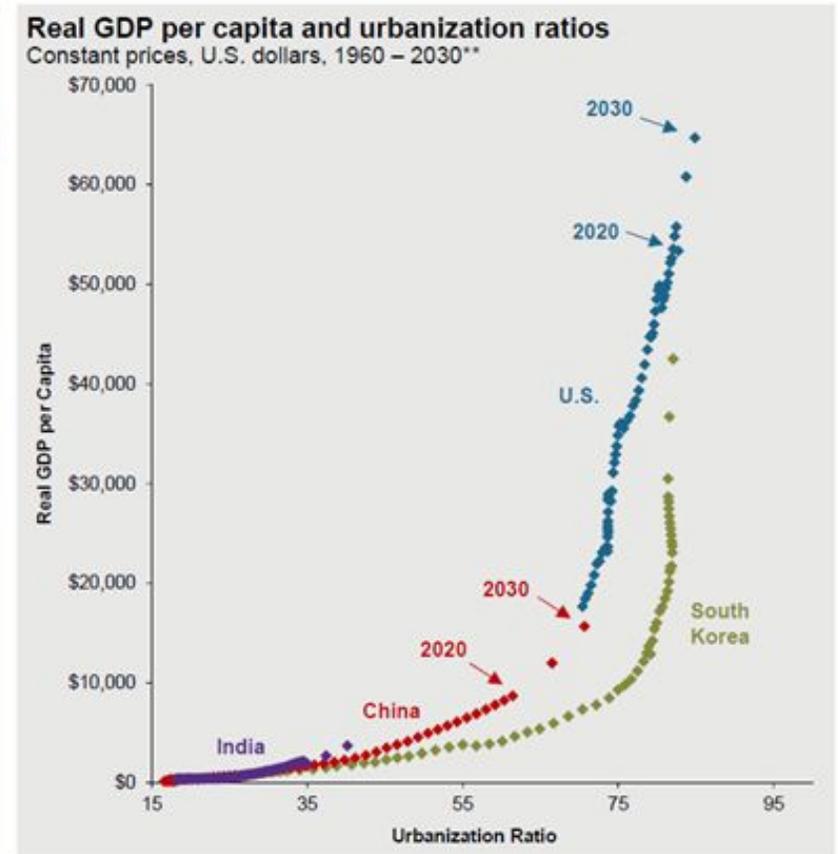
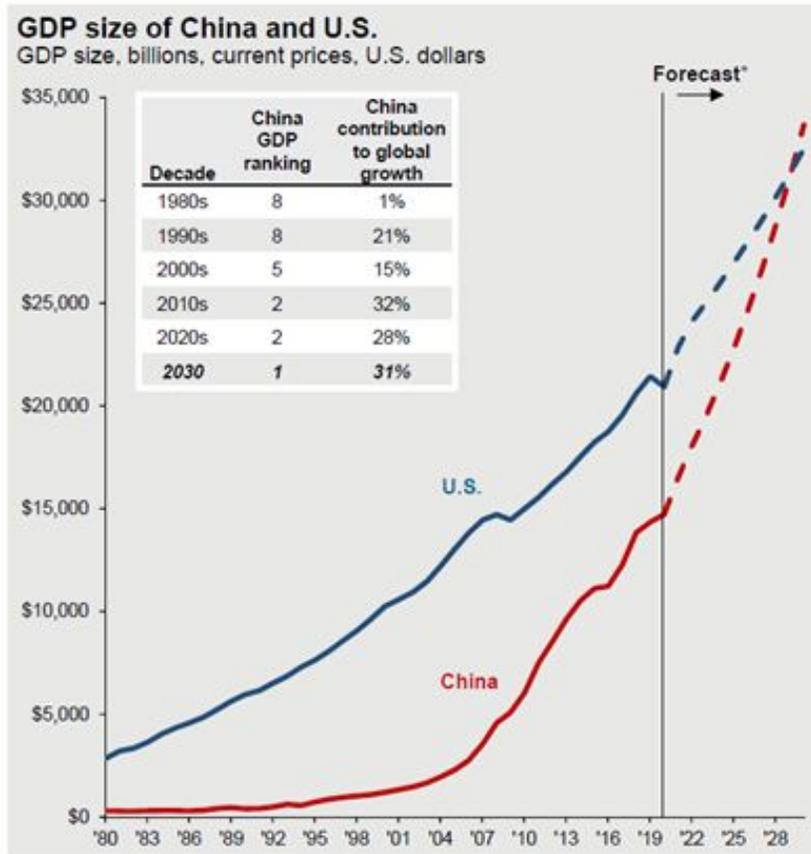
Source: JP Morgan, Guide to China 3Q 2021

US / China Relations



China GDP To Exceed US Over Next Decade

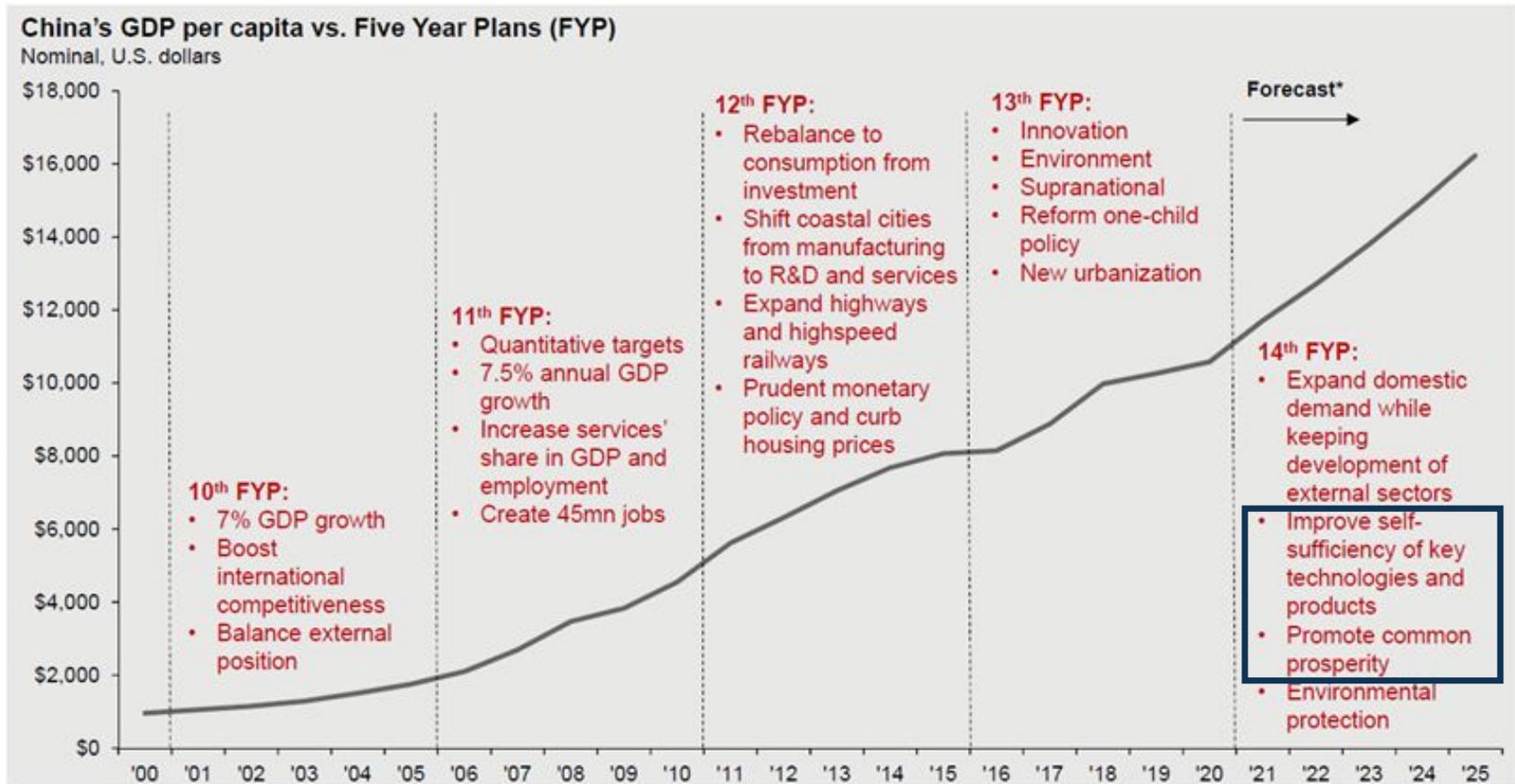
Real GDP per capita on track to remain well below US



Source: JP Morgan, Guide to China 3Q 2021



Focus on Self Sufficiency & “Common Prosperity”



Source: JP Morgan, Guide to China 3Q 2021



Focus on Self Sufficiency of Key Technologies

China Reigning in “Free-wheeling” Technology Sectors

Regulatory event	Sector impacted	When	Duration (months)
Anti-corruption campaign	Consumer Discretionary	Nov 12 - Jun 16	44
Supply side structural reform*	Old Economy	Dec 15 - 1Q 18	28
Education sector reform (phase 1)	Education (K-12 AST)	Feb 18 - Mar 19	14
Gaming license suspension	Internet / gaming	Mar 18 - Oct 18	8
Drug procurement reform (pilot scheme)	Pharma	Jun 18 - Sep 19	16
Antitrust / cybersecurity regulation on internet companies	Internet	Since Nov 20 until now	9
Education sector reform (phase 2)	Education (K-12 AST)	Since May 21 till now	3

Source: Morgan Stanley, China's Regulatory Reset

Bloomberg

How China Lost Patience With Jack Ma, Its Loudest Billionaire

THE WALL STREET JOURNAL.

China's Tech Clampdown Is Spreading Like Wildfire

Chinese authorities are targeting hundreds of apps in a push to clean up the country's fast-growing, freewheeling internet sector

Bloomberg

Technology

China Tech Rout Deepens as New Regulations Muled; Alibaba Dives

FINANCIAL TIMES

Tencent warns investors China's tech regulation will intensify

Bloomberg

Marshall Wace Hedge Fund Warns Chinese ADRs Have Become 'Uninvestable'



Focus on “Common Prosperity”

President Xi

2012: Inauguration speech

“China will target to **double the national income** level from 2010 to 2020”

2020: Dec. Politburo meeting

“To prevent unbridled expansion of capital, strengthen supply chain self-sufficiency, foster healthy property market, and promote decarbonization”

2021: CPC’s 100th Anniversary

“China has achieved total victory in ending extreme poverty and will target **reaching common prosperity** the next stage of development”

FINANCIAL TIMES
Jack Ma and the Chinese tech titans’ mission to give away billions
Xi Jinping’s focus on ‘common prosperity’ has galvanised the country’s wealthiest entrepreneurs

■ ■ South China Morning Post
China’s Big Tech answers Xi’s call for ‘common prosperity’ as Tencent, Meituan and Pinduoduo launch new initiatives

THE WALL STREET JOURNAL.
Alibaba Pledges \$15.5 Billion as Chinese Companies Extol Beijing’s ‘Common Prosperity’ Push

Tencent and others also rush to support government initiative to bolster social equality in China



US and China Technology Stocks Relative Returns

Few companies planning to move production out of China

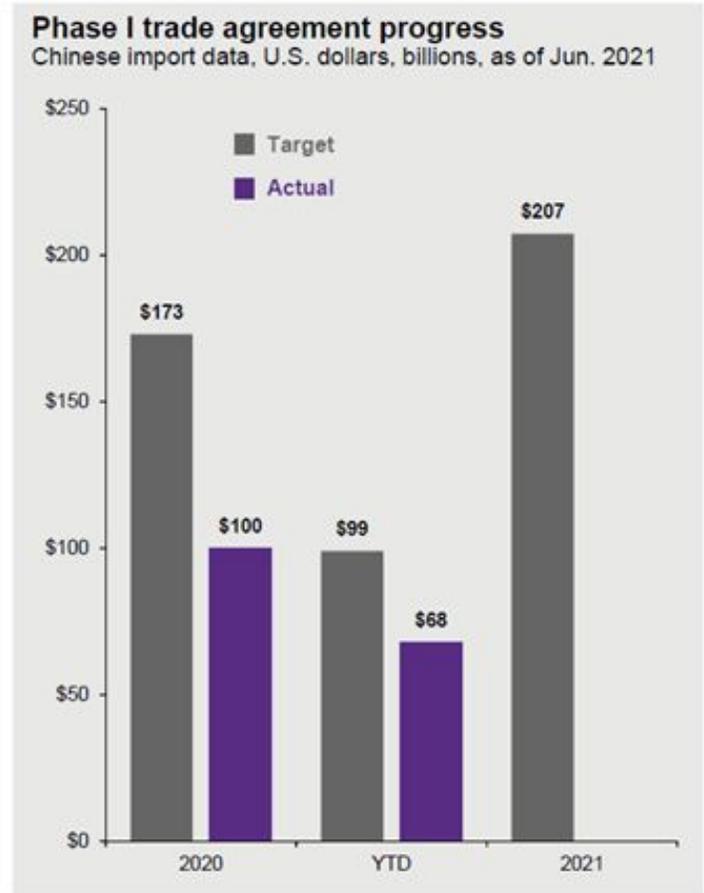
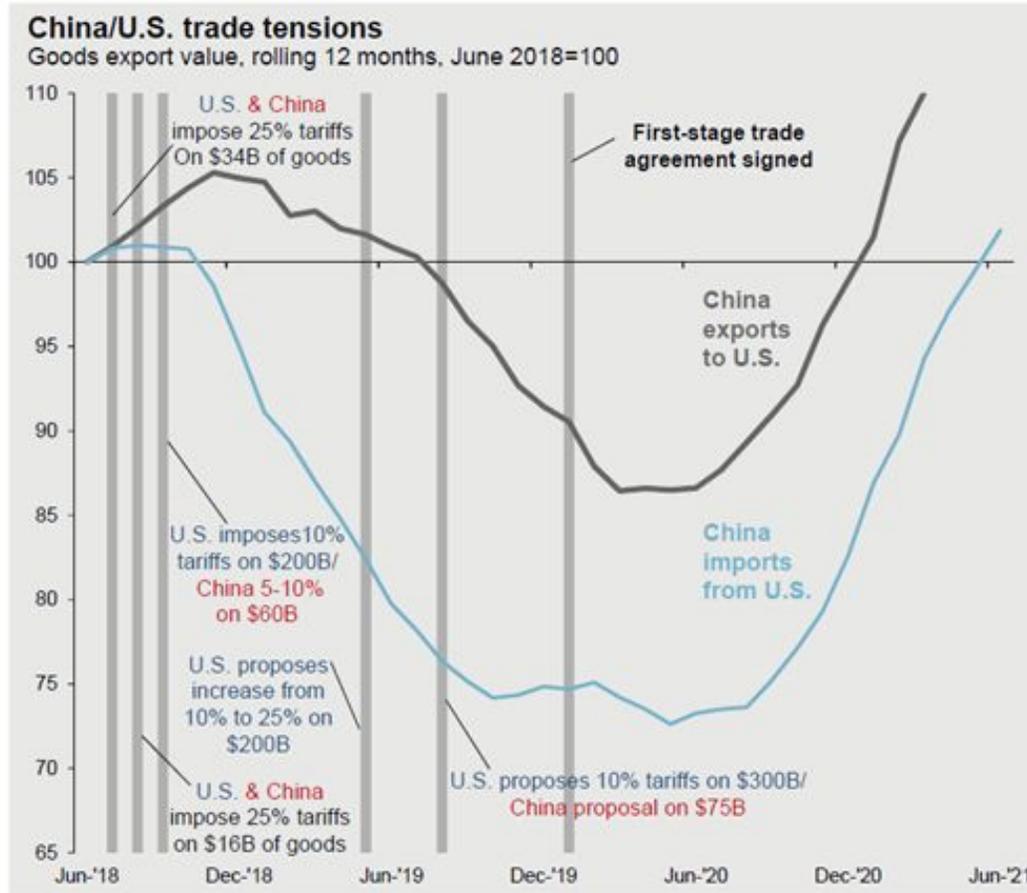


Source: Goldman Sachs, Where to Invest Now



China / US Trade Has Normalized

Real GDP per capita on track to remain well below US



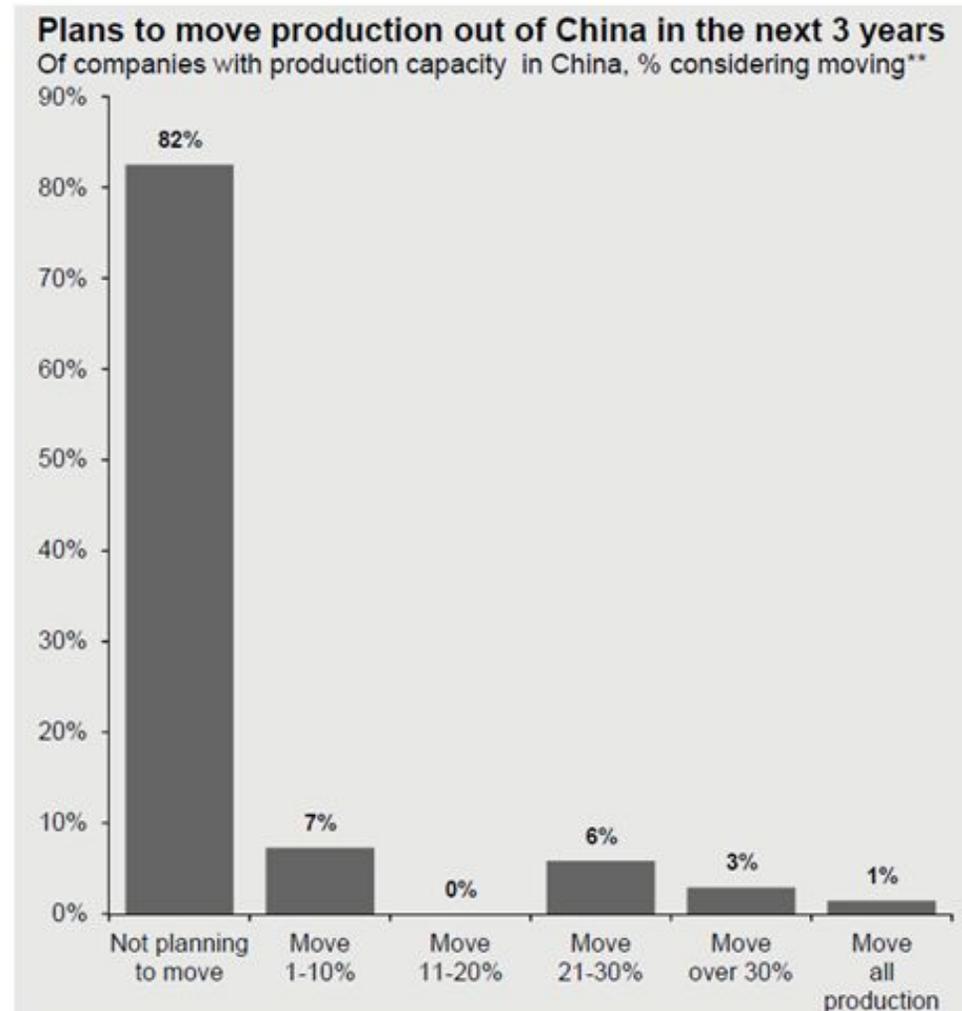
Source: China Customs, J.P. Morgan Asset Management; (Left) CEIC; (Right) Peterson Institute for International Economics. Guide to China. Data are as of July 31, 2021.

Source: JP Morgan, Guide to China 3Q 2021



China / US Trade Has Normalized

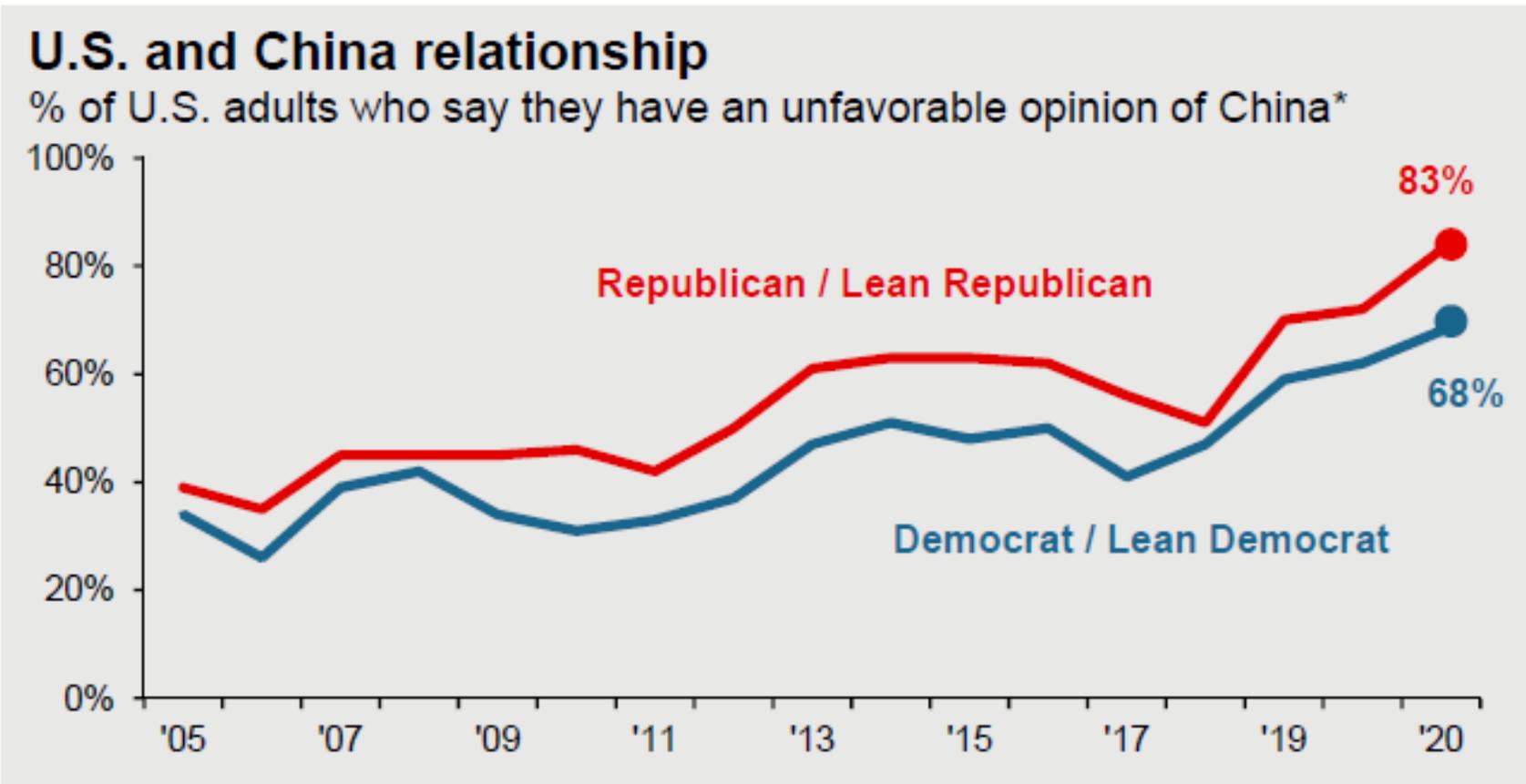
Few companies planning to move production out of China



Source: JP Morgan, Guide to China 3Q 2021



But Unfavorable Views at All Time High



Source: JP Morgan, Guide to China 3Q 2021

China Outpacing the US in Digital Currencies

THE WALL STREET JOURNAL.

China Creates Its Own Digital Currency, a First for Major Economy

A cyber yuan stands to give Beijing power to track spending in real time, plus money that isn't linked to the dollar-dominated global financial system

NIKKEI Asia

Will China's digital yuan vanquish the dollar?

50 years after the 'Nixon shock,' a new era in international finance is dawning

Bloomberg

China's Digital Yuan Trial Reaches \$5.3 Billion in Transactions

China's digital yuan trial has reached 34.5 billion yuan (\$5.3 billion) in transaction value as the central bank continues to outpace global peers in developing a virtual currency.

Screenshots of the CCB's Digital Yuan Wallet

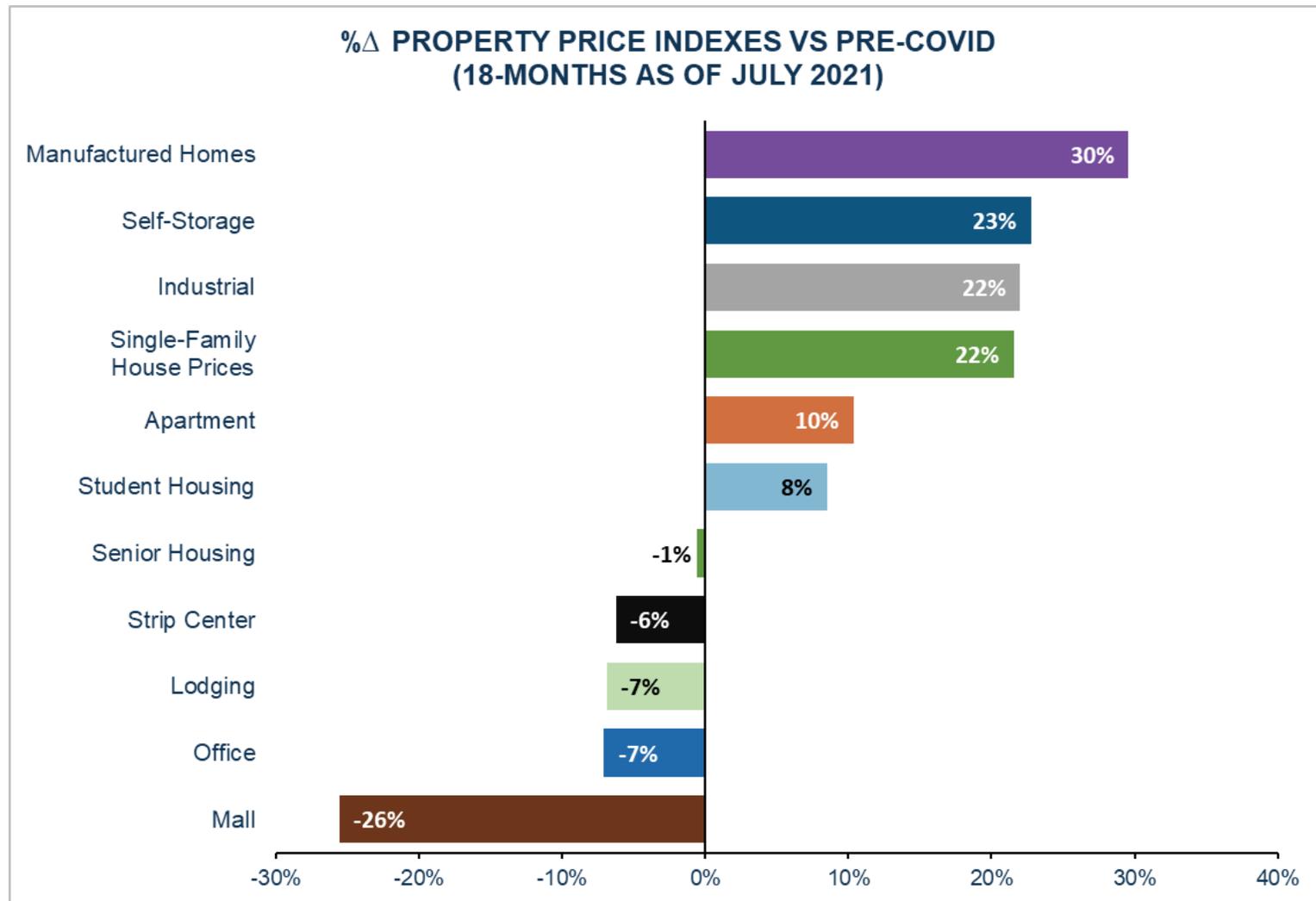


Future of Real Estate





Real Estate Dispersion



Source: Green Street, US Census



Housing Demand Outstrips Supply

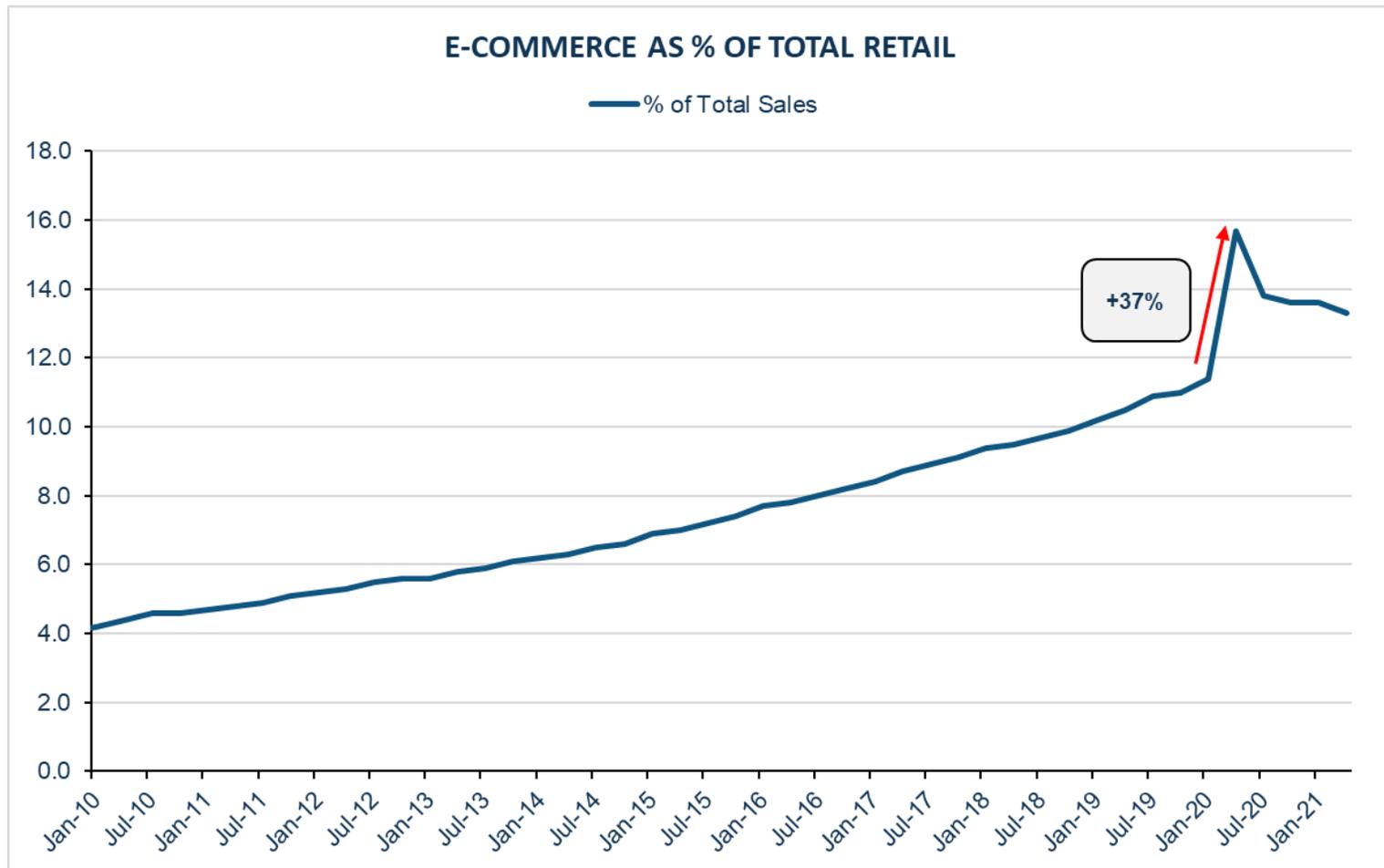
Housing supply is beginning to increase, but not enough to meet demand from an aging millennial population. Tight supply-demand, loose monetary/fiscal policy, and “social distancing” + “work from home” space requirements have combined to lift home prices to record highs and up 23% Y-o-Y





E-Commerce Penetration

E-Commerce is driving value in industrial real estate. Covid-19 accelerated these trends and valuations reflect divergent outlooks for industrial vs. traditional retail

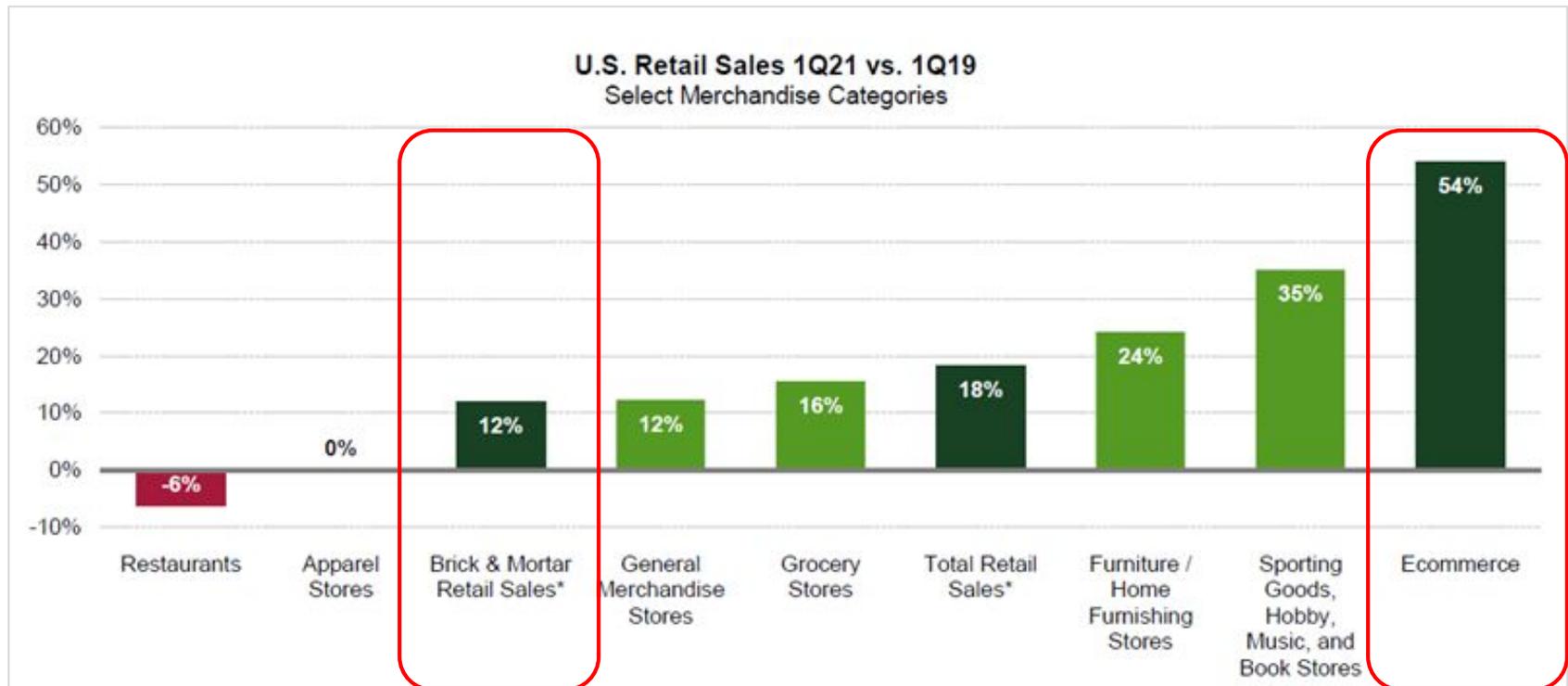


Source: Federal Reserve Bank of St. Louis



E-Commerce Outpaces Total Retail

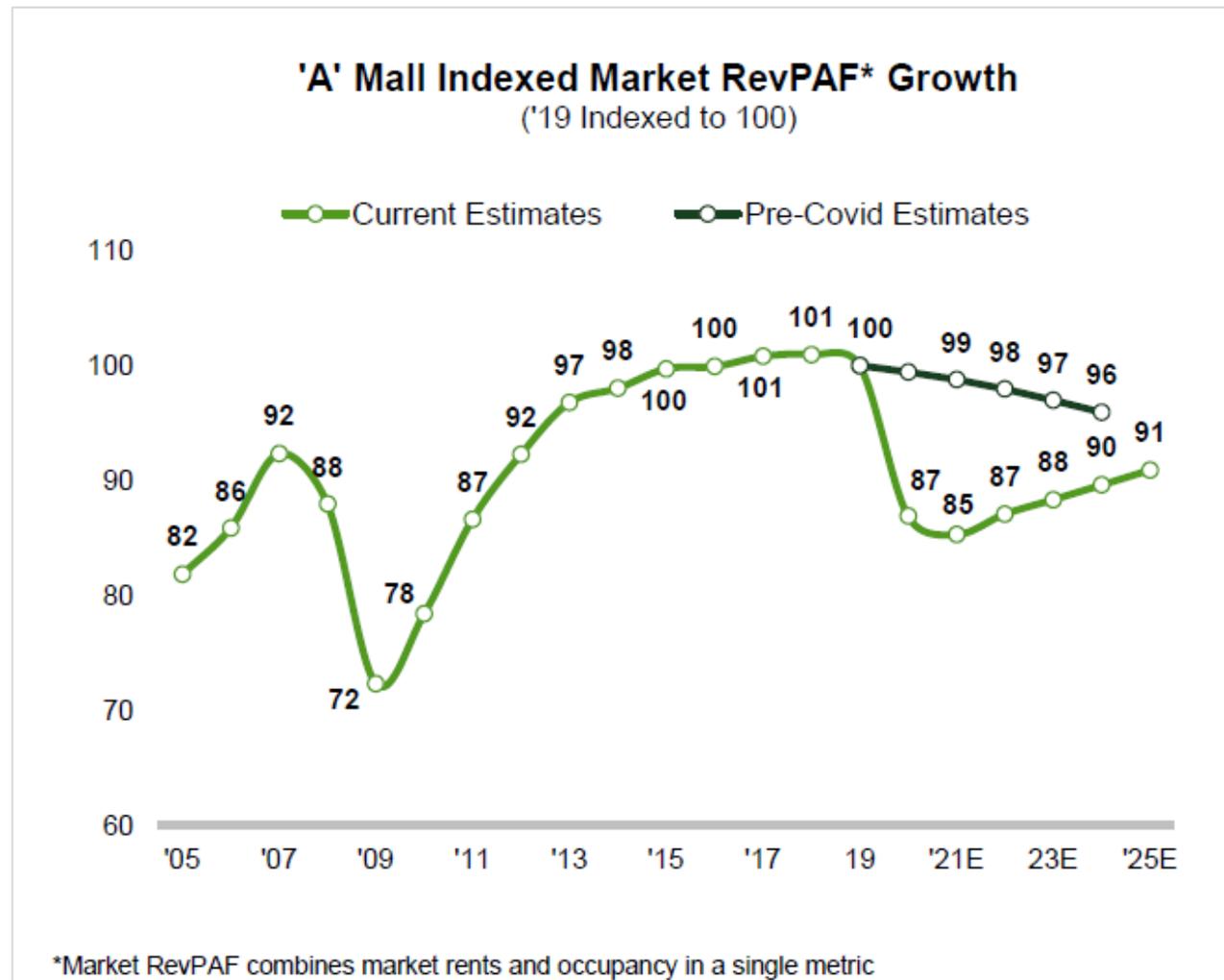
E-Commerce is winning out vs. brick and mortar, with much higher growth rates





Malls on a Downward Trajectory

Before Covid, malls' revenue per available foot was expected to slowly deteriorate. The pandemic accelerated what was already expected by investors



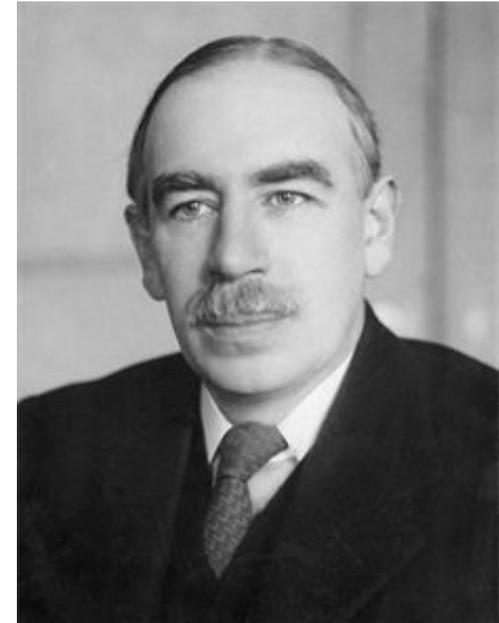
Second Machine Age: AI, Robots & The Future of Work



Keynes on Possibilities

I draw the conclusion that, assuming no important wars and no important increase in population, **the economic problem may be solved, or be at least within sight of solution, within a hundred years.** This means that the economic problem is not-if we look into the future-the permanent problem of the human race.

Why, you may ask, is this so startling? **It is startling because-if [...] we look into the past-we find that the economic problem, the struggle for subsistence, always has been hitherto the primary, most pressing problem of the human race** - not only of the human race, but of the whole of the biological kingdom from the beginnings of life in its most primitive forms.

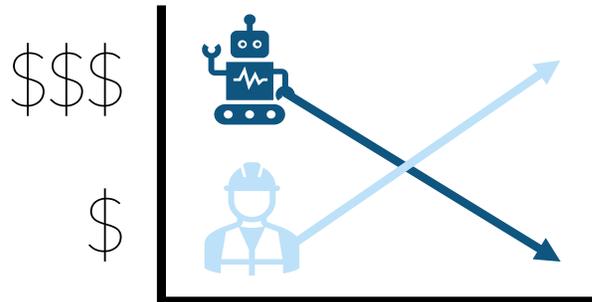


For many ages to come the old Adam will be so strong in us that everybody will need to do some work if he is to be contented. We shall do more things for ourselves than is usual with the rich to-day, only too glad to have small duties and tasks and routines. But beyond this, we shall endeavor to spread the bread thin on the butter-to make what work there is still to be done to be as widely shared as possible. **Three-hour shifts or a fifteen-hour week may put off the problem for a great while. For three hours a day is quite enough to satisfy the old Adam in most of us!**

John Maynard Keynes,
Economic Possibilities for our Grandchildren (1930)

Labor Market

SHORT-TERM IMPACTS



As robots become cheaper compared to human labor, their adoption will expand rapidly

Note: Automotive sector has already passed the threshold for automation

...By 2030, 2 billion jobs are projected to disappear³

LONG-TERM IMPACTS

Experts anticipate an average forecasted unemployment rate of **24%** by 2050¹

50% chance of full AI (AI with full human capabilities) by 2050; **90%** chance by 2075²

Even with human's ability to evolve, full automation of jobs is expected in **125 years²**

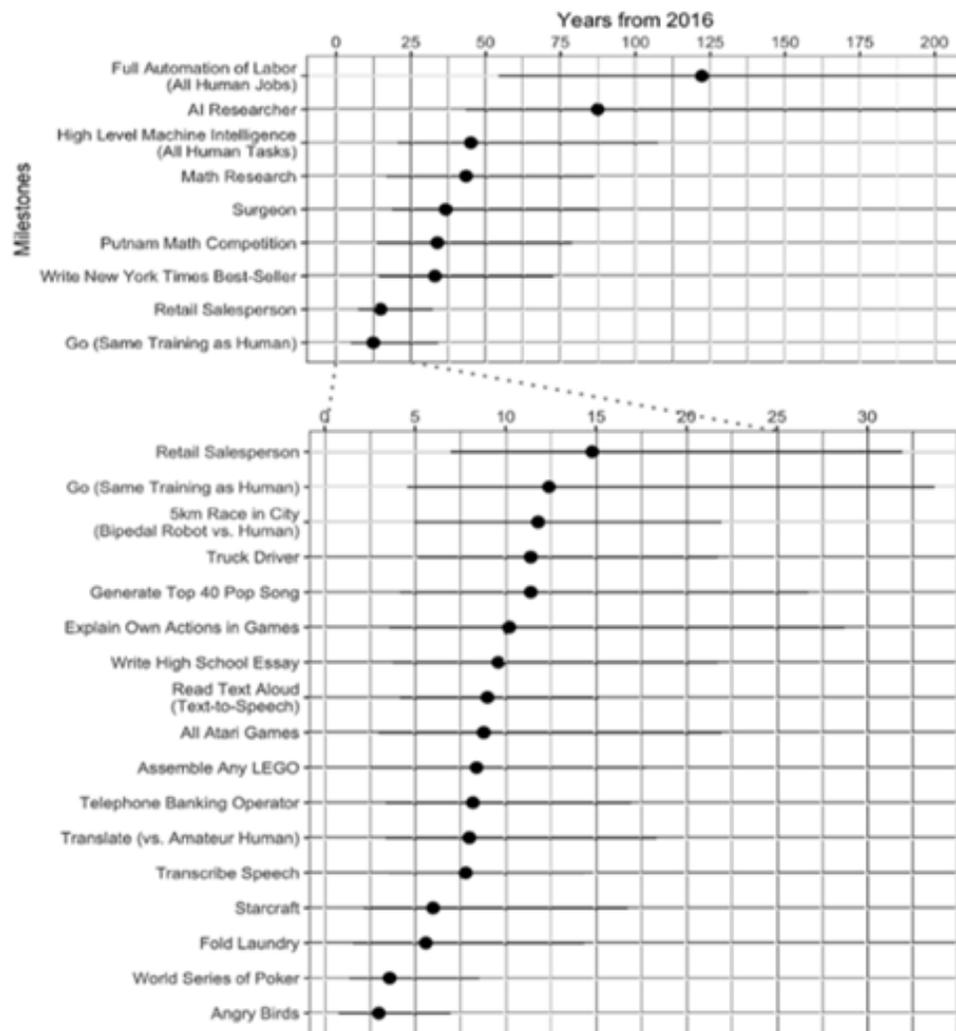
Robots/AI have automated tasks with the help of co-bots, but not yet entire sectors in the foreseeable future

Source:

- 1) 2050: The Future of Work. Findings of an International Delphi Study of The Millennium Project
- 2) When Will AI Exceed Human Performance? Evidence from AI Experts, Yale, Grace et al 2017
- 3) Thomas Frey, Futurist Speaker, *2 Billion Jobs to Disappear by 2030*, 2012

Future of AI

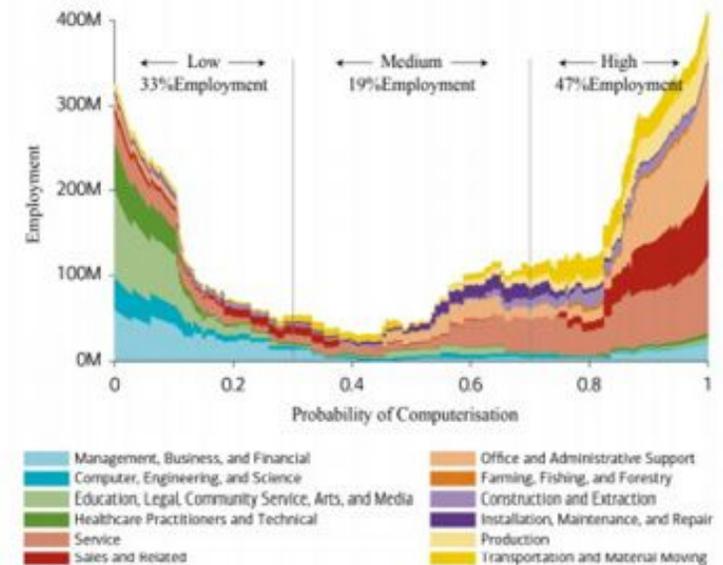
AI Adoption Timeline



Future of AI

Exhibit 40: 47% of jobs in US at risk of being computerised in 20Y

Distribution of US occupational employment & the probability of computerization (share in low, medium, high probability categories)



Source: Frey and Osborne 2013. Note: total area under all curves is equal to total US employment.

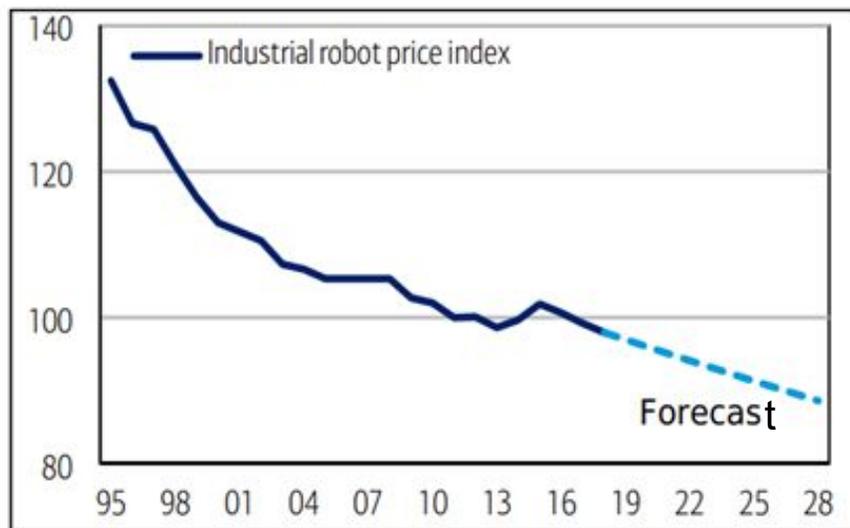
As automation intensifies, some occupations will see automation well before others



Co-Bots

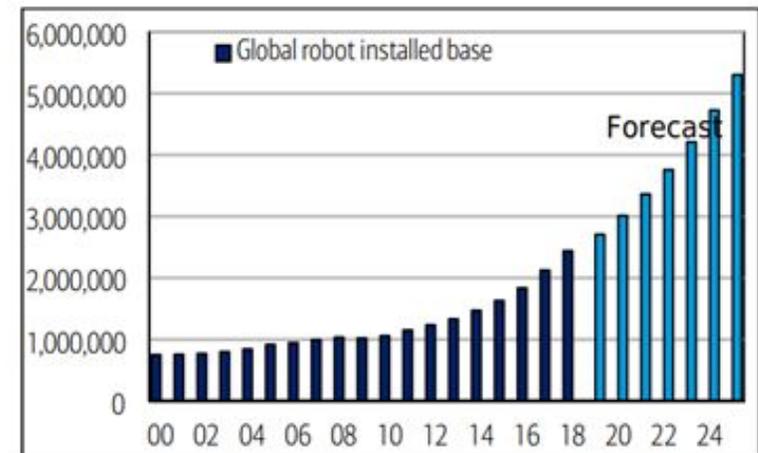
- Co-Bots are growing at +50% compound annual growth rate (“CAGR”) through 2023
- Implementation of co-bots could lead to higher productivity, leading to higher pay
 - Amazon Factory pay went from \$12-\$20/hour
- Bridge the gap with labor shortages (“Moxi” co-bot: Diligent Robotics)
- Solve decreasing labor productivity compounded by aging demographics

Exhibit 68: Industrial robot prices expected to keep falling
10% reduction in robot prices estimated over the next decade



Source: Boj, BofA Global Research, BCG. Price indexed to 100 in 2011

Exhibit 69: Global industrial robot installed base grow in next 5Y
Global installed base can hit 5 million units by 2025 doubling from 2019 levels



Source: IFR, BofA Global Research estimates, World Bank



Current Situations & Government Approaches

TOPIC	CHINA	U.S.
Government Involvement & Funding	+	-
Private Sector Involvement & Funding	-	+
Data Collection	+	-
Data Processing	-	+
Talent	-	+
Implementation	?	?



Key Takeaways

TODAY, MACHINES ARE REPLACING MENTAL LABOR

DISPLACEMENT IN THE LABOR FORCE

- Not From Blue-Collar to White Collar
- From Easily Repetitive Tasks to More Valuable Tasks
- Job Displacement is Beginning with Co-Bots

SIGNIFICANT IMPACT ON WORLD GDP

- Technology, Retail, Manufacturing, Healthcare, Transportation, and Finance

DIFFERENT APPROACHES BY U.S. & CHINA

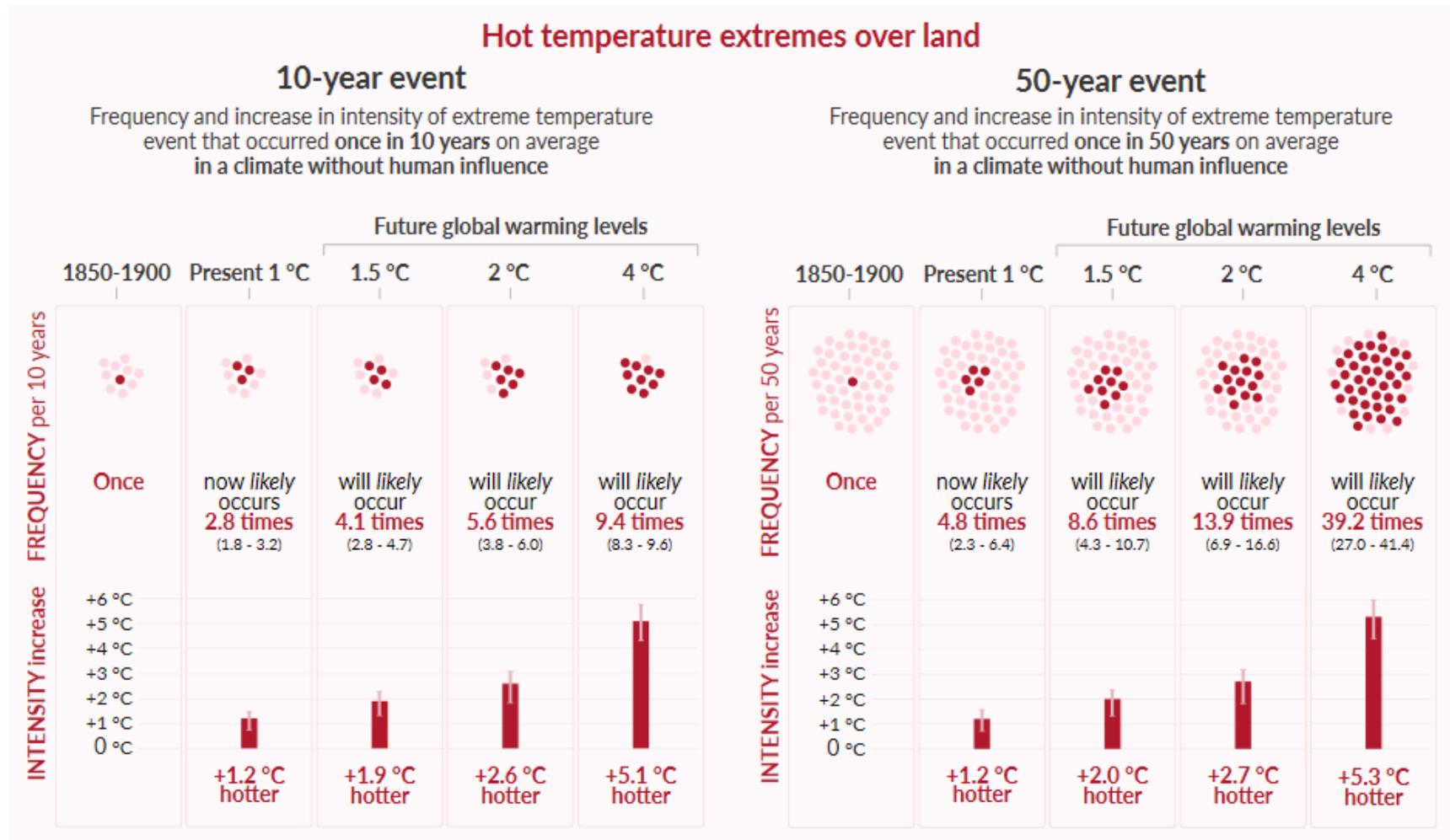
- United States: Market-based, Centered on Retaining Talent
- China: Top-down, Government-led, Data Availability

Appendix





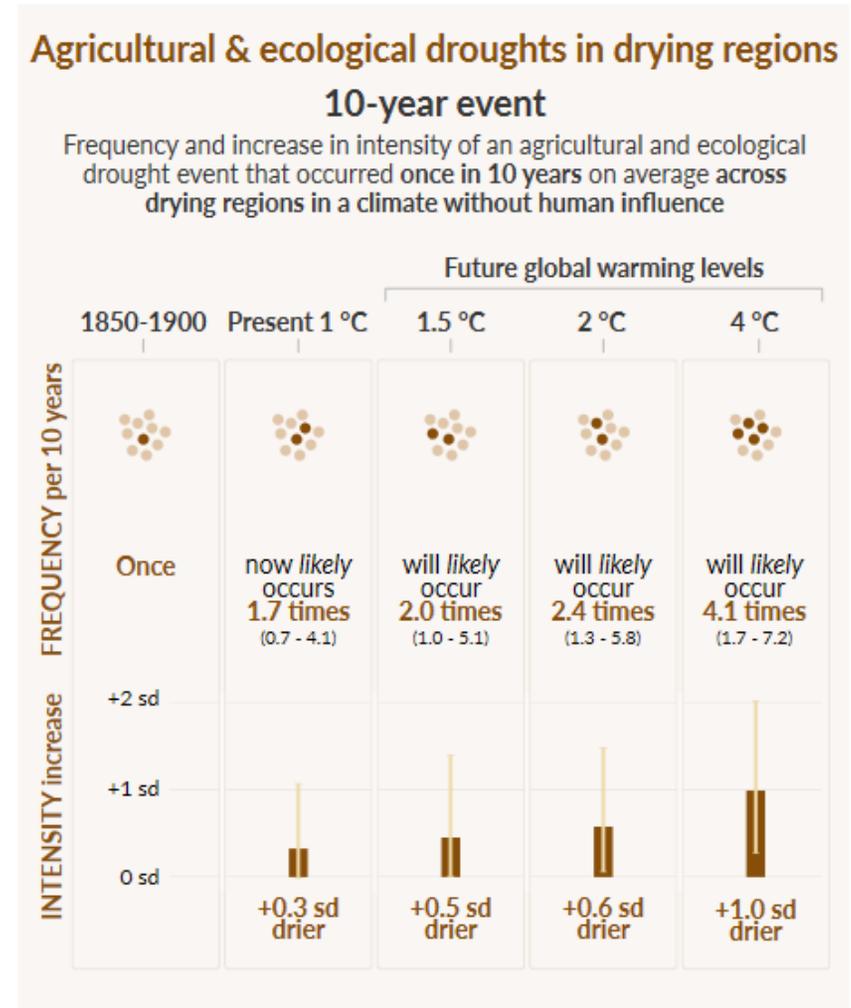
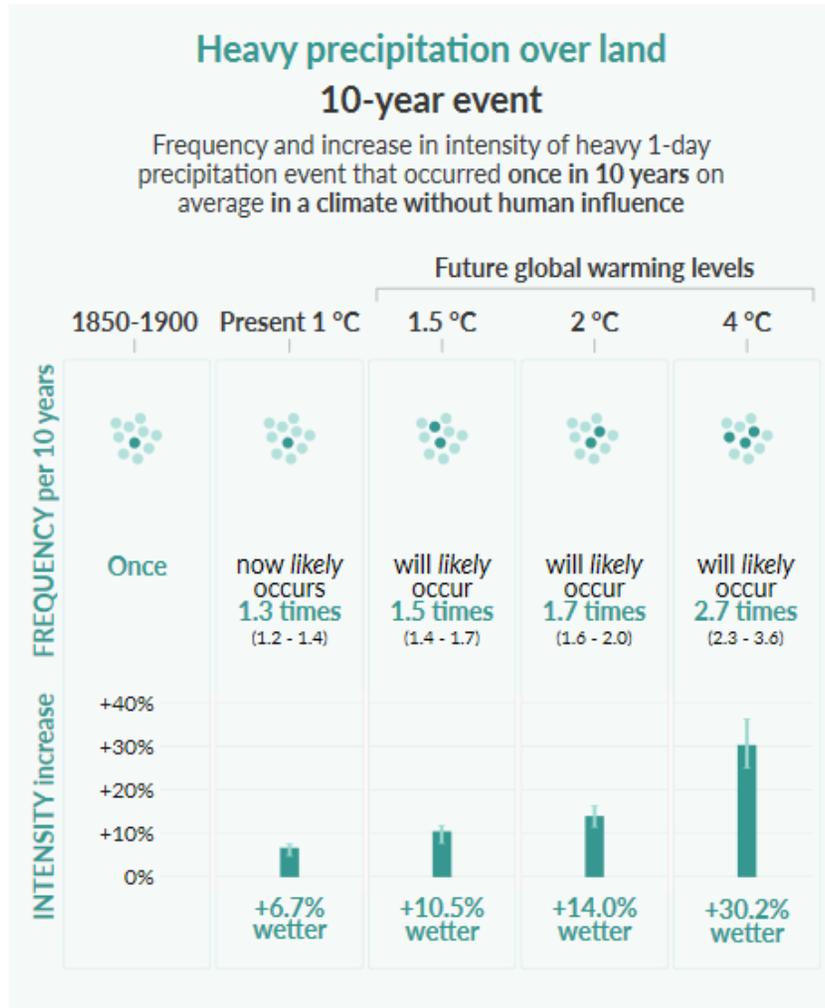
Impacts: Hot Temperature Extremes



Source: Climate Change 2021, The Physical Science Basis, IPCC



Impacts: Heavy Precipitation & Droughts



Source: Climate Change 2021, The Physical Science Basis, IPCC

Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Agenda Item: Tactical Asset Allocation Presentation

Developed By: Slayton

Presented By: Slayton

Type of Item: Information Item

Description: Mr. Slayton will provide an update on UTIMCO's Tactical Asset Allocation activities and progress in 2021.

Recommendation: None

Reference: *Tactical Asset Allocation* presentation



Tactical Asset Allocation

Scott Slayton, Managing Director

September 16, 2021



Executive Summary

Philosophy

- New Holistic TAA system launched in May 2021
 - 80% Systematic / 20% Discretionary
 - Take advantage of broad opportunity set across asset classes and geographies
 - Fully utilize UTIMCO's internal and external "edges"
- Tactical positioning increasingly important in a highly uncertain world

HTAA Program Objectives

- Produce Alpha
- Manage to Stated Risk Parameters
- Generate Fee Savings
- Innovation Engine
- Monitor Perimeter

HTAA Implementation

- Sized at 1/3 of target risk weight
- Target sizing at 2/3 of target risk weight by Q4 and fully sized by 1H22
- Current positions are long global equity and short global fixed income bonds
- Current priorities include internal benchmarking, model impact and reporting

TAA Team

- Tenured team that has worked together at UTIMCO for over three years
- Executing Action Plan with meaningful impact to the Endowments and firmwide goals



TAA Organization

Internal Resources:

CEO Office
Advisory Team
Risk and SPN Teams
UTIMCO Risk Models



Scott T. Slayton, CFA **Managing Director**

33 years of inv. experience
3.5 years with UTIMCO
UT Austin
Prior: Morgan Stanley, Tudor



Patrick Zerda, CFA **Associate Director**

8 years of experience
3 years with UTIMCO
UT Austin
Prior: Teacher Retirement System



Jenna Hudson **Investment Team Coordinator**

9 years of experience
1 year with UTIMCO
UT Austin
Prior: Carlson Capital

External Resources:

Strategic Partners
External Research Partners
Applied Global Macro Research



HTAA Execution Update

Objective	Status	Details
Produce Alpha: 15-20bps annual over a cycle	✓	<ul style="list-style-type: none"> • Produced 20bps in F2021 • Breakeven in F2022
Manage to Stated Risk Parameters: Marginal Contribution to Tracking Error (MCTE) Target of 20bps	✓	<ul style="list-style-type: none"> • Moderate risk contributor • Modestly smaller than HF, larger than FI
Generate Fee Savings: \$20-30mm per year	On Track	<ul style="list-style-type: none"> • Saving an estimated \$20mm in fees per year with HTAA
Innovation Engine: 2-4 Investment Research Projects per year	✓	<ul style="list-style-type: none"> • China Task Force • Crypto Commission • Carbon Credit Research
Monitor Perimeter: Identify and Communicate Potential Economic & Market Risks	✓	<ul style="list-style-type: none"> • China leading indicator dashboard • Markets, data, geopolitics, trends, themes



TAA vs. HTAA

TAA Program

April 2018 – May 2021

- 100% Discretionary portfolio
- Limited integration of UTIMCO's internal and external "edges"
- Limited geographies
- Impressionistic, thematic
- Significant Key-man risk
- Smaller in size, \$700m gross notional
- Pilot program
- 15 bps of tracking error
- Generate 10 bps of added alpha (10% of total endowment target alpha)

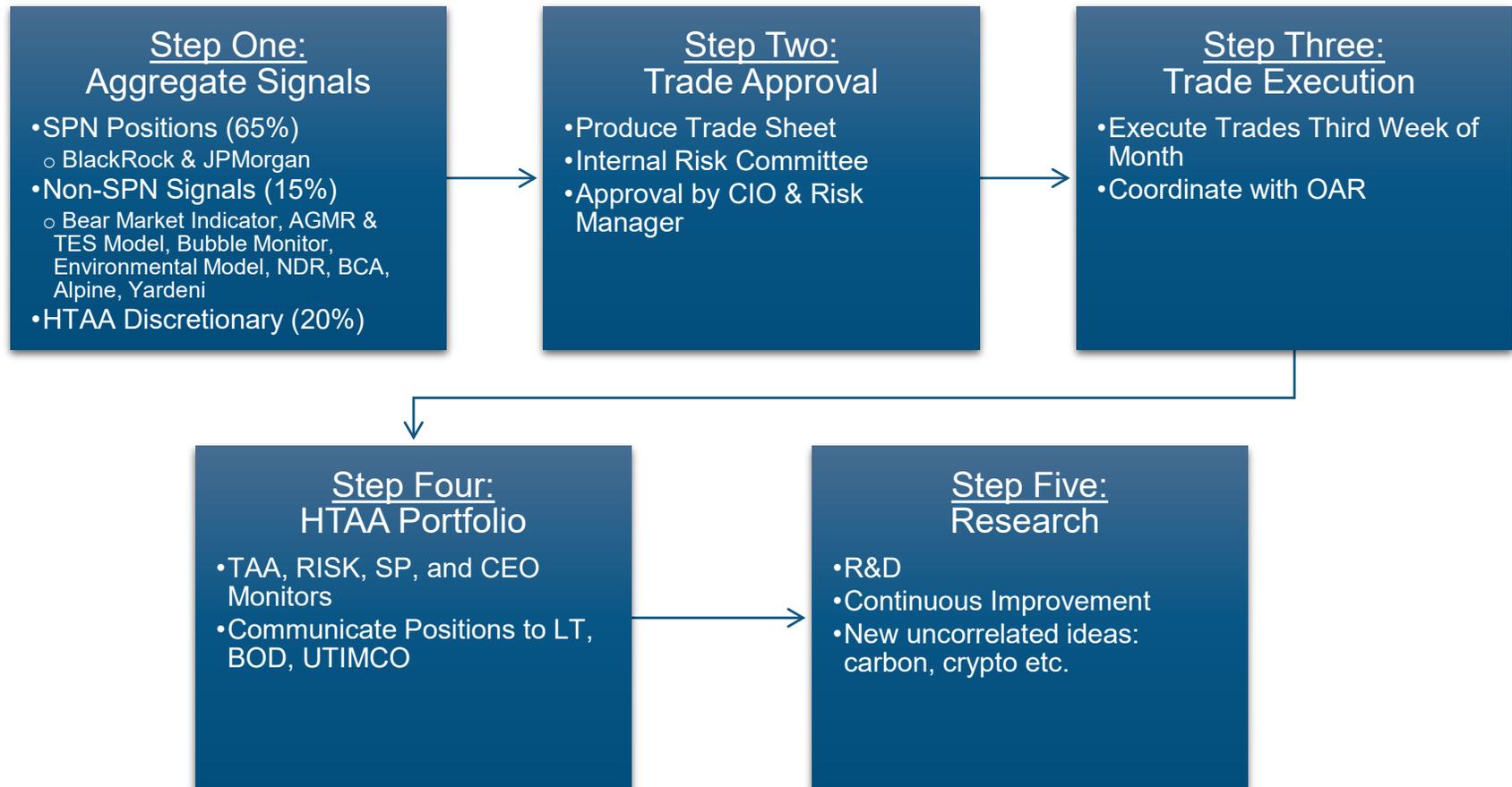
HTAA Program

May 2021 – Present

- 80% Systematic / 20% Discretionary
- Fully utilize UTIMCO's internal and external "edges"
- Trade across multiple markets/geographies
- More repeatable and sustainable
- Low Key-man risk
- Larger impact – +/-5% of total Endowments
- Fully operational program
- 40 bps of tracking error/20 bps of MCTE
- Generate 20 bps of added alpha (20% of total endowment target alpha)
- Estimated fee savings of \$20-30mm



How HTAA Portfolio is Generated





HTAA Positions Example & Markets

HTAA Position Summary	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6	Step 7	Step 8	Step 9			
Asset Class	Total SPN	Scaled SPN	Bear Market Indicators	Environmental Model	AGMR & TES Models	Bubble Monitor	Core Exposures	Advisory NDR, BCA, Alpine, Yardeni	Technicals	TAA Discretion	Extended Exposures ¹	Extended Exposures (\$m)
US Public Equity	+0.2%	+0.0%	0.0%	0.0%	0.0%	0.0%	+0.0%	+0.1%	+0.0%	0.0%	+0.1%	46
Non-US Developed Public Equity	+4.7%	+0.3%	0.0%	0.0%	0.0%	0.0%	+0.3%	+0.1%	+0.0%	0.0%	+0.4%	201
Emerging Markets Public Equity	(-0.1%)	(-0.0%)					(-0.0%)				(-0.0%)	(4)
TOTAL EQUITY	+4.9%	+0.3%	0.0%			0.0%	+0.3%	+0.1%	+0.0%	0.0%	+0.5%	243
TOTAL FIXED INCOME	(-10.6%)	(-0.8%)	0.0%	0.0%	0.0%	0.0%	(-0.3%)	(-0.1%)	(-0.0%)	0.0%	(-0.5%)	(243)
FX Positioning (USD)	+0.0%	+0.0%					+0.0%				+0.0%	0

Markets Traded

<u>Equities</u>	<u>Fixed Income</u>	<u>FX</u>	<u>Commodities</u>
US Equity	Global Fixed Income	AUD	Gold
Market Cap (Large, Small, Mid)	Treasuries	CAD	Broad Commodities
US Cyclical	Investment Grade	JPY	
Value/Growth	High Yield	Euro	
	Credit	NOK	
Non-US Equity	Canada		
Canada	Australia		
Europe	Germany		
EAFE	UK		
Japan	Japan		
Asia ex-Japan			
Emerging Markets Equity			



HTAA Positioning

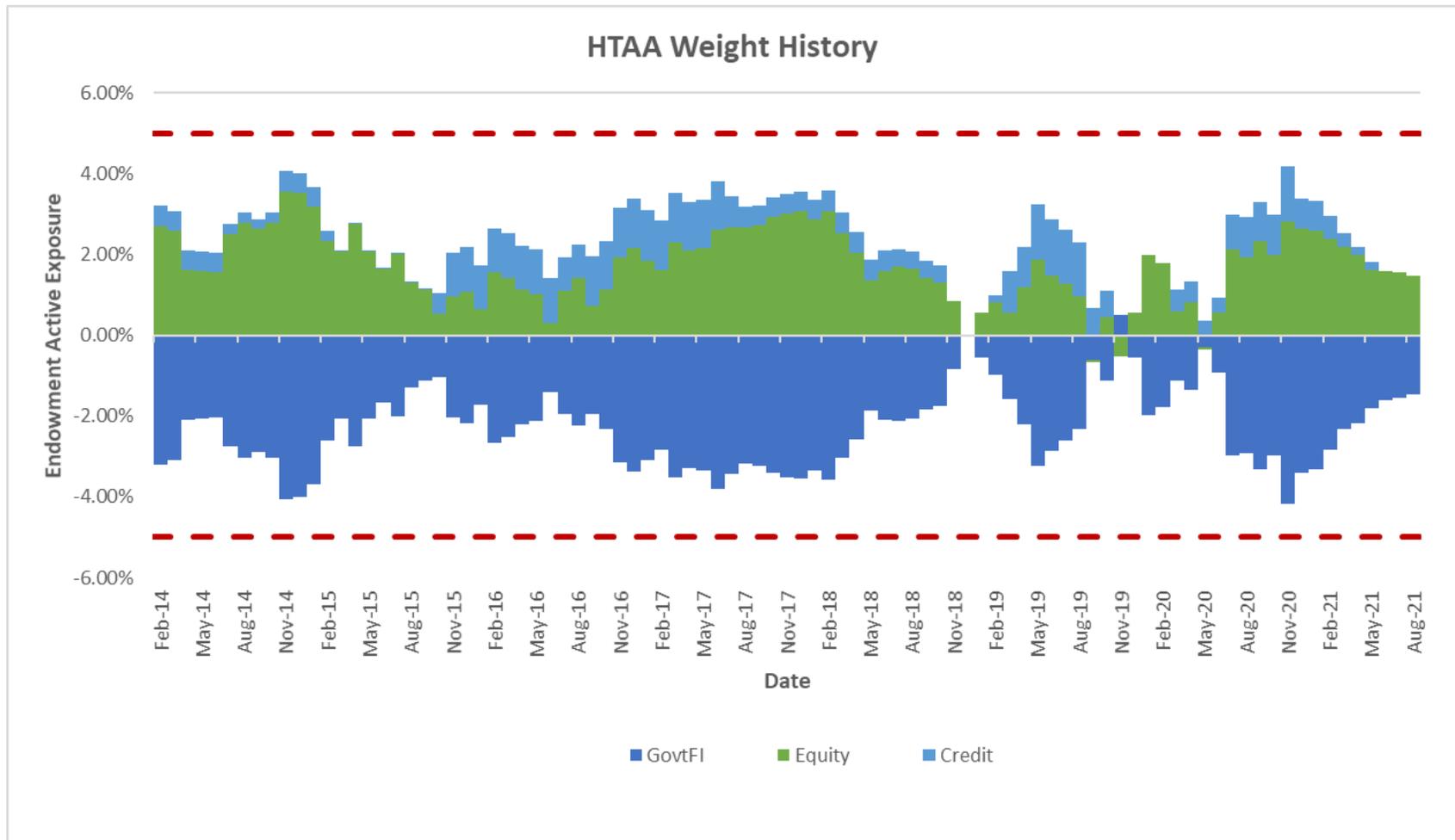
- HTAA positioning across asset classes and geographies is shown below
- Current portfolio is long equities (0.5%) and broadly short global fixed income (-0.5%)

Asset Class	Instrument	Total Exposure (\$m)	Total Exposure (bps)
US Public Equity		52	10.1
Large	S&P 500	39	7.5
Small/Mid Cap	Russell 2000	0	0.0
US REITs	DJ US Real Estate	13	2.5
US Cyclical Basket		0	0.0
US Value	R1k Value	0	0.0
US Growth	R1k Growth	0	0.0
Non-US Developed Public Equity		194	37.6
Broad EAFE	MSCI EAFE	0	0.0
Canada	S&P/TSX 60	0	0.0
Europe ex-UK	Euro STOXX 50	35	6.8
Hong Kong	Hang Seng	-14	-2.7
UK	FTSE 100	42	8.2
Japanese	Nikkei 225	33	6.5
Australia	S&P/ASX 200	0	0.0
Asia ex-Japan		0	0.0
Italy	FTSE MIB	49	9.5
Spain	IBEX 35	48	9.4
Europe Options	SX5E	0	0.0
Emerging Markets Public Equity	MSCI EM	-2	-0.4
TOTAL EQUITY		244	47.3

Asset Class	Instrument	Total Exposure (\$m)	Total Exposure (bps)
Global Fixed Income		0	0.0
US 2 Yr Treasury	US 2 Yr	221	42.8
US 10yr Treasury	US 10 Yr	-370	-71.9
US 20yr Treasury	US 20 Yr	0	0.0
US 30yr Treasury	US 30 Yr	-24	-4.6
Crossover Credit		0	0.0
IG	IBOXX IG	0	0.0
HY	IBOXX HY	0	0.0
Canada	Canada 10 Yr	0	0.0
Australia	Australia 10 Yr	0	0.0
Germany 5y	Germany 5 Yr	-51	-9.9
Germany 10y	Germany 10 Yr	22	4.3
Germany 30y	Germany 30 Yr	-62	-11.9
UK	UK 10 Yr	0	0.0
Japan	Japan 10 Yr	21	4.0
TOTAL FIXED INCOME		-243	-47.2
CASH		0	0.0
Gold	Gold	0	0.0
Commodities	BCOM	0	0.0
FX Positioning (USD)		0	0.0
NOK	NOKUSD	0	0.0
AUD	AUDUSD	-28	-5.5
CAD	CADUSD	-28	-5.5
JPY	JPYUSD	-28	-5.4
EUR	EURUSD	85	16.5



Historical Weights

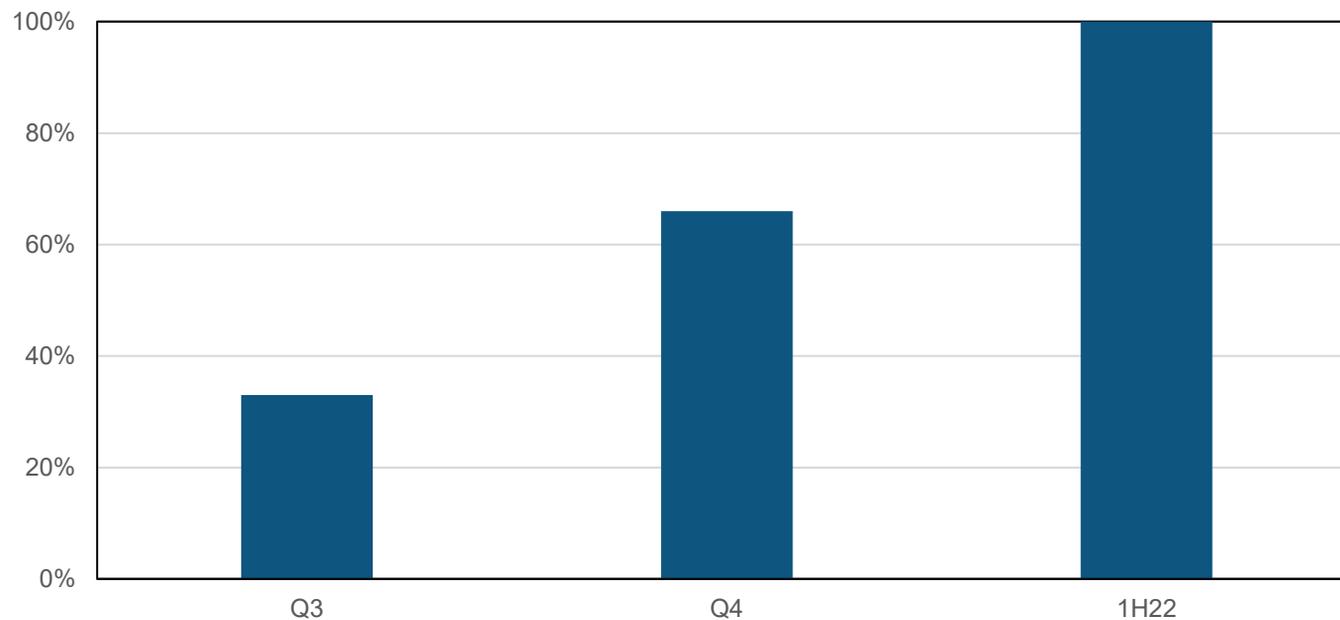




HTAA Implementation Timeline

- Launched in May at 1/3 of the target risk weight
- In Q4 expect to increase to 2/3 of target risk weight
- Anticipate program being fully sized in 1H22

HTAA Program Sizing





Conclusions

TAA Has Evolved Substantially

- New HTAA program launched in May of 2021
- 80% Systematic / 20% Discretionary
- Fully utilize UTIMCO's internal and external "edges"

HTAA Tracking vs. Objectives

- Meaningful alpha generated, within risk targets, generating fee savings
- Innovation engine for endowments & monitoring perimeter for new risk

HTAA Implementation Update

- HTAA 1/3 of target risk weight
- Target sizing at 2/3 of target risk weight by Q4 and fully sized by 1H22
- Current positions are long global equity and short global fixed income, which is an "expansionary" book of risks that should benefit from continued above trend economic growth along with sustained higher inflation
- Current priorities include internal benchmarking, model impact and reporting

TAA Team

- Tenured stable team
- Executing Action Plan with meaningful impact to the Endowments and firmwide goals

Appendix





Sorted Marginal Risk Contribution

	Contribution to TE (bps)
Public Equity	74
Private (PE + RR)	72
Hedge Funds	24
HTAA	20
Fixed Income	7
SPN	5
TOTAL	203



Model Risk Attribution

Signal Provider	Vol Attrib (bps)	Contrib
JP Morgan	16.0	38%
<u>BlackRock</u>	<u>12.0</u>	<u>28%</u>
Total Strategic Partners	28.0	66%
BCA	1.2	3%
Yardeni	1.1	3%
Alpine Macro	0.9	2%
Ned Davis Research	0.4	1%
<u>AGMR TAA Model</u>	<u>0.3</u>	<u>1%</u>
Total Outside Research Providers	3.9	9%
Environmental Model	0.8	2%
Tactical Equity Signal	0.7	2%
Technical	0.6	1%
<u>US Bear Market Indicator</u>	<u>0.0</u>	<u>0%</u>
Total UTIMCO Models	2.1	5%
UTIMCO Discretionary	8.5	20%
Total	42.6	100%

80% Quantitative / Systematic Target

20% Discretionary / Qualitative Target



How Trades are Executed

- Rebalancing trades are executed during third week of every month based upon updated signals.
- Transactions are executed between UTIMCO and Goldman Sachs, Morgan Stanley, JPMorgan, and BAML.
- Financial and Commodity futures contracts represent the vast majority of trades executed for HTAA. Total return swaps are used when futures contracts are unavailable or are not liquid.
- Options contracts are part of our tool-box but are used sparingly for special situations only. Currently, there are no options contracts in our HTAA book of risk.
- Trades have flowed seamlessly through OAR systems.

Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Agenda Item: Fixed Income Presentation

Developed By: Kampfe, Doak

Presented By: Kampfe

Type of Item: Information Item

Description: Mr. Kampfe will present on the Fixed Income portfolio.

Recommendation: None

Reference: *Fixed Income Review* presentation



Fixed Income Review

Russ Kampfe, Managing Director
September 16, 2021



Executive Summary

Objectives

- IGFI - Provide meaningful diversification and liquidity during deflationary equity bear markets
- TIPS - Provide meaningful diversification and liquidity during inflationary equity bear markets

Philosophy

- Has historically been an actively managed global investment grade fixed income portfolio but is reducing global investment grade fixed income and moving to Long Treasury and TIPs passive portfolios

Experience

- Two Senior Portfolio Managers with 30+ years of experience each

Performance (IGFI)

As of 6/30/2021	1 YR	5 YR	10 YR	15 YR
Returns (ann.)	3.0%	3.4%	3.3%	4.6%
Alpha	+2.9%	+0.9%	+1.2%	+1.0%
Tracking Error	1.6%	1.8%	1.7%	1.9%
Information Ratio	1.8	0.5	0.7	0.5

Exposure (IGFI)

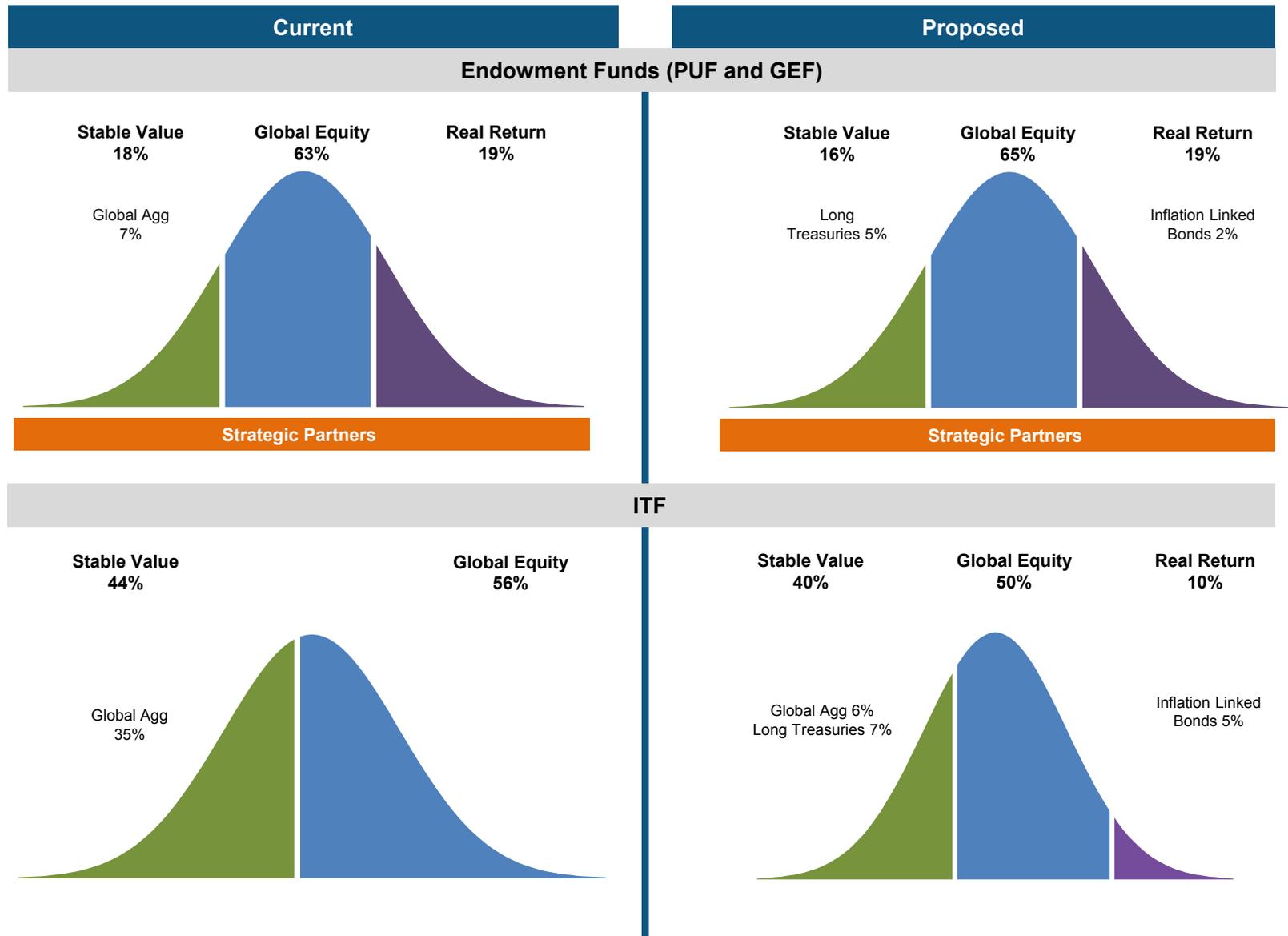
In \$millions	PUF	GEF	ITF	Total
Investment Grade Fixed Income	2,647	1,785	3,408	7,840
UTIMCO	30,607	20,757	10,165	61,529
% of Total Fund	8.6%	8.6%	33.5%	12.7%
2021 Policy Target	7.2%	7.2%	35.0%	13.0%

Priorities

- Implement new Strategic Asset Allocation
- Evaluate active alpha overlay for TIPS and Treasury portfolio
- Get MSCI Barra into shape to independently analyze the total IGFI, Long Treasury and TIP portfolios, as well as the external managers



New SAA Projected Roles in the Endowments





Team



Russ Kampfe
Managing Director

MBA, UT Austin
Joined UTIMCO in 1988



Harland Doak, CFA
Senior Director

MBA, St. Edwards University
Joined UTIMCO Feb. 2001
Prior: TRS



Russ Brown, CFA, CPA
Director¹

MS, UT Austin
Joined UTIMCO Nov. 2012
Prior: Holtzman Partners



David Huang, CFA
Associate Director¹

MS, NYU
Joined UTIMCO Aug. 2020
Prior: Helmsley Charitable Trust



Andres Delgado, CFA, FRM
Associate¹

BBA, Texas State University
Joined UTIMCO Jan. 2017
Prior: Goldman Sachs



RJ Dymke, CFA
Senior Analyst¹

BBA, Texas State University
Joined UTIMCO Sep. 2018
Prior: Sage Advisory



Kayla Young,
Analyst¹

BA, Cornell University
Joined UTIMCO June 2020
Prior: Novus Partners



Kathy Simons
Team Coordinator¹

Texas A&M
Joined UTIMCO May 2018

Experience Summary:

5 CFA Charter Holders
4 Master Degrees
1 CPA

¹ Works on both Public Equity and Fixed Income. Workload is split approximately 85% Public Equity and 15% Fixed Income, based on the number of investment relationships



Market Performance¹

Bond Market Performance - Jun 2021

	1-Yr	3-Yr	5-Yr	7-Yr	10-Yr
Barclays Global Agg	0.1%	4.6%	3.0%	3.6%	3.9%

Geographic

United States	-0.3%	5.3%	3.0%	3.3%	3.4%
Canada	-2.5%	4.5%	2.9%	3.6%	3.6%
Europe	0.3%	4.6%	3.5%	4.3%	5.0%
Asian-Pac Aggregate	0.1%	2.8%	1.8%	2.9%	2.9%
Emerging Markets ²	-0.9%	4.7%	3.1%	3.1%	3.3%

Sector

Treasuries & Sovereign	-1.3%	4.0%	2.5%	3.5%	3.7%
Government Related	-1.1%	4.0%	2.5%	3.5%	3.7%
Corporates	3.7%	6.8%	4.7%	4.6%	5.1%
Securitized	-0.1%	3.8%	2.4%	2.7%	3.0%

Tenor

1-3 Years	0.6%	2.5%	2.0%	1.8%	1.7%
5-7 Years	0.7%	4.5%	2.9%	3.2%	3.6%
10+ Years	-1.6%	7.0%	4.1%	6.4%	7.0%

Risk Premia

Credit	5.0%	2.8%	2.3%	1.1%	1.3%
Duration	-2.2%	4.5%	2.1%	4.6%	5.2%

Inflation Linked

US TIPS	6.5%	6.5%	4.2%	3.3%	3.4%
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Currency Performance - Jun 2021

	1-Yr	3-Yr	5-Yr	7-Yr	10-Yr
Developed Markets					
Euro	5.6%	0.5%	1.3%	-2.0%	-2.0%
Japan	-2.9%	-0.1%	-1.5%	-1.3%	-3.2%
Britain	11.5%	1.6%	0.8%	-3.0%	-1.5%
Canada	9.5%	1.9%	0.8%	-2.1%	-2.5%
Australia	8.6%	0.4%	0.1%	-3.2%	-3.5%
Switzerland	2.4%	2.3%	1.1%	-0.6%	-1.0%
Hong Kong	-0.2%	0.4%	-0.0%	-0.0%	0.0%
Singapore	3.6%	0.4%	0.0%	-1.1%	-0.9%

Emerging Markets

China	9.4%	0.8%	0.6%	-0.6%	0.0%
South Korea	6.1%	-0.5%	0.4%	-1.6%	-0.6%
Taiwan	6.1%	3.0%	2.9%	1.0%	0.3%
Brazil	10.0%	-7.9%	-8.3%	-10.9%	-10.9%
South Africa	21.5%	-1.3%	0.6%	-4.1%	-7.2%
India	1.6%	-2.7%	-1.9%	-3.0%	-5.0%
Russia	-2.6%	-5.0%	-2.6%	-10.4%	-9.2%
Mexico	15.4%	-0.0%	-1.6%	-6.0%	-5.2%
Indonesia	-0.6%	-0.6%	-2.0%	-2.9%	-5.1%

Bond returns in USD.

Returns greater than 1 year are annualized.

¹ Total returns utilize Bloomberg Barclays Global Aggregate Indices, hedged in (USD).

² EM hedged Return is for a country-constrained, more liquid version of the flagship EM Local Currency Government Index.



Characteristics, Performance, & Attribution

Characteristic	Jun 2021		Jun 2020	
	UTIMCO	BC Global Agg	UTIMCO	BC Global Agg
Total Portfolio Size	\$7.8B	\$67T	\$5.8B	\$54.8T
Modified Duration	5.5	7.5	7.1	7.3
Yield to Maturity	1.8%	1.1%	1.9%	1.0%
Avg Agency Rating	A1	AA3	AA3	AA3

Performance

Contributors

- Overweight to IG Corporate Bonds in H2 2020
- Exposure to EM bonds and currencies (Mexico, Brazil, Colombia, South Africa, and others)
- Exposure to peripheral Europe bonds and currencies in H2 2020
- Exposure to securitized bonds (Agency & Non-Agency MBS)
- Tactical underweight to long-duration Treasuries
- Exposure to US TIPS

Detractors

- Underweight euro and Japanese yen in H1 2021
- Overweight to IG Corporate Bonds in H1 2021

What Has Worked

- The Fixed Income portfolio generated **+2.9% alpha** over the 1-year period ended June 30, 2021.
- Managers that outperformed their manager-specific benchmark for the year comprised **100%** of the total portfolio average NAV.
- The portfolio allocations to investment and non-investment grade corporate bonds, select EM bonds and currencies, peripheral European bonds and currencies, and securitized bonds such as mortgage-backed securities from the US and Denmark.

What Hasn't Worked

- The portfolio allocation to long-duration US Treasuries and select currencies (primarily the Euro and Colombian Peso) detracted from alpha over the period.

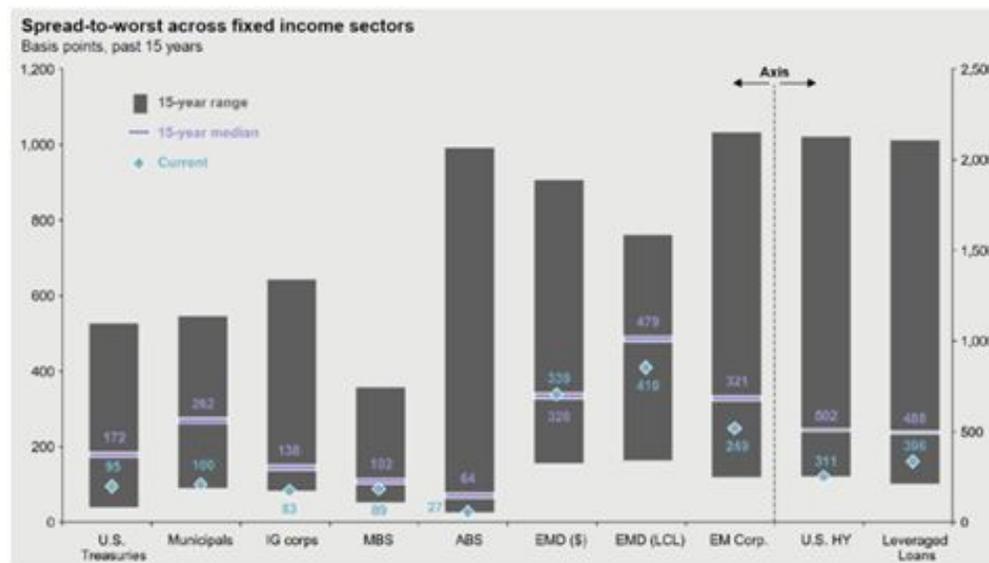
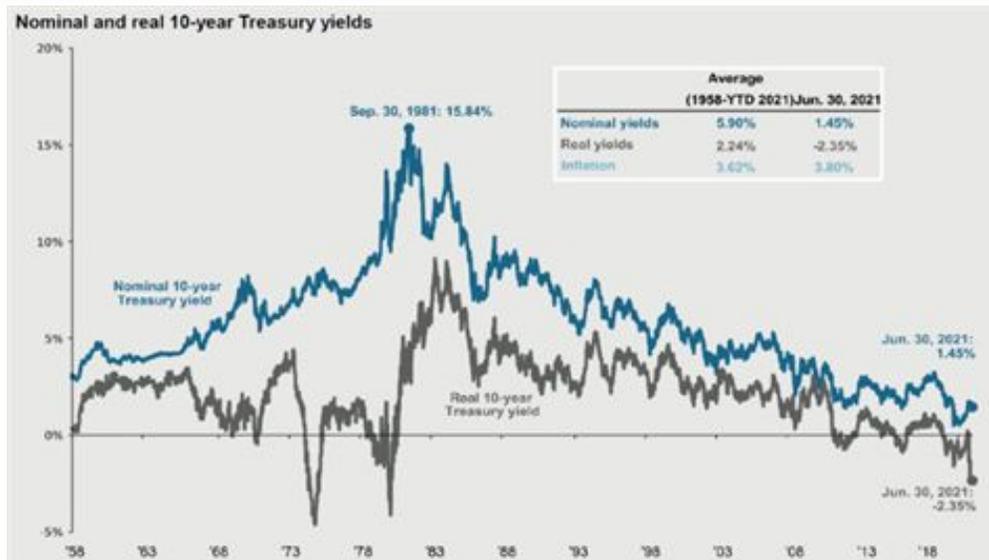
Country	Jun 2021			Jun 2020			O/U YoY Change
	UTIMCO	BC Global Agg	O/U	UTIMCO	BC Global Agg	O/U	
USA	39%	32%	+7%	49%	31%	+18%	-11%
Canada	2%	4%	-2%	3%	4%	-1%	-1%
Europe	16%	34%	-18%	21%	35%	-14%	-4%
Asian-Pac Aggregate	24%	28%	-4%	17%	28%	-11%	+7%
Emerging Markets	19%	2%	+17%	10%	2%	+8%	+9%

Currency	Jun 2021			Jun 2020			O/U YoY Change
	UTIMCO	BC Global Agg	O/U	UTIMCO	BC Global Agg	O/U	
US Dollar	96%	100%	-4%	95%	100%	-5%	+1%
Euro	-4%	0%	-4%	-3%	0%	-3%	-1%
Japanese Yen	-1%	0%	-1%	-2%	0%	-2%	+1%
UK Sterling	1%	0%	+1%	1%	0%	+1%	--
Emerging Markets	8%	0%	+8%	8%	0%	+8%	--
Others	-1%	0%	-1%	1%	0%	+1%	-2%

Sector	Jun 2021			Jun 2020			O/U YoY Change
	UTIMCO	BC Global Agg	O/U	UTIMCO	BC Global Agg	O/U	
Treasuries & Sovereign	61%	62%	-1%	54%	64%	-10%	+9%
Government Related	3%	12%	-9%	2%	11%	-9%	--
Corporates	29%	19%	+10%	37%	20%	+17%	-7%
Securitized	7%	8%	-1%	7%	5%	+2%	-3%
Cash & Equivalents	0%	0%	--	0%	0%	--	--



Market Conditions



Source: JP Morgan



Conclusion

- UTIMCO's Fixed Income portfolio is ~\$7.8 billion and represents ~13% of Total Assets across endowments and operating funds
- The portfolio had a great year, producing strong relative returns in an environment of low beta returns and low yields
- The portfolio fulfilled its objectives with diversification and liquidity
- The TIPS portfolio grew from \$387 Million to \$797 Million over the last year while closely following its benchmark
- Completed Strategic Asset Allocation and are actively planning for best possible implementation
 - Current SAA Targets:
 - IGFI: 7% for Endowments, 35% for ITF
 - TIPS: 0% for Endowments and ITF
 - Long Treasuries: 0% for Endowments and ITF
 - Proposed SAA Targets:
 - IGFI: 0% for Endowments, 6% for ITF
 - TIPS: 2% for Endowments, 5% for ITF
 - Long Treasuries: 5% for Endowments, 7% for ITF



Appendix



2021 Priorities and Results

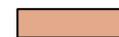
Deliver Results			Professional Development			Firmwide Collaboration			Portfolio Initiatives		
Action	Metric	Timing	Action	Metric	Timing	Action	Metric	Timing	Action	Metric	Timing
Continue portfolio performance and deliver positive alpha over FI benchmark for rolling 3yr period	0 to 80 bps of alpha	Dec-21	Enhance leadership and depth of managerial talent	Complete Executive Training Modules	Jun-21	Work with Risk to implement new UTIMCO U.S. economic cycle model	Apply to major asset classes and review	Dec-21	Support FY 2022 SAA to assess best mix to deal with economic uncertainties and peer competition	Final SAA results	Jun-21
Obtain approval for at least one manager to Premier List	# of managers	Sep-21	100% success rate on training and talent management plans	50 hours complete per professional	Dec-21	Aid in development of a robust WFH policy to make RTO as smooth as possible	Completion and use of plan	Jun-21	Complete Semiannual reviews with buy-in from Leadership Team	Semiannual / Business Plan	June-21 / Dec-21
Continuous improvement of critical processes	15% increased productivity	Dec-21	Institutionalizing Servant Leadership at UTIMCO from top to bottom	Show SL concepts in communication and customer service	Dec-21	Transition seamlessly from current bond analytic system to new risk system	Smooth usage of new system and apply to bond portfolios	Mar-21			
			Actively identify and develop junior talent that has longer term interest in Fixed Income	Hold macro and fixed income discussions that ferret out interest	Dec-21	Build robust UTIMCO culture and brand with peers, stakeholders, and industry	Give exposure to UTIMCO on external boards, peer orgs., teaching and conferences	Dec-21			
Generate attractive risk-adjusted returns while meeting allocation and regime targets			Hire the best candidates and invest in UTIMCO through leadership and development			Share best ideas and expertise across and outside the organization			Provide clarity on investment strategies throughout the organization		



Completed Initiative



On Track To Complete



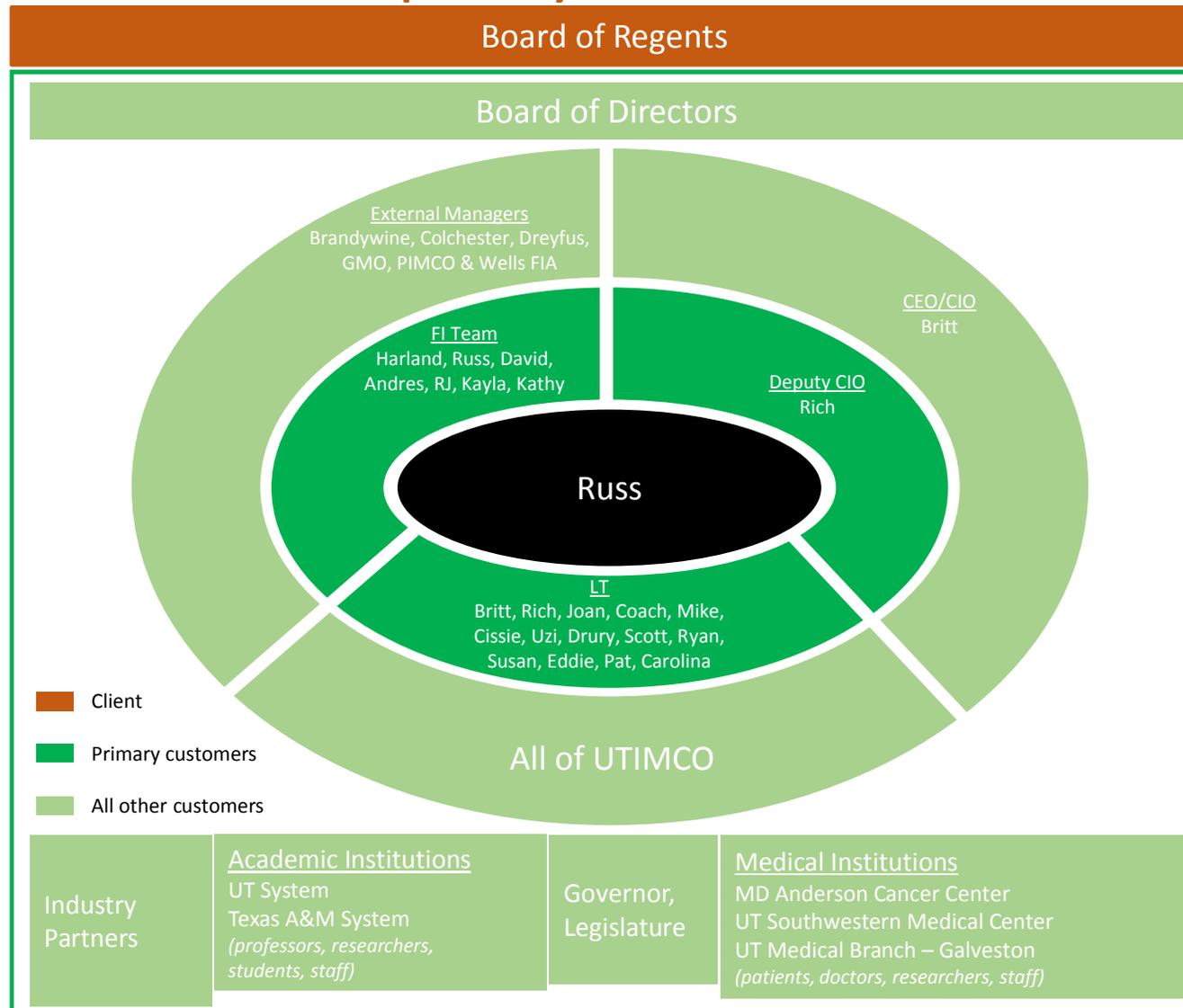
Ongoing with Mixed Results



Russ Kampfe – Managing Director, Fixed Income

Customer Map

Russ Kampfe – My Client and Customers



Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Agenda Item: Risk Management Presentation and Risk System Demonstration

Developed By: Risk Management Team

Presented By: Yoeli, Jones, MSCI Barra

Type of Item: Information Item

Description: Dr. Yoeli will discuss key projects and initiatives of Risk Management at UTIMCO. Dr. Jones will lead the presentation on the development and deployment of the new unified risk system, based on MSCI Barra. MSCI Barra personnel will demonstrate some new capabilities that this system will provide.

Reference: *Risk Management* presentation



Risk Management Presentation

Uzi Yoeli, Managing Director – Risk Management
Tim Jones, Senior Director – Risk Management

September 16, 2021



Executive Summary

Philosophy

- Work across all teams with unified frameworks, such as the MSCI Barra Risk System, IC Risk Scorecard, apples-to-apples comparison of Marginal Contribution to Risk or Drawdown Risk
- Highly quantitative approach for analyzing both the portfolios and the markets

Key Responsibilities

- Setting long-term targets – lead SAA reviews and recommendations
- Develop state of the art monitoring tools – MSCI Barra Risk System, Bear and Bubble Monitors, Economic Environment Monitor
- Manage to target exposures – capital planning and rebalancing
- Allocate risk based on the opportunity set, and monitor use and level of risk deployed
- Increase involvement in the management of the Funds

Key Accomplishments Over the Past Year

- Implementation of the MSCI Barra Risk System as a unified risk system for all asset classes, giving UTIMCO a common risk language across investment teams and portfolios
- Leading SAA discussions as we enter a very different economic environment
- Internal Risk Committee, which was established a year ago, has matured into a key element of how UTIMCO conducts its business



Risk Team Members and Purpose

Team Members



Uzi Yoeli
Managing Director

16 years at UTIMCO
PhD, UT Austin



AliEmme Binns
Analyst

1 year at UTIMCO
MSF, Univ of Utah



Tim Jones
Senior Director

3 years at UTIMCO
PhD, UT Austin



Jenna Hudson
**Investment Team
Coordinator**

1 year at UTIMCO
BA, UT Austin

Team Purpose

Lead UTIMCO in maintaining a sound risk culture, by providing services and information in the following areas:

SAA/ Long Term Issues

- Lead Strategic Asset Allocation reviews and recommendations

Models

- Bear and Bubble Monitor
- Economic Environment
- CUSUMs

Managing to Target Exposures

- Capital Planning
- Rebalancing

Risk Results

- Risk Summary
- Risk Dashboard

Internal Risk Committee

- Discussion on beta exposures and other risk-related topics

Barra

- Common Risk Language
- Best in class risk modeling of Private Markets and Hedge Funds

Risk Budgeting

- Allocate Risk (tracking error, drawdown) based on opportunity set

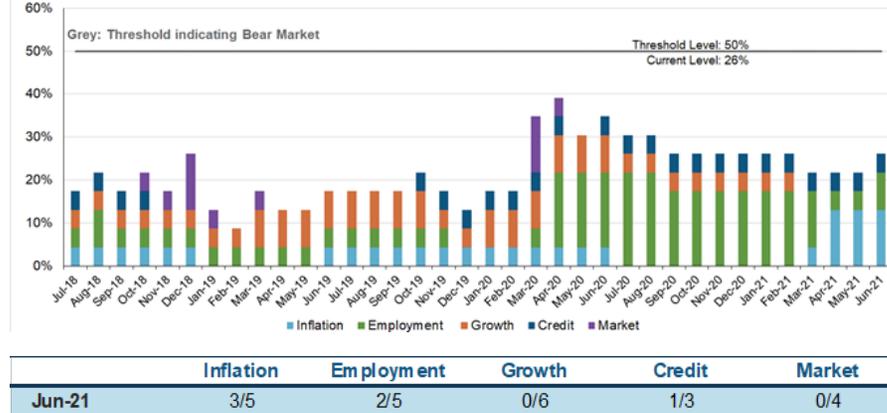
Individual Deals

- Provide an early independent review
- Rate risk level & concerns

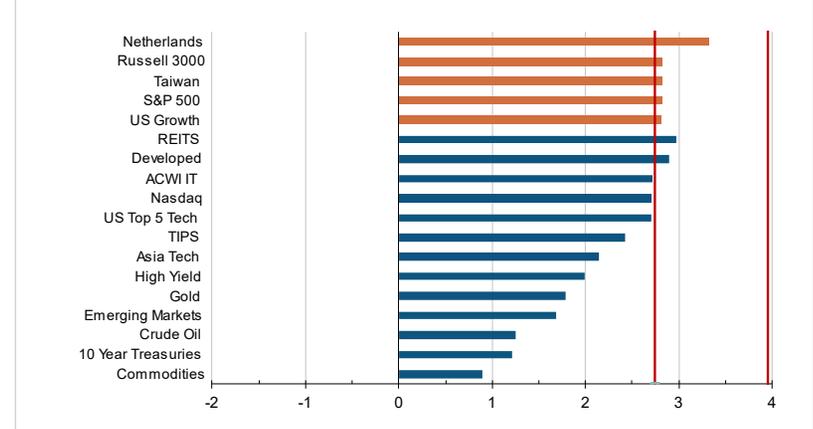


Spotting the Next Bear Market

BEAR MARKET INDICATOR: JUNE 2021



BUBBLE MONITOR Z -SCORES: JULY 2021

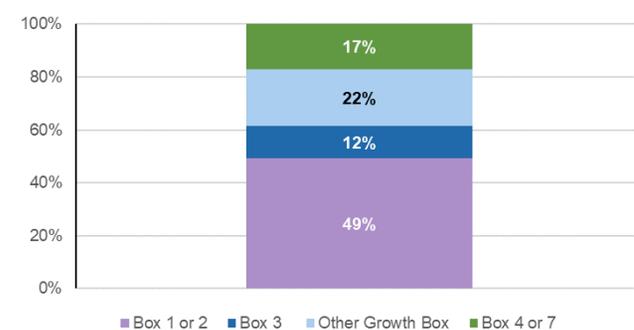


US POLICY SIGNAL CHART



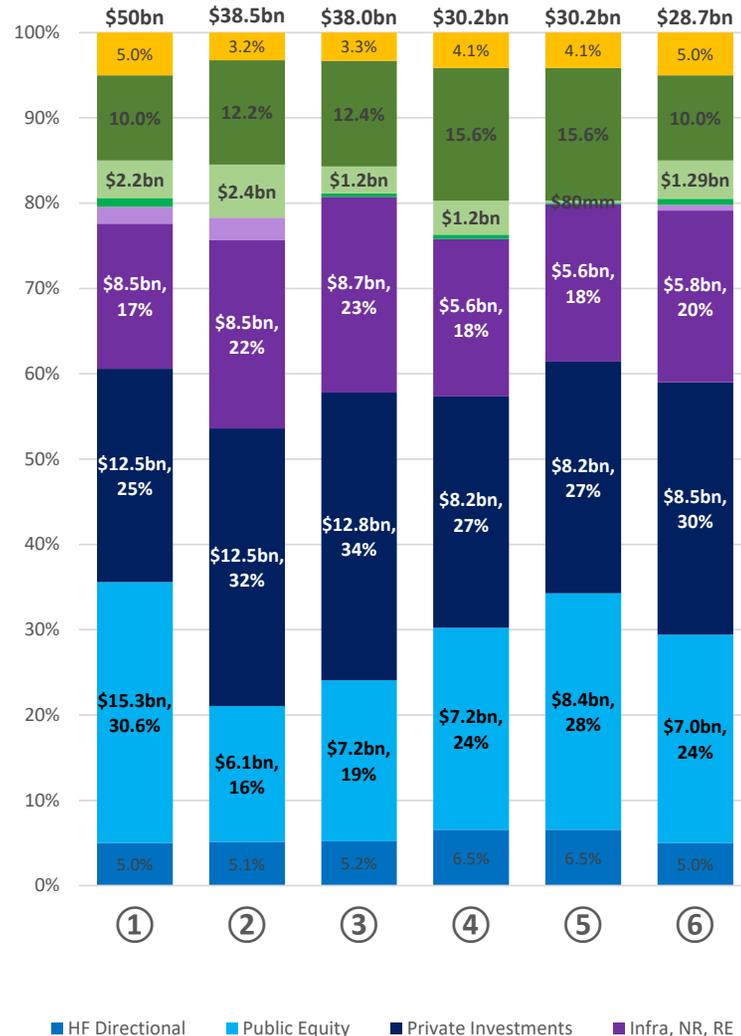
- CPI rose again in June pushing the indicator further into Box 3
- Based on history, nominal returns in Box 3 are strong but real returns are close to zero

Environmental Indicator One Year After Box Three





Liquidity Planning for a Rapid 60% Market Decline



- Start** with a \$50bn Endowment at LTSAA weights
- Rapid market decline by 60%**, resulting in \$11.5bn loss: \$9bn in Public Markets, \$1.25bn in SPN, \$0.75bn in HF and \$0.75bn in TAA
- Rebalance using only “first responders”**, and adhering to the floating weights in Policy:
 - Assume \$500mm of capital calls
 - Make \$500mm quarterly distributions
 - Buy \$1.0bn of Public Equities
 - Sources:** \$1.0bn from Treasuries and all \$1.0bn of TIPS
- Privates are marked down (typically with a delay), showing another ~\$7.8bn of loss
- Rebalance again using only “first responders”**, and adhering to the floating weights in Policy:
 - Buy another \$1.2bn of Public Equities
 - Sources: most of remaining Treasuries and Cash
- Rebalance using Hedge Funds** (takes 3-6 months) and continue making the annual distribution:
 - Redeem \$2.4bn from Hedge Funds
 - Re-establish positions in Treasuries, TIPS, and Cash at Policy levels
 - Make another \$1.5bn of distributions as needed, mostly by selling equities

Bottom Line: we can fully rebalance the Endowments even after a rapid market decline of 60% with no recovery, and continue make distributions as needed – all without using any derivatives or leverage

- In practice, we might decide to use derivative and conserve cash to be on the safe side; these derivatives will be fully backed by cash – no leverage, and will not limit TAA’s ability to go on the offense as needed



MSCI Barra Risk Project: Goals and Progress

An ambitious set of goals with large but well-defined challenges

Goals for the project:

1. Create a common risk language across the entire firm
2. Provide best in class private markets risk modeling
3. Deliver a unified factor model

Our diligence calls with other Asset Owners discovered that these goals had not been accomplished before; the norm was to use different risk systems by asset class.

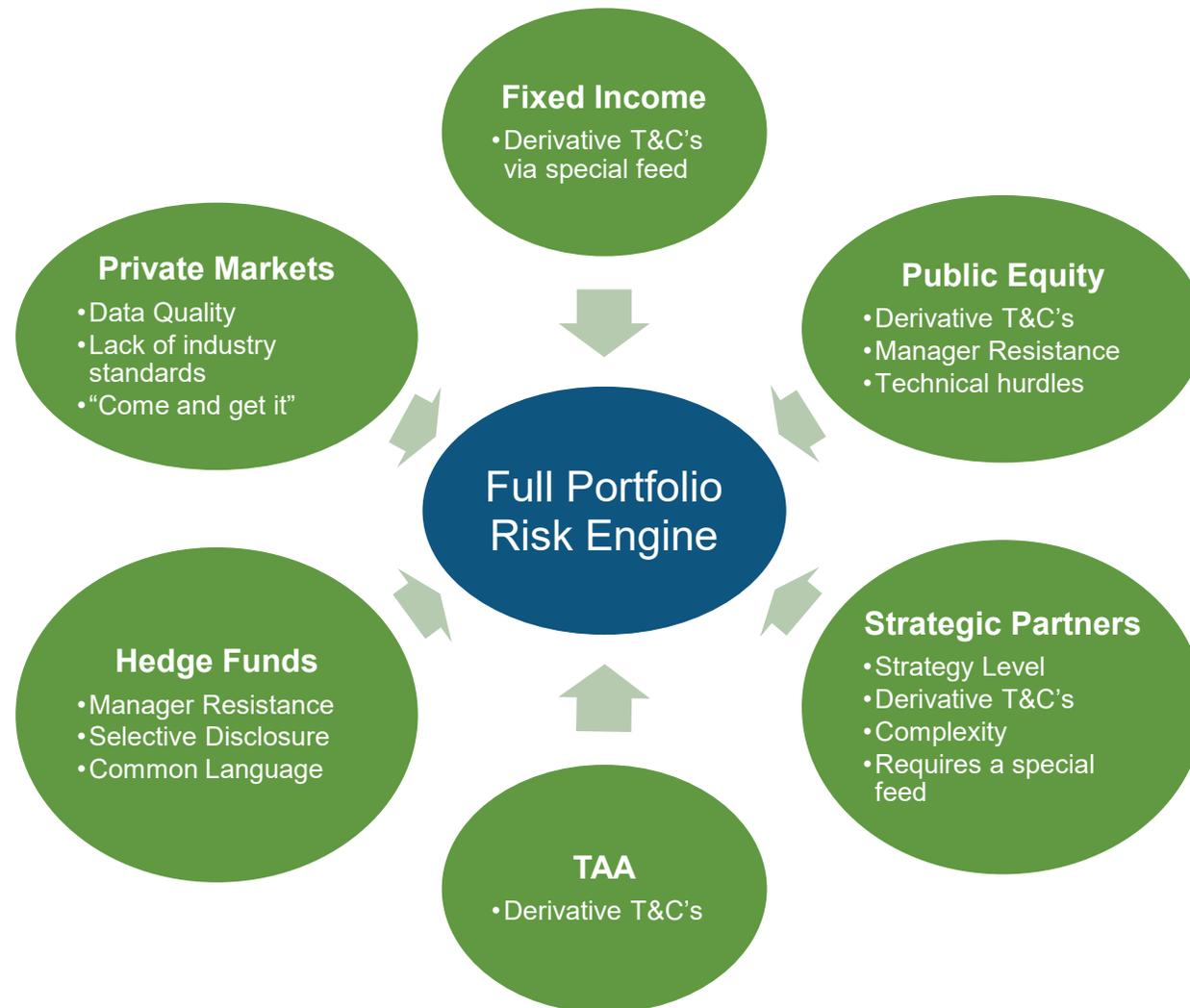
Successes from the past year:

1. The MSCI Barra onboarding process is on schedule and on budget
2. Successfully onboarded all the data from every asset class
3. Successfully trained and certified all Public Markets groups on MSCI Barra and Factor Investing
4. Each group has defined and built the outputs from the risk system that meet their needs
 - Utilizing the Barra Portfolio Manager interface for Public Equity Team
 - A custom-built spreadsheet delivered daily for Fixed Income Team
 - Machine readable standardized reports for the Hedge Fund Team
 - Batched pdf reporting for the SP and TAA Teams
 - A custom-built dynamic report set for Team CIO and the Risk Team



Collecting the Data – Diversity of Challenges

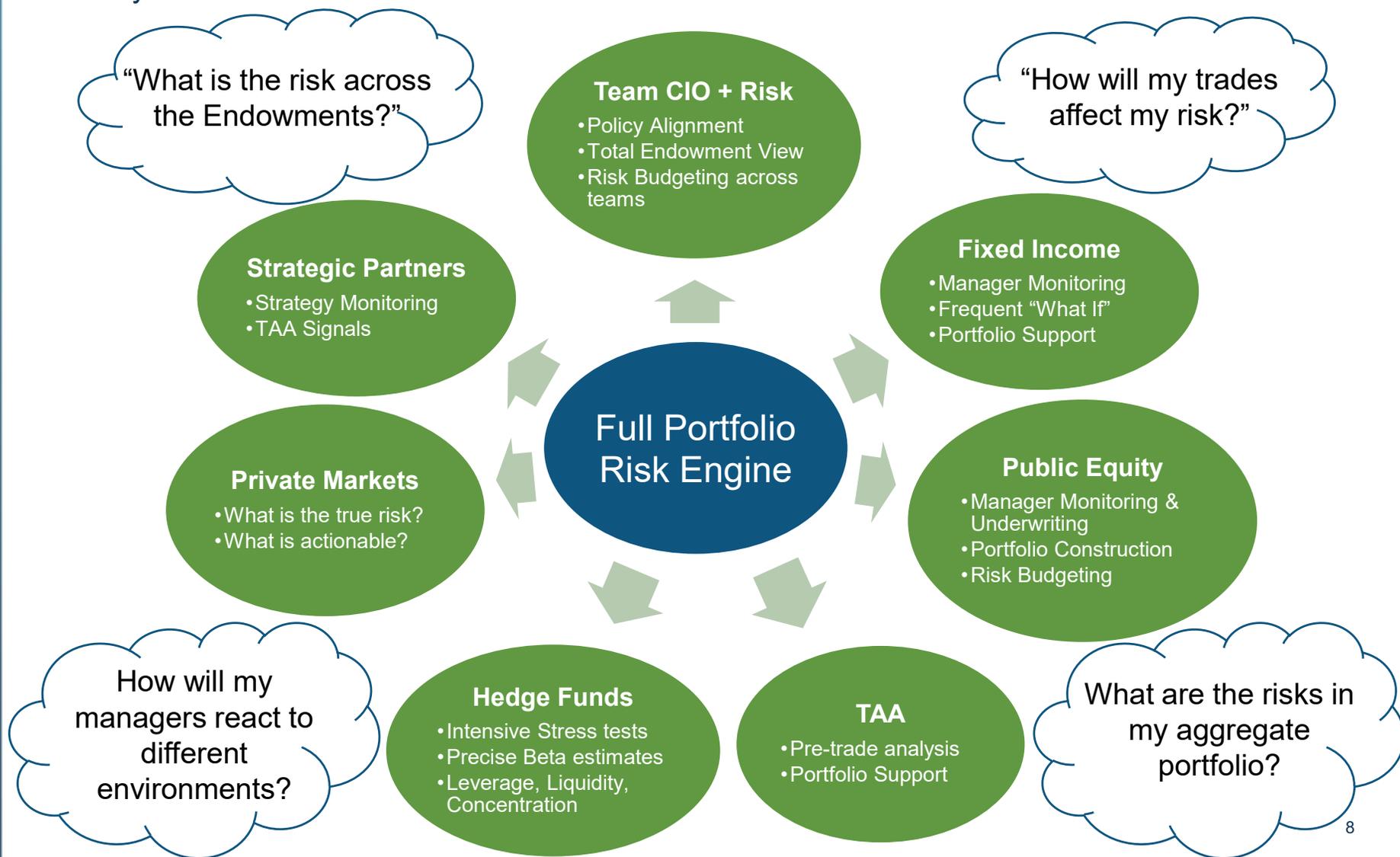
For a common language, we need position level data across the Endowment. Each Asset Class has its own unique needs and challenges in gathering such data.





Distributing Analysis – Diversity of Needs

Even using a common language, each group asks different questions and has different analytical needs.





Conclusions

Implementation of a unified risk system for all asset classes

- Solved substantial technical and conceptual problems to create a common risk platform
- First known implementation that enables systematic evaluation of risks across and within asset classes
- On schedule and on budget
- All teams trained and certified
- Public Market portion going live in a few weeks, followed by the Private Market portion in a few months

Monitoring risks as we head to a very different economic environment

- SAA did not recommend major changes, as it was too early to figure out which way the economy is likely to go
- Now in an environment with rising inflation – next state is more likely to be worse before it gets better, in terms of the attractiveness of equities
- Bubble Monitor suggests valuations may be stretched; even if they are, they could stay stretched for a very long time

Internal Risk Committee has matured into a key element of how UTIMCO conducts its business

Liquidity management has been battle-tested and continues to improve

- We have a plan for the next bear market that shows we can likely retain our strong hand and go on offense at the trough, even if we were faced with the worst drawdown the US markets have had

Demo of Risk System



Appendix





Monitoring Potential Bubbles

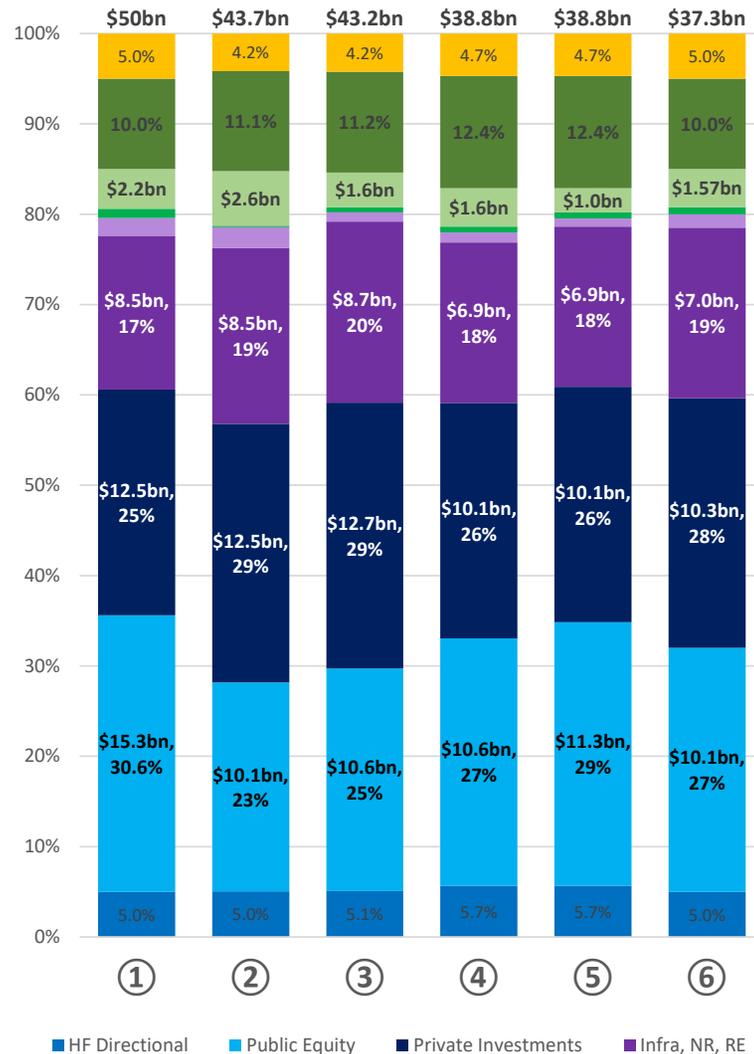
Bubble Track Record															
Index Name	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Time Since First Trigger	% of Time On Since July 2020
Asia Big Tech							x	x	x	x				6 Months	31%
FAAMGs	x	x				x								12 Months	23%
MSCI ACWI Consumer Discretionary		x				x	x		x	x	x	x		11 Months	54%
MSCI ACWI Information Technology	x	x	x		x	x	x	x		x				12 Months	62%
MSCI ACWI Telecom										x				3 Months	8%
Nasdaq	x	x			x	x	x	x		x			x	12 Months	62%
Netherlands								x	x	x	x	x	x	5 Months	46%
Russell 1000 Growth	x	x	x		x	x	x			x			x	12 Months	69%
Russell 2000										x				3 Months	8%
Russell 3000						x			x	x	x	x	x	7 Months	46%
SOX		x			x	x	x	x	x	x	x	x	x	11 Months	77%
S&P 500										x	x	x	x	3 Months	31%
S&P 500 IT	x	x	x		x	x								12 Months	38%
Taiwan							x	x	x	x	x	x	x	6 Months	54%

Bubble Rule: To trigger a bubble investigation an asset must have at least 1) Doubled on price over a 7-year period and 2) Moved 2.75 standard deviations away from its 7-year mean. There is also an override condition where if the asset has moved more than 3.95 standard deviations away from its 7 year mean it is considered a potential bubble regardless of if the doubling criteria is met

- The bubble signals by themselves are not actionable – bubbles can last for 3 or more years (“markets can remain irrational longer than you can remain solvent”)
- Our main concern is a bear market that comes after very stretched valuations can be very ugly, with potential drops of up to 60%
 - Ideally, the Bear Market Monitor is what we need to look at now – even if it turns on after a 20% drop, it will still help us reduce exposure for the other 40% drop
 - A bear market that follows bubbles has some unique leading indicators, different than the inflation, employment, growth, credit and markets indicators we normally track. We are developing with TAA an ancillary Bear Market Model, specifically for a “Bear after Bubble” scenario



Liquidity Planning for a Rapid 34% Market Decline



- Start** with a \$50bn Endowment at LTSAA weights
- Rapid market decline by 34%**, resulting in \$6.3bn loss: \$5.2bn in Public Markets, \$600mm in SPN, \$500mm in HF and TAA
- Rebalance using only “first responders”**, and adhering to the floating weights in Policy:
 - Assume \$350mm of capital calls
 - Make a \$500mm quarterly distribution
 - Buy \$550mm of Public Equities
 - Add back \$200mm to Cash
 - Sources:** \$1.0bn from Treasuries and \$600mm from TIPS
- Privates are marked down (typically with a delay), showing another ~\$4.4bn of loss
- Rebalance again using only “first responders”**, and adhering to the floating weights in Policy:
 - Buy another \$700mm of Public Equities
 - Sources: Treasuries, still leaving us with \$1.0bn (2.7%) of Treasuries in the Endowments
- Rebalance using hedge funds** (takes 3-6 months) and continue making the annual distribution
 - Redeem \$1.4bn from hedge funds
 - Re-establish Treasuries, TIPS, and Cash at Policy levels
 - Make another \$1.5bn of distributions as needed, mostly by selling equities

"first responders"

Bottom Line: we can fully rebalance the Endowments even after a rapid market decline of 34% with no recovery, and continue make distributions as needed – all without using any derivatives or leverage

- In fact, this is true even with a 60% market decline which would be the worst decline since the Great Depression



FY2022 Transition Plan

	Endowments				ITF				TOTAL		
	Current	FY2022 Target		Change	Current	FY2022 Target		Change	Current	Target	Change
		(%)	(\$)			(%)	(\$)				
Public Equities	15,640	30.6%	15,588	(52)	1,258	14.0%	1,420	162	16,898	17,008	110
Private Equities	12,264	24.2%	12,328	64					12,264	12,328	64
DHF	4,031	6.5%	3,311	(720)	4,351	38.0%	3,854	(497)	8,383	7,165	(1,217)
TOT GE	31,935	61.3%	31,227	(708)	5,609	52.0%	5,274	(335)	37,544	36,501	(1,043)
SPN	1,759	5.0%	2,547	788					1,759	2,547	788
Cash	1,047	1.0%	509	(538)	260	2.0%	203	(57)	1,307	712	(595)
Global Agg	4,408	4.5%	2,292	(2,116)	3,533	16.0%	1,623	(1,910)	7,941	3,915	(4,025)
Long Treasuries		2.2%	1,121	1,121		4.0%	406	406	0	1,526	1,526
SVHF	4,175	9.2%	4,687	512	741	16.0%	1,623	882	4,916	6,309	1,394
TOT SV	9,630	16.9%	8,609	(1,021)	4,534	38.0%	3,854	(679)	14,164	12,463	(1,701)
Private RE	3,066	7.3%	3,719	435					3,066	3,719	435
Public RE					218		2.5%	254	254	0	254
Nat Res	2,639	4.5%	2,292	(347)					2,639	2,292	(347)
Infrastructure	1,137	3.0%	1,528	392					1,137	1,528	392
Commodities						2.5%	254	254	0	254	254
TIPS	775	2.0%	1,019	244		5.0%	507	507	775	1,526	751
TOT RR	7,617	16.8%	8,558	941	0	10.0%	1,014	1,014	7,617	9,572	1,956
TOTAL	50,941	100.0%	50,941	0	10,143	100.0%	10,143	0	61,084	61,084	0

- The Global Agg portfolio is expected to shrink by \$340mm/month, of which \$130mm will go to Long Treasuries, \$65mm to TIPS, \$75mm to Real Estate (Private and Public) and \$70mm to Strategic Partners
 - The transition can be implemented 50% faster or 50% slower by changing these monthly flows $\pm 50\%$
- These initial estimates will change with ITF→LTF transfers, STF→LTF transfers, market moves, and other changes

Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Agenda Item: Report from Audit and Ethics Committee: Discussion and Appropriate Action Related to Proposed Amendments to the Charter of the Audit and Ethics Committee

Developed By: Team

Presented By: Handley

Type of Item: Information item; Action required by UTIMCO Board related to Charter of the Audit and Ethics Committee

Description: The Audit and Ethics Committee (the “Committee”) met on September 8, 2021. The Committee’s agenda included (1) discussion and appropriate action related to the Committee minutes; (2) discussion and appropriate action related to proposed amendments to the Charter of the Audit and Ethics Committee; (3) an update on UTIMCO’s compliance, reporting, and audit matters; and (4) a presentation of the unaudited financial statements for the Investment Funds and the Corporation. The Committee convened in Executive Session to consult with Counsel and to deliberate individual personnel matters.

The purpose of the Charter of the Audit and Ethics Committee (the “Charter”) is to outline the duties and responsibilities of the Committee. In accordance with the Charter, the Committee will periodically review and reassess the adequacy of the Charter and recommend any proposed changes to the UTIMCO Board for approval. The current Charter was approved by the UTIMCO Board on February 21, 2019.

Discussion: The Committee reviewed and approved the proposed changes to the Charter at the September 8, 2021. The following changes to the Charter are proposed:

- Page 1; *Background*, updated dates of superseding Charters
- Page 2; *Scope*, updated the date of the Investment Management Services Agreement
- Page 8; *Oversee the Corporation’s Enterprise Risk Management*, eliminated language related to integrity of investment risk management procedures and controls and integrity of risk models and modeling processes, as duplicative of the duties of the Risk Committee
- Page 8, *Oversee the Corporation’s Enterprise Risk Management*, eliminated duplicative reporting from Risk Committee, as relevant items will be reported directly in the Audit and Ethics Committee
- Page 9; *Review the Overall Duties and Responsibilities of the Chief Compliance Officer*, changed language regarding reporting line for the Chief Compliance Officer (CCO) from the Chief Operating Officer to the CEO
- Other minor editorial changes

Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Ms. de Onis reported on quarterly compliance and 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, leases, or other commercial arrangements of \$250,000 or more from the prior reporting end date of June 5, 2021, through August 27, 2021.

The Committee reviewed the unaudited financial statements for the Funds for the nine months ended May 31, 2021, and the Corporation for the eleven months ended July 31, 2021.

Recommendation: The Committee will recommend that the UTIMCO Board approve the proposed amendments to the Charter.

Reference: Charter of the Audit and Ethics Committee

**RESOLUTION RELATED TO THE
CHARTER OF THE AUDIT AND ETHICS COMMITTEE**

RESOLVED, that the amendments to the Charter of the Audit and Ethics Committee, as recommended be, and are hereby approved, in the form submitted to the Corporation's Board of Directors.

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

Charter of the Audit and Ethics Committee

Background

The Board of Directors (the "Board") of The University of Texas/Texas A&M Investment Management Company (the "Corporation") established an Audit and Ethics Committee (the "Committee") on February 22, 1996. On July 15, 1996, the Board adopted certain resolutions regarding, among other things, the Corporation's Audit and Ethics Committee Mandate (the "Mandate"). The Mandate was superseded by this Charter. -This Charter adopted by the Board on September 16, 2021, February 21, 2019, supersedes the Charter adopted by the Board on February 21, 2019, February 20, 2014.

Purpose

The primary purpose of the Committee is to assist the Board in monitoring the ethics programs and the audit, financial and compliance functions of the Corporation and the investment funds managed on behalf of The University of Texas System Board of Regents (the "UT Board") to assure the balance, transparency and integrity of published financial information. Specifically, the Committee is to assist the Board in monitoring:

- the integrity of the financial reporting process, the system of internal controls, the audit process, and the process for monitoring compliance with laws and regulations;
- the independence and performance of the Chief Compliance Officer;
- the independence and performance of the Corporation's independent auditors;
- the independence and performance of the independent auditors selected by the UT Board to audit the investment funds managed by the Corporation on their behalf;
- internal audit functions performed by the UT System Audit Office;
- independent audit functions performed by the Texas State Auditor's Office;
- the Corporation's audit policies, ethics programs, and adherence to regulatory requirements;
- the Corporation's enterprise risk management; and
- the Corporation's fraud prevention and detection system.

The Committee is responsible for maintaining free and open communication as well as effective working relationships among the Committee members, the Chief Compliance

Officer, independent external auditors, UT System Audit Office, the Texas State Auditor's Office, and management of the Corporation. To perform his or her role effectively, each Committee member will need to develop and maintain his or her skills and knowledge, including an understanding of the Committee's responsibilities and of the Corporation's activities, operations and risks.

The Committee will take all appropriate actions to set the overall tone at the Corporation for quality financial reporting, sound risk practices, and ethical behavior.

Scope

This Audit Charter sets forth the Committee's monitoring responsibilities with respect to the Corporation and the investment funds subject to the Master Investment Management Services Agreement by and between the UT Board and the Corporation effective [February 27, November 13, 2008](#)¹⁹, and any subsequent amendments. As such, the role and purpose of the Committee includes monitoring the functions and processes for both the Corporation and the investment funds managed on behalf of the UT Board.

Composition

The Committee shall be composed of at least three members of the Board; such members to be appointed from time to time by a majority vote of the Board at a meeting at which a quorum is present and approved by the UT Board as required by Section 66.08 (c)(3) of the *Texas Education Code*. Individuals who are not members of the Board may be appointed to the Committee; provided however, a majority of the Committee members shall be members of the Board of Directors. Members of the Committee must meet the independence and financial literacy requirements as defined below. A member may be removed with or without cause at any time by a vote of a majority of the Board.

Independence Requirements

The Board shall determine that all members of the Committee are independent. A person is "independent" who has no relationship with the Corporation which would interfere with his or her exercise of independence from management. In addition, Committee members would not be "independent" if during the three years prior to their appointment or at any time during their service on the Committee, they accepted, directly or indirectly, any consulting, advisory, or other compensatory fee from the Corporation apart from travel and expense reimbursements they may receive as members of the Board and its Committees.

Financial Literacy

The Board, based on its business judgment, shall determine that each member of the Committee is financially literate.

Financial Management Expertise

The Board, based on its business judgment, shall determine that at least one member of the Committee is a “financial expert.” A financial expert possesses the following attributes:

- an understanding of generally accepted accounting principles (GAAP) and financial statements;
- an ability to assess the application of GAAP in connection with accounting for estimates, accruals and reserves;
- an understanding of audit committee functions;
- experience preparing, auditing, analyzing or evaluating financial statements, or experience actively supervising persons engaged in such activities; and
- an understanding of internal controls and procedures for financial reporting.

Meetings; Quorum; Etc.

The Corporation's Bylaws state that any committee created by the Board or the Bylaws shall (i) have a chairman designated by the Board, (ii) fix its own rules or procedures, (iii) meet at such times and at such place or places as may be provided by such rules or by resolution of such committee or resolution of the Board, and (iv) keep regular minutes of its meetings and cause such minutes to be recorded in books kept for that purpose in the principal office of the Corporation, and report the same to the Board at its next regular meeting. At every meeting of any such committee, the presence of a majority of all the members thereof shall constitute a quorum, and the affirmative vote of a majority of the members present shall be necessary for the adoption by it of any action, unless otherwise expressly provided in the committee's rules or procedures or the Bylaws of the Corporation or by the Board. The Board may designate one or more Directors as alternate members of any committee, who may replace any absent or disqualified member of such committee. In the absence or disqualification of a member of a committee, the member or members present at any meeting of the committee and not disqualified from voting, whether or not constituting a quorum, may unanimously appoint the designated alternate Director to act at the meeting in the place of the absent or disqualified member.

Functions, Duties and Responsibilities

Review Financial Statements for Quality Considerations

The Committee has the following duties and responsibilities with respect to the financial statements of the Corporation and the investment funds managed on behalf of the UT Board:

- review the annual audited financial statements with management and the independent auditor, including significant issues regarding adequacy of internal controls and accounting principles and practices;
- review an analysis prepared by management and the independent auditor of significant financial reporting issues, if any, made in connection with the preparation of the financial statements;

- discuss with the independent auditor the matters required to be communicated by AU-C Section 260, *The Auditor's Communication With Those Charged With Governance*, as amended, relating to an audit of financial statements;
- discuss with the independent auditor any fraud of which the independent auditor becomes aware that involves senior management and/or which causes a material misstatement of the financial statements; and
- periodically discuss with the independent auditor the auditor's independence.

Monitor Management's Handling of Internal Controls

The Committee has the following duties and responsibilities with respect to its monitoring of the integrity of the financial reporting process and internal controls of the Corporation and the investment funds managed on behalf of the UT Board:

- review with the independent auditor all significant deficiencies and material weaknesses identified during the audit as required by AU-C Section 265, *Communicating Internal Control Related Matters Identified in an Audit*, as amended.
- review with the independent auditor any problems or difficulties the auditor may have encountered during its audit and any management letter provided by the auditor and the Corporation's response to that letter, such review to include:
 - any restrictions on the scope of activities or access to required information; and
 - any changes required in the planned scope of the audit;
- obtain reports from management and UT System Audit Office with respect to the Corporation's policies and procedures regarding compliance with applicable laws and regulations;
- when considered necessary, meet with the independent auditor and the senior personnel of the UT System Audit Office without management participation;
- meet periodically with management to review the major financial risk exposures and the steps management has taken to monitor and control such exposures;
- review significant changes to internal controls and accounting principles and practices as suggested by the independent auditor, internal auditors or management;

- review the significant reports to management prepared by the UT System Audit Office and management's responses; and
- review with the Corporation's legal counsel or other appropriate persons legal matters that may have a material impact on the financial statements, the Corporation's compliance policies and any material reports or inquiries received from regulators or governmental agencies.

Manage the Relationship with the External Auditors

The external auditors for the Permanent University Fund are selected by the UT Board. These auditors have a dual reporting responsibility, reporting to both the Audit, Compliance, and Risk Management Committee of the UT Board and to the Committee. The external auditors for the Corporation are selected by, and report to, the Board. By agreement between the UT Board and the Board, the external auditors for the other investment funds managed by the Corporation on behalf of the UT Board will be selected by the UT Board and will have a dual reporting responsibility, reporting to both the Audit, Compliance, and Risk Management Committee of the UT Board and to the Committee. The Committee may approve additional audit and non-audit services provided by the external auditor related to the Corporation and investment funds as long as the work does not impair auditor independence.

The Committee has the following specific duties and responsibilities with respect to the Corporation's independent auditors:

- recommend to the Board the appointment of the independent auditor, which firm is ultimately accountable to the Committee and the Board.
- approve the fee arrangement of the independent auditor;
- after interviewing employees of the Corporation, evaluate together with the Board the performance of the independent auditor and, if so determined by the Committee, recommend that the Board replace the independent auditor; and
- if determined by the Committee to be necessary or advisable, recommend that the Board take appropriate action to satisfy itself of the independence of the auditor.

Auditor Independence

In connection with the selection of external auditors, the Committee shall determine that:

- the public accounting firm engaged to perform the annual audit does not provide non-audit services to the Corporation contemporaneously with the audit (other than the agreed upon procedures required for compliance with the terms of the UTIMCO Compensation Program);

- the lead audit partner and the concurring (quality review) partner rotate off of the audit every 7 years, unless the Committee adopts a resolution affirmatively determining that such rotation is not required; and
- the CEO, Controller, CFO, Chief Accounting Officer, or person in an equivalent position shall not have been employed by the public accounting firm during the 1 year period preceding the audit.

Work with the Internal Audit Function

The Corporation utilizes the UT System Audit Office to perform internal audit functions hereunder with respect to the Corporation and investment funds and report directly to the Committee. The Committee has the following duties and responsibilities with respect to internal audit:

- review the independence, qualifications, activities, resources and structure of the internal audit function;
- review significant findings and recommendations made by the internal auditor and management's response and proposed implementation plan;
- review the proposed internal audit plan for the coming year to determine that it addresses key areas of risk and that there is appropriate coordination with the external auditor;
- review completed internal audits and the status of management's implementation of related recommendations; and
- receive a progress report on the internal audit plan with explanations for any deviations from the original plan.

Monitor Ethics Program

The Committee is responsible for overseeing codes of conduct/conflicts of interest and a system of addressing complaints. The Committee has the following duties and responsibilities in monitoring the ethics program:

- periodically review the Code of Ethics policy of the Corporation and recommend any proposed changes to the Policy Committee for concurrence and submission to the Board for approval;
- periodically review the process for communicating to employees and for monitoring compliance with the Code of Ethics;

- periodically evaluate and review the Corporation's compliance process;
- follow the UT System compliance guideline as outlined in *Regents' Rule* 20401 and UTS 119; and
- review procedures for the receipt, retention and treatment of complaints about accounting, internal accounting controls or auditing matters.

Oversee Regulatory Compliance

The Committee is responsible for overseeing the effectiveness of the system for assuring compliance with laws and, regulations and has the following duties and responsibilities:

- review the effectiveness of the system for monitoring compliance with laws and, regulations— and the results of management's investigation and follow-up of any fraudulent acts or non-compliance;
- obtain regular updates from management, the Chief Compliance Officer, and the Corporation's legal counsel regarding compliance matters that may have a material impact on the Corporation's and investment funds' financial statements or compliance policies;
- obtain regular updates from management and the Chief Compliance Officer regarding their consideration of all regulatory compliance matters in connection with the preparation of the financial statements; and
- review the findings of any examinations by regulatory agencies, including the Texas State Auditor's Office.

Oversee the Corporation's Enterprise Risk Management

Without limiting any of the foregoing, the Committee, along with management and other personnel, as directed by the Board, is responsible for the Corporation's enterprise risk management. Enterprise risk management assists management in achieving the Corporation's performance goals and prevents loss of resources; helps ensure effective reporting and compliance with laws and regulations; and helps avoid damage to the Corporation's reputation and associated consequences. Enterprise risk management enables management to effectively deal with uncertainty and associated risk and opportunity, enhancing the capacity to build value. The Committee has the following responsibilities related to enterprise risk management:

- evaluate the overall effectiveness of the Corporation's achievement of its objectives, as set forth in four categories:
 - Strategic – high-level goals, aligned with and supporting its mission;

- Operations – effective and efficient use of its resources;
 - Reporting – reliability and timeliness of reporting; and
 - Compliance -
 - with applicable laws and regulations;
 - with non-investment Board policies such as the Code of Ethics and Delegation of Authority, and non-investment items in the Board investment policies; and
 - with 1) investment risk management and compliance, ~~2) integrity of risk management procedures and controls, 3) integrity of risk models and modeling processes, 4) liquidity of the Permanent University Fund, General Endowment Fund, and Intermediate Term Fund; 5) compliance with the Derivative Investment Policy; and 6) the monitoring of manager mandates;~~
- evaluate whether management is setting the appropriate tone at the top by communicating the importance of enterprise risk; and
 - inquire of management, the Chief Compliance Officer, the UT System Audit Office, and the independent external auditor about significant enterprise risks or exposures to the Corporation and how these are being managed.

~~With respect to 1) investment risk management and compliance, 2) integrity of risk management procedures and controls, 3) integrity of risk models and modeling processes, and 4) liquidity of the Permanent University Fund, General Endowment Fund, and Intermediate Term Fund, 5) compliance with the Derivative Investment Policy; and 6) the monitoring of manager mandates, the Committee may rely on assurances from the Risk Committee in determining compliance.~~

Oversee Fraud Prevention and Detection

The Committee is responsible for overseeing the effectiveness of the system for the prevention and detection of fraud and has the following duties and responsibilities:

- oversee management’s arrangements for the prevention and deterrence of fraud;
- ensure that appropriate action is taken against known perpetrators of fraud; and
- ensure that the entity has appropriate antifraud programs and controls in place to identify potential fraud and ensure that investigations are undertaken if fraud is detected.

Review the Overall Duties and Responsibilities of the Chief Compliance Officer

The Chief Compliance Officer will report functionally to the Committee and administratively to the ~~CEO Senior Managing Director and Chief Operating Officer~~. The CEO ~~and Chief Investment Officer~~ will nominate the Chief Compliance Officer for hiring by the Committee. The Committee has exclusive dismissal authority. The Chairman of the Committee and the CEO ~~and Chief Investment Officer~~ will determine the Chief Compliance Officer’s individual

performance goals. The Committee and the CEO ~~and Chief Investment Officer~~ will determine the achievement of the Chief Compliance Officer's individual performance goals, and will make joint recommendations to the Compensation Committee as to base salary and performance awards for the Chief Compliance Officer. ~~The Chief Compliance Officer will report compliance activities directly to the Committee at its regular meetings and to the chair between meetings. The Chief Compliance Officer will develop an annual plan for review by the Committee. The CEO Senior Managing Director and Chief Operating Officer will direct day-to-day responsibilities of the Chief Compliance Officer with oversight by the Committee.~~

Other Duties

The Committee has the following additional duties and responsibilities:

- make regular reports (at least twice each calendar year) to the Board regarding the Committee's activities and such other reports as may be requested by the Board;
- periodically review the adequacy of this Charter and recommend any proposed changes to the Board for approval;
- perform such additional special functions, duties or responsibilities related thereto as may from time to time be designated by the Board Chairman;
- evaluate the Committee's own performance, both of individual members and collectively, on a periodic basis; and
- perform any other activities consistent with this Charter, the Corporation's Bylaws, and applicable laws as the Committee or the Board deems necessary or appropriate.

Powers and Limitations

In discharging its responsibilities, the Committee will have unrestricted access to members of management, employees, and relevant information it considers necessary to discharge its duties. The Committee also will have unrestricted access to records, data, and reports. The Committee shall have the authority to retain special legal, accounting or other consultants to advise the Committee. The Committee may request any officer or employee of the Corporation, the Corporation's outside legal counsel or an employee in the UT System Audit Office to attend any meeting of the Committee or to meet with any members of, or consultants to, the Committee.

Approved by the Board of Directors on ~~September 16, 2021~~ February 21, 2019.

Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Agenda Item: Report from Risk Committee: Discussion and Appropriate Action Related to Proposed Amendments to the Charter of the Risk Committee

Developed By: Team

Presented By: Weaver

Type of Item: Information item; Action required by UTIMCO Board related to Charter of the Risk Committee

Description: The Risk Committee (“Committee”) met on September 8, 2021. The Committee’s agenda included (1) discussion and appropriate action related to the approval of minutes of its June 17, 2021 meeting and joint meeting of the Policy and Risk Committees; (2) discussion and appropriate action related to proposed amendments to the Charter of the Risk Committee; (3) review and discussion of compliance reporting; and (4) market and portfolio risk update.

The purpose of the Charter of the Risk Committee (the “Charter”) is to outline the duties and responsibilities of the Committee. In accordance with the Charter of the Committee, the Committee will periodically review and reassess the adequacy of the Charter and recommend any proposed changes to the UTIMCO Board for approval. The current Charter was approved by the UTIMCO Board on March 24, 2020.

Discussion The Committee reviewed and approved the proposed changes to its Charter. The following changes to the Charter are proposed:

- Page 1; *Title*, rename the Committee the “Investment Risk Committee” to focus the Committee on investment risks rather than operational or compliance risks
- Page 1; *Purpose*, remove “the monitoring of economic and trade sanctions compliance” as a responsibility of the committee, as the trade sanctions policy has been eliminated, and trade sanctions compliance has been outsourced
- Page 2; *Duties and Responsibilities*, eliminated duplicative compliance reporting to the Audit and Ethics Committee
- Page 2; *Duties and Responsibilities*, modified language to require compliance reporting only in the event it is requested by the Committee or if a compliance violation occurs
- Page 4; *Monitoring of Manager Mandates*, modified language to require compliance reporting only in the event certain manager mandates are exceeded
- Page 4; *Monitoring of Economic and Trade Sanctions Compliance*, removed this language, as the trade sanctions policy has been eliminated, and trade sanctions compliance has been outsourced
- Other minor editorial changes

Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Ms. de Onis reviewed the quarterly compliance reporting with the Committee. The Committee also heard an update on the market and portfolio risk from Dr. Yoeli.

Recommendation: The Committee will recommend that the UTIMCO Board approve the proposed amendments to the Charter.

Reference: Charter of the Risk Committee

**RESOLUTION RELATED TO THE
CHARTER OF THE RISK COMMITTEE**

RESOLVED, that the amendments to the Charter of the Risk Committee, as recommended be, and are hereby approved, in the form submitted to the Corporation's Board of Directors.

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

Charter of ~~the~~ the Investment Risk Committee

Background

The Board of Directors (the "Board") of The University of Texas/Texas A&M Investment Management Company (the "Corporation") established a Liquidity Committee on November 20, 2003. The name of the Liquidity Committee was changed to the Risk Committee (the "Committee") on May 19, 2005 to reflect the expanded responsibilities of the Committee. The Risk Committee was renamed the Investment Risk Committee at the Board's September 16, 2021 meeting to clarify the responsibilities of the Committee. This Charter adopted by the Board on September 16, 2021~~February 21, 2019~~, supersedes the Charter adopted by the Board on March 24, 2020~~February 20, 2014~~.

Purpose

The primary purpose of the Committee is to provide oversight and monitor

- 1) investment risk management and compliance;
- 2) the integrity of investment risk management procedures and controls;
- 3) the integrity of risk models and modeling processes;
- 4) liquidity of the Permanent University Fund (PUF), the General Endowment Fund (GEF), and the Intermediate Term Fund (ITF) (individually referred to as the "Fund" and collectively, the "Funds");
- 5) ~~compliance~~the monitoring of with the Derivative Investment Policy; and
- 6) ~~the monitoring of certain~~ manager concentration limits, mandates; and
- 7) ~~the monitoring of economic and trade sanctions compliance.~~

Composition

The Committee shall be composed of at least three members of the Board appointed from time to time by a majority vote of the Board at a meeting at which a quorum is present. Individuals who are not members of the Board may be appointed to the Committee; provided however, a majority of the Committee members shall be members of the Board ~~of Directors~~. A member may be removed with or without cause at any time by a majority vote of the Board.

Meetings; Quorum; Etc.

The Corporation's Bylaws state that any committee created by the Board or the Bylaws, including the Committee, shall (i) have a chairman designated by the Board, (ii) fix its own rules or procedures, (iii) meet at such times and at such place or places as may be provided by such rules or by resolution of the Committee or resolution of the Board, and (iv) keep regular minutes of its meetings and cause such minutes to be recorded in books kept for that purpose in the principal office of the Corporation, and report the same to the Board at

its next regular meeting. At every meeting of the Committee, the presence of a majority of all the members thereof shall constitute a quorum, and the affirmative vote of a majority of the members present shall be necessary for the adoption by it of any action, unless otherwise expressly provided in the Committee's rules or procedures or the Bylaws of the Corporation or by the Board. The Board may designate one or more Directors as alternate members of the Committee, who may replace any absent or disqualified member of the Committee. In the absence or disqualification of a member of the Committee, the member or members present at any meeting of the Committee and not disqualified from voting, whether or not constituting a quorum, may unanimously appoint the designated alternate Director to act at the meeting in the place of the absent or disqualified member.

Duties and Responsibilities

~~The Committee will provide assurances to the Audit and Ethics Committee on a periodic basis regarding the following items so the Audit and Ethics Committee may evaluate them as a part of the Audit and Ethics Committee's evaluation of the Corporation's overall enterprise risk management.~~

Investment Risk Management and Compliance: The Committee has the following duties and responsibilities related to the oversight and monitoring of investment and compliance risk:

- The Committee will monitor actual risk levels in the PUF, GEF, and ITF to assess whether current risk levels are within the bounds established by the Investment Policies adopted by the UT Board of Regents;
- The Committee will monitor trends and changes in actual risk levels in the PUF, GEF, and ITF and report any significant changes to the Board; and
- The ~~Chief Compliance Officer will report compliance with~~ Committee will monitor the compliance processes related to the Derivative Investment Policy, risk targets, asset class targets and ranges, and investment-related restrictions in the Investment Policy statements.

Integrity of risk management procedures and controls: The Committee has the following duties and responsibilities related to the oversight and monitoring of the risk management procedures and controls:

- The Committee will understand and review how the information provided by the Managing Director - Risk is reported to the Chief Compliance Officer; and
- The Committee will monitor the reports provided by the Managing Director - Risk to the Chief Compliance Officer.

Integrity of risk models and modeling processes: The Committee has the following duties and responsibilities related to the oversight and monitoring of the risk models and modeling processes:

- The Committee will monitor the investment risk models, tools, and processes used by Corporation employees; and
- The Committee will review and understand the data used in the risk models.

Liquidity: The Committee has the following duties and responsibilities related to the oversight and monitoring of liquidity:

- The Committee (or the Board), after consultation with The University of Texas System Office of Business Affairs, must review and approve any new investment that would cause the allocation for illiquid investments in the PUF, GEF, or ITF to exceed the permitted maximum specified in the Liquidity Policy for the respective Fund's total portfolio.
- The Committee (or the Board), after consultation with The University of Texas System Office of Business Affairs, must review and approve, before any such action or actions are taken, any proposed changes in allocations among existing investments that would cause the allocation for illiquid investments in the PUF, GEF, or ITF to exceed the permitted maximum specified in the Liquidity Policy for the respective Fund's total portfolio.
- The Committee (or the Board) must review and approve, before any such action or actions are taken, any proposed investment action or actions that would increase the actual investment position in illiquid investments in the PUF, GEF, or ITF by 10% or more of a respective Fund's total asset value.
- The Committee must review and approve, before any such action or actions are taken, any new commitments for the PUF or GEF, if the actual amount of such Fund's unfunded commitments, as defined in the Liquidity Policy, exceeds or, as a result of the commitment, would exceed the Maximum Permitted Amount specified in the Liquidity Policy.
- In the event that market actions cause actual investment positions in illiquid investments to exceed the permitted maximum illiquidity levels specified in the Liquidity Policy for the PUF, GEF, or ITF, the Committee (or the Board) must review and approve the Chief Investment Officer's proposed remedy or strategy for eliminating the exception or deviating from the Liquidity Policy before any such actions are taken.
- The Committee (or the Board) must approve the use of swaps, derivatives, or other third party arrangements to alter the liquidity status of any investment classified as illiquid.

Committee review of new investments above the permitted maximums will supplement, rather than replace, the procedures established by the Board for the approval of new investments.

~~*Compliance with Monitoring*~~ the Derivative Investment Policy: The Committee has the following duties and responsibilities related to monitoring compliance with the Derivative Investment Policy:

- The Committee will review the comprehensive report of all outstanding derivative investments, by type, entered into during the period being reported, for both internal managers and external managers operating under agency agreements.

Monitoring of Certain Manager Mandates: The Committee has the following duties and responsibilities related to the monitoring of internal and external investment mandates:

- The ~~Chief Compliance Officer will report compliance with~~ Committee will review manager mandates (excluding passive exposure), aggregated across all Funds and Assets Classes, resulting ~~ing~~ in six percent (6%) or more exposure relative to the total Funds (excluding the ITF for Private Equity) ~~on a quarterly basis~~;
- The Committee will review and approve the CEO's recommendation regarding an appropriate course of action for any manager mandate resulting in six percent (6%) or more exposure relative to the total Funds (excluding the ITF for Private Equity) or determine a different appropriate level of exposure.

~~*Monitoring of Economic and Trade Sanctions Compliance:* The Committee has the following duties and responsibilities related to the monitoring of economic and trade sanctions compliance:~~

- ~~• The Committee will monitor compliance with economic and trade sanctions; and~~
- ~~• The Committee will receive periodic reports from the Chief Compliance Officer regarding the Office of Foreign Assets Control (OFAC) Compliance Procedure.~~

Other Duties

In addition to its duties and responsibilities outlined above, the Committee shall perform such additional special functions, duties or responsibilities related thereto as may from time to time be designated to it by the Board Chairman. In discharging its responsibilities, the Committee may obtain advice and assistance from Board consultants, U.T. System employees, and other s individuals as it deems necessary.

The Committee will evaluate the Committee's performance on a periodic basis, periodically review the adequacy of this Charter and submit this Charter to the Board for its approval; and perform any other activities consistent with this Charter, the Corporation's Bylaws, and applicable laws as the Committee or the Board deems necessary or appropriate.

Approved by the Board of Directors on September 16, 2021 ~~February 21, 2019~~.

Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Agenda Item: Report from Cyber Risk Committee

Developed By: Moeller

Presented By: Rothrock

Type of Item: Information Item

Description: The Cyber Risk Committee (the “Committee”) met on September 8, 2021. The Committee’s agenda included discussion and appropriate action related to the approval of minutes of June 17, 2021, meeting. The Committee also met in Executive Session to receive an update on computer security assessments related to information resources technology including security assessments.

Recommendation: None

Reference: None

Agenda Item
UTIMCO Board of Directors Meeting
September 16, 2021

Agenda Item: Report on 2022 Meeting Dates

Developed By: Harris

Presented By: Harris

Type of Item: Information item

Description: This agenda item presents the 2022 UTIMCO Board Meeting schedule and the Committee meetings schedule.

Recommendation: None

Reference: UTIMCO 2022 Meeting Dates



UTIMCO Meeting Dates

210 W. Seventh Street, Suite 1700
Austin, TX 78701

2022 Draft							
	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						2/23-24	2/16-18
March	3/3	3/3	3/3	3/3	3/10		
April							
May						5/4-6	5/18-20
June (Annual)	6/2	6/2	6/2	6/2	6/9		
July							
August						8/24-25	8/9-11
September	9/8	9/8	9/8	9/8	9/15		
October							
November						11/16-17	11/9-11
December	12/1	12/1	12/1	12/1			
		12/8			12/8		