

29th Annual

OKLAHOMA PUBLIC FUNDS TRUSTEE EDUCATION CONFERENCE

presented by



OKLAHOMA POLICE PENSION AND RETIREMENT SYSTEM



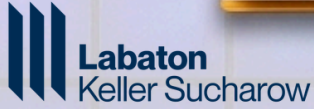
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**Durant, OK
September 23-25, 2026**

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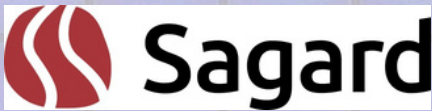
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Attorneys and Counselors at Law

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BLB&G
Bernstein Litowitz Berger & Grossmann LLP



**Mondrian
INVESTMENT PARTNERS**

RESTAURANTS

- 1 Starbucks®–Grand Casino
- 2 Butterfields Buffet
- 3 Grand Café & Bakery
- 4 Bamboo Noodle Bar
- 5 Smashburger®
- 6 Papa Johns®
- 7 Cinnabon®
- 8 Krispy Krunchy Chicken®
- 9 Guy Fieri's American Kitchen + Bar
- 10 Gilley's
- 11 1832 Steakhouse
- 12 Salt & Stone
- 13 Starbucks®–Sky Casino
- 14 Luna
- 15 Snao Bar
- 16 The League Sports Bar
- 17 Italia Kitchen
- 18 South Hot Chicken
- 19 The Pit
- 20 Velvet Taco®

AMENITIES

- 21 Grand/Spa Hotel Check-In
- 22 Spa Tower Hotel
- 23 Grand Tower Hotel
- 24 The Spa
- 25 The Oasis Pool
- 26 VIP Lounge
- 27 ONYX Lounge
- 28 Fitness Center
- 29 AQUA Pool
- 30 AQUA Check-In
- 31 Sky Tower Hotel

ENTERTAINMENT

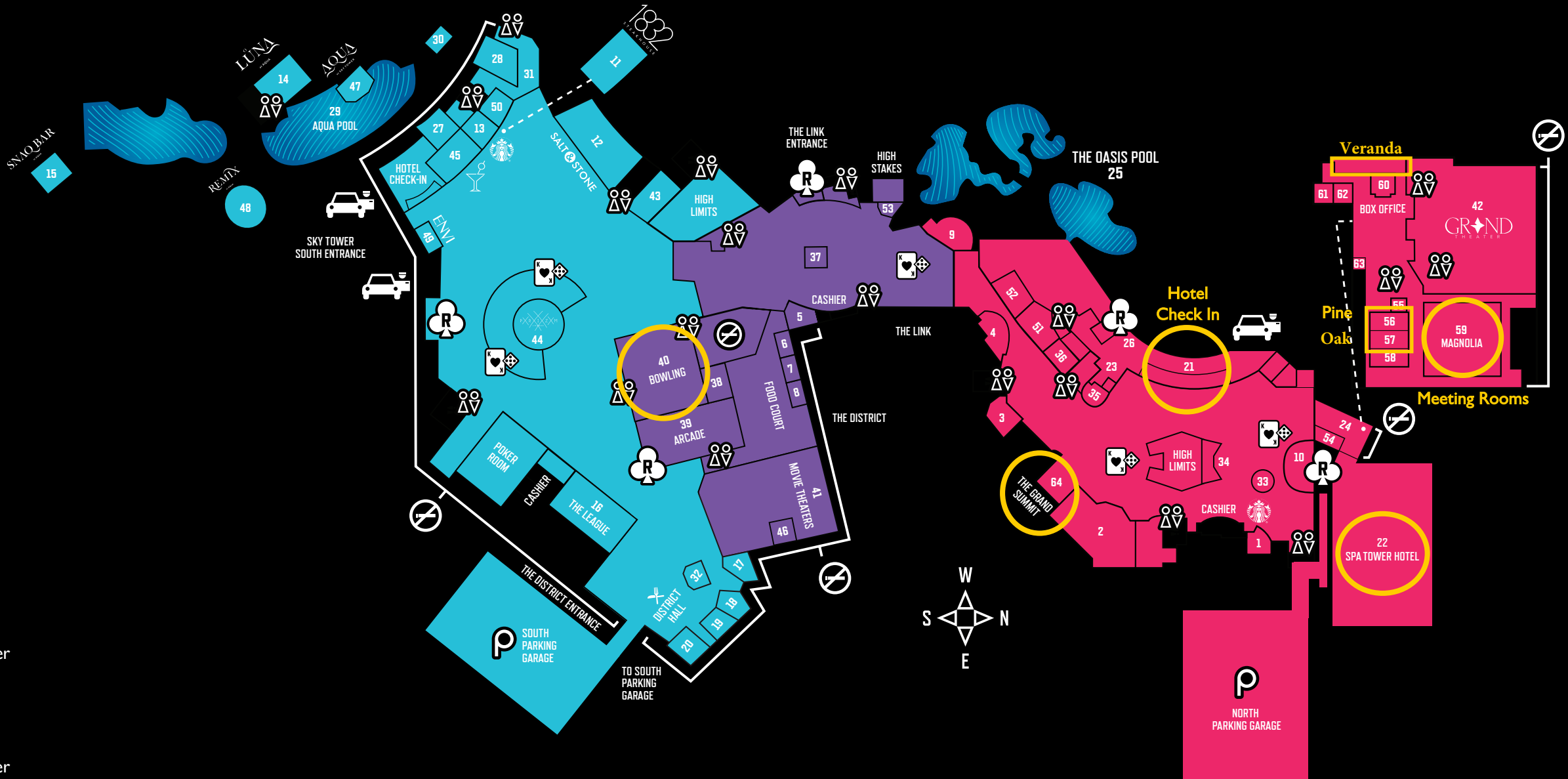
- 32 Slush'D
- 33 North Brew
- 34 Platinum Lounge
- 35 The Reserve
- 36 Red River Lounge
- 37 Mason Jar Bar
- 38 Tailgater's Lounge
- 39 Arcade
- 40 Bowling Alley
- 41 Movie Theaters
- 42 Grand Theater
- 43 ONYX Bar
- 44 Prizm Lounge
- 45 Lobby Bar
- 46 Intermission Bar
- 47 AQUA Bar
- 48 Remix

RETAIL

- 49 ENVI
- 50 Essentials Sky Tower
- 51 Bordeaux
- 52 Hudson's
- 53 Longitude
- 54 Essentials Spa Tower

CONFERENCE CENTERS

- 55 Cypress
- 56 Pine
- 57 Oak
- 58 Cedar
- 59 Magnolia
- 60 Redbud
- 61 Willow
- 62 Pecan
- 63 Business Center
- 64 The Grand Summit



MAP KEY

- Rewards Club
- Valet/Bellhop
- Table Games
- Restrooms
- Parking
- Non-Smoking

COLOR KEY

- Grand Casino
- Link Casino
- Sky Casino

29th Annual Oklahoma Public Funds Trustee Education Conference

Aaron X. Montano	AllianceBernstein
Aimee Maddera	Oklahoma City Employee Retirement System
Akash Patel	J.P. Morgan Asset Management
Amanda Rekemeier	Bernstein Litowitz Berger & Grossmann LLP
Andrew Boyd	Oklahoma Public Employees Retirement System
Andy Schallhorn	Oklahoma Public Employees Retirement System
Angel Odom	Oklahoma City Employee Retirement System
Angela Berry	Teachers' Retirement System of Oklahoma
Anthony Morrison	City of Edmond, OK, Employees' Retirement Plan
Ashish Pai	Oklahoma Public Employees Retirement System
Ashley Alson	Northern Trust Asset Management
Ashley Hyotte	Barings
Beau Ratke	Oklahoma Law Enforcement Retirement System
Ben Stewart	Humphreys Capital
Beth Hallmark	Teacher Retirement System of Texas
Brad Jolliff	City of Edmond, OK, Employees' Retirement Plan
Brad Tillberg	Oklahoma Public Employees Retirement System
Brandon Meyer	Teachers' Retirement System of Oklahoma
Brandy Manek	Teachers' Retirement System of Oklahoma
Brandy Reames	Oklahoma Public Employees Retirement System
Brent Baggett	Oklahoma Firefighters Pension and Retirement System
Brett Logan	Oklahoma City Employee Retirement System
Bruce Davis	Oklahoma City Employee Retirement System
Caitlin Russell	J.P. Morgan Asset Management
Cary Provence	Oklahoma Firefighters Pension and Retirement System
Casey Baker	Oklahoma Firefighters Pension and Retirement System
Casey Cass	Barrow Hanley Global Investors
Catherine Bartlett	Teachers' Retirement System of Oklahoma
Chance Tuttle	Oklahoma Law Enforcement Retirement System
Chase Rankin	Oklahoma Firefighters Pension and Retirement System
Chris Cook	Oklahoma Police Pension and Retirement System
Chris Smith	Oklahoma Law Enforcement Retirement System
Chris Whatley	Oklahoma Municipal Retirement Fund
Clayton Johnston	Barrow Hanley Global Investors

29th Annual Oklahoma Public Funds Trustee Education Conference

Connor Watson	Boston Partners
Cristine Turner	Cohen Milstein Sellers & Toll, LLP
Dan Drum	Warwick Investment Group
Dana Cramer	Oklahoma Firefighters Pension and Retirement System
Darcie Gordon	Oklahoma Police Pension and Retirement System
David Lubchenco	Chautauqua Capital Management, a division of Baird
Debbie McMillen	Asset Consulting Group
Dessa Herl	Teachers' Retirement System of Oklahoma
Diana O'Neal	Oklahoma Public Employees Retirement System
Dionda Browder	EMBARK (Central Oklahoma Transportation and Parking Authority)
Donna Doolen	Oklahoma Municipal Retirement Fund
Douglas Anderson	Mariner
Duane Michael	Oklahoma Law Enforcement Retirement System
Dylan Terhune	Oklahoma Firefighters Pension and Retirement System
Ed Petersen	Oklahoma Public Employees Retirement System
Ed Tinker	Oklahoma Municipal Retirement Fund
Edward Romero	Commissioners of the Land Office
Emily Fraser	Bain Capital
Erin Kennedy	Oklahoma Public Employees Retirement System
Ernest Johnson	ApexOne Investment Partners
Felicia Clark	Oklahoma Law Enforcement Retirement System
Gabriela Santos	J.P. Morgan Asset Management
Garrett Aylor	PIMCO
Garrett Washenko	Brookfield Asset Management
George Tarlas	Asset Consulting Group
Gerry Esparza	Constitution Capital Partners
Ginger Sigler	Oklahoma Police Pension and Retirement System
Gordon Gingrich	Oklahoma Firefighters Pension and Retirement System
Grace Chua	Orbis Investments
Greg Buckley	Oklahoma Municipal Retirement Fund
Greg Winters	Teachers' Retirement System of Oklahoma
Jake Brenner	Apollo Global Management
Jake Meyer	Humphreys Capital
Jake Siebenaler	Oklahoma City Employee Retirement System

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Jared Haines	Oklahoma Public Employees Retirement System
Jason Pulos	Asset Consulting Group
Jay Green	Harding Loevner
Jeanna Jordan	Oklahoma City Employee Retirement System
Jericha Bickell	Oklahoma Public Employees Retirement System
Jim Klaus	Silvercrest Asset Management Group
Jim Luckett	Oklahoma Municipal Retirement Fund
Joanna McSpadden	Oklahoma City Employee Retirement System
Jodi Cox	Oklahoma Municipal Retirement Fund
Joe Nugent	Asset Consulting Group
John Toombs	Oklahoma Law Enforcement Retirement System
John Dashtara	PIMCO
John Fischer	Commissioners of the Land Office
John Fothergill	Employees' Retirement System of Tulsa County
John Meyer	Loomis, Sayles & Company
John Rochford	Tocqueville Asset Management
John Trydahl	Income Research + Management
Jonathan Woodward	Teachers' Retirement System of Oklahoma
Joseph Cappello	Teachers' Retirement System of Oklahoma
Joseph Fox	Oklahoma Public Employees Retirement System
Joseph Zock	Tocqueville Asset Management
Justin Hildebrand	Agincourt Capital Management, LLC
K.W. Cryer	Warwick Investment Group
Karla Nickels	Oklahoma City Employee Retirement System
Karson Wattles	Northern Trust Asset Management
Kate Richard	Warwick Investment Group
Kathy Henton	City of Edmond, OK, Employees' Retirement Plan
Katie Sinderson	Bernstein Litowitz Berger & Grossmann LLP
Kelsey Ardies	Teachers' Retirement System of Oklahoma
Kenneth Yates	Employees' Retirement System of Tulsa County
Keri Gomez	Teachers' Retirement System of Oklahoma
Kevin Darrow	Oklahoma Municipal Retirement Fund
Kieran Fitzpatrick	CD&R
Kris Olsen	TPG

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Kristen Wilson	Oklahoma Law Enforcement Retirement System
Kyle Ridenour	Oklahoma Municipal Retirement Fund
Lara Goldstone	Labaton Keller Sucharow
Leslie Griffith	Oklahoma Police Pension and Retirement System
Lisa Van Liew	Teachers' Retirement System of Oklahoma
Lucy Goodling	Blackstone
Lynne Bajema	Oklahoma Public Employees Retirement System
Marc Dreyer	Employees' Retirement System of Tulsa County
Marc Edwards	Phillips Murrah
Marc Pierce	Oklahoma Public Employees Retirement System
Mark Giura	Loomis, Sayles & Company
Mark Mason	Oklahoma Police Pension and Retirement System
Mark Mooers	McGinty Road Partners
Marley Kornreich	Orbis Investments
MaryEllen Layton	Oklahoma City Employee Retirement System
Matt Clarkson	Commissioners of the Land Office
Matt Hanson	AllianceBernstein
Matthew Considine	Bain Capital
Matthew Kesser	Oklahoma Public Employees Retirement System
Maurice Torres	PGIM
Melissa Reames	Oklahoma Municipal Retirement Fund
Michael Canty	Labaton Keller Sucharow
Michael Willis	Employees' Retirement System of Tulsa County
Michelle McRee	Oklahoma Public Employees Retirement System
Mike Brown	Oklahoma Police Pension and Retirement System
Mike Shaw	EMBARK (Central Oklahoma Transportation and Parking Authority)
Mike Truitt	Oklahoma City Employee Retirement System
Mitchel Massie	Oklahoma City Employee Retirement System
Morgan Doyle	Garcia Hamilton & Associates
Nagesh Chopra	Oklahoma City Employee Retirement System
Nathan Robinson	Barings
Nathan Watson	City of Edmond, OK, Employees' Retirement Plan
Nykkia Harris	Oklahoma Police Pension and Retirement System
Patrick Egan	Berman Tabacco

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Patty Karolczak	Asset Consulting Group
Paul Thompson	Oklahoma Public Employees Retirement System
Phillip Chandler	Commissioners of the Land Office
Quyen Do	Oklahoma Public Employees Retirement System
Rachael Johnson	Employees' Retirement System of Tulsa County
Rachelle Hochman	Apollo Global Management
Randal Lewis	Oklahoma City Employee Retirement System
Regina Story	Oklahoma Municipal Retirement Fund
Renda Reese-Davis	Oklahoma Law Enforcement Retirement System
Rhonda Cavagnaro	Saxena White
Richard Lorant	Cohen Milstein Sellers & Toll, LLP
Richard Mahoney	Oklahoma City Employee Retirement System
Rick Heitzmann	FirstMark
Robert Johnston	Oklahoma Municipal Retirement Fund
Robert Ward	Teachers' Retirement System of Oklahoma
Ross Lawyer	Oklahoma Law Enforcement Retirement System
Ryan Falls	Milliman
Ryan M. Schrader, CFA	Mondrian Investment Partners
Sarah Ashmore	Oklahoma Public Employees Retirement System
Sarah Green	Teachers' Retirement System of Oklahoma
Sarah Khorasanee McGrath	Berman Tabacco
Scott Van Horn	Oklahoma Public Employees Retirement System
Sean Ruark	Oklahoma Police Pension and Retirement System
Shannon Bolton	StepStone Group
Sharone BenEzra	TPG
Shaun Barnett	Oklahoma Municipal Retirement Fund
Shelly Paulk	Oklahoma Public Employees Retirement System
Sophie Bullard	StepStone Group
Stefanie Leverette	Saxena White
Stephen Baldrige	Oklahoma Public Employees Retirement System
Stephen Simpkin	I Squared Capital
Stephen Streeter	Teachers' Retirement System of Oklahoma
Tamara Johnson	Oklahoma Municipal Retirement Fund
Tara Harris	Oklahoma Public Employees Retirement System

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Taylor Atherton	Oklahoma City Employee Retirement System
Teresa Green	Oklahoma Firefighters Pension and Retirement System
Terri Phillips	Teachers' Retirement System of Oklahoma
Tim Strakosch	Boston Partners
Toni Kizer	Employees' Retirement System of Tulsa County
Traci Scullaw	Employees' Retirement System of Tulsa County
Trevour Story	Oklahoma Law Enforcement Retirement System
Trey Smith	Cerberus
Vanessa Hampton	Agincourt Capital Management, LLC
William Strange	Milliman
William Whitman	NCPERS
Yvette Duenas	Garcia Hamilton & Associates

29th Annual Oklahoma Public Fund Trustee Education Conference

September 23-25, 2026

CONTINUING EDUCATION CERTIFICATION

Choctaw Casino, Durant
4216 S Hwy US-69
Durant, OK 74701

Name _____ Agency/Fund _____

Address _____

City, State, Zip _____

Phone _____ Email _____

Topic	Presenter	CPE Time	Initial if Attended
Wednesday, September 23, 2026			
2:00 pm New Trustee Education - Jeopardy	Doug Anderson <i>Mariner</i>	45 minutes	
3:15 pm What to Know Before Meeting with Your Actuary	Ryan Falls <i>Milliman</i>	45 minutes	
Thursday, September 24, 2026			
9:00 am Divergences Amidst the AI Capex Surge: A Guide to the Markets	Gabriella Santos <i>JP Morgan</i>	45 minutes	
10:00 am Bring Your Own Power (BTM), the Solution to Power Cost Escalation	Bob Purgason <i>Wildfork Power Solutions</i>	30 minutes	
10:30 am Building an AI Strategy: Lessons from the Teacher Retirement System of Texas	Beth Hallmark <i>Teacher Retirement System of Texas</i>	30 minutes	
11:15 am The Fiduciary Playbook	Benita Harper <i>Aon Consulting</i>	45 minutes	
1:00 pm Advice for Investing Institutions	Howard Marks <i>Oaktree Capital Management</i>	60 minutes	
2:15 pm A View from Washington	Libby Cantrill <i>PIMCO</i>	45 minutes	
3:15 pm Unbiased: How to Manage Risk in the Gray Zone	Andy Fastow <i>Former CFO for Enron</i>	60 minutes	
Friday, September 25, 2026			
9:00 am The Role of Venture Capital in the World of Artificial Intelligence	Joe Nugent <i>ACG</i> Rick Heitzman <i>FirsMark</i>	45 minutes	
10:00 am Oklahoma and Regional Economic Update	Courtney Cowley <i>Kansas City Federal Reserve</i>	45 minutes	
10:45 am Jeopardy	ACG	45 minutes	

Signature of Participant

Signature of Conference Host

29th Annual Oklahoma Public Fund Trustee Education Conference

Past Hosts & Conference Locations

1.	1997	Police	Shangri-La Resort
2.	1998	Teachers	Shangri-La Resort
3.	1999	OPERS	Shangri-La Resort
4.	2000	Firefighters	Shangri-La Resort
5.	2001	OLERS	Quartz Mountain Lodge
6.	2002	Teachers	Tulsa DoubleTree Warren Place
7.	2003	OkMRF	OSU Student Union/Atherton Hotel
8.	2004	Police	OSU Student Union/Atherton Hotel
9.	2005	OPERS	OSU Conoco Phillips Center/Atherton Hotel
10.	2006	Firefighters	OSU Conoco Phillips Center/Atherton Hotel
11.	2007	OLERS	OSU Conoco Phillips Center/Atherton Hotel
12.	2008	OKC ERS	OSU Conoco Phillips Center/Atherton Hotel
13.	2009	Teachers	OSU Conoco Phillips Center/Atherton Hotel
14.	2010	OkMRF	OSU Conoco Phillips Center/Atherton Hotel
15.	2011	Police	OSU Conoco Phillips Center/Atherton Hotel
16.	2012	OPERS	OSU Conoco Phillips Center/Atherton Hotel
17.	2013	Firefighters	Renaissance Tulsa Hotel & Convention Center
18.	2014	OLERS	National Center for Employee Development
19.	2015	OKC ERS	National Center for Employee Development
20.	2016	Teachers	Renaissance Tulsa Hotel and Convention Center
21.	2017	OkMRF	Chickasaw Resort & Conference Center
22.	2018	Police	Hard Rock Hotel & Casino Tulsa
23.	2019	OPERS	Hyatt Regency Tulsa
24.	2021	Firefighters	Shangri-La Resort
25.	2022	OLERS	The DoubleTree Tulsa-Warren Place
26.	2023	OKC ERS	Choctaw Casino & Resort
27.	2024	Teachers	Hyatt Regency Tulsa Downtown
28.	2025	OkMRF	Stoney Creek Hotel
29.	2026	Police/Tulsa Co ERS	Choctaw Casino & Resort

29th Annual Oklahoma Public Fund Trustee Education Conference

Agenda September 23-25, 2026

Choctaw Casino & Resort
4216 S. Highway 69/75
Durant, Oklahoma 74701

Wednesday, September 23, 2026

All Sessions will be held in Magnolia Rooms 1,6,7

- 8:30 am **Pre-Conference Event Golf Scramble**
Chickasaw Point Golf Club
Shotgun Start
12428 Chickasaw Pointe Road
Kingston, OK 73439
- 1:00 pm **Registration: Magnolia Ballroom Hallway**
- 2:00 pm **Session 1: New Trustee Education - Investments**
Speaker: Doug Anderson, Senior Institutional Advisor
Mariner Wealth Advisors
- 2:45 pm **Session 2: Value of NCPERS Membership**
Speaker: William Whitman, Director, Membership & Strategic Alliances
National Conference on Public Employee Retirement Systems
- 3:00 pm **Break**
- 3:15 pm **Session 3: What to Know Before Meeting with Your Actuary**
Speaker: Ryan Falls, Principal & Consulting Actuary
Milliman
- 5:00 pm **Reception: The Veranda**
- 6:30 pm **Karaoke: The Grand Summit**

Thursday, September 24, 2026

All Sessions will be held in Magnolia Rooms 1,6,7

- 7:00 am **Breakfast: Magnolia 2-5**
- 8:00 am **Registration: Magnolia Ballroom Hallway**
- 8:45 am **Welcome:** Tammye Gwin, Senior Executive Officer of Strategic Development
Choctaw Nation of Oklahoma
- 9:00 am **Session 4: Divergences Amidst the AI Capex Surge: A Guide to the Markets**
Speaker: Gabriella Santos, Chief Market Strategist - Americas
J.P. Morgan Asset Management
- 9:45 am **Break**
- 10:00 am **Session 5: Bring Your Own Power (BTM), the Solution to Power Cost Escalation**
Speaker: Bob Purgason, CEO & Co-Founder
Wildfork Power Solutions
- 10:30 am *Speaker:* **Building an AI Strategy: Lessons from the Teacher Retirement System of Texas**
Beth Hallmark, Chief Communications Officer
Teacher Retirement System of Texas
- 11:00 am **Break**

29th Annual Oklahoma Public Fund Trustee Education Conference

Agenda September 23-25, 2026

11:15 am	Session 6: The Fiduciary Playbook <i>Speaker:</i> Benita Harper, Associate Partner Aon Fiduciary Services Practice
12:00 pm	Lunch: Magnolia 2-5
1:00 pm	Session 7: Advice for Investing Institutions <i>Speaker:</i> Howard Marks, Co-Chairman Oaktree Capital Management, L.P.
2:00 pm	Break
2:15 pm	Session 8: A View from Washington <i>Speaker:</i> Libby Cantrill, Managing Director & Head of Public Policy PIMCO
3:00 pm	Break
3:15 pm	Session 9: Unbiased: How to Manage Risk in the Gray Zone <i>Speaker:</i> Andrew Fastow Principal at KeenCorp, Former CFO of Enron
6:00 pm	Dinner: The Grand Summit
8:00 pm	Bowling: Bowling Alley

Friday, September 25, 2026

All Sessions will be held in Magnolia Rooms 1,6,7

7:30 am	Breakfast: Oak & Pine Room
9:00 am	Session 10: The Role of Venture Capital in the World of Artificial Intelligence <i>Speaker:</i> Joe Nugent, Director - Asset Consulting Group Rick Heitzman, Co-Founder and Partner - Firstmark
9:45 am	Break
10:00 am	Session 11: Oklahoma and Regional Economic Update <i>Speaker:</i> Courtney Cowley, Assistant Vice President & Oklahoma City Branch Executive Federal Reserve Bank of Kansas City
10:45 am	Session 12: Jeopardy
11:30 am	Conference Wrap Up/Evaluations/Final Grand Prize Drawing

29th Annual Oklahoma Public Fund Trustee Education Conference

Session 1

New Trustee Education – Investments *Jeopardy Style*

Doug Anderson
Mariner Wealth Advisors

29th Annual Oklahoma Public Fund Trustee Education Conference



Mariner Wealth Advisors

Doug Anderson, CPFA, Senior Institutional Advisor works extensively with plan sponsors supporting their defined benefit and defined contribution plans while also servicing some of the firm's foundation and endowment clients. He serves his client base by optimizing investment portfolios, conducting investment manager due diligence reviews, selecting investment managers, developing investment policy guidelines, preparing performance-monitoring reports, and conducting trustee education on a wide range of investment topics. He brings diversity of experience encompassing institutional client consulting and working as a portfolio management and trader for an investment management firm.

Doug has 36 years of experience in institutional investment consulting. Prior to joining Mariner Institutional, he served as a Consultant for Gregory W. Group where he worked with public and private pension, operating, and foundation clients. He has written research papers on a variety of investment topics. His research has focused on opportunistic and non-traditional assets, including core real estate, non-core real estate, high yield fixed income, distressed debt, private equity and energy infrastructure assets.

Bachelor of Science Business Administration, Finance, University of Tulsa
Certified Plan Fiduciary Advisor Designee

29th Annual Oklahoma Public Fund Trustee Education Conference

Session 2

Value of NCPERS Membership

William Whitman
NCPERS

29th Annual Oklahoma Public Fund Trustee Education Conference



NCPERS

William Whitman joined NCPERS in November 2023 as the Director of Membership & Strategic Alliances, bringing with him over 20 years of membership and association management experience. In this role, William oversees NCPERS' membership recruitment and retention efforts to enhance the depth and breadth of the trade association's engagement with current members and prospects.

Prior to joining NCPERS, William worked at the International Food Information Council where he directed the member relations for a portfolio of leading global food and beverage companies supporting education and advocacy. He brings to NCPERS an extensive track record of creating impactful services and programs for a diverse range of member communities. He has helped build membership infrastructure within several associations, allowing him to hone his skills in identifying and applying best practices across organizations.

William holds a BA in English from Hamilton College and became an ASAE Certified Association Executive in 2016.

The National Conference on Public Employee Retirement Systems

William Whitman

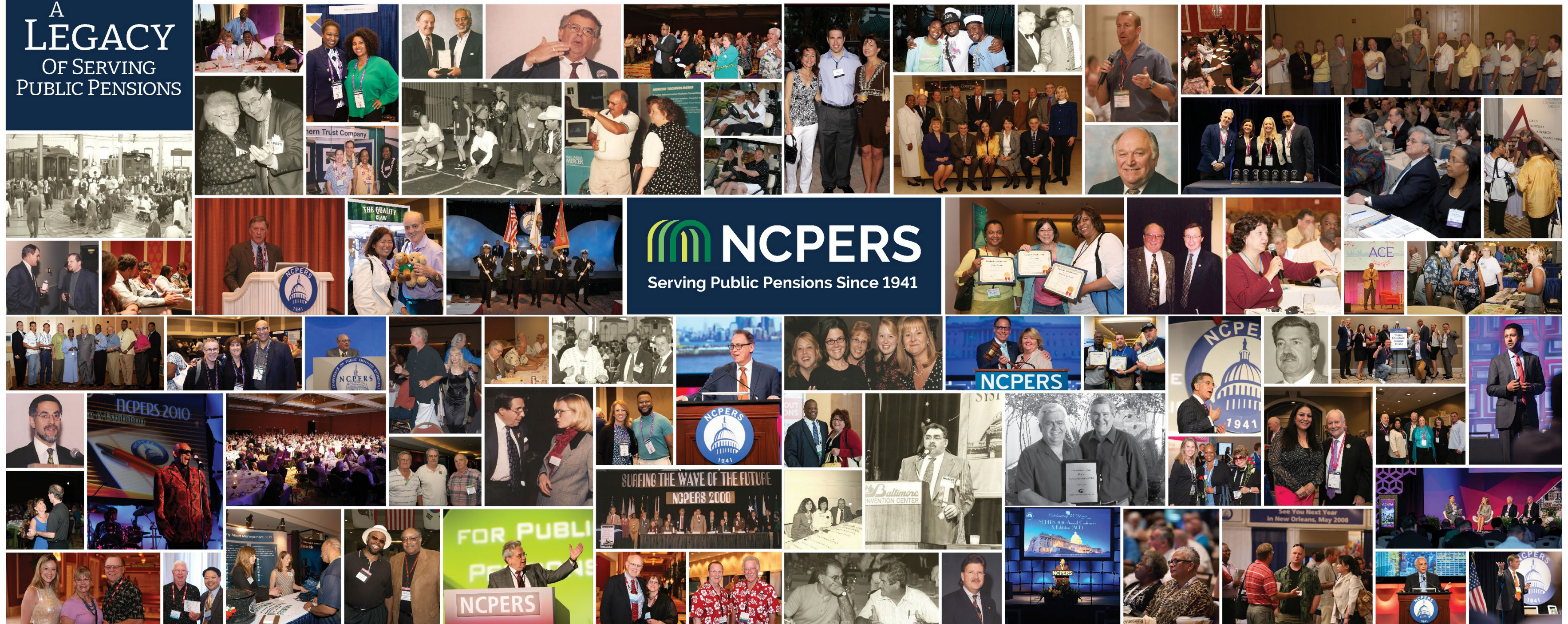
Director of Membership & Strategic Alliances

Topics

- ✓ NCPERS Introduction
- ✓ Public Pension History & Retirement Landscape
- ✓ Programs for Trustees

National Conference on Public Employee Retirement Systems

A
LEGACY
OF SERVING
PUBLIC PENSIONS



National Conference on Public Employee Retirement Systems

- 501(c)(3) representing **650+ public plans, plan sponsors, and stakeholders, and service providers that collectively manage \$7 trillion in retirement assets.**
- Visit www.NCPERS.org to learn more

Mission:

To connect and empower public pension leaders—across sectors and states—with the skills, strategies, and networks to solve today's challenges and prepare for tomorrow's.

Vision:

A world where public service brings peace of mind with the promise of retirement security.

Public Pension History

Public pensions have been around for more than 150 years.

- 1857 New York state established lump sum benefit for NYC police.
- 1866 FDNY gets lump sum LOD benefit.
- 1878 Proto pension for NYC police & fire.
- Many statewide public plans established soon after 1935.

U.S. Retirement Landscape

Private Sector Plans

- \$2.897 trillion in defined benefit plans
- \$11.495 trillion in defined contribution plans

State/Local Plans

- \$6.772 trillion in defined benefit plans
- \$537 billion in defined contribution plans

Federal Plans

- \$3.244 trillion in defined benefit plans
- \$1.076 billion in defined contribution plans

U.S. Retirement Landscape

Private Sector Plans

- 135.3 million employed
- 85.3 percent of the workforce
- ~\$14.3 trillion total saved for retirement

State/Local Plans

- 20.7 million employed
- 13.1 percent of the workforce
- ~\$7.3+ trillion total saved for retirement

Federal Plans

- 2.7 million employed
- 1.7 percent of the workforce
- ~\$4.3+ trillion total saved for retirement

NCPERS

Programs for Trustees



NCPERS Resources for Pension Trustees

Educational conferences and virtual learning for trustees

In-Person Events

- Attend NCPERS conferences to stay up to date on issues impacting pensions and governance best practices

Educational Webinars

- Attend monthly webinars and learn from trustees, plan professionals, and industry experts about pension investment and administration

E-Learning Modules

- *Callan On Demand Education (CODE)* platform offers dozens of 30- or 60-minute modules accessible online

Upcoming In-Person Events

In-person learning opportunities for trustees

2026 Public Safety Conference

- Educational program addresses unique concerns of pension systems for fire, police, and other first responders
- October 25-28 in Nashville

2027 Annual Conference & Exhibition

- Our flagship event bringing together 750+ pension leaders for 3.5 days of educational sessions and relationship building
- May 16-19, 2027 in NYC

2027 Legislative Conference

- Engage directly with representatives on Capitol Hill, gathering insights and advocating for increased retirement security
- July 19-21, 2027 in Washington, DC

NCPERS University

Training for trustees at any level of experience

Trustee Essentials Training

- New trustees build foundational knowledge to fulfill their fiduciary duties
- May 15-16, 2027 in NYC

Fiduciary in Focus

- Experienced trustees continue their education with timely insights
- Oct. 24-25, 2026 in Nashville

Advanced Fiduciary Institute

- Earn credential in governance, finance, risk management and human capital
- Oct. 24-25, 2026 in Nashville

Advocacy Resources Online



[Learn](#) [Engage](#) [Access Insights](#) [Membership](#) [About NCPERS](#)

Member-Only Resources

- **State-Level Pension Legislation Tracking Report:** As a member benefit, NCPERS tracks state-level legislation that impacts pension systems. The bills being tracked focus on a range of issues including changes to plan design, eligibility, or administration, funding of pension systems, and statewide retirement savings programs. [View the report](#) (login required).
- **Pension Fund Government Affairs/Advocacy Roundtable:** Connect virtually with fellow pension fund staff responsible for advocacy efforts on this [member-only roundtable](#). Each month, this group meets via Zoom to ask questions, share ideas, and crowdsource solutions. Participation is free for NCPERS members. [Sign up here to join](#).
- **Public Pension Defense Toolkit:** The [Public Pension Defense Toolkit](#), created in partnership with the National Public Pension Coalition, serves as a template for what local or regional media outreach efforts built to support retirement security for all public employees should contain. You'll find legislative action checklists, case studies, and more. [Download the toolkit](#) (login required).
- **Legislative & Regulatory Issues Book:** Each year, NCPERS produces the Legislative & Regulatory Issues Book as a complimentary, member-only resource. This book (PDF) provides in-depth insights into critical legislative and regulatory issues impacting public pensions, along with NCPERS' positions on these matters. [Access now](#) (login required).
- **View Advocacy Activities:** Keep up-to-date with our latest advocacy activities and resources. [Learn more](#) (login required).

Pension News: Federal Policy Developments to Watch

We track the latest policy developments impacting the public sector retirement industry to ensure you



The Employment Situation, U.S. Bureau of Labor Statistics, March 2026

Your Questions About NCPERS

Thank You!

William Whitman

wwhitman@NCPERS.org

NCPERS.org

29th Annual Oklahoma Public Fund Trustee Education Conference

Session 3

What to Know Before Meeting with Your Actuary

Ryan Falls
Millman

29th Annual Oklahoma Public Fund Trustee Education Conference



Milliman

Ryan Falls is a principal and consulting actuary in Milliman's Dallas, Texas, office. Ryan joined Milliman's public sector consulting team in April 2023.

Professional Work Experience

Ryan has 25 years of actuarial and benefits consulting experience, focusing on the needs of major public employee retirement systems and private sector employers. Throughout his career, Ryan has provided consulting services to statewide and municipal retirement systems across the country. As an actuary and senior consultant, Ryan performs actuarial valuations for public pension and retiree health care plans; conducts plan design analyses, including the design and implementation of cash balance and other hybrid plan designs; and performs asset liability modeling and actuarial audits.

Ryan is an expert in consulting on plan design and sustainability. His background includes studying many large plan designs to understand the impacts on plan costs, employee retention, administrative functions, and applicable stakeholders. Ryan has repeatedly seen first-hand the monumental effort required by retirement systems, stakeholders, and politicians to reform public pension plans. As a result, Ryan works closely with his clients to educate all stakeholders on the importance of adaptable features such as actuarially determined contributions and adjustable benefit provisions to enhance plan sustainability.

Ryan currently serves a lead consulting actuary Public Employees Retirement System of Idaho, City of Austin Employees Retirement System, Dallas Police and Fire Pension System, Tulsa County Employees Retirement System, City of Omaha Retirement Systems, and the Springfield Police and Firefighters Pension System. Ryan also serves as the lead auditing actuary for the State of Washington Department of Retirement Systems and the Virginia Retirement System.

Education

Bachelor of Science, Applied Mathematical Science, Texas A&M University

Presentations and Publications

Ryan regularly serves as a speaker at national conferences for organizations such as the National Council on Teacher Retirement (NCTR), National Conference on Public Employee Retirement Systems (NCPERS), International Foundation of Employee Benefit Plans (IFEBC), and National Association of Public Pension Attorneys (NAPPA).

Professional Designations

Fellow, Society of Actuaries; Fellow, Conference of Consulting Actuaries; Enrolled Actuary; Member, American Academy of Actuaries

Affiliations

Ryan is an active member of the NASRA Associate Advisory Committee. As a committee member, Ryan provides advice and counsel for the governance process.

Organized by the Oklahoma Police Pension and Retirement System & Tulsa County Employees' Retirement System

OPFTEC New Trustee Education:

What to know before meeting with your actuary

R. Ryan Falls, FSA, EA, MAAA

Principal & Consulting Actuary

Milliman, Inc.

Dallas, Texas

Agenda

- Sustainability
- Contribution policies
- Funding policies
- Reactions to changes in the funding equation
- Working with your actuary and focusing on the big picture

Sustainability

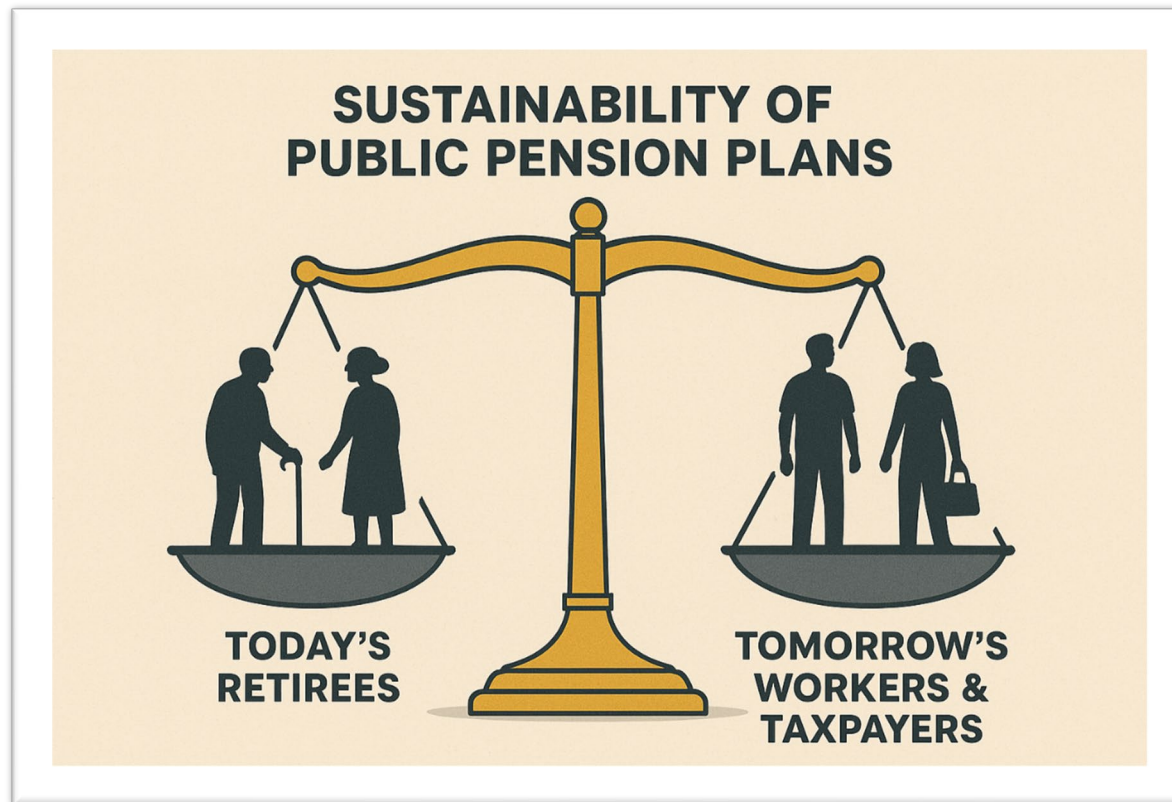
Sustainability

- What is “sustainability” for a public employee pension plan?
 - Proactive set of policies that promote achievable, stable fiscal goals for the employers and a stable, secure retirement for the public employees
- Essentially, do we have a plan in place if the future is not what we assumed?
- We want to establish a manageable retirement program from both a benefits standpoint and a contributions standpoint

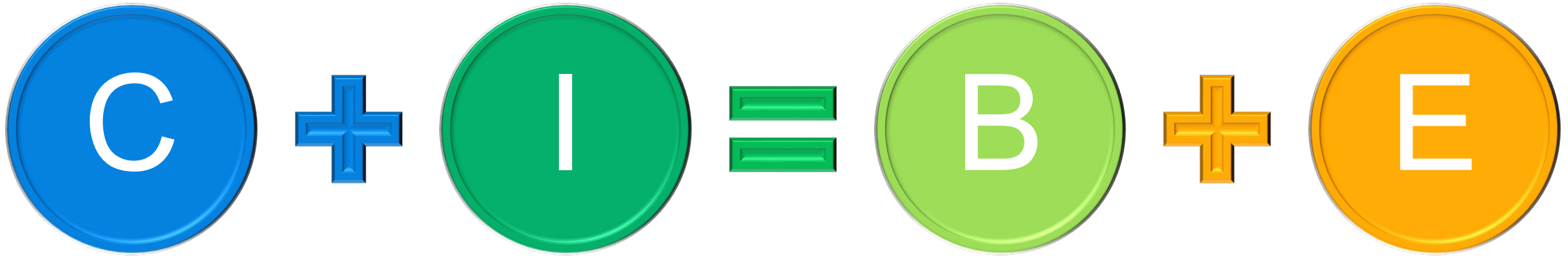


Sustainability

- ChatGPT's attempts



Pension Funding Equation



“C” =
Contributions
into the fund

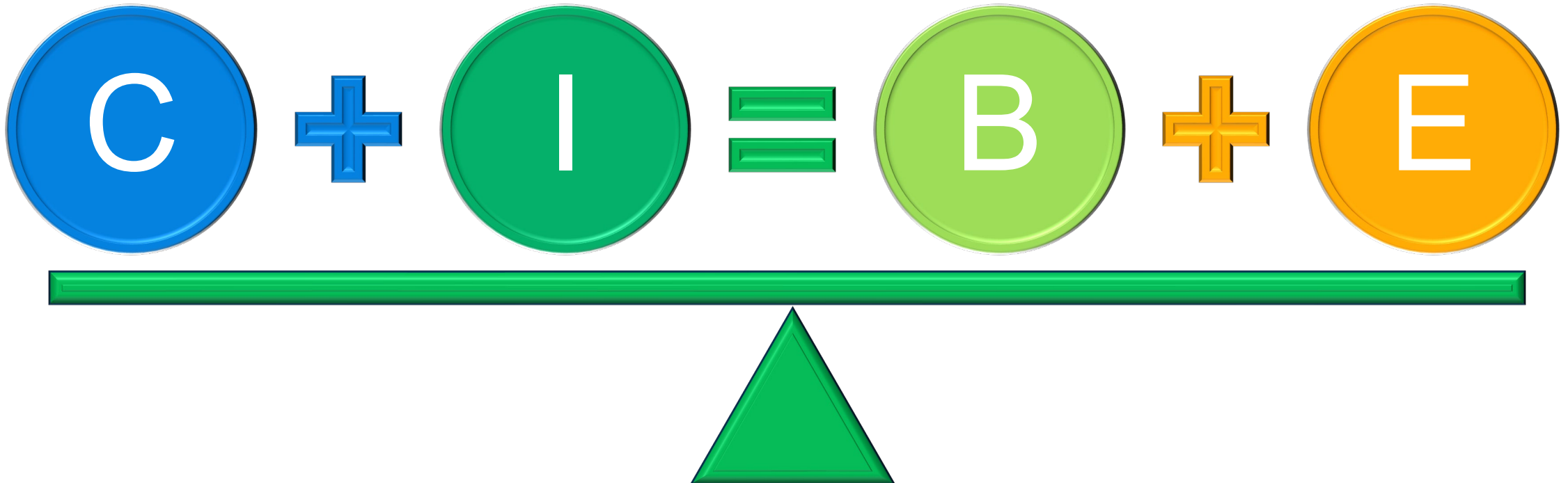
“I” =
Accumulated
investment
earnings

“B” =
Promised
benefits paid to
members

“E” =
Expenses
necessary for
administering the
plan

Pension Funding Equation

- This equation must stay in balance for the plan to be sustainable



Definitions

- Contribution Policy
 - Plan sponsor's actual methodology used to determine contributions
- Funding Policy
 - Governing entity's documented goals for eliminating the unfunded actuarial accrued liabilities (UAAL) and methods utilized to monitor progress
- Actuarially Determined Contribution (ADC)
 - Contribution calculated to meet the goals of the Funding Policy
 - Reacts to the current condition of the plan
 - Technically speaking
 - Normal cost (benefits earned in the current year), plus
 - Amortization payment to address UAAL



Contribution Policies

Types of Contribution Policies

- **Actuarially Determined Contribution (ADC)**
 - Actuary calculates the contribution for the year in accordance with “policy” and the plan sponsor contributes that amount
- **Fixed Contribution Rate**
 - Plan sponsor contributes the same fixed percentage of pay (or fixed dollar amount) every year to the plan
- **Source Unrelated to Pension**
 - Portion of Tax Revenue, Court Fees, Lottery Revenue
- **Most plans also have member contributions**
 - Often fixed but can be actuarially determined

Types of Contribution Policies

- Each of these policies have positives and negatives

Policy	Positives	Negatives
Actuarially Determined Contribution	Always adjusts to meet the goals of the Funding Policy	Contributions can be large during down market cycles
Fixed Contribution Rate	Predictable	May not always be sufficient; long process to adjust.
Source Unrelated to Pension	Automatically incorporated into employer's budget	Gov't policy changes can have unintended impact on pension

Funding Policies

Need for Funding Policy

- Every retirement board should have a Funding Policy to document their goals for eliminating the Unfunded Actuarial Accrued Liability (UAAL)
 - Possibly every plan sponsor as well
- Regardless of the Contribution Policy
 - Provides a benchmark contribution level even if plan contribution policy is not equal to the ADC
- GFOA, CCA and SOA provide good guidance for developing good funding policies



GFOA Recommendation



*Every state and local government that offers defined benefit pensions and/or OPEB must formally adopt a **funding policy** that provides reasonable assurance that the cost of those benefits will be funded in an equitable and sustainable manner.*

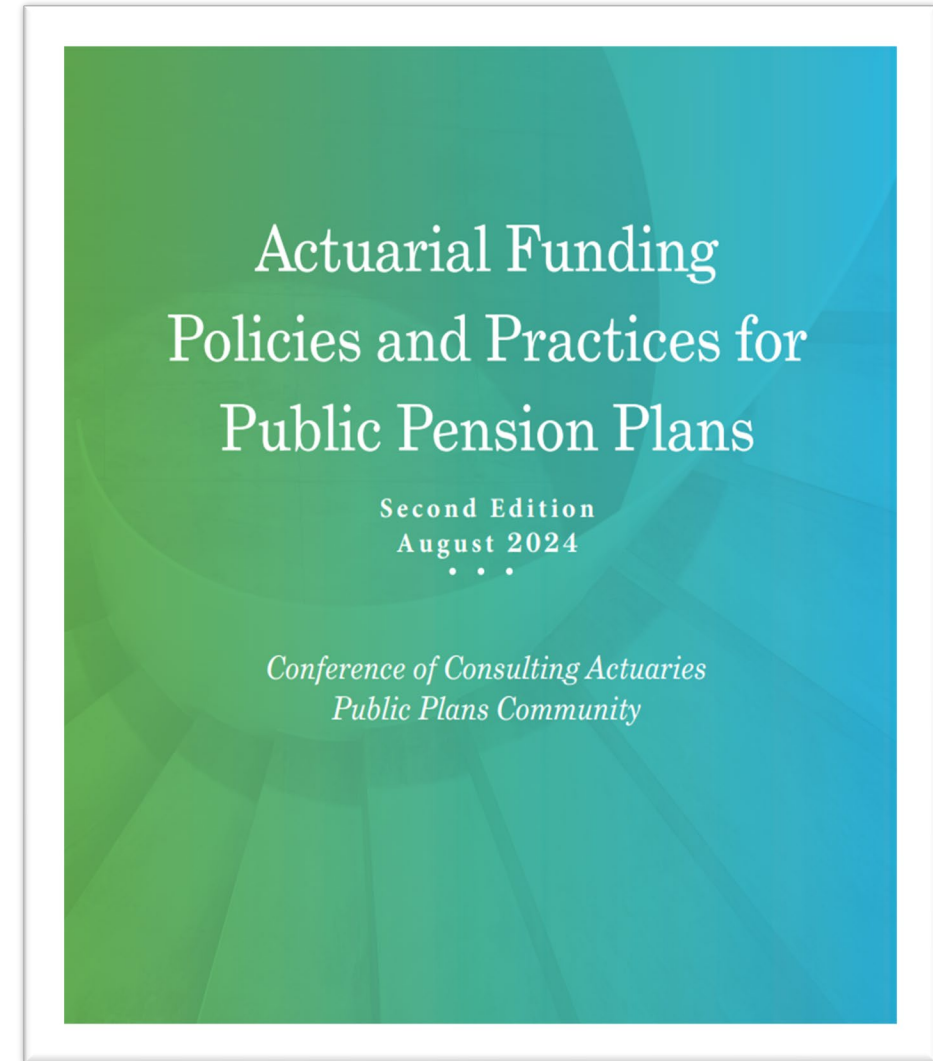
GFOA Principles and Objectives



- Employer should **regularly obtain a reasonable ADC** to serve as the basis for its contributions
- ADC should be calculated in a manner that fully funds the long-term costs of promised benefits, while:
 1. Keeping contributions relatively stable and
 2. Equitably allocating the costs over the employees' active service
- Employer should **make a commitment to fund the ADC**
 - A reasonable transition period may be necessary
- Employer should **demonstrate accountability and transparency** by communicating all the information necessary for assessing the government's progress toward meeting its future objectives

CCA Funding Policy Whitepaper

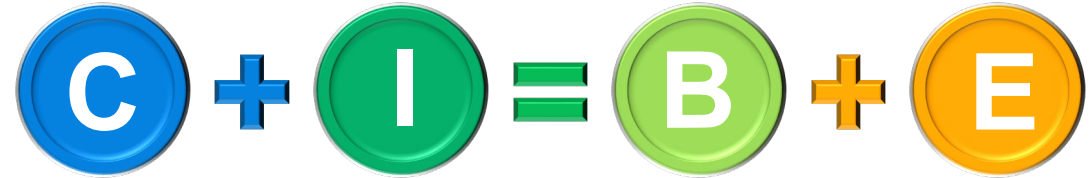
- Conference of Consulting Actuaries (CCA) initial whitepaper on Funding Policies in 2014
 - Updated and expanded in 2024
- Intended to support and inform the development, review, and discussion of funding policies for public pension plans



CCA Funding Policy Whitepaper

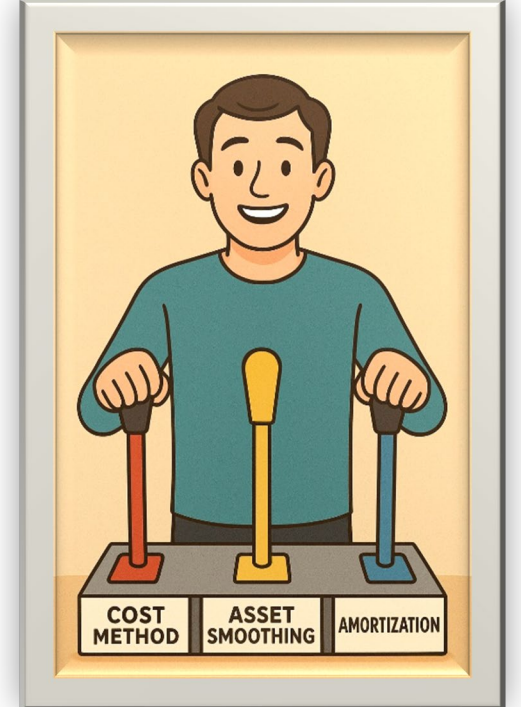
- Policy objectives

- Contribution sufficiency
- Demographic matching
 - Intergenerational equity
 - Align funding cost and time service performed
- **Volatility management**
 - **Manage and control future contribution volatility**
- Transparency and accountability
 - Clarity on each method's intent, effect and timing
- **Sound governance**
 - **Guard against “agency risk”**
 - **In the face of budgetary challenges, do the right thing for the plan**



CCA Funding Policy Whitepaper

- Key methods to select as part of the Funding Policy
 - **Actuarial cost method**
 - Establishes the pattern for allocating plan costs over a plan member's career
 - **Asset smoothing method**
 - Reduces the effect of short-term market volatility and provides for a longer-term perspective on plan's funded status
 - **Amortization policy**
 - Determines the methodology for calculating contributions that will systematically eliminate any unfunded liabilities



Amortization Strategies - Period

- Single Layer, Closed
 - *Ex: Eliminate the unfunded liability by 2046*
 - Unfunded liability will get smaller as 2046 approaches
 - However, significantly elevated volatility as 2046 nears
- Single Layer, Rolling/Open
 - *Ex: Annual re-amortization over a new 20-year period*
 - Open period of 20 years would not reduce the balance at all
 - CCA rates a 10-year period “Acceptable with Conditions” if it “reduces balance by a reasonable amount each year”

Amortization Strategies - Period

- Layered “bases”
 - *Ex: (1) Initial UAAL amortized over closed 20 years*
(2) Each subsequent unexpected change in UAAL separately amortized over closed 20 years
 - Establish plan to fund every dollar of the UAAL
 - Manages volatility as initial unfunded base nears completion
 - Provides a history of the plan



Amortization Strategies - Period

Layered “bases”

<u>Date Established</u>	<u>Description</u>	<u>Initial Amount</u>	<u>Remaining Years on 7/1/2024</u>	<u>Outstanding Balance on 7/1/2024</u>	<u>Mid-Year Amortization Payment</u>
7/1/2017	Unfunded Accrued Liability	\$ 58,436,475	13	\$ 47,746,388	\$ 4,786,732
7/1/2018	Actuarial Loss	10,396,105	14	9,968,647	945,300
7/1/2018	Assumption Changes	7,494,421	14	7,186,271	681,455
7/1/2019	Actuarial Loss	10,374,846	15	10,073,925	908,092
7/1/2019	Plan Amendment	14,758	15	14,329	1,292
7/1/2020	Actuarial Loss	13,574,046	16	13,385,187	1,151,938
7/1/2021	Actuarial Gain	(5,231,604)	17	(5,185,174)	(427,644)
7/1/2022	Actuarial Loss	13,438,718	18	13,461,507	1,067,517
7/1/2023	Actuarial Loss	8,781,393	19	8,814,226	674,080
7/1/2023	Assumption Changes	11,320,326	19	11,362,652	868,974
7/1/2024	Actuarial Loss	9,260,723	20	<u>9,260,723</u>	<u>684,802</u>
Current UAAL →				126,088,681	11,342,538

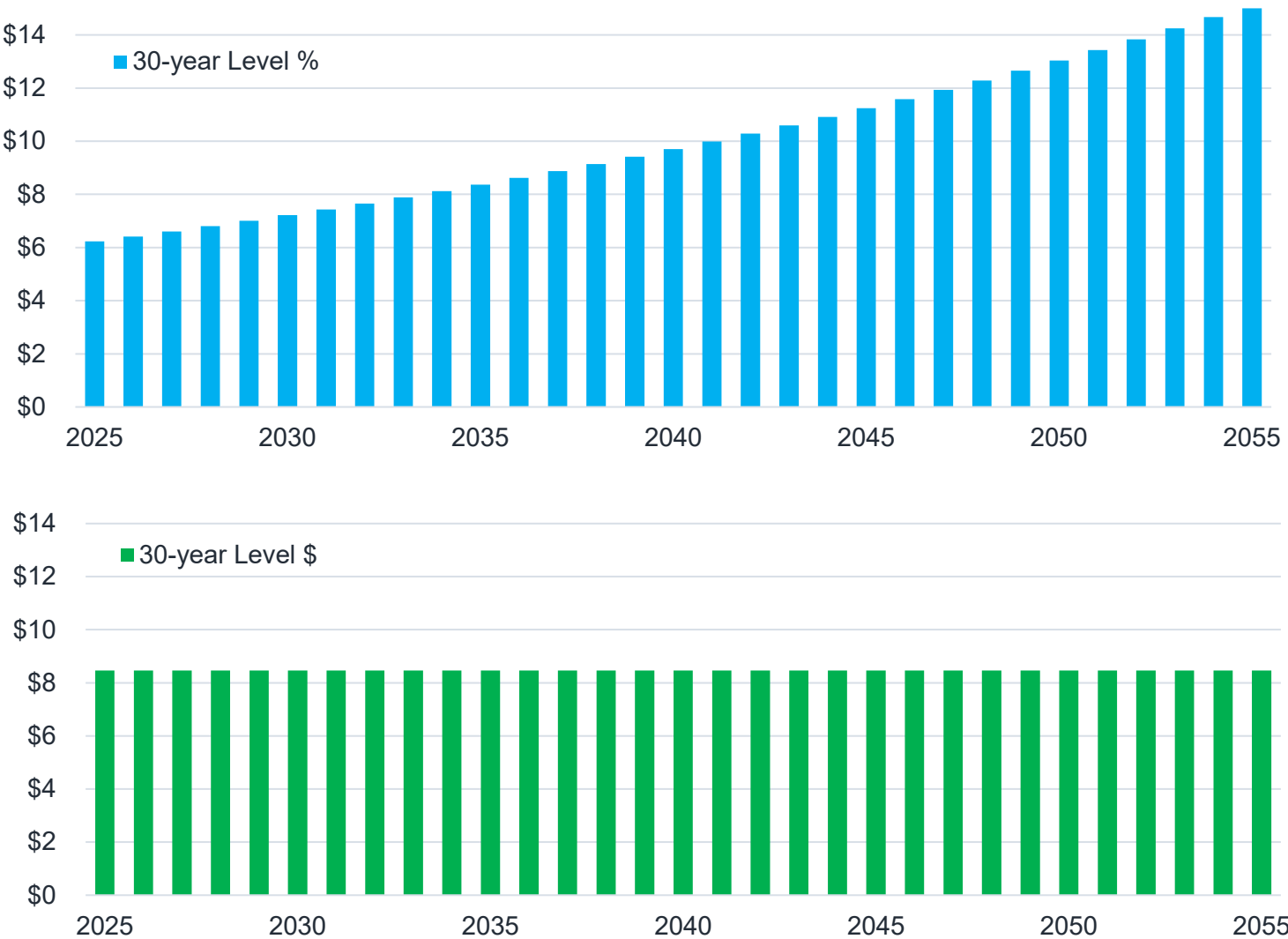
Amortization Strategies - Pattern

- Two most common ways to amortize a portion of the UAAL
 - Level % of Pay
 - Intention is for resulting contributions to be fairly stable as a percentage of payroll
 - Results in back-loaded payments
 - If amortization period is over 20 years, will have negative amortization an expected increases in UAAL
 - Level \$ Payments
 - Similar to a traditional home loan with consistent payments
 - Results in immediate expected reduction in UAAL

Amortization Strategies - Pattern

Goal is to amortize the same \$100 UAAL

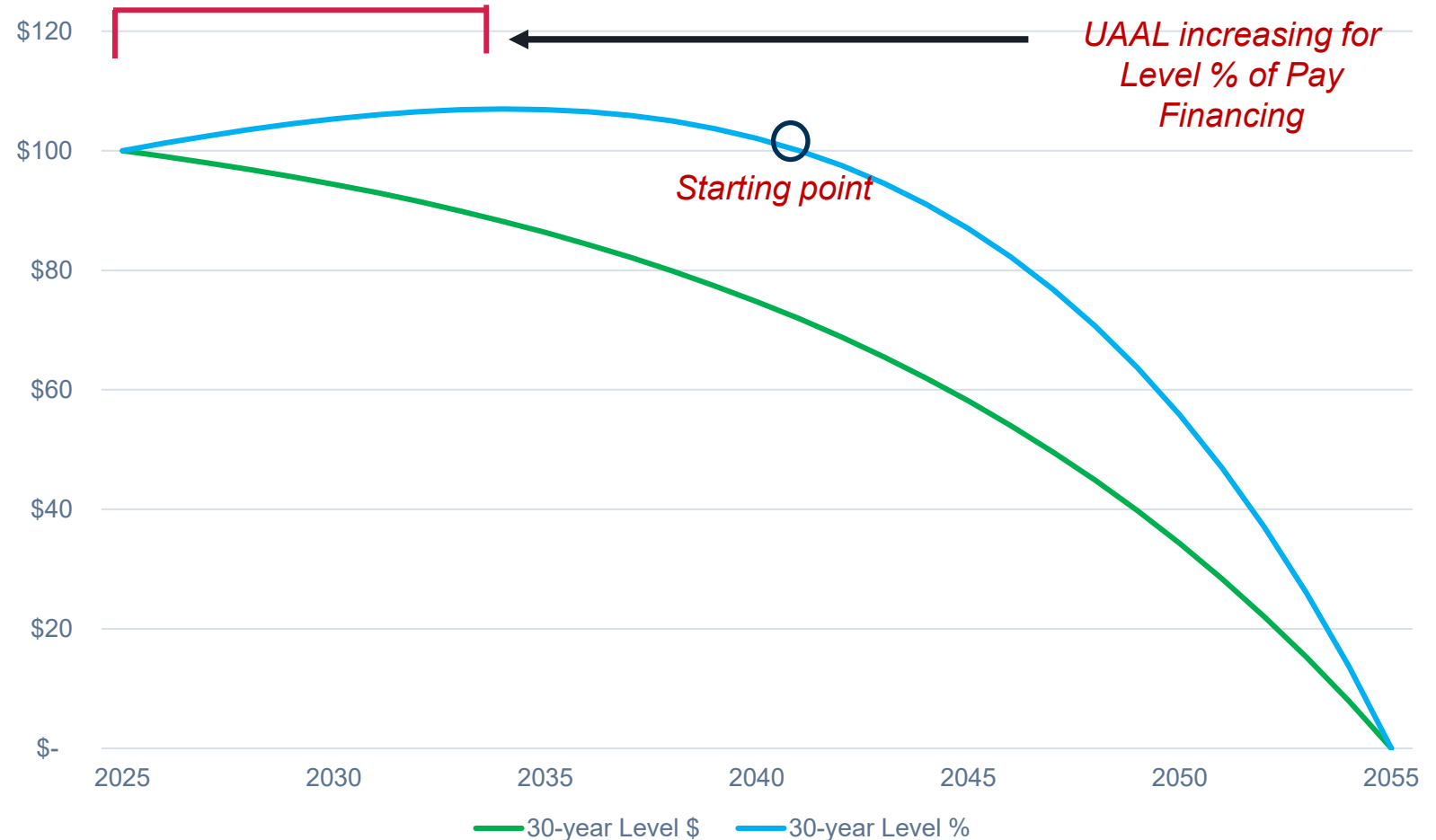
What payments are necessary for Level % and Level \$ amortization?



Amortization Strategies - Pattern

How quickly does our \$100 UAAL get paid down?

Both schedules ultimately eliminate the UAAL but take very different paths

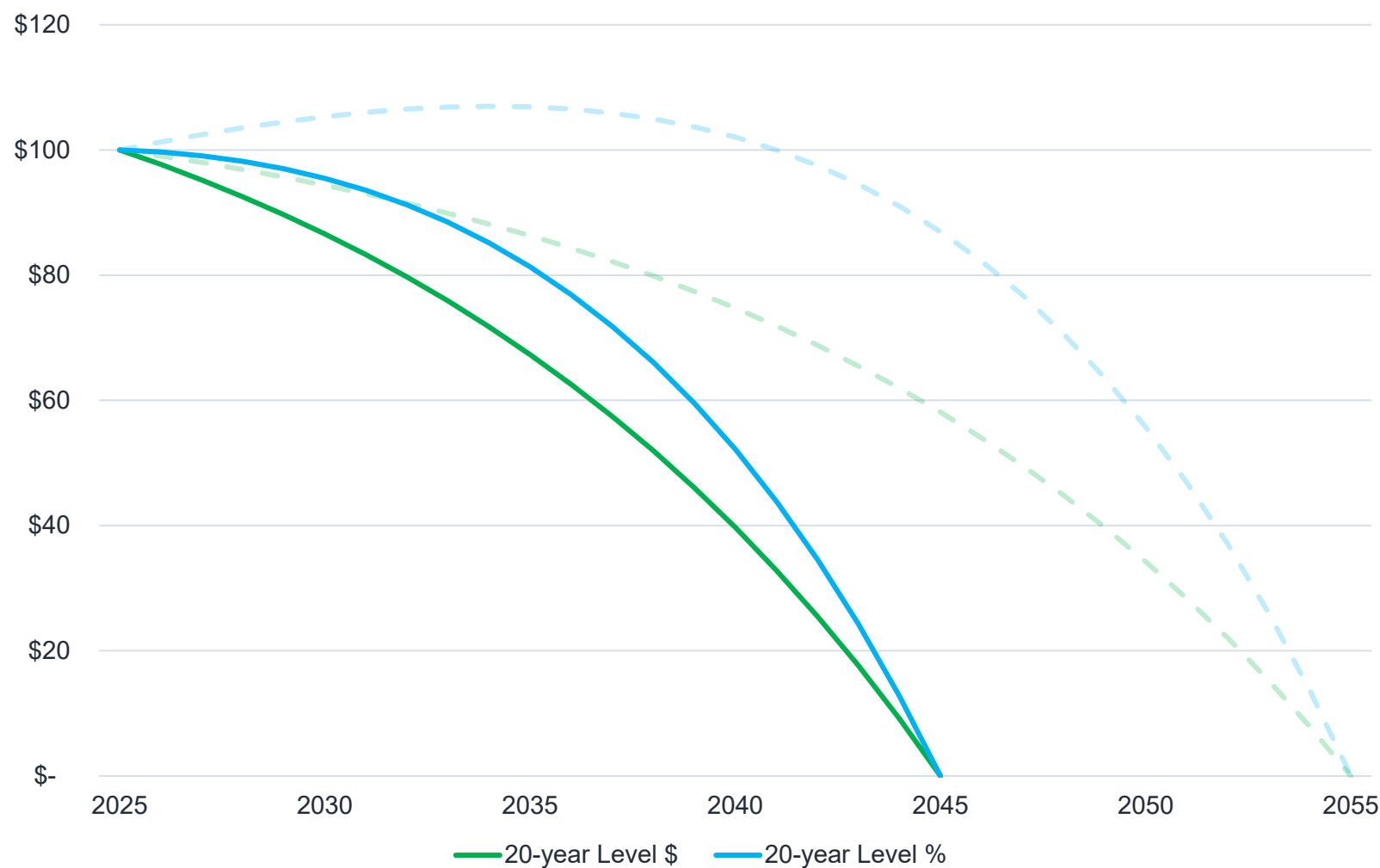


Negative Amortization occurs when contributions to the UAAL are less than the interest on the UAAL, causing the UAAL to grow.

Amortization Strategies - Pattern

What if we shorten the initial amortization period?

Generally, 20-year Level % amortization avoids negative amortization



CCA Funding Policy Whitepaper

Categories for amortization policies		
“LCAM” Model Level percent of pay ▪ Experience: 15-20 years ▪ Assumptions: 15-25 years Tail volatility: Synchronize bases	Acceptable Level Dollar (decreasing percent of pay) Tail volatility: Combine bases ▪ Combining bases loses source history	Acceptable with Conditions Fixed period layers by source ▪ Experience: 21-25 years Rolling single layer amortization ▪ Reduces balance by “reasonable amount” annually
Non-recommended Fixed period layers ▪ Experience: 26-30 years Rolling single layer amortization ▪ No negative amortization, but no “reasonable amount” reduction	Unacceptable Fixed period layers ▪ Experience: >30 years Rolling single layer amortization ▪ Incurs negative amortization	

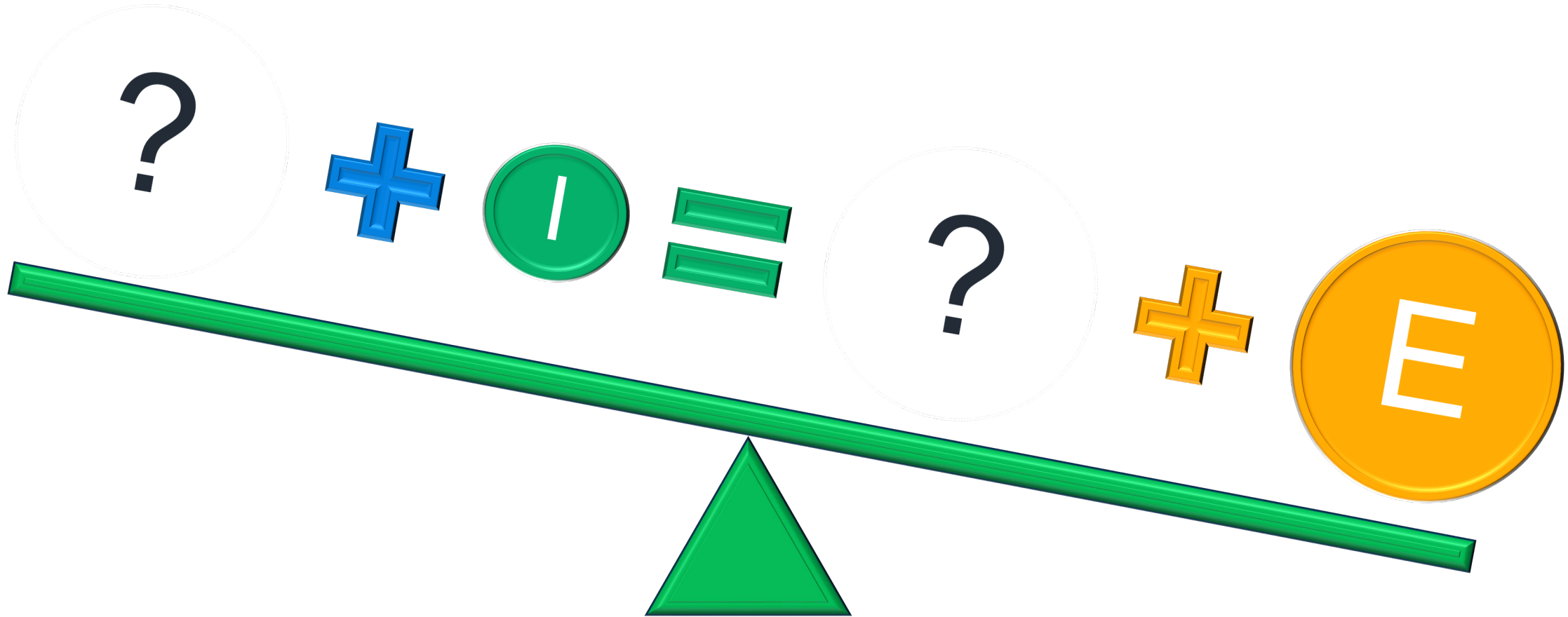
Reasonable ADC Under ASOP 4

- Actuary now must calculate and disclose a “**Reasonable ADC**” due to recent updates to ASOP 4
 - Applies to contribution rate calculations with measurement dates mid-2023 and later
- Some required aspects of a Reasonable ADC
 - **All assumptions are reasonable**
 - No disclaimed assumptions permitted, even if the assumption was selected by another body
 - Actuarial cost method to allocate normal cost must relate to the benefits provided to the member
 - Amortization method for unfunded liability
 - **Fully amortize the entire unfunded balance in a reasonable time, or**
 - Reduce unfunded balance by a “reasonable amount” in a “sufficiently short” period

Reactions to Changes in Pension Funding Equation

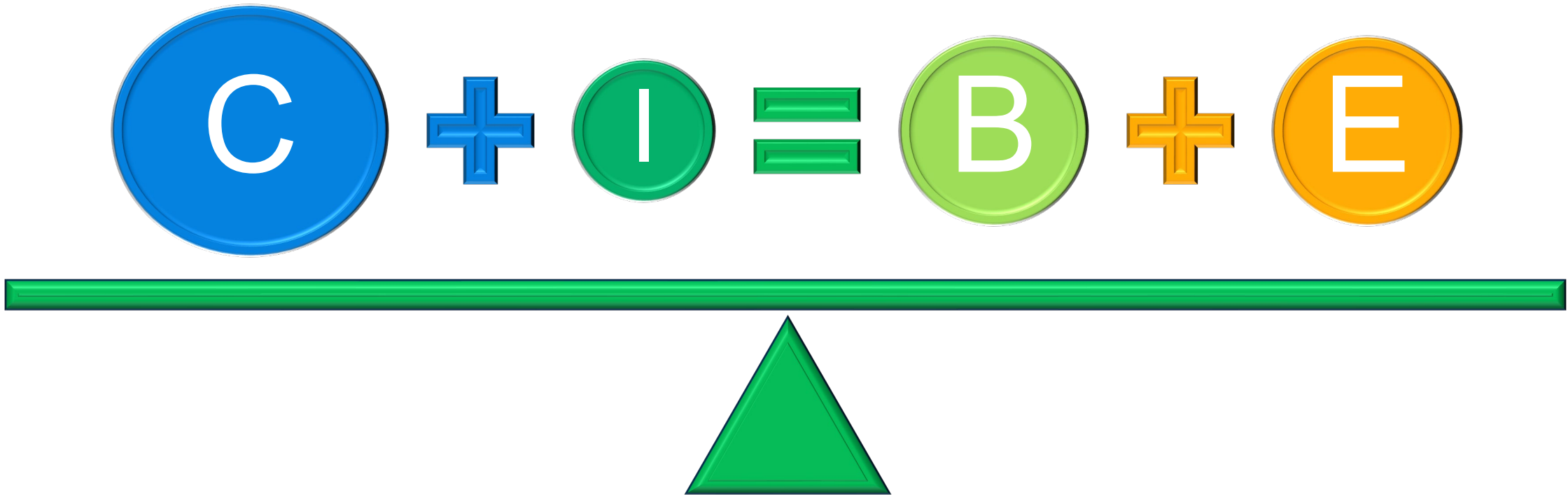
Reactions to Changes in Funding Equation

- What are ways to address this shift in the Equation?



Reactions to Changes in Funding Equation

- One option: Address through Contribution Policy



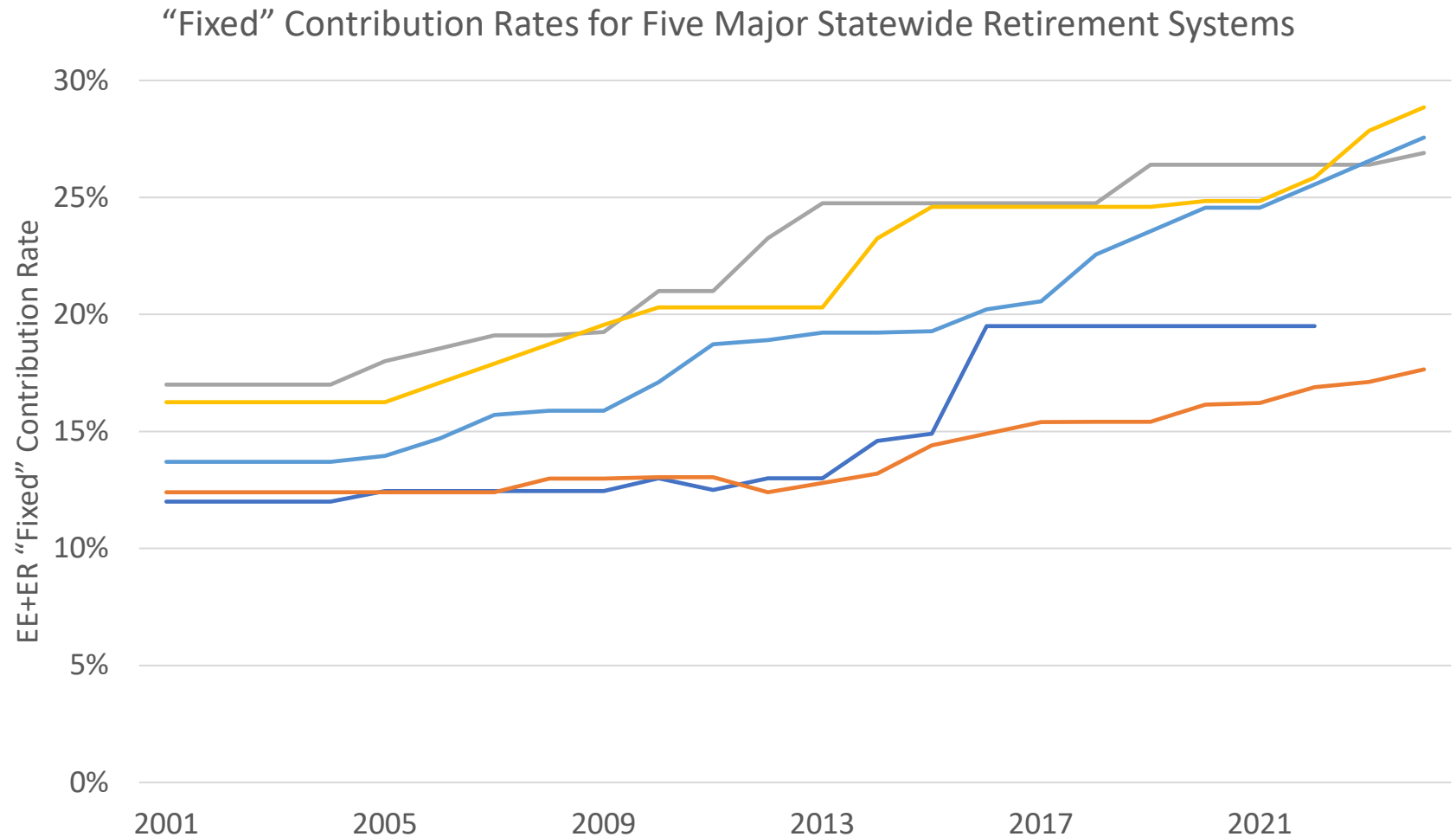
Reactions to Changes in Funding Equation

- Plan sponsor committed to contributing the ADC will continue to meet the goals outlined in the Funding Policy
 - Contributions **automatically** react to changes to the health of the plan
- Fixed Contributions may ultimately need to be adjusted but process is less clear



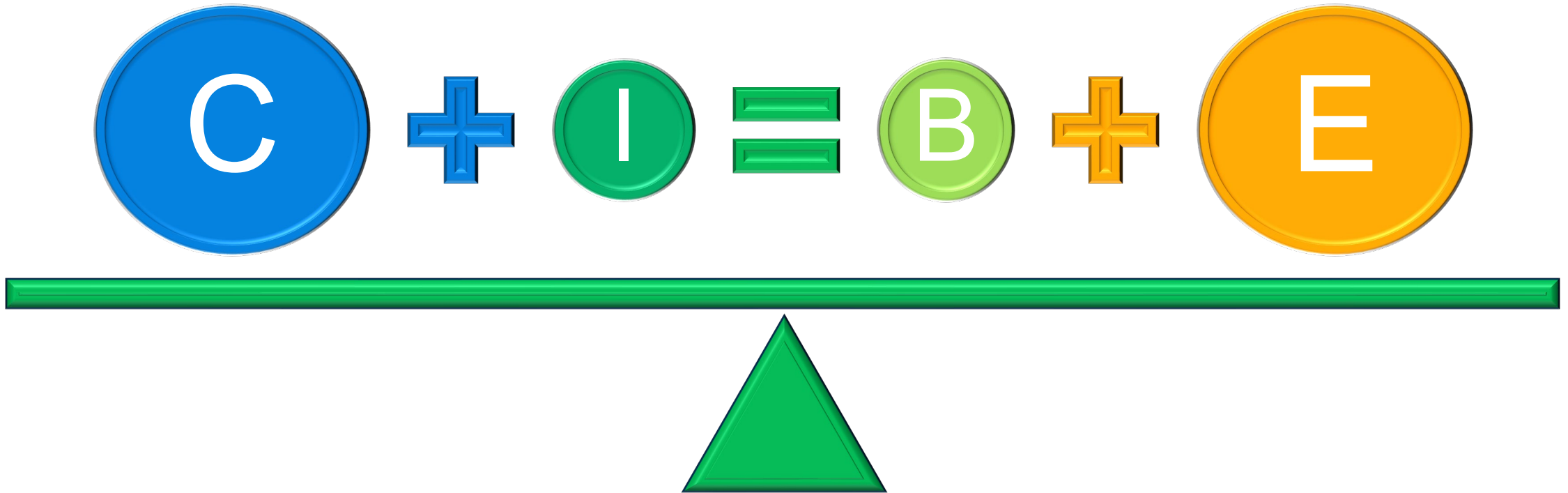
Reactions to Changes in Funding Equation

- Fixed rates are not really “fixed”
- “Sticky” rates may be a better description
- Characterized by the effort necessary to change the rate



Reactions to Changes in Funding Equation

- Another option: Address through Benefits Policy



Reactions to Changes in Funding Equation

- Employer contributing ADC is most common approach for improving sustainability
- Can also improve sustainability by implementing adjustable gain/risk sharing benefit provisions
 - Especially in the case of fixed contribution rates
 - Put in certain benefit provisions “at risk” depending on the funded status of the plan
 - Use accumulated gains to pay for benefit increases
- The key is to proactively have a plan in place

Working with your actuary and focusing on the big picture

Big Picture: For Actuarially Funded Plans

Your plan receives a contribution calculated by the actuary

- Great place to be!
 - Contribution will react to changes in the plan
 - Will work towards the goals in the Funding Policy
- Important to understand that not all Funding Policies are created equal
 - Realities of each situation can be very different

Questions to Ask

- *Is the plan sponsor contributing the ADC, as expected?*
- *Does the valuation include a separate “Reasonable ADC”?*



Big Picture: For Plans Not Actuarially Funded

Plan contributions are set without regard to the funded status of the plan

- Annual actuarial valuation is the opportunity to assess the actual contributions
- Funding Policy provides guidance on the Board's goals for eliminating unfunded liability
 - Actuary will still calculate a contribution amount that will meet the Board's goals
 - Use this calculated amount as a benchmark for assessing current contribution amounts

Questions to Ask

- *If we continue with the same Contribution Policy, when is our unfunded liability expected to be paid down over time?*



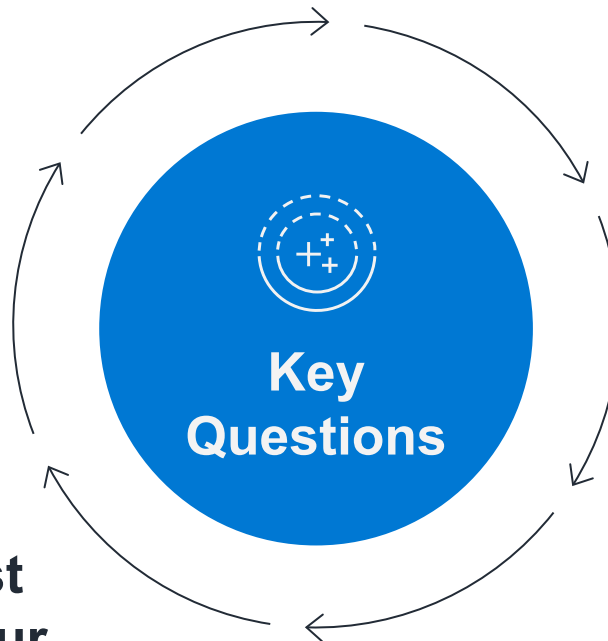
Additional Questions to Ask Your Actuary



How is the funded status expected to change over the next few years?



What are the biggest challenges facing our pension fund right now?



How does that expectation differ if there is unfavorable experience (for example, low asset returns)?



Are there any assumptions that you think we should discuss before the next actuarial valuation?

Additional Considerations Between Actuarial Valuations

A year will pass before the Board receives updated actuarial valuation results

- *What should the Board be thinking about until that time?*



Schedule an **education session** with your actuary between valuations



Conduct an **experience study** if it has been a while or there are questions about some of the assumptions



Revisit the Board's **Funding Policy** to make sure it still reflects the Board's goals

Key Takeaways

- Goal to have a sustainable plan
- Must have policies and procedures in place to react to changes in the health of the plan
- Thoughtful ADC contributed to the plan is the most common way
- Adjustable benefit provisions can be another contributor to sustainability

Case Studies: Adjustable Benefit Provisions

Fort Worth Employees Retirement Fund

- Changes to FWERF were adopted by the City Council in 2018 and approved by a vote of the active employees of the City
 - Largely eliminated automatic COLA for everyone not retired by January 1, 2021
 - If funding goals were met, a **Variable COLA** can be approved by both the FWERF Board of Trustees and the City Council
 - Immediate increases in statutory required contribution rates for members and the City
 - Introduced **risk-sharing contributions**
 - If funding goals are NOT being met, contributions would increase by an ADDITIONAL 4% of pay
 - Split 60% for the City and 40% for the members
 - Risk-sharing contributions **automatically go away** when they are no longer needed

New Mexico Educational Retirement Board

- Statewide teacher plan was struggling to make progress paying down the UAAL
 - First step to improve health of their pension fund was to increase employer and member contributions
 - Another significant component of the plan reform was to put a portion of their **annual COLA “at risk”** depending on the financial health of the plan
 - If the funded status of the plan is less than 80% then the annual COLA is reduced by 20%
 - If the funded status is between 80% and 90% then the annual COLA is reduced by 10%
 - The full COLA is paid if the funded status is greater than 90%
 - Full **COLA is automatically reinstated once the plan reaches a better funded status**

Employees Retirement System of Texas

- 2020 actuarial valuation indicated the trust fund was projected to be fully depleted in 40 years
 - During 2021 legislative session, legislature willing to increase contribution to an actuarially determined level but wanted changes that would mitigate the possibility of new Unfunded Liabilities
 - Implemented a cash balance plan for future employees
 - Provided similar level of employer-provided benefit as the existing benefits
 - Included **gain-sharing interest credits** to limit unexpected unfunded liability increases
 - Legislature included an additional actuarially determined level-dollar **“legacy payment”** of \$510 million designed to eliminate unfunded liability by 2054

29th Annual Oklahoma Public Fund Trustee Education Conference

Session 4

Divergences Amidst the AI Capex Surge: A Guide to the Markets

Gabriela Santos
J.P. Morgan Asset Management

29th Annual Oklahoma Public Fund Trustee Education Conference



J.P. Morgan Asset Management

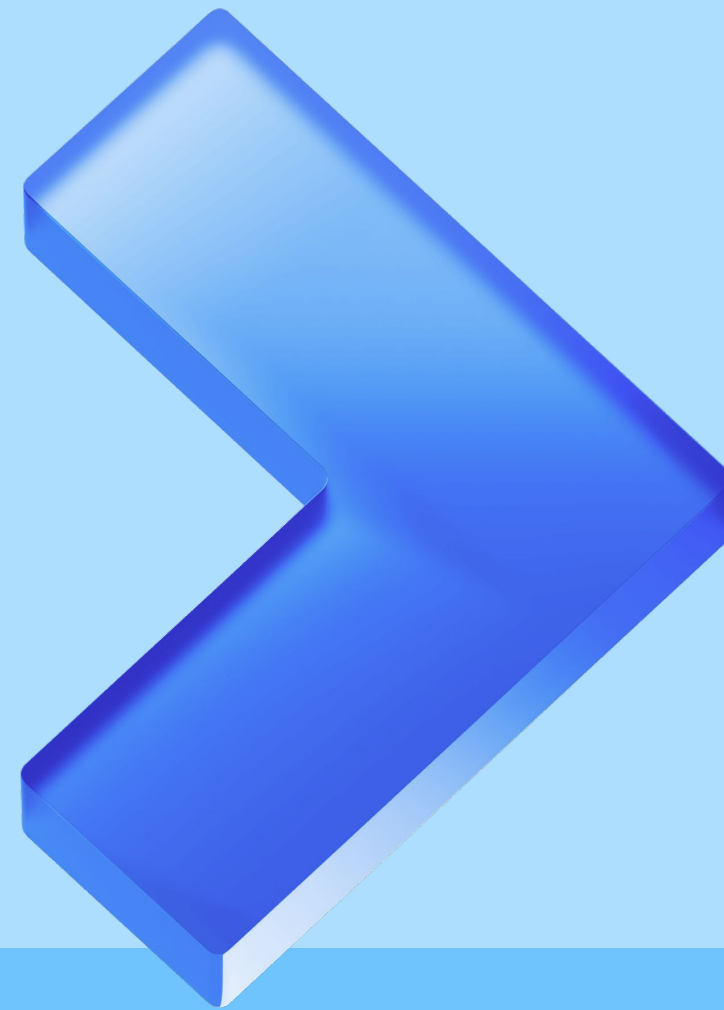
Gabriela D. Santos, Managing Director, is the Chief Market Strategist for the Americas on the Global Market Insights Strategy Team at J.P. Morgan Asset Management. In this role, Gabriela provides valuable insight and perspective on the global economy and markets to institutional and retail clients across the Americas. Gabriela's research focuses on emerging markets, especially China. She is responsible for the development of the Guide to the Markets, Guide to China and Guide to the Markets - Latin America, amongst other publications.

Gabriela is also a frequent guest on CNBC, Bloomberg, and other financial news outlets and is often quoted in the financial press.

Prior to joining J.P. Morgan in 2012, Gabriela worked at HSBC's Private Bank, stationed in Singapore, Switzerland and Mexico. She held various roles including banker, structured products trader and business manager.

Gabriela graduated summa cum laude from the University of Pennsylvania with a Bachelor of Arts degree in Philosophy, Political Science and Economics, as well as French. She is fluent in English, Portuguese, Spanish and French.

Divergences Amidst the AI Capex Surge: A Guide to the Markets





Agenda



- **Economy:** AI capex and upper income consumers keep economy on trend
- **Equities:** Climate still favors AI theme, but on to a new season of it
- **International:** Strong earnings driven by secular over cyclical themes
- **Fixed Income:** Bonds now priced for inflation and a Fed hiking rates
- **Alternatives:** Diversifying the offense and the defense



Looking through the ups and downs, economy continues to grow around trend.

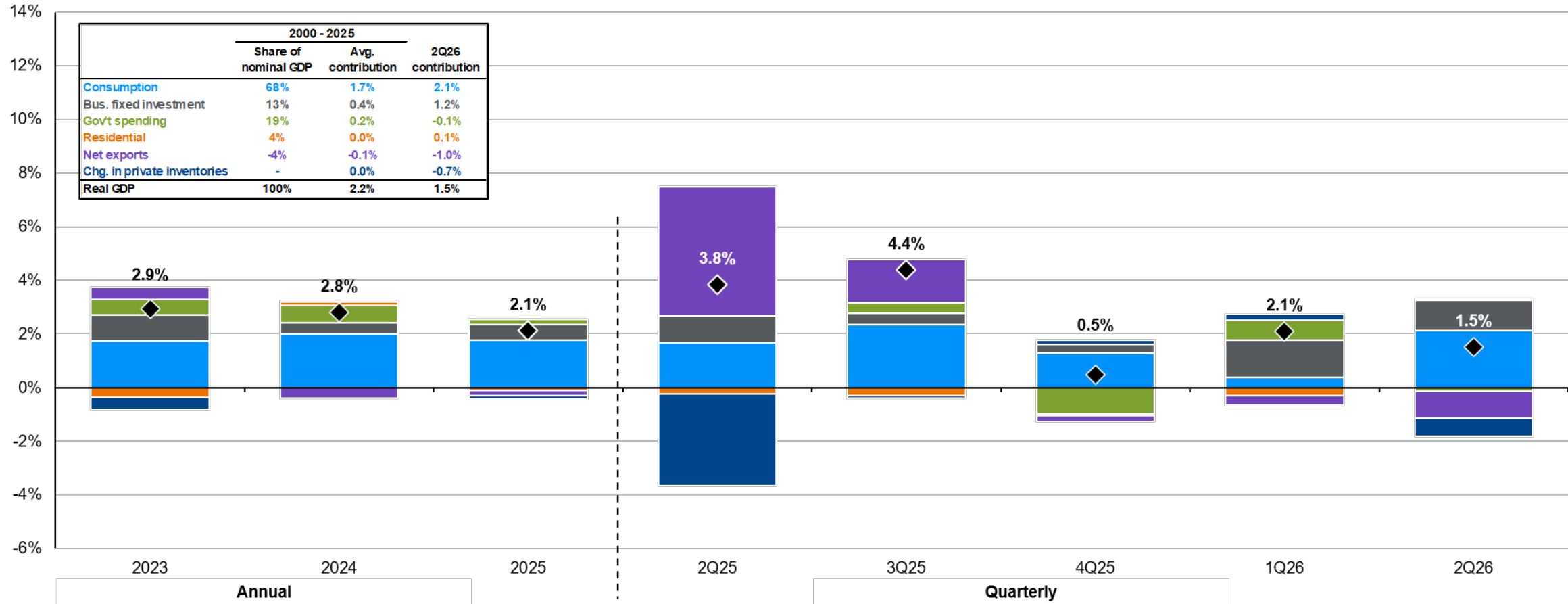
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Contributors to real GDP growth

Seasonally adjusted annualized rate



Source: BEA, FactSet, J.P. Morgan Asset Management.
Guide to the Markets – U.S. Data are as of August 28, 2026.



Hyperscalers' AI-related spend has lifted overall capex...

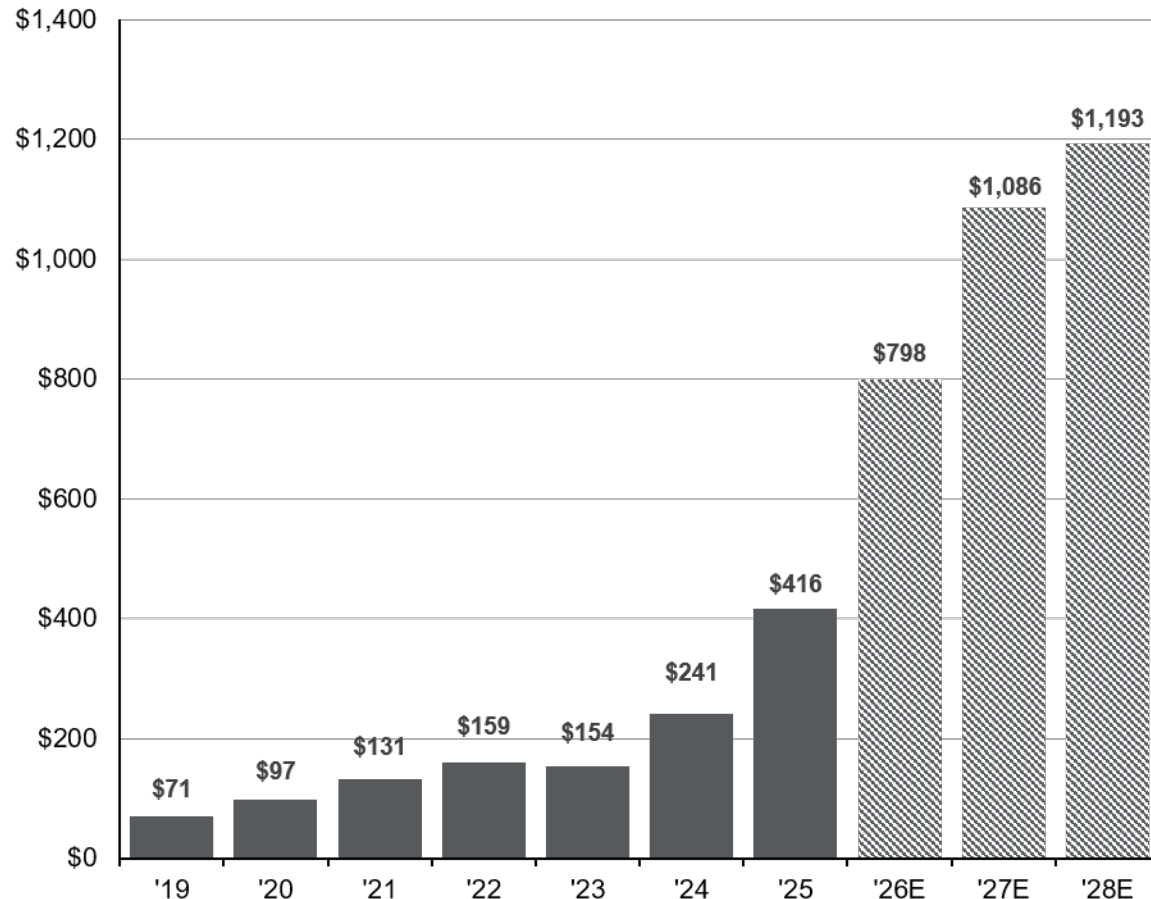
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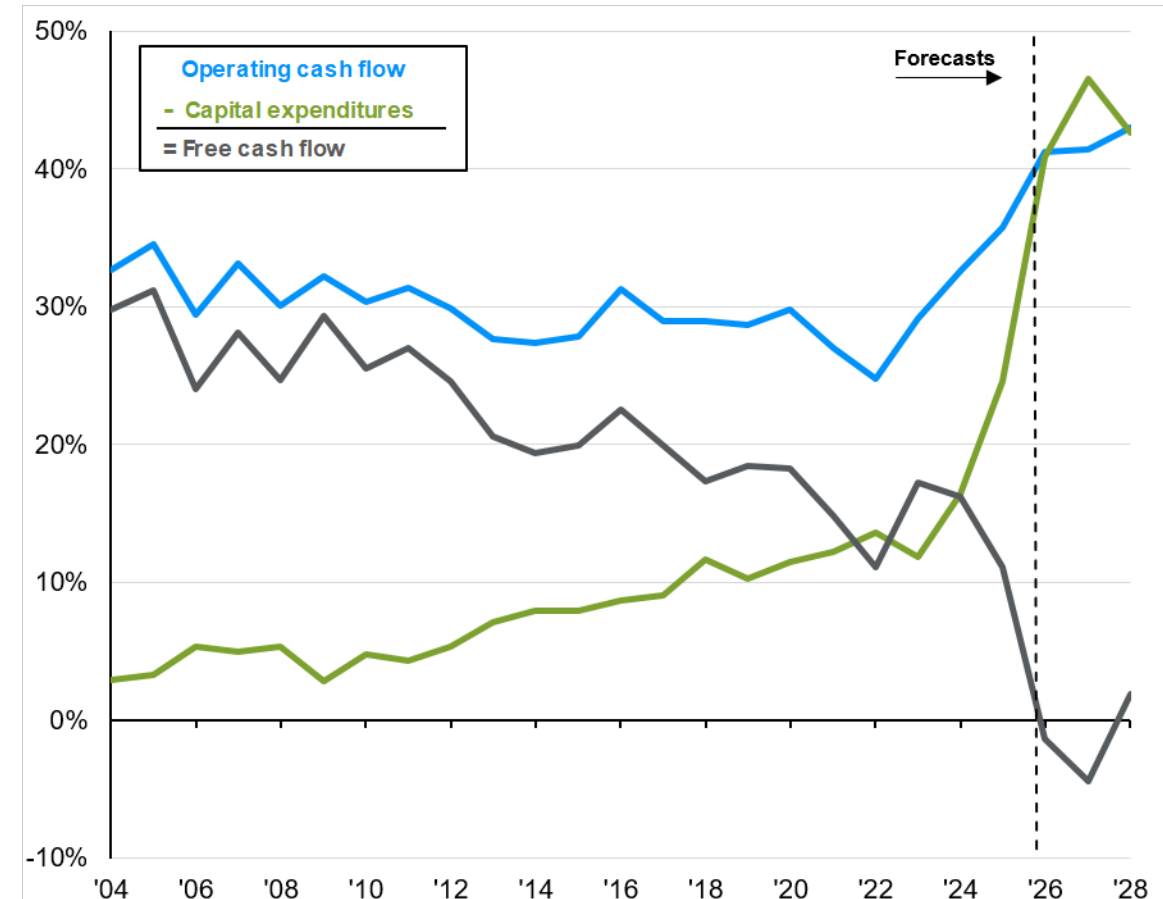
Capex from the major AI hyperscalers*

USD billions; Alphabet, Amazon, Meta, Microsoft, Oracle



Hyperscalers' cash flow and capex

% of sales



Source: Bloomberg, J.P. Morgan Asset Management.

Data for 2026, 2027 and 2028 reflect consensus estimates. Capex shown is company total. *Hyperscalers are the large cloud computing companies that own and operate data centers with horizontally linked servers that, along with cooling and data storage capabilities, enable them to house and operate AI workloads.

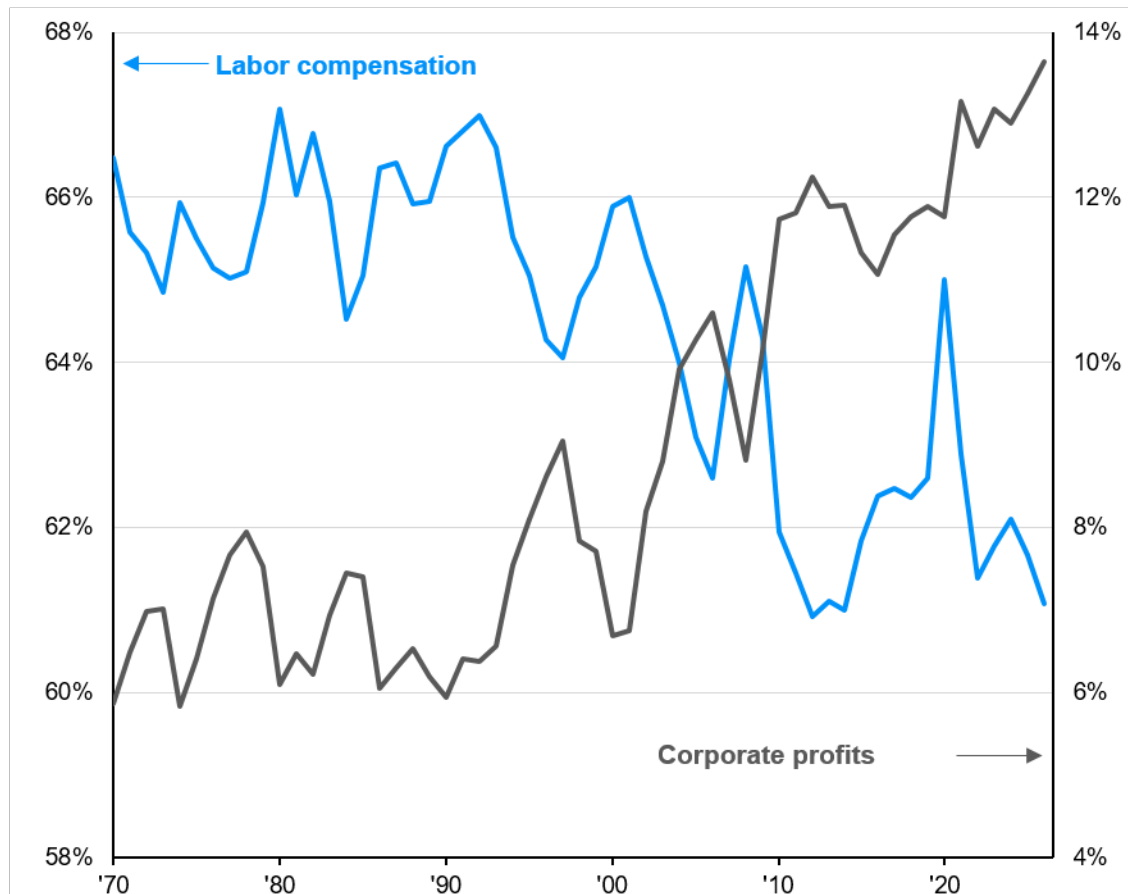
Guide to the Markets – U.S. Data are as of August 28, 2026.



...while the wealth effect has boosted spending by upper income consumers.

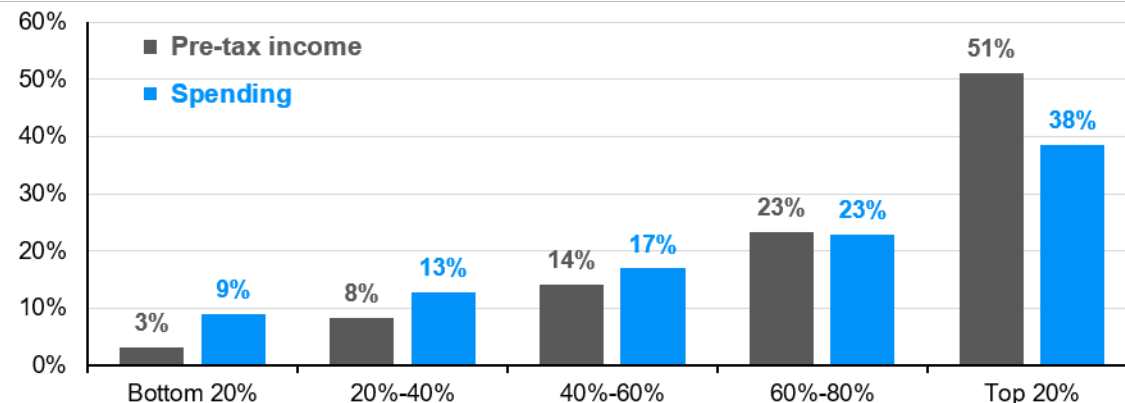
Labor compensation vs. corporate profits

Share of national income, annual and 1Q26



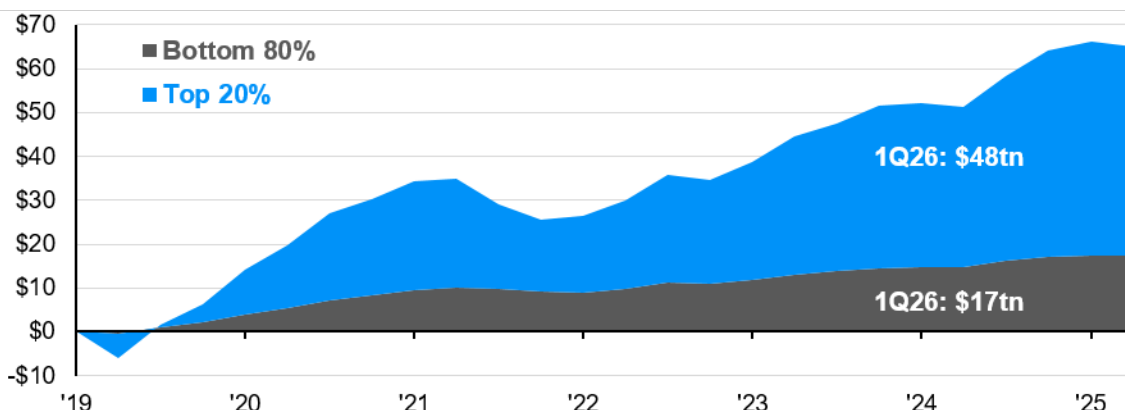
Consumer share of total pre-tax income and spending

By pre-tax income cohort, 2024



Net worth growth by income cohort

Cumulative growth from 4Q19, by pre-tax income cohort, USD trillions



Source: J.P. Morgan Asset Management; (Left and bottom right) BEA; (Top right) BLS.

(Left) Labor compensation includes wages and benefits. Corporate profits are calculated after tax and with capital consumption and inventory valuation adjustments. (Top right) Data sourced from the 2024 Consumer Expenditure Survey.

Guide to the Markets – U.S. Data are as of August 28, 2026.

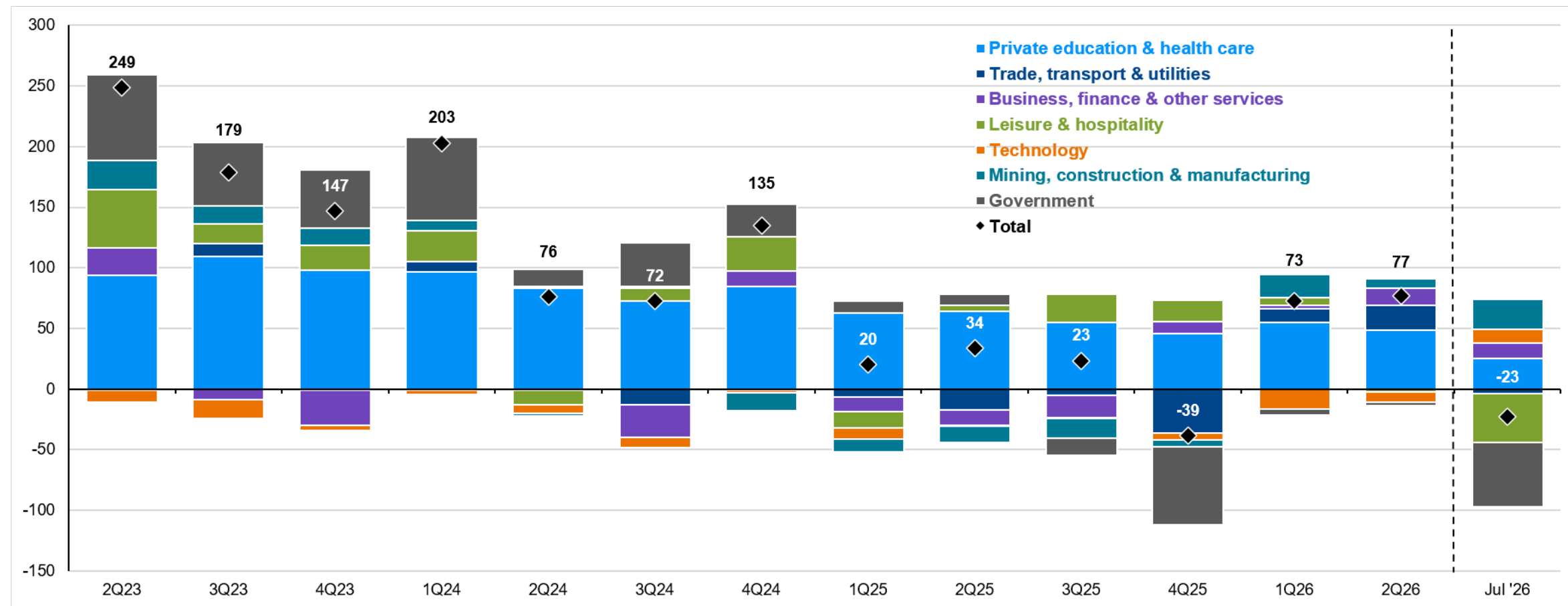


Job growth has normalized and broadened out...

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Job creation by sector

Average monthly change by quarter, thousands of jobs, seasonally adjusted



Source: U.S. Bureau of Labor Statistics, J.P. Morgan Asset Management.
Bars show the average monthly payroll change within each quarter by sector.
Guide to the Markets – U.S. Data are as of August 28, 2026.



...but remains non-inflationary given that wage growth has rolled over again.

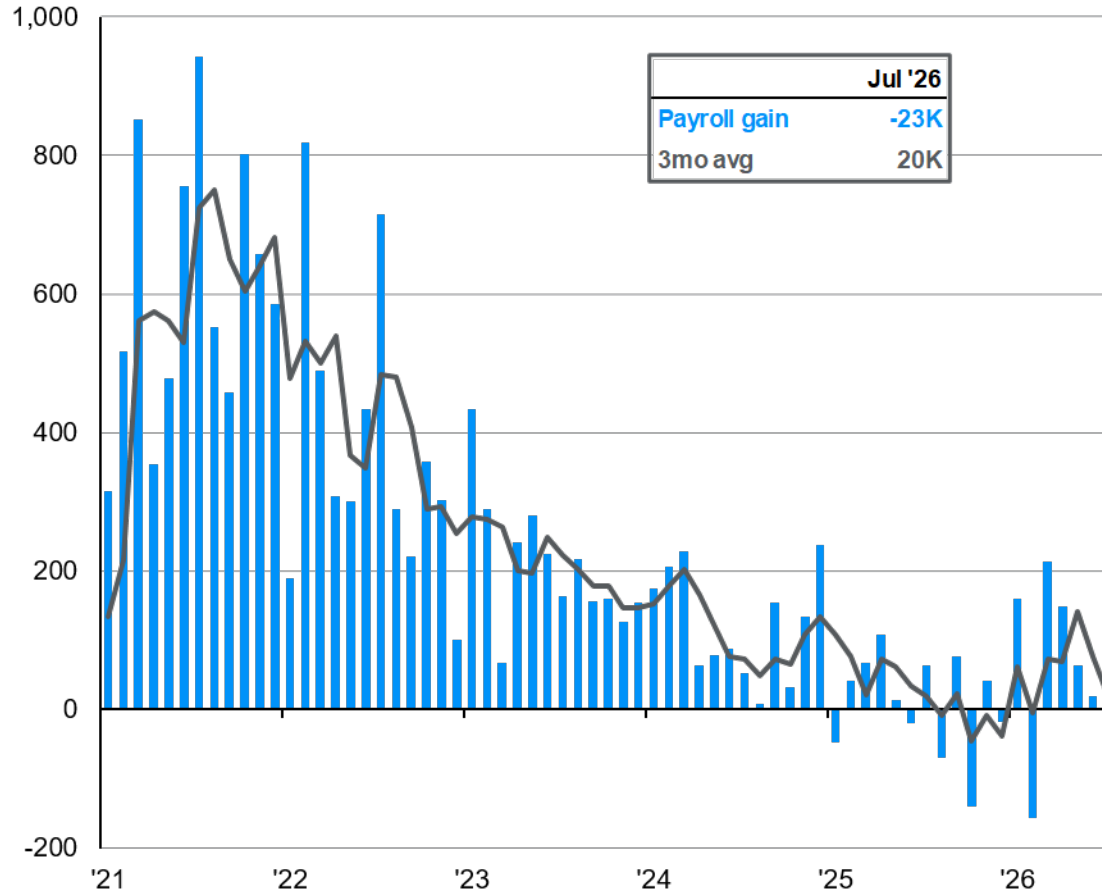
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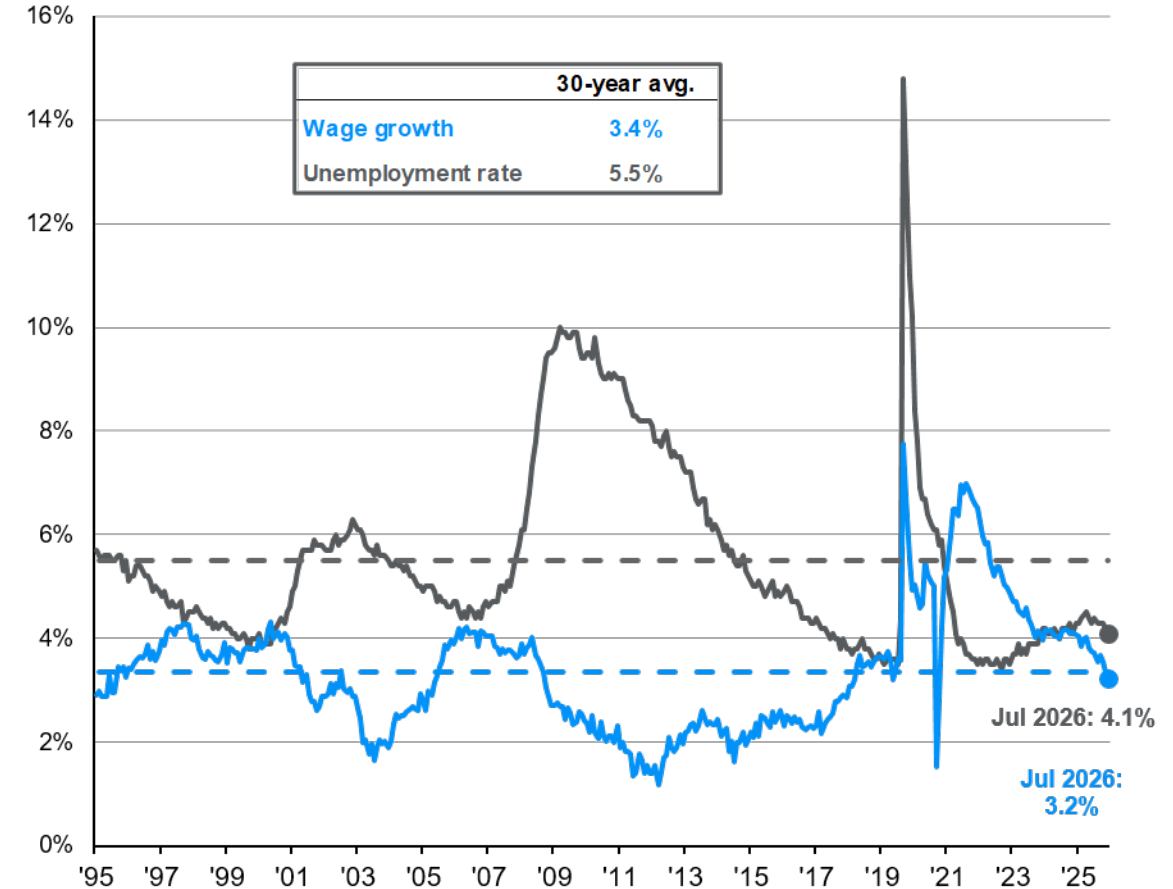
Nonfarm payroll gains

Month-over-month change and 3-month moving average, thousands, SA



Civilian unemployment rate and annual wage growth

Private production and non-supervisory workers, seasonally adjusted, %



Source: BLS, FactSet, J.P. Morgan Asset Management.
Private production and non-supervisory jobs represent just over 80% of total private nonfarm jobs.
Guide to the Markets – U.S. Data are as of August 28, 2026.



After reaccelerating for a few months, headline and core inflation have started to cool once again...

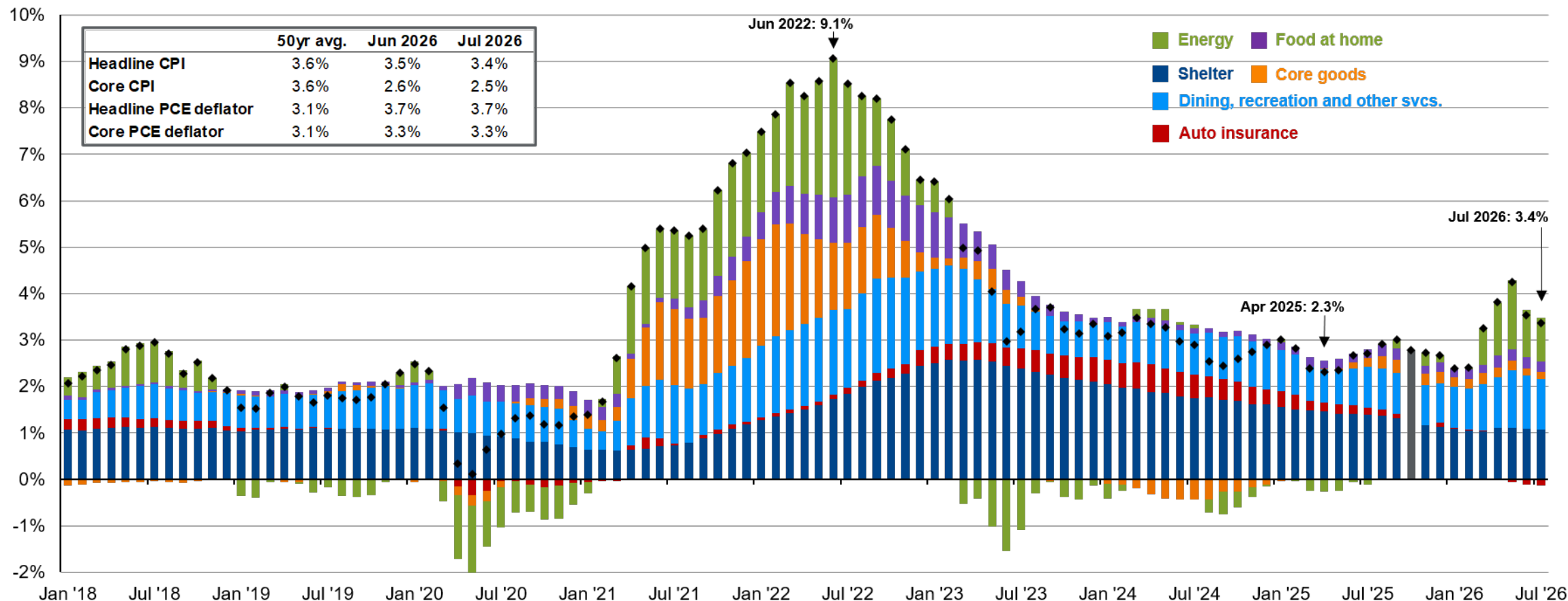
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Contributors to headline CPI inflation

Contribution to year-over-year % change in CPI, non-seasonally adjusted



Source: BLS, FactSet, J.P. Morgan Asset Management.

Contributions mirror the BLS methodology on Table 7 of the CPI report. Values may not sum to headline CPI figures due to rounding and underlying calculations. "Shelter" includes owners' equivalent rent, rent of primary residence and tenants' and household insurance. "Food at home" includes alcoholic beverages. Headline and core PCE deflator inflation shown are based on seasonally adjusted data due to data availability. Official October 2025 data unavailable due to government shutdown and data shown are J.P. Morgan Asset Management estimates.

Guide to the Markets – U.S. Data are as of August 28, 2026.



...which should keep the Fed on hold this year, but this is now a close call.

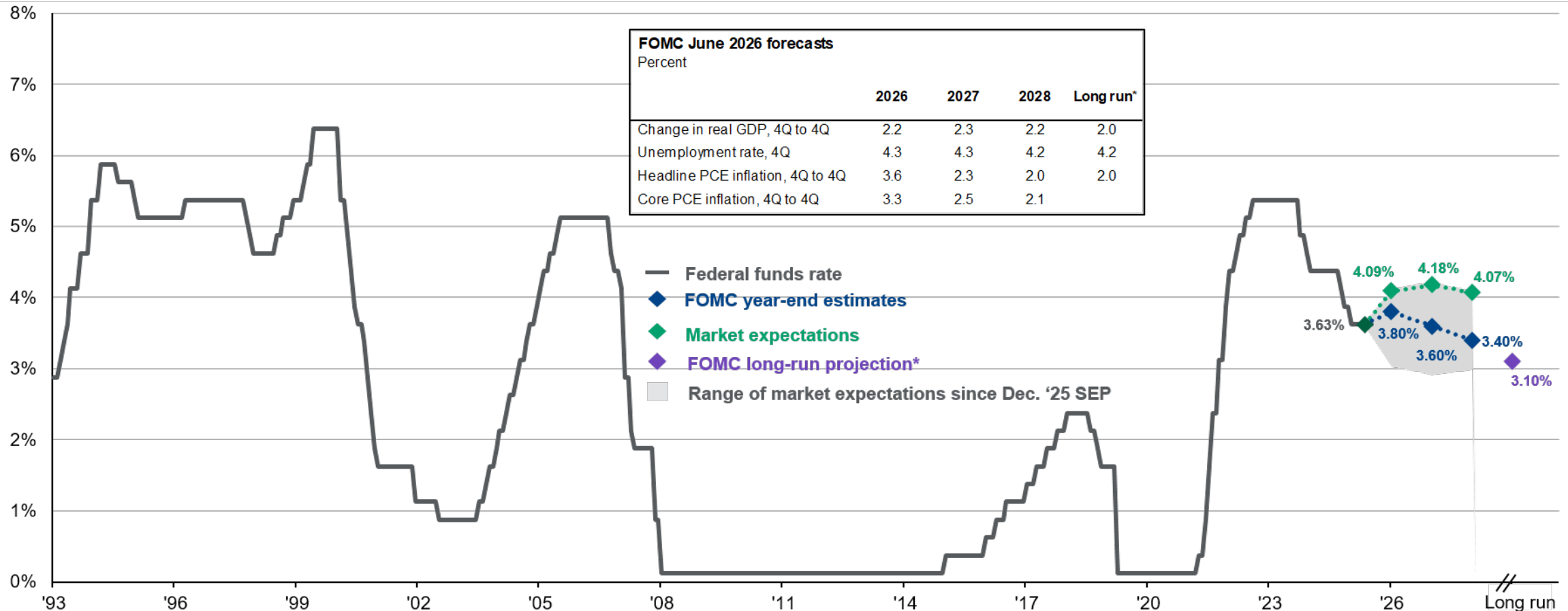
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Federal funds rate expectations

FOMC and market expectations for the federal funds rate



Source: Bloomberg, FactSet, Federal Reserve, J.P. Morgan Asset Management.

Market expectations are based off of USD Overnight Index Swaps. *Long-run projections are the rates of growth, unemployment and inflation to which a policymaker expects the economy to converge over the next five to six years in absence of further shocks and under appropriate monetary policy. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecasts, projections or other forward-looking statements, actual events, results or performance may differ materially from those reflected or contemplated.

Guide to the Markets – U.S. Data are as of August 28, 2026.



Agenda



- Economy: AI capex and upper income consumers keep economy on trend
- **Equities: Climate still favors AI theme, but on to a new season of it**
- International: Strong earnings driven by secular over cyclical themes
- Fixed Income: Bonds now priced for inflation and a Fed hiking rates
- Alternatives: Diversifying the offense and the defense



Despite macro cross-currents, risk assets have had a solid year so far, while bonds haven't recovered yet.

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2011 - 2025		Ann.	Vol.	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	YTD
Large Cap	Small Cap	REITs	REITs	Small Cap	REITs	REITs	Small Cap	EM Equity	Cash	Large Cap	Small Cap	REITs	Comdty.	Large Cap	Large Cap	EM Equity	Comdty.		
14.1%	20.3%	8.3%	19.7%	38.8%	28.0%	2.8%	21.3%	37.8%	1.8%	31.5%	20.0%	41.3%	16.1%	26.3%	25.0%	34.4%	30.9%		
Small Cap	EM Equity	Fixed Income	High Yield	Large Cap	Large Cap	Large Cap	High Yield	DM Equity	Fixed Income	REITs	EM Equity	Large Cap	Cash	DM Equity	Small Cap	DM Equity	EM Equity		
9.5%	17.5%	7.8%	19.6%	32.4%	13.7%	1.4%	14.3%	25.6%	0.0%	28.7%	18.7%	28.7%	1.5%	18.9%	11.5%	31.9%	24.6%		
REITs	REITs	High Yield	EM Equity	DM Equity	Fixed Income	Fixed Income	Large Cap	Large Cap	REITs	Small Cap	Large Cap	Comdty.	High Yield	Small Cap	Asset Alloc.	Large Cap	Small Cap		
7.8%	16.4%	3.1%	18.6%	23.3%	6.0%	0.5%	12.0%	21.8%	-4.0%	25.5%	18.4%	27.1%	-12.7%	16.9%	10.0%	17.9%	20.6%		
Asset Alloc.	DM Equity	Large Cap	DM Equity	Asset Alloc.	Asset Alloc.	Cash	Comdty.	Small Cap	High Yield	DM Equity	Asset Alloc.	Small Cap	Fixed Income	Asset Alloc.	High Yield	Asset Alloc.	REITs		
7.3%	15.7%	2.1%	17.9%	14.9%	5.2%	0.0%	11.8%	14.6%	-4.1%	22.7%	10.6%	14.8%	-13.0%	14.1%	9.2%	15.8%	15.3%		
DM Equity	Comdty.	Cash	Small Cap	High Yield	Small Cap	DM Equity	EM Equity	Asset Alloc.	Large Cap	Asset Alloc.	DM Equity	Asset Alloc.	Asset Alloc.	Asset Alloc.	High Yield	EM Equity	Comdty.		
7.1%	15.4%	0.1%	16.3%	7.3%	4.9%	-0.4%	11.6%	14.6%	-4.4%	19.5%	8.3%	13.5%	-13.9%	14.0%	8.1%	15.8%	14.7%		
High Yield	Large Cap	Asset Alloc.	Large Cap	REITs	Cash	Asset Alloc.	REITs	High Yield	Asset Alloc.	EM Equity	Fixed Income	DM Equity	DM Equity	REITs	Comdty.	Small Cap	Large Cap		
5.7%	14.7%	-0.7%	16.0%	2.9%	0.0%	-2.0%	8.6%	10.4%	-5.8%	18.9%	7.5%	11.8%	-14.0%	11.4%	5.4%	12.8%	13.5%		
EM Equity	Asset Alloc.	Small Cap	Asset Alloc.	Cash	High Yield	High Yield	Asset Alloc.	REITs	Small Cap	High Yield	High Yield	High Yield	Large Cap	EM Equity	Cash	High Yield	Asset Alloc.		
4.2%	10.1%	-4.2%	12.2%	0.0%	0.0%	-2.7%	8.3%	8.7%	-11.0%	12.6%	7.0%	1.0%	-18.1%	10.3%	5.3%	12.1%	11.4%		
Fixed Income	High Yield	DM Equity	Fixed Income	Fixed Income	EM Equity	Small Cap	Fixed Income	Fixed Income	Comdty.	Fixed Income	Cash	Cash	EM Equity	Fixed Income	REITs	Fixed Income	High Yield		
2.4%	9.1%	-11.7%	4.2%	-2.0%	-1.8%	-4.4%	2.6%	3.5%	-11.2%	8.7%	0.5%	0.0%	-19.7%	5.5%	4.9%	7.3%	2.9%		
Cash	Fixed Income	Comdty.	Cash	EM Equity	DM Equity	EM Equity	DM Equity	Comdty.	DM Equity	Comdty.	Comdty.	Fixed Income	Small Cap	Cash	DM Equity	Cash	Cash		
1.5%	4.6%	-13.3%	0.1%	-2.3%	-4.5%	-14.6%	1.5%	1.7%	-13.4%	7.7%	-3.1%	-1.5%	-20.4%	5.1%	4.3%	4.3%	2.4%		
Comdty.	Cash	EM Equity	Comdty.	Comdty.	Comdty.	Comdty.	Cash	Cash	EM Equity	Cash	REITs	EM Equity	REITs	Comdty.	Fixed Income	REITs	Fixed Income		
-1.1%	0.9%	-18.2%	-1.1%	-9.5%	-17.0%	-24.7%	0.3%	0.8%	-14.2%	2.2%	-5.1%	-2.2%	-24.9%	-7.9%	1.3%	2.3%	-0.2%		

Source: Bloomberg, FactSet, MSCI, NAREIT, Russell, Standard & Poor's, J.P. Morgan Asset Management.

Large Cap: S&P 500; Small Cap: Russell 2000; EM Equity: MSCI EME; DM Equity: MSCI EAFE; Comdty: Bloomberg Commodity Index; High Yield: Bloomberg Global HY Index; Fixed Income: Bloomberg U.S. Aggregate; REITs: NAREIT Equity REIT Index; Cash: Bloomberg 1-3m Treasury. The "Asset Allocation" portfolio is for illustrative purposes only and assumes annual rebalancing with the following weights: 25% in the S&P 500, 10% in the Russell 2000, 15% in the MSCI EAFE, 5% in the MSCI EME, 25% in the Bloomberg U.S. Aggregate, 5% in the Bloomberg 1-3m Treasury, 5% in the Bloomberg Global High Yield Index, 5% in the Bloomberg Commodity Index and 5% in the NAREIT Equity REIT Index. Annualized (Ann.) return and volatility (Vol.) represent the period from 12/31/2010 to 12/31/2025. Please see the disclosure page at the end for index definitions. All data represent total return for stated period. Past performance is no guarantee of future results.

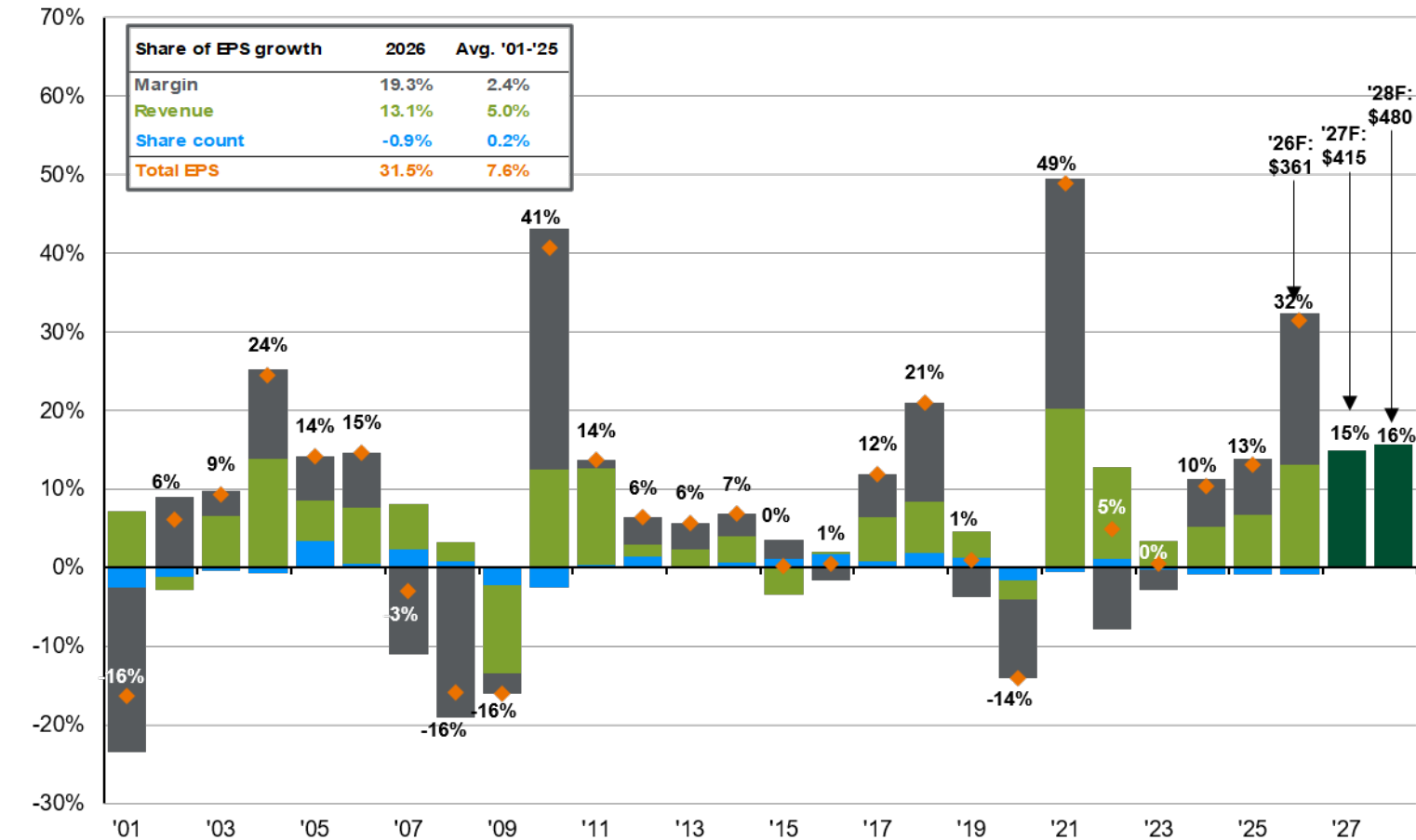
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Stock market supported by strong earnings, not a strong economy...

S&P 500 EPS growth

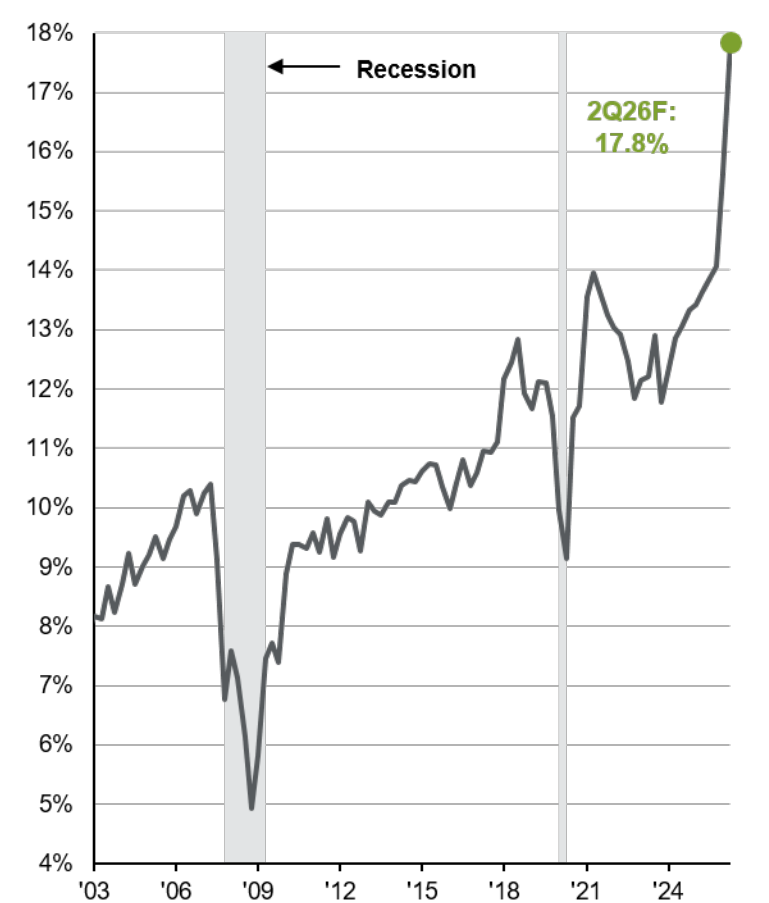
Year-over-year growth broken into changes in revenue, profit margin and share count



Source: Compustat, FactSet, Standard & Poor's, J.P. Morgan Asset Management.
Historical EPS values are based on annual earnings per share. Forecasts for 2026, 2027 and 2028 reflect consensus analyst expectations, provided by FactSet. Past performance is no guarantee of future results.
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S&P 500 profit margins

Quarterly earnings/sales





...boosted by the boom in AI-related capex spending.

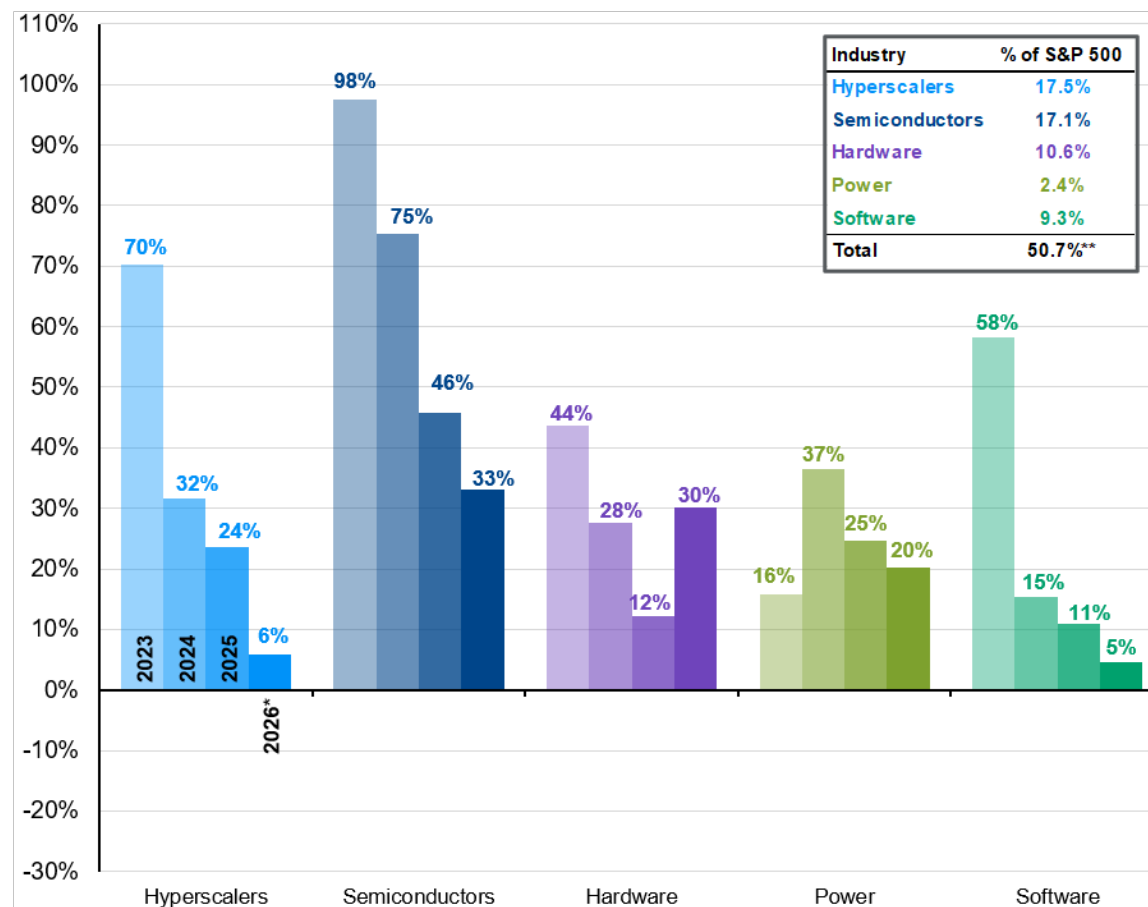
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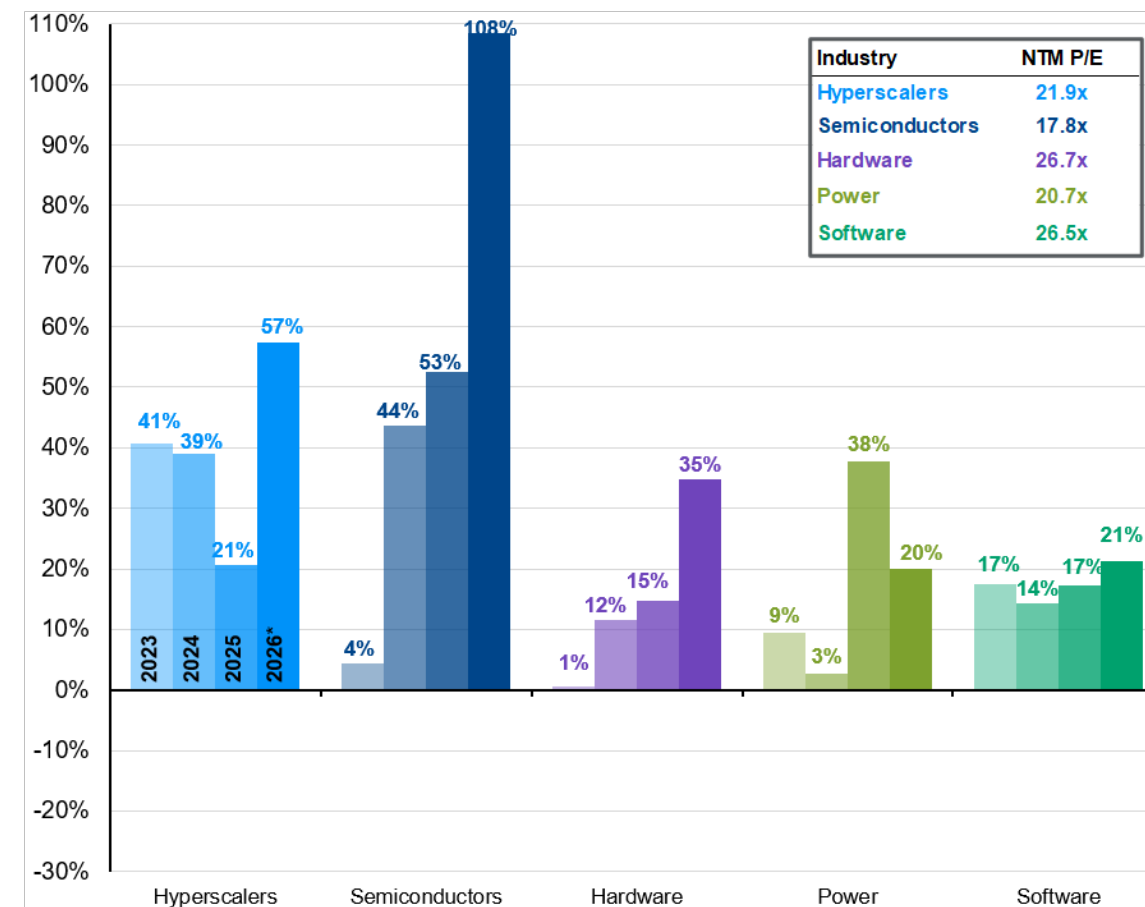
AI-related industry performance

Price return



AI-related industry earnings growth

Year-over-year



Source: FactSet, MSCI, Standard & Poor's, J.P. Morgan Asset Management.

*2026 price return is year-to-date, and earnings growth reflects 2026 consensus estimates as provided by FactSet. Hyperscalers is a market-weighted composite of AMZN (Sector = Con. Disc, Industry = Broadline Retail), GOOGL/GOOG (Comm. Svcs., Interactive Media & Svcs.), META (Comm. Svcs., Interactive Media & Svcs.), MSFT (Info. Tech., Software) and ORCL (Info. Tech., Software). The remaining categories are based on GICS Industries. Semis = Semiconductors & Semiconductor Equipment (Info. Tech.); Hardware = market-weighted composite of Communications Equipment (Info. Tech.), Electronic Equipment Instruments & Components (Info. Tech.) and Technology Hardware Storage & Peripherals (Info. Tech.); Power = market-weighted composite of Electrical Equipment (Industrials) and Electric Utilities (Utilities); Software = Software (Info. Tech.). Hyperscalers that fall in category industries are included in both the hyperscaler and that additional category.

**Total percentage in the S&P 500 does not double count hyperscalers that fall in additional categories. Past performance is no guarantee of future results.

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“Mag 7” returns fizzled out despite continued strong earnings – a reminder that the “AI theme” keeps evolving...

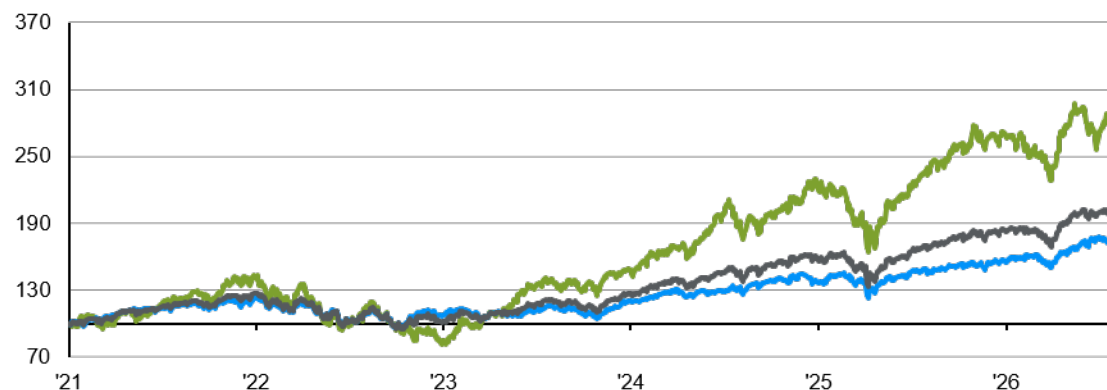
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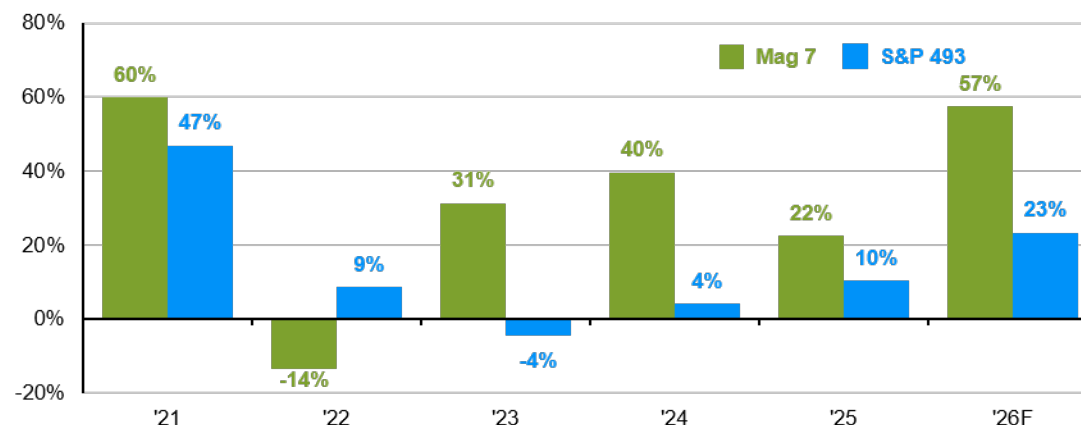
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Magnificent 7 performance in the S&P 500

Indexed to 100 on 1/1/2021, price return

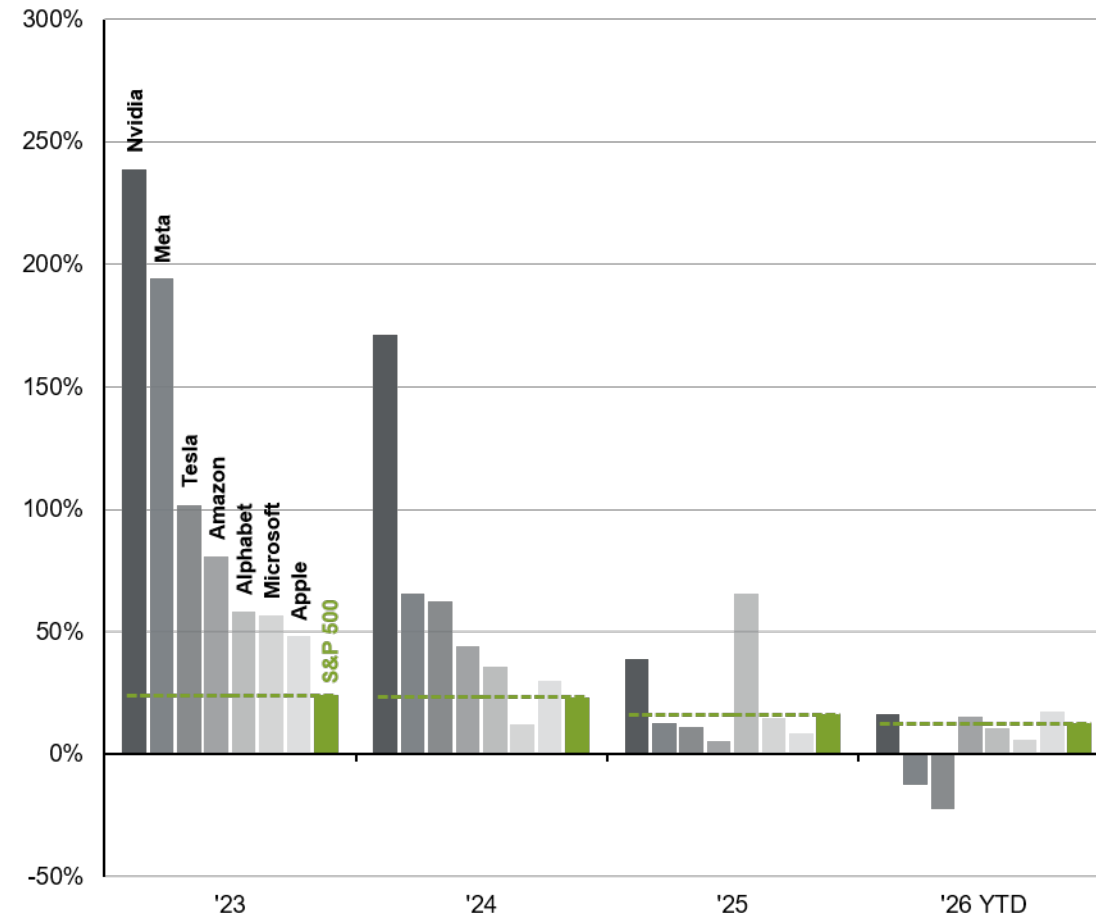


Year-over-year earnings growth



Magnificent 7 performance dispersion

Price return



Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management.

Magnificent 7 (Mag 7) includes AAPL, AMZN, GOOGL/GOOG, META, MSFT, NVDA and TSLA. The S&P 500 ex-Mag 7 (S&P 493) is calculated by backing out a weighted average Mag 7 price return from the S&P 500 price return. *Return share represents the Mag 7's contribution to the index return. Past performance is no guarantee of future results.

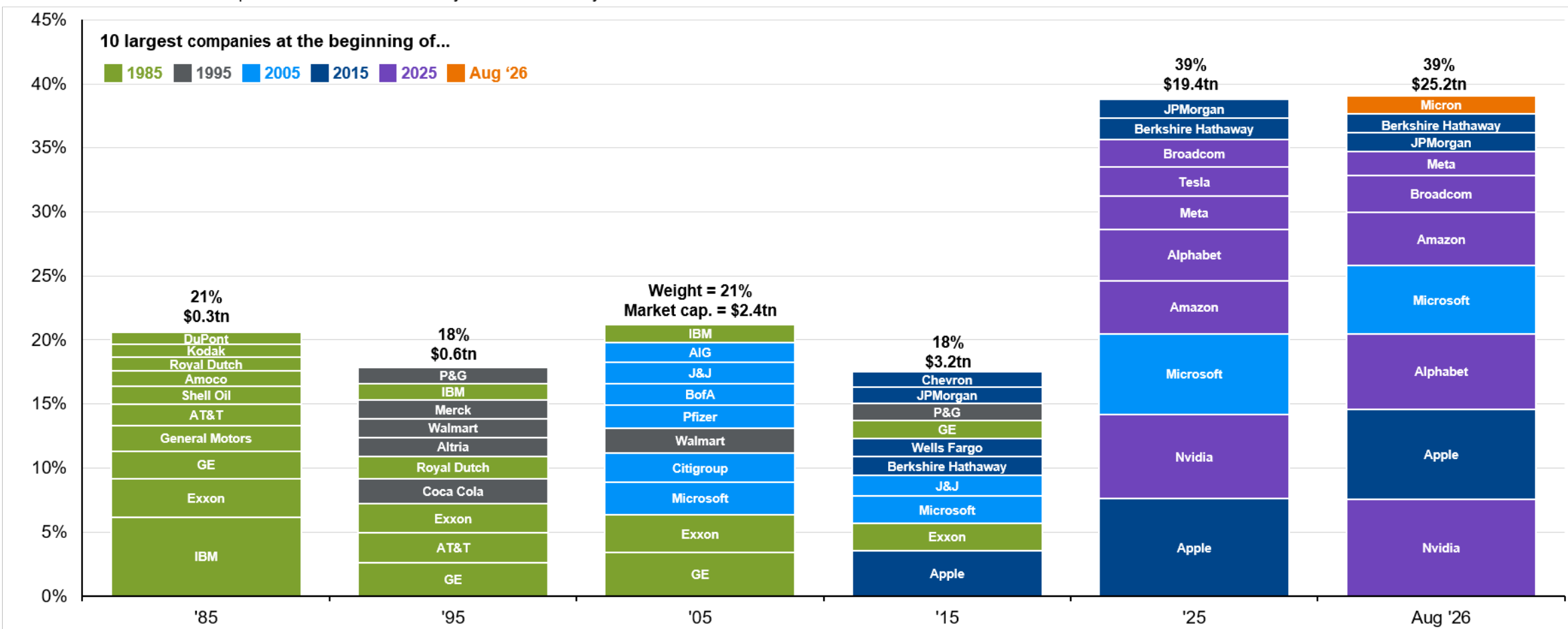
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...and the ultimate AI winners may not have been created yet.

Top 10 S&P 500 companies by market capitalization

Percent of S&P 500 market capitalization as of the first day of the indicated year



Source: Bloomberg, FactSet, Standard & Poor's, J.P. Morgan Asset Management. Companies are organized from highest weight at the bottom to lowest weight at the top. Market weights are provided by Bloomberg through 2025 and FactSet thereafter. Past performance is no guarantee of future results.
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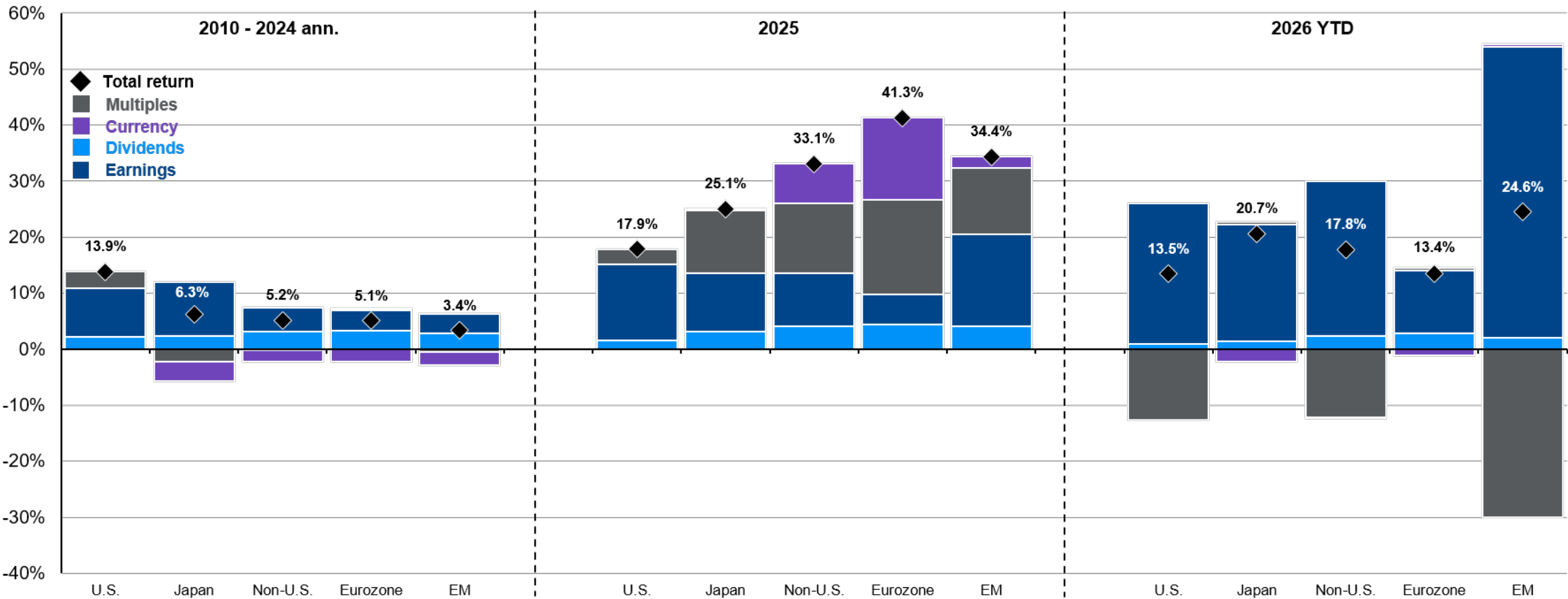
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- Equities: Climate still favors AI theme, but on to a new season of it
- **International: Strong earnings driven by secular over cyclical themes**
- Fixed Income: Bonds now priced for inflation and a Fed hiking rates
- Alternatives: Diversifying the offense and the defense



International stocks are outperforming again, boosted by exceptional earnings growth...

Sources of global equity returns*

Total return, USD



Source: FactSet, MSCI, Standard & Poor's, J.P. Morgan Asset Management.
All return values are MSCI Gross Index data, except the U.S., which is the S&P 500. Non-U.S. is MSCI AC World ex USA Index. *Multiple expansion is based on the forward P/E ratio, and EPS growth outlook is based on next 12 months earnings estimates. Chart is for illustrative purposes only. Past performance is no guarantee of future results.
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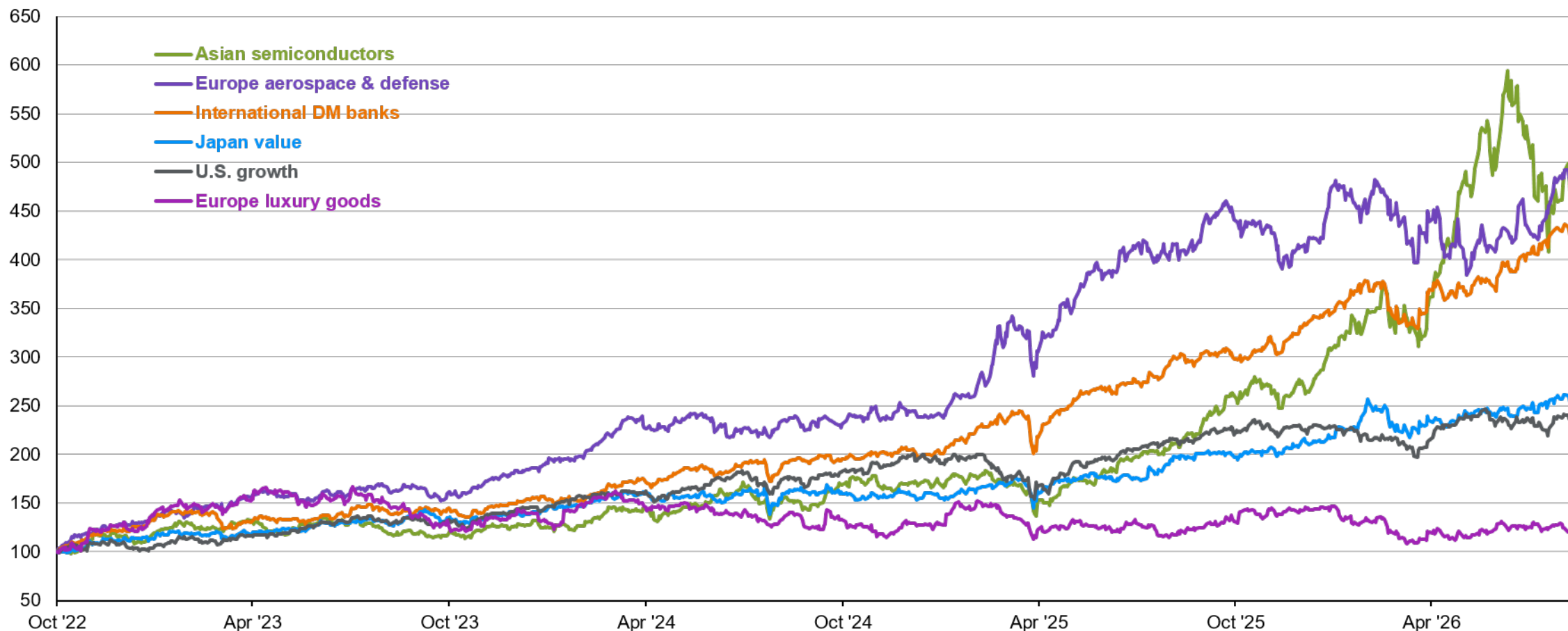


...as a result of strong secular, not cyclical, themes.

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Major global investment themes

Oct 12, 2022 = 100, total return, USD



Source: FactSet, MSCI, Standard & Poor's, J.P. Morgan Asset Management.

10/12/2022 was the market bottom for U.S. equities. Europe aerospace & defense = MSCI Europe / Aerospace & Defense Index, Asian semis = FactSet Market Indices Asia / Semiconductors Index, International DM banks = MSCI EAFE / Banks Index, U.S. Growth = Russell 1000 Growth Index, Japan value = MSCI Japan/ Value Index, Europe luxury goods = MSCI Europe / Textiles & Apparel & Luxury Goods Index. Past performance is no guarantee of future results.

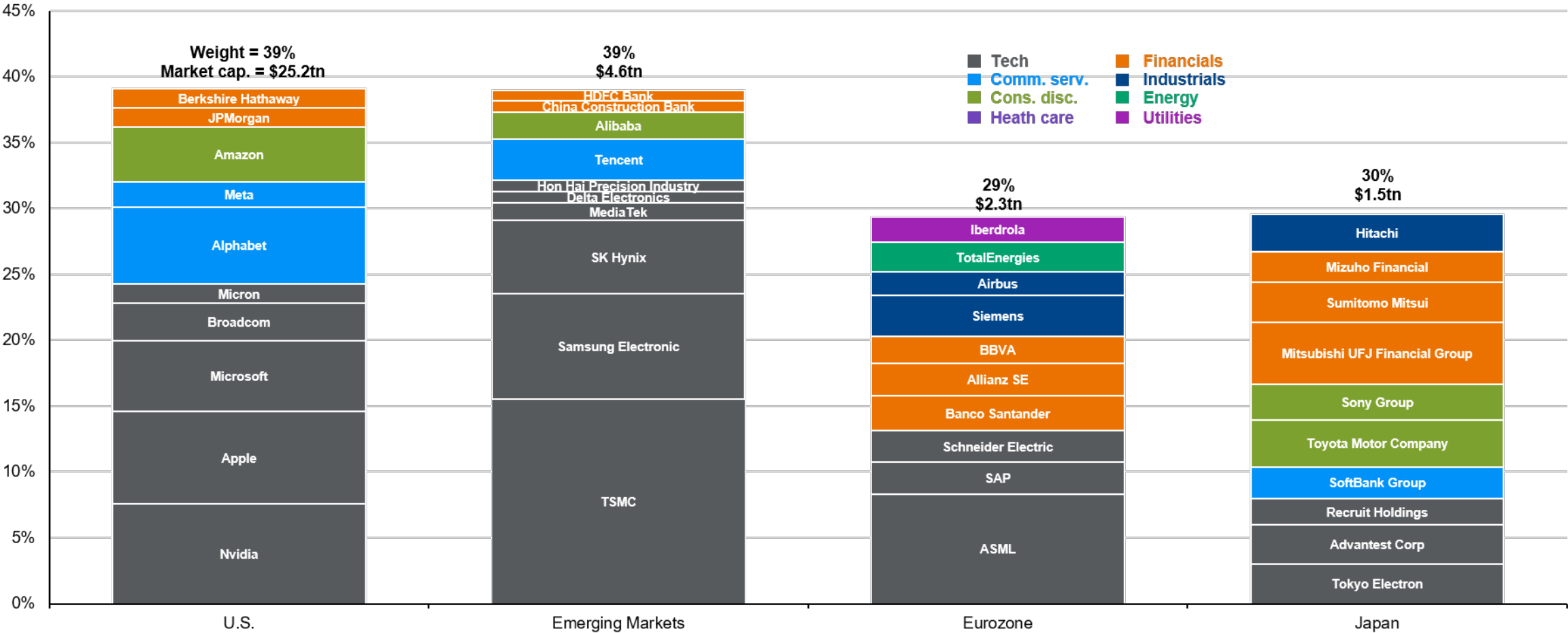
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U.S. and EM are concentrated in AI, while Europe and Japan offer more thematic diversification.

Index weight on the first day of the current month



Source: Bloomberg, MSCI, Standard & Poor's, J.P. Morgan Asset Management.
All markets are represented by their respective MSCI index except for the U.S., which is the S&P 500. Eurozone is MSCI European Monetary Union Index. Past performance is no guarantee of future results.
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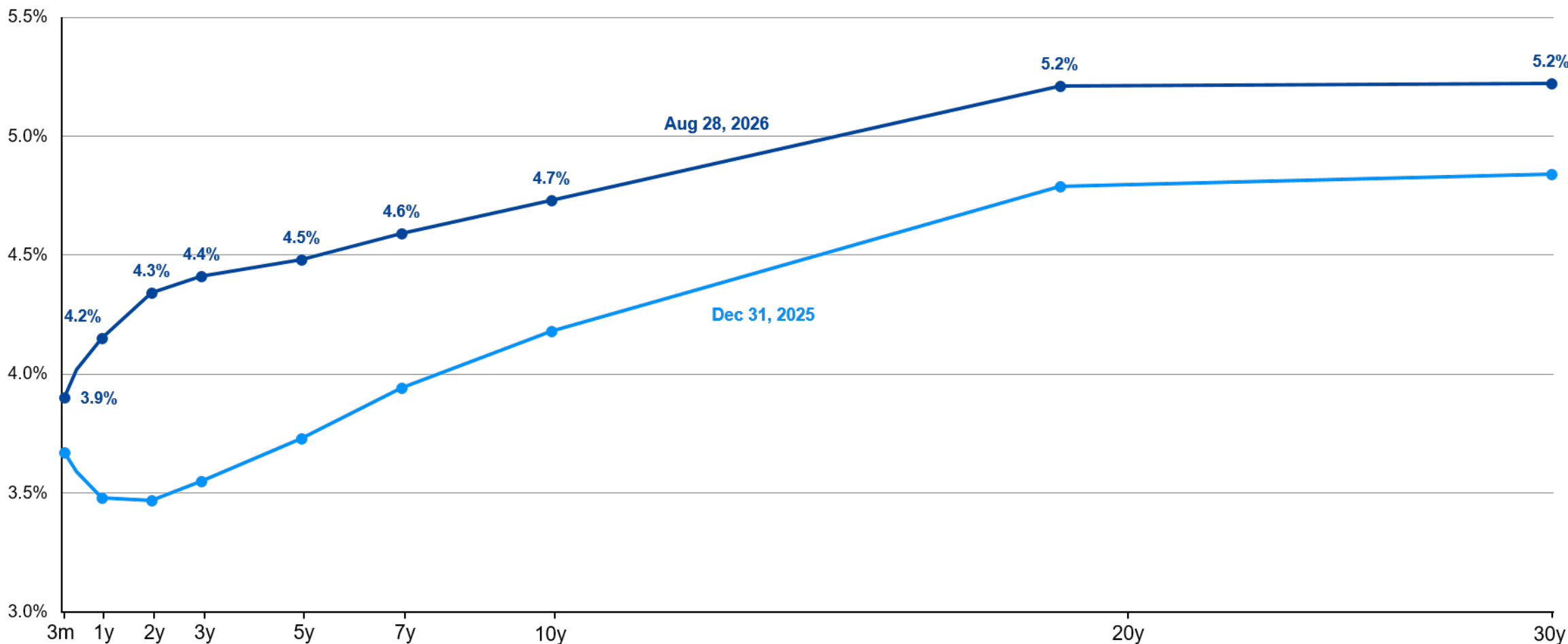


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Short-duration yields have reset sharply higher, creating value on the short end of the curve.

U.S. Treasury yield curve



Source: FactSet, Federal Reserve, J.P. Morgan Asset Management.
Guide to the Markets – U.S. Data are as of August 28, 2026.



The Fed may be on pause, but the attractive income in fixed income is not.

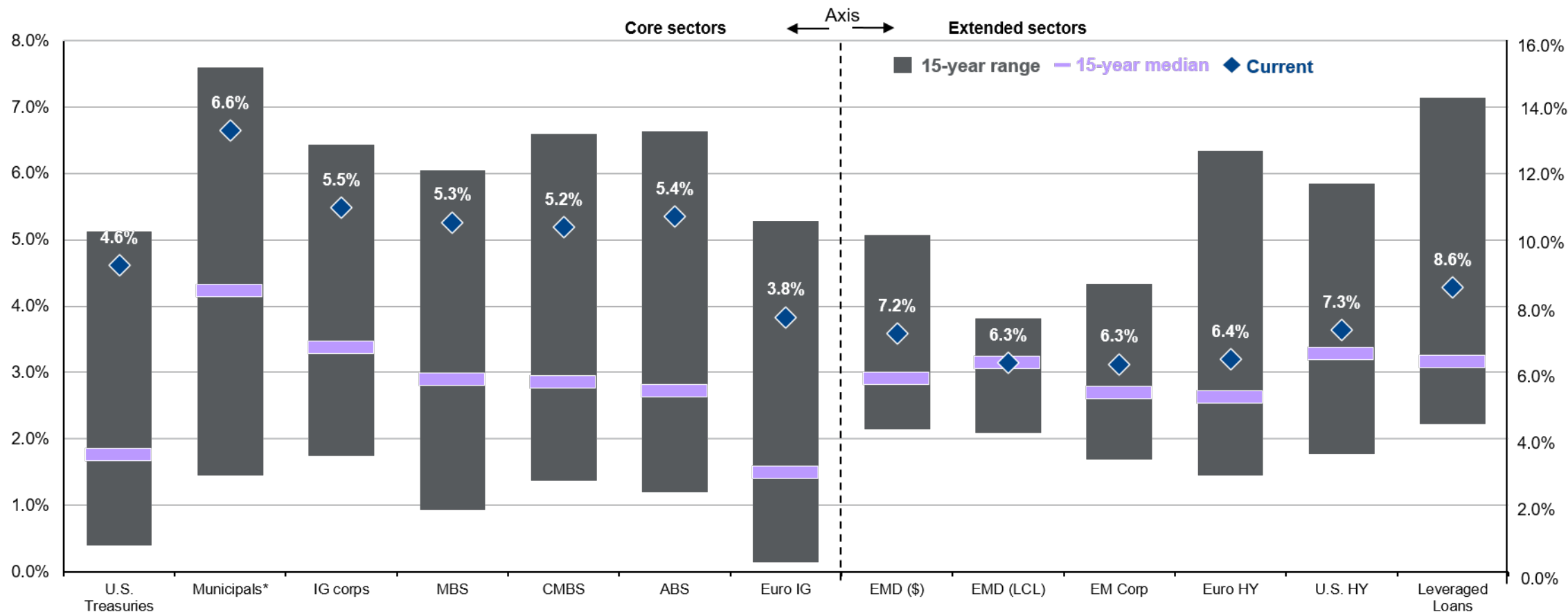
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Yield to worst across fixed income sectors

Percent, past 15 years



Source: Bloomberg, FactSet, J.P. Morgan Credit Research, J.P. Morgan Asset Management.

Indices used are Bloomberg except for ABS, emerging market debt and leveraged loans: ABS: J.P. Morgan ABS Index; CMBS: Bloomberg Investment Grade CMBS Index; EMD (USD): J.P. Morgan EMIGLOBAL Diversified Index; EMD (LCL): J.P. Morgan GBI-EM Global Diversified Index; EM Corp.: J.P. Morgan CEMBI Broad Diversified; Leveraged Loans: JPM Leveraged Loan Index; Euro IG: Bloomberg Euro Aggregate Corporate Index; Euro HY: Bloomberg Pan-European High Yield Index. Yield to worst is the lowest possible yield that can be received on a bond apart from the company defaulting and considers factors like call provisions, prepayments and other features that may affect the bonds' cash flows. ABS data begins in 2012. *All sectors shown are yield to worst except for Municipals, which is based on the tax-equivalent yield to worst assuming a top income tax bracket rate of 37% plus a Medicare tax rate of 3.8%.

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J.P.Morgan
ASSET MANAGEMENT



Bonds do still have an important role to play when the going gets tough...

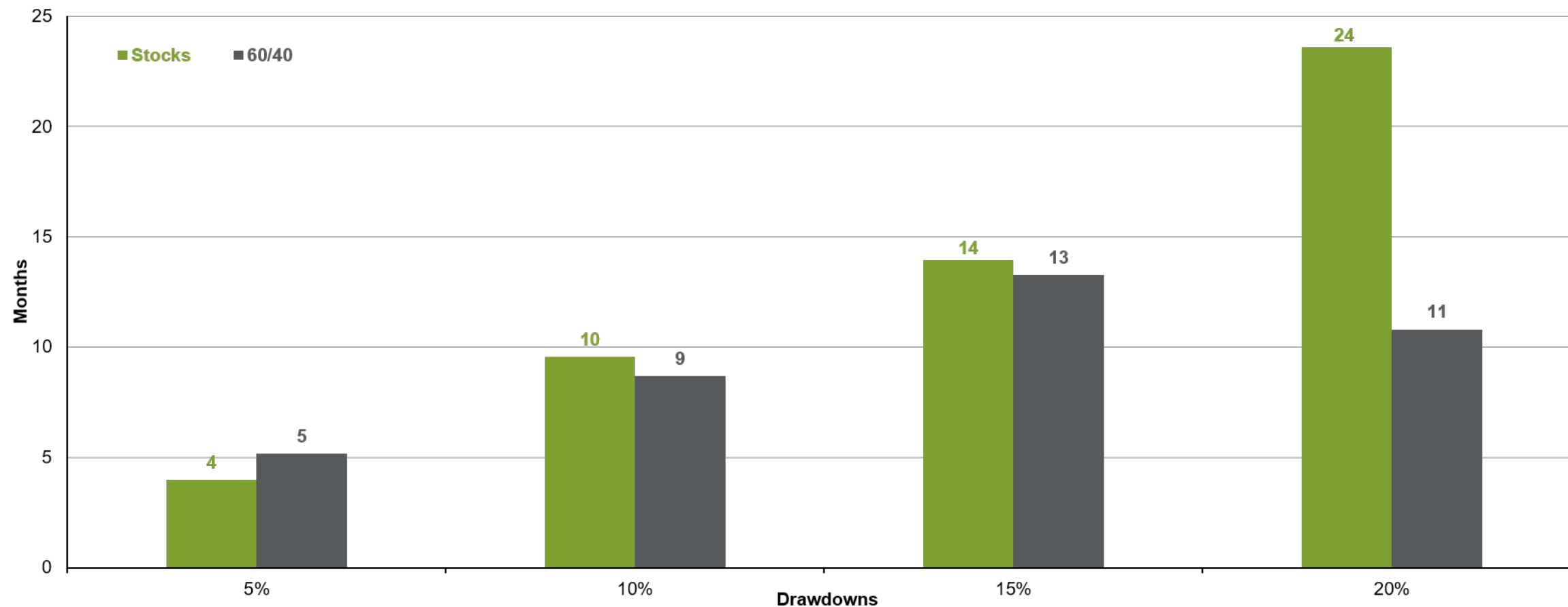
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Average time to recover from drawdowns by portfolio type

1988 - 2025



Source: Bloomberg, FactSet, Standard & Poor's, J.P. Morgan Asset Management.

Stocks: S&P 500 Total Return Index; 60/40: A blended portfolio of 60% S&P 500 Total Return Index and 40% Bloomberg U.S. Aggregate Bond Index, rebalanced daily. Time in months is calculated based on trading days between drawdown and the subsequent recovery.

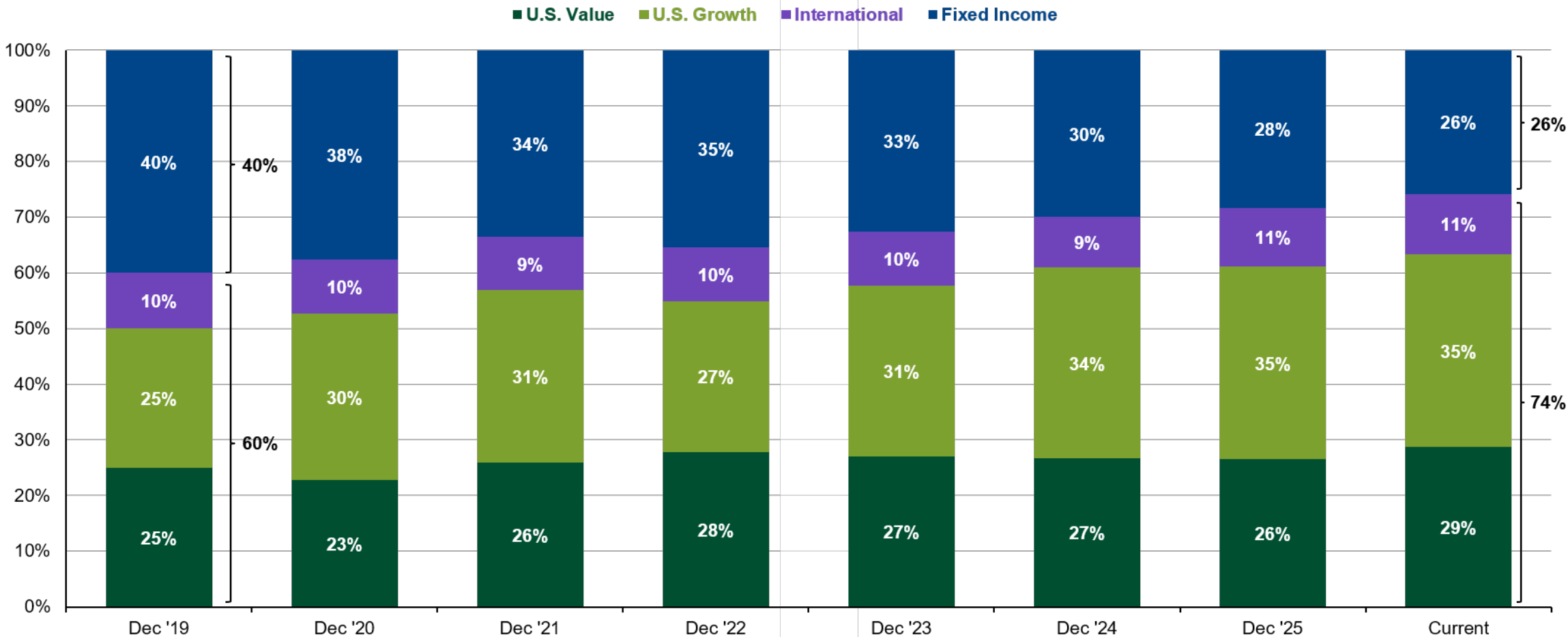
Guide to the Markets – U.S. Data are as of August 28, 2026.



...and investors should beware the portfolio drift beneath the surface.

60/40 portfolio composition by asset class

December 31, 2019 – present, no rebalancing



Source: Bloomberg, FactSet, MSCI, Russell, Standard & Poor's, J.P. Morgan Asset Management. Standard asset allocation at the end of 2019 assumes 60% weight to global equities and 40% to U.S. fixed income. U.S. Value: Equal-weighted Russell 1000 Value and Russell 2000 Value; U.S. Growth: Equal-weighted Russell 1000 Growth and Russell 2000 Growth; International: MSCI ACWI ex-US; Fixed Income: 10% Bloomberg Global HY Index and 30% Bloomberg U.S. Aggregate. Past performance is no guarantee of future results. Guide to the Markets – U.S. Data are as of August 28, 2026.



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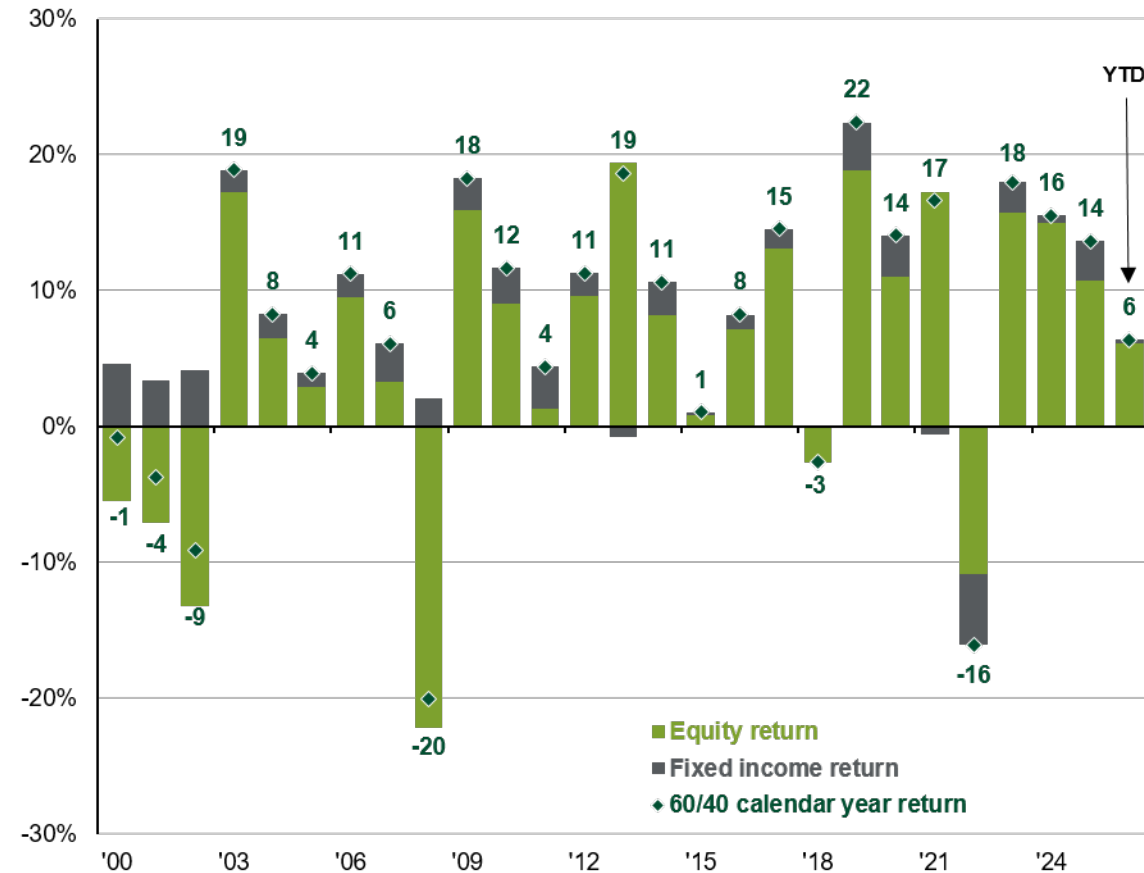
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While still an important diversifier, bonds are not a “one-stop-shop” for diversification.

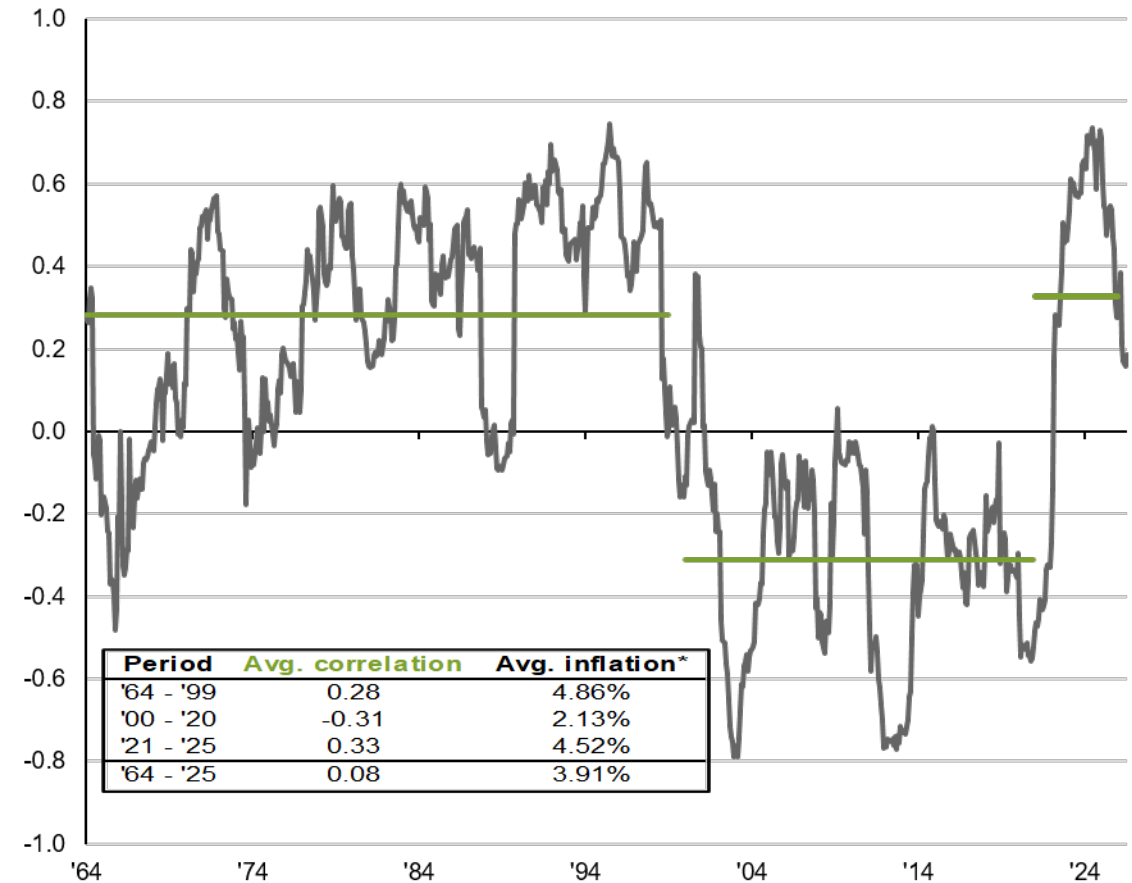
60/40 annual return decomposition

Total return, %



S&P 500 / U.S. 10-year Treasury correlation

Rolling 24-month corr. based on monthly total returns, 1964 - present



Source: Bloomberg, FactSet, Haver Analytics, LSEG, Standard & Poor's, J.P. Morgan Asset Management.

(Left) The 60/40 portfolio is 60% invested in the S&P 500 Total Return Index and 40% invested in the Bloomberg U.S. Aggregate Total Return Index. (Right) Correlations are calculated using monthly returns of S&P 500 TR Index and U.S. 10-year Constant Maturity TR Index. For the U.S. 10-year Constant Maturity TR Index, data until 2006 are sourced from Haver Analytics and from FactSet thereafter. *Simple average of the y/y percent change in headline CPI during each period. For the year 2025, October CPI data is missing due to the U.S. federal government shutdown.

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Alternatives have a lot to offer for both the offense and defense in portfolios.

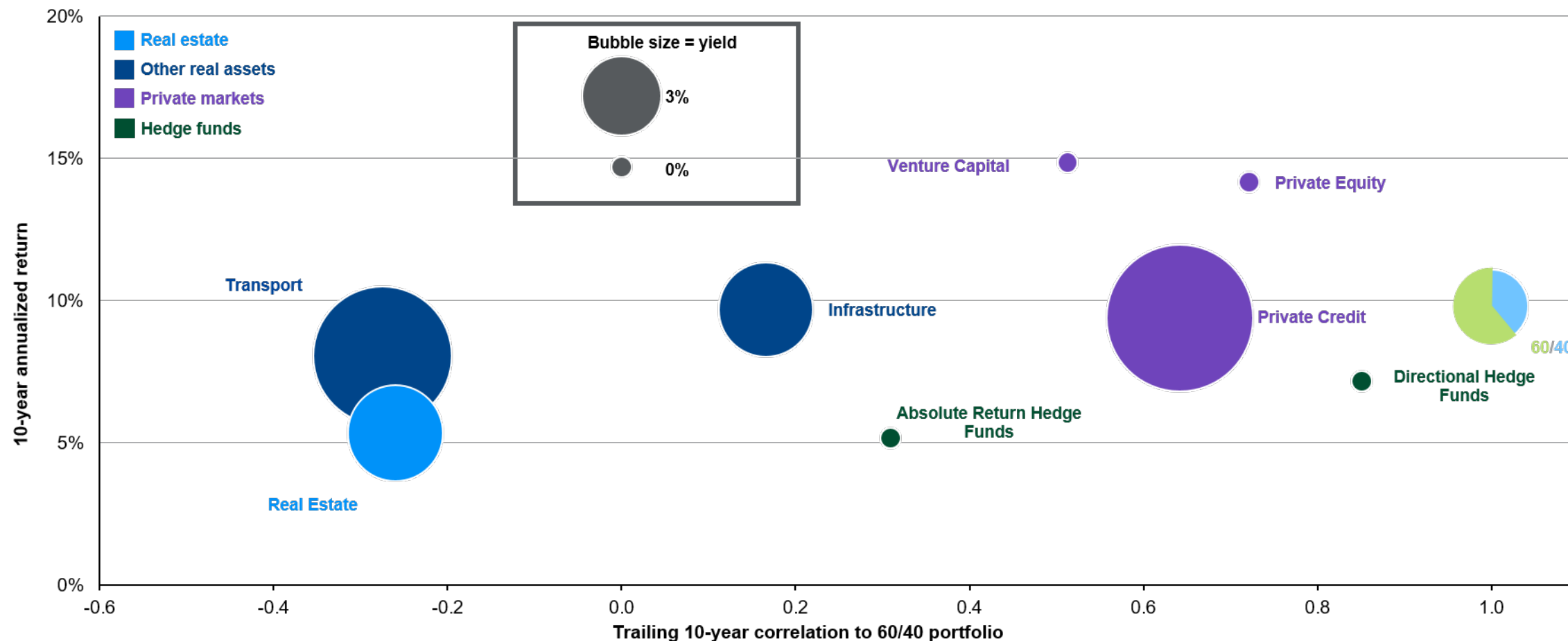
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Correlations, returns, and yields

10-year correlations and 10-year annualized total returns, 1Q16 – 4Q25



Source: Burgess, Cliffwater, FactSet, MSCI, PivotalPath, J.P. Morgan Asset Management.

All categories are global, except for private credit, which is U.S. Correlations are based on quarterly returns over the time period indicated. A 60/40 portfolio is comprised of 60% stocks and 40% bonds. Stocks are represented by the S&P 500 Total Return Index. Bonds are represented by the Bloomberg U.S. Aggregate Total Return Index. 10-year annualized returns are calculated based on the time period indicated. "Absolute Return Hedge Funds" represent asset-weighted returns from the PivotalPath Global Macro and Relative Value indices. "Directional Hedge Funds" represent asset-weighted returns from the PivotalPath Credit, Equity Diversified and Event Driven indices. Private credit represents direct lending returns and yields from the Cliffwater Direct Lending Index. All other indices and data used for alternative asset class returns and yields are as described on pages 12 and 17 of the *Guide to Alternatives* based on latest data available. Transportation returns are shown on an unlevered basis and returns can be enhanced by adding leverage. Past performance is no guarantee of future results.

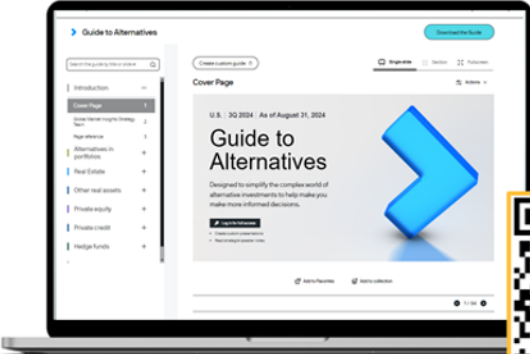
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Gabriela Santos  · 2nd
Managing Director, Chief Market Strategist for the Americas, J.P.
Morgan Asset Management

 Top Voice

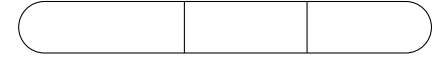
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J.P. Morgan Asset Management – Index definitions



All indexes are unmanaged and an individual cannot invest directly in an index. Index returns do not include fees or expenses.

Equities:

The **Dow Jones Industrial Average** is a price-weighted average of 30 actively traded blue-chip U.S. stocks.

The **MSCI ACWI (All Country World Index)** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets.

The **MSCI EAFE Index(Europe, Australasia, Far East)** is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the US & Canada.

The **MSCI Emerging Markets Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets.

The **MSCI Europe Index** is a free float-adjusted market capitalization index that is designed to measure developed market equity performance in Europe.

The **MSCI Pacific Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance in the Pacific region.

The **Russell 1000 Index®** measures the performance of the 1,000 largest companies in the Russell 3000.

The **Russell 1000 Growth Index®** measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

The **Russell 1000 Value Index®** measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

The **Russell 2000 Index®** measures the performance of the 2,000 smallest companies in the Russell 3000 Index.

The **Russell 2000 Growth Index®** measures the performance of those Russell 2000 companies with higher price-to-book ratios and higher forecasted growth values.

The **Russell 2000 Value Index®** measures the performance of those Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values.

The **Russell 3000 Index®** measures the performance of the 3,000 largest U.S. companies based on total market capitalization.

The **Russell Midcap Index®** measures the performance of the 800 smallest companies in the Russell 1000 Index.

The **Russell Midcap Growth Index ®** measures the performance of those Russell Midcap companies with higher price-to-book ratios and higher forecasted growth values. The stocks are also members of the Russell 1000 Growth index.

The **Russell Midcap Value Index ®** measures the performance of those Russell Midcap companies with lower price-to-book ratios and lower forecasted growth values. The stocks are also members of the Russell 1000 Value index.

The **S&P 500 Index** is widely regarded as the best single gauge of the U.S. equities market. The index includes a representative sample of 500 leading companies in leading industries of the U.S. economy. The **S&P 500 Index** focuses on the large-cap segment of the market; however, since it includes a significant portion of the total value of the market, it also represents the market.

Fixed income:

The **Bloomberg 1-3 Month U.S. Treasury Bill Index** includes all publicly issued zero-coupon US Treasury Bills that have a remaining maturity of less than 3 months and more than 1 month, are rated investment grade, and have \$250 million or more of outstanding face value. In addition, the securities must be denominated in U.S. dollars and must be fixed rate and non convertible.

The **Bloomberg Global High Yield Index** is a multi-currency flagship measure of the global high yield debt market. The index represents the union of the US High Yield, the Pan-European High Yield, and Emerging Markets (EM) Hard Currency High Yield Indices. The high yield and emerging markets sub-components are mutually exclusive. Until January 1, 2011, the index also included CMBS high yield securities.

The **Bloomberg Municipal Index:** consists of a broad selection of investment-grade general obligation and revenue bonds of maturities ranging from one year to 30 years. It is an unmanaged index representative of the tax-exempt bond market.

The **Bloomberg US Dollar Floating Rate Note (FRN) Index** provides a measure of the U.S. dollar denominated floating rate note market.

The **Bloomberg US Corporate Investment Grade Index** is an unmanaged index consisting of publicly issued US Corporate and specified foreign debentures and secured notes that are rated investment grade (Baa3/BBB or higher) by at least two ratings agencies, have at least one year to final maturity and have at least \$250 million par amount outstanding. To qualify, bonds must be SEC-registered.

The **Bloomberg US High Yield Index** covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (sovereign rating of Baa1/BBB+/BBB+ and below using the middle of Moody's, S&P, and Fitch) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included.

The **Bloomberg US Mortgage Backed Securities Index** is an unmanaged index that measures the performance of investment grade fixed-rate mortgage backed pass-through securities of GNMA, FNMA and FHLMC.

The **Bloomberg US TIPS Index** consists of Inflation-Protection securities issued by the U.S. Treasury.

The **J.P. Morgan Emerging Market Bond Global Index(EMBI)** includes U.S. dollar denominated Brady bonds, Eurobonds, traded loans and local market debt instruments issued by sovereign and quasi-sovereign entities.

The **J.P. Morgan Domestic High Yield Index** is designed to mirror the investable universe of the U.S. dollar domestic high yield corporate debt market.

The **J.P. Morgan Corporate Emerging Markets Bond Index Broad Diversified (CEMBI Broad Diversified)** is an expansion of the **J.P. Morgan Corporate Emerging Markets Bond Index (CEMBI)**. The CEMBI is a market capitalization weighted index consisting of U.S. dollar denominated emerging market corporate bonds.

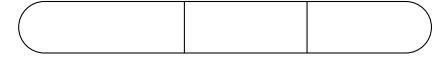
The **J.P. Morgan Emerging Markets Bond Index Global Diversified (EMBI Global Diversified)** tracks total returns for U.S. dollar-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady bonds, loans, Eurobonds. The index limits the exposure of some of the larger countries.

The **J.P. Morgan GBI EM Global Diversified** tracks the performance of local currency debt issued by emerging market governments, whose debt is accessible by most of the international investor base.

The **U.S. Treasury Index** is a component of the U.S. Government index.



J.P. Morgan Asset Management – Definitions



Other asset classes:

The **Alerian MLP Index** is a composite of the 50 most prominent energy Master Limited Partnerships (MLPs) that provides investors with an unbiased, comprehensive benchmark for the asset class.

The **Bloomberg Commodity Index** and related sub-indices are composed of futures contracts on physical commodities and represents twenty two separate commodities traded on U.S. exchanges, with the exception of aluminum, nickel, and zinc

The **Cambridge Associates U.S. Global Buyout and Growth Index®** is based on data compiled from 1,768 global (U.S. & ex –U.S.) buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2013.

The **CS/Tremont Hedge Fund Index** is compiled by Credit Suisse Tremont Index, LLC. It is an asset-weighted hedge fund index and includes only funds, as opposed to separate accounts. The Index uses the Credit Suisse/Tremont database, which tracks over 4500 funds, and consists only of funds with a minimum of US\$50 million under management, a 12-month track record, and audited financial statements. It is calculated and rebalanced on a monthly basis, and shown net of all performance fees and expenses. It is the exclusive property of Credit Suisse Tremont Index, LLC.

The **HFRI Monthly Indices (HFRI)** are equally weighted performance indexes, utilized by numerous hedge fund managers as a benchmark for their own hedge funds. The HFRI are broken down into 4 main strategies, each with multiple sub strategies. All single-manager HFRI Index constituents are included in the HFRI Fund Weighted Composite, which accounts for over 2200 funds listed on the internal HFR Database.

The **NAREIT EQUITY REIT Index** is designed to provide the most comprehensive assessment of overall industry performance, and includes all tax-qualified real estate investment trusts (REITs) that are listed on the NYSE, the American Stock Exchange or the NASDAQ National Market List.

The **NFI-ODCE**, short for NCREIF Fund Index -Open End Diversified Core Equity, is an index of investment returns reporting on both a historical and current basis the results of 33 open-end commingled funds pursuing a core investment strategy, some of which have performance histories dating back to the 1970s. The NFI-ODCE Index is capitalization-weighted and is reported gross of fees. Measurement is time-weighted.

Definitions:

Investing in **alternative assets** involves higher risks than traditional investments and is suitable only for sophisticated investors. Alternative investments involve greater risks than traditional investments and should not be deemed a complete investment program. They are not tax efficient and an investor should consult with his/her tax advisor prior to investing. Alternative investments have higher fees than traditional investments and they may also be highly leveraged and engage in speculative investment techniques, which can magnify the potential for investment loss or gain. The value of the investment may fall as well as rise and investors may get back less than they invested.

Bonds are subject to interest rate risks. Bond prices generally fall when interest rates rise.

Investments in **commodities** may have greater volatility than investments in traditional securities, particularly if the instruments involve leverage. The value of commodity-linked derivative instruments may be affected by changes in overall market movements, commodity index volatility, changes in interest rates, or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs and international economic, political and regulatory developments. Use of leveraged commodity-linked derivatives creates an opportunity for increased return but, at the same time, creates the possibility for greater loss.

Derivatives may be riskier than other types of investments because they may be more sensitive to changes in economic or market conditions than other types of investments and could result in losses that significantly exceed the original investment. The use of derivatives may not be successful, resulting in investment losses, and the cost of such strategies may reduce investment returns.

Distressed Restructuring Strategies employ an investment process focused on corporate fixed income instruments, primarily on corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceeding or financial market perception of near term proceedings.

Investments in **emerging markets** can be more volatile. The normal risks of investing in foreign countries are heightened when investing in emerging markets. In addition, the small size of securities markets and the low trading volume may lead to a lack of liquidity, which leads to increased volatility. Also, emerging markets may not provide adequate legal protection for private or foreign investment or private property.

The price of **equity** securities may rise, or fall because of changes in the broad market or changes in a company's financial condition, sometimes rapidly or unpredictably. These price movements may result from factors affecting individual companies, sectors or industries, or the securities market as a whole, such as changes in economic or political conditions. Equity securities are subject to "stock market risk" meaning that stock prices in general may decline over short or extended periods of time.

Equity market neutral strategies employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities, select securities for purchase and sale. Equity Market Neutral Strategies typically maintain characteristic net equity market exposure no greater than 10% long or short.

Global macro strategies trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets.

International investing involves a greater degree of risk and increased volatility. Changes in currency exchange rates and differences in accounting and taxation policies outside the U.S. can raise or lower returns. Some overseas markets may not be as politically and economically stable as the United States and other nations.

There is no guarantee that the use of **long and short positions** will succeed in limiting an investor's exposure to domestic stock market movements, capitalization, sector swings or other risk factors. Using long and short selling strategies may have higher portfolio turnover rates. Short selling involves certain risks, including additional costs associated with covering short positions and a possibility of unlimited loss on certain short sale positions.

Merger arbitrage strategies which employ an investment process primarily focused on opportunities in equity and equity related instruments of companies which are currently engaged in a corporate transaction.

Mid-capitalization investing typically carries more risk than investing in well-established "blue-chip" companies. Historically, mid-cap companies' stock has experienced a greater degree of market volatility than the average stock.

Price to forward earnings is a measure of the price-to-earnings ratio (P/E) using forecasted earnings. **Price to book value** compares a stock's market value to its book value. **Price to cash flow** is a measure of the market's expectations of a firm's future financial health. **Price to dividends** is the ratio of the price of a share on a stock exchange to the dividends per share paid in the previous year, used as a measure of a company's potential as an investment.

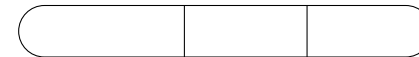
Real estate investments may be subject to a higher degree of market risk because of concentration in a specific industry, sector or geographical sector. Real estate investments may be subject to risks including, but not limited to, declines in the value of real estate, risks related to general and economic conditions, changes in the value of the underlying property owned by the trust and defaults by borrower.

Relative Value Strategies maintain positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities.

Small-capitalization investing typically carries more risk than investing in well-established "blue-chip" companies since smaller companies generally have a higher risk of failure. Historically, smaller companies' stock has experienced a greater degree of market volatility than the average stock.



J.P. Morgan Asset Management – Risks & disclosures



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Unless otherwise stated, all data are as of May 13, 2026 or most recently available.

Guide to the Markets – U.S.

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29th Annual Oklahoma Public Fund Trustee Education Conference

Session 5

Part 1

Bring Your Own Power (BTM), the Solution to Power Cost Escalation

Bob Purgason
Wildfork Power Solutions

29th Annual Oklahoma Public Fund Trustee Education Conference



Wildfork Power Solutions

Bob Purgason is the CEO of Wildfork Power Solutions. He began his career with Perry Gas Companies before eventually leading to a long tenure with The Williams Companies where over the next 18 years he held various leadership roles in gas pipelines, energy and power services, and eventually managing Williams' U.S. Gulf Coast Midstream Gas and Liquids business. In 2004, he joined Crosstex Energy as it's SVP of Treating subsequently becoming the COO for the next 5 years. In 2009, Bob was recruited to be the COO of Chesapeake Midstream Partners and over the next 8 years developed, built and lead the operations for what became Access Midstream, which the general partner was sold to Williams 2013 and fully merged into Williams Partners in 2017. This marked Bob's second stint with Williams where he culminated his time there as head of process and safety. Later in 2017 he was again recruited to form and lead another organization with the launch of the Kayne Anderson Acquisition Company, which eventually purchased Permian Basin infrastructure assets to become Altus Midstream Partners. This company merged with Eagle Claw Midstream in 2022 to become Kinetik Holdings, a publicly traded Permian Basin-focused midstream company. After the merger, Bob rejoined the Crosstex Energy management team at EnLink Midstream to lead their carbon solutions group giving him depth and insight into how industrial customers were thinking about their produced carbon. Bob received his BS in Chemical Engineering from the University of Oklahoma in 1978.

GROW OR GET LEFT BEHIND

Behind-the-meter power, fuel assurance, and the
second restructuring of American electricity

Oklahoma Public Funds Trustee Education Conference
September 2026

BTM

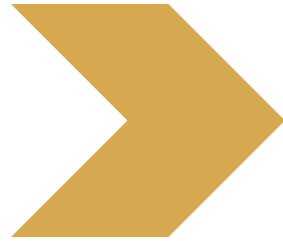
Competition + capacity + customer
protection

The central claim

BTM is not an escape from the grid; it is a policy tool for adding supply with demand.

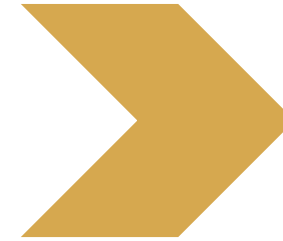
1978–1990s

BTM cogeneration
introduced competition
when monopoly
industrial rates
exceeded the marginal
cost of new self-supply.



2026 forward

BTM can add supply
with load when utility
grids cannot expand
fast enough without
ratepayer risk.

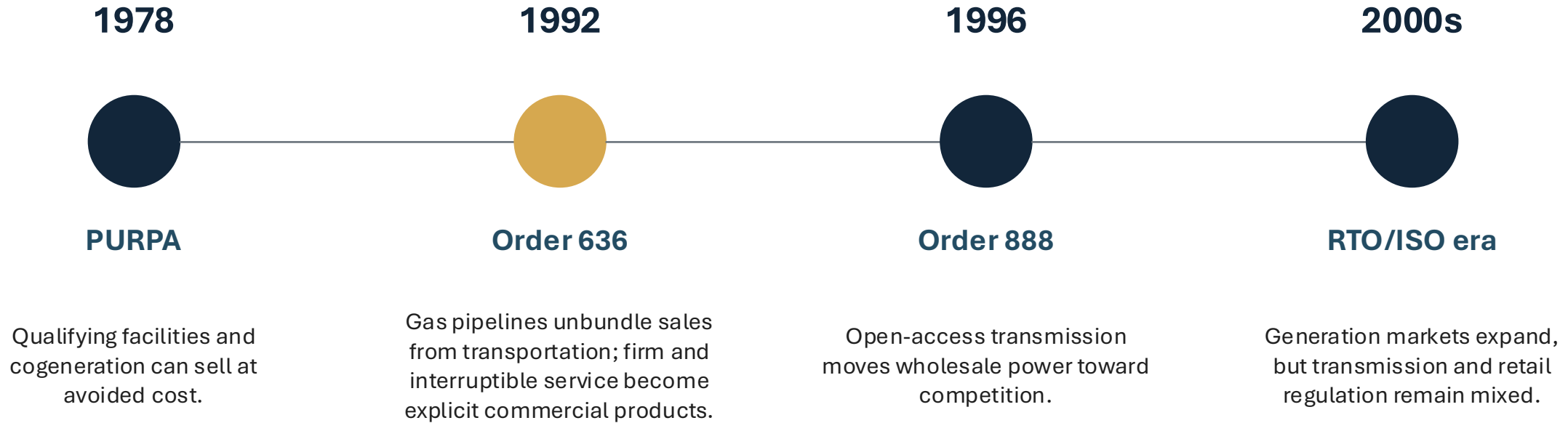


Outcome

Grow the
denominator
without
shifting costs

The first restructuring: competition entered through the side door

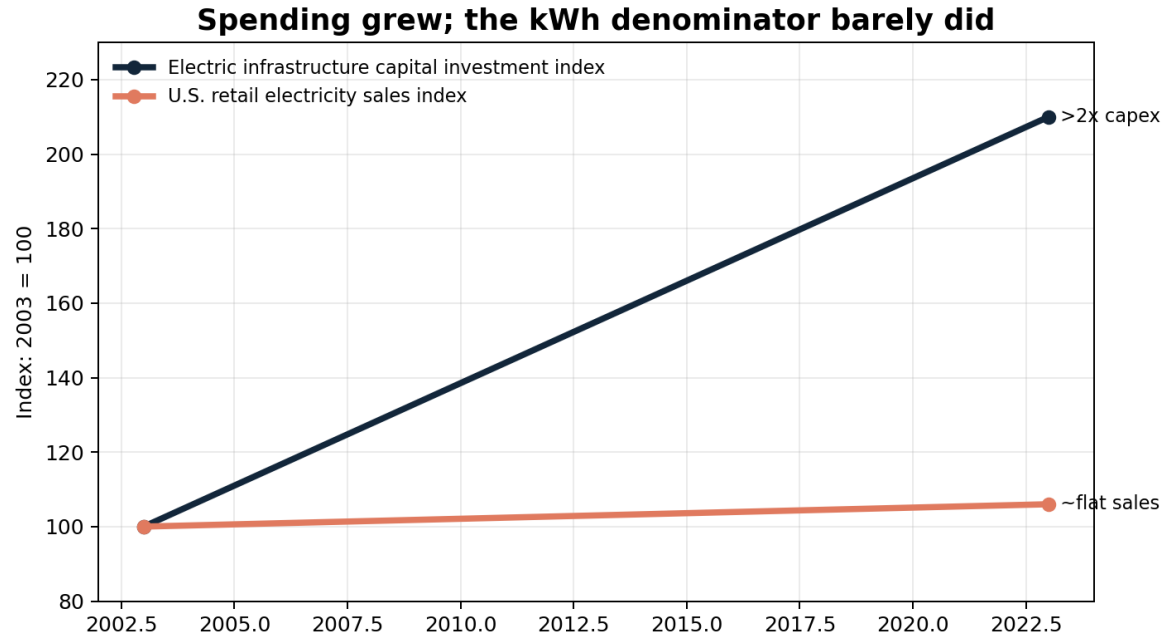
Key dates that made generation competitive while leaving the grid partly regulated.



The structural gap: the gas market priced firm vs. interruptible service; the electric market often paid the same for the MWh.

The old assumption broke: spend rose while load barely grew

The rate-base arithmetic matters as much as the technology.

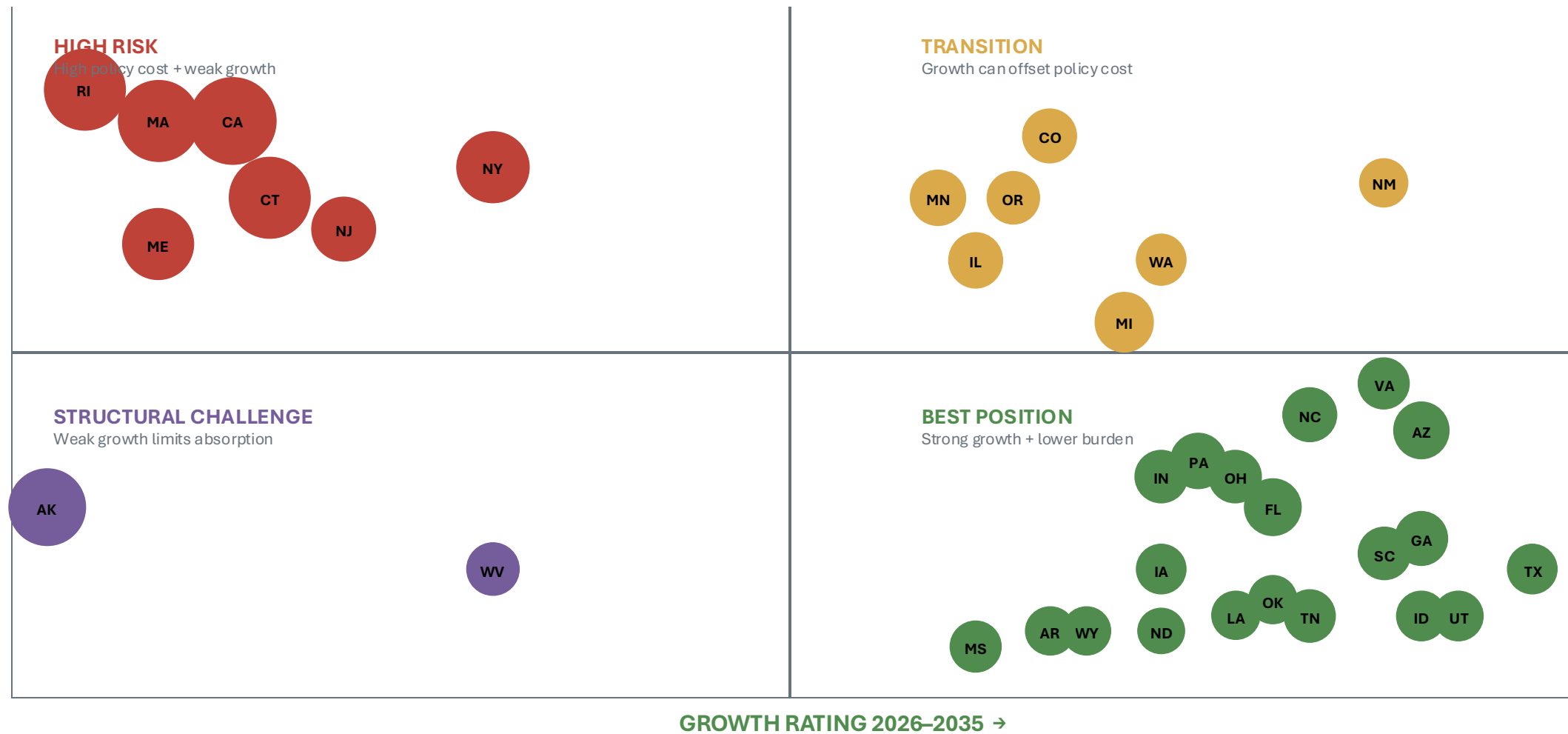


The stronger argument is not “utilities stopped spending.” It is that utilities spent heavily on replacement, T&D, resiliency, and policy-driven assets while kWh sales were flat.

Rate pressure = rising fixed costs ÷ stagnant kWh denominator

Affordability is now a state policy choice

High same-service policy burden raises rates; load growth is the denominator that can absorb it.



Bubble size = 2024 average all-sector electricity price. Positions are analytical screening scores based on EIA, utility IRPs, retirement/transmission plans and capacity accreditation.

Texas is the cleanest laboratory

Competition built gas quickly; subsidies and market rules then changed the signal.

2000–2004

Competitive capital added roughly 22 GW of natural-gas generation in early ERCOT restructuring.

2010s

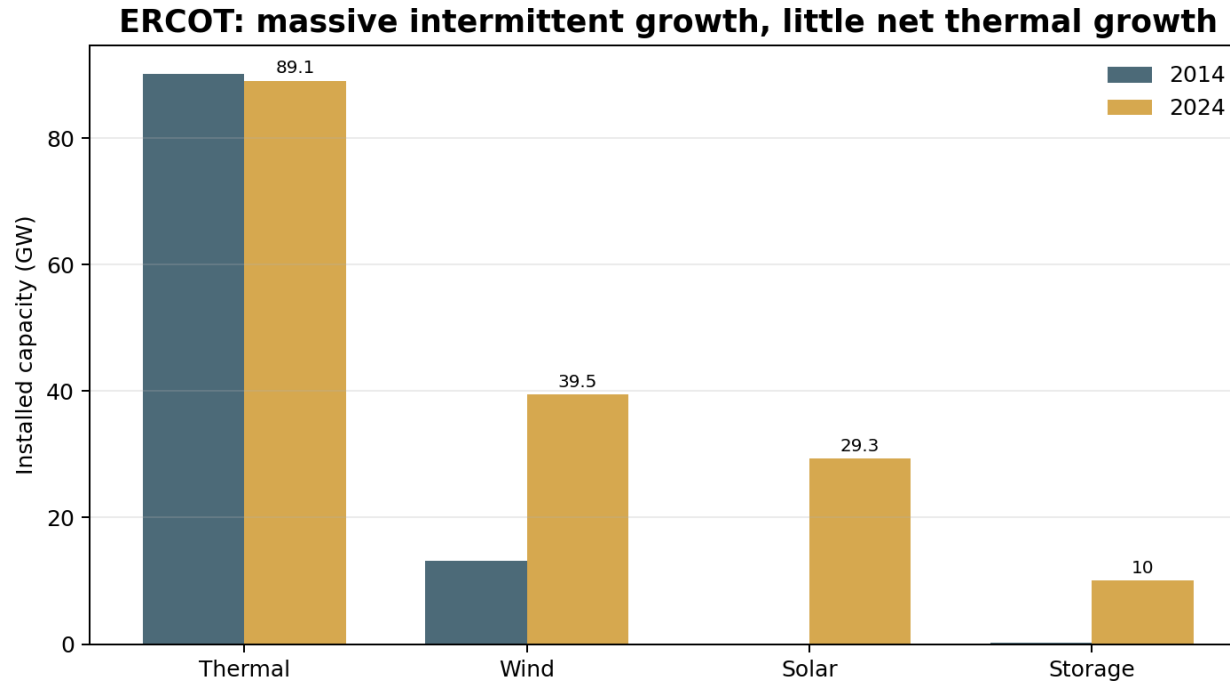
CREZ socialized transmission for remote wind while PTC economics enabled negative-price bidding.

Lesson

Markets build what they are paid to build. Reliability attributes must be priced explicitly.

ERCOT capacity shifted, but dependable thermal capacity did not grow with the boom

This is the investment-signal exhibit.



ERCOT reports 2015–2024 thermal retirements of 11,980 MW and additions of 10,867 MW: net -1,112 MW.

The system added vast energy capability without adding equivalent fuel-assured dispatchable capability.

The megawatt was firm. Was the molecule?

Your Williams/TPA/Fuel Managers point becomes the reliability hinge of the speech.

Dispatchable generation requires a dependable fuel chain



The electric dispatcher can call the turbine; the pipeline can only deliver what was contracted and physically available.

Pipeline market

Firm transportation
Interruptible transportation
Storage
No-notice service
Backup fuel

**Electric market often paid the MWh
without fully valuing that fuel-service
hierarchy.**

Core line: You cannot schedule pipeline capacity you never contracted for.

Uri was a systems-integration failure, not a single-fuel morality play

The official reports support the broader market-design lesson.

44.2%

unplanned outages tied
to freezing issues

31.4%

unplanned outages tied
to fuel issues

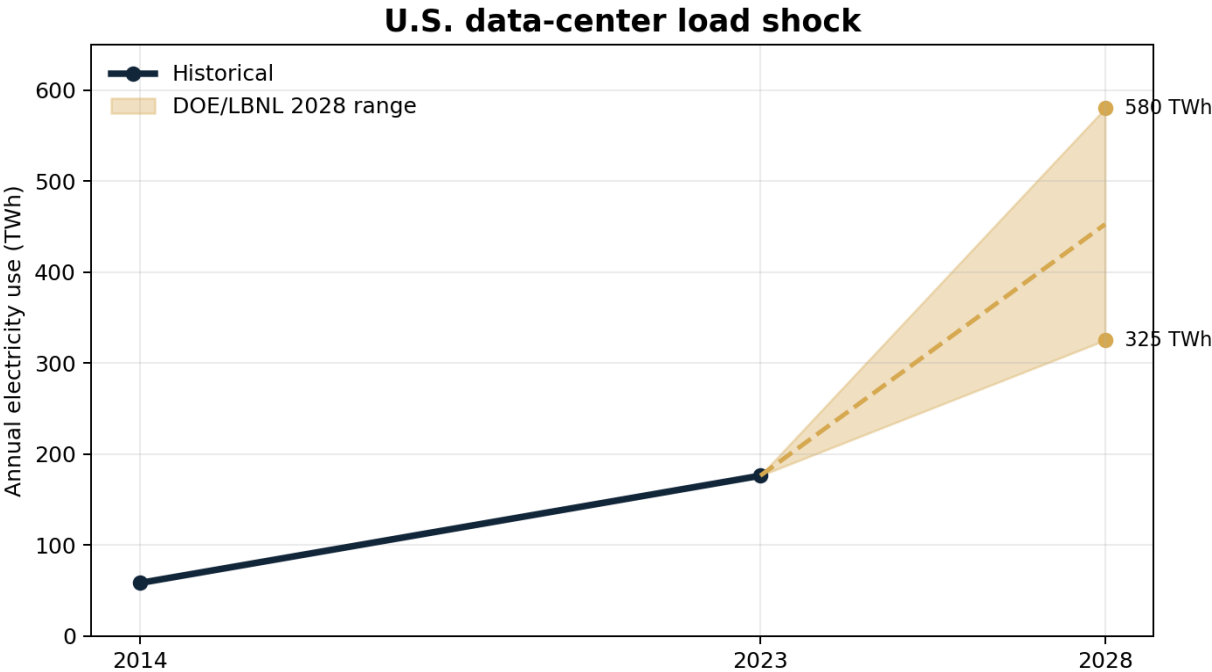
87%

fuel-related unplanned
outages involving natural
gas

Deeper lesson: dependable generation requires dependable fuel, weatherized equipment, and contractual rights that match the grid's reliability expectation.

Then the denominator suddenly turned up

AI converted electricity from an operating input into the gating constraint on growth.



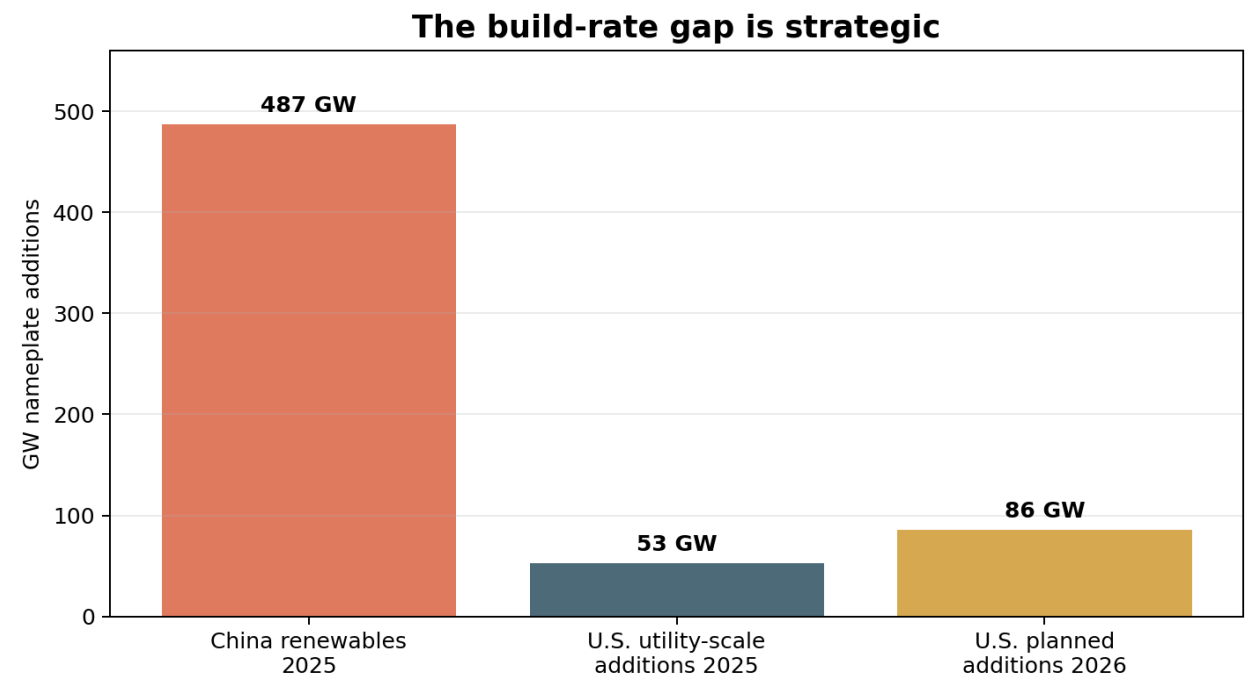
DOE/LBNL 2024

Data centers: 4.4% of U.S. electricity in 2023; projected 6.7%–12% by 2028.

2025 update: potential 9.5%–15.3% by 2030.

China is building while we are debating

The national-security context is build rate, not just fuel mix.

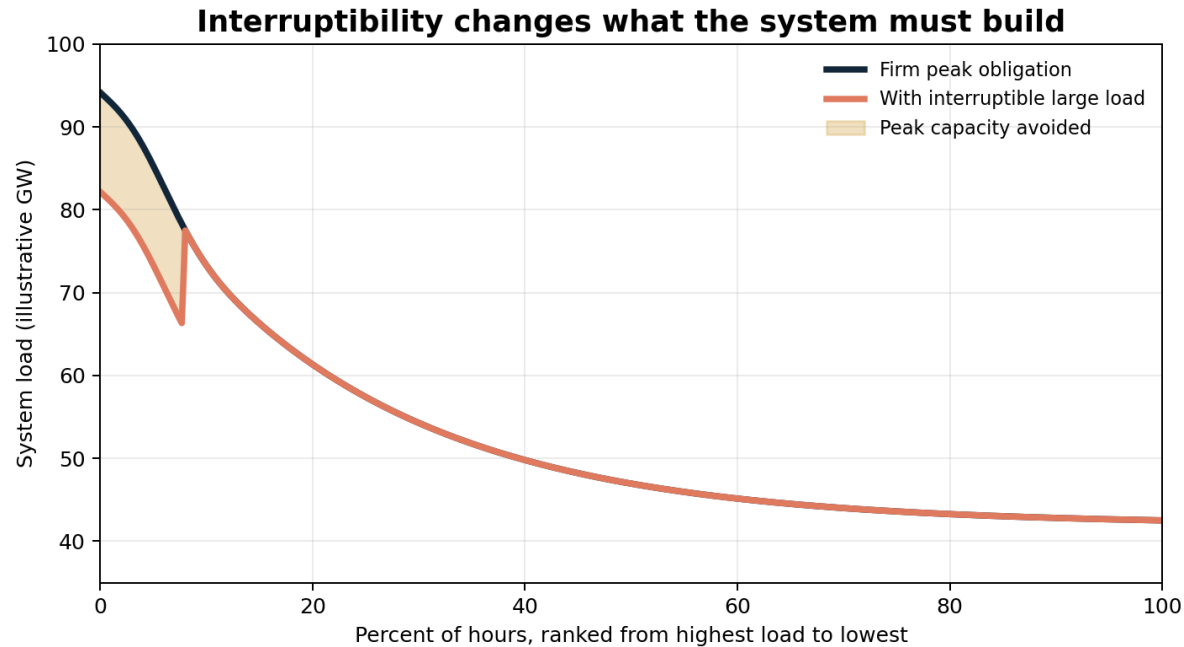


China is not choosing one technology. It is building all of them: solar, wind, transmission, nuclear, hydro, storage — and thermal capacity.

The U.S. challenge is not redistributing a fixed power supply. It is increasing dependable supply fast enough.

BTM + interruptibility can turn new load from threat into resource

The solution is not “off-grid forever”; it is staged integration and price signals.



Bring supply

New load brings generation, fuel, and capital with it.

Connect intelligently

Use the grid when capacity exists; leave the grid during stressed hours.

Price attributes

Pay for dispatchability, fuel assurance, and flexibility—not just annual energy.

Policy test: Does the rule add net supply, protect existing customers, and improve reliability?

Oklahoma's choice

Do we structure power policy to capture AI infrastructure — or let it go to states that can move faster?

Low-cost energy

A structural advantage if paired with speed and reliability.

BTM policy

Let capital compete to add supply with load.

Grow denominator

Growth lowers the pressure of fixed costs if costs are assigned fairly.

Closing line: Fifty years ago BTM helped break the monopoly on who could produce power. Today it can help break the monopoly on how fast America is allowed to grow.

29th Annual Oklahoma Public Fund Trustee Education Conference

Session 5

Part 2

Building an AI Strategy: Lessons from the Teacher Retirement System of Texas

Beth Hallmark
Teacher Retirement System of Texas

29th Annual Oklahoma Public Fund Trustee Education Conference



Teacher Retirement System of Texas

Beth Hallmark joined the Teacher Retirement System of Texas (TRS) in August 2022, bringing with her nearly 30 years of experience leading communication teams and strategies in both the public and private sectors.

TRS is the sixth-largest public pension system in the country, serving more than 2 million public education employees and retirees. Beth's team works with all areas of TRS to ensure the right information is communicated in the right way, to the right people, at the right time. In 2026, she was named "Public Pension Communicator of the Year" for large pension systems by the National Conference on Public Employee Retirement Systems.

Before joining TRS, Beth worked as the Communications Division Director at the Texas Department of Transportation. Her previous experience also includes serving as the deputy chief of Information Outreach, Data Services and Transparency at the Texas Comptroller of Public Accounts, where she helped lead the agency's award-winning fiscal transparency initiatives as well as public outreach strategies and digital communications. Prior to that she was the Director of Marketing Information at the Texas Department of Agriculture. She began her career as a radio news reporter and newspaper staff writer in Texas and also worked previously leading public relations for a national health care company.

Beth comes from a family of educators and is honored to be a part of TRS. She has a bachelor's degree in English and a master's degree in Information Studies, both from The University of Texas at Austin. She and her husband of more than 30 years have two grown daughters and a much-loved and much-spoiled five-year-old granddaughter.

Building an AI Strategy: Lessons from the Teacher Retirement System of Texas

From guardrails to enterprise adoption

Getting started, scaling responsibly, and putting AI
to work for a public pension fund

Beth Hallmark | September 2026 | Oklahoma Public Fund Trustee Education Conference



Three ideas to take home from TRS' approach

1. Start with trust

Put policy, security, privacy, legal review and human accountability in place before broad adoption.

2. Let work drive the roadmap

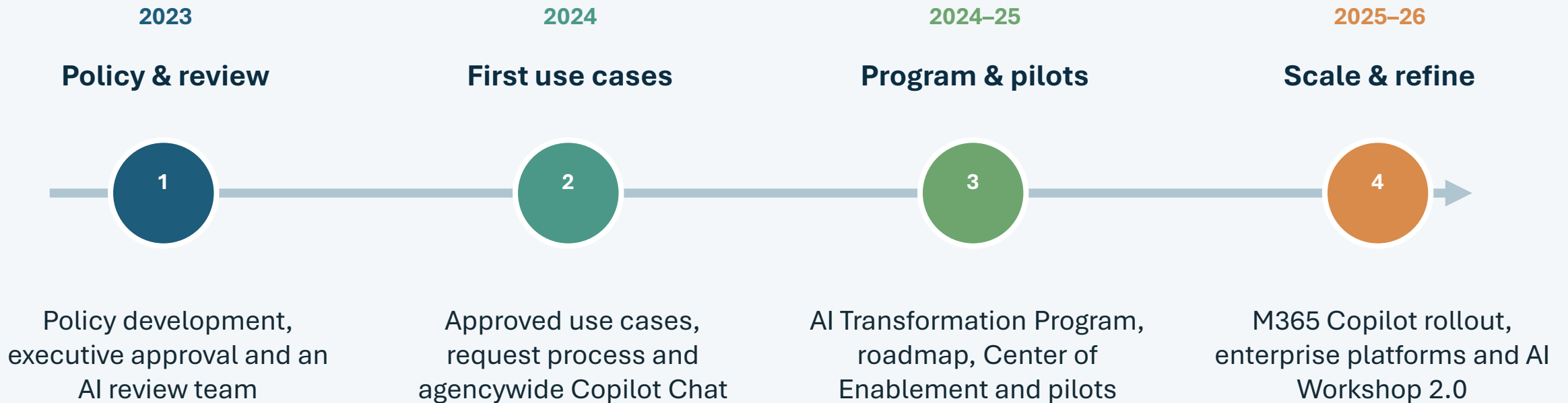
Collect use cases across the organization, remove duplicates, assess feasibility and prioritize business value.

3. Scale enablement, not just licenses

Use pilots, champions, training, office hours, reusable prompts and measurable outcomes to turn access into adoption.

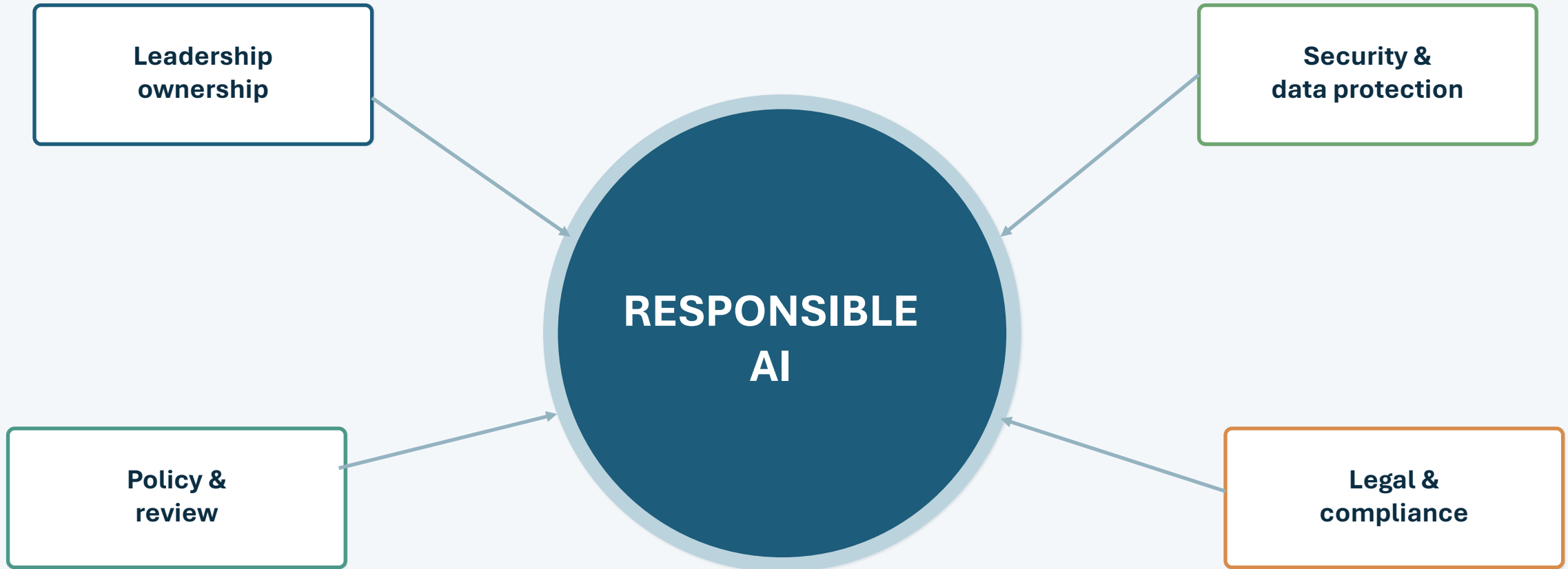
THINK: TRUST → VALUE → SCALE

The journey was a sequence, not a single launch



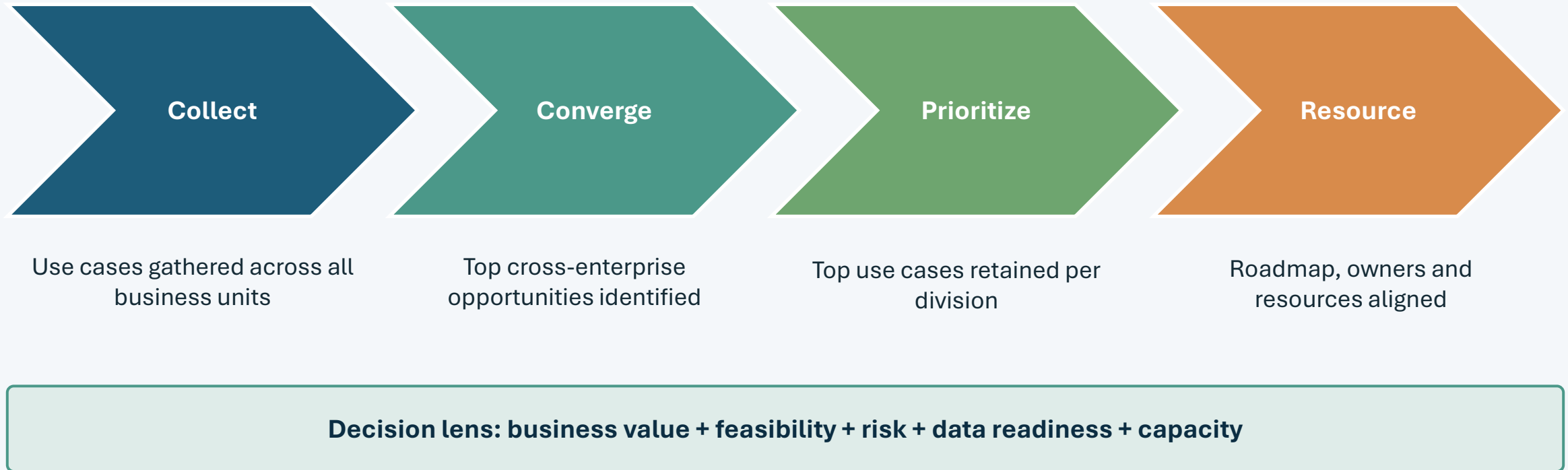
Key lesson: each step created capacity for the next one.

Build the foundation before you employ the use cases



TRS defined an AI vision, mission, guiding principles and responsible-use guidelines, then used them to guide approved tools across the enterprise.

Turn broad interest into a prioritized roadmap



Fusion teams: business and IT share ownership

Business drives priorities

Use cases, domain context, outcomes and change sponsorship

Fusion team shares ownership

Product owner, data science, architecture, delivery, risk

IT enables the foundation

Platforms, data governance, security and integration

Agile delivery

Small teams working in short, visible cycles

Shared KPIs

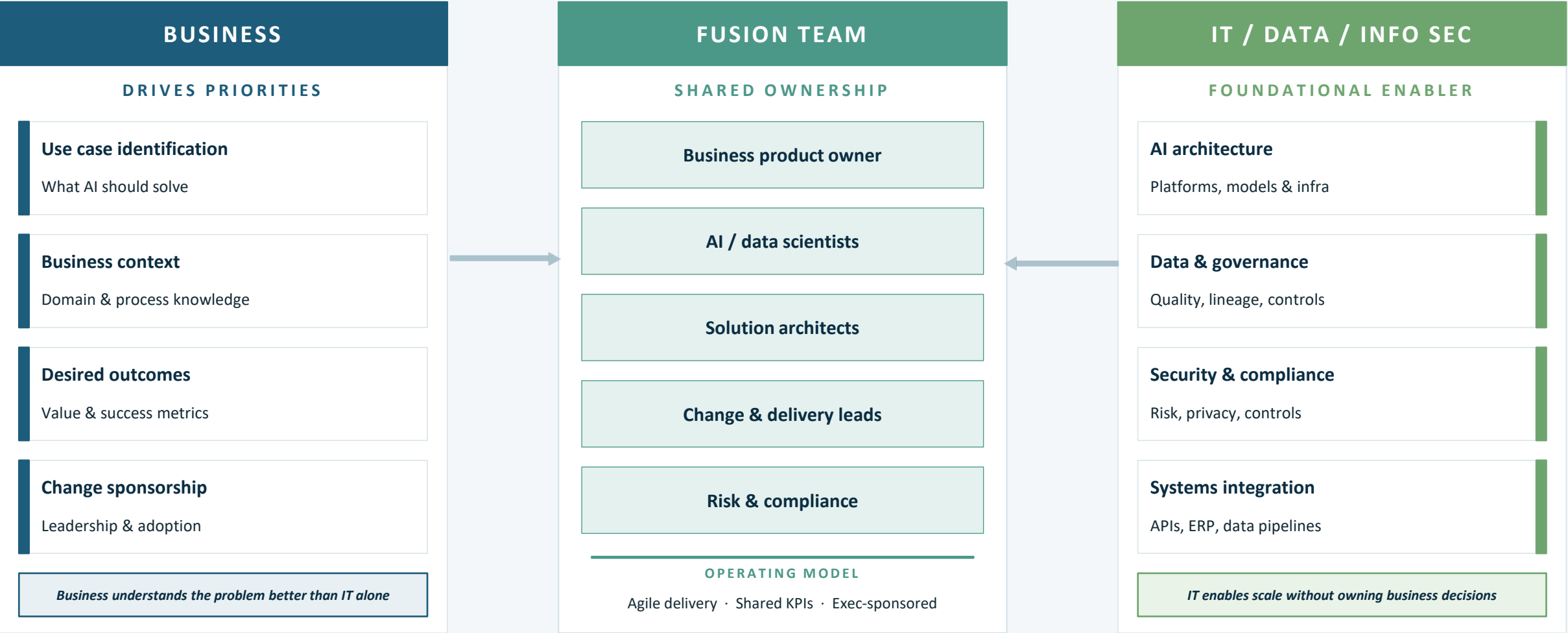
One set of measures for value and delivery

Executive sponsorship

Named leaders accountable for outcomes

The business understands the problem best; IT enables scale without owning the business decision.

The fusion team model in detail



Create an adoption engine: the Center of Enablement

Enterprise adoption

Move from access to realized efficiency

Training & support

Quick starts, workshops, office hours and Study Hall

Champions

About 70 people extending reach across divisions

Knowledge sharing

Reusable lessons and a Copilot prompt library

Best practices

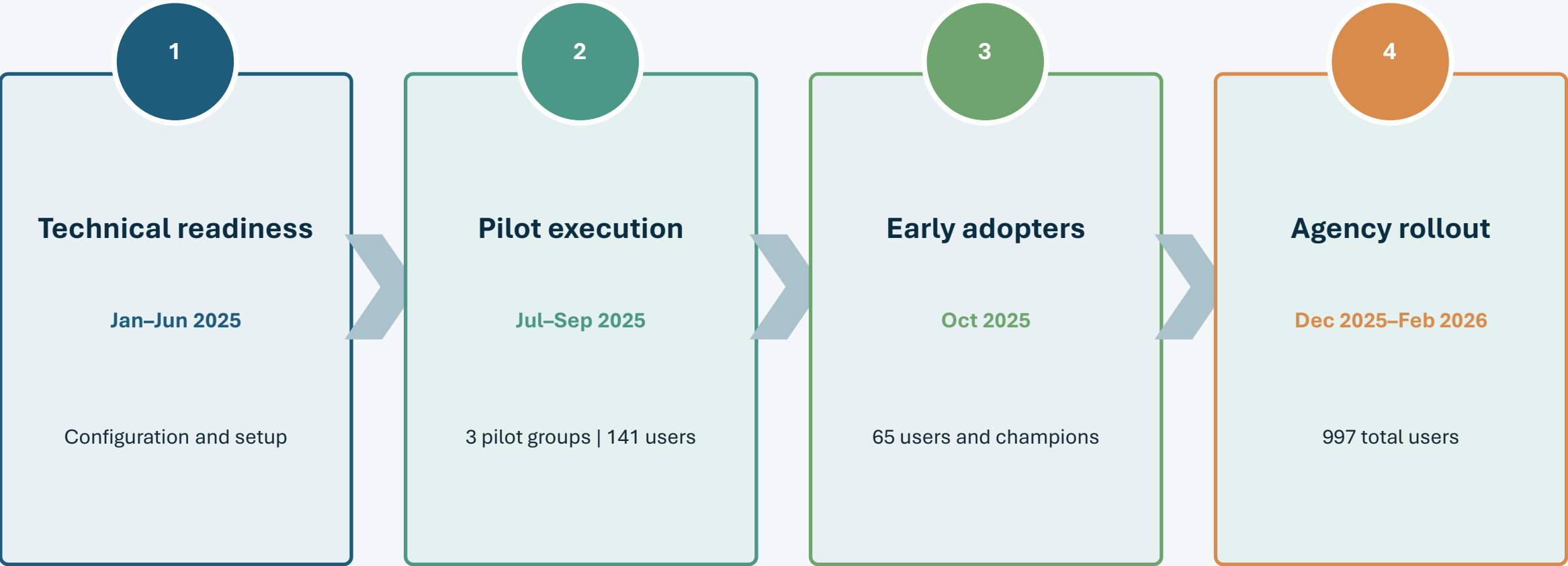
Playbooks, templates, processes and guardrails

Community

More than 1,000 members connected via Teams

A center of enablement is the bridge between technology deployment and changed behavior and adoption.

Piloted in waves, then scaled with evidence



Each wave answered a different question: Is it ready? Is it safe? Does it help? Can we support it at scale?

TRS manages AI as a portfolio, not a single product

Everyday productivity

Copilot Chat
Microsoft 365 Copilot

Software development

GitHub Copilot Business
AI developer assistants

Process automation

Vendor digital invoicing
Copilot Studio workflows

Document intelligence

Intelligent document processing
Summarization and extraction

Enterprise foundation

TeReSAI platform
Data science and agent patterns

Member operations

Contact center AI
Future member file summary

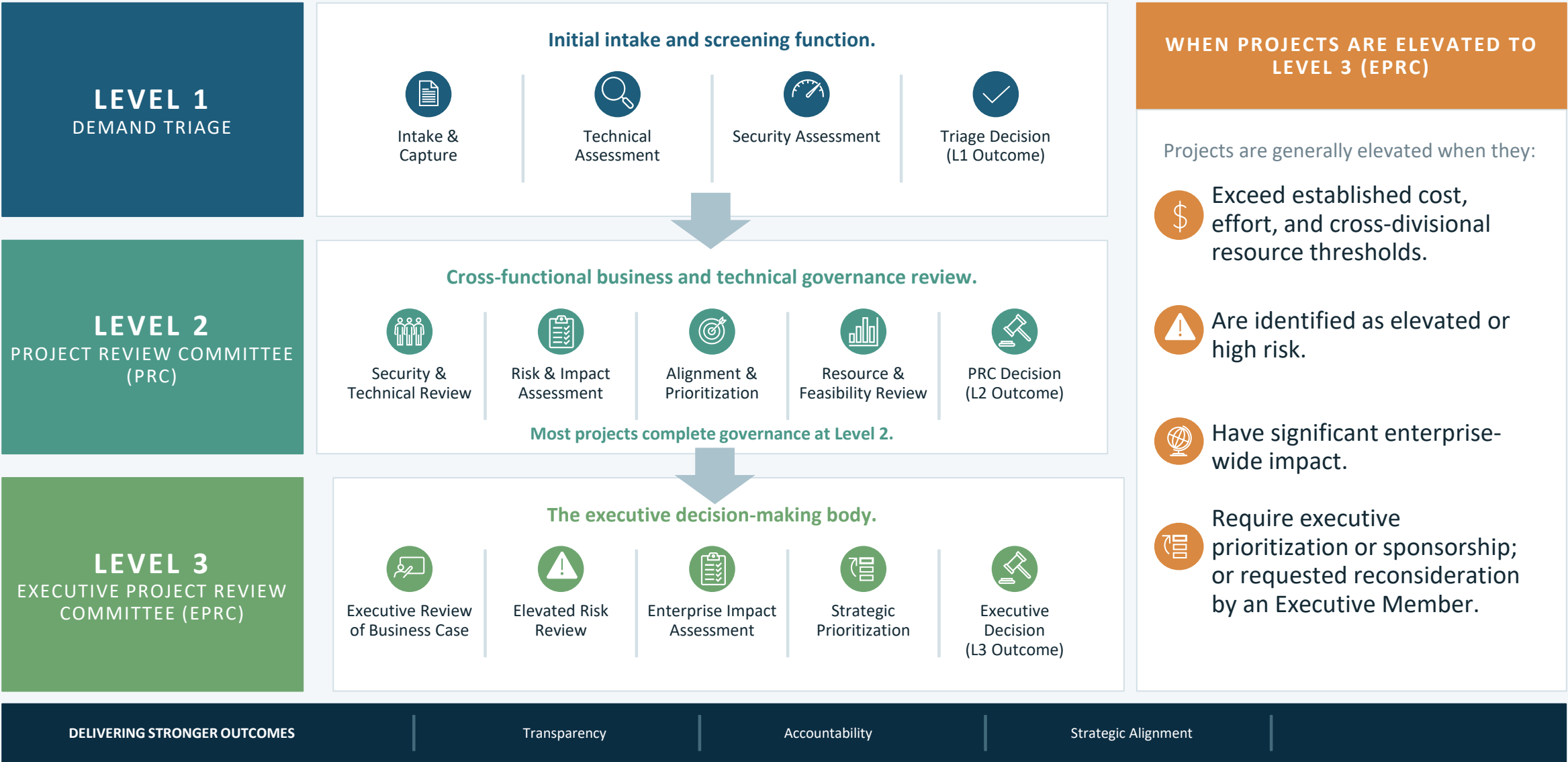
One intake, review and prioritization path across the portfolio.

One front door for every AI request

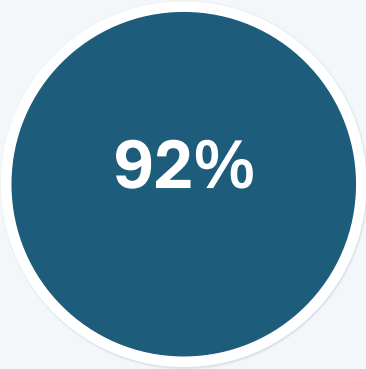


Most requests complete governance at Level 2

TRS Project Governance Process – Details

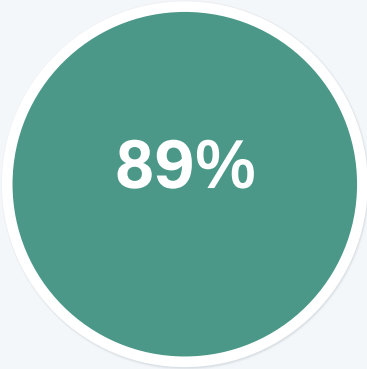


Measuring behavior and value, not license counts alone



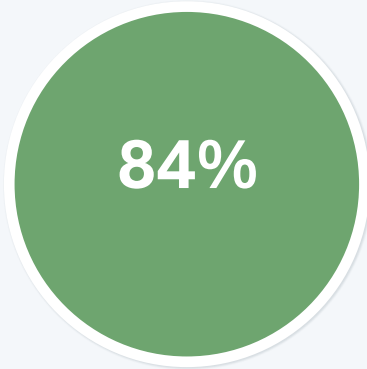
active use

of licensed users



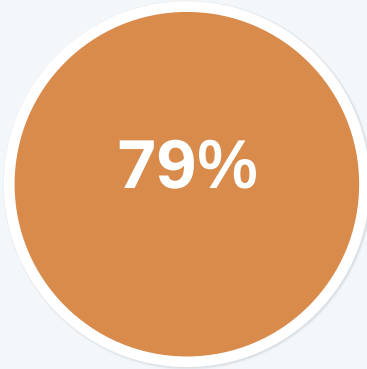
satisfaction

satisfied or very satisfied



productivity

reported improvement



speed

reported faster completion

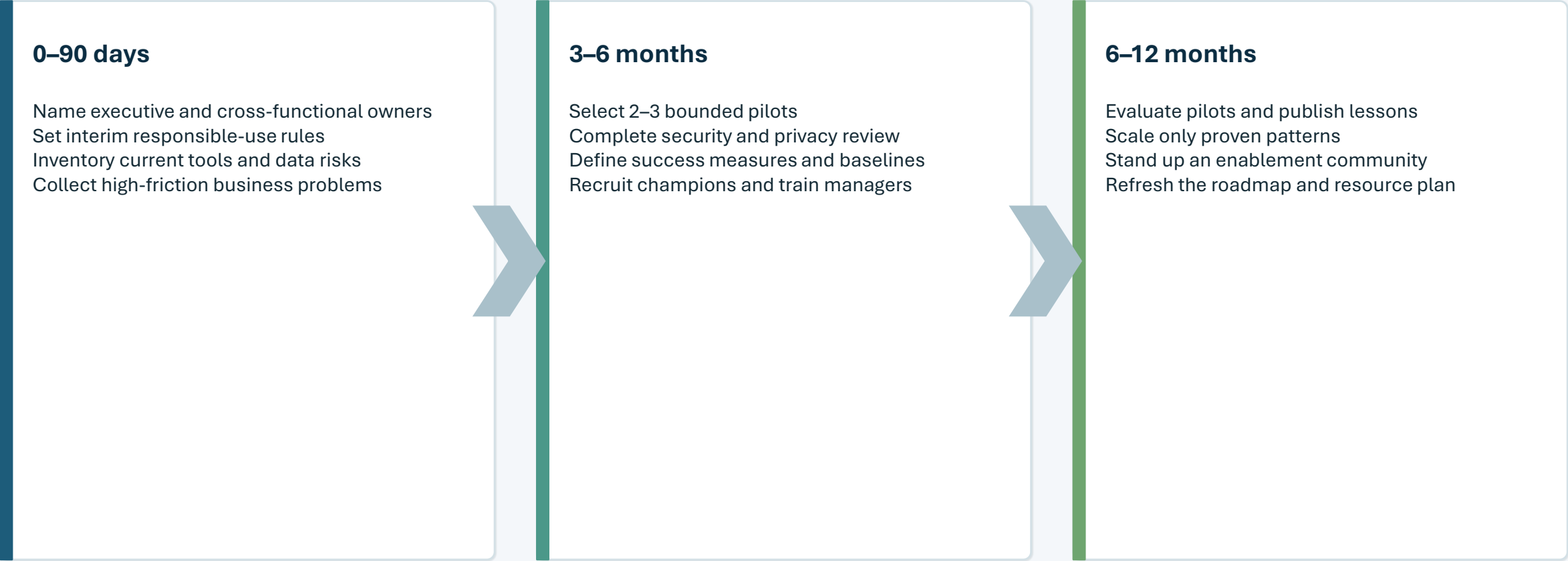
Also looking to measure: recurring task time saved | response quality | adoption by role | training needs | risk events | member-service outcomes

Choose use cases where AI supports, not replaces, judgment

Pension services	Call triage, counselor guidance and interaction summaries	Human verifies information
Information security	Surface exposed data, investigate alerts and flag fraud patterns	Analyst investigates and responds
Investments	Document processing, research synthesis and coding assistance	Investment professional owns decisions
Communications	Plain language, accessibility, tailored content and production efficiency	Human review protects accuracy and trust

Design rule: automate the repeatable work; preserve accountable human decisions.

A practical first-year starting sequence



Recommended sequence based on TRS experience. Adapt timing to your governance, procurement and capacity.

What we would tell a peer starting today

Strategy	Multi-year plans do not hold when AI moves in weeks	➤	Start with engagement, iterate and refresh often
Leadership	Leader training helps drive staff adoption	➤	Engage leaders early in business-outcome language
Adoption	Mandates moved slower than peer coaching	➤	Grow champions and let the community carry it
Capacity	Use case demand far outpaces available resources	➤	Prioritize thoughtfully and make the resource case early
Measurement	Perfect AI metrics do not exist yet	➤	Start with adoption and satisfaction, mature toward outcomes

Planning for the constraints before they become blockers

Governance drift	Different teams adopt different rules	➤	Use one review path and approved-tool catalog
Data readiness	Poor access, quality or classification limits value	➤	Prioritize data protection, labeling and ownership
Skill gaps	Licenses do not create confident users	➤	Train by role; use champions and office hours
Integration & budget	Pilots can outpace architecture and resources	➤	Connect roadmap choices to capacity and total cost
Accuracy & trust	Outputs can be incomplete or wrong	➤	Require human review, testing and clear accountability

The goal is visible, owned and managed risk.

Ten actions to begin responsibly

1

Name an executive sponsor

2

Form a cross-functional team

3

Publish responsible-use expectations

4

Create one intake path

5

Inventory and prioritize use cases

6

Select bounded pilots

7

Define success before launch

8

Train leaders and champions

9

Measure value and risk

10

Refresh the roadmap regularly

Start where you are. Learn. Scale what works.

29th Annual Oklahoma Public Fund Trustee Education Conference

Session 6

The Fiduciary Playbook

Benita Harper
Aon Fiduciary Services Practice

29th Annual Oklahoma Public Fund Trustee Education Conference



Aon Fiduciary Services Practice

Benita Harper is a pension governance attorney with Aon's Fiduciary Services practice where she provides consulting advice to institutional investor clients. Prior to joining Aon, Benita was the executive director for the Fort Worth Employees' Retirement Fund, preceded by positions with the city of Fort Worth, including seven years as a judge. Benita began her career with Akin Gump Strauss Hauer & Feld after graduation from Rice University and University of Houston Law School.



Oklahoma Public Fund Trustee Education Conference

The Fiduciary Playbook

Benita Harper, Associate Partner
Aon Fiduciary Services Practice

September 24, 2026

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Agenda

1

Fiduciary Duties

- Fiduciary Concepts
- Key Fiduciary Standards
- Fiduciary Pitfalls

2

Board Engagement Models

- Overview
- Different Ways Boards Engage
- Summary

1

Fiduciary Duties



Key Fiduciary Standards

Who is a Fiduciary?

- Property is entrusted to a “trustee” on behalf of a beneficiary who receives money from the trust.
- A person’s fiduciary duty is limited to the scope of responsibility delegated to them.
- A fiduciary may not avoid fiduciary status through documentation stating they are not a fiduciary.
- Usually those performing ministerial tasks are not fiduciaries.
- Typically, accountants, attorneys, actuaries and record keepers are not considered to be fiduciaries.

You don’t have to be identified as a fiduciary or accept fiduciary status to be a fiduciary.

Key Fiduciary Standards

Key Fiduciary Standards	Loyalty	Prudence	Diversification	Follow Plan Document	Prohibited Transactions
	Loyalty requires an unwavering commitment to act solely in the best interests of the beneficiaries for the exclusive purpose of providing them with benefits, also known as the “exclusive benefit rule.”	Prudence means having the required expertise, and if you do not have expertise, seeking it out. It is also how you make decisions and document the process.	Diversify to minimize risk unless it is not prudent.	Following plan documents is abiding by the applicable laws, regulations, policies and guidelines.	Refrain from prohibited transactions.

Duty of Loyalty

Avoid conflicts; if you cannot, then disclose and mitigate.

When acting as a fiduciary, you may not put others' interests ahead of the System's interests.



When making decisions, fiduciaries may not balance interests.

The duty of loyalty has not evolved — courts strictly interpret.



Examples of Areas Where Duty of Loyalty Comes into Play



Conflicts of
interest



Acting in
your self-
interest



Kickbacks
from
investment
managers

Duty of Prudence

- A good process is more important than a good outcome and is the best defense to potential liability.
 - **Written documentation is critical** to demonstrate that you acted prudently.
Hard to prove your conduct or process if it is not documented.
- The law requires prudence, not perfection.
- Contemplates comparison to peers.
- It is judged on an objective standard — prudent fiduciary behaves as other similarly situated fiduciaries would behave.

Examples of Areas Where Duty of Prudence Usually Comes into Play

 Setting the Asset Allocation	 Documentation of Processes	 Retaining Expert Advice
 Reviewing Performance	 Managing Risk	 Delegations of Authority



Standards of Prudence Evolve

Prudence standards evolve over time.

- Fiduciaries need to stay current.
- Due diligence practices of the past may not be enough.
- Investments with the potential for high returns are often higher risk and require more due diligence.

Decisions should be made using contemporary standards of prudent experts.

- More specialized advice from independent consultants/ service providers may be needed.
- More written opinions rather than verbal “off the cuff” comments may be helpful.

Duty of Prudence in Practice

Collect and understand information before making a decision.

- Consult with knowledgeable, independent outside external and/or internal experts (other staff).
- Review information on what others are doing, i.e., your peers.
- Decisions should be consistent with information and policy.
- Decisions should be made using contemporary standards of prudent experts — remember the duty of prudence evolves over time.

Document steps taken in the deliberative decision-making process (evidence of prudent process).



Duty of Prudence — Delegation

A trustee has a duty personally to perform the responsibilities of trustee except as a prudent person might delegate those responsibilities to others. In deciding whether, to whom and in what manner to delegate fiduciary authority in the administration of a trust, and thereafter in supervising agents, the trustee is under a duty to the beneficiaries to exercise fiduciary discretion and to act as a prudent person would act in similar circumstances. (Restatement of Trusts 3rd)

- Delegation is allowed and even encouraged by the Prudent Investor Act and ERISA.
- Failure to delegate may be a fiduciary breach.

Duty of Prudence — Delegation

- To be prudent, when delegating the following generally applies:
 - Duty of prudence in selecting qualified professionals;
 - Duty to specify the scope of the delegation;
 - Duty to monitor the professionals to ensure the delegation is carried out in a manner consistent with the delegation, and the delegation continues to be prudent.
- Board members may delegate but they cannot abdicate their fiduciary responsibility.

Duty to Follow Plan Documents

- Fiduciaries cannot be arbitrary and capricious in their application of applicable law(s) or plan.
- Familiarity with plan documents is essential.

Duty to Monitor

U.S. Supreme court opinion held fiduciaries have a continuing duty —separate and apart from the duty to exercise prudence in selecting investments at the outset — to monitor and remove imprudent investment options. *Tibble v. Edison International*, 135 S.Ct. 1823 (2015), *Hughes v. Northwestern Univ.*, 595 U.S. __ (2022).



The board's role is to establish policies and procedures that staff can implement to protect the fund and ensure the highest level of services from external advisors.

Adequate reporting is necessary for prudent monitoring.

Fiduciary Pitfalls

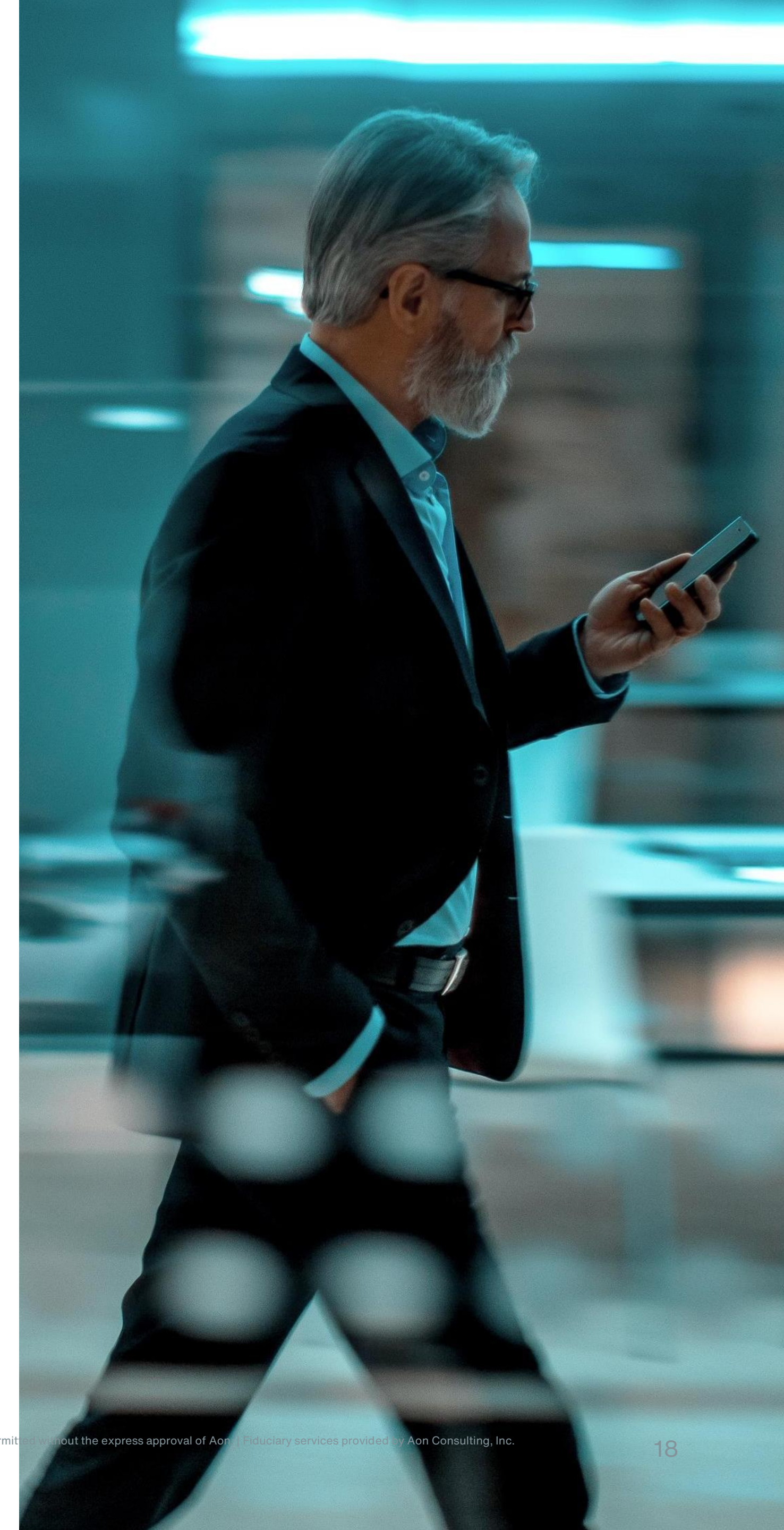
Prohibited Transactions



Prohibited Transactions = Conflicts of Interest



Conflicts of interest can arise if personal financial gain impairs objective decision-making



Prohibited Transactions

- “Prohibited transactions” include:
 - A sale, exchange, or lease of any property between the plan and party-in-interest;
 - Lending money or other extension of credit between the plan and party-in-interest;
 - Furnishing goods, services, or facilities between the plan and party-in-interest.
- “Self-dealing” means:
 - Using the plan’s assets in one’s own interest;
 - Acting on both sides of a transaction involving the plan;
 - Receiving anything of value for one’s personal account from any party doing business with the plan related to that business.

Ways to Mitigate Fiduciary Liability

A thorough orientation and continuing education on fiduciary responsibility

A good understanding of common scenarios where fiduciary duties come into play

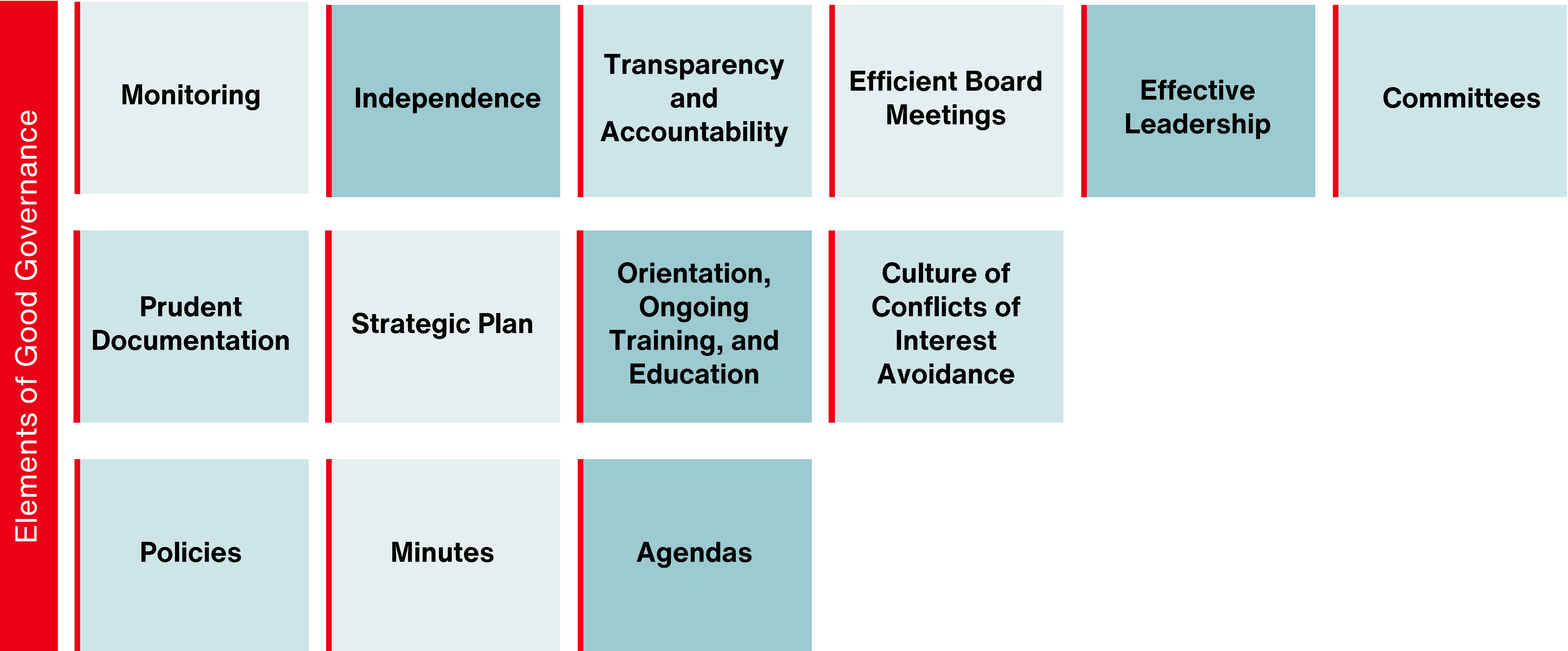
A thorough decision-making process with clear documentation of actions and rationale

Obtain expert advice from the staff, legal counsel, and others when needed

Prudent delegation and diligent oversight —understand what authority has been delegated and what authority has been retained

Good governance policies including clear accountability and a commitment to ongoing oversight activities

Utilize Good Governance



Examples of Fiduciary Pitfalls

Failing to operate the System prudently and for the exclusive benefit of participants	Failure to document decisions	Failure to periodically review policies	Failure to engage in ongoing education
Failure to engage in succession planning	Inconsistent actions	Failure to identify problems and act when needed	Failure to follow the plan documents (unless inconsistent with law)
Overreaction to recent information	Failure to have a strategic plan and/or follow it	Failure to properly select and monitor service providers	Operating in a vacuum, not knowing what the industry and your peers are doing

Independence

- It is important for a pension fund to be independent.
- Independence is often measured by evidence of a pension fund's:
 - Procurement authority
 - Budgetary authority
 - Personnel authority — hire, evaluate, compensate, and terminate staff
- If non-fiduciaries are able to exert control over pension fund fiduciaries, the duties of loyalty and prudence could be compromised.

Independence

- The duty of loyalty demands independence from:
 - The appointing body
 - The plan sponsor
 - Taxpayers
 - The public
 - Sub-groups of the participants

2

Board Engagement Models



Active Board Roles

Board as Workforce

Complete Legal Accountability

Under this approach, the board carries full legal responsibility for the organization and its activities.

Setting Strategic Direction

The board establishes the organization's mission, outlines long-term objectives, and formulates strategies to reach those goals.

Direct Operational Involvement

The board manages daily operations, essentially functioning as the organization's staff.

Common Among Smaller Entities

This structure is often found in small or newly formed organizations with limited personnel and resources.



Board as Administrators

Legal Accountability of the Board

Under this framework, the board carries ultimate legal responsibility and establishes the organization's mission.

Joint Development of Strategy

Long-term objectives and strategic plans are shaped collaboratively by the board and executive leadership.

Operational Authority Delegated

Management is entrusted with day-to-day operations, while the board maintains oversight and governance.

Governance with Operational Balance

This approach creates equilibrium between strategic oversight and operational execution, enabling the board to concentrate on governance.



Board as Directors

Clear Division of Roles

This structure establishes a firm separation between governance by the board and operational management led by the CEO and staff.

CEO Accountability

The CEO assumes legal responsibility and works closely with the board to define organizational purpose and objectives.

Board's Strategic Oversight

The board maintains authority over strategic decisions, approving plans and monitoring management performance.

Operational Management by Staff

Daily operations are managed by staff under the CEO's direction, ensuring smooth execution of organizational activities.



Non-Operational Board Roles

Board as Council

Oversight-Focused Board

The board concentrates on monitoring and ensuring the organization stays aligned with its mission, without engaging in daily operations.

CEO Accountability

Legal responsibility rests with the CEO, who oversees day-to-day management and holds decision-making authority.

Staff-Led Strategic Planning

Long-term objectives and strategies are primarily developed by staff or volunteers, with periodic review by the board.

Decentralized Governance Structure

This model promotes a distributed governance approach, best suited for organizations with strong internal leadership and a clearly defined mission.



Board as Consultants

Advisory Role for the Board

The board serves primarily as an advisor, offering guidance without direct involvement in daily operations or strategic decision-making.

Staff-Led Management and Compliance

Staff members assume full responsibility for legal compliance, organizational vision, goal-setting, and strategy development.

Best Fit for Established Organizations

This structure is ideal for well-developed organizations with seasoned teams and strong leadership systems, enabling the board to focus on support rather than control.



Summary of Levels and Types of Boards

Board Roles

Board as Administrators

- Board holds legal responsibility
- Board defines purpose
- Board approves goals set by management
- Board and management co-create strategies
- Board retains authority while management runs operations

Board as Workforce

- Board holds legal accountability
- Board defines purpose
- Board sets strategy
- Board manages operations

Board as Directors

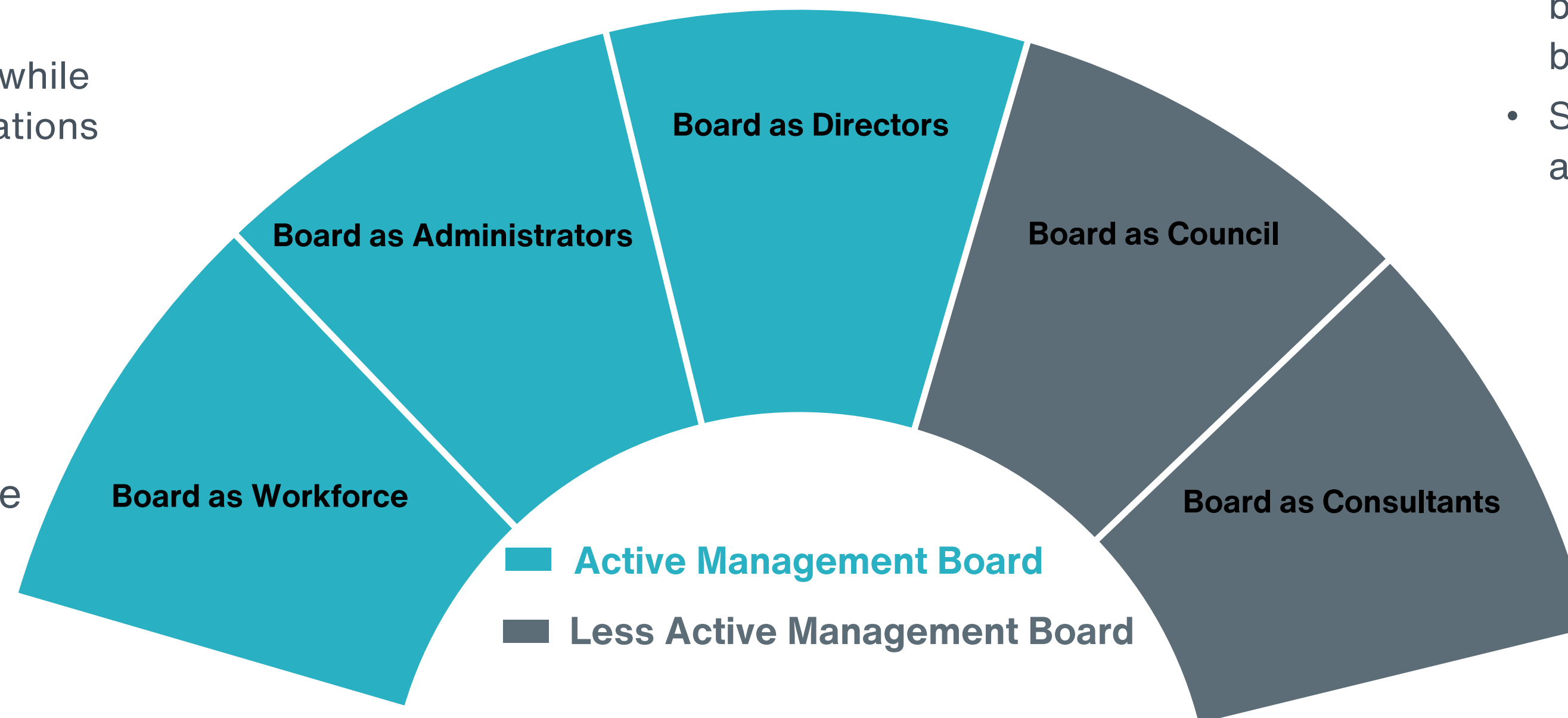
- CEO holds legal responsibility
- CEO and board set purpose and goals together
- CEO and board co-develop and approve strategies
- CEO retains authority while staff manage operations

Board as Council

- CEO holds legal responsibility
- CEO articulates purpose through mission statement (board may endorse)
- Goals and strategies created by staff/volunteers, reviewed by board
- Staff holds full operational authority

Board as Consultants

- Staff holds legal responsibility
- Staff defines vision, goals, and strategies
- Staff has full control over daily operations



Adapted in part from R. Terrence Jackson © 2004

Most Common Role of Public Pension Board

The board's role is to **adopt** policies and procedures that staff can **implement** to protect the fund and ensure the highest level of services from external advisors and to the beneficiaries and participants.

Best practice is a governance model that enables board members to focus on the policy issues that demand their attention while board members are the ultimate governing fiduciaries, it is prudent for them to consider what is the most effective, efficient, use of their time.

Board's role is not:

- Day-to-day operations
- The details of policy implementation — the “how to do it”
- Staff functions

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29th Annual Oklahoma Public Fund Trustee Education Conference

Session 7

Advice for Investing Institutions

Howard Marks
Oaktree Capital Management

29th Annual Oklahoma Public Fund Trustee Education Conference



Oaktree Capital Management

Howard Marks. Since the formation of Oaktree in 1995, Mr. Marks has been responsible for ensuring the firm's adherence to its core investment philosophy; communicating closely with clients concerning products and strategies; and contributing his experience to big-picture decisions relating to investments and corporate direction. From 1985 until 1995, Mr. Marks led the groups at The TCW Group, Inc. that were responsible for investments in distressed debt, high yield bonds, and convertible securities. Previously, Mr. Marks was with Citicorp Investment Management for 16 years, where from 1978 to 1985 he was Vice President and senior portfolio manager in charge of convertible and high yield securities. Between 1969 and 1978, he was an equity research analyst and, subsequently, Citicorp's Director of Research. Mr. Marks holds a B.S.Ec. degree cum laude from the Wharton School of the University of Pennsylvania with a major in finance and an

M.B.A. in accounting and marketing from the Booth School of Business of the University of Chicago. He is a CFA® charterholder. Mr. Marks is a Trustee and Member of the Investment Committee at the Metropolitan Museum of Art, and a member of the Investment Committee of the Royal Drawing School in London. He also serves as a Director of Brookfield Corporation, and is a member of the Shanghai International Financial Advisory Council. Howard is an Emeritus Trustee of the University of Pennsylvania, where from 2000 to 2010 he chaired the Investment Board.



OAKTREE

Advice for Investing Institutions

Howard Marks, Chairman
Oaktree Capital Management, L.P.

Oklahoma Public Fund Trustee Education Conference
Date: September 24, 2026

Advice for Institutional Investors

- **Expectations and Goals**
- Creed
- Process
- Organization and Environment
- Inescapable Truths

Expectations and Goals: Understanding the Essence of Investing

Investing consists of positioning capital in order to benefit from future events and reach one's financial goals

Because the future can't be known with precision, investing requires decision-making under uncertainty

The high degree of uncertainty has important implications for:

- The selection of goals
- The usefulness of forecasts
- The ability to assess risk
- The information content of successful decisions
- The significance of short-term performance
- The choice of organizational structure

Expectations and Goals: Establish Your Priorities

Investment goals essentially come in two forms:

- Preserve principal
- Achieve high return

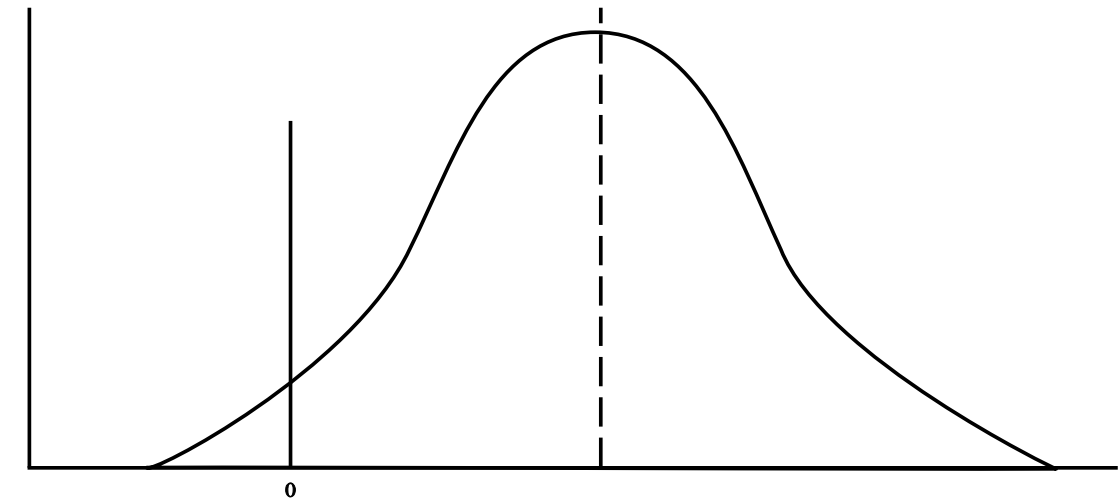
Investors generally have to emphasize one or the other

Prioritizing one reduces the likelihood of accomplishing the other

Expectations and Goals: Establish Your Priorities

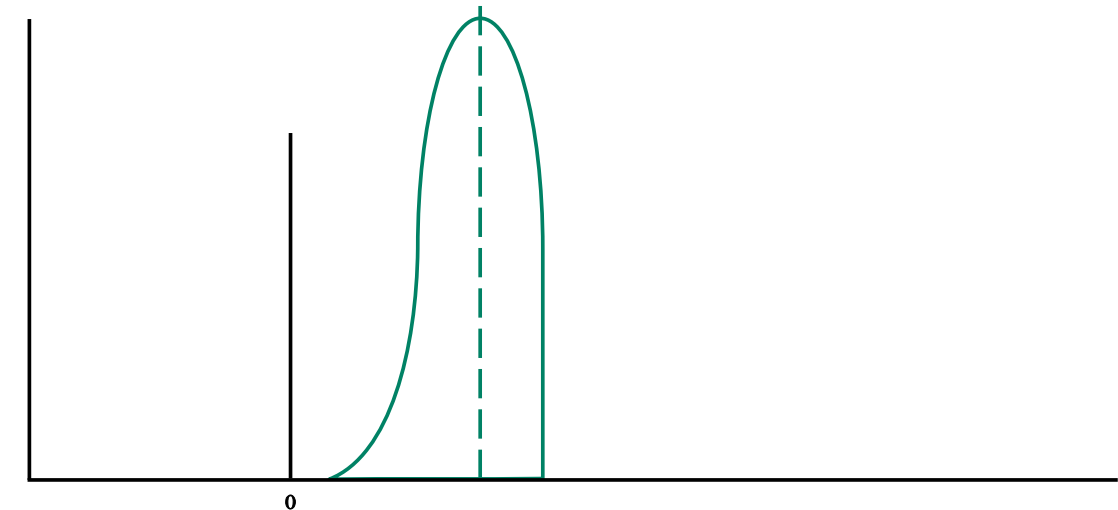
Most ownership/equity investments have this kind of return profile:

- Higher expected return
- Wider range of potential outcomes
 - Significant upside potential
 - Significant downside risk



Most creditor/debt investments have this kind of return profile:

- Lower expected return
- Little uncertainty regarding outcome
 - Little or no upside potential
 - Modest downside risk

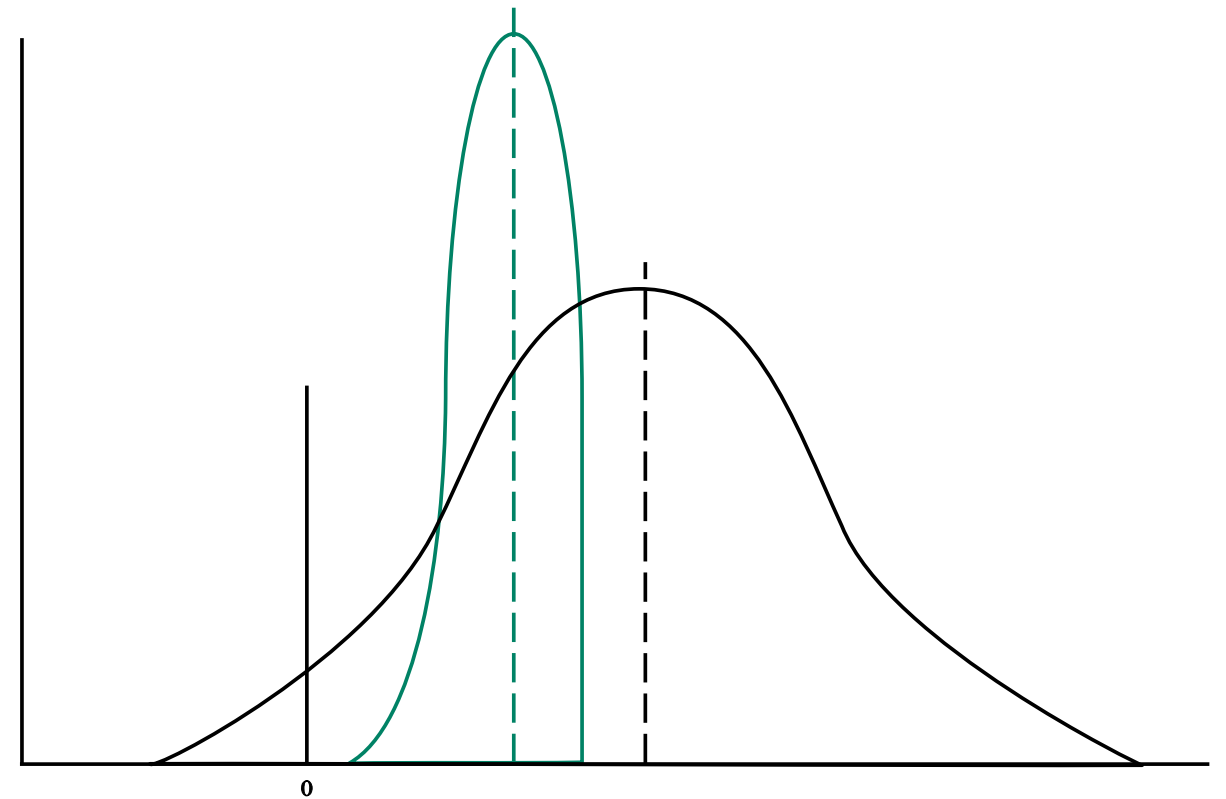


Expectations and Goals: Establish Your Priorities

Which would you and your organization prefer?

There is no right or wrong answer

The question is how you will combine them



Expectations and Goals: Start from Reasonable Expectations

In investing, it's extremely easy to achieve average results and extremely difficult to consistently be above average.

It's important to decide whether you will:

- Strive to be above average – which costs money, is far from sure to work, and can result in your being below average, or
- Accept average performance – avoiding those costs but being forced to look on as the winners occasionally report mouth-watering successes.

A decision to strive for superior results should be based on conviction that (a) assets are often mispriced and (b) your organization is capable of exploiting those mistakes (or finding managers who are).

Expectations and Goals: Make Your Goals Explicit

Every coherent investment program has to proceed from an explicit return goal.

The goal is likely to be expressed in absolute terms. How will it be reconciled with relative performance considerations?

Keeping up with – or beating – the market when it rises usually requires market-sized helpings of beta, risk, and correlation.
If you have those things, what will happen when the market falls?

The time frame has to be explicit, too:

- The goal doesn't have to be achieved every year, and it probably can't be.
- The only thing that matters is achieving it on average over the long term.
- Full market cycles present a reasonable time frame for the purposes of assessment.

Expectations and Goals: Make Sure Your Goals are Realistic and Achievable

Your goals should reflect and accommodate to the investment environment.

- For example, a goal that is far above the prospective returns on mainstream asset classes may require holding a risky portfolio and accepting the possibility of meaningful drawdowns and perhaps permanent loss.

In addition, your expectations should reflect the realities of your situation:

- Are you small enough to benefit from selectivity, contrarianism and active management?
- Does your financial condition mandate conservatism or permit a more aggressive approach?
- Given that achieving superior performance requires heightened risk-taking, should it be your goal?
- Will your institutional setting permit you to attract and retain people who are above average?
- Will your realities permit you to focus on the long term and ignore short-term noise?
- Given how hard it is to perform above average, do you have reason to think you can?

**“The market is not an accommodating machine.
It will not go where you want it to just because you need it to.”**

– Peter Bernstein

Advice for Institutional Investors

- Expectations and Goals
- **Creed**
- Process
- Organization and Environment
- Inescapable Truths

Creed:

Adopt an Investment Creed That Is Clear to All

What do you believe in? What core values will guide your organization?

- Is the efficient market hypothesis relevant?
- Will you put faith in macro forecasts? Will you attempt to predict and profit from the market's ups and downs?
- How do you think about risk? Can it be predicted and quantified a priori? Can it be controlled through a methodical process? Will bearing more increase your returns?
- Will you emphasize risk control or return maximization? Will you pursue fewer losers or more winners?
- How will you balance science and art, process and judgment?
- **How will you define success, and what risks will you take to achieve it?**

Creed:

Understand the Notion of Market Efficiency

- There are lots of investors. Many are intelligent, numerate, computer-literate, able to access data, clinical and objective, and highly motivated.
- They work hard to find mispriced assets, buying those they think are underpriced and selling those that are overpriced.
- These actions cause the available information to be reflected in asset prices so that they converge with intrinsic value. In other words, prices become “fair,” meaning no assets will be obviously overpriced or underpriced. There will be no “inefficiencies” – mispricings – to be found.
- If you buy an asset at a fair price you should expect to earn a return that is fair relative to the risk involved, but no more. Thus (a) no market will offer a better risk/return proposition than any other, and (b) no investor can beat the market he or she operates in.

These are the assertions of the efficient market hypothesis. I don’t believe they all hold true, but I do believe prices tend to reflect the consensus opinion regarding the significance of the available information.

My bottom line: while assets may be priced right or wrong, some markets are so efficient in incorporating the available information that few individuals can regularly find and benefit from mispricings. Where efficiency is present, it’s hard to beat the market.

Creed:

Take a Position Regarding Market Efficiency

Do you think investors can beat the market?

- Do “inefficiencies” exist – instances when assets are mispriced?
- Are there people with enough “alpha” (personal skill) to find them?
- Can they do so consistently?
- Can they do so with a lot of money under management?
- Can you identify these people, retain them on your staff and hire them as outside managers?
- At moments when their efforts fail, what will the reaction be?
- What are the implications for your approach of the answers to these questions?

Creed:

Understand Where Superior Returns Come From

The “base” long-term return enjoyed by the average investor comes from participating in companies’ earnings by owning their securities. One of the routes to outperformance is superior asset selections: overweighting the securities that will do better than average and underweighting those that will do worse.

Often, securities do better because their companies’ fundamentals had been under-appreciated:

- The price of each security reflects the consensus view regarding its company’s earning potential
- Perhaps you hold a view of one company that is more favorable than the consensus – a “variant perception” – so you overweight its security in your portfolio
- When the company delivers a favorable surprise, others see that they weren’t optimistic enough – and thus didn’t hold enough of its security – so they buy to increase its representation in their portfolios
- Their buying causes the security to outperform those of companies that only perform as expected or worse. Because you held more of it than the average investor, you outperform

Thus, above average gains usually come from pleasant surprises

You can only hope to perform better than others if you possess a “knowledge advantage” – if you see something differently than others and better, enabling you to be better prepared for the events that surprise others.

A knowledge advantage can be put to work through security selection in private as well as public markets, and through superior decisions with regard to complexity, liquidity provisions, portfolio structuring, or manager selection.

Creed:

Decide Whether You Will Bet on Macro Forecasts as the Route to Outperformance

Can macro forecasting contribute to superior performance?

- Consistently correct macro forecasts could be a great help in investing.
- They're easily achieved when trends roll on and extrapolation succeeds.
- But extrapolation isn't very helpful . . . or profitable. Everyone gets it right, but correct forecasts that everyone has are no help toward outperformance.
- Correct forecasts of deviations from trend are potentially very valuable.
- But they're rarely made correctly.
- Thus forecasts are not useful on balance.

**“We have two kinds of forecasters: the ones who don't know,
and the ones who don't know they don't know.”**

— John Kenneth Galbraith

- Even worse, bold and idiosyncratic forecasts that lead to bold bets can be highly injurious if they turn out to be wrong.

**“It ain't what you don't know that gets you into trouble.
It's what you know for sure that just ain't so.”**

— Mark Twain

Creed:

Will You Bet on Macro Forecasting?

The macro future isn't knowable with confidence.

The future must be viewed as a probability distribution, not a single, knowable outcome.

“Only investors with unusual insight can regularly divine the probability distribution that governs future events and sense when the potential returns compensate for the risks that lurk in the distribution’s negative left-hand tail.”

– “The Most Important Thing,” 2011

It’s essential to realize that you may know what’s likely — you may even know the probabilities precisely — but you still don’t know what’s going to happen. That’s where risk comes in.

“Risk means more things can happen than will happen.”

– Elroy Dimson, London Business School

Creed:

Clarify How You Think about Risk

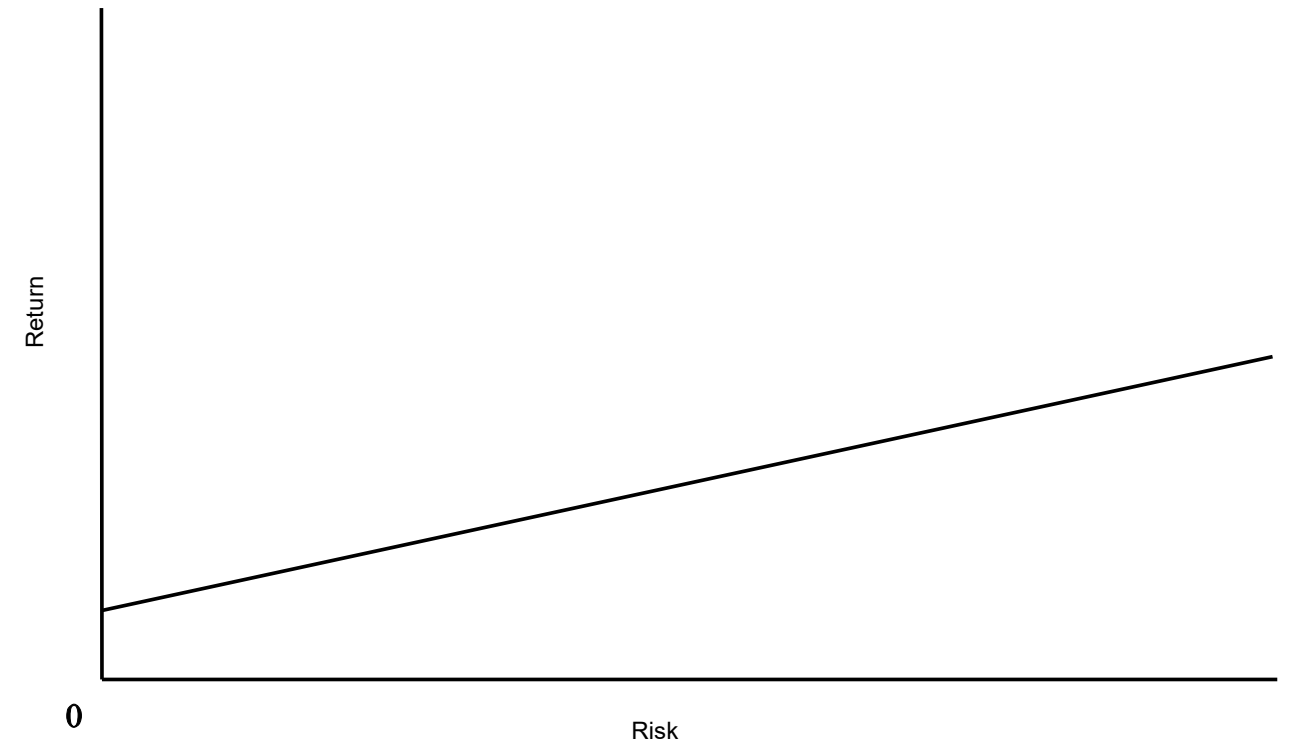
How are risk and return connected?

Most people have come to think about the relationship between risk and return as follows: as risk increases, the expected return increases.

Given this relationship, how much risk will you take?

The upward slope and linearity of the line give the impression that bearing risk can be counted on to deliver higher returns. Most people take this to mean “riskier assets produce higher returns” and “the way to achieve higher returns is to take more risk.”

But that can’t be right: If riskier assets could be counted on to produce higher returns, they wouldn’t be riskier.



Creed: Clarify How You Think about Risk (cont'd)

I think this graphic is much more helpful.

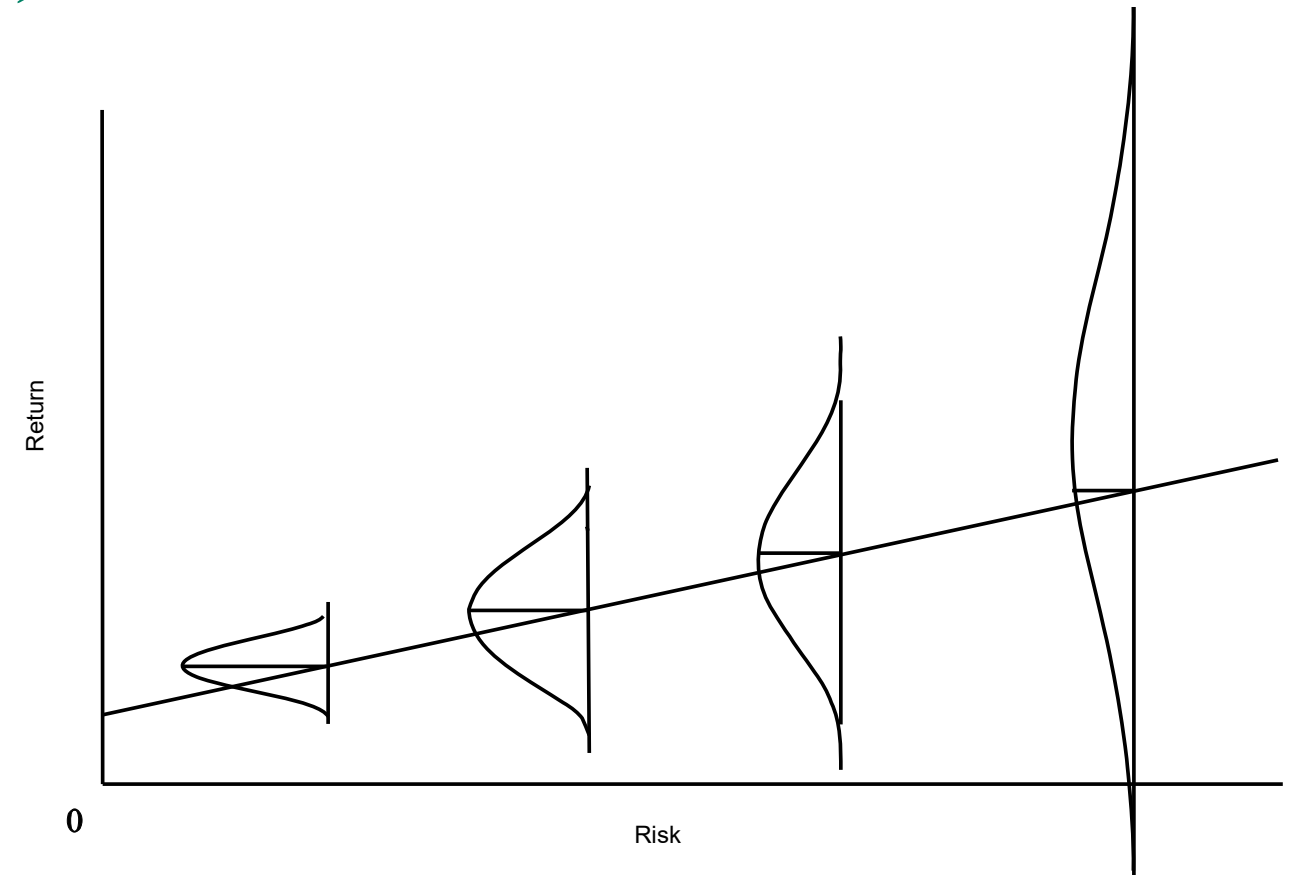
Viewed this way, as risk increases:

- The expected return increases (as in the traditional graphic),
- The range of possible outcomes becomes wider, and
- The less-good outcomes become worse.

That's the essence of risk.

Now how much will you take?!?!?

- It's easy to say, "I want a high return." Who doesn't?
- It's easy to say, "I'm willing to bear risk to get it."
- But how much uncertainty can you live with, and how bad an outcome can you survive?



“Don’t risk what you have and need in order to pursue what you don’t have and don’t need.”

– Warren Buffett

Creed:

Consider Risk, But Don't Think You've Mastered It

Risk isn't volatility, but rather the possibility of unfavorable outcomes, including permanent loss.

Like other things in the future, this possibility can be estimated, but it can't be measured.

- We don't know whether negative events will occur, or when.
- We don't know what losses negative events will produce – the linkages are unpredictable.

Thus, the potential for loss can't be predicted with precision, quantified, or limited to a given quantum.

We can't know with certainty how bad things can get.

Creed:

Accept that It's Hard to Have Both Superior Returns and a High Degree of Safety

There is no simple roadmap to superior returns.

For example:

- For superior results, you have to do something other than chase assets with obvious appeal and managers with good records.
- You can't ensure success by going with things that are "obviously good" regardless of how they're priced. Oftentimes others will have bid up the price of a good asset to the point where it's a bad investment, or will have given a previously-superior manager enough money to blunt his or her effectiveness.
- But in order to depart from things with obvious appeal and managers with good records, you have to make a leap of faith. This is unlikely to work all the time.

Advice for Institutional Investors

- Expectations and Goals
- Creed
- **Process**
- Organization and Environment
- Inescapable Truths

Process:

Make Clear How Participants Can Add Value

How can the participants in the process add value?

The main thing we can't consistently do is see the macro future better than others.

But what might we be able to do?

- Identify potentially profitable asset classes, strategies and approaches
- Inform the capital allocation process by assessing the attractiveness of asset classes
- Strive to know more than others about companies, industries and securities
- Attempt to find bargains and avoid overpriced securities
- Try to limit risk to a tolerable level
- Set an appropriate balance between offense and defense; alter it as appropriate
- Practice contrarianism and counter-cyclicality
- Control ego and emotion
- Assess managers in terms of intelligence, process, philosophical agreement and trustworthiness

These are the things the team should be charged with and paid for achieving.

Process:

Employ Benchmarks That Measure (and Motivate) the Things That Matter to You

There are many possible benchmarks. They include indices for individual strategies; the portfolio-weighted average of the strategy indices; passive proxies like 60% equities/40% bonds; the performance of peer organizations; and the institution's target return.

Each can accomplish certain things.

- The overall efficacy of your investment process can be measured by comparing your return against a passive benchmark such as 60% MSCI Equities and 40% Barclay's Aggregate.
- Your U.S. large-cap stock manager can be evaluated by comparing returns against the S&P 500.
- The portfolio-weighted average of your strategies will tell you if your managers collectively did a superior job.

But each also has pitfalls.

- Beating the weighted average of the strategy indices doesn't tell the whole story. How will you assess the efficacy of the decisions regarding weightings?
- **Since all benchmarks are imperfect, they can be a cinch to beat some of the time and impossible at others.**
- And what happens when performance is good relative to all the benchmarks listed above but the portfolio fails to meet its absolute return goal? Or it meets its absolute goal but lags behind the market and the peers?
- **Benchmarking that evaluates relative performance won't tell you anything about whether the portfolio provided what was needed from it based on the institution's liabilities or spending requirements, liquidity needs, risk tolerance, and time horizon.**

Process:

Formulate an Opinion Regarding Cycle Positioning

The goal in cycle positioning is to have more aggressiveness when the markets rise and more defensiveness when they fall.

It has to be based on the belief that opportunities to benefit exist and can be recognized and taken advantage of.

The keys in this regard lie in awareness of where the market stands, contrarianism, counter-cyclical behavior, and the pursuit of relative value.

But it isn't easy: Today's valuations already reflect everyone else's effort to do the same. Can you do a superior job? If not, your efforts will be in vain at best and costly at worst.

Process:

Understand the Essential Nature of Contrarianism

The investing herd is usually wrong at the extremes.

- The herd becomes more optimistic and euphoric as positive events occur and asset prices rise. Its buying creates the markets' highs.
- Likewise, the herd becomes more pessimistic and depressed as negative events occur and prices decline, and its selling brings on the lows.

Thus contrarianism – doing the opposite of the herd – is an essential element in superior investing.

It's important to assess the state of the environment and take advantage of investors' biases and foibles. As Warren Buffet says:

- Be fearful when others are greedy
- Be greedy when others are fearful

But contrarianism isn't easy. This is true particularly because most investors are subject to the same environmental and emotional influences as the herd.

And remember, even the best contrarian decisions often fail to work immediately and thus can look wrong for long periods of time.

Process:

Work to Combat Envy, FOMO and Other Destructive Emotions

One of the strongest and most destructive aspects of human nature is the discomfort that comes from watching while others make money. Envy lies behind much of the worst investment behavior.

“Overpriced” is far from synonymous with “sure to go down tomorrow.” An investment mania or bubble won’t correct immediately after you conclude it should. In fact, it’s likely to go considerably further in the “wrong” direction.

“The market can remain irrational longer than you can remain solvent.”

– John Maynard Keynes

It’s particularly unpleasant to not hold something that’s popular and appreciating. Thus the higher it goes, people who resisted at lower prices become increasingly likely to capitulate and jump on board. This is prime among the forces that cause bubbles to proceed beyond reason.

In order to avoid being victimized when bubbles pop, you have to refuse to participate in them. And given the impossibility of beginning to do so at the exact right time, you have to refuse well before they pop. That means there’s sure to be a period when you look dumb and feel dumb.

Likewise, to be early in buying something that everyone will clamor for in the future, you have to commit before its merit becomes obvious and hold until its price begins to rise. This, too, can take a good while to work and introduce considerable discomfort.

“Being too far ahead of your time is indistinguishable from being wrong.”

Process: Decide How Reliable You'll Expect Your Process to Be

“There is nothing reliable to be learned about making money. If there were, study would be intense and everyone with a positive IQ would be rich.”

– John Kenneth Galbraith

“... not only am I unaware of any formula that alone will lead to above average investment performance, but I'm convinced such a formula cannot exist.”

– “Dare to Be Great,” September 2006

“Process” alone will not suffice. Even a well-designed process, operated in an average way, will lead to average results.

Superior judgment is the essential ingredient in investment success.

Advice for Institutional Investors

- Expectations and Goals
- Creed
- Process
- **Organization and Environment**
- Inescapable Truths

Organization and Environment: Create an Organization and Environment That Are Conducive to Achieving Your Goals

You won't get the behavior you want if your environment doesn't encourage it.

For example,

- Pursuing superior returns requires risk taking;
- Risk taking means some actions will result in losses;
- When losses arise, staff decisions will look wrong;
- If staff will be penalized for errors, risk taking will be discouraged.

People don't do what you tell them to do – they do what you pay them to do.

Organization and Environment:

Accept the Fallibility of Even the Best Investment Organization

- Randomness plays a substantial role in determining investment outcomes. Random developments have the ability to render even well-reasoned decisions unsuccessful.
- Even the best investors make lots of mistakes and experience significant rough periods.

If you accept these things, you should focus on batting average rather than individual decisions, and the long term, not the short.

Organization and Environment: Insist on Long-Term Focus

- It's hard to consistently do the right thing.
- It's impossible to consistently do the right thing at the right time.
- Thus no one and no organization can consistently achieve short-term goals.
- **Anyway, only long-term performance matters.**
- Short-termism is one of the greatest weaknesses in investing today.

If you agree with the above, you should de-emphasize the short run.

Given that no one can be right consistently, penalizing short-term underperformance – which we agreed doesn't matter – will discourage constructive, long-term creativity.

An easy way for an organization to distinguish itself today is by focusing on the long run, not the short run. But you have to walk the walk:

- Make clear to all that you only want long-term decisions.
- Deemphasize reporting on short-term results.
- Base compensation on long-term performance, not short-term. (But then how will you decide on pay in the early years?)

Organization and Environment: Ensure an Appropriate Allocation of Roles

Board or Investment Committee:

- Select and review the Chief Investment Officer
- Set goals, creed, allocation framework and long-term allocation ranges
- “Advise and consent”
- Get out of the way

CIO and staff:

- Propose changes to goals, creed, allocation framework and long-term allocation ranges
- Move capital within long-term allocation ranges and among managers. (If they have the requisite skill, why not let them? If they don't, why employ them?)
- Hire managers and choose funds (with the Board in the loop)

Should the Board interview and decide on new managers?

- Do they know more than the staff? If not, what can they add?
- Do they ever say no to staff recommendations?
 - If not, isn't their involvement a waste of everyone's time?
 - If so, isn't it dispiriting?

Organization and Environment: Pay Strict Attention to Fees

The only sure thing in investing is management fees

However, fees are not unmanageable. They can be reduced, for example, through passive investing

High fees should be paid only if they increase the expected net return

Incentive fees, in particular, have gone from being rare to common.

Only exceptional managers deserve to receive the return on a portion of your capital. By definition they are the exception, not the rule.

Advice for Institutional Investors

- Expectations and Goals
- Creed
- Process
- Organization and Environment
- **Inescapable Truths**

Inescapable Truths: The Ultimate Issue: Decide Whether Your Organization Will Dare to Be Great

Will you dare to behave unconventionally?

Will you bear the associated uncertainties?

Will you accept the risk of being wrong?

Will you accept the risk that even correct actions may look like mistakes for a good while?

How will you define success, and what risks will you take to achieve it?

“How much emphasis should be put on diversifying, avoiding risk and ensuring against below-pack performance, and how much on sacrificing these things in the hope of doing better?”

– “Dare to Be Great II,” 2014

Inescapable Truths: Will You Dare to Be Different?

Unusual success cannot lie in doing the obvious. The investing herd pursues the obvious. Conventional behavior will, by definition, lead to conventional results.

	Conventional Behavior	Unconventional Behavior
Favorable Outcomes	Average good results	Above-average results
Unfavorable Outcomes	Average bad results	Below-average results

“Only if your behavior is unconventional is your performance likely to be unconventional . . . and only if your judgments are superior is your performance likely to be above average.”

– “Dare to Be Great,” 2006

“Establishing and maintaining an unconventional investment profile requires acceptance of **uncomfortably idiosyncratic portfolios, which frequently appear downright imprudent in the eyes of conventional wisdom.”**

– David Swensen

Inescapable Truths: Will You Dare to Be Wrong?

Every attempt at above average performance will expose you to the possibility of experiencing below average performance.

- Most institutions invest a lot of capital, effort and opportunity costs to avoid the embarrassment that results from being wrong.
- Consider, for example, this challenge: for most bureaucracies, the unspoken rule is, “We would never buy so much of something that if it didn’t work, it would make us look bad.” If that’s true, how can you do enough of it so that if it works it will move the needle on performance?
- **Trying to do better than average means accepting the possibility of doing worse, and the associated headline risk.** In particular, think hard about the possible consequences of high-profile deals and large commitments.

Inescapable Truths: Will Your Environment Encourage Trying to Be Great?

Bureaucracy and great investment results tend to be mutually exclusive.

“... active management strategies demand uninstitutional behavior from institutions, creating a paradox few can unravel.”

– David Swensen

This is largely because unconventional behavior is inconsistent with bureaucratic oversight.

Bureaucracies are unlikely to coalesce around idiosyncratic decisions.

“Worldly wisdom teaches us that it is better for reputation to fail conventionally than to succeed unconventionally.”

– John Maynard Keynes

What will be your response?

- Will your organization be permitted – and enabled – to act unconventionally?
- Will you try to reduce bureaucracy, or will you give up on achieving great results? There is no third option.

Inescapable Truths: Will You Dare to Look Wrong?

Remember, in investing, it's hard to do the right thing and impossible to consistently do the right thing at the right time.

That means even “correct” actions may take a while to work, and in the meantime they’ll look like mistakes.

The penalties institutional investors face for below average results can far exceed the potential rewards for above average results.

“Unconventional behavior is the only road to superior investment results, but it isn’t for everyone. In addition to superior skill, successful investing requires the ability to look wrong for a while and survive some mistakes.”

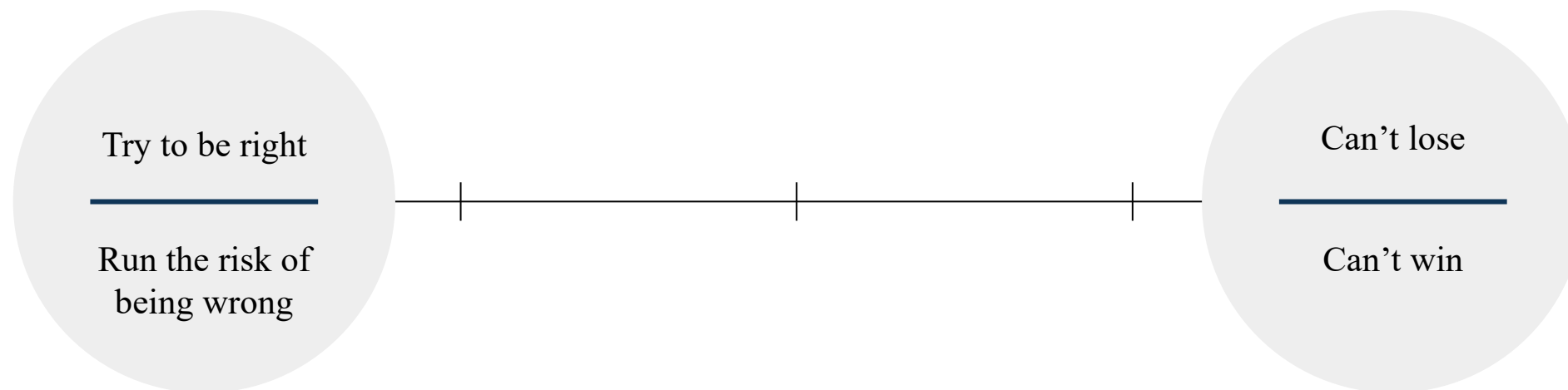
– “Dare to Be Great II,” 2014

You should consider whether your organization’s investment goals are consistent with the realities of its environment. Can you endure long enough for the wisdom of your correct actions to become apparent?

Inescapable Truths: Grapple with the Great Conundrum

- You can't try to be superior without running the risk of being inferior
- Most loss-minimization strategies eliminate the possibility of substantial gains

These two pairings represent the opposite ends of a spectrum of behavior



How will you position your effort on that spectrum?

Inescapable Truths: Never Forget the Inescapable Truths

Investing is a challenging, messy and imprecise activity that has to be engaged in on the basis of estimates, intuition and subjective judgment, not accurate forecasts, scientific laws and dependable processes.

Nothing is sure to work every time. The best you can hope for is asymmetry: that you'll be right more often than you're wrong, and that your correct decisions will add more than your mistakes subtract.

Nothing will lead to superior results in the absence of superior judgment. But even superior investors are far from perfect.

The environment doesn't remain static. The actions of the participants alter the environment, and thus they change the things you must do for success. The quest for gain causes easy answers to be driven out. Yesterday's right answer can be today's wrong answer.

Most of what's important is counterintuitive, and most of what's obvious is wrong.

Ego, emotion and human nature are dangerous enemies.

On average, the average investor produces average results before fees and below average results after fees. Very few can be consistently above average after fees – especially in more-efficient markets.

If you can't understand and accept these things, you're in the wrong job.

“It's not supposed to be easy. Anyone who finds it easy is stupid.”

– Charlie Munger

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29th Annual Oklahoma Public Fund Trustee Education Conference

Session 8

A View from Washington

Libby Cantrill
PIMCO

29th Annual Oklahoma Public Fund Trustee Education Conference



PIMCO

Libby Cantrill is a managing director and the head of public policy for PIMCO. In her role, she analyzes policy and political risk for the firm's portfolio management group and leads policymaker engagement and policy strategy for the firm. Ms. Cantrill is a regular contributor to Bloomberg and CNBC and a member of the Council on Foreign Relations. She sits on PIMCO's Closed-End Fund board as well as the boards of Covenant House New York and the Securities Industry and Financial Markets Association (SIFMA). Prior to joining PIMCO in 2007, she served as an aide in the U.S. House of Representatives, and she began her career in the investment banking division at Morgan Stanley. She has 20 years of investment experience and holds an MBA from Harvard Business School and an undergraduate degree in economics from Brown University. She is a CFA charterholder.

A large, low-angle photograph of a modern PIMCO building with a light-colored stone facade and large glass windows. A tall palm tree stands next to the building. A white geometric arrow shape points from the building towards the title.

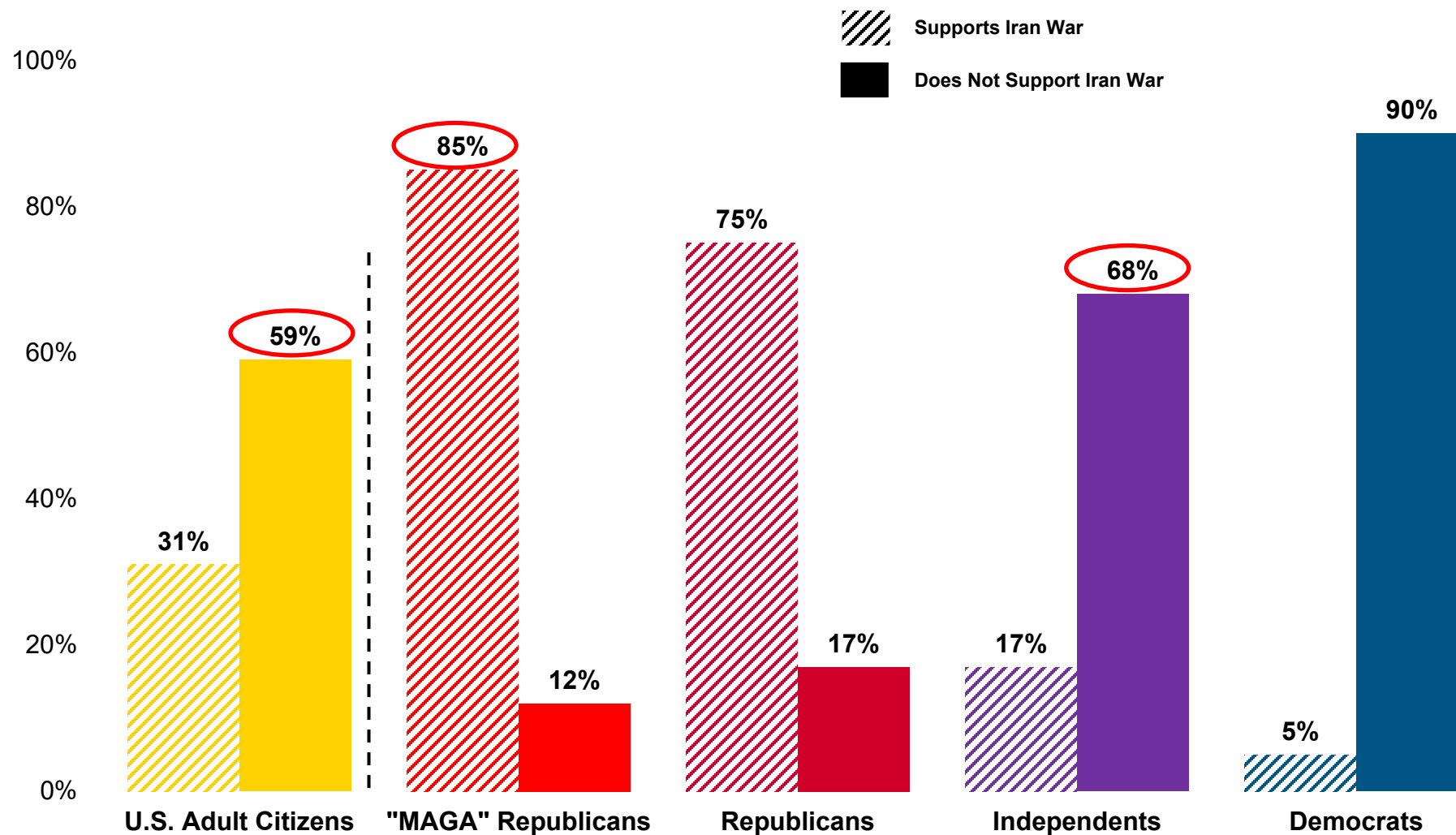
A View from Washington

Libby Cantrill, CFA

IMPORTANT NOTICE

Please note that the following contains the opinions of the manager as of the date noted and may not have been updated to reflect real time market developments. All opinions are subject to change without notice.

War with Iran has dominated the narrative in 2026: Republicans largely support it, but Independents and Democrats do not



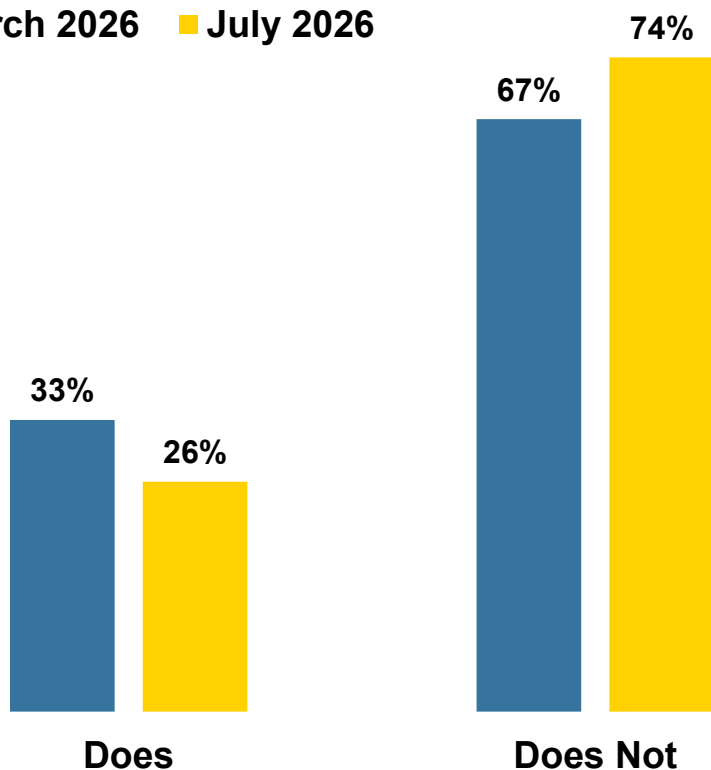
As of July 2026. Source: The Economist; YouGov

Note: Given that some respondents respond with "No opinion", percentages within each group do not always sum to 100%.

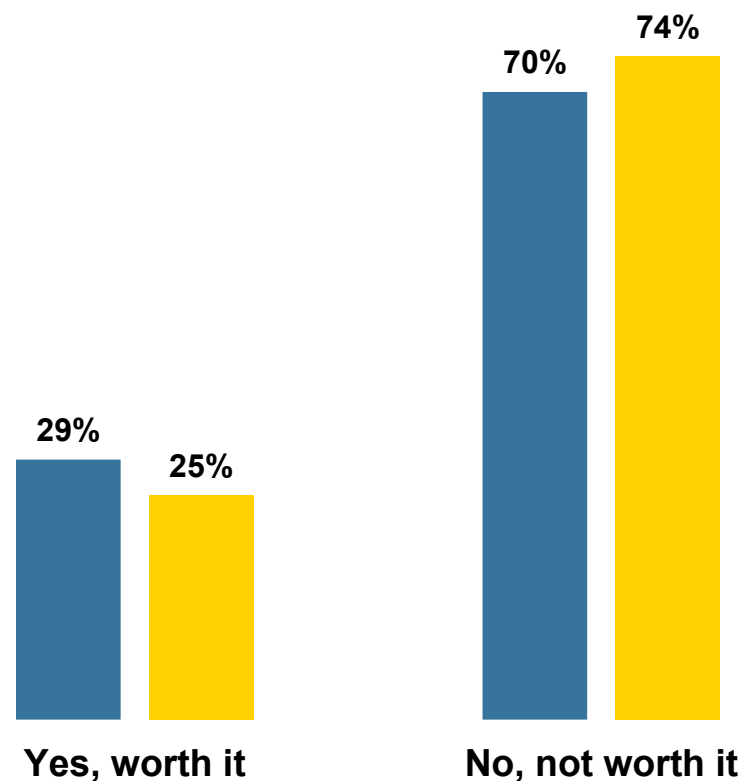
Unlike other conflicts, it was never particularly popular to begin with, but has become even less so

Do you think the U.S. has a plan for handling the situation in Iran?

■ March 2026 ■ July 2026



In your view, is the war in Iran worth it?

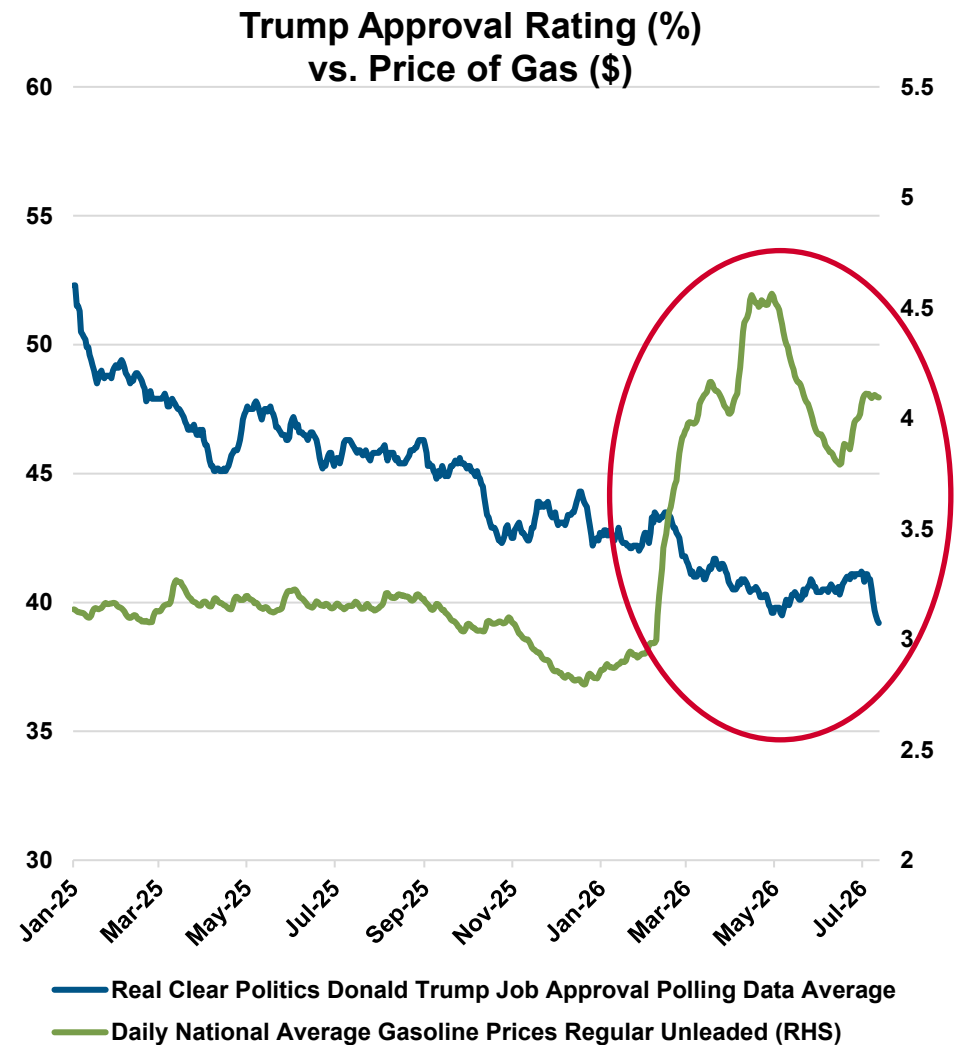
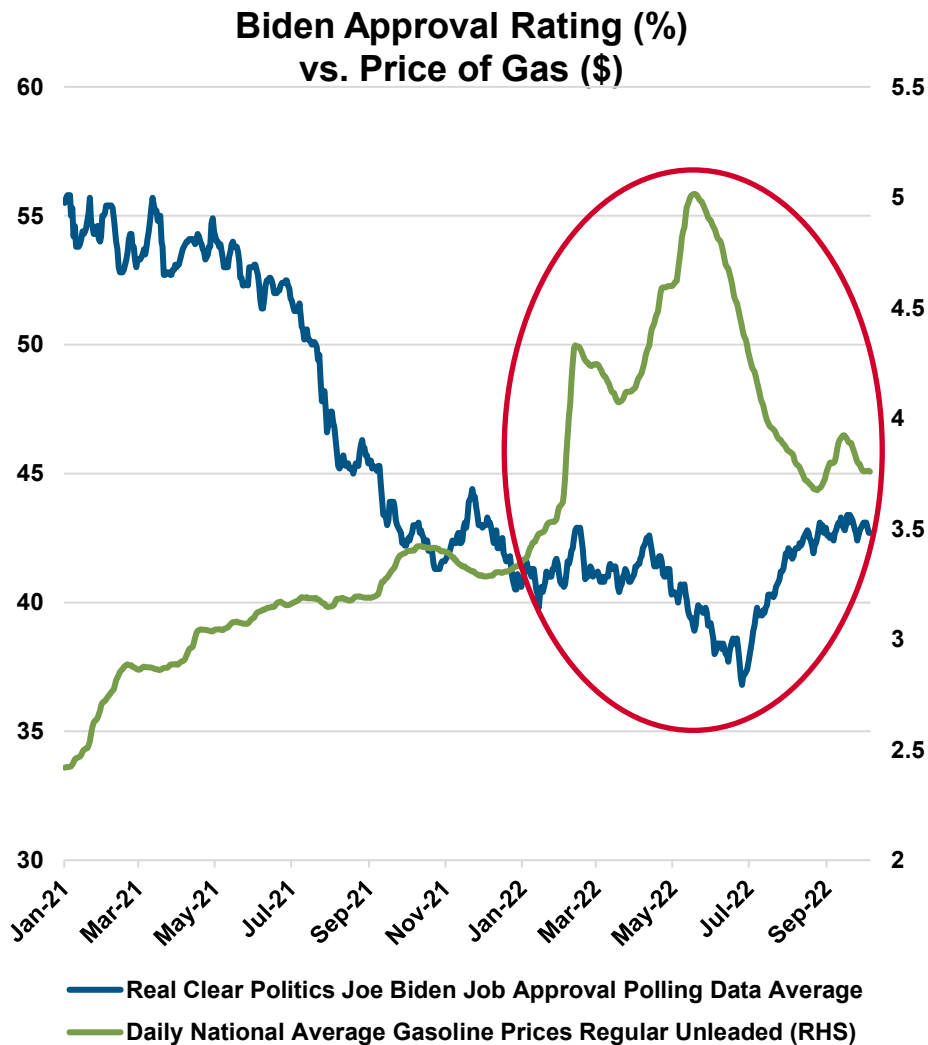


Note: The latest CNN poll was conducted by SSRS from July 23-27 among a random national sample of 1,225 US adults drawn from a probability-based panel. Surveys were either conducted online or by telephone with a live interviewer. Results have a margin of sampling error of up to ± 3.2 percentage points.

Source: CNN/SSRS polling

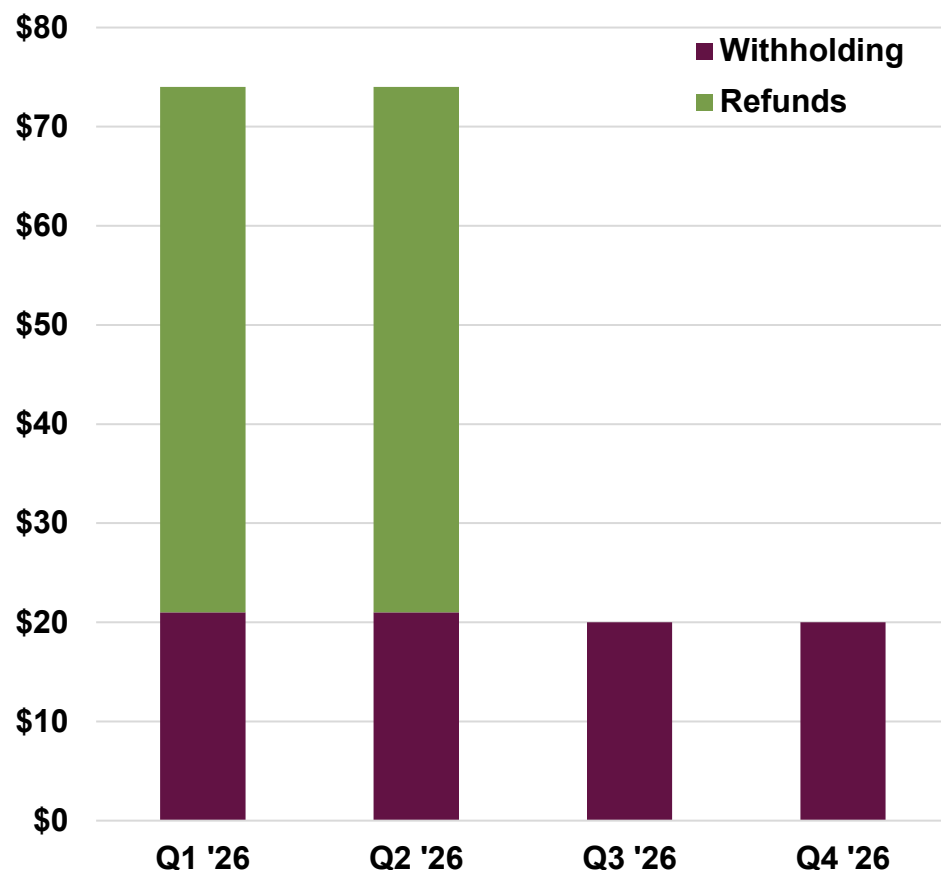
Graphic: Ariel Edwards-Levy, CNN

“Gas & Groceries:” High gas prices are politically challenging as President Biden learned in 2022



As of July 2026
Source: Real Clear Politics, Bloomberg

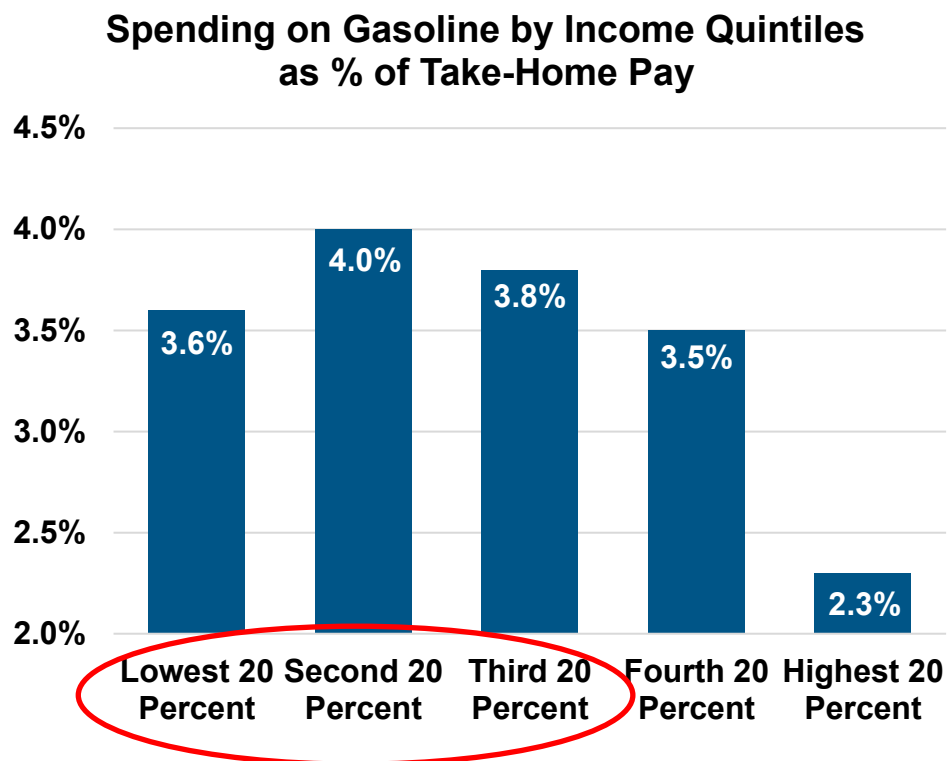
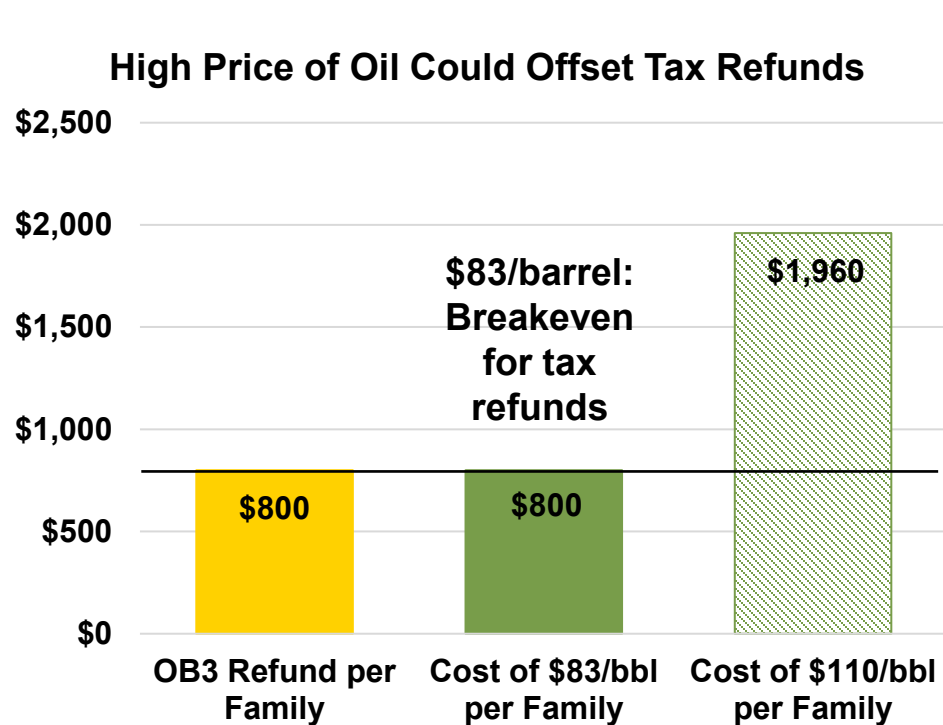
2026 was supposed to be the year of the tax cut: Tax cuts from the “One Big Beautiful Bill” (OB3) could amount to ~0.6% of GDP in 2026



Breakdown of OB3 Tax Cut (\$Bn)	Retroactive	Lower Withholding
SALT Cap Increase	29.4	13.1
Overtime Deduction	22.4	13.9
Seniors Deduction	15.1	23.0
Standard Deduction	12.3	19.0
Auto Loans	7.3	
Tips Deduction	7.8	3.1
CTC Expansion	5.5	6.1
Trump Accounts	6.4	
Bracket Expansion		4.6
Total Impact in 2026 (\$Bn)	\$106.1	\$82.8

As of March 2026
Source: JCT & CBO

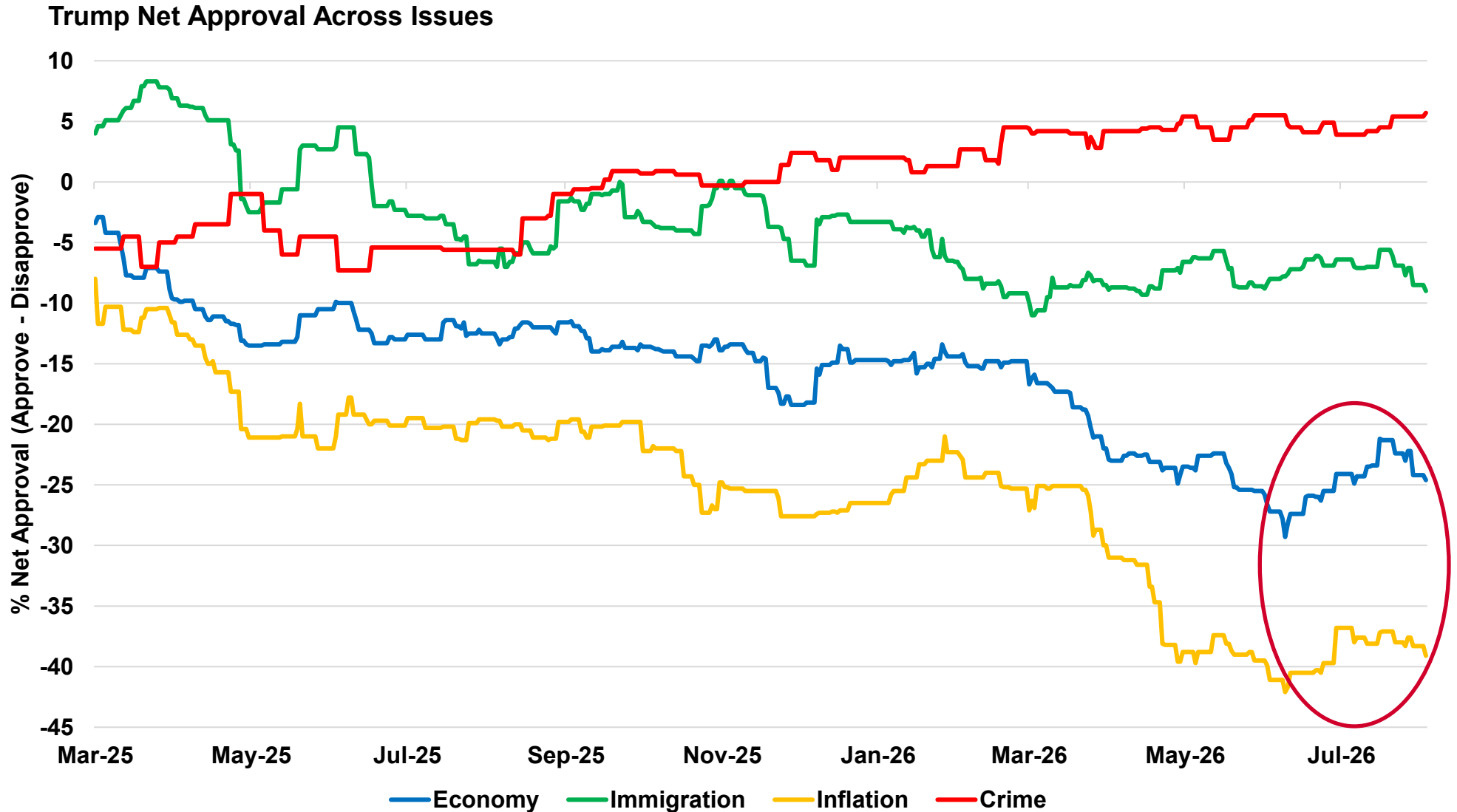
But, but, but: Higher sustained gas prices seem to be eroding some of the stimulative impact of Trump's tax bill, hitting the lower leg of the "K" hardest



As of March 11, 2026

Source: Bloomberg; assumes price of oil continues through end of 2026

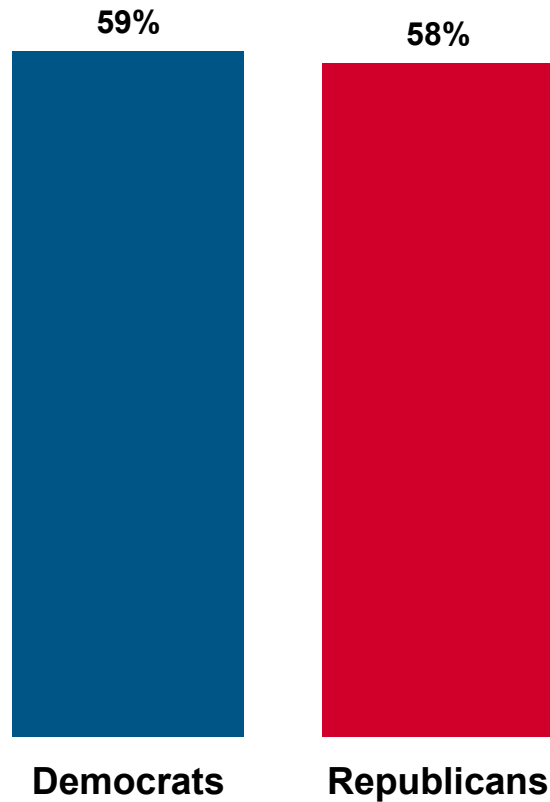
While tax cuts have been helpful, affordability and cost of living are (still) major issues for voters...



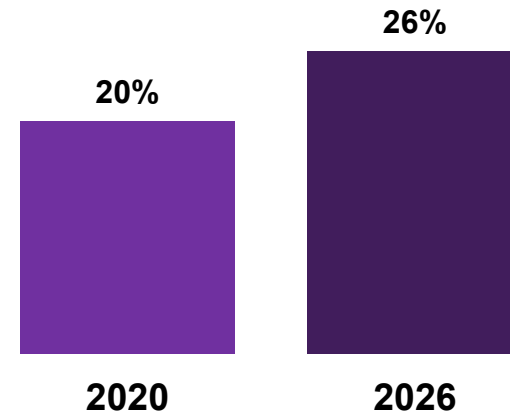
As of July 2026
Source: Bloomberg, RCP, Gallup, PIMCO.

And comes at a time when voters are feeling disillusioned by both parties...

% of American Voters Who Disapprove of the Respective Political Parties

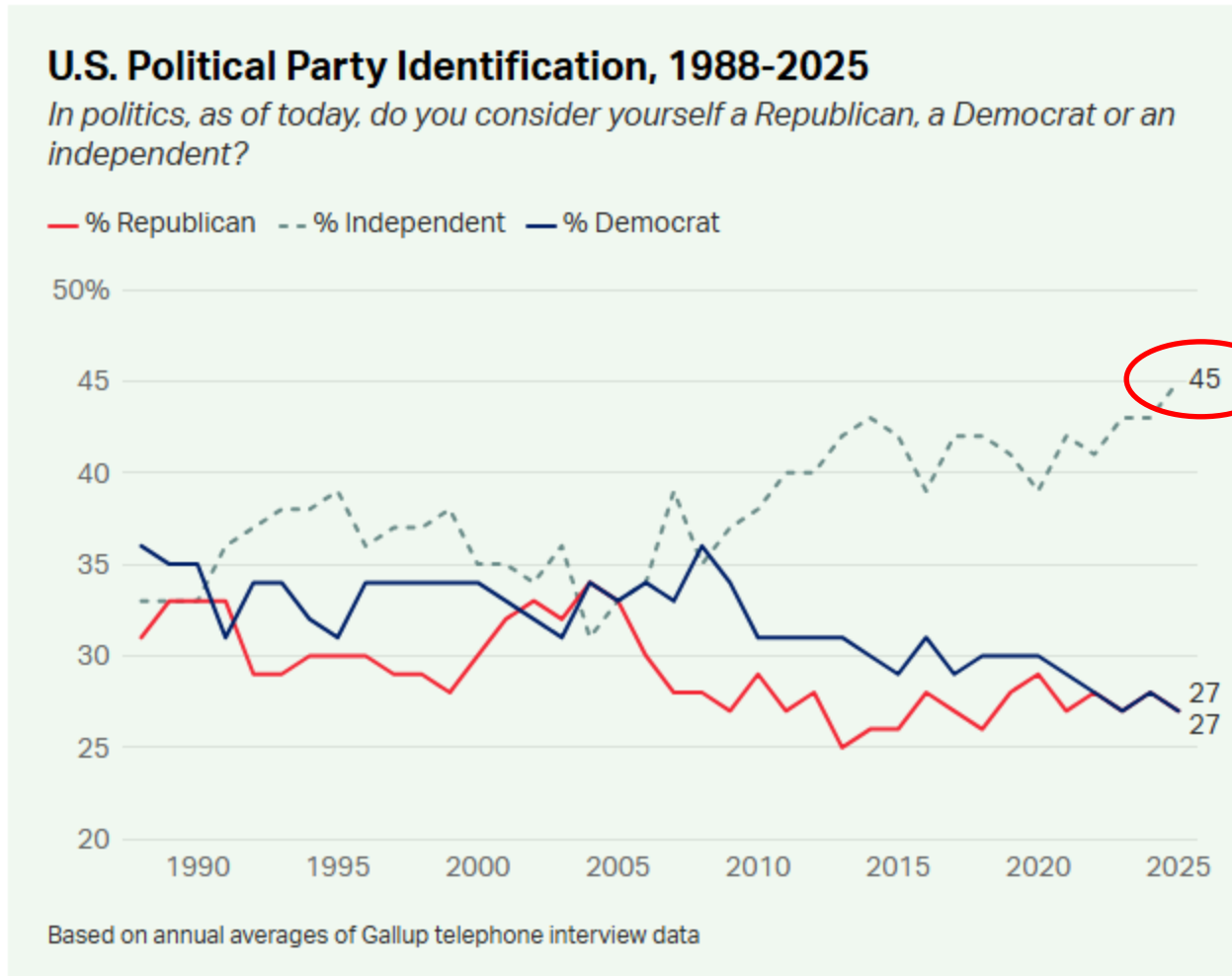


“Double Haters”: % of Voters Who Dislike Both Parties



Source: Pew Research; As of April 2026

...and more voters are asserting they are “Independent.” This group includes the “median voter,” who decides elections in the U.S.



Source: Gallup; January 2026

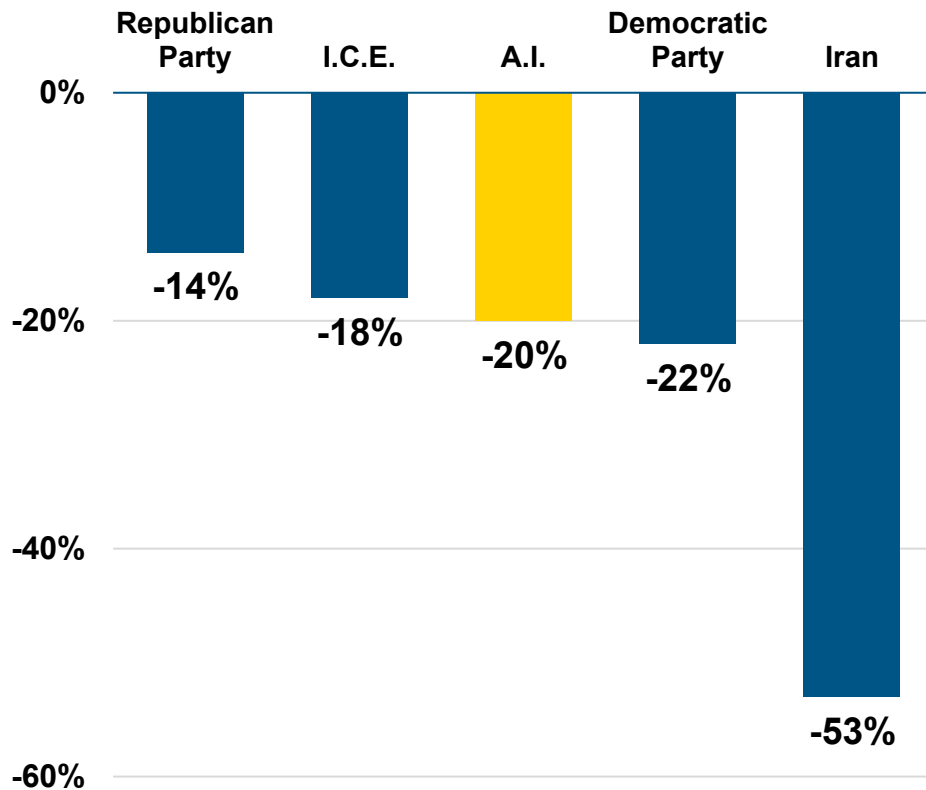
AI – and higher electricity prices – are becoming a new boogieman among voters, an issue that could have implications in 2028, if not 2026



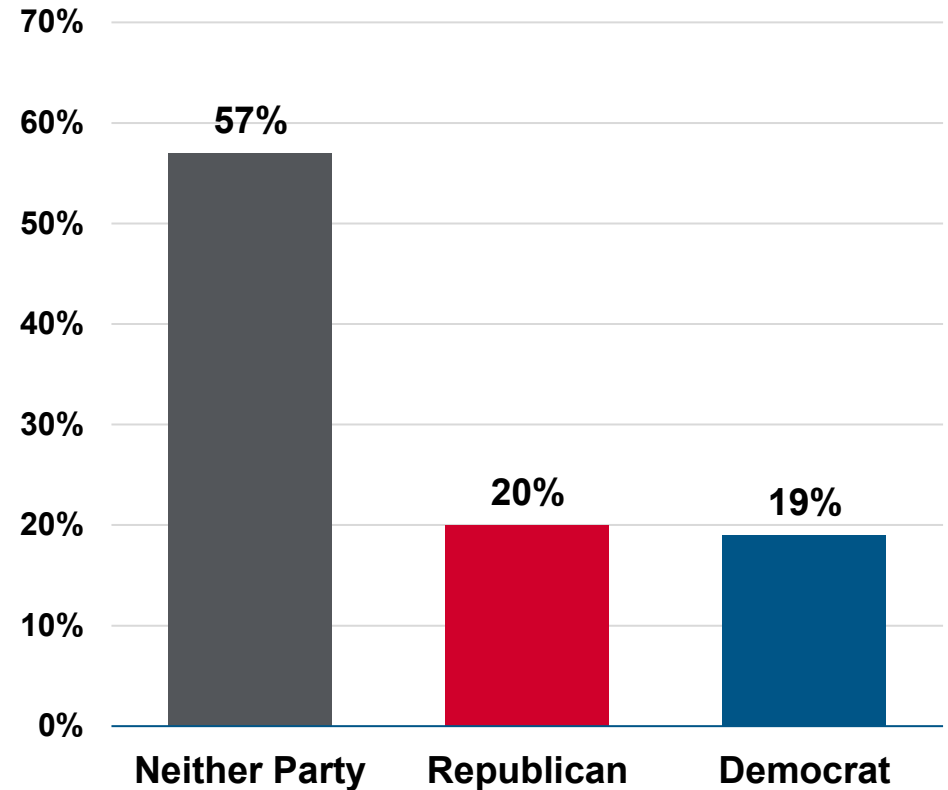
Source: Bruce Mehlan's Age of Disruption: Six-Chart Sunday – Rage Against the Machine.
As of September 2025.

Americans really dislike AI and do not think policymakers are managing it well...

Americans hate AI more than ICE... But better than Iran



It's Bipartisan: Voters did not think either party is managing AI well

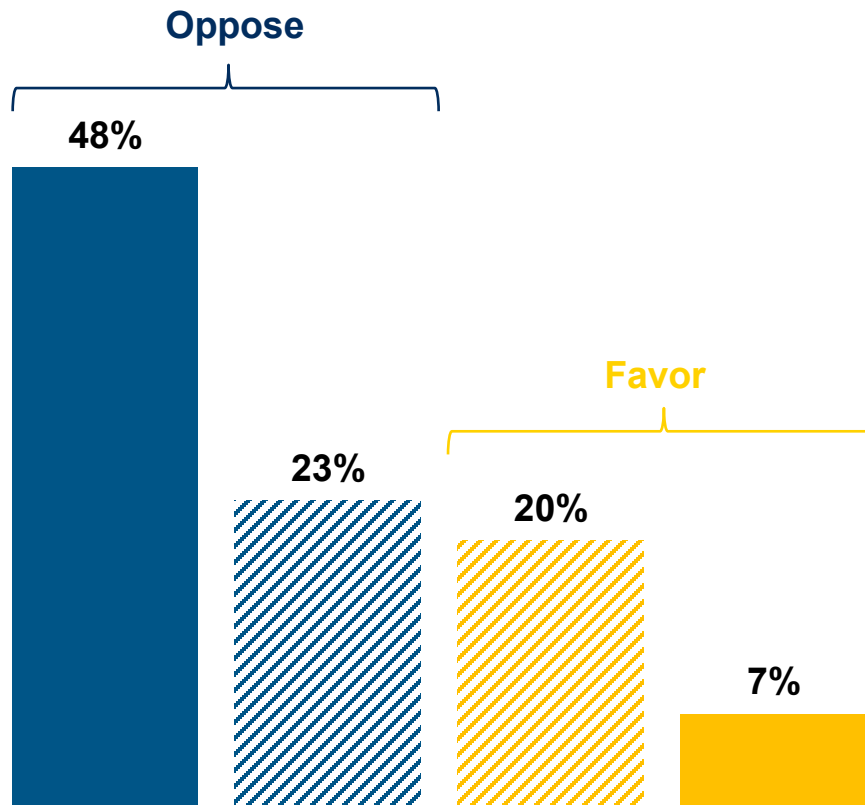


As of March 2026. Source: NBC

“AI” is a catch-all and reflects concerns from the prosaic to the existential

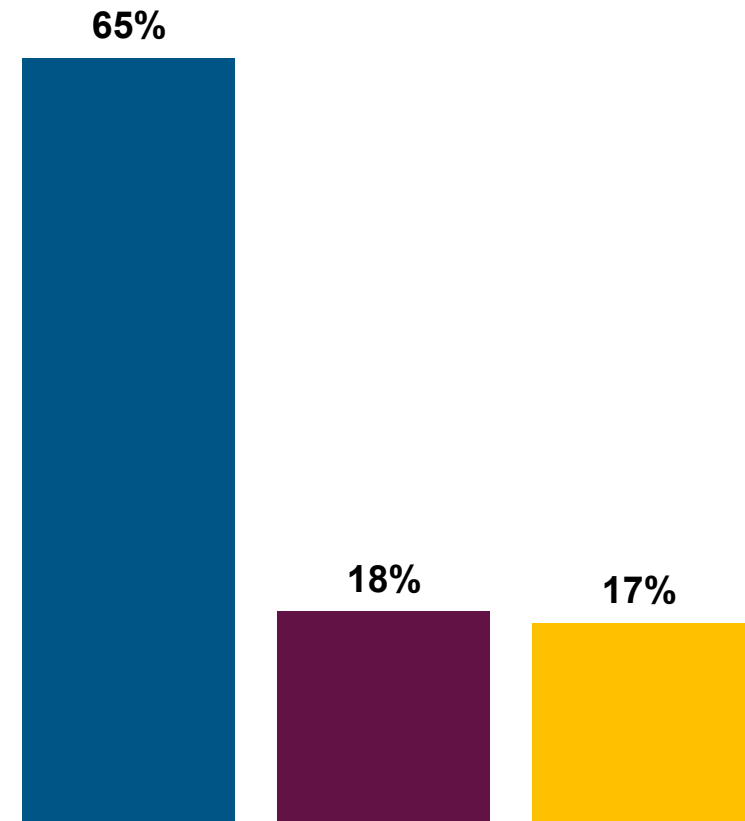
Seven in 10 Americans oppose data centers...

■ % Strongly oppose ▨ % Somewhat oppose
▨ % Somewhat favor ■ % Strongly favor



...and 65% of Americans think AI will lead to fewer jobs

■ Will Decrease Jobs ■ Will Increase Jobs
■ Have No Effect



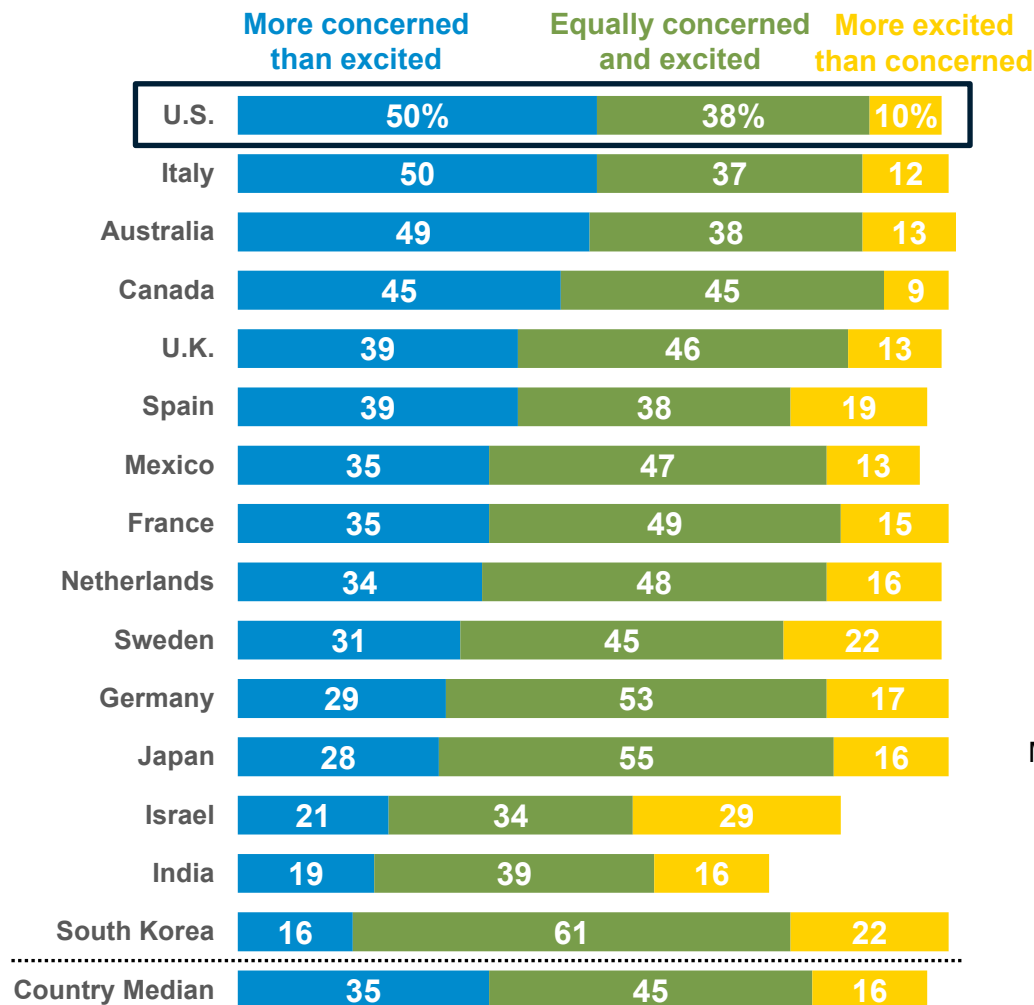
As of March 2-18, 2026. Source: Gallup
"No opinion" percentage not shown

As of May 13-15, 2026. Source: CBS News Poll/YouGov. MOE: ±2.7 pts

Unusually, Americans are more skeptical and pessimistic about the new technology than others globally

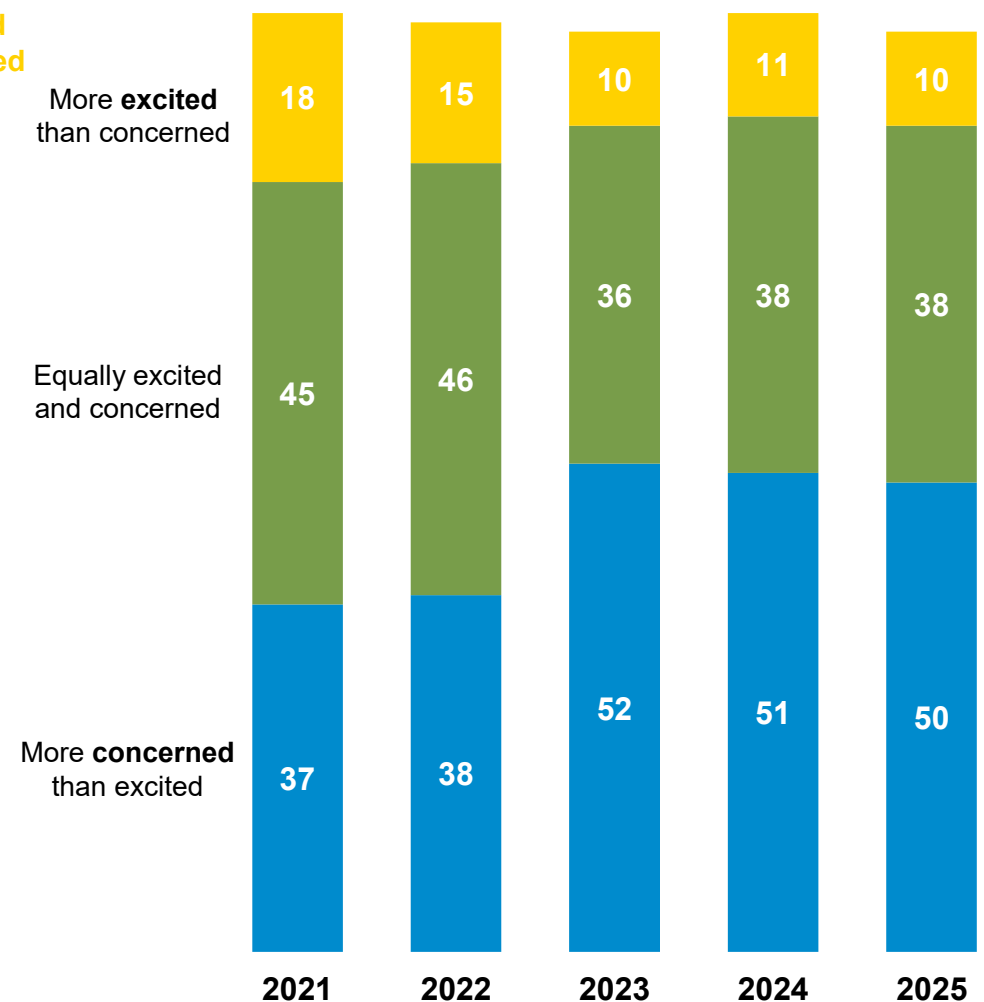
Americans are Most Negative About AI

% who say the increased use of artificial intelligence in daily life makes them feel...



Americans are Growing Less Excited About AI

% of U.S. adults who say the increased use of artificial intelligence (AI) in daily life makes them feel...

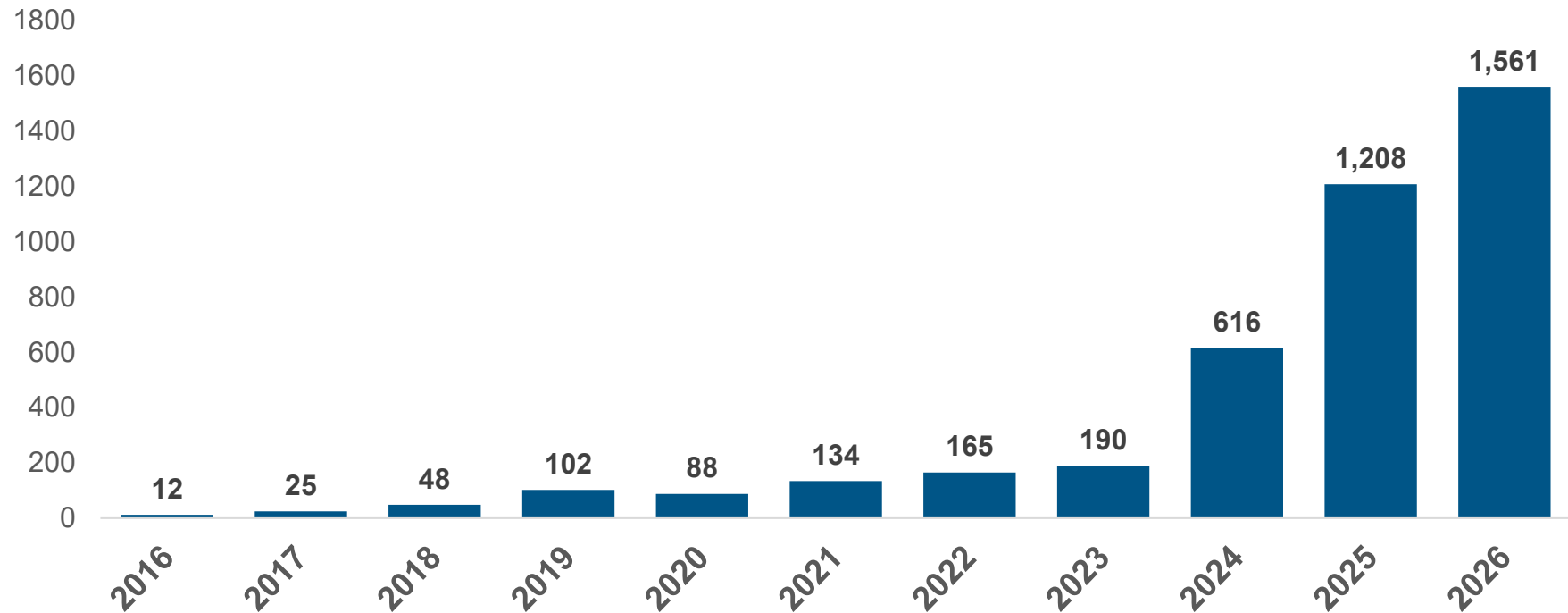


Note: Those who did not answer are not shown.
Source: Pew Research Center. Spring 2026 Global Attitudes Survey, "How People around the World View AI"

Note: Respondents who did not give an answer are not shown.
Source: Pew Research Center. Survey of U.S. adults conducted June 9-15, 2025. "How Americans View AI and Its Impact on People and Society"

The national regulatory framework is insufficient for AI, which may lead to a patchwork of state laws and/or overreach by the federal government

AI-Related Legislation Introduced in U.S. States



Source: Bruce Mehlman, Multistate; as of May 2026

Broadly, President Trump's policy options to address affordability unilaterally are limited; i.e., there is little that he can do without Congress

Actions Taken

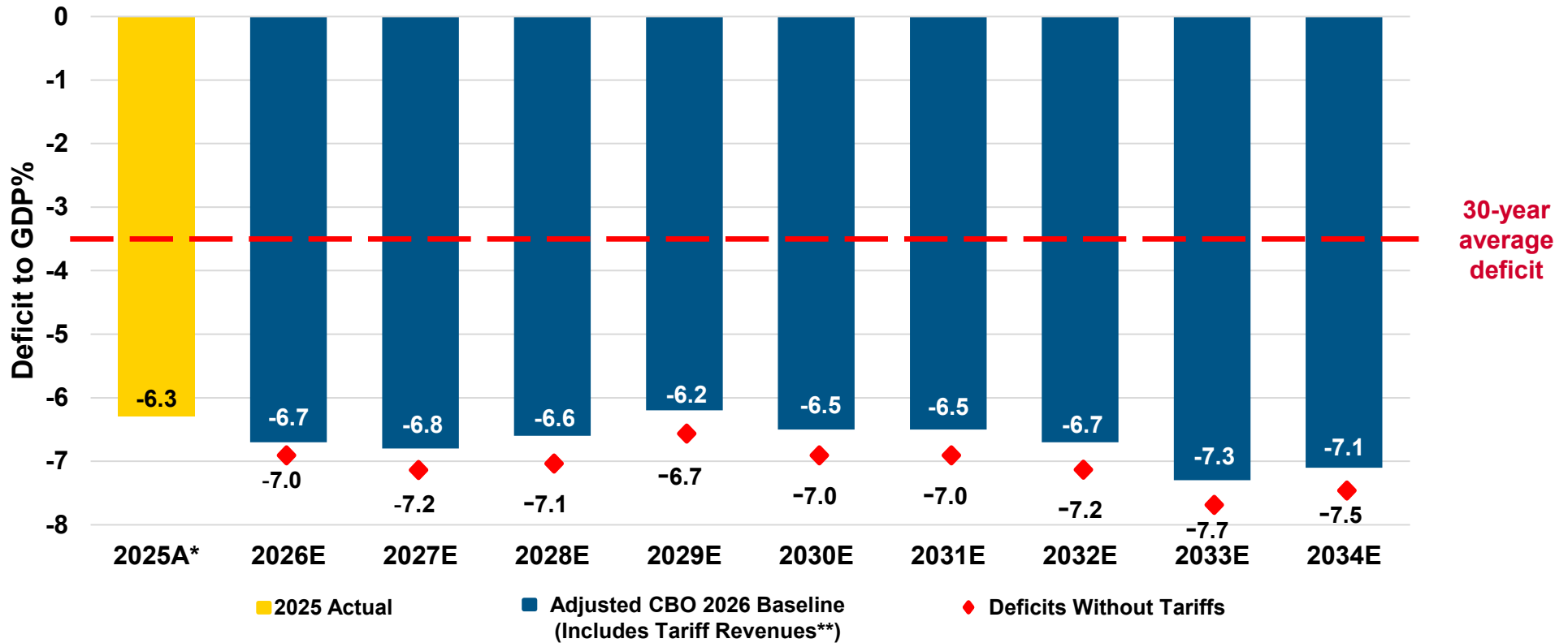
- Direct the GSEs (Fannie & Freddie) to buy Agency MBS
- (Try to) Lower the price of oil: Release oil from the SPR, soften Russia / Iran sanctions, relax Jones Act
- Ease regulations on tips/overtime deductions associated with the OB3
- Enter into agreements with hyper-scalers to prevent increases in utility bills

Discussed but unlikely to be enacted

- Pass a federal gas tax holiday (needs Congress)
- Index capital gains tax (needs Congress)
- \$2K tariff rebates (needs Congress)
- Cap credit card interest rates at 10% (needs Congress)
- Export ban on oil (can do unilaterally)

Deficits are becoming a limiting factor in terms of a potential policy response given they are running at “6-7”% of GDP; steeper yield curves here to stay

Deficit-to-GDP (%): CBO Baseline, With & Without Tariff Impacts

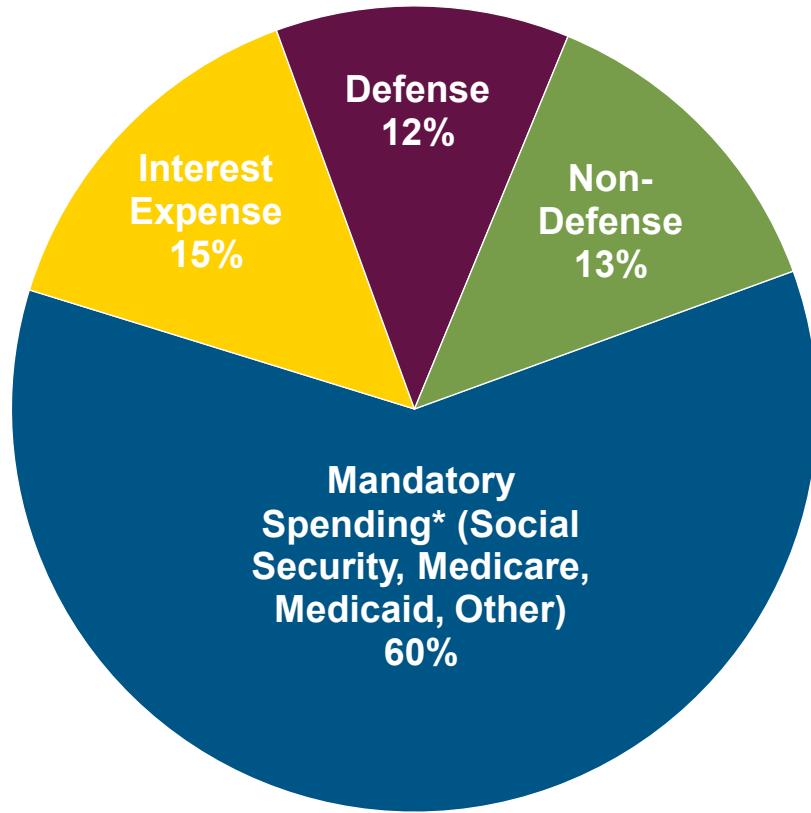


As of August 2026. Source: Congressional Budget Office, Yale Budget Lab, JCT, PIMCO calculations.

* 2025 excludes \$131Bn adjustment for student loans. ** Assumes Section 232 and Section 301 tariffs raise ~\$190bn/yr; years are fiscal ending 9/30.

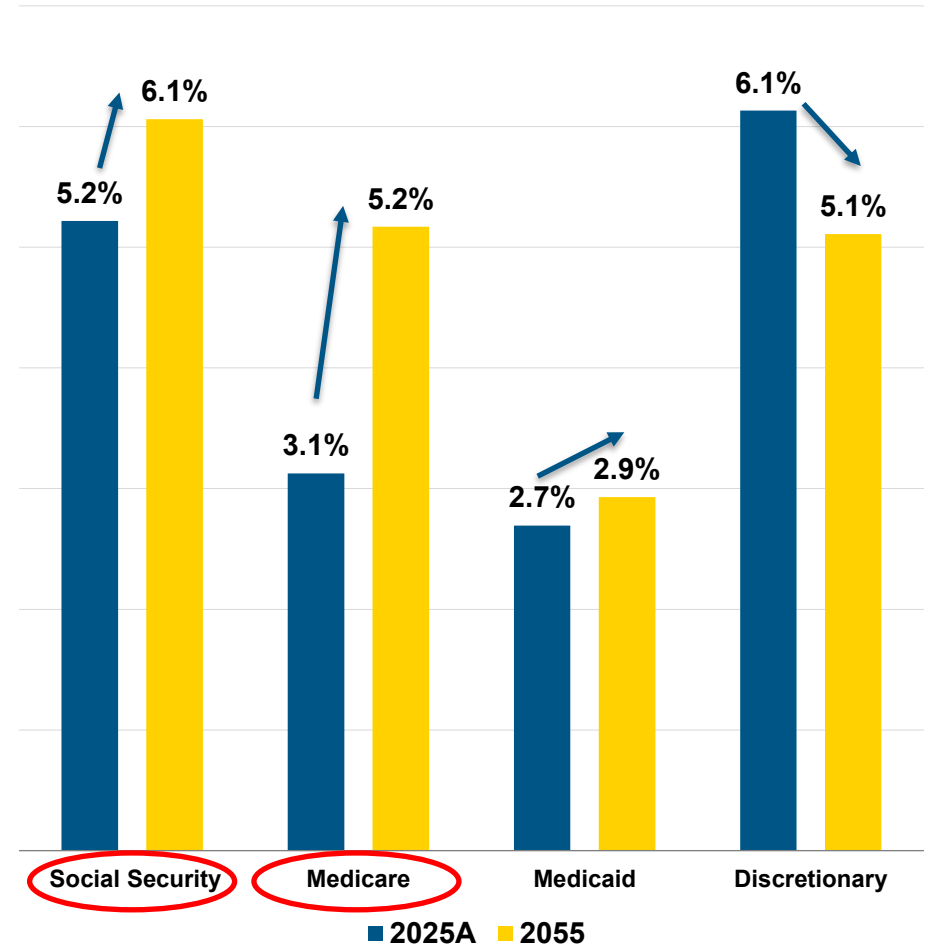
Yes, and: The U.S. is “just an insurance company with an army;” to really move the needle on the deficit, Congress would have to touch the “third rails”

FY 2025 Total Government Spending (%)



Total Spending: \$6.8 trillion

Spending as % of GDP



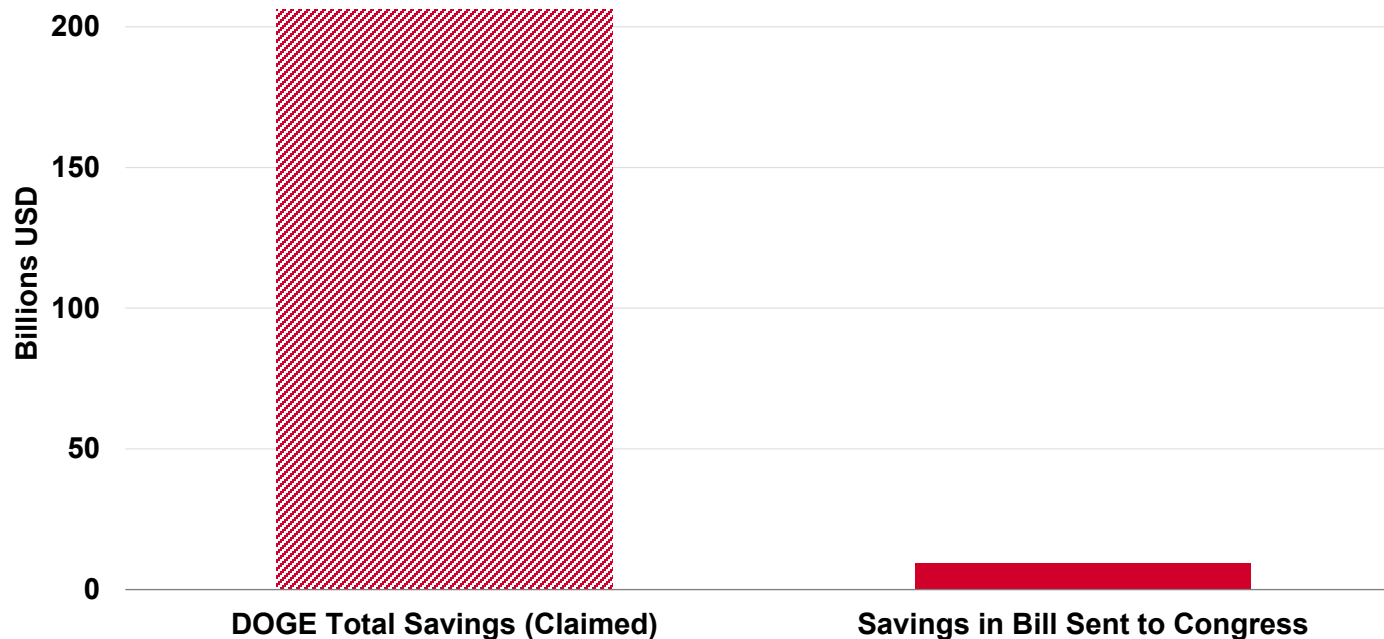
As of November 2025

Source: PIMCO, Congressional Budget Office. **For illustrative purposes only.** RHS graph: “A” stands for Actual; *Mandatory spending as % of total spending = 20% Medicare & Veterans Health; 22% Social Security; 10% Medicaid

Despite its claims, the DOGE effort turned out to be more sizzle than steak; Congress only codified \$9bn in cuts, some of which have been reversed

- DOGE-related cost savings from cancelled contracts were small, and the only savings that was codified by Congress was \$9 billion
- In 2026, Congress - quietly – has moved to reinstate many of the cuts DOGE made anyway

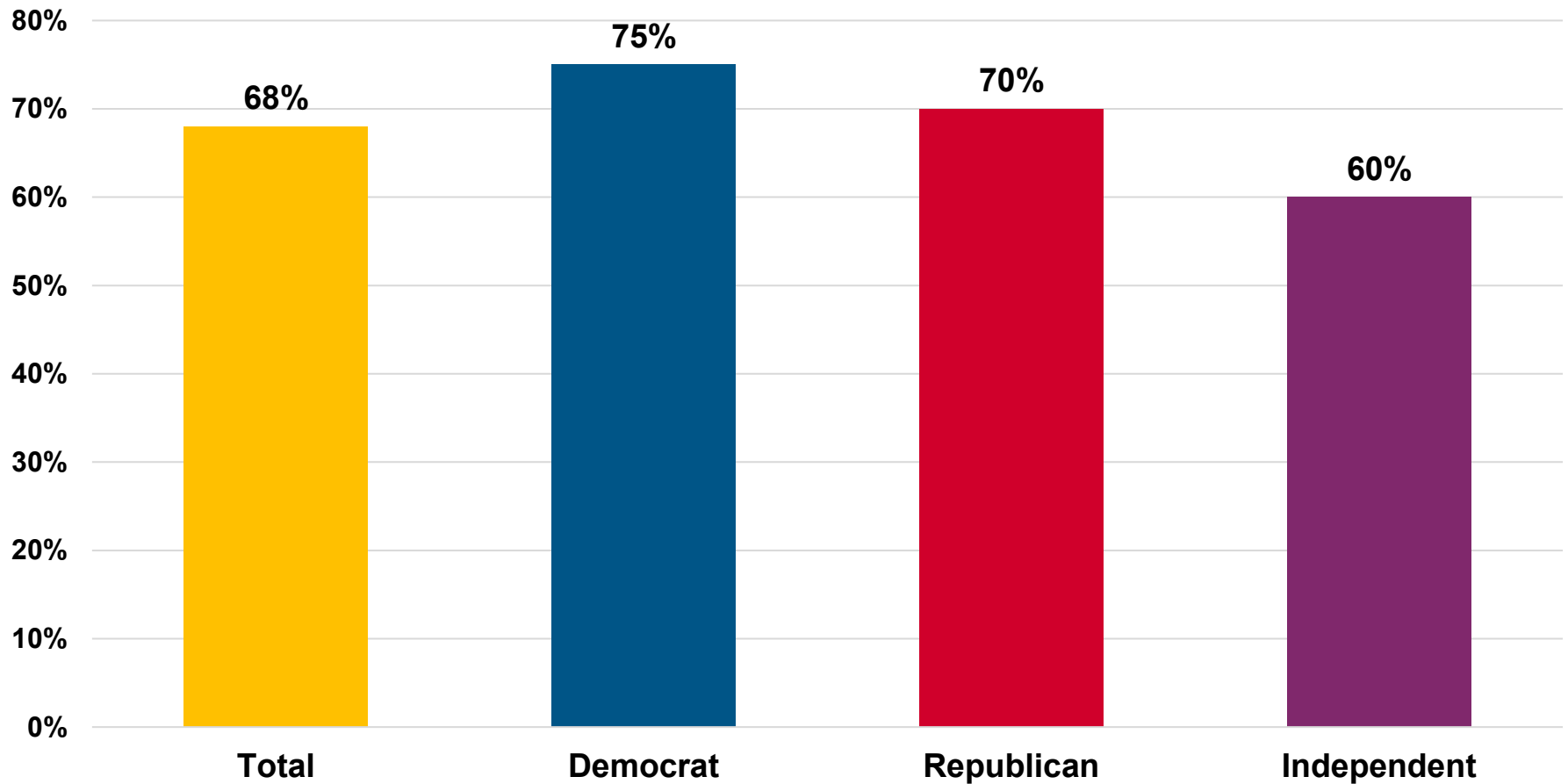
DOGE Savings Claimed vs Rescissions - 2025



As of September 26th, 2025
Source: DOGE.gov, The Hill, PIMCO

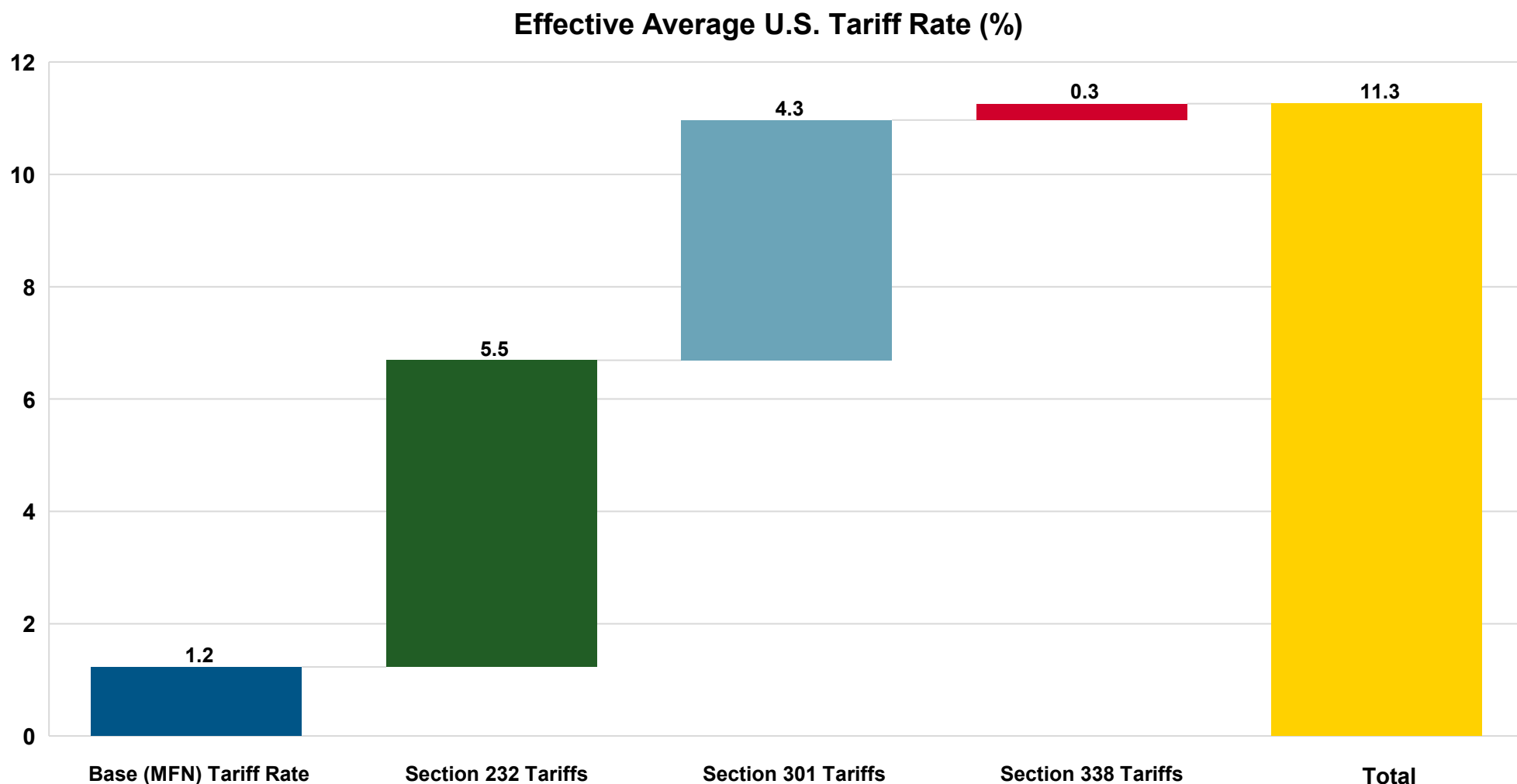
There is likely to be a fiscal reckoning at some point, but until then, Medicare and Social Security remain too politically popular to change

Poll: I support leaving Social Security as is



As of October 2023
Source: The Hill, Data for Progress

What about tariffs? The Supreme Court overturned the IEEPA tariffs, but new Section 301 tariffs have rebuilt the tariff rate to ~11%

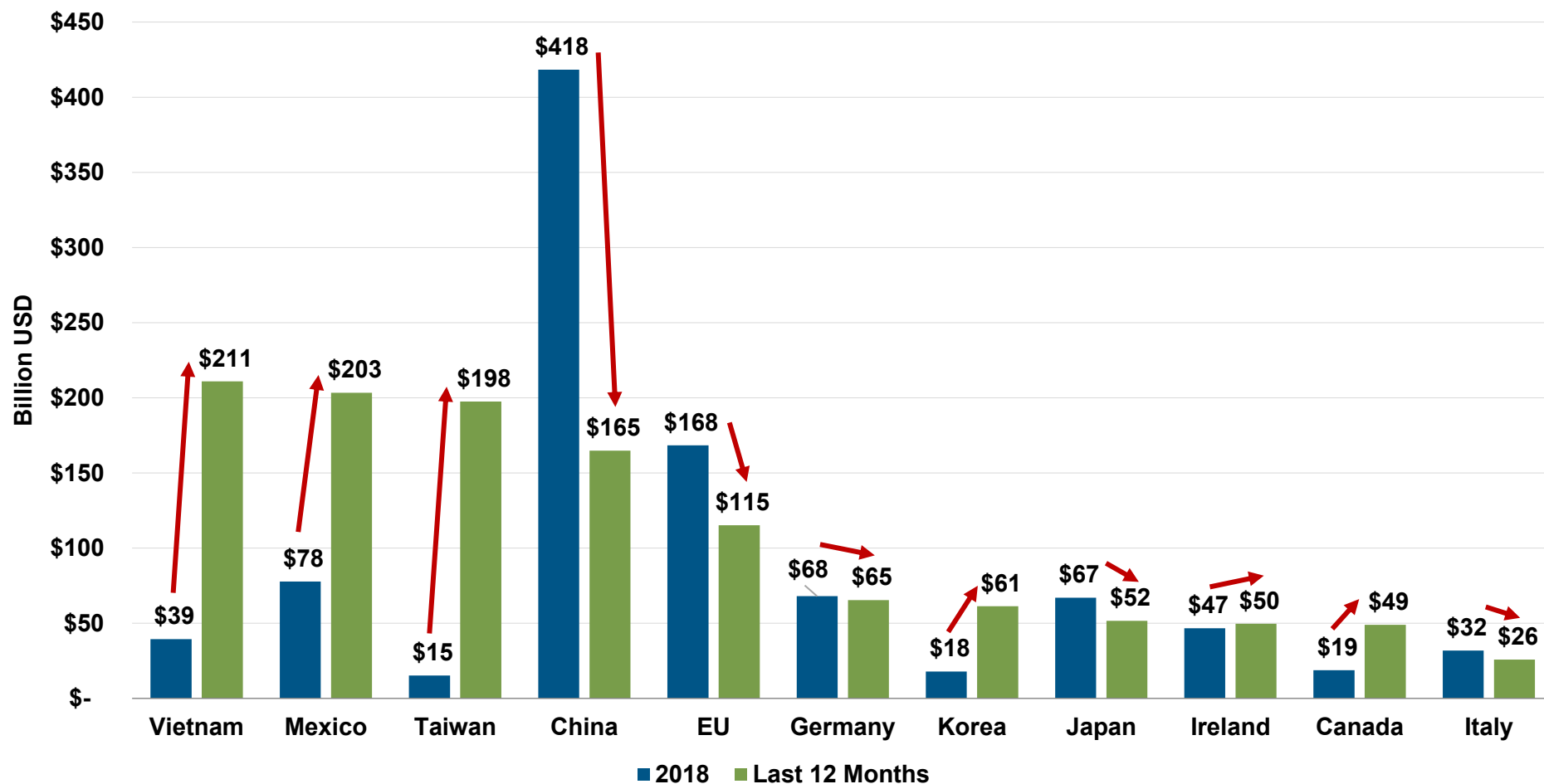


As of August 2026. Source: USITC, Yale Budget Lab, PIMCO calculations

Note: IEEPA tariffs were invalidated by the Supreme Court and terminated, while the Section 122 10% surcharge expired and was replaced with Section 301 tariffs on 80+ economies (10% or 12.5%, flat or net of MFN) for forced labor practices.

“Tariff man” or “TACO man?” Do not underestimate Trump's conviction on trade and his focus on trade deficits

Countries with the Greatest Goods Trade Deficit with US (2018 vs. Last 12 Months)



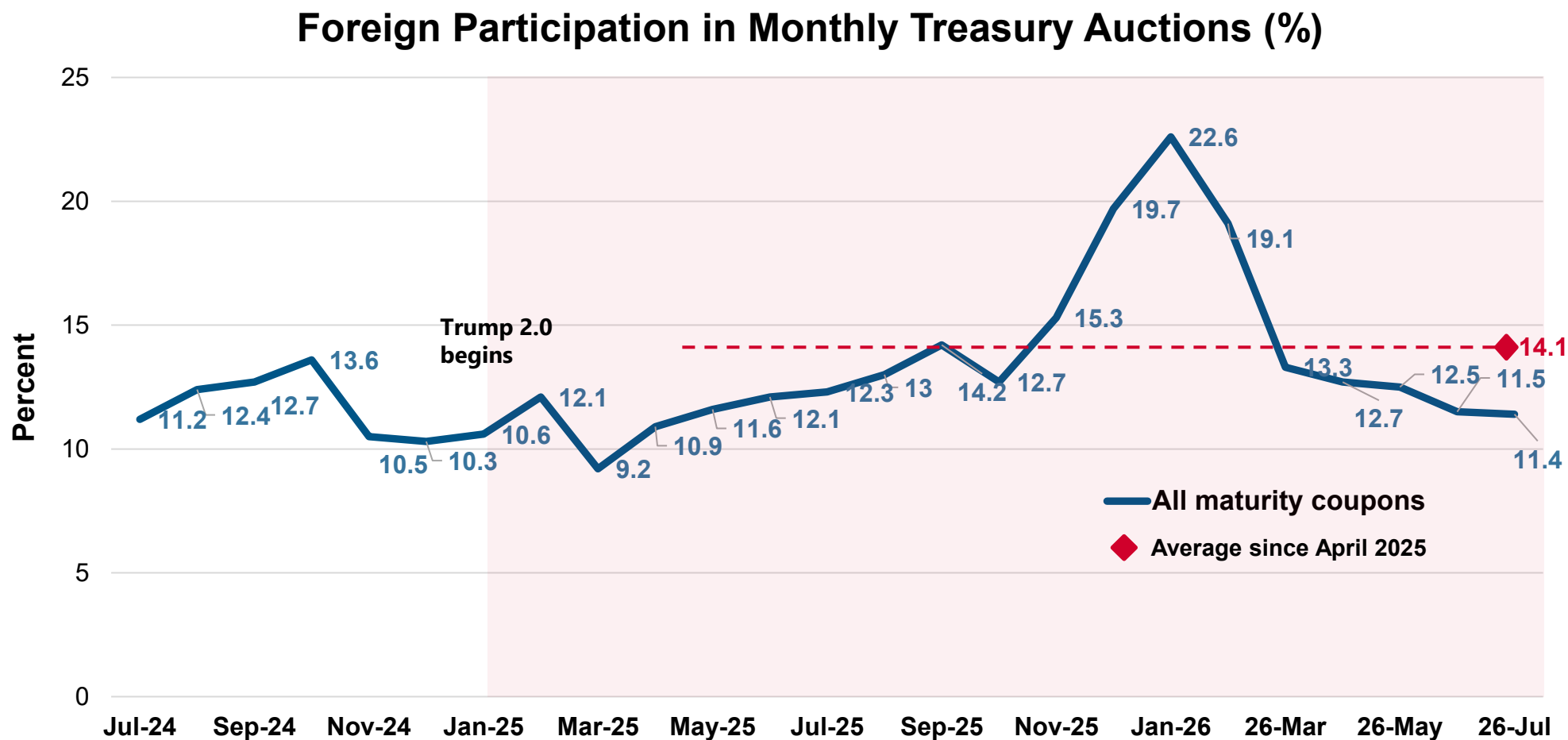
Latest data as of June 2026

Source: Haver, U.S. Commerce Department, PIMCO

Other tariff authorities are less flexible, but could ultimately be more durable - and may be kept around anyway as deficits continue to widen

Available authority	Action	Used under Trump 2.0?	Can be imposed immediately?	Details
Section 122, Trade Act of 1974	Impose tariffs due to a balance of payments "crisis"	✓	✓	Allows the president to impose 15% tariffs for up to 150 days on countries with "large and serious" balance-of-payments deficits; any extension would require Congressional approval
Section 338, Tariff Act of 1930	Impose tariffs on a country that is "discriminating" against the U.S.	✓	✓	- Allows for the imposition of tariffs of up to 50% against countries that are found to discriminate against U.S. commerce - Could be legally-dubious given age of law/lack of precedent
Section 232, Trade Expansion Act of 1962	Impose tariffs on products for "national security" reasons	✓	No; investigation is required	- Allows for tariffs in the name of protecting national security; current 232 tariffs include autos, aluminum, copper, and steel New tariffs on pharma, ships, advanced tech are expected in 2026
Section 301, Trade Act of 1974	Impose tariffs on a country that presents "burdens" to U.S. commerce	✓	No; investigation is required	- Gives president wide-latitude to impose tariffs on any country found to burden or prohibit U.S. exports Trump 1.0 used this authority to impose tariffs on China in 2018/19
Section 201, Trade Act of 1974	Impose tariffs on products for "safeguarding" reasons	X	No; investigation is required	- Allows the president to impose tariffs to "safeguard" industry - Trump 1.0 used Section 201 to impose tariffs on solar panels and washing machines

Sell America? Despite “America First,” little evidence of selling America in Treasury auctions, which continue to see high foreign participation

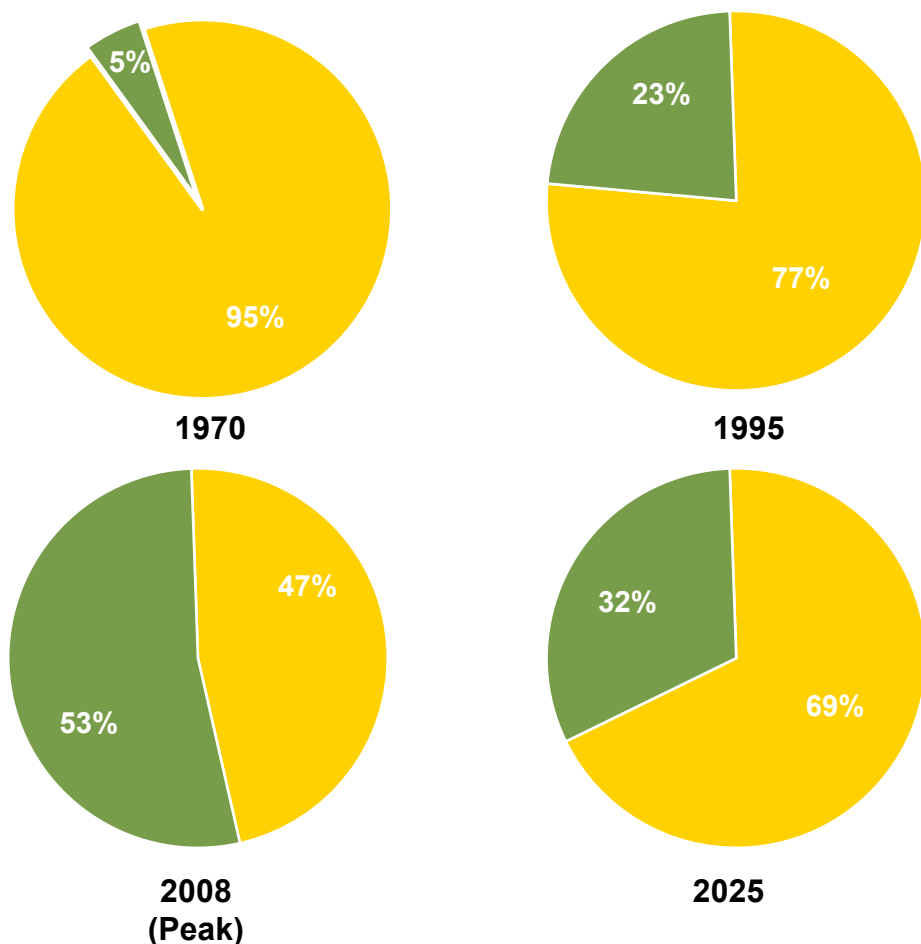


As of July 2026
Source: US Treasury, PIMCO calculations

Sell America? Foreign holders hold fewer Treasuries than they did in 2008 but still more than they did in the 1990s when the debt burden was much smaller

Foreign holdings of federal debt account for nearly one-third of the total

■ U.S. ■ Foreign



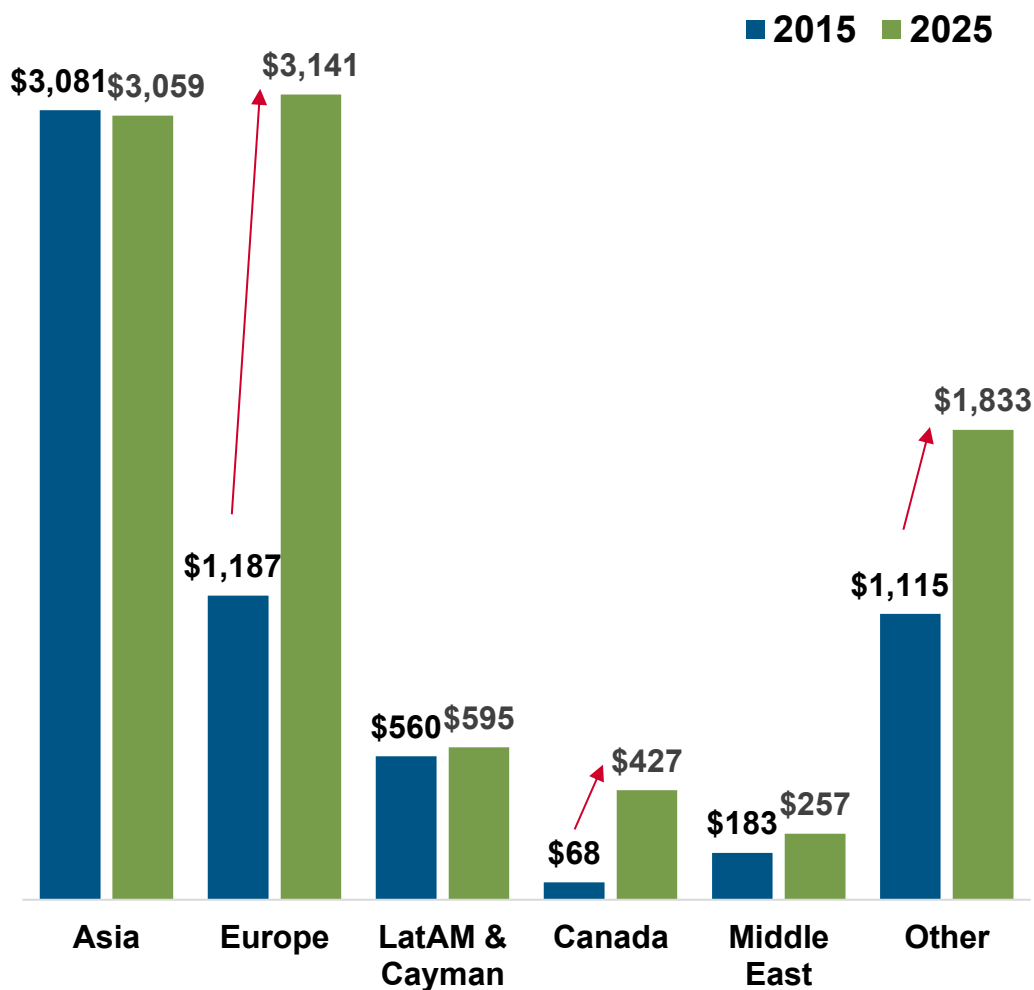
As of August 2026.

Sources: Peter G. Peterson Institute, Office of Management and Budget, U.S. Treasury, PIMCO calculations

Note: Data reflect debt held by the public at the end of the fiscal year.

Which foreigners own U.S. debt?

(Billions of \$)

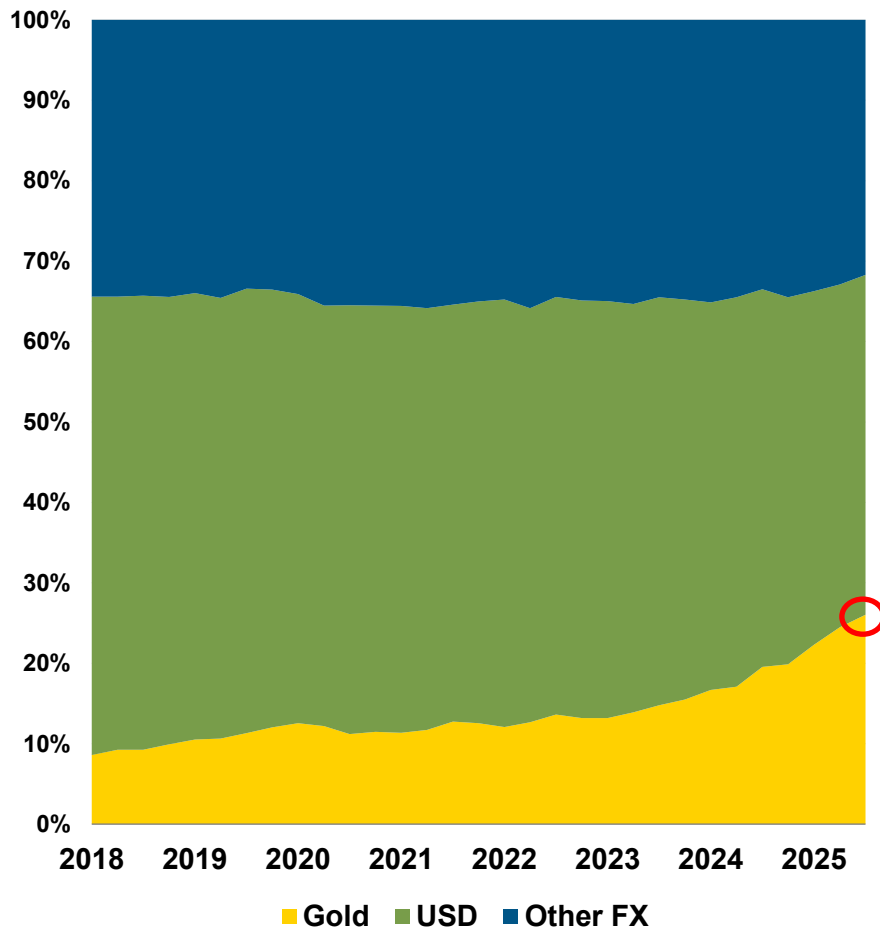


As of 07 December 2025. Sources: Peter G. Peterson Institute, U.S. Treasury

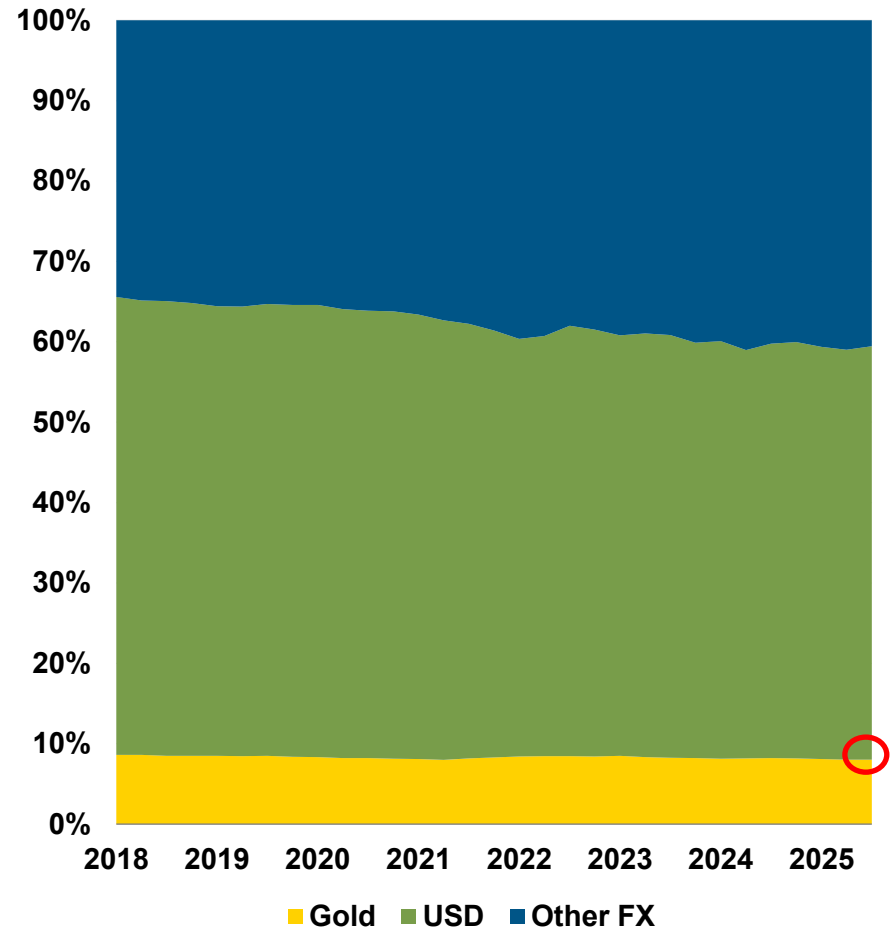
Note: Top 5 Foreign Holders of U.S. Debt in 2025 include: Japan, U.K., China, Belgium, & Canada; In 2015, they included: China, Japan, Hong Kong, Cayman, & Brazil

Sell America? Not when you look at gold, either; increases on central bank balance sheets have more to do with the price of gold than flow

At market value

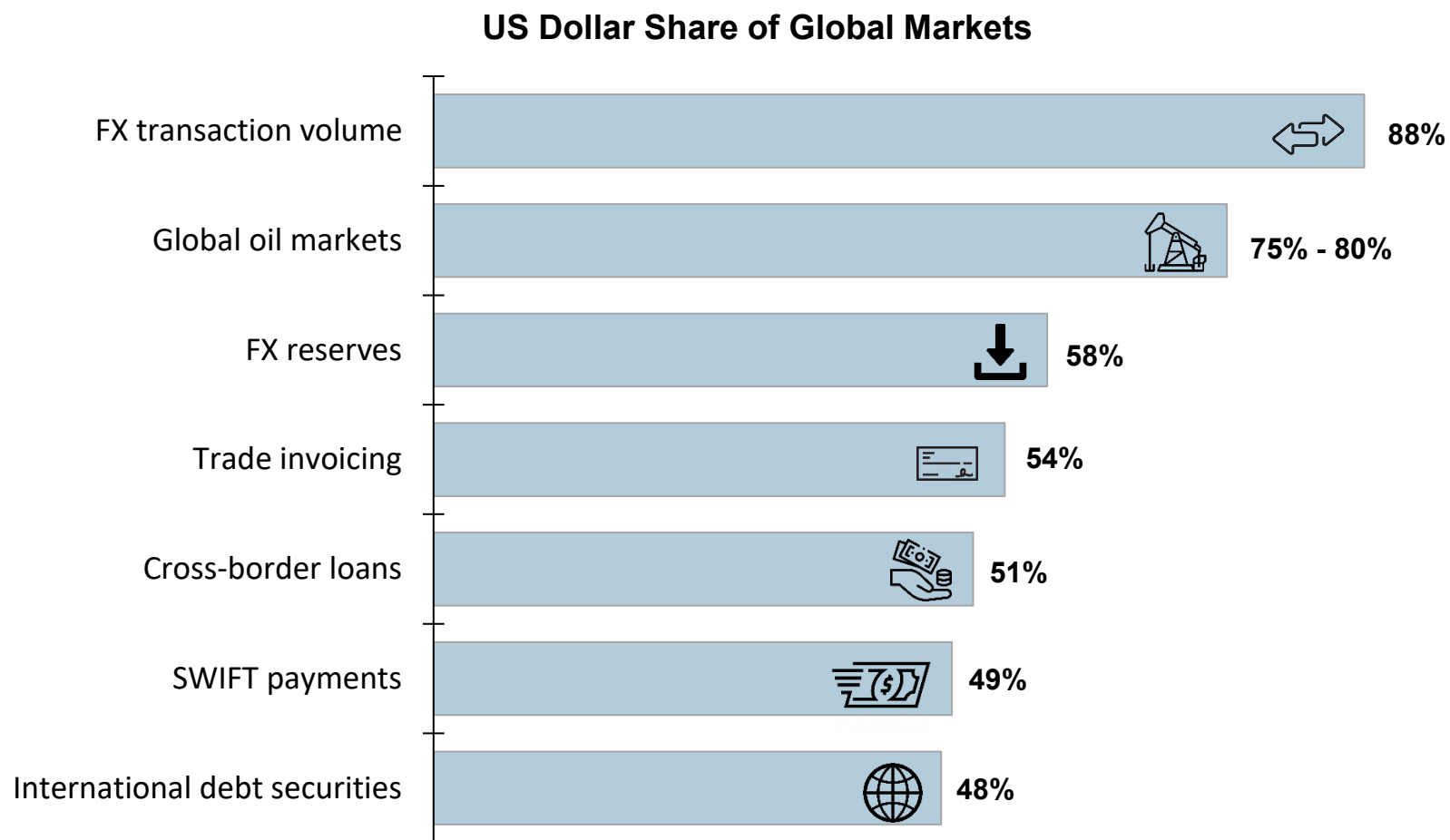


At constant prices



As of 31 March 2026. Constant prices fixed relative to Q3 of 2018.
Source: IMF, Bloomberg, PIMCO

Dollar is still king (for now). USD is sticking around as the “reserve currency,” and Treasuries will continue to be the “reserve asset”

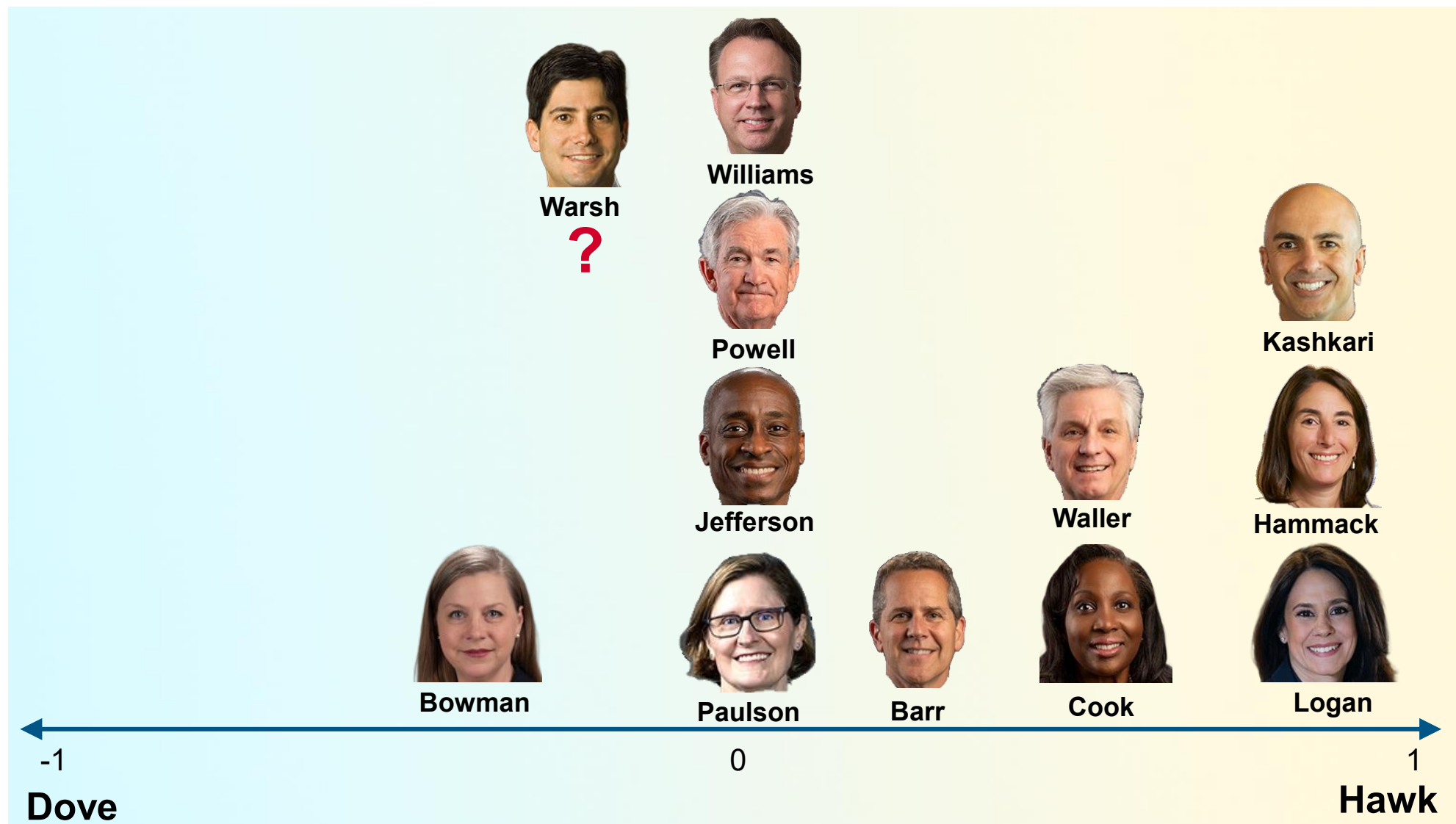


As of December 2024

Source: In order from top to bottom, the source (and latest data in parentheses) is: BIS Triennial Central Bank Survey (2022); PIMCO estimate (2024); IMF's Currency Composition of Official Foreign Exchange Reserves (3Q24); BIS "Revisiting the international role of the US dollar" (2022); BIS Locational Banking Statistics (4Q24); Swift (Mar 2025); BIS Debt Securities Statistics (4Q24)

What will the Fed do? Regardless of Warsh's ideology, the Fed chair is important but not omnipotent and will be constrained by the rest of the FOMC

2026 FOMC Voter Estimated Hawk-Dove Score

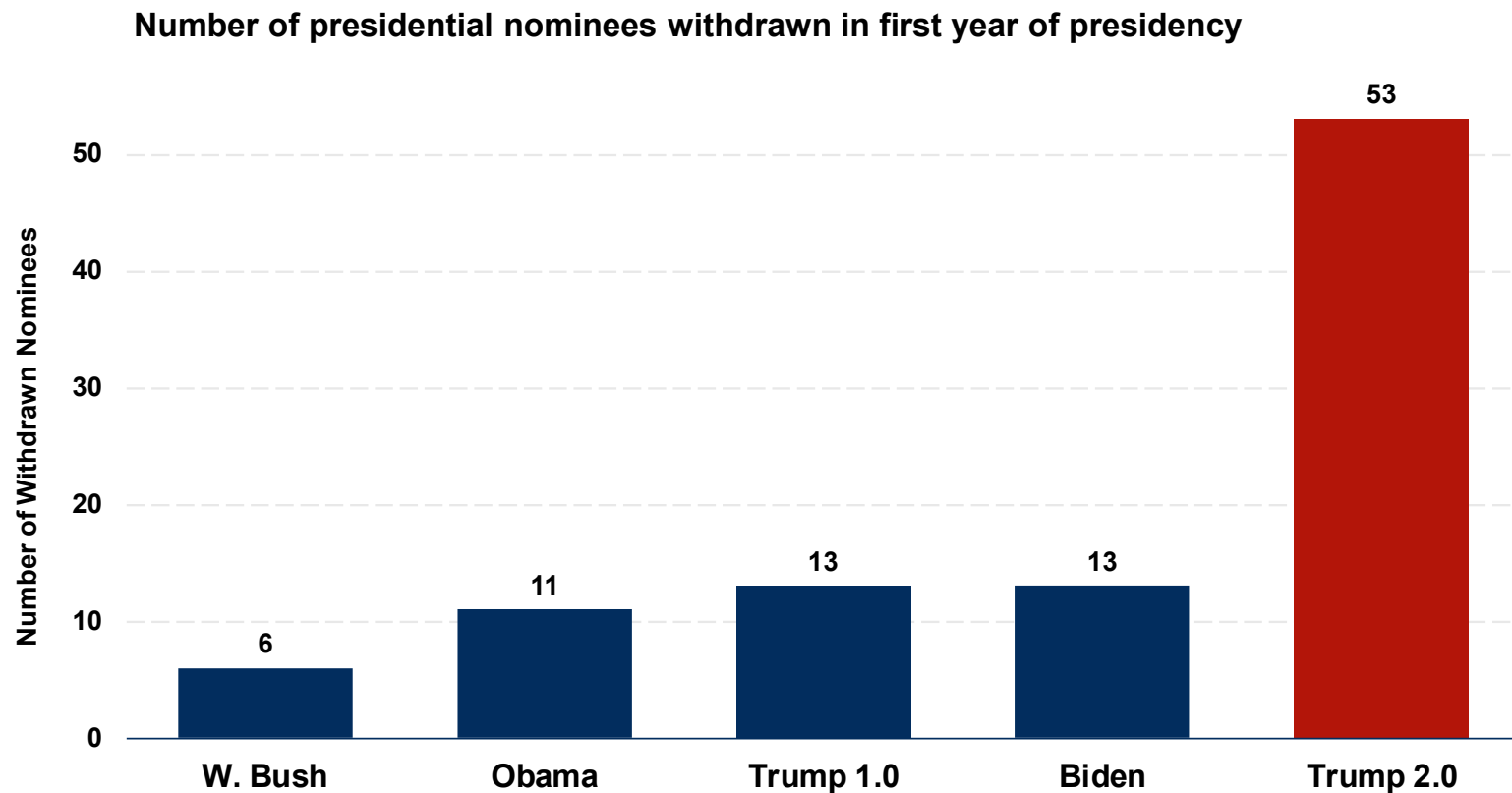


As of July 2026

Source: PIMCO estimates based on Fed speeches and media appearances and June 2026 FOMC interest rate projections

Remember: The Senate confirmation process is an important guardrail to Fed independence

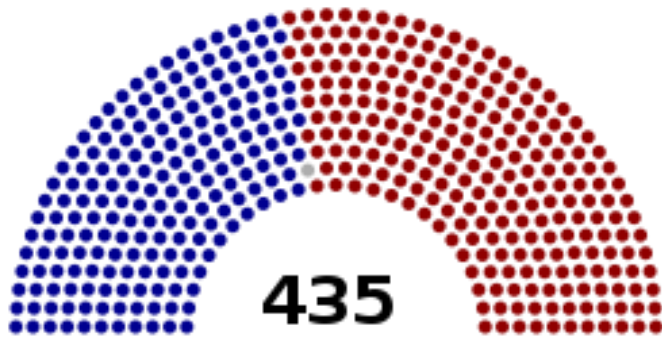
- The Trump White House has had to withdraw more nominees than any other modern president due to lack of Senate support, underscoring that the confirmation process continues to be a check on the president (any president)



Source: Bloomberg; December 2025

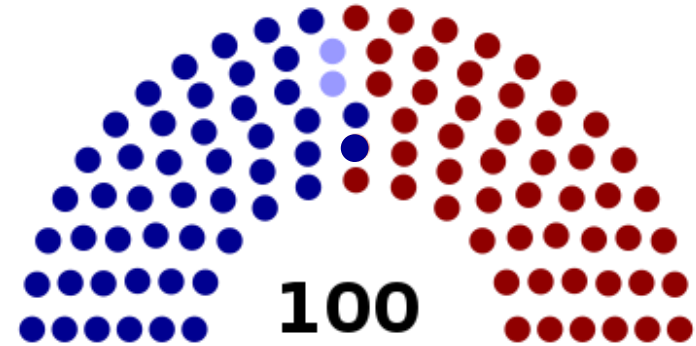
What does it all mean for the midterms? All 435 House seats are up for election in November, while only one-third of the Senate is up

U.S. House of Representatives *Republican controlled (+3 seats)*



	Republicans	Democrats	Total
Seats up for reelection	220	215	435
Seats needed for Dem majority			+3
Historical pick-up by party out of power*			+26
Redistricting seat gains**	+12-14	+6	Net +6-8

U.S. Senate *Republican controlled (+4 seats)*

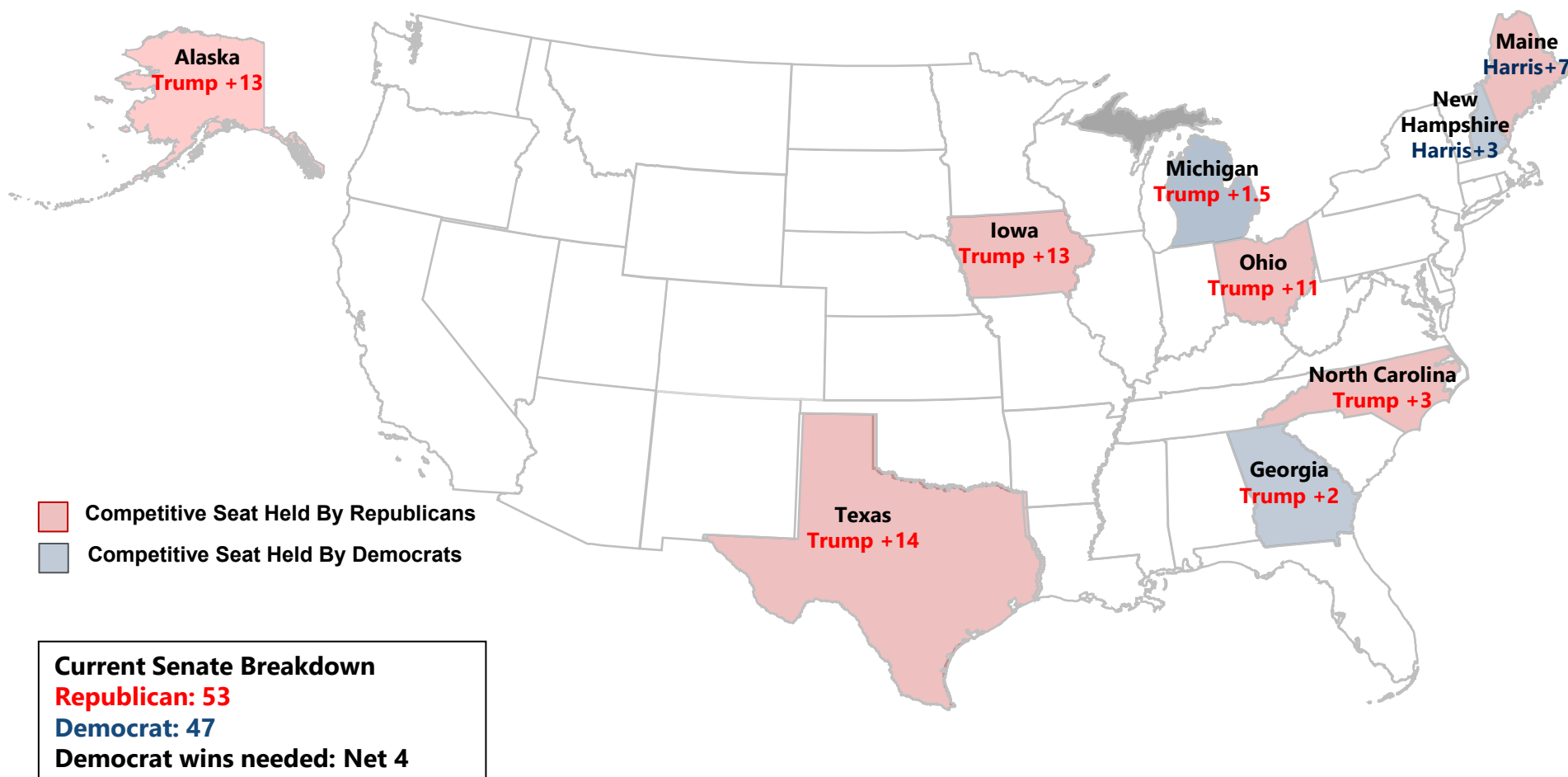


	Republicans	Democrats	Total
Seats up for reelection	22	13	35
Seats needed for Dem majority			+4
Historical pick-up by party out of power*			+4

As of July 2026; Source: PIMCO, Brookings, Cook Political Report, CNN, Bloomberg; *Average pick-up of seats in midterm cycles by party out of power since World War I; **Based on redistricting efforts as of July 8, 2026

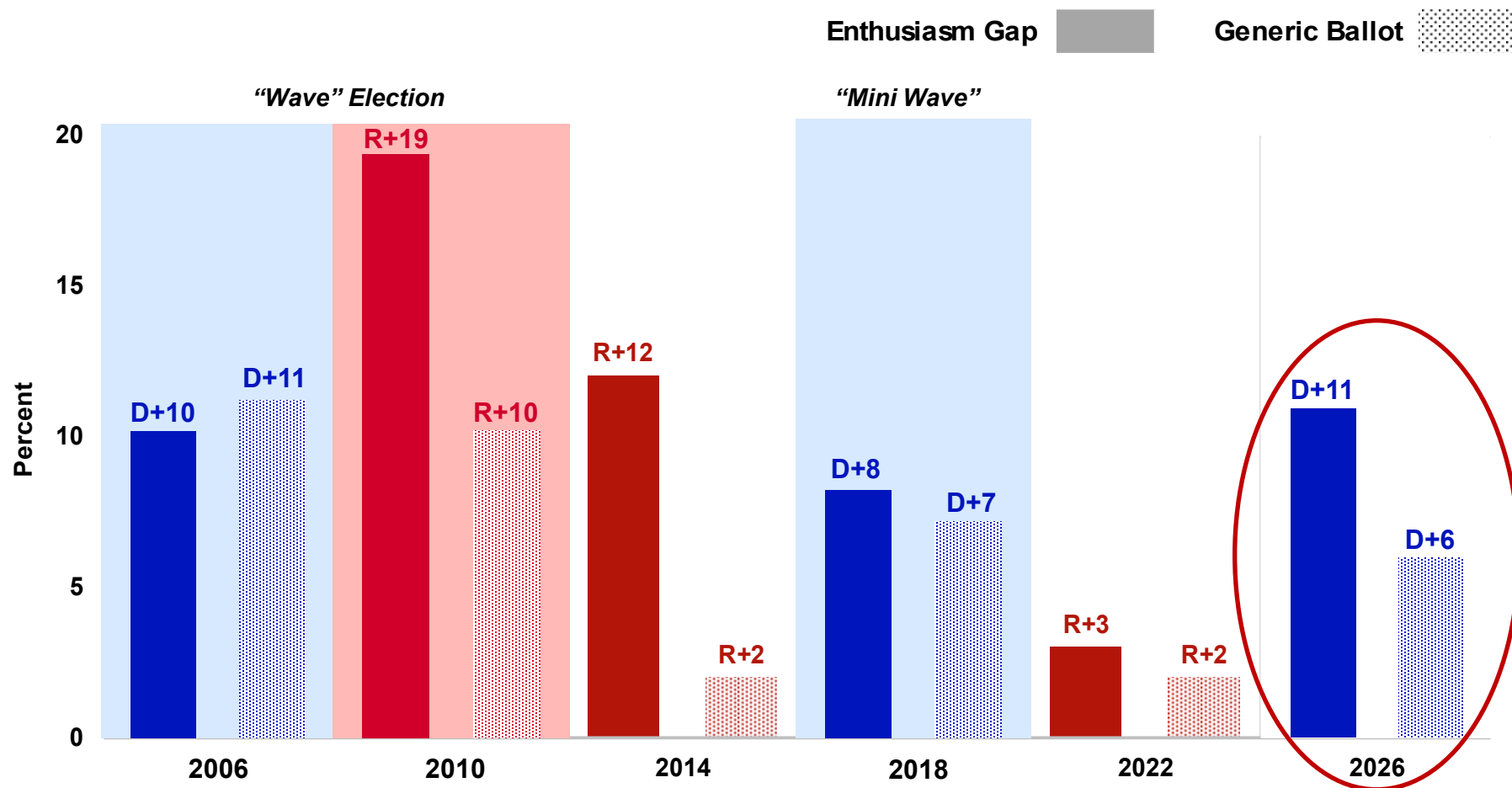
The Senate still looks harder: While Democrats only need a mediocre night to flip the House, they would need a perfect one (a “wave”) to win the Senate

- To win back the Senate, **Democrats would need to have a perfect night** – defend their 3 competitive seats *and* win 4 of the 6 Republican seats in deep Trump territory



Source: PIMCO, Congress.gov; as of April 2026

Will it be a “wave election?” As of now, the Generic Ballot points to a good night for Democrats, but the enthusiasm gap suggests a possible “wave”



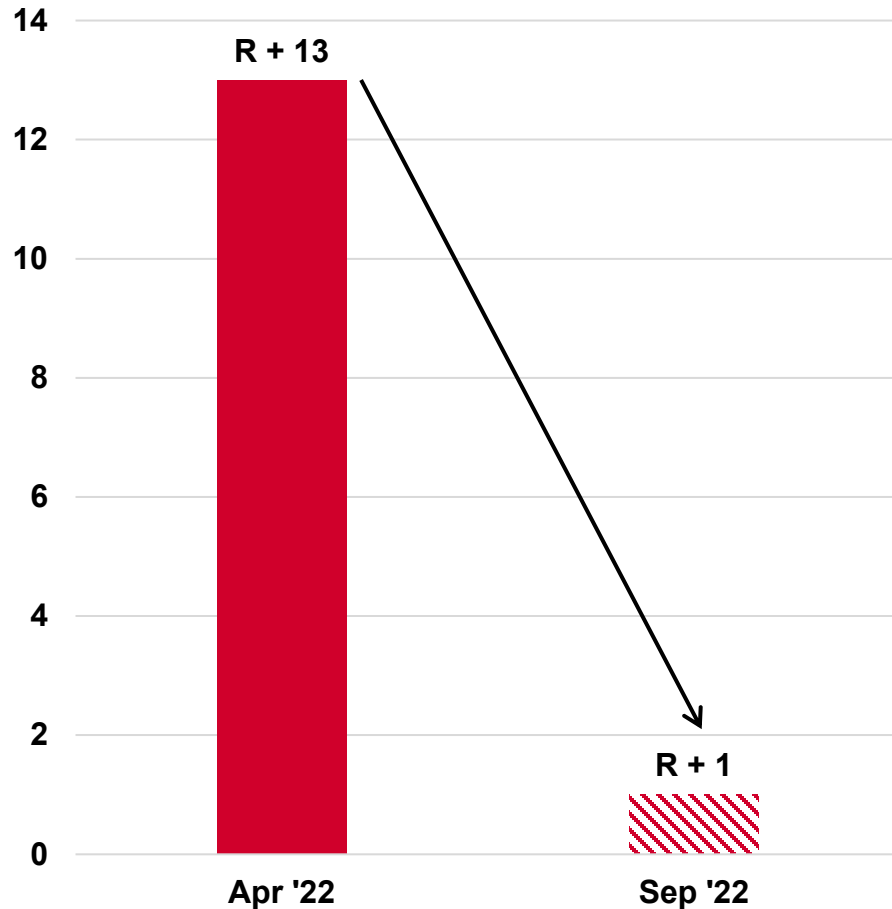
House Gain/Loss of Party Out of Power	+30 D	+63 R	+13 R	+42 D	+9 R	?
Senate Gain/Loss of Party Out of Power	+6 D	+6 R	+9 R	-2 D	-1 R	?

Source: PIMCO, Pew Research, Gallup, RealClearPolitics; as of August 2026

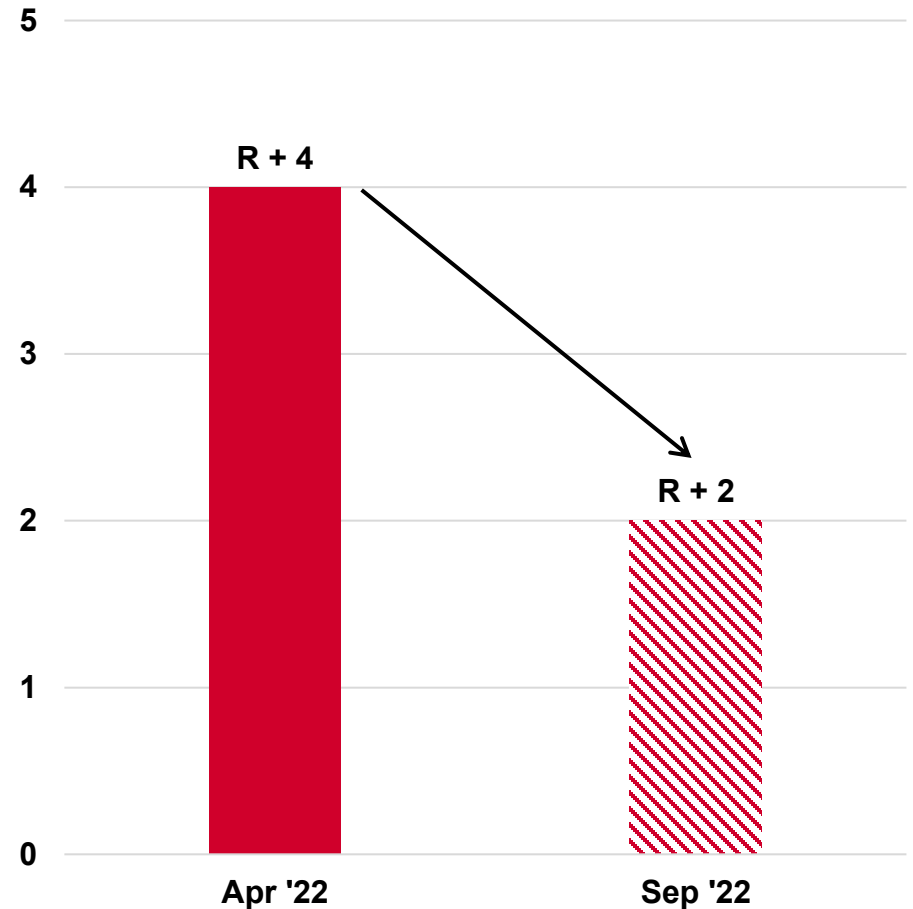
Note: 2026 generic ballot and enthusiasm gap as of July 2026; other data as of November of those respective years.

It is still (kind of) early. A lesson from the 2022 midterms is that things can change significantly from spring/summer to election day

Voter Enthusiasm Gap

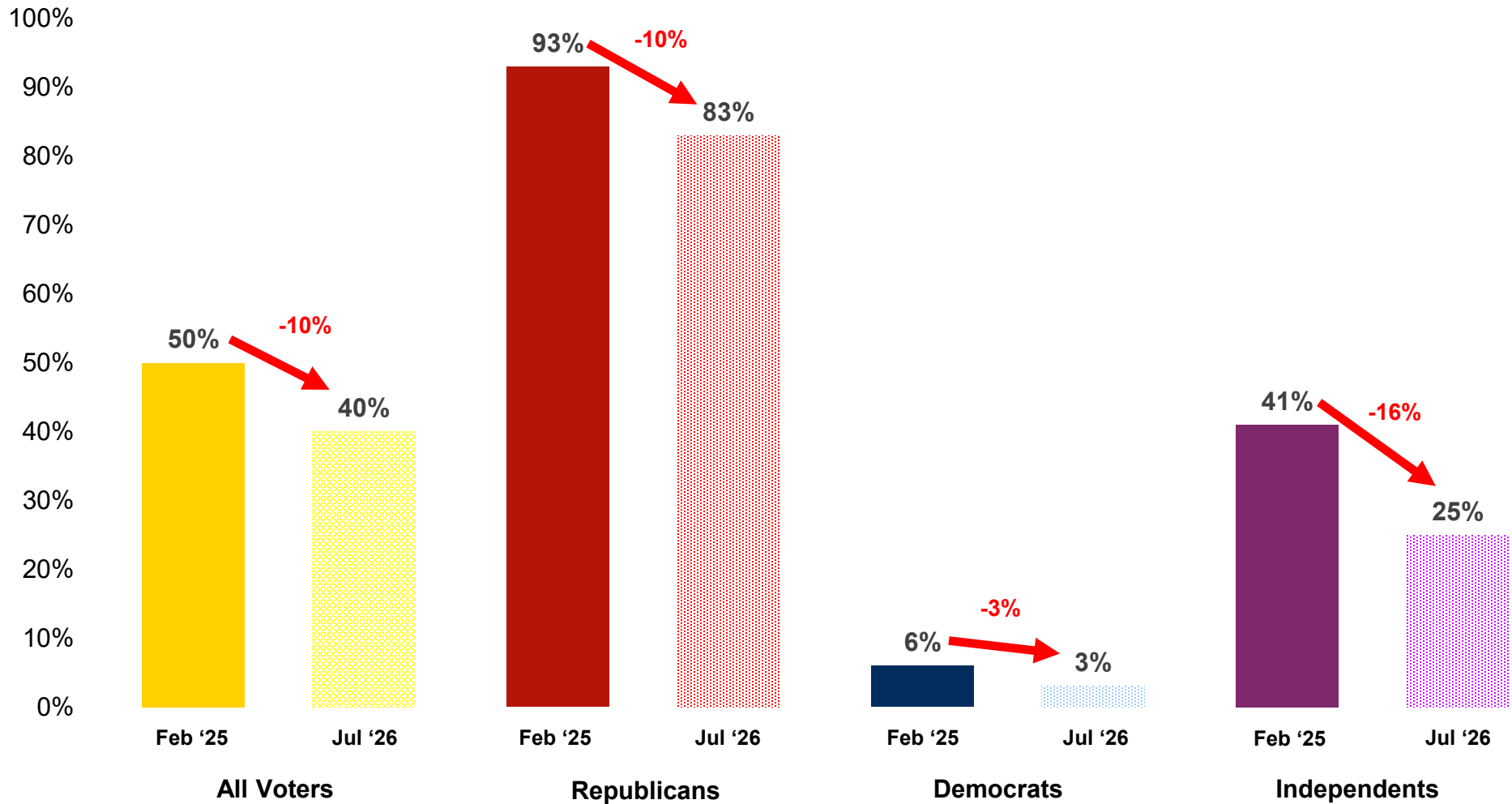


Generic Ballot



Presidential approval ratings matter, too. There are some red flags with Trump's approval ratings, particularly among Independents

Trump's Approval Ratings: February 2025 vs July 2026



As of July 2026
Source: YouGov

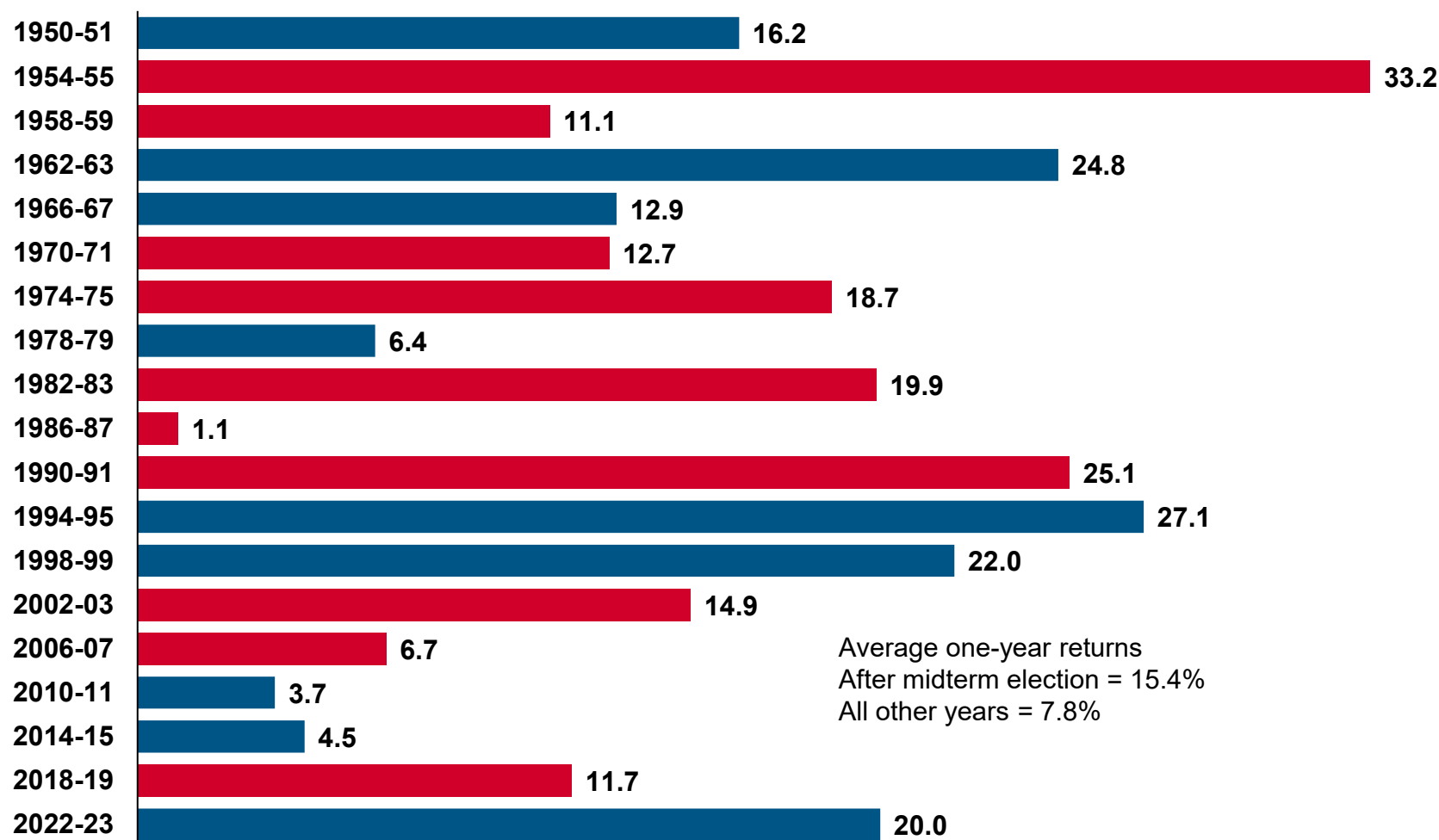
If our base case is realized – a Democratic House and narrower Republican Senate – obstruction, oversight, and fiscal fights should be expected



- 1) **More oversight: All Epstein files, all the time.** Democrats will try to throw **sand-in-the-gears** through their subpoena and oversight powers
- 2) **More obstruction:** Most, if not all, of **President Trump's legislative agenda will be frozen;** albeit **more spending is one of the** few things the parties agree on
- 3) **2027 will see the past of “Peak Trump” (similar to other presidential cycles)**
- 4) **A harder confirmation process:** A narrower Senate majority will make it harder for Trump to get his nominees confirmed, including filling Federal Reserve Governor vacancies
- 5) **More fiscal fights: The debt ceiling will need to be raised in 2027,** and Democrats are likely to use it as leverage to get some concessions (e.g., restore funding cuts)

A relief rally? Risk markets have done the best the year after the midterms, with the S&P returning ~15.4% vs. ~7.8% in other years

S&P 500 Index price return one year after midterm election

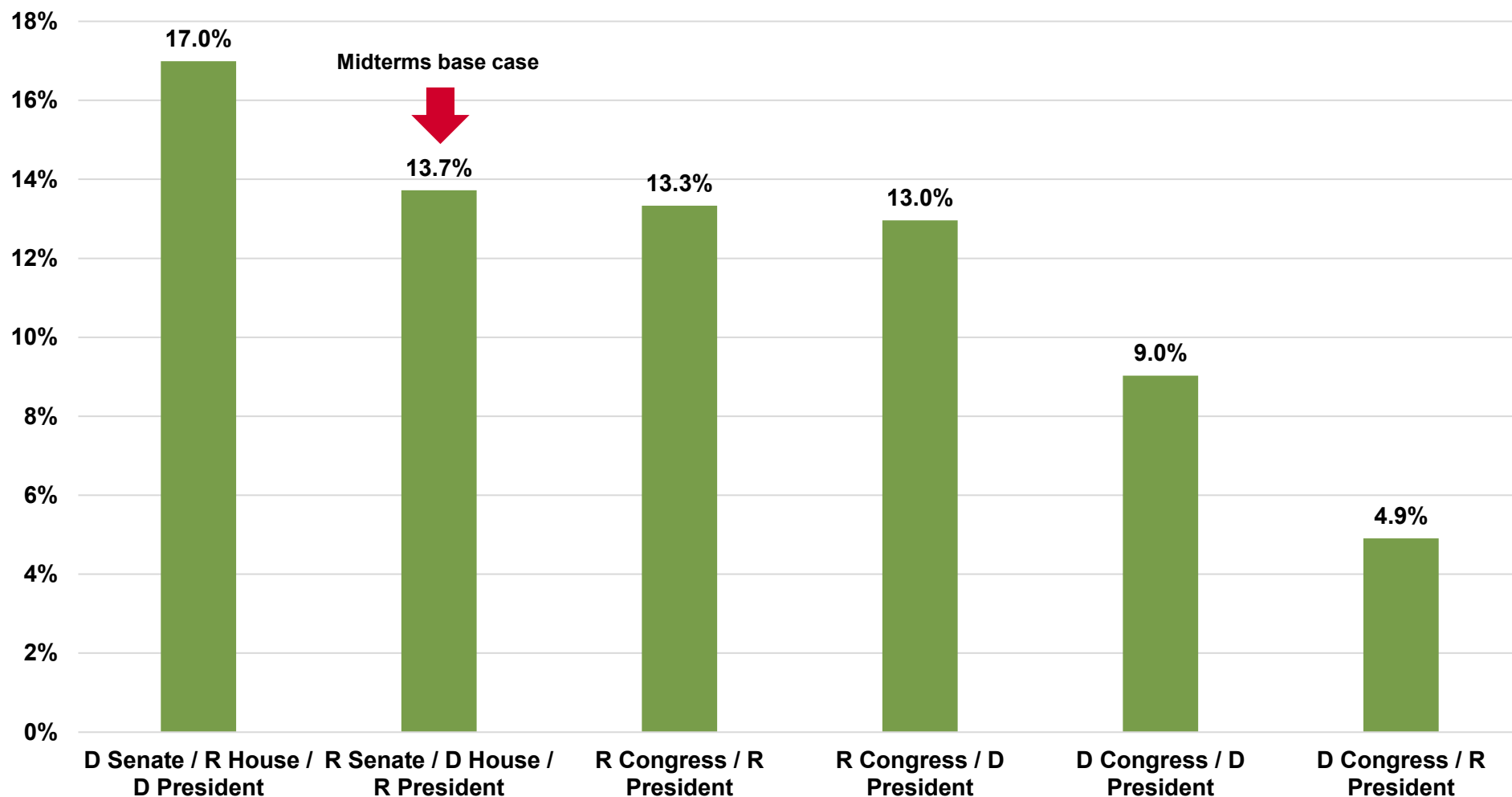


As of 15 January 2026

Sources: Bloomberg; Standard & Poor's, Calculations use Election Day as the starting date in all election years and November 5th as a proxy for the starting data in other years. Only midterm election years are shown in the chart.

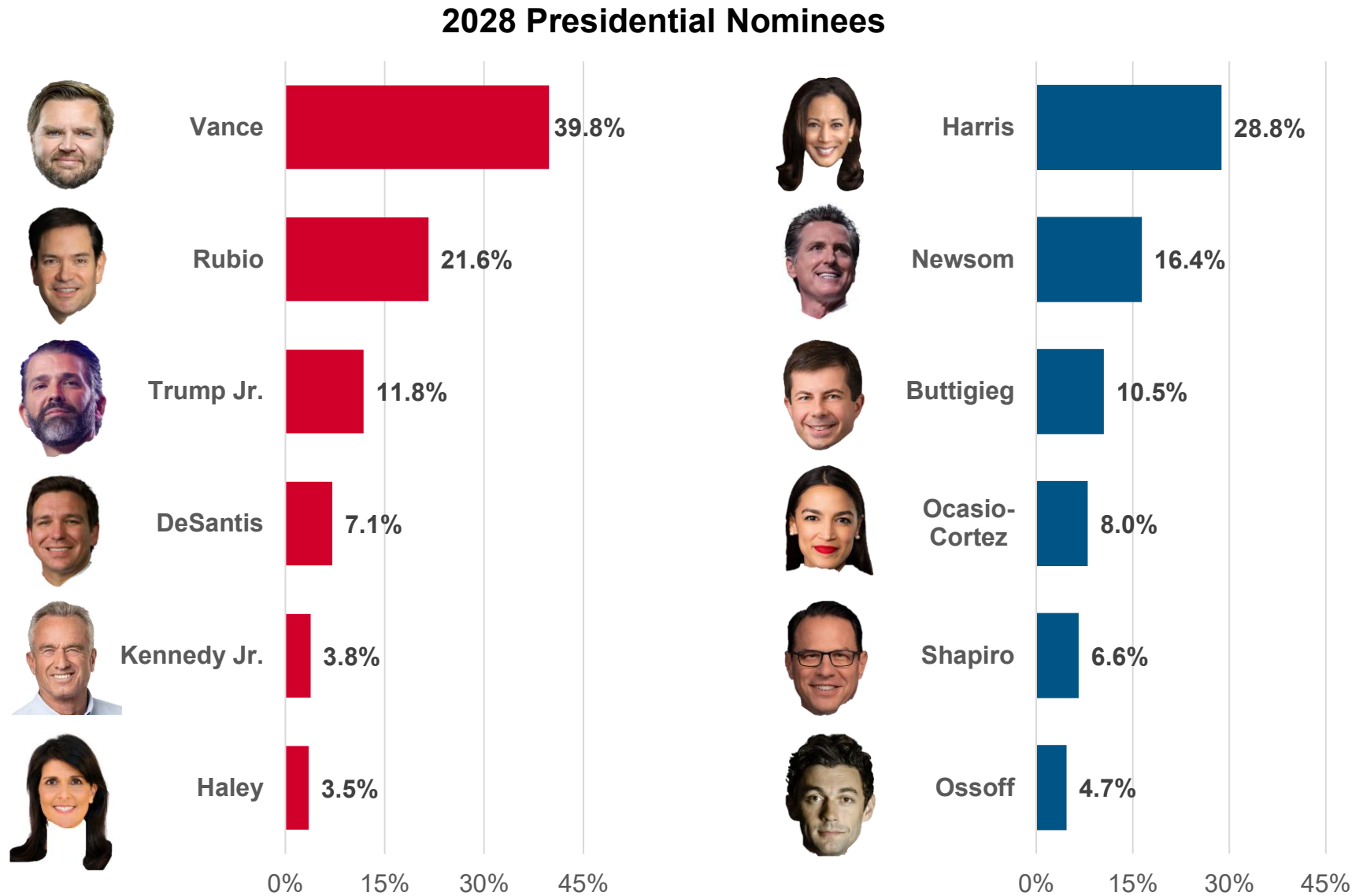
Something we can all agree on: The market has done particularly well under split government control

Partisan Control, Avg. Annual S&P 500 Performance (1933-2025)



Data excludes 2001-2002 due to Sen Jeffords changing party mid-2001
Source: Stategasrp.com

It gets late early: 2028 primaries will be here before you know it, but fade early polling (and prediction markets)



As of July 2026
Source: RealClearPolitics Poll Averages

If past is prologue, moderate candidates have typically done better in general elections

State	Party	2022 Moderate Governor Candidate % of vote	2022 Partisan Senate Candidate % of vote	Moderate Candidate Outperformance
Georgia	Republican	Kemp 53.4%	Walker 48.5%	+4.9%
New Hampshire	Republican	Sununu 57.0%	Bolduc 44.4%	+12.6%
Ohio	Republican	DeWine 62.6%	Vance 53.2%	+9.4%
Pennsylvania	Democrat	Shapiro 56.5%	Fetterman 51.2%	+5.3%
Wisconsin	Democrat	Evers 51.1%	Barnes 49.3%	+1.8%

As of November 2022
Source: CNN

Key takeaways

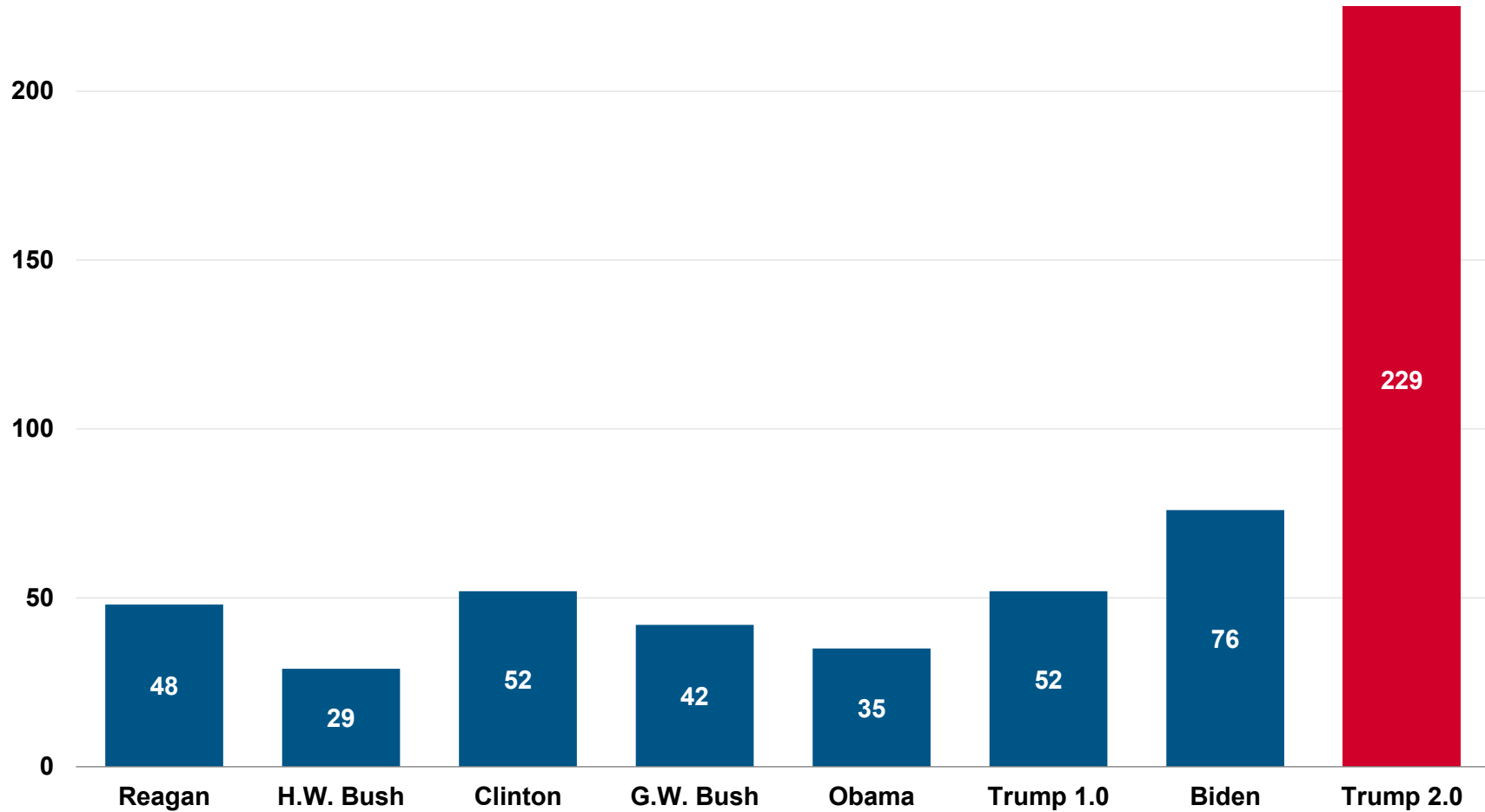
- ✓ **Midterms are likely to result in more gridlock and oversight**, but there could be some room for a deal on bipartisan issues, such as housing
- ✓ **“Peak Trump” in the rear view:** Like Biden and Obama, the third year of an administration will see a president with less political power
- ✓ **Populism to stick around. A large segment of voters are mad;** if cost-of-living issues are not addressed, economic populism will be a significant theme in politics and policy
- ✓ **There is not the political will or the work required for Congress to move forward with comprehensive AI regulation anytime soon**
 - By delaying, there is a risk that the federal government may have to resort to blunt tools (e.g., a prohibition of open-source models)
- ✓ **Deficits will continue to be high, but 2032 could be an inflection point.** Regardless, deficits are likely to be a topic in 2028 presidential campaign
- ✓ **It gets late early:** 2028 will be a focus starting after the midterms. Both parties could see a crowded primary – good for democracy, noisy for markets



Appendix

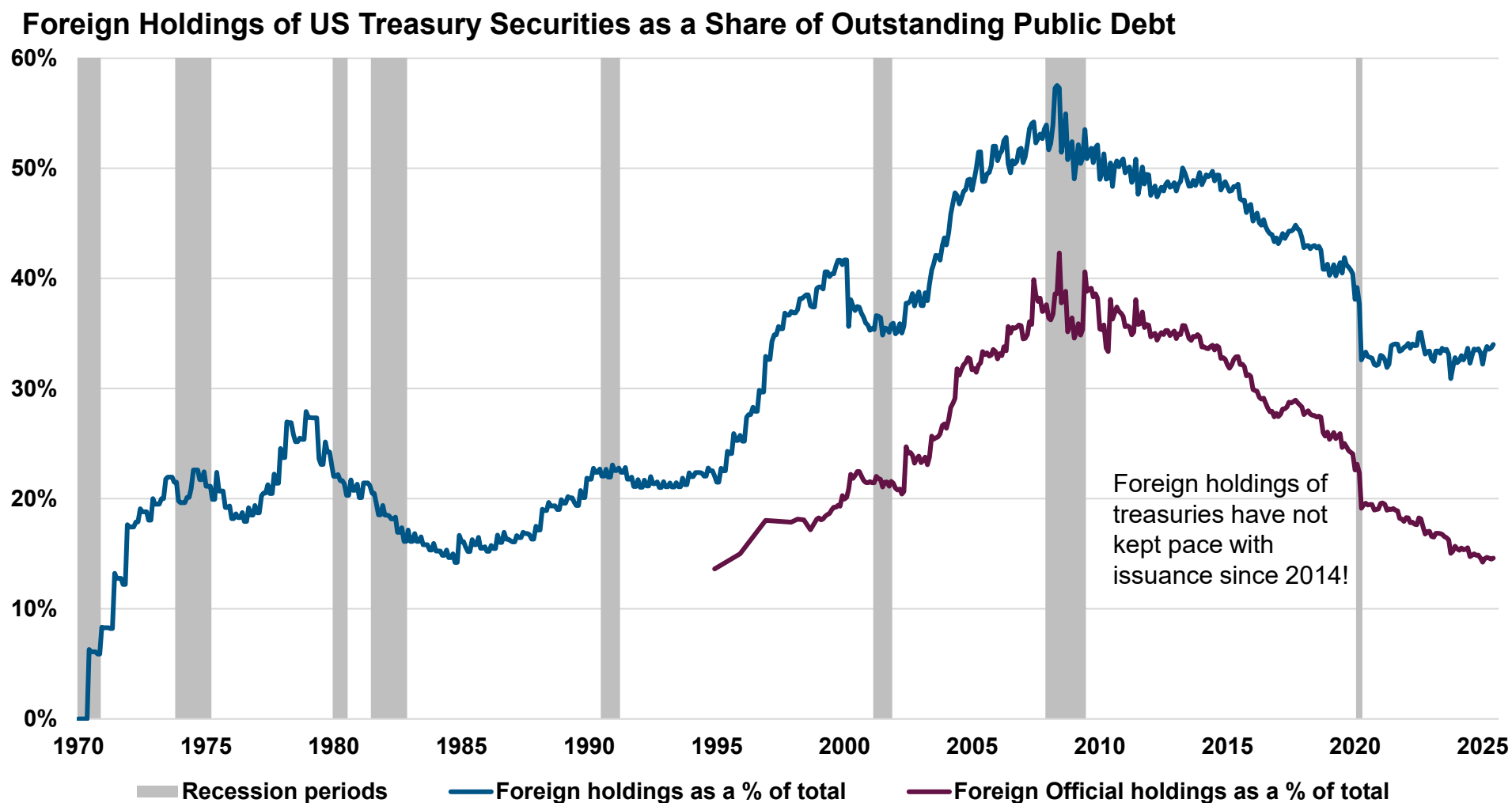
Peak Trump? 2025 saw an active and effective Trump, with a cooperative Congress, a slow-moving judiciary, and high approvals among Republicans

Executive Orders in First Year of Presidency



Data as of December 31, 2025
Source: Federal Register, Just Security, PIMCO

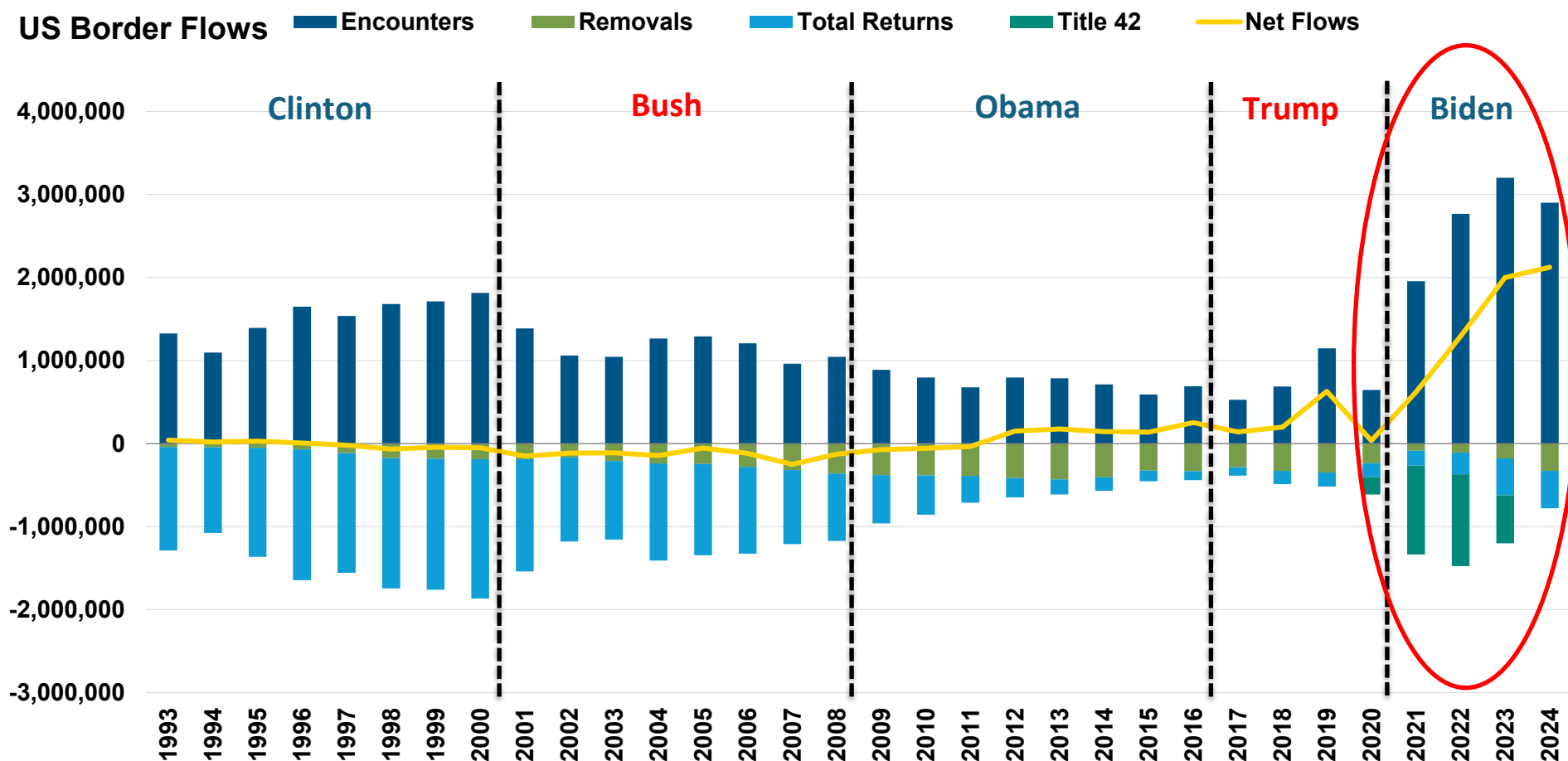
With that said, foreign investors have been holding fewer Treasuries for a while now anyway (i.e., this is not simply a Trump 2.0 phenomenon)



As of June 2025.

Source: Haver Analytics, Bloomberg, PIMCO.

On the heels of a massive increase in migrants, Trump ran - and won - on a platform to control immigration and is following through on it



President	Net Flows	Encounters	Total Deportations
Clinton	(79,662)	12,211,243	12,290,905
Bush	(1,066,535)	9,262,315	10,328,850
Obama	691,400	5,940,293	5,248,893
Trump	1,004,961	3,007,140	2,002,179
Biden	5,934,874	10,680,710	4,745,836

Source: Office of Homeland Security Statistics, PIMCO

Data as of August 24; data is collected by fiscal year, so does not represent exactly the terms of each presidents, we calculate numbers for term starting the fiscal year they are sworn in as some policies take some time to implement

Appendix

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S&P 500 Index is an unmanaged market index generally considered representative of the stock market as a whole. The Index focuses on the large-cap segment of the U.S. equities market.

INDEX

It is not possible to invest directly in an unmanaged index.

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CMR2026-0827-5877730

Midterm Election Forecasting Models

- Each state's voter preferences are a latent variable that fluctuates stochastically around a state fixed effect. The fluctuations are persistent, respond to observable fundamental shocks (e.g., state of the economy), as well as to “political” shocks, that is, shocks to voter preferences that are orthogonal to fundamentals. Both fundamental and political shocks can be correlated across states. Pollsters observe and report each state's voter preferences with error. The error is also persistent and potentially correlated across states, making it a second latent state variable. The poll results, observable by the econometrician, are a sum of the two.
- Under standard conditions, the market-clearing price on a given day before the election can then be interpreted as the marginal investor's risk-adjusted probability of candidate A winning the election conditional on all information available to investors as of that date
- We develop a formal asset pricing framework to establish each contract's value as a function of state variables. We assume that state variables, which are a blend of latent and macro variables, follow vector autoregression (VAR) dynamics. This approach is similar to that employed in modeling of the term structure of interest rates
- Each snapshot uses data on polls, prices, and fundamentals available through that date to estimate and simulate the model, with the last snapshot providing the forecast discussed throughout the paper. Our forecasts differ from prediction market prices both (1) because polls inform estimates of measurement error and risk premia contained in prices and (2) because the low-dimensional structure of the model raises the confidence of the forecast.
- Using prices alone requires assuming zero risk premia. This restriction turns out to be mild in practice: the estimates closely match those from the joint polls-prices specification. The similarity is expected, because option prices encode the full distribution of outcomes, whereas polls primarily pin down the mean.

Midterm Election Forecasting Models

- proposing a novel framework that integrates polling data, economic fundamentals, and prediction market prices to capture the dynamics of voter preferences across states, thereby enhancing political forecasting methodologies.

29th Annual Oklahoma Public Fund Trustee Education Conference

Session 9

Unbiased: How to Manage Risk in the Gray Zone

Andrew Fastow
Principal at KeenCorp, Former CFO of Enron

29th Annual Oklahoma Public Fund Trustee Education Conference



Principal at KeenCorp, Former CFO of Enron

Andy Fastow was the Chief Financial Officer of Enron Corp. from 1998 through 2001. In 2001, Enron filed for bankruptcy protection. As a result of the bankruptcy, \$40 billion of shareholder wealth and retirement savings was destroyed, thousands of people lost their jobs, and many businesses and institutions in Houston and elsewhere were adversely affected. In 2004, Mr. Fastow pled guilty to two counts of securities fraud, and was sentenced to six years in federal prison.

Mr. Fastow is the only Enron executive that has taken full responsibility for his actions, and he has repeatedly and publicly expressed remorse. In addition to serving his prison sentence, Mr. Fastow forfeited far more money than he ever earned at Enron. He is credited with being the individual most responsible for helping to recover \$6 billion for Enron shareholders.

Mr. Fastow has been invited to speak at schools such as Harvard, Stanford, Rice, University of Texas, University of Houston, Dartmouth, Tufts, and USC. He was the keynote speaker at the United Nations conference on responsible business practices, at the FBI's Advanced White Collar Financial Crimes conference to train agents, the Association of Certified Fraud Examiners and the American Accounting Association annual conferences, and the Financial Times' Outstanding Directors conference, and to many other groups and businesses around the world.

Mr. Fastow lives with his family in Houston, Texas. He currently serves as a Principal with KeenCorp, an artificial intelligence software firm, and he consults with Nonexecutive Directors, Management, Hedge Funds, and Auditors, in order to identify potentially critical finance, accounting, compensation, and cultural issues. Mr. Fastow will talk about business ethics, how the ambiguity and complexity of laws and regulations breeds opportunity for problematic decisions, and how technology can be used to potentially illuminate such opportunities.

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Session 10

The Role of Venture Capital in the World of Artificial Intelligence

Joe Nugent
Asset Consulting Group

Rick Heitzmann
FirstMark

29th Annual Oklahoma Public Fund Trustee Education Conference



Asset Consulting Group

Joe Nugent is a director and joined ACG as an Analyst in our research group in 2005. He oversees the analysis, due diligence and reporting on illiquid investment strategies including real estate and private equity investments. He also participates in ACG's Investment Committee, which establishes the framework for the firm's investment philosophy and oversees the internal processes used to ultimately make investment recommendations to clients. Prior to joining ACG, Joe performed in several roles for State Street Corporation, including serving as an Analyst specializing in mutual fund valuation issues. Joe has over 13 years of experience in the financial services industry. He is a graduate of Avila University with a Bachelor of Science degree in Accounting.



FirstMark

Rick Heitzmann is a Co-Founder and Partner at FirstMark, where he focuses on investments across technology with a focus on disruptive consumer applications, including marketplaces, healthcare, software, and gaming. He has led investments in iconic companies such as Pinterest (NYSE: PINS), Riot Games (acquired by Tencent), DraftKings (NASDAQ: DKNG), Airbnb (NASDAQ: ABNB), StubHub (acquired by eBay), Discord, and Ro, among many others.

Rick has been named to the Forbes' Midas List as one of the world's top venture capitalists for 2020, 2021, 2022, 2023, and 2024, has received similar distinctions from CB Insights, Business Insider, and the New York Times, and is a regular contributor on CNBC.

Before founding FirstMark, Rick was an entrepreneur and founder of First Advantage (NASDAQ: FADV), which he helped grow and sell to First American (NYSE: FAF). He holds a B.S. from Georgetown University and an M.B.A. from Harvard Business School.

Organized by the Oklahoma Police Pension and Retirement System & Tulsa County Employees' Retirement System

29th Annual Oklahoma Public Fund Trustee Education Conference

Session 11

Oklahoma & Regional Economic Update

Cortney Cowles
Federal Reserve Bank of Kansas City

Presentation will be distributed at the conference

29th Annual Oklahoma Public Fund Trustee Education Conference



Federal Reserve Bank of Kansas City

Cortney Cowley serves as Oklahoma City Branch Executive and Assistant Vice President for the Federal Reserve Bank of Kansas City. Cowley joined the Bank in 2015 as an economist and was promoted to senior economist in 2021. In 2025, Cowley began her role as Branch Executive.

As Oklahoma City Branch Executive, Cowley is the Bank's lead officer and economist in Oklahoma. She recruits and works closely with the Oklahoma City Branch Board of Directors and is responsible for briefing Kansas City Fed President Jeff Schmid, a member of the Federal Open Market Committee, on economic trends in the state. She also serves as a special advisor on agriculture to Vice Chair for Supervision Miki Bowman at the Federal Reserve Board of Governors. Cowley's team conducts research and surveys on key regional issues such as energy, manufacturing and migration.

Cowley holds a Ph.D. in Agricultural Economics from Oklahoma State University, as well as a master's degree in Civil Engineering from Colorado State University and a bachelor's degree in Biosystems Engineering from Oklahoma State University, where she was named a Harry S. Truman Scholar. She is a member of the Economic Club of Oklahoma, Downtown Club of Oklahoma City, the Agricultural and Applied Economics Association and serves as an economic advisor on the campaign cabinet of the United Way of Central Oklahoma. Cowley, along with her husband and nine-year-old twins, lives on a small farm northwest of Oklahoma City.

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Session 12

OPFTEC Jeopardy

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Feedback

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2027

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30th Annual Oklahoma Public Fund Trustee Education Conference**

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