AI: What We Need to Know

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Jefferies

Washington Strategy

AI – What We Need to Know: Jefferies Briefing to CalPERS Board

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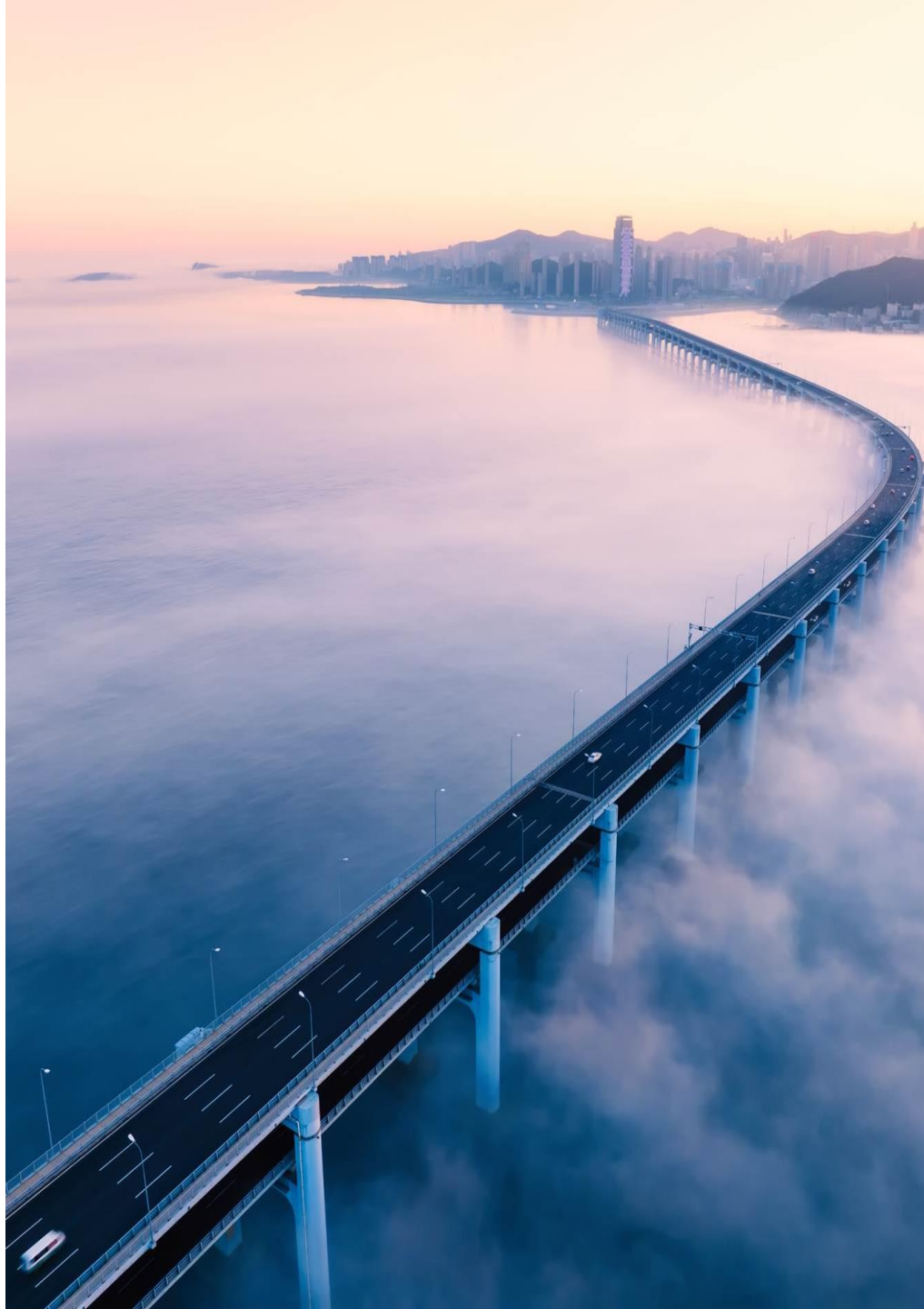
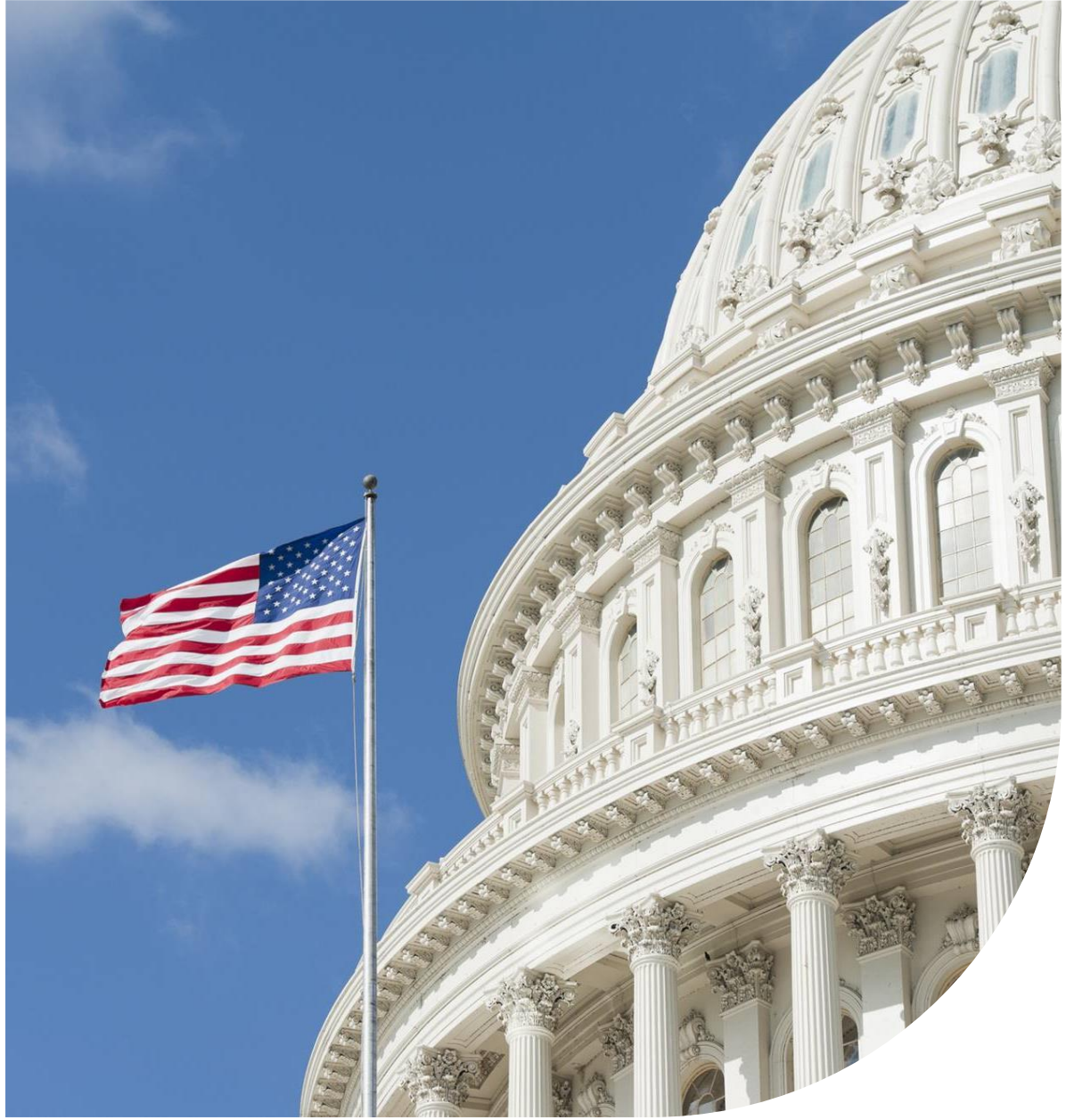
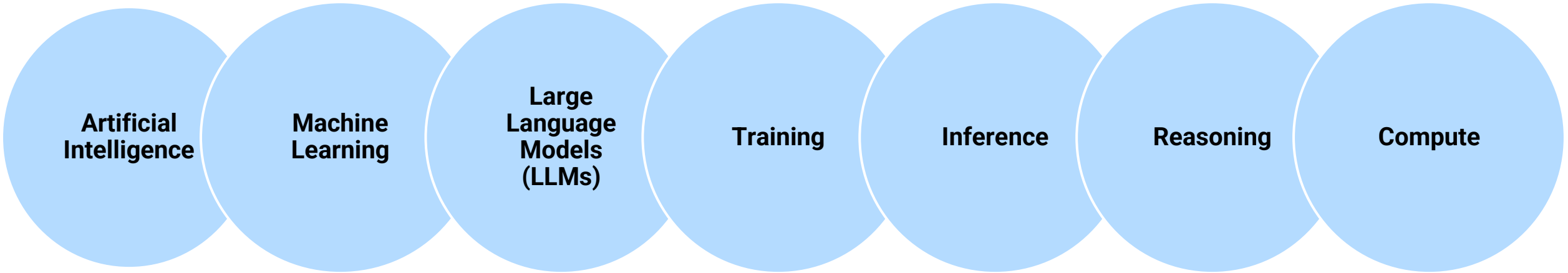


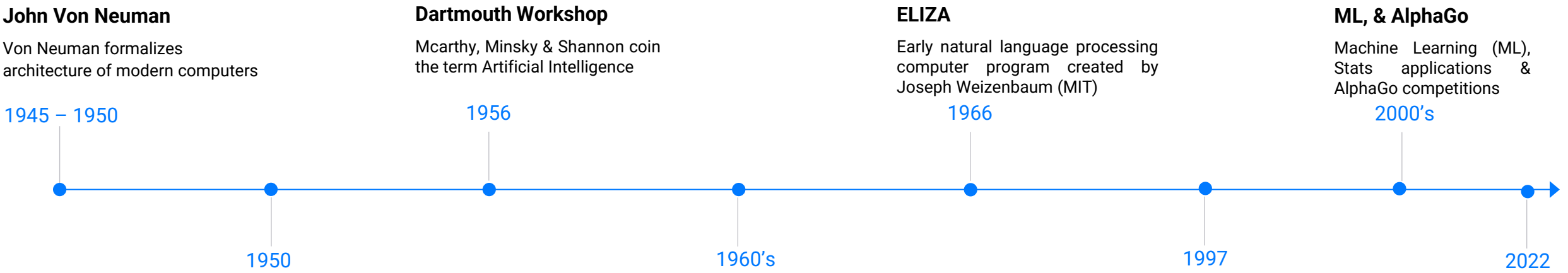
1) Introduction to Artificial Intelligence



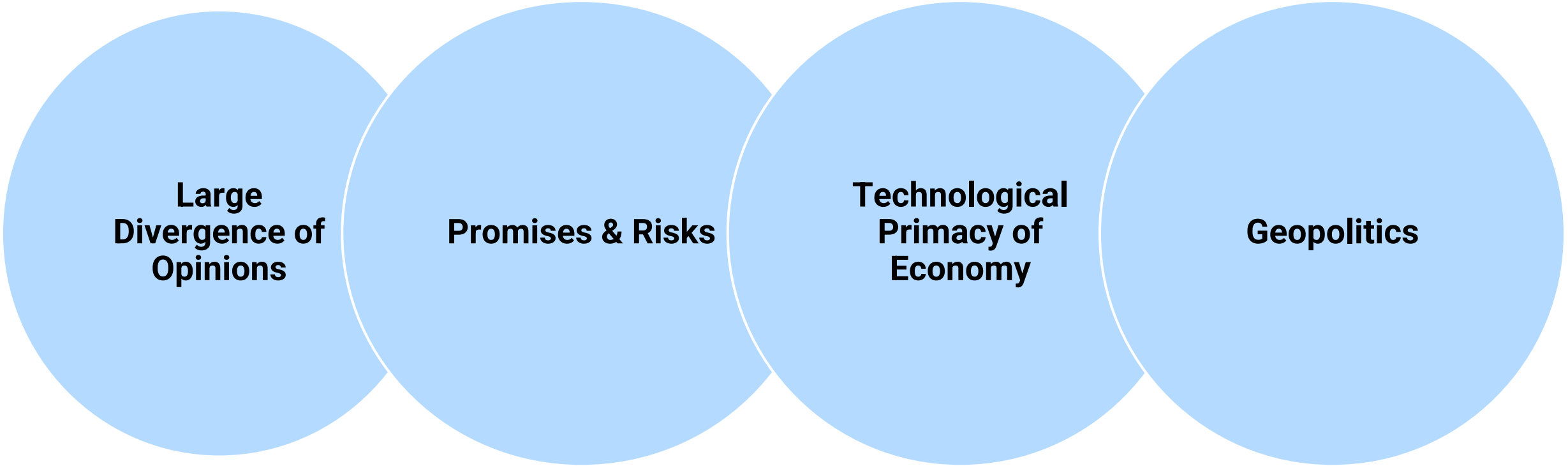
The “Basic” Concepts



Evolution & Timeline of AI



Why So Much Attention Now?



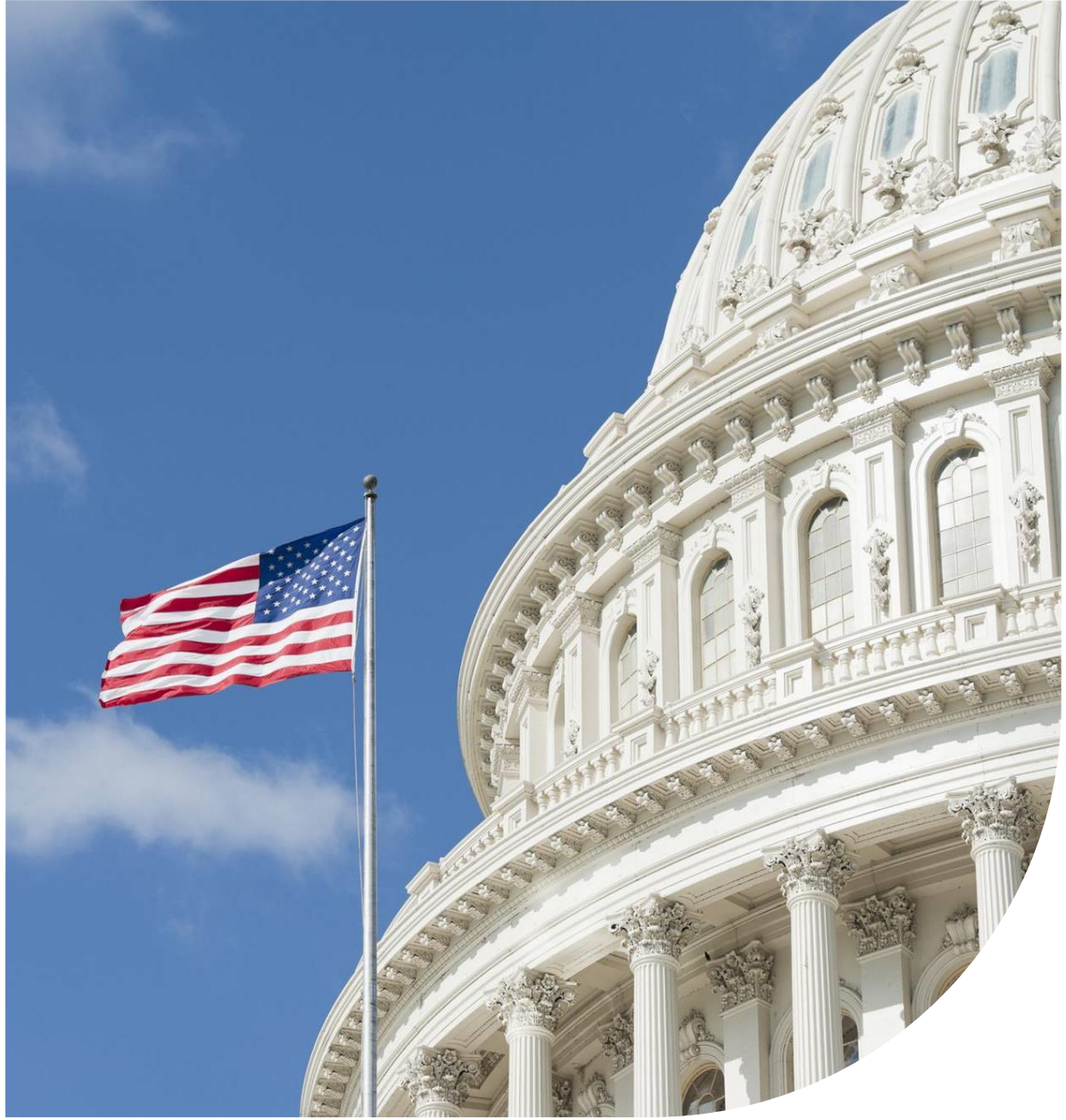
Why So Much Attention Now – ChatGPT & OpenAI

ChatGPT from OpenAI: Fastest-growing consumer application in history

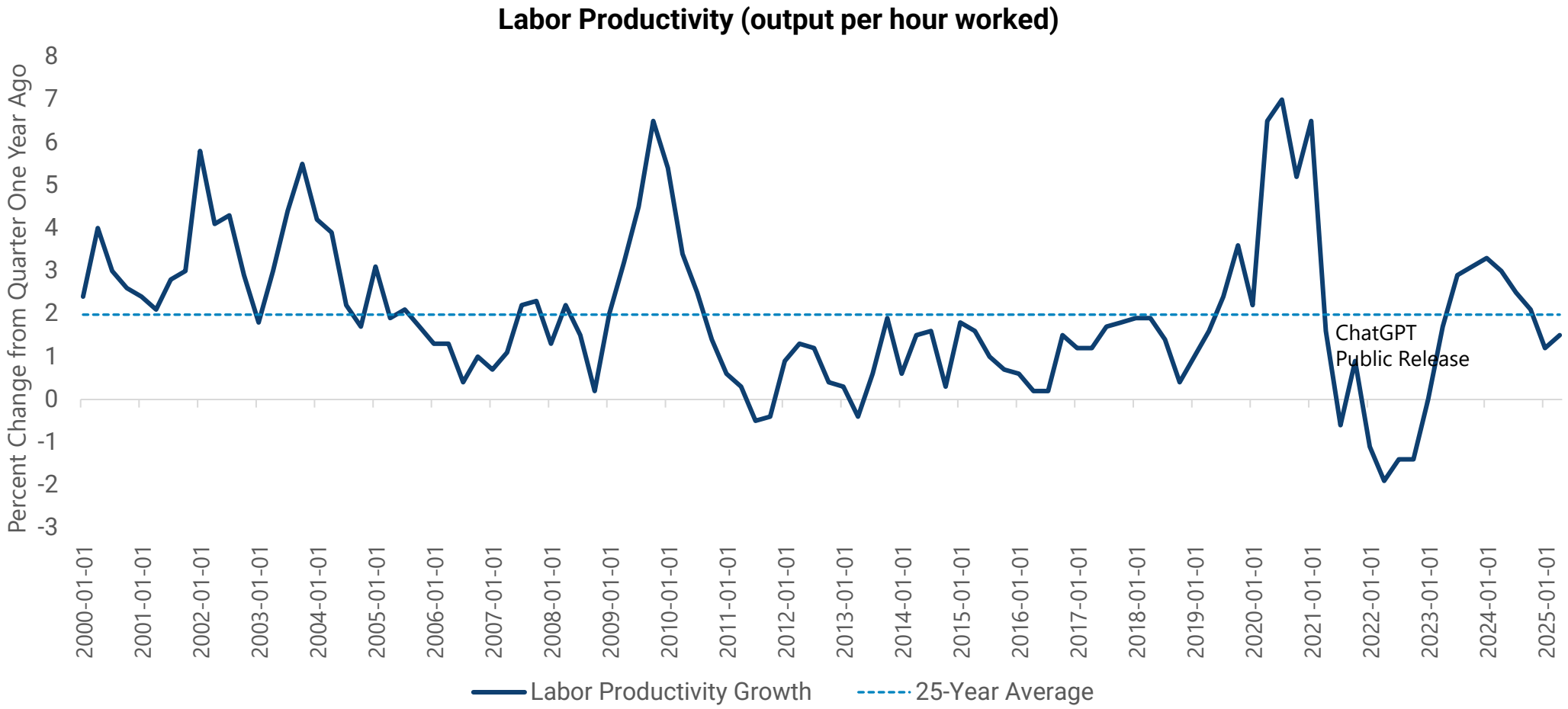
Metric	Late 2022	Mid 2024	Dec-25
Weekly Active Users	1 Million (5 days)	200 Million	**800 Million**
Annualized Revenue	~$10 Million	$3.7 Billion	**$20+ Billion**
Business Customers	Minimal	600,000	**1 Million+**
Market Valuation	$29 Billion	$86 Billion	**$500 Billion**

SOURCE: OpenAI, Jefferies

2) The Economics of AI

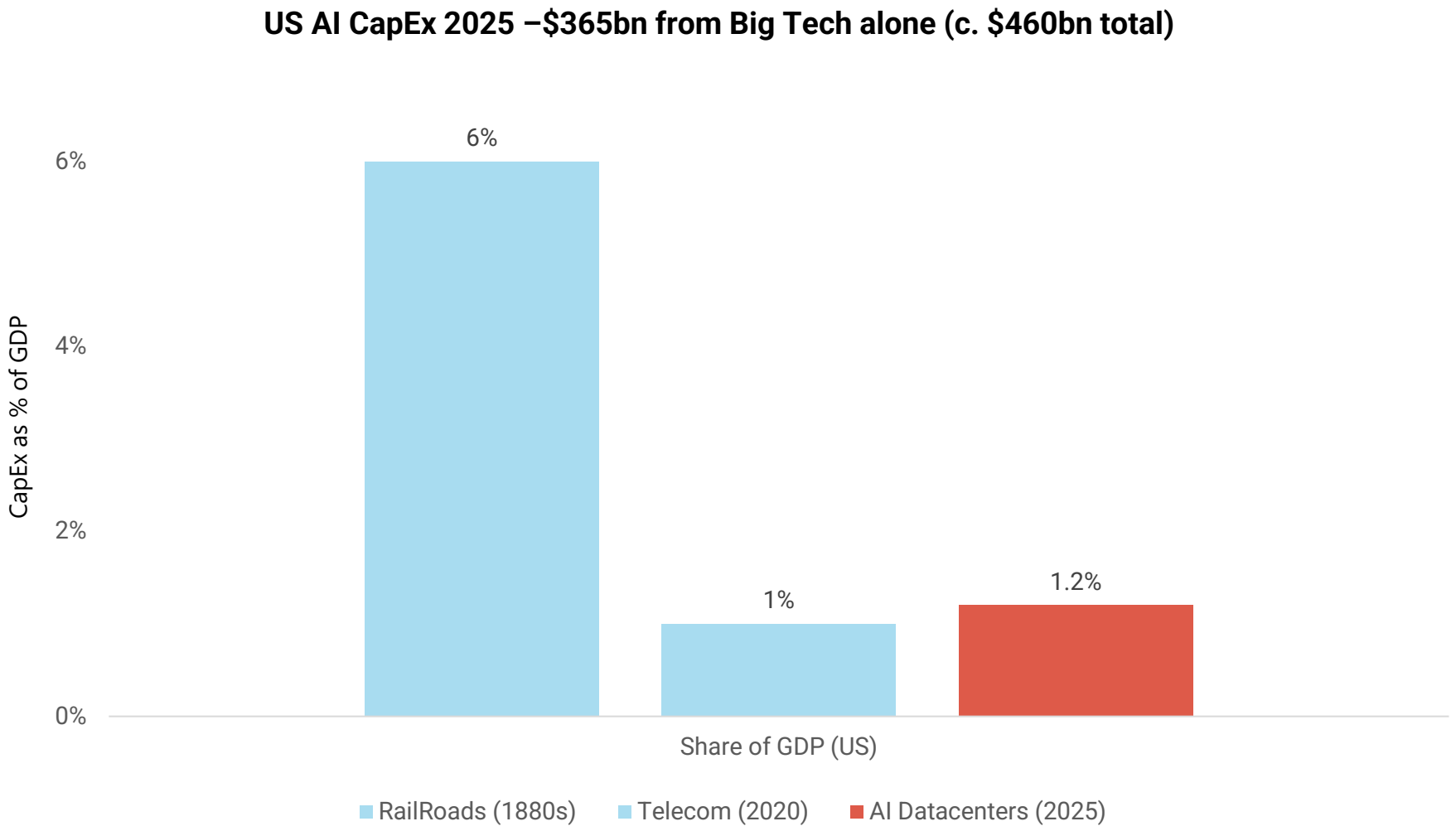


U.S. labor productivity remains within its historical range.



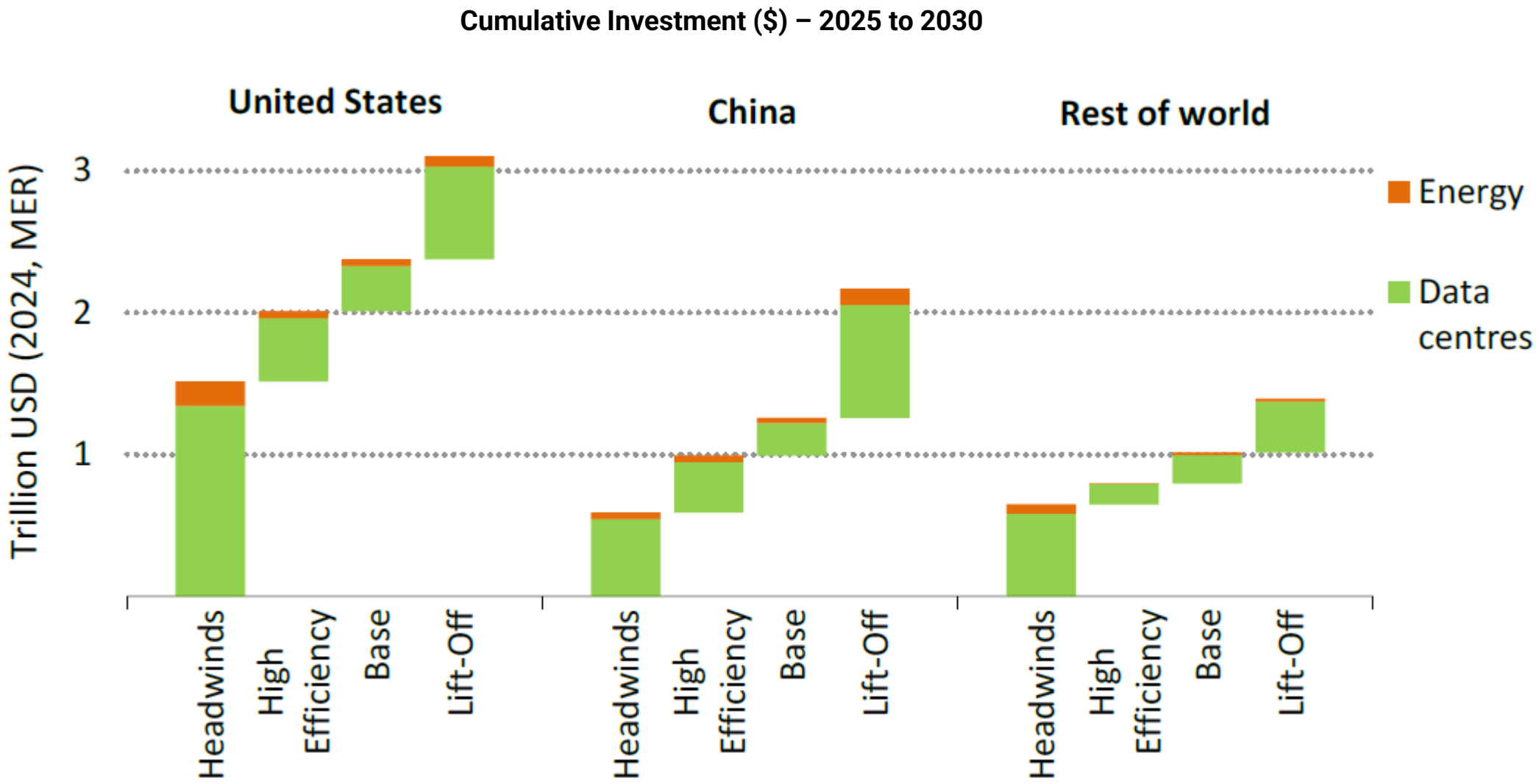
Source: U.S. Bureau of Labor Statistics, Jefferies.
Note: Labor productivity is real output per hour worked in the U.S. nonfarm business sector. Chart shows Q2 year-over-year change (seasonally adjusted; PRS85006091). The dashed line is the simple mean of quarterly YoY growth from 2000–2025.

AI CapEx – Large but not unprecedented



SOURCE:Bloomberg,LP, Company Reporting, FRED

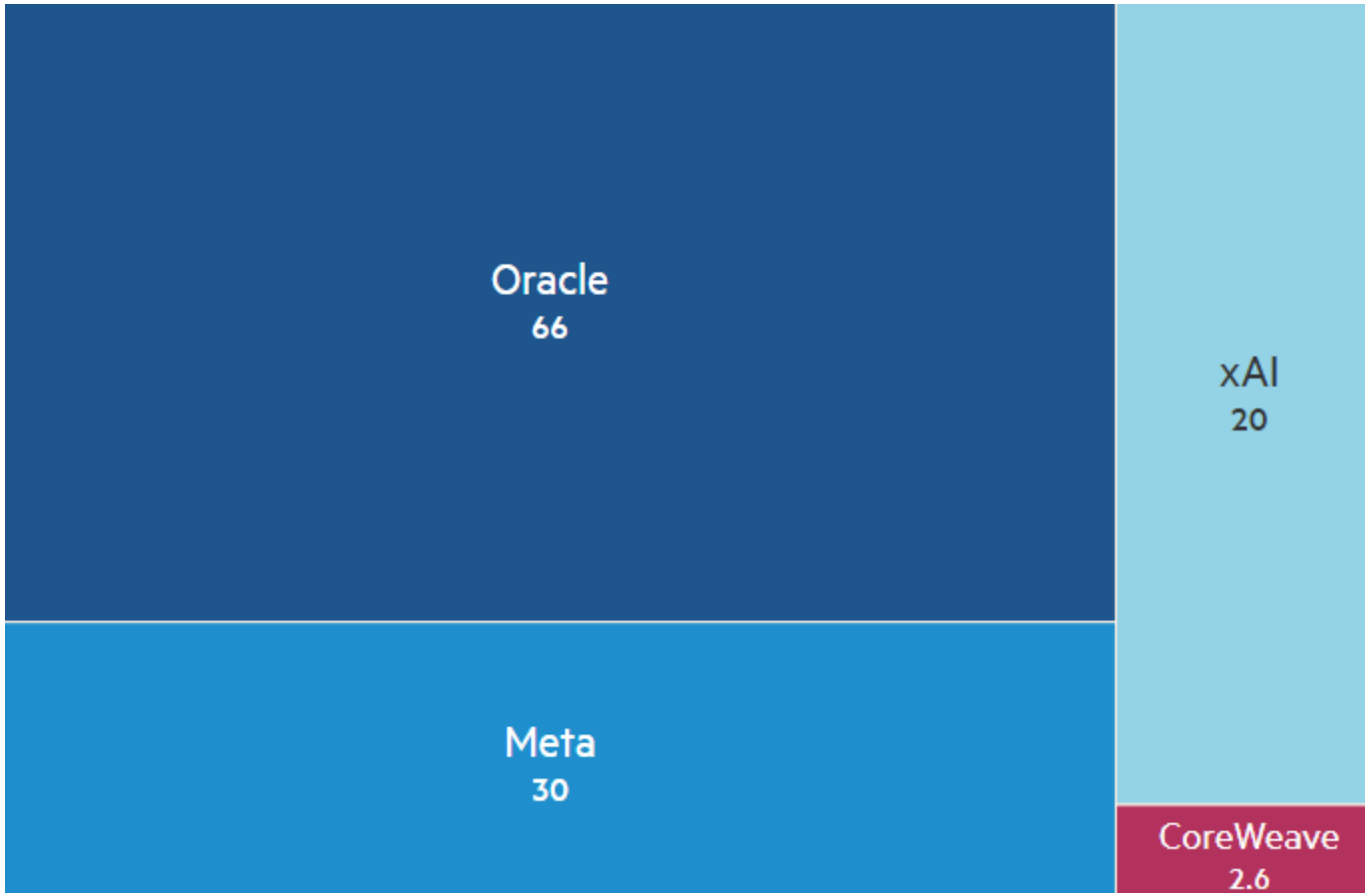
Cumulative additional investment – data centers & energy for data centers



SOURCE: IEA, Jefferies

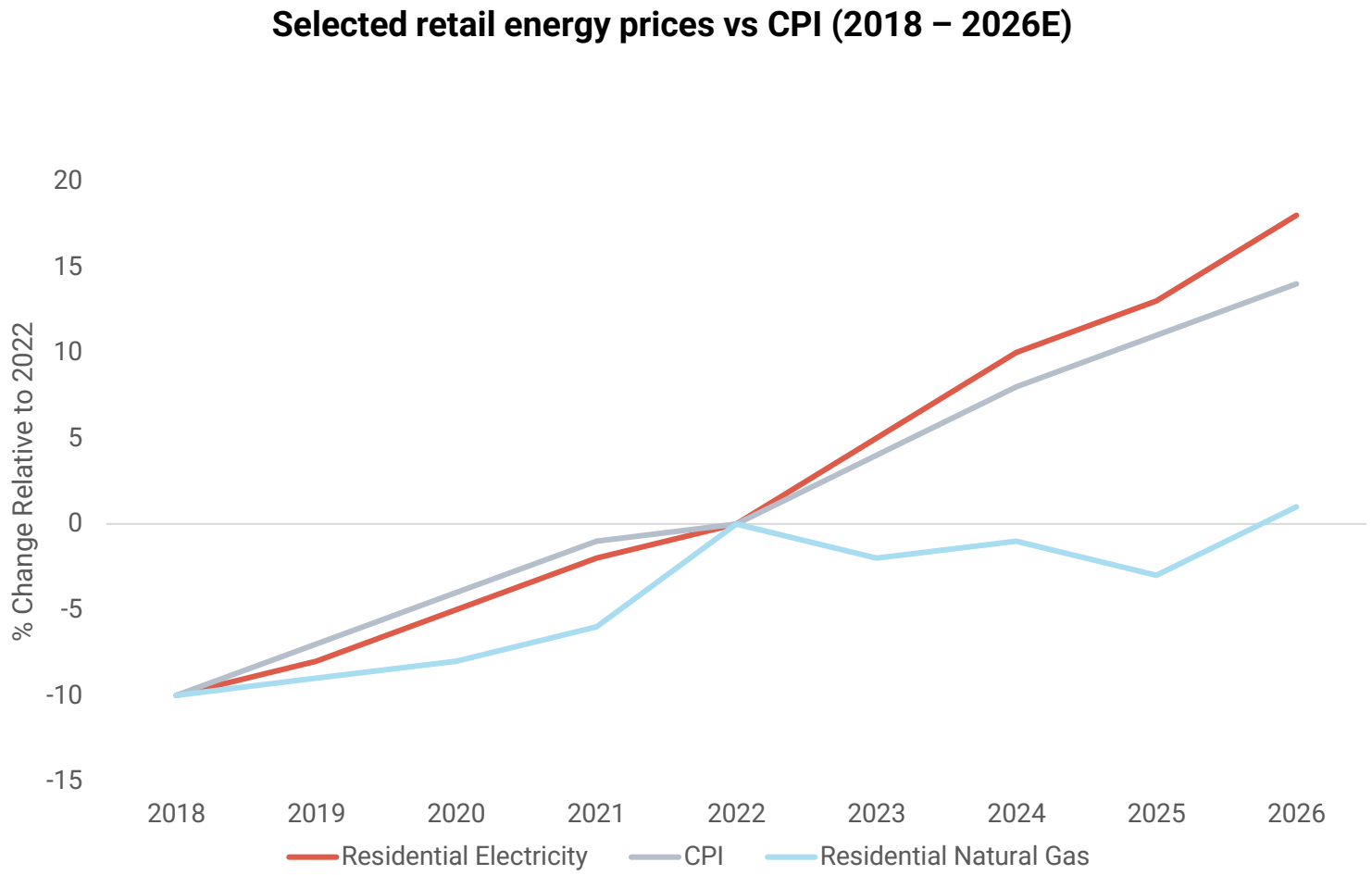
AI CapEx, funding quality – off-balance sheet & complex debt structures

> $120bn in financing has been raised in SPVs for Data centres



SOURCE: FT Research

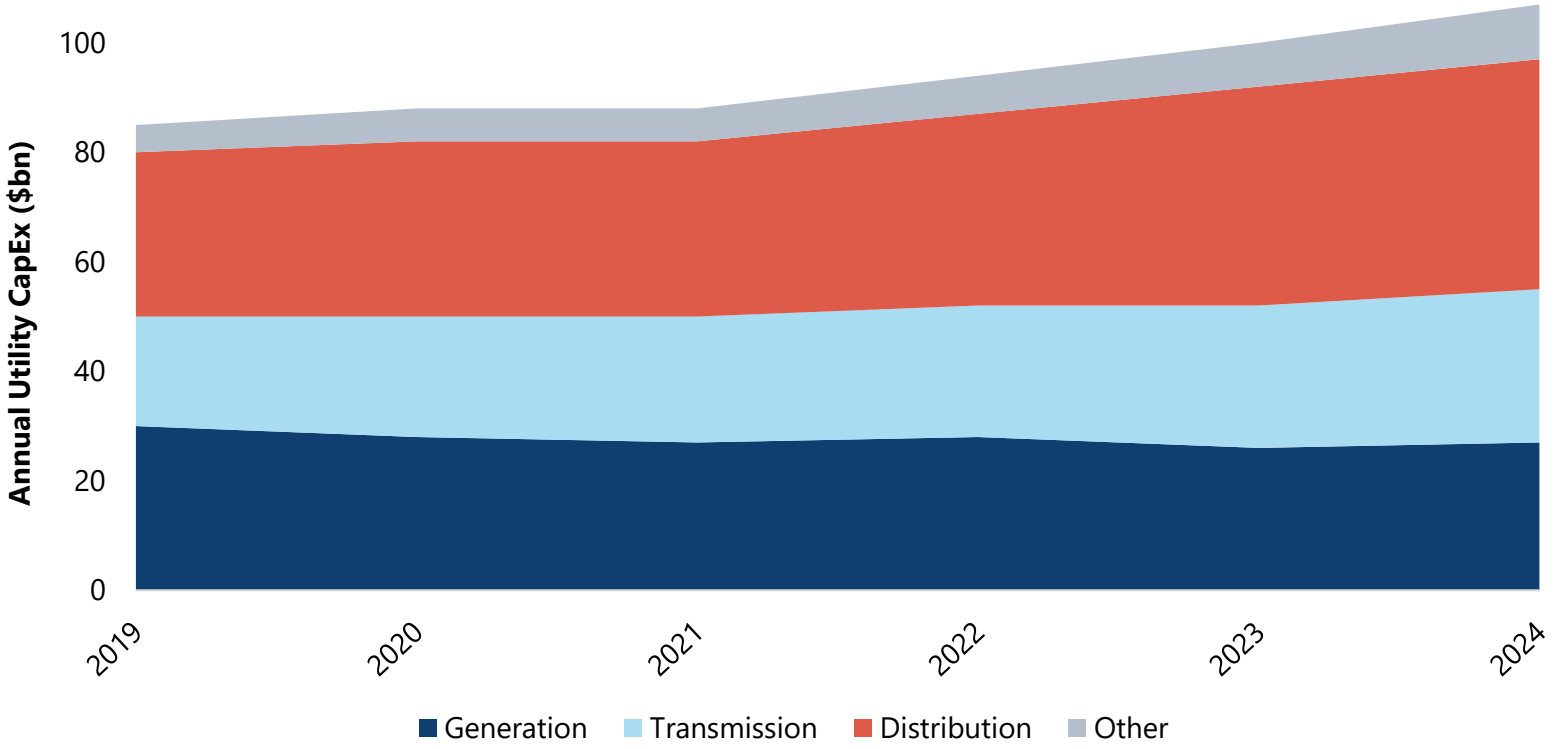
Power Prices – Up & Rising Across the US



Source: EIA, Jefferies

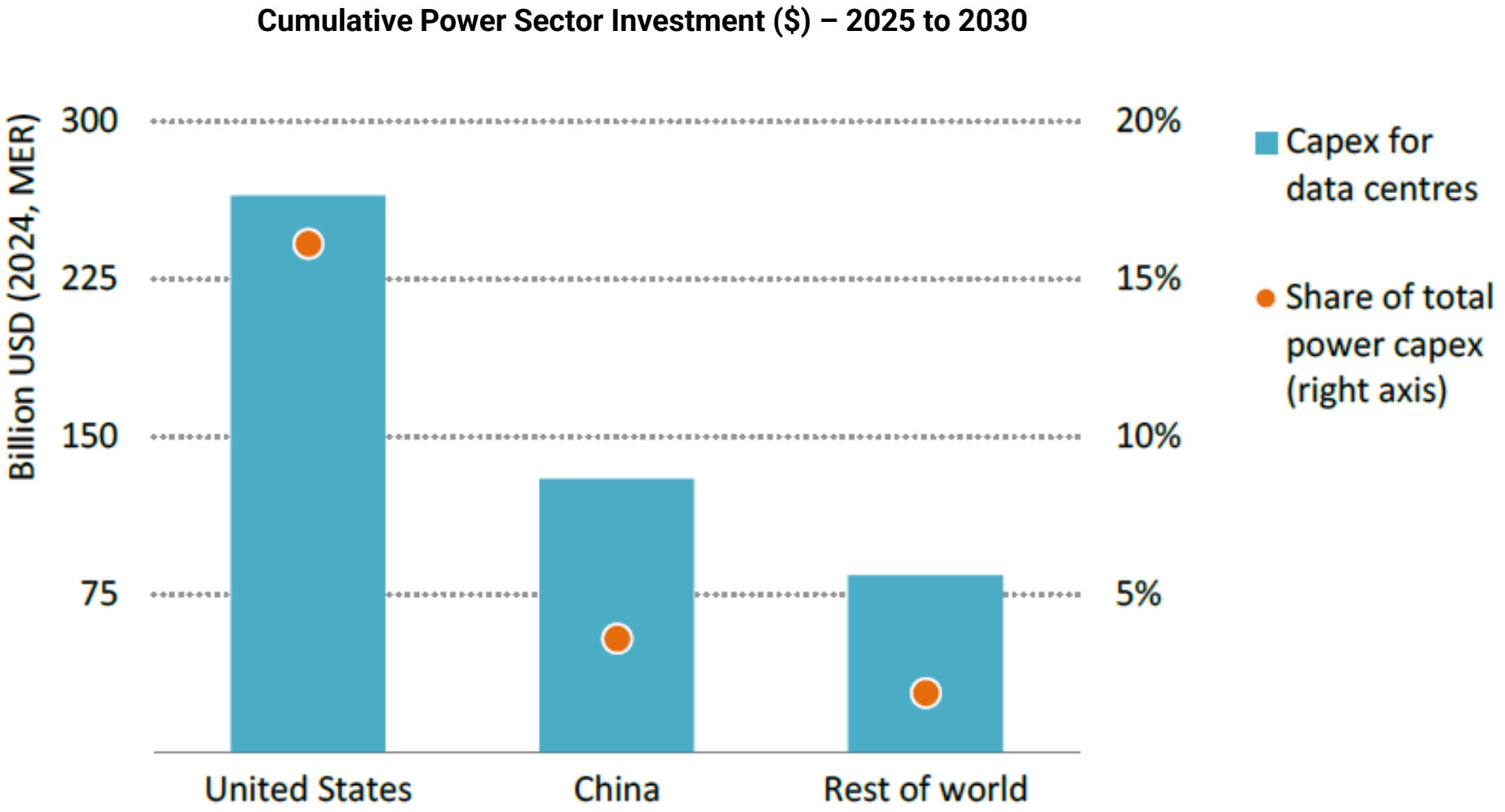
Power CapEx – Transmission, Distribution & Other Costs

T&D CapEx is the largest drivers of retail price increases – direct generation costs have declined nationally



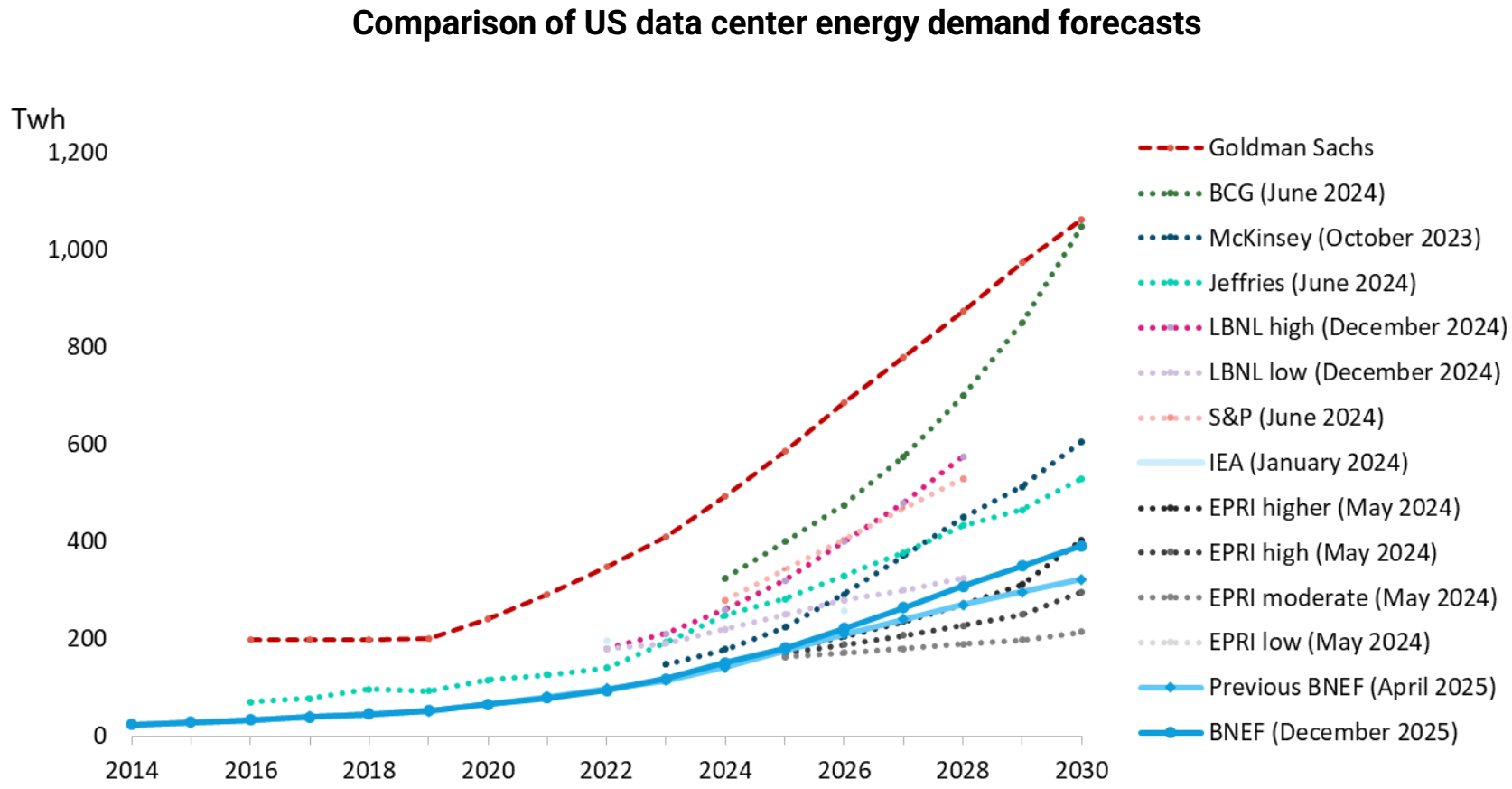
Source: Lawrence Berkely National Lab, FERC, Jefferies

Cumulative power sector investment



SOURCE: IEA – Energy & AI

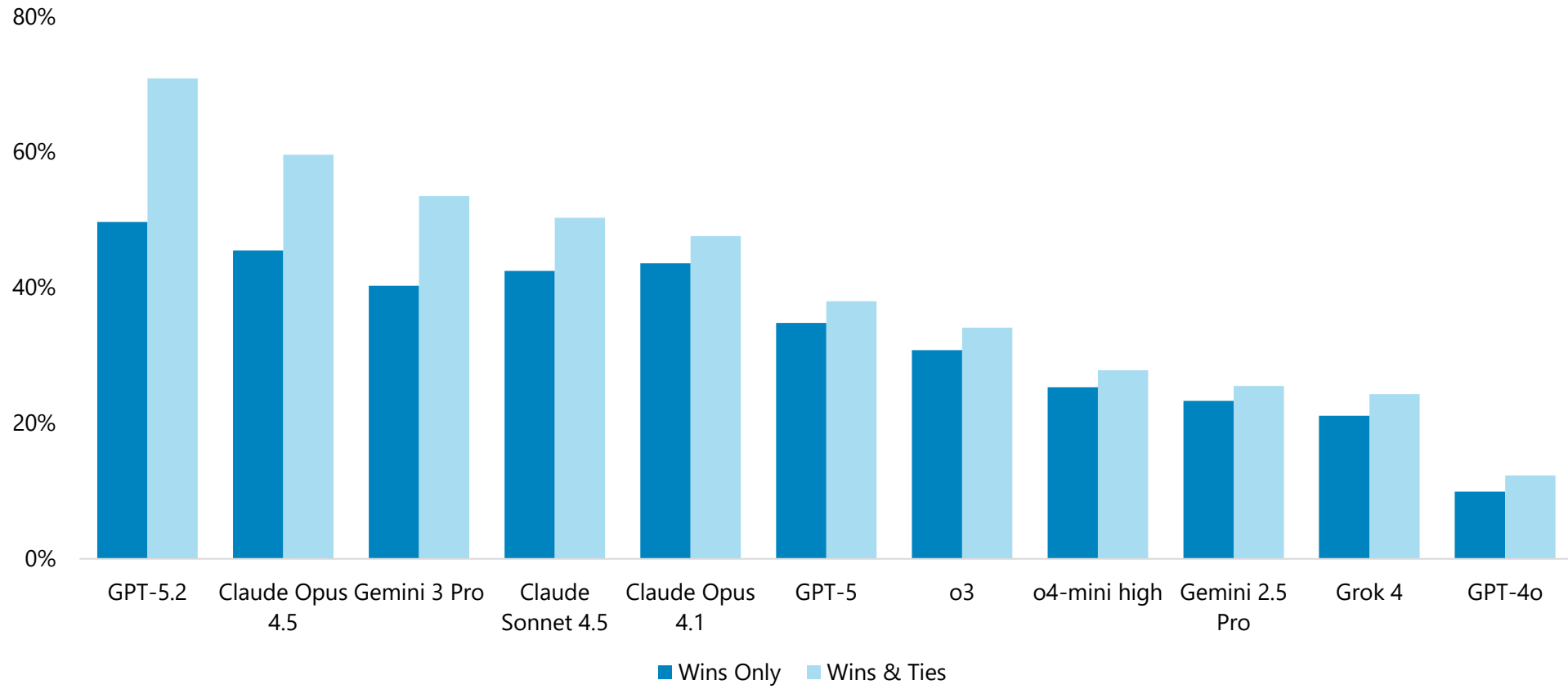
AI Power Demand Projections Vary



SOURCE: Jefferies, BloombergNEF, Lawrence Berkeley National Lab (LBNL) , International Energy Agency (IEA) 2024 , Boston Consulting Group (BCG), Electric Power Research Institute (EPRI) ,Goldman Sachs, McKinsey, S&P, IEA 2025

Current State of AI Models

Model Parity with Humans – No Model Has Reached Parity (50%) with Human Experts When Considering Wins Only



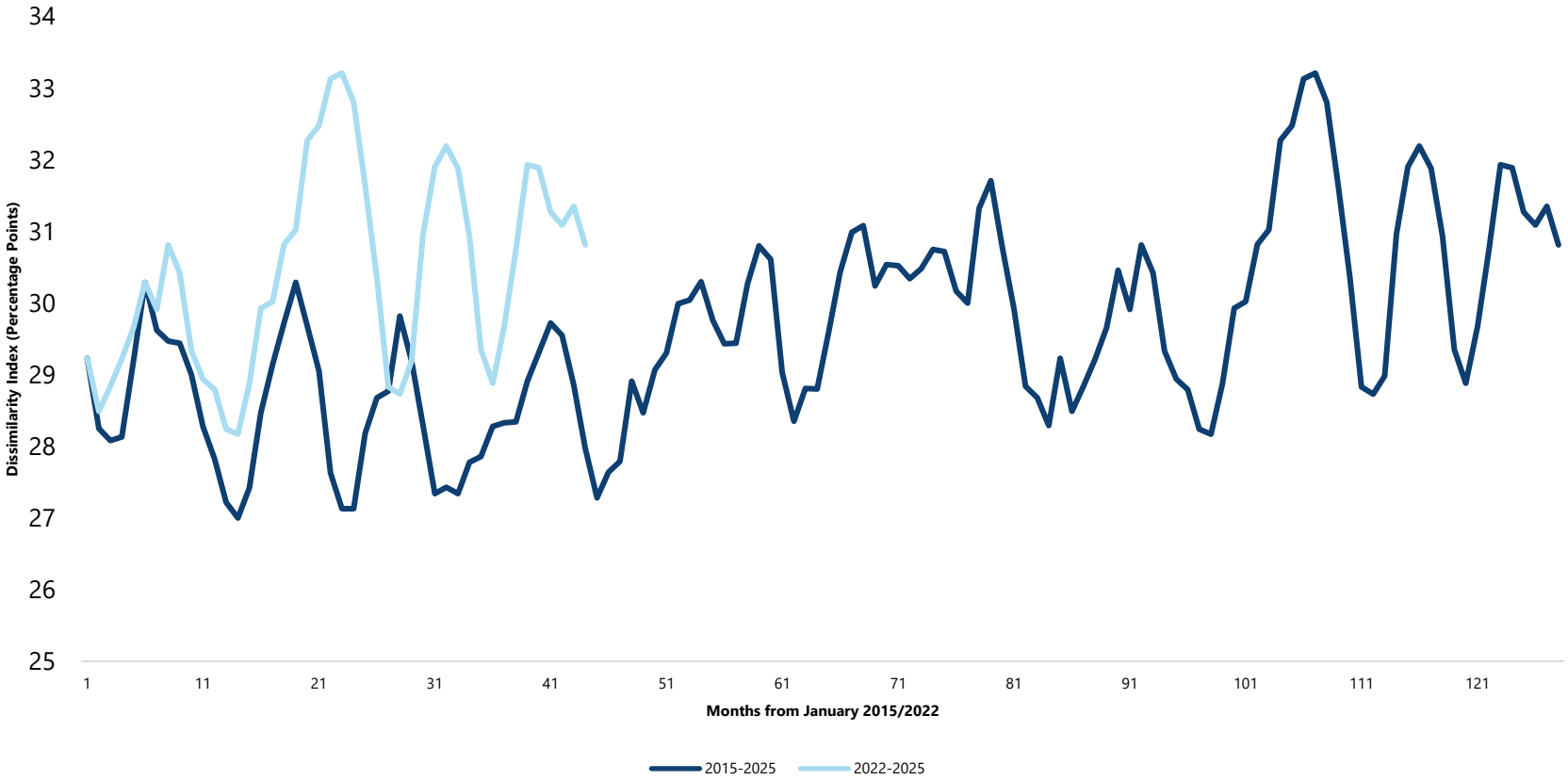
SOURCE: OpenAI Evals GDPval Leaderboard as of December 2025; Jefferies

US Labor Market Disruption: The Budget Lab at Yale

Dissimilarity in the Occupational Mix Between Recent College Grads (Ages 20-24) and Older College Grads (Ages 25-34)

Has Increased Slightly Faster in More Recent Months, Which Could be Consistent with a Possible Impact of AI on Employment of Early Career Workers

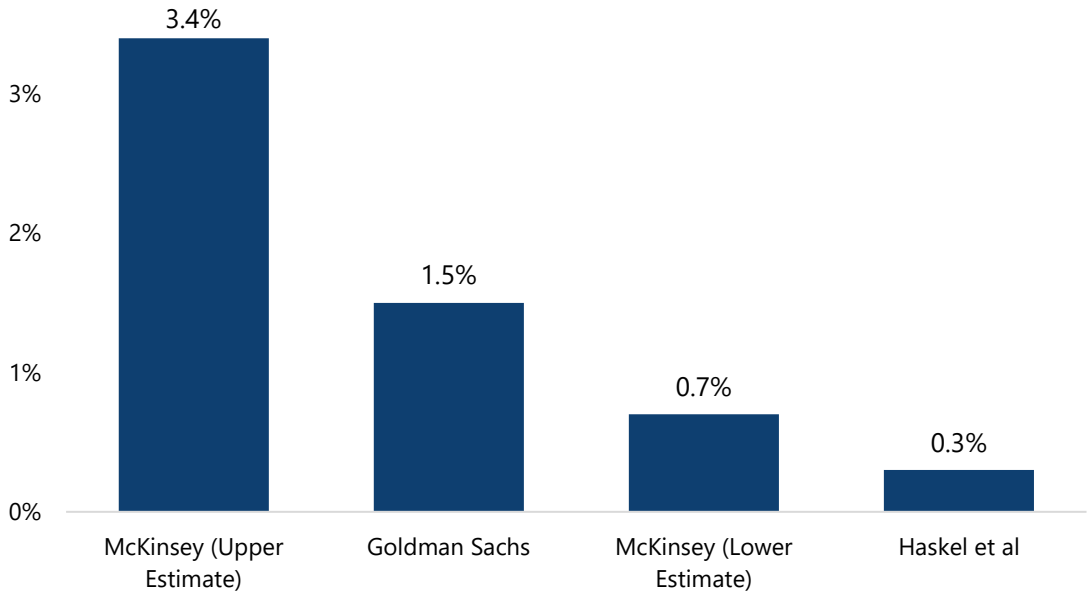
Dissimilarity Index calculated using a 3-month moving average of employment data



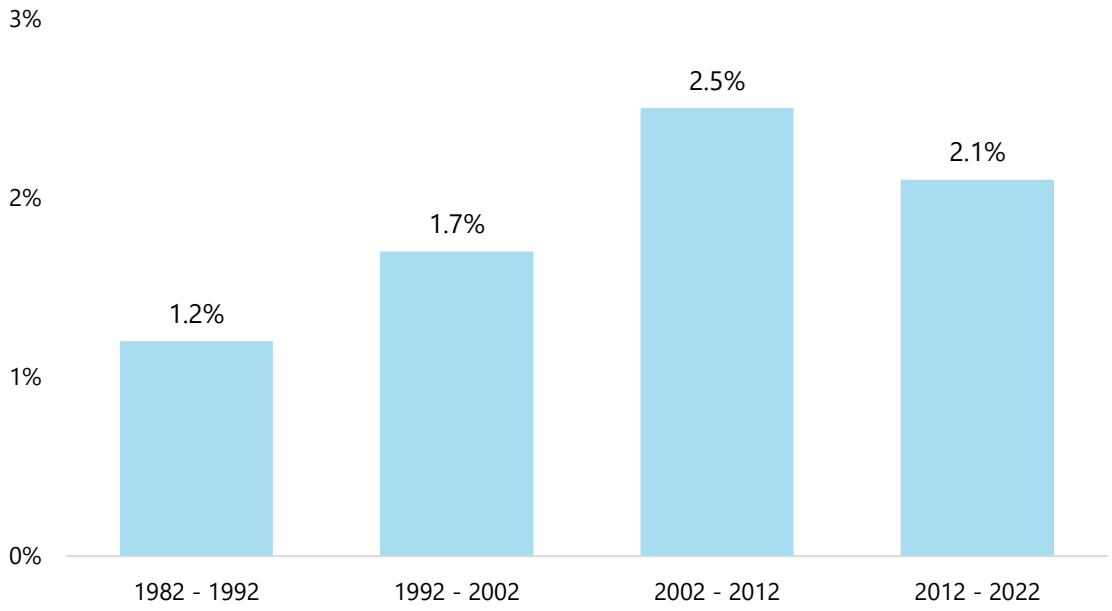
SOURCE: The Budget Lab at Yale (October 2025); Jefferies

Estimates of productivity gains from AI vary widely

Annual productivity growth (%) – Increase from AI over long term

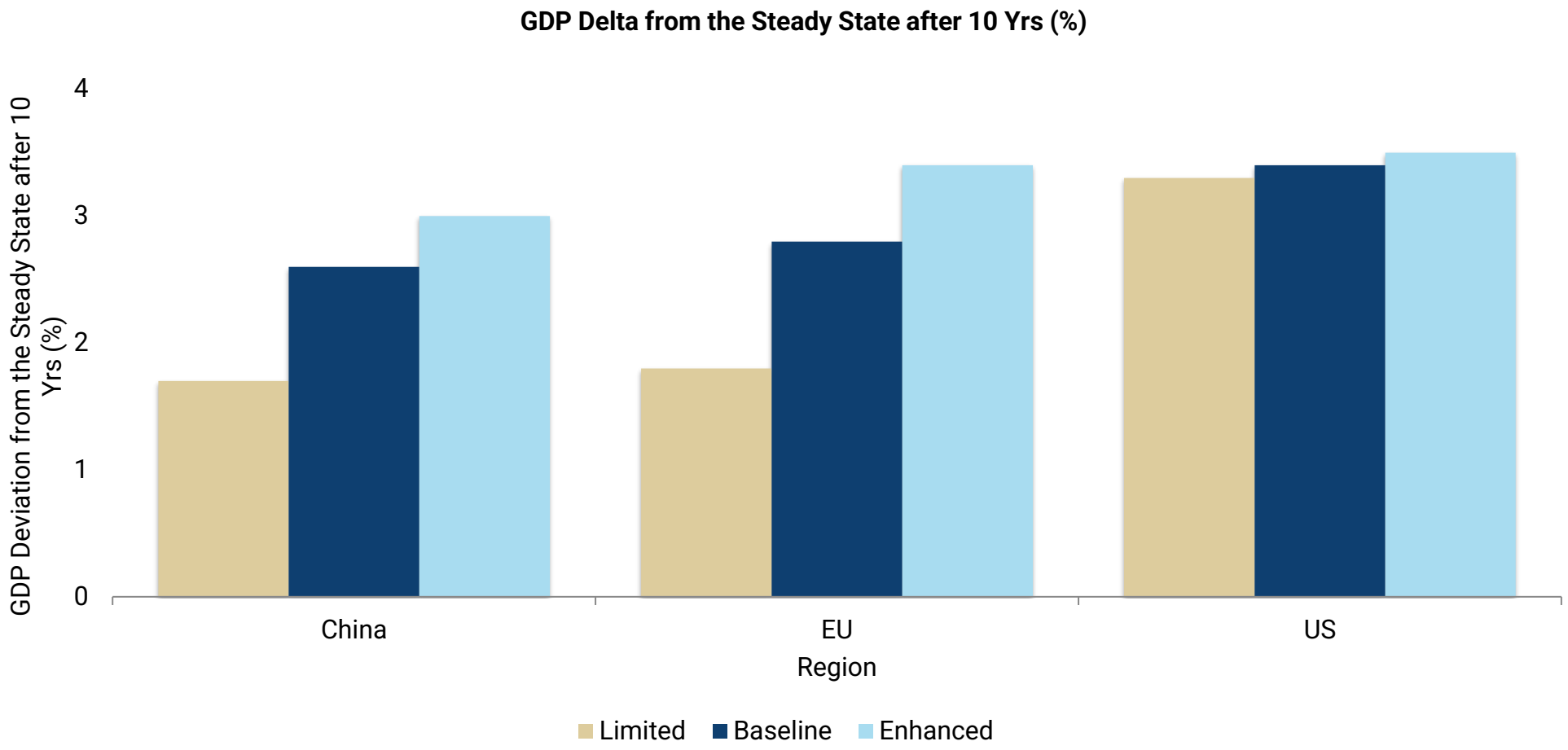


Annual productivity growth (%) – Historic Growth



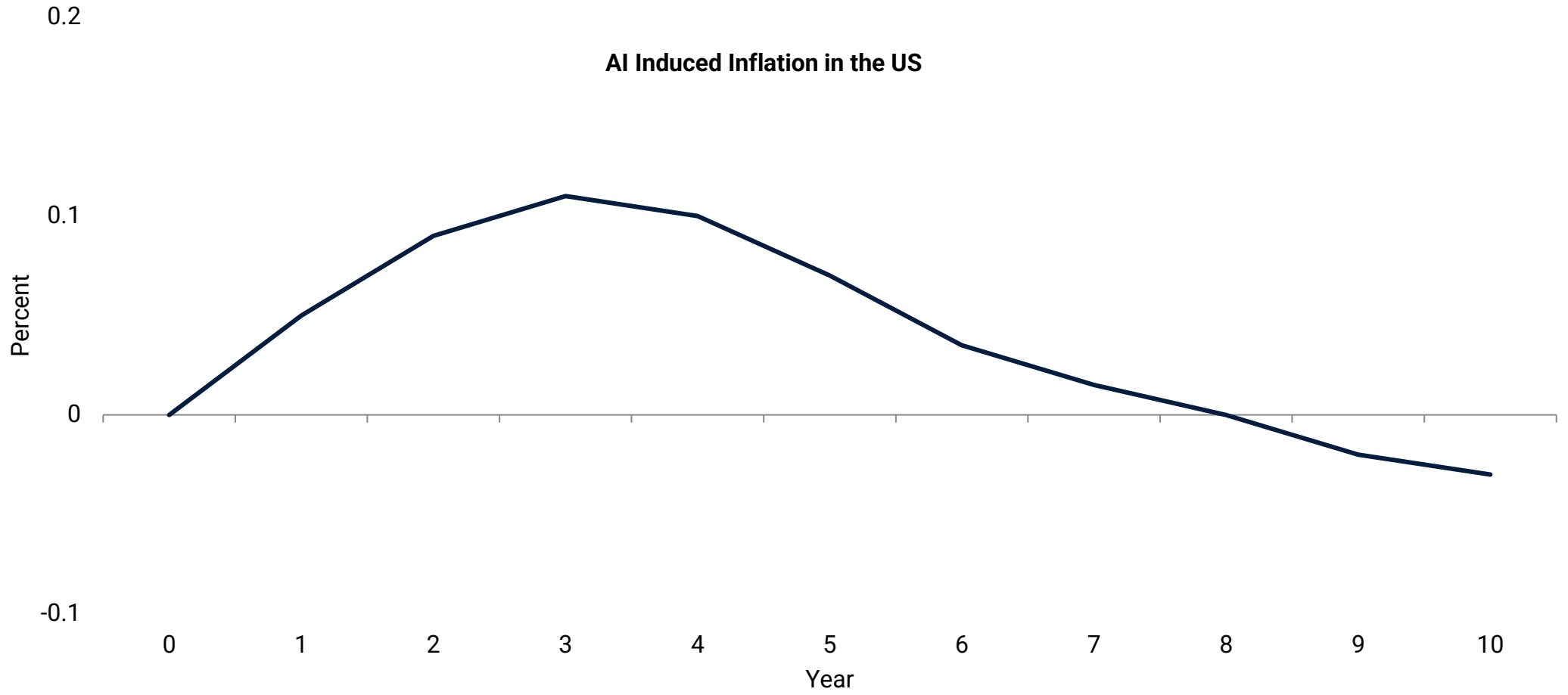
SOURCE: OBR, McKinsey, Goldman, Haskel et al, Jefferies

AI could lift GDP levels by 5-6% in the US next decade, lower elsewhere.



Source: Cerutti, E., A. Garcia Pascual, Y. Kido, L. Li, G. Melina, M. M. Tavares and P. Wingender "The Global Impact of AI: Mind the Gap" IMF Working Paper No. 25/76, April 2025.
Note: Chart shows % deviation of real GDP from steady state after 10 years under IMF's limited, baseline (high TFP growth path), and enhanced AI preparedness scenarios. AI preparedness covers institutions, digital infrastructure, workforce skills, regulatory frameworks, and government structures. Model-based scenario results (multi-region DSGE), not forecasts; magnitudes depend on assumptions about AI exposure, preparedness, and access.

AI productivity shocks are likely to have limited inflation impact.



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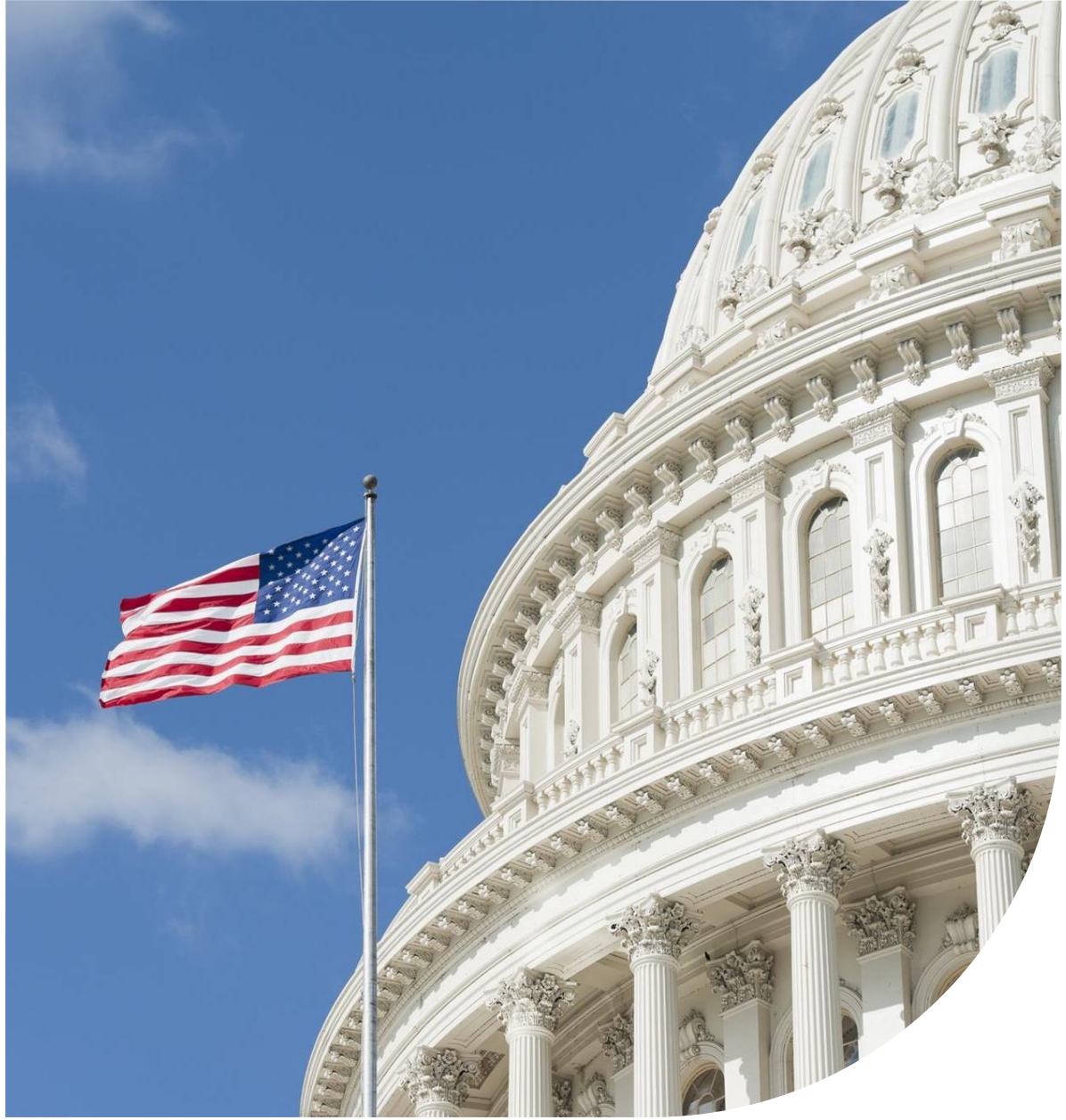
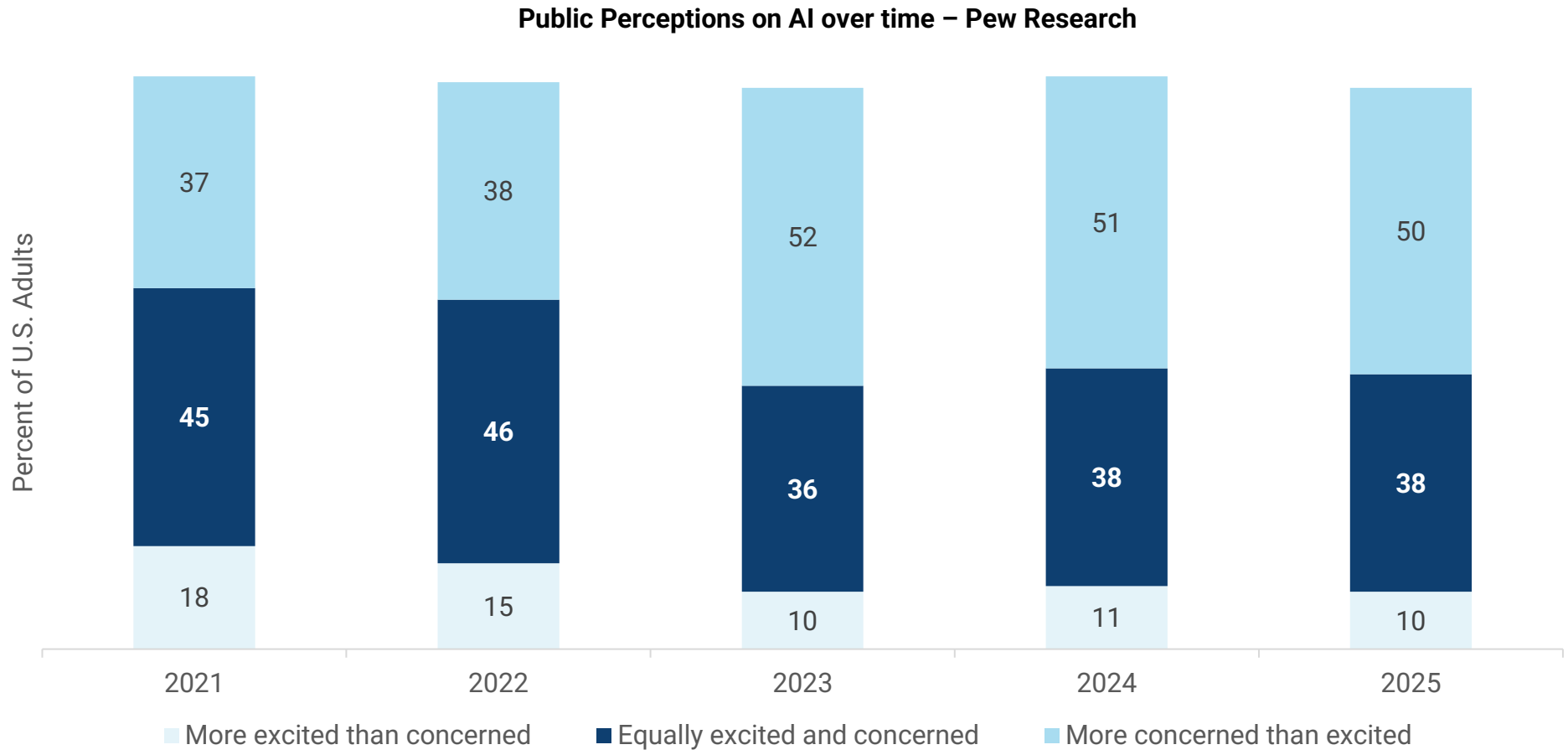
Note: The values are shown as deviations from the steady state.

3) Politics, Geopolitics & Climate Implications of AI



50% of Americans are more concerned than excited about increased AI use



Source: Pew Research Center. Survey of U.S. adults conducted June 9-14, 2025.
Note: The figures represent % of U.S. adults who responded to how the increased use of AI in daily life makes them feel; Respondents who did not give an answer are not shown.

States continue to enact AI laws despite federal preemption efforts.

State	Law (Citation)	Effective date	Scope	Core obligations	Enforcement & penalties
California	**SB 53** – Transparency in Frontier Artificial Intelligence Act	1-Jan-26	Developers of "frontier" foundation models (compute threshold; large developers) offering models in CA	Publish annual frontier AI framework (risk management for catastrophic harms), transparency reports, safety-incident reporting, whistleblower protections	CA AG and relevant agencies; civil penalties (up to $1M per violation cited by practitioners)
	AB 325 – Algorithmic pricing	1-Jan-26	Any use or distribution of "common pricing algorithms" that leverage competitor data	Prohibits anticompetitive use/distribution and coercion to adopt algorithm-recommended terms	Cartwright Act enforcement; antitrust remedies ($6mn per corporate violation, $1mn for individuals)
	AB 2013 – Training dataset disclosure for GenAI	Jan 1, 2026 (compliance date)	Developers of generative AI models available in CA	Publicly disclose training dataset details on website; update on material modifications	AG enforcement; civil penalties
Colorado	**SB24-205** – Consumer Protections for Artificial Intelligence (Colorado AI Act)	June 30, 2026 (delayed from Feb 1, 2026)	Developers and deployers of high-risk AI making or materially influencing consequential decisions (employment, lending, housing, education, healthcare, etc.)	Reasonable care duty; developer disclosures; deployer risk management program, impact assessments, annual review; consumer disclosure/appeal rights; incident reporting	AG exclusive enforcement
Texas	**HB 149** – Texas Responsible Artificial Intelligence Governance Act (TRAIGA)	1-Jan-26	Developers/deployers of AI systems	Baseline duties; categorical prohibitions (social scoring, discriminatory uses, unlawful deepfakes/child sexual abuse material); 36-month regulatory sandbox with legal immunity	AG exclusive enforcement

Source: National Conference of State Legislators AI Database, State legislative websites.

US vs China on AI – A key feature of the Geopolitical Tech Race

Artificial intelligence, computing & communications

Technology	Country 1	Country 2	Country 3	Country 4	Country 5
Advanced data analytics	**China**	**United States**	India	United Kingdom	Italy
AI algorithms and hardware accelerators	**China**	**United States**	India	South Korea	Taiwan
Machine learning	**China**	**United States**	India	United Kingdom	South Korea
Advanced integrated circuit design and fabrication	**China**	**United States**	India	Germany	South Korea
Adversarial AI	**China**	**United States**	India	Australia	Saudi Arabia
Natural language processing	**United States**	**China**	India	United Kingdom	South Korea

Quantum technologies

Technology	Country 1	Country 2	Country 3	Country 4	Country 5
Post-quantum cryptography	**China**	**United States**	India	Germany	United Kingdom
Quantum computing	**United States**	**China**	United Kingdom	Germany	Japan
Quantum communication	**China**	**United States**	Germany	United Kingdom	Poland
Quantum sensors	**United States**	**China**	Germany	India	Japan

Source: ASPI, Jefferies

AI – A Positive for Climate

Grantham Research Institute identify **5 key impact areas** through which AI can support the climate action across mitigation, adaptation & resilience:

1. Transforming complex systems
2. Accelerating technology discovery & resource efficiency
3. Nudging & behavioural change
4. Modelling climate systems and policy interventions
5. Managing resilience and adaptation

AI applications in only **3 sectors (power, food, & mobility) could reduce emissions by 3.2–5.4 GtCO2e pa by 2035.** This more than offsets the **projected 0.4–1.6 $GtCO_2e$ increase** from all AI-related data center emissions

SOURCE: How AI Can Supercharge the Energy Transition & Climate Action Roberta Pierfederici, Grantham Research Inst

AI Will Pull Forward “Precipice Technologies”

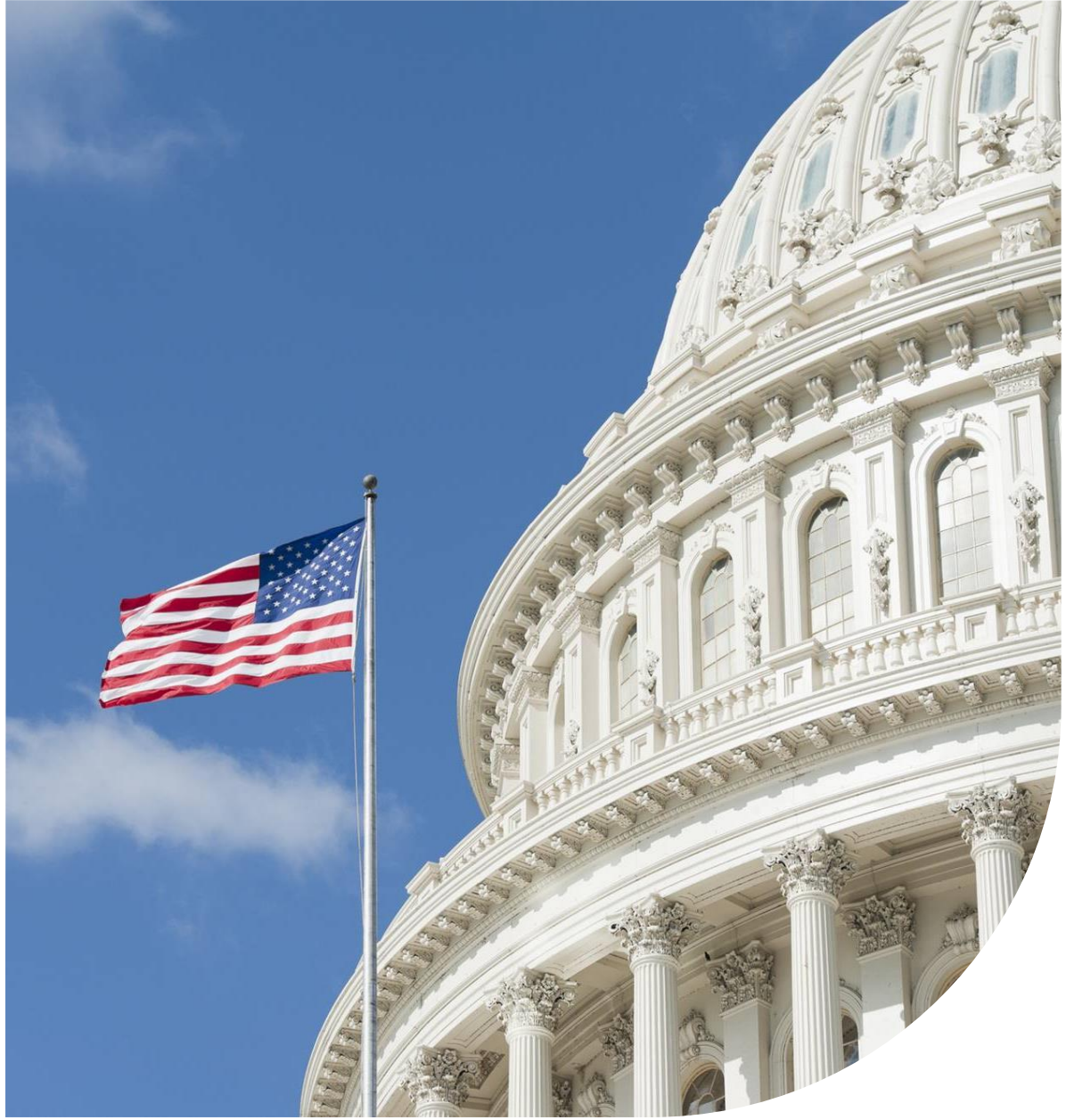
Microsoft Signs Deal to Remove 3.7 Million Tons of CO2

Talen Energy and Amazon sign nuclear power deal to fuel data centers

Google, Kairos and Tennessee Valley Authority ink landmark nuclear power deal

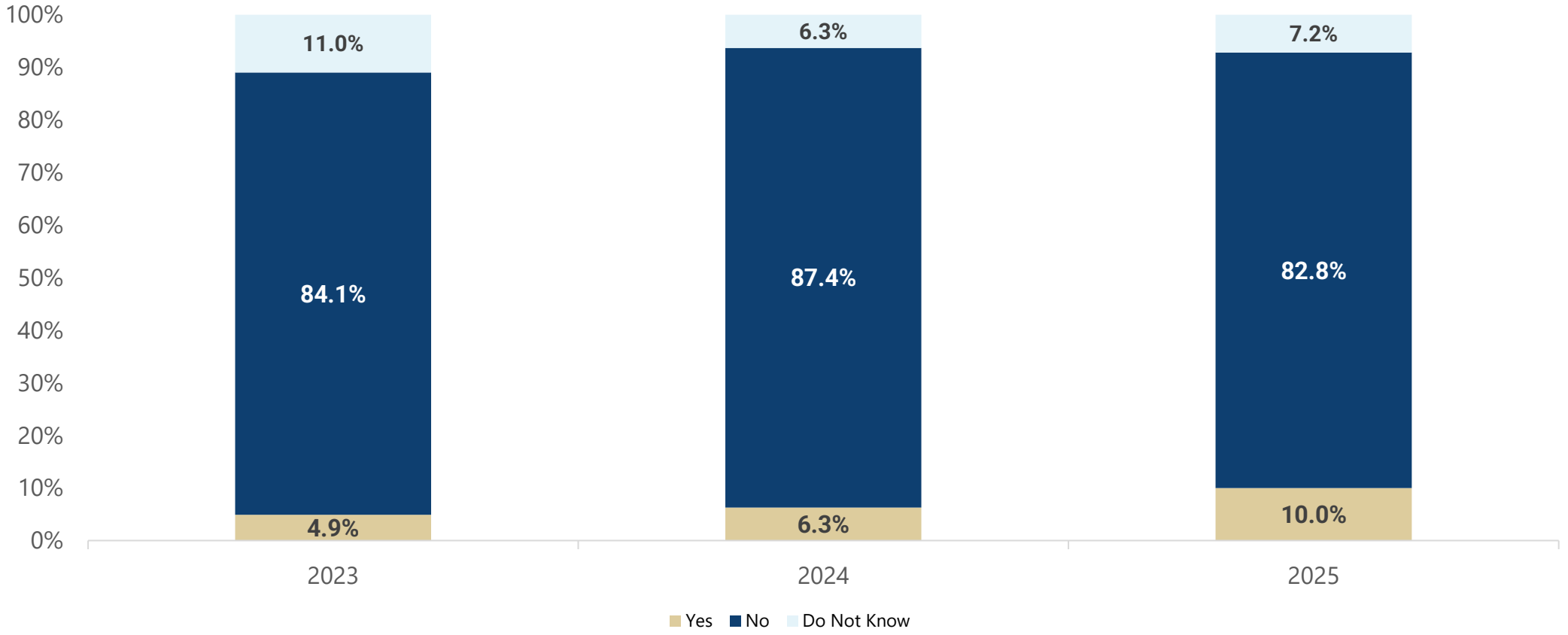
Google DeepMind to undertake research partnership with nuclear fusion firm CFS

4) Corporate Adoption, Strategy & Financial Performance of AI



Over 80% of U.S. businesses report not using AI in production.

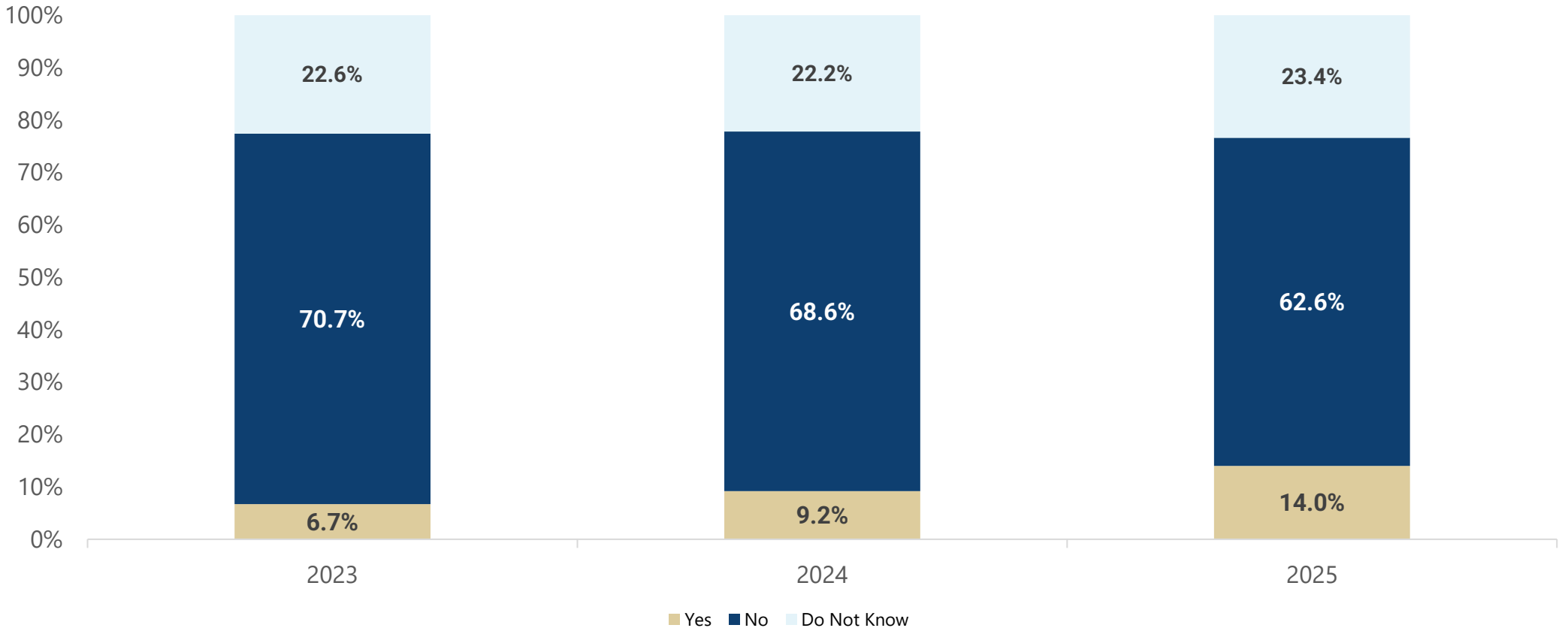
Q: In the last two weeks, did this business use Artificial Intelligence in producing goods or services?



Source: U.S. Census Bureau, Business Trends and Outlook Survey (BTOS) 2023-2025.
Note: Values represent the last available BTOS reading of each calendar year shown.

Expected AI use remains low over the next six months.

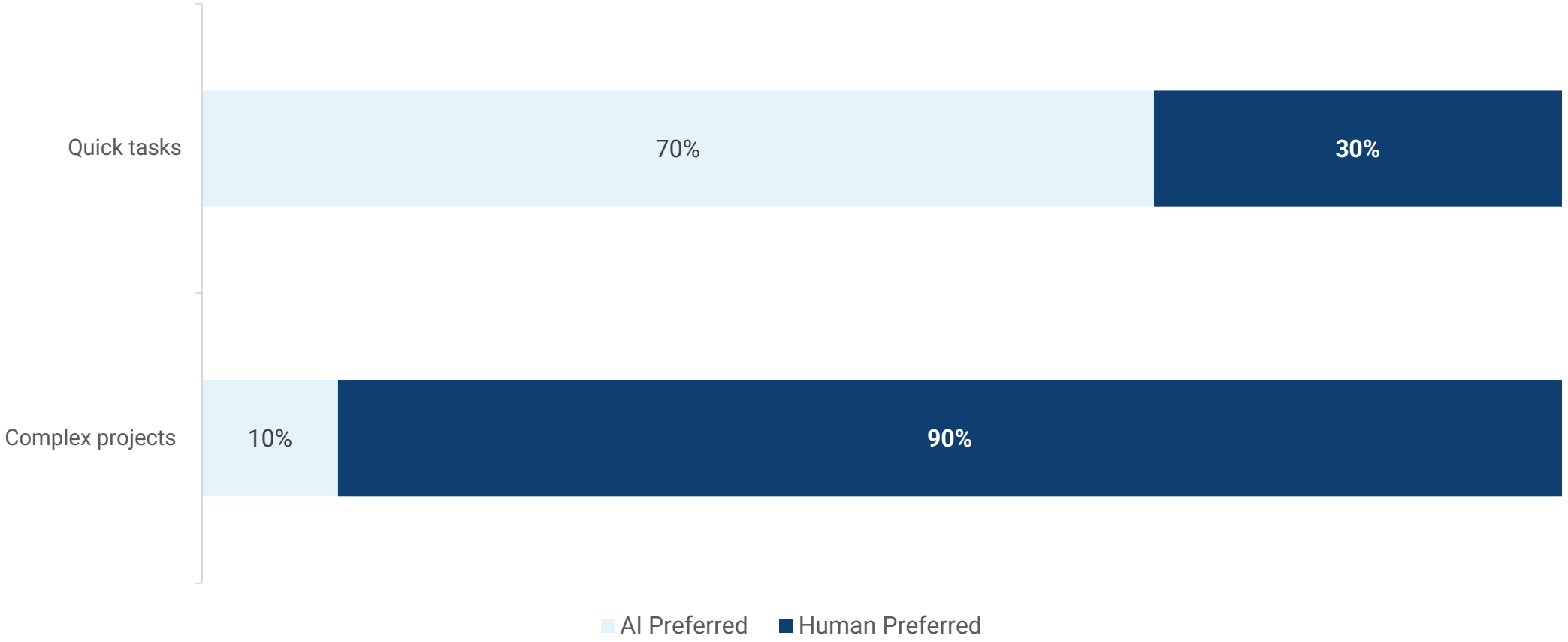
Q: During the next six months, do you think this business will be using Artificial Intelligence in producing goods or services?



Source: U.S. Census Bureau, Business Trends and Outlook Survey (BTOS) 2023-2025.
Note: Values represent the last available BTOS reading of each calendar year shown.

Most business leaders surveyed prefer humans for complex projects.

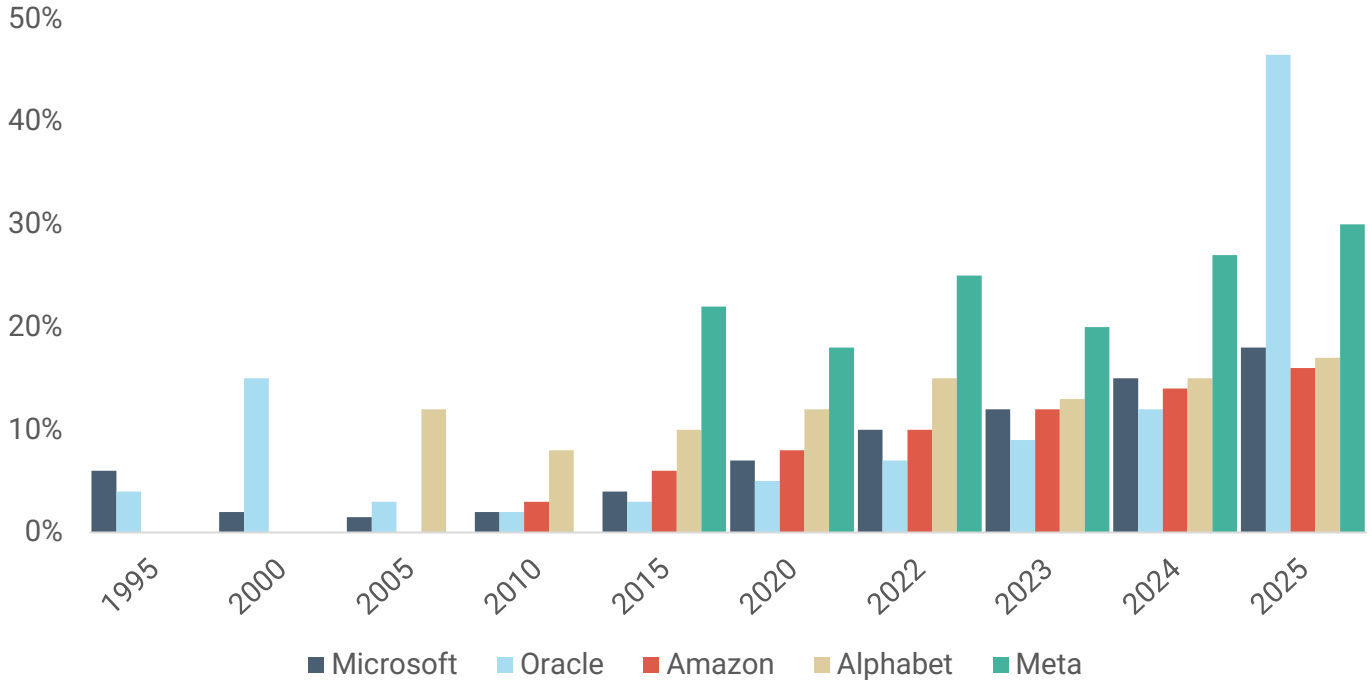
Q: Would you assign this task to AI or a junior colleague?



Source: MIT Media Lab – Project NANDA, The GenAI Divide: State of AI in Business 2025.
Note: Quick tasks = Emails, summaries, and basic analysis. Complex projects = Multi-week work and client management. Methodology: 52 structured interviews across enterprise stakeholders, systematic analysis of 300+ public AI initiatives and announcements, and surveys with 153 leaders.

Tech Giants CapEx – Uncharted Territory

CapEx as a percentage of revenue, trailing 4Qs

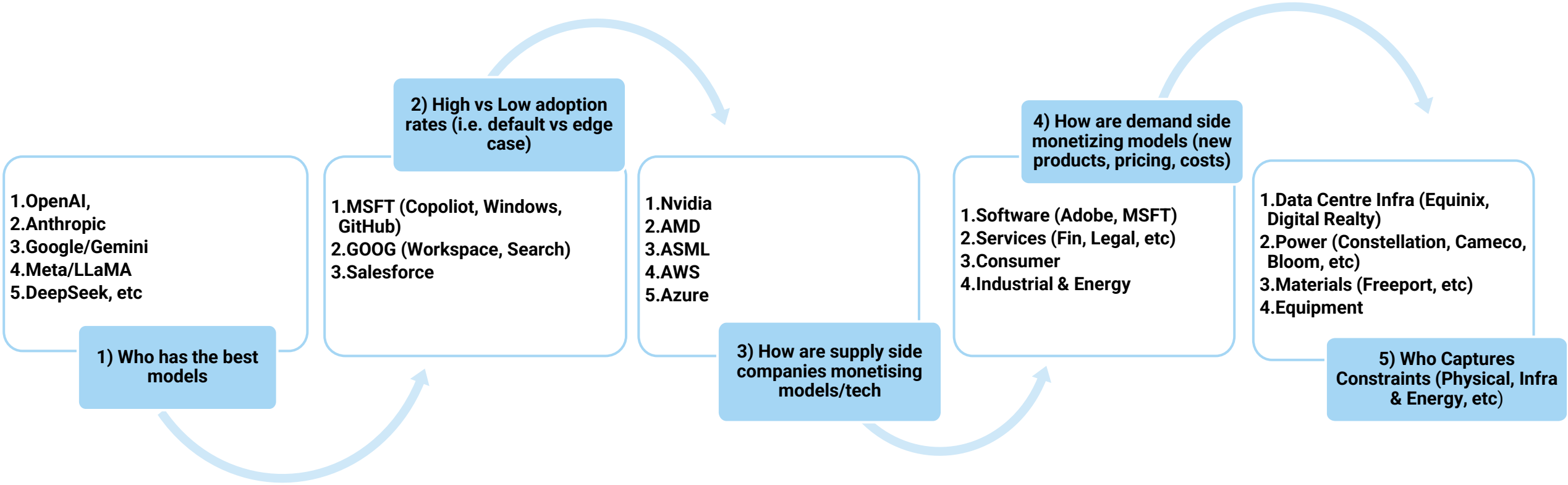


CapEx Spend ($) – trailing 4Q

Top 10, Oct. 2025	CapEx ('25)	Top 10, Oct. 2015	CapEx ('15)
Amazon	$107.7bn	Chevron	$33.2bn
Alphabet	$67.0bn	Exxon Mobil	$31.0bn
Microsoft	$64.6bn	AT&T	$17.9bn
Meta Platforms	$52.2bn	Verizon	$16.9bn
Oracle	$27.4bn	Berkshire Hathaway	$15.9bn
Exxon Mobil	$25.2bn	Conocophillips	$14.7bn
Walmart	$24.7bn	Hertz	$13.9bn
AT&T	$21.3bn	Intel	$13.9bn
Intel	$21.0bn	Walmart	$12.1bn
Nextera Energy	$20.7bn	Avis Budget	$11.8bn

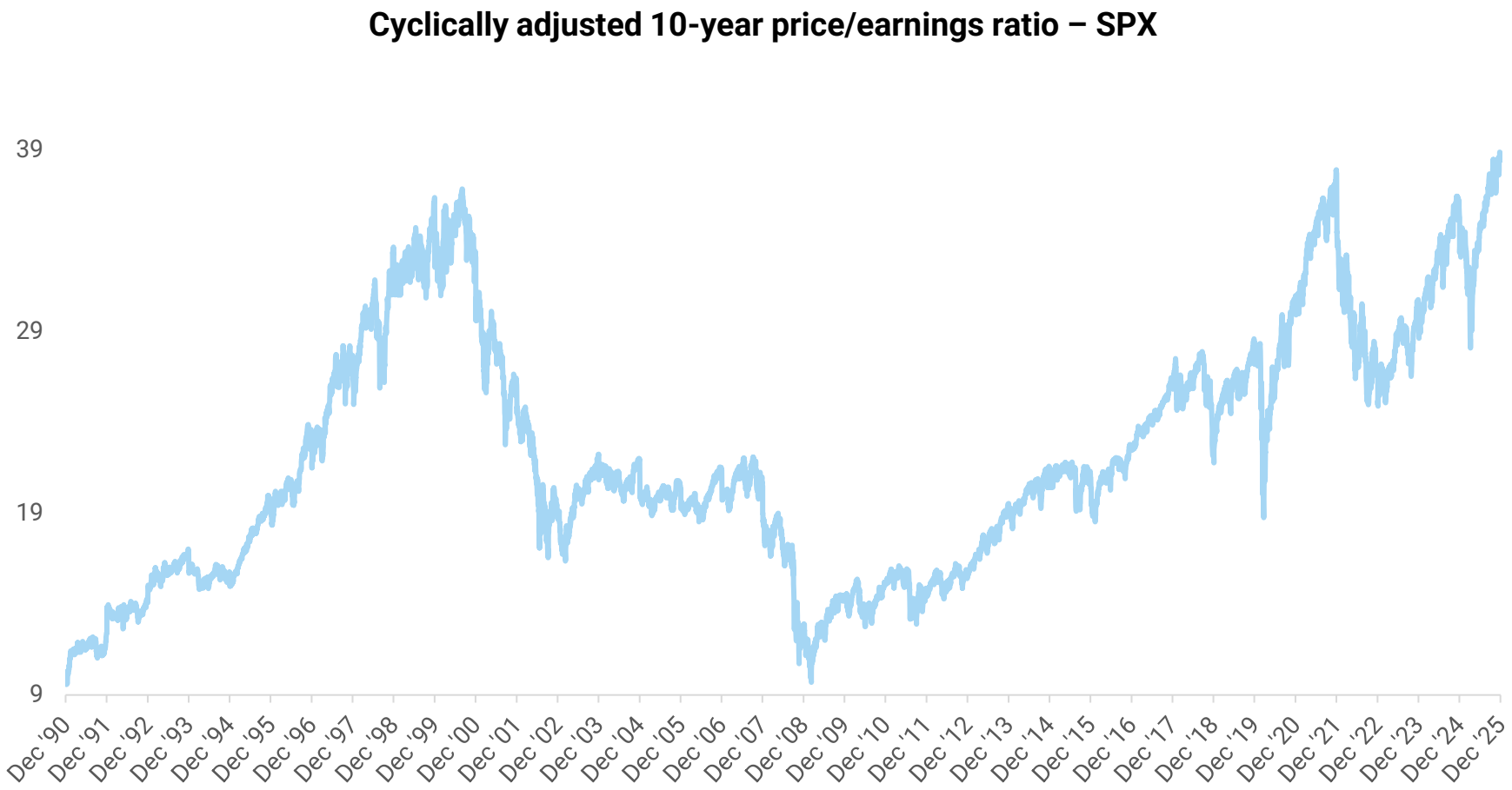
SOURCE: Company reporting, BloombergLP; Jefferies

Winners & Losers



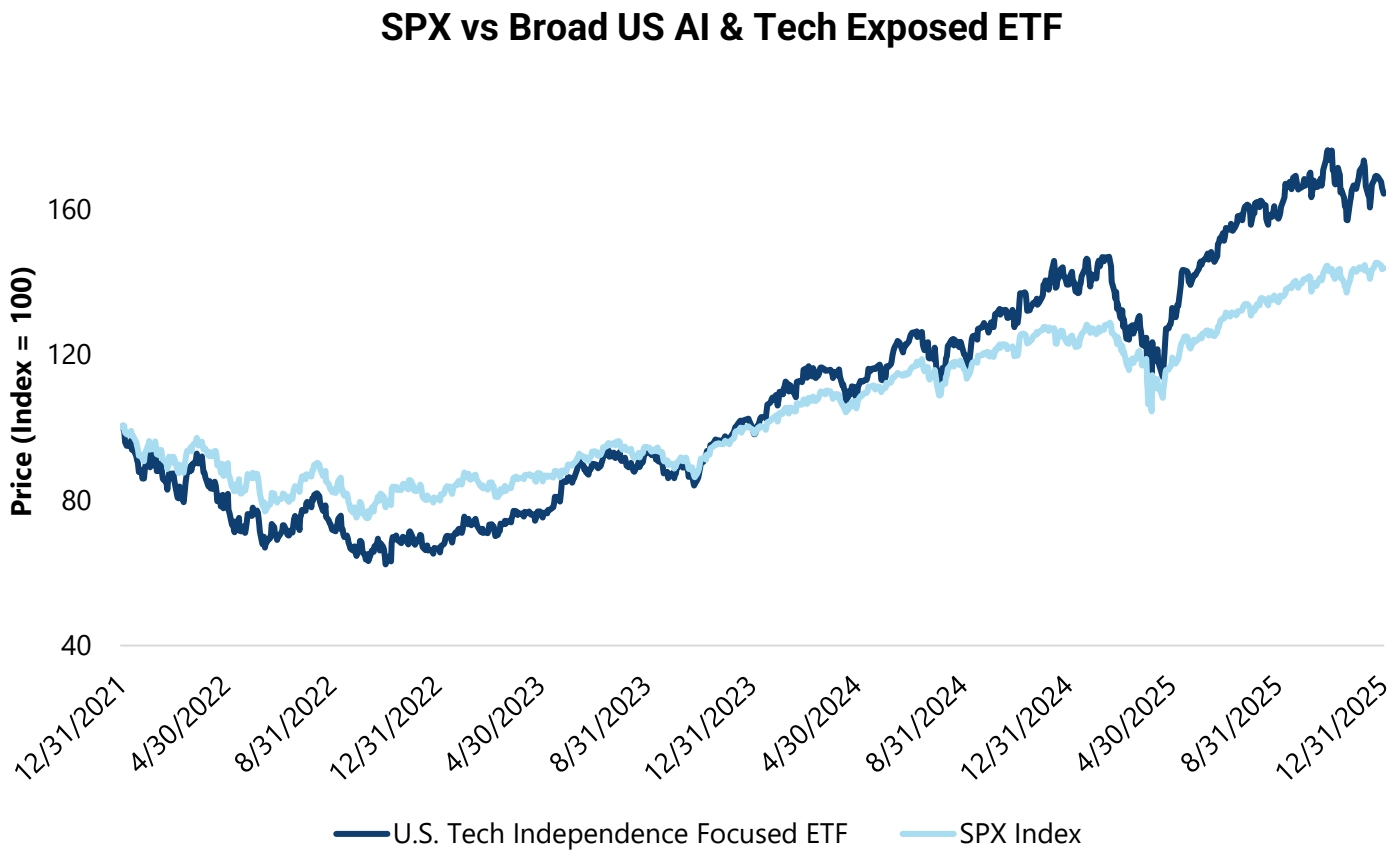
SOURCE: Jefferies

Are We in a Financial Bubble?



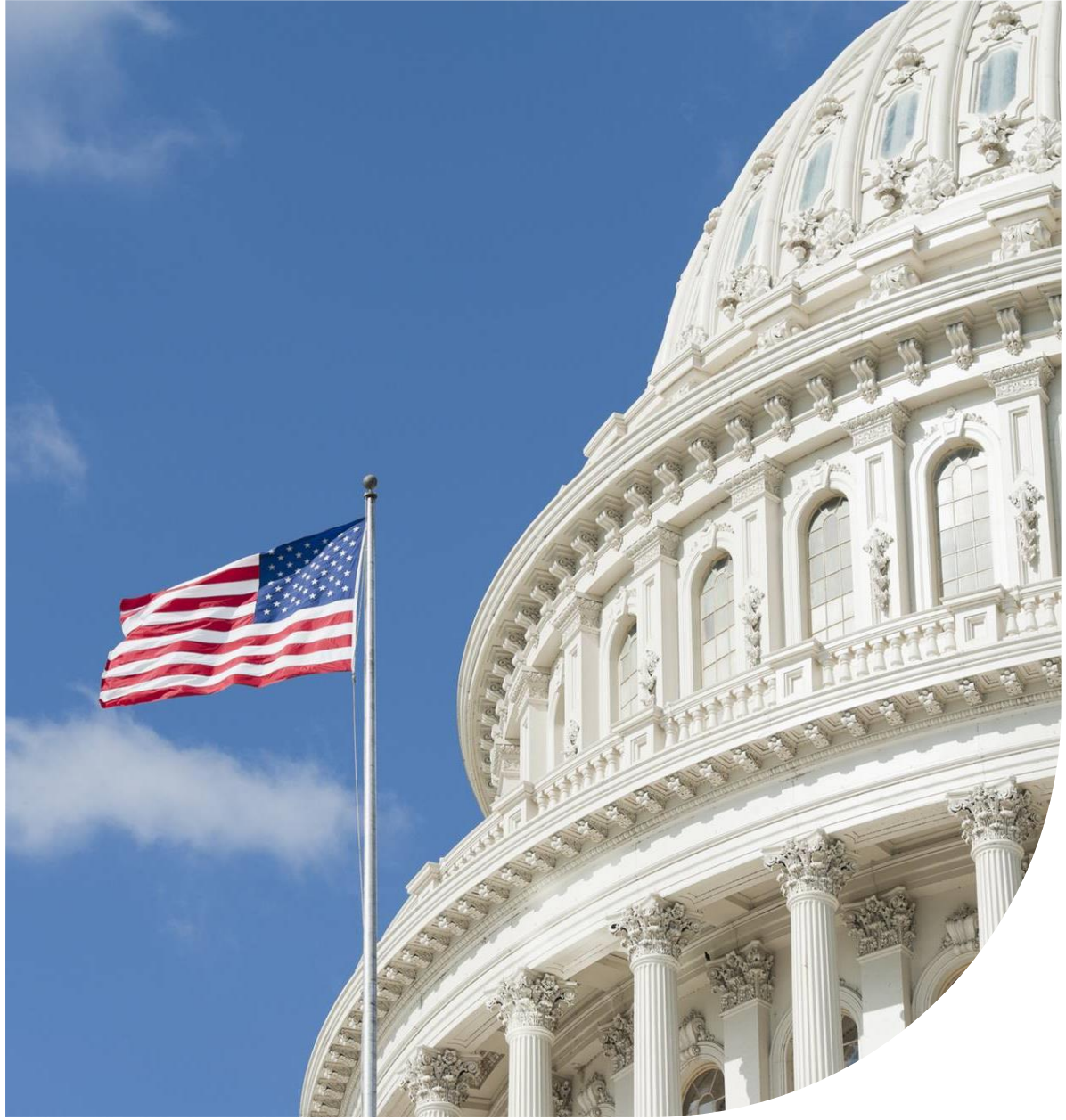
SOURCE: BloombergLP, Jefferies

Are We in a Financial Bubble?

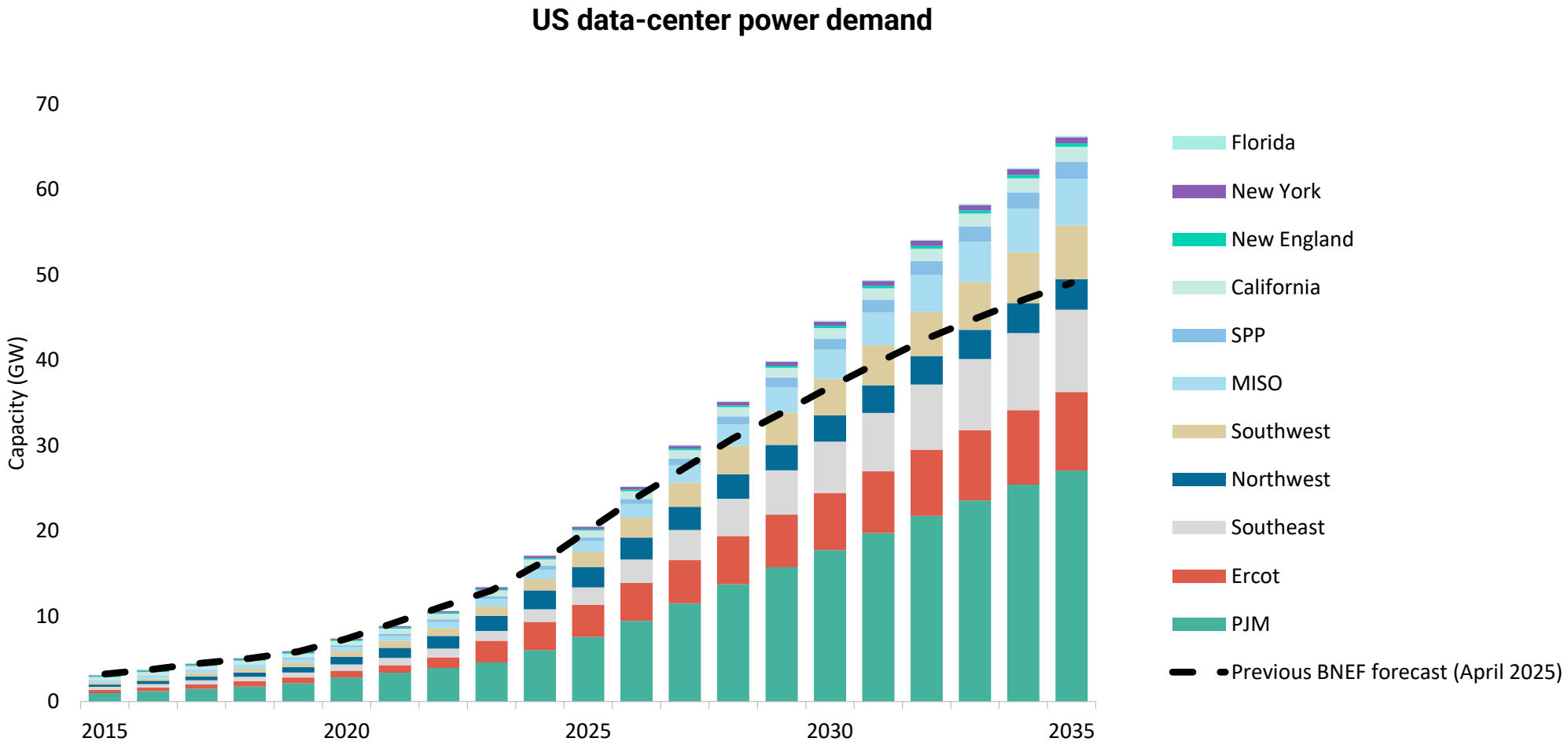


SOURCE: BloombergLP, Jefferies

5) Appendix

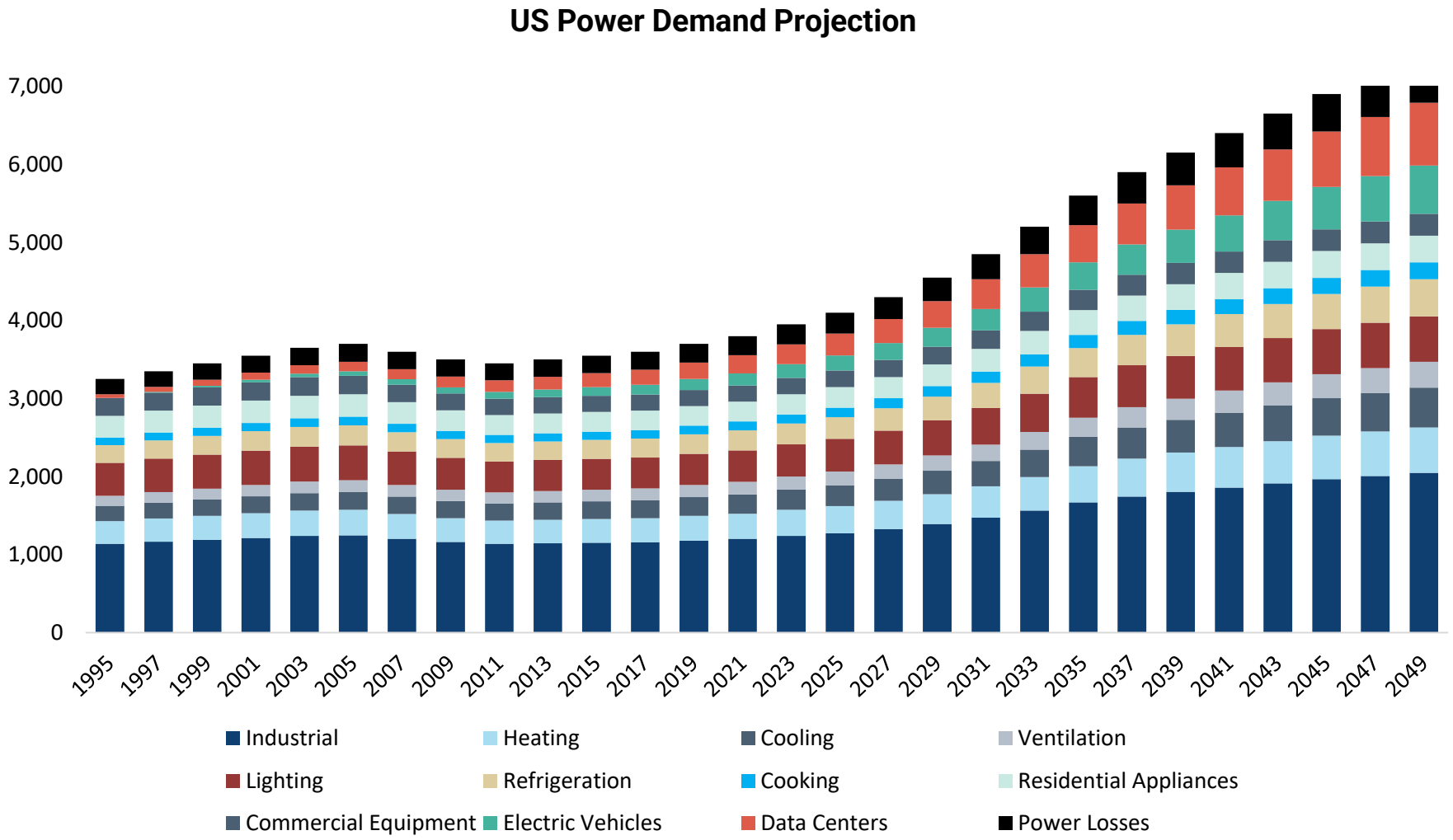


AI Power Demand – A Highly Regional Picture



SOURCE: Jefferies, BloombergNEF, IEA

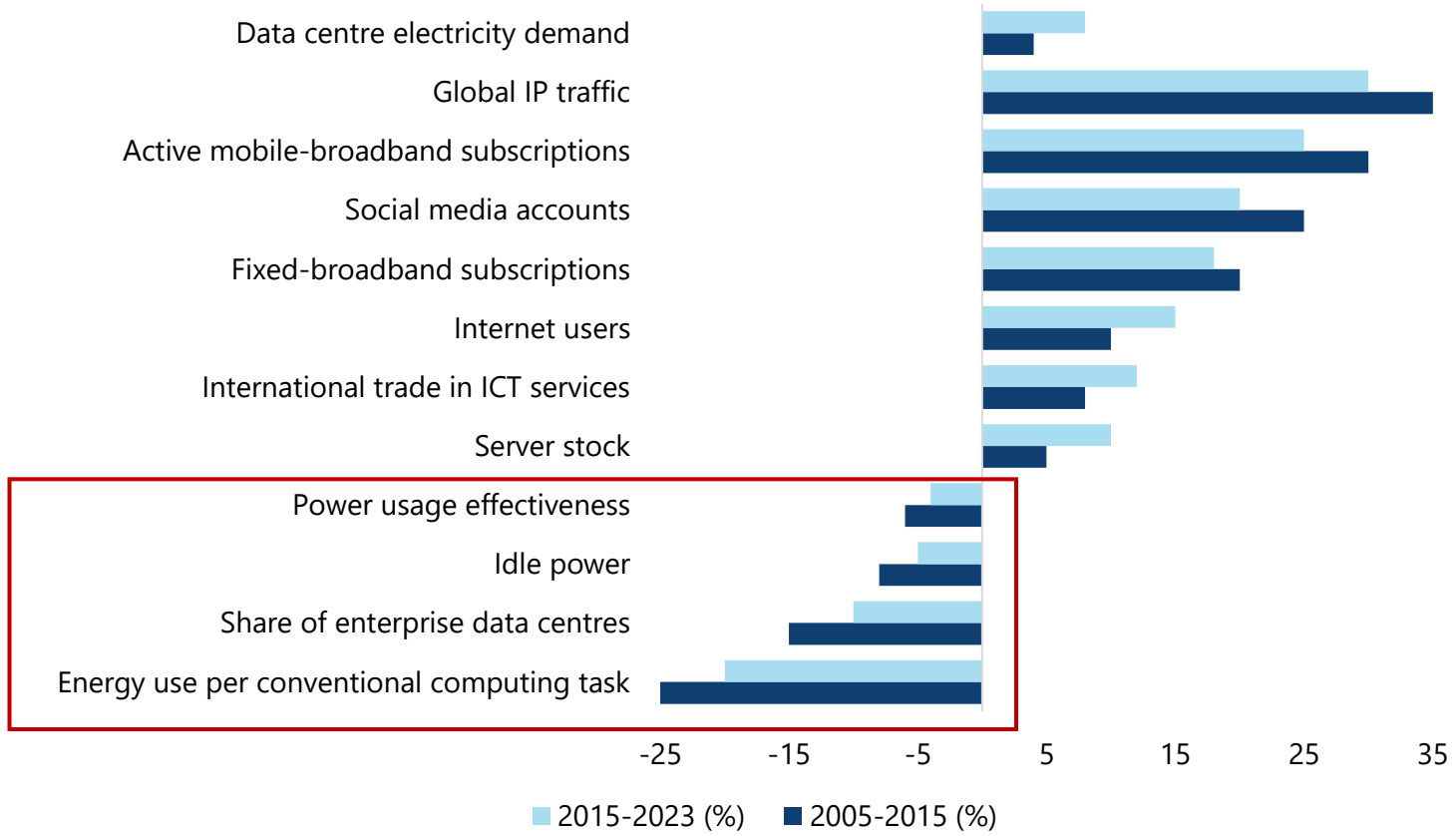
US Load Set to Grow – Data Center Agnostic



SOURCE: Jefferies, ThunderSaid Energy, IEA WEO 2025

AI Power Demand Growth – Linked to AI Adoption & Efficiency Improvements

Avg annual change in key drivers of data center power consumption globally, 2005-2015 vs 2015-2023

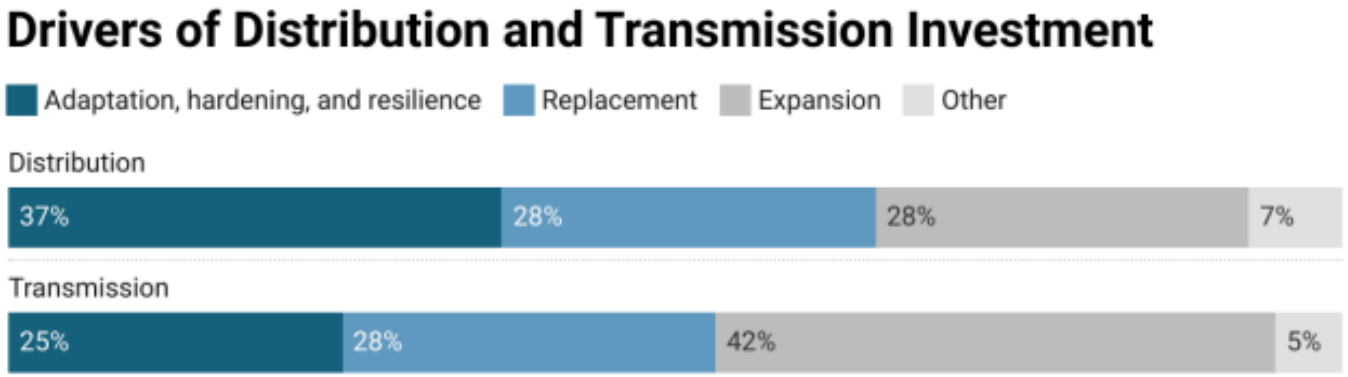


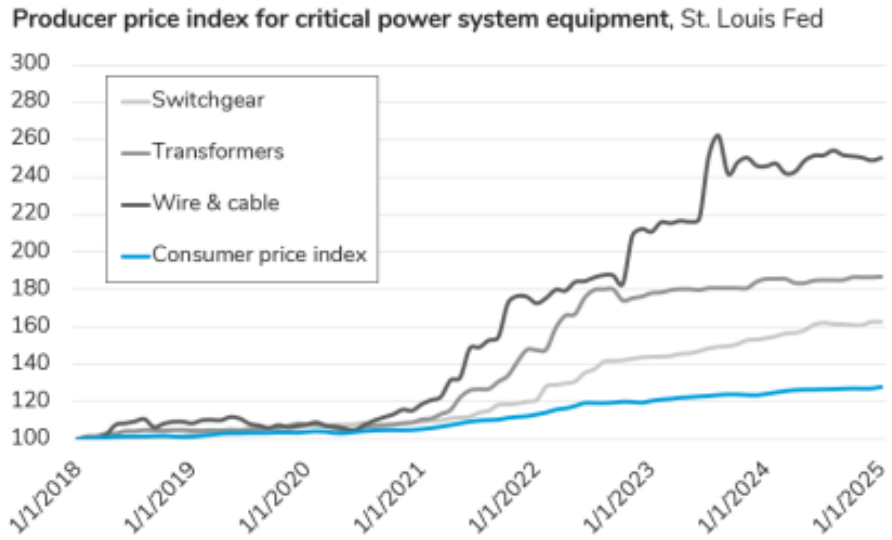
Robust service demand growth, an acceleration in servers and a slowdown in efficiency saw faster power demand growth

SOURCE: Jefferies, IEA Energy & AI

Power CapEx – Transmission, Distribution & Other Costs

T&D CapEx are the largest drivers of retail price increases – direct generation costs have declined nationally





Source: Lawrence Berkely National Lab, FERC, Jefferies

Jefferies | Washington Strategy