CLARITY

The AI bubble question: Six signals we're watching

PUBLISHED BY THE WEALTH CHIEF INVESTMENT OFFICE

TIAA Wealth Management

SEPTEMBER 2026

EXECUTIVE SUMMARY

- **AI demand is real, but pricing may be ahead of it.** Valuations aren't at dot-com extremes, but they assume ~20% annual EPS growth versus an 8% historical norm, leaving little room for disappointment.
- **The ROI timeline is stretched.** Hyperscalers are on pace to invest over $1 trillion in capital expenditures (capex) by 2027, increasingly funded by debt ($220B in bond issuance in 2026 alone), with returns not expected to materialize until 2028—well beyond markets' typical three-to-six-month horizon.
- **Leverage and politics add fragility.** Rising retail margin debt could amplify any correction, while growing local opposition to data centers (NIMBY resistance) poses an underappreciated regulatory risk heading into midterms.
- **Scarcity cuts both ways.** Surging demand for chips, power, and skilled labor confirms AI's real economic pull, but persistent shortages could delay the buildout and fuel inflation, potentially forcing the Fed's hand and raising financing costs.
- **The bigger risk is disengagement, not volatility.** Rather than one bubble, markets are moving through a rolling series of corrections across software, materials, and chips. History suggests the enduring winners stay invested through the noise rather than attempt to time it.



Niladri 'Neel' Mukherjee
TIAA Wealth Management
Chief Investment Officer



Alberto Favalli-Ragusini
TIAA Wealth Management
Director, Investment Strategy

At a client event in Rhode Island this summer, nearly half the questions I received centered on artificial intelligence (AI) and AI-related investments. One answer, in particular, seemed to stop the room. I described how Nvidia CEO Jensen Huang, speaking at a technology conference in Asia, casually remarked that semiconductor company Marvell Technology could become "the next trillion-dollar company." There was no acquisition announcement, no earnings release, and no major product launch—just a brief expression of confidence. By the next day's close, Marvell's stock had surged more than 32%, its largest single-day gain on record, adding roughly $50 billion in market value.[1]

For many investors, it felt like the kind of market behavior that inevitably sparks questions about speculation, exuberance, and whether expectations have begun running ahead of reality. Those questions are understandable. In fact, some version of "Is AI a bubble?" has come up at nearly every client event I've attended this year.

Bubble spotting is appealing precisely because bubbles rarely look like bubbles from the inside. Rising prices feel like vindication, new technologies offer compelling narratives, and skeptics appear uninformed rather than prescient. Markets aggregate the judgment of millions making real bets, and those millions are sometimes right—which is exactly what makes timing a crash so difficult.

What history consistently shows, though, is that most bubbles form around real secular trends. The dot-com crash was harsh, but it didn't invalidate the internet. As it turns out, investors were simply early, sometimes by a decade. Amazon survived being declared "Amazon.bomb" to become one of the most valuable companies ever created. The underlying idea was sound; the problem was too much capital piled in too soon.

The same logic applies here. AI demand is real and broad-based as companies across finance, manufacturing, academia, and beyond are actively deploying it and pushing their workforces to adopt it. We are not going back to a world without AI. But whether the current pace of investment is sustainable, and whether expected returns will materialize on the timelines the market has priced in, are questions my team evaluates carefully. With that in mind, here are six signals we are actively monitoring.

Signal #1: Valuations

Today's price-to-earnings (P/E) ratios[2] are nowhere near the stratospheric levels of the late 1990s. Back then, companies with no revenue, no profits, and no credible path to either were valued in the billions. That is emphatically not the case today. The companies driving the AI build-out—the hyperscalers,[3] the semiconductor manufacturers, the infrastructure providers—are well-capitalized, long-established, and genuinely profitable.

That said, current valuations are underpinned by earnings expectations that are significantly above historical norms. The long-term average earnings-per-share (EPS) growth for the S&P 500 is roughly 8% annually. Markets are currently pricing in something closer to 20% growth—or higher—over the next several years. If those expectations prove correct, today's valuations are quite defensible. If earnings growth were to slow materially, for any reason, the math would look very different, very quickly.

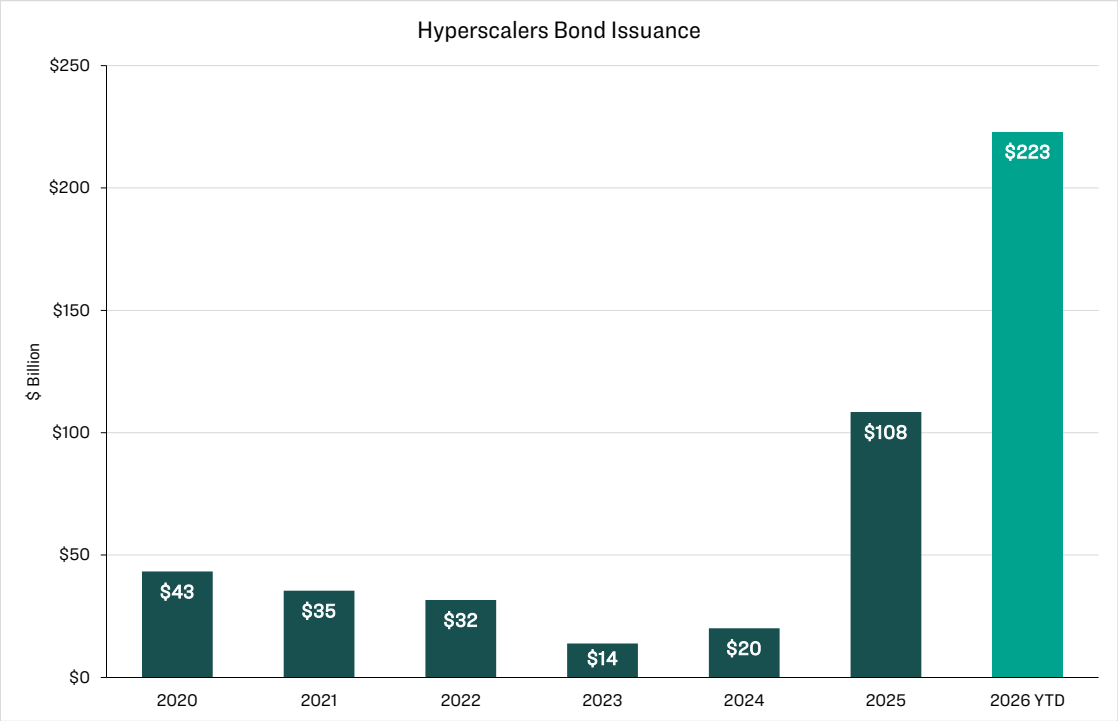
Signal #2: Return on investment (ROI)

The five largest hyperscalers (Alphabet, Amazon, Microsoft, Meta, and Oracle) are projected to invest close to $800 billion in capital expenditures in 2026 alone, rising to more than $1 trillion in 2027.

To put that in context, these companies were spending roughly 75% of their operating cash flow on AI capital expenditures last year. This year, that figure is tracking toward 100%. To bridge the gap between cash generation and investment needs, these companies have accelerated their use of debt financing, increasing bond issuance from approximately $20 billion two years ago to $108 billion last year and roughly $220 billion so far in 2026[4] (Figure 1). Given the pace of this issuance, we are watching credit spreads, or the additional yield investors require to own corporate bonds over comparable Treasury bonds, closely. They remain contained for now, suggesting bond markets have not yet grown uneasy about the scale of hyperscaler borrowing.

FIGURE 1

The AI buildout is driving significant financing needs.



Source: Bloomberg, TIAA Wealth Chief Investment Office. Data through Q2 2026.

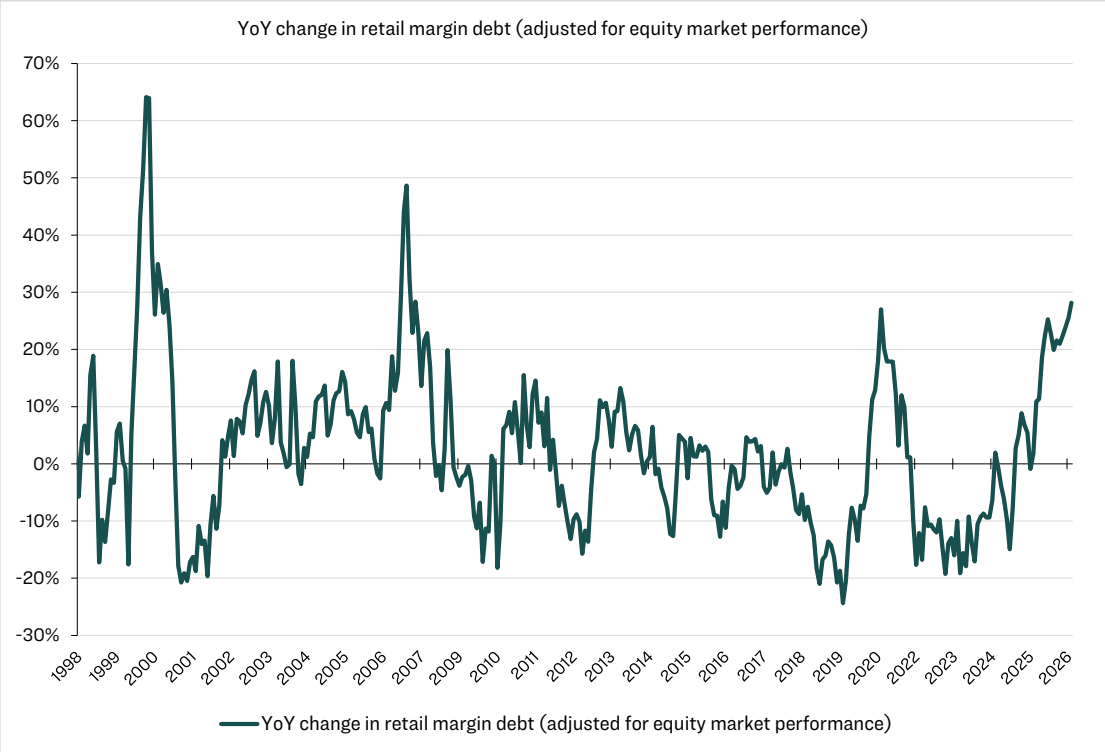
Markets are, in effect, making a bet that the return on all this data-center spending will materialize by around 2028, when cash flow projections for these companies pick up significantly. But markets typically trade on projections three to six months out, not three to five years out—and that disconnect helps explain why hyperscalers have actually underperformed the broader market over the past year. This underperformance is occurring even as AI enthusiasm drives semiconductor and infrastructure stocks higher. The margin for error has shrunk considerably for hyperscalers, and investors are currently rewarding the beneficiaries of data-center spending rather than the hyperscalers themselves. If those longer-horizon returns fail to materialize on schedule, sentiment could shift quickly.

Signal #3: Leverage

Margin debt in retail brokerage accounts—money individual investors borrow to buy additional stock—has picked up meaningfully, reaching some of the highest levels since the pandemic, though still well below the peaks seen in 1999 or 2006-07 (Figure 2). This suggests a meaningful number of retail investors are using leverage to build exposure to AI-related equities. It's a dynamic worth watching, since leverage tends to amplify market moves in both directions. In the event of a market pullback—whether triggered by disappointing earnings, a shift in sentiment, or higher borrowing costs—elevated margin debt could make the decline somewhat sharper than it might otherwise be, as investors who borrowed to purchase stocks may be forced to sell those holding to meet margin calls. That said, this leverage is concentrated among a subset of investors and is a trend we're keeping an eye on as part of our broader market monitoring.

FIGURE 2

Growth in margin debt in retail brokerage accounts has accelerated to one of the highest levels in decades.



Source: FINRA, TIAA Wealth Chief Investment Office. Data through Q2 2026. YoY denotes Year-over-Year growth.

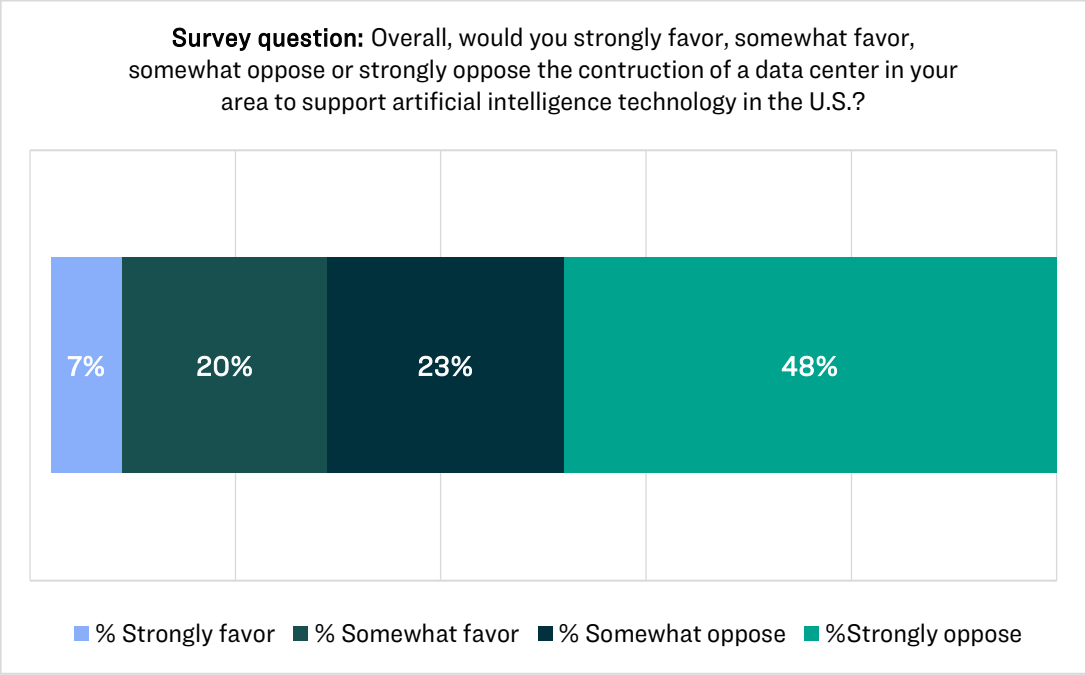
Signal #4: NIMBY risk and the politics of data centers

One of the least appreciated risks to the AI buildout may be a familiar one: NIMBY ("Not in My Backyard") opposition. AI's physical infrastructure has to go somewhere, and communities across the country are increasingly pushing back. Data centers consume enormous amounts of electricity and water, strain local power grids, generate noise and heat, and are therefore not popular developments among polled Americans (Figure 3).

As we approach the midterm elections, these concerns are beginning to find their way onto the campaign trail. Politicians at the state and local level are already beginning to respond, and the risk of regulatory action—zoning restrictions, permitting delays, outright bans in some jurisdictions—is real and growing. This is not a risk that shows up neatly in a spreadsheet, and there is no single metric that captures it in real time. But it is the kind of headwind that can quietly slow a build-out that the market is currently assuming will proceed on an uninterrupted trajectory.

FIGURE 3

7 in 10 Americans oppose constructing data centers for artificial intelligence in their local area.



Source: Gallup, TIAA Wealth CIO. Gallup data from May 2026; "No opinion" percentage not shown.

Signal #5: Scarcity

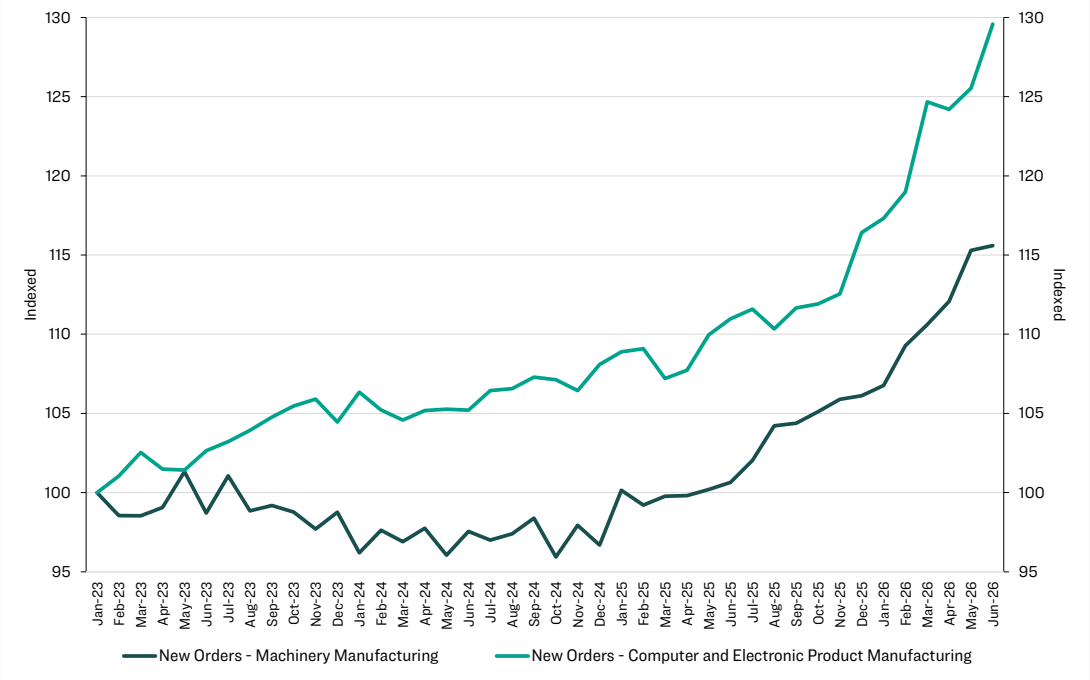
The AI build-out requires an enormous amount of components—memory semiconductors, copper, rare earth metals, water for cooling, electricity, and skilled construction labor to build the facilities. Between early 2023 and mid-2025, new orders for computer and electronic product manufacturing grew at 11% while new orders for traditional manufacturing machinery barely moved, growing at just 0.7%. The AI buildout was booming, but the broader industrial economy hadn't fully joined the party. Since June 2025, that gap has essentially disappeared. Traditional machinery orders have grown 14.9%, keeping pace with the 16.8% growth in computer and electronic manufacturing (Figure 4). To put that in context, the annualized growth rate for new manufacturing machinery orders between 2010 and June 2025 was just 1.5%.

Demand for nearly all of these inputs is currently outstripping supply, and we are already seeing this show up in inflation data. Semiconductor prices, in particular, have risen significantly. Shortages of electricians and other skilled tradespeople needed to build and wire data centers are being reported across the country.

In the near term, scarcity is actually a sign that demand is real—which is one argument against the bubble thesis. But an extended period of input shortages could slow the build-out considerably, creating a gap between what the market has priced in and what can actually be delivered on any reasonable timeline.

FIGURE 4

The manufacturing cycle has broadened beyond AI.



Source: Bloomberg, TIAA Wealth Chief Investment Office. Data through 6/30/2026.

Signal #6: Inflation, the bond market, and the Fed

This is perhaps the most complex of the warning signs, because it involves a chain of events rather than a single trigger. If the energy and commodity demands of the AI build-out continue to push prices higher, that inflationary pressure could rattle the bond market—and, more importantly, the Federal Reserve (Fed).

Fed Chair Kevin Warsh has been clear that he intends to react to what the data shows, even as he is broadly optimistic about AI's long-term deflationary potential. If rising energy prices were to force the Fed's hand and push interest rates meaningfully higher, the cost of the debt financing that is increasingly funding the AI build-out would rise accordingly. At current levels of leverage—both corporate and retail—a sustained rise in rates would put real pressure on a boom that has, to a significant degree, been funded by cheap debt.

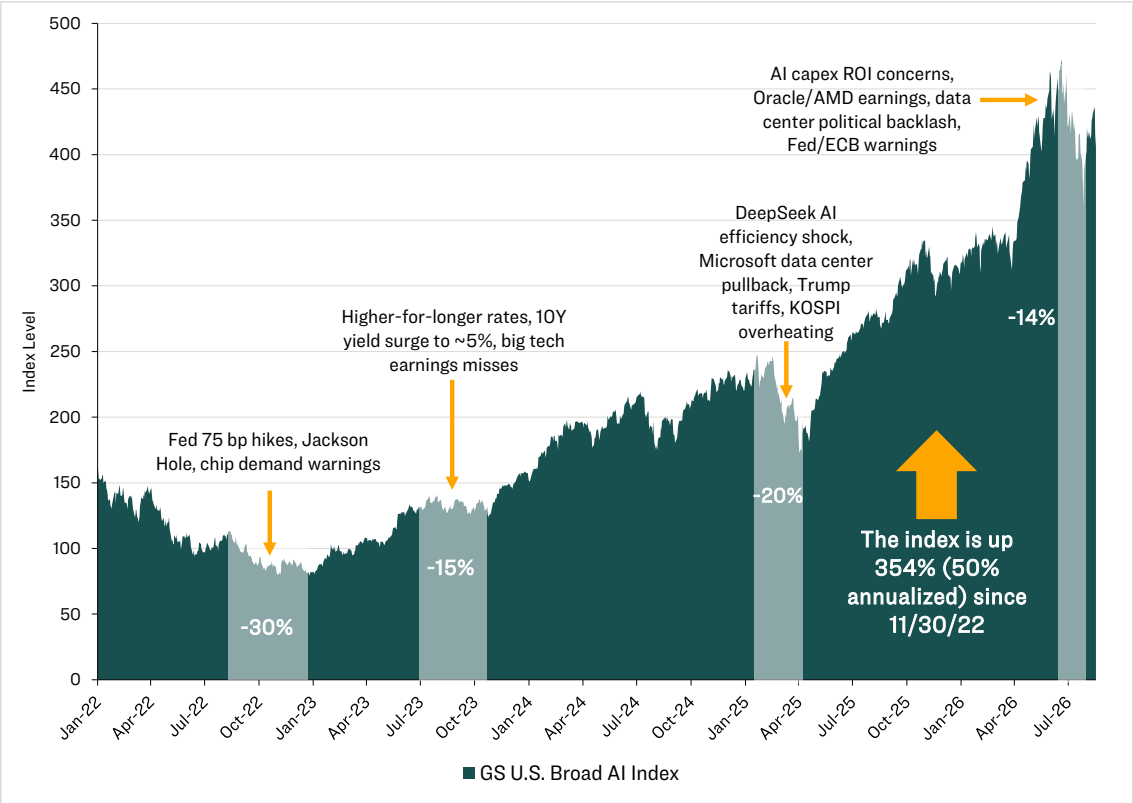
What it means for investors

Whether AI constitutes a bubble is a less useful question than which AI-related bubble is currently deflating. Rather than a single bubble inflating toward one collapse, markets are experiencing a rolling sequence of bubbles, as investors repeatedly misjudge—then correct—where AI's economic value will actually accrue.

Against a backdrop of interest rate uncertainty, this pattern has already moved through software, materials, and semiconductors. Software as a service (SaaS) stocks rose on AI's productivity promise, then fell as agents threatened the subscription-based business model itself. Silver surged on its utility as a data-center conductor, then retreated. Chipmakers rallied on assumed pricing power, only for investors to question whether that advantage is durable (Figure 5).

FIGURE 5

Despite periods of volatility over the last five years, the broad AI index is up over 350%.



Source: Bloomberg, TIAA Wealth Chief Investment Office. Data through 6/30/2026.

This dynamic suits a general-purpose technology, where value migrates across layers—builders, infrastructure, applications, adopters—as each commoditizes in turn. The open question is which layer ultimately retains pricing power.

What matters more for long-term investors, however, is not whether a correction occurs, but how they respond when it does. The dot-com crash erased trillions in market value without altering the internet's long-term trajectory; it changed the timeline and the experience of getting there, not the destination.

That distinction deserves emphasis. Volatility is not evidence that something has gone permanently wrong. Rather, it is the price of participating in markets that have historically been among the most effective engines of long-term wealth creation. Those who benefited most from prior secular shifts, from the internet to mobile to cloud computing, were rarely the ones who timed peaks and troughs. They were the ones who stayed anchored to a long-term plan while others reacted to noise.

AI may follow a similar arc. The path forward is unlikely to be smooth, and expectations will periodically outrun reality. But if the technology delivers even a fraction of its promised productivity gains, the greater risk to investors may not be enduring volatility. It may be failing to participate at all.

Endnotes:
[1] TIAA Wealth CIO does not recommend or endorse the purchase or sale of any single stock based on rumors, unverified information, or hearsay. All investment decisions should be based on thorough research, verified financial data, and a formal assessment of individual financial objectives and risk tolerance.
[2] The price-to-earnings (P/E) ratio measures a company's share price relative to its earnings per share.
[3] Hyperscalers are giant cloud computing companies that operate massive networks of data centers housing millions of servers, such as Alphabet, Amazon, Microsoft, Meta, and Oracle. They rent out vast storage and computing power, and they now drive the global boom in AI.
[4] As of August 19, 2026.

Contributing Authors

John J. Canally, Jr., CFA - Head of Portfolio Strategy

John Greene - Sr. Manager, Investment Content

Rob Dziedzic - Sr. Manager, Investment Content

Jon Birger - Director, Institutional Content

IMPORTANT DISCLOSURES

This material is for informational or educational purposes only and is not fiduciary investment advice, or a securities, investment strategy, or insurance product recommendation. This material does not consider an individual's own objectives or circumstances, which should be the basis of any investment decision.

Optional discretionary investment management services for a fee are provided through TIAA-CREF Individual & Institutional Services, LLC ("T**C Services**"), a broker-dealer (member FINRA/SIPC) and an SEC registered investment adviser, and TIAA Trust, N.A. ("**TIAA Trust**"), a national trust bank. TIAA Trust also provides custody, and trust services for a fee. TIAA Wealth Investment Management LLC ("**WIM**") acts as the sub-adviser for the investment management programs offered by TC Services and TIAA Trust.

TC Services, TIAA Trust, and WIM are affiliates, and wholly owned subsidiaries of Teachers Insurance and Annuity Association of America ("**TIAA**"). Each entity is solely responsible for its own financial condition and contractual obligations.

The TIAA group of companies does not provide tax or legal advice. Tax and other laws are subject to change, either prospectively or retroactively. Individuals should consult with a qualified independent tax advisor, CPA and/or attorney for specific advice based on the individual's personal circumstances.

Past performance is no guarantee of future results. All investments involve some degree of risk, including loss of principal. Investment objectives may not be met. Investments in managed accounts should be considered in view of a larger, more diversified investment portfolio. Asset allocation and diversification are techniques to help reduce risk. There is no guarantee that asset allocation or diversification ensures profit or protects against loss.

Investing involves risk, and the value of your investments may gain or lose value and fluctuate over time. Generally, among asset classes, stocks are more volatile than bonds or short-term instruments and can decline significantly in response to adverse issuer, political, regulatory, market, or economic developments. Although the bond market is also volatile, lower-quality debt securities including leveraged loans generally offer higher yields compared to investment-grade securities, but also involve greater risk of default or price changes. Foreign markets can be more volatile than U.S. markets due to increased risks of adverse issuer, political, market or economic developments, all of which are magnified in emerging markets. Foreign securities are subject to special risks, including currency fluctuation and political and economic instability.

INVESTMENT, INSURANCE AND ANNUITY PRODUCTS ARE NOT FDIC INSURED, ARE NOT BANK GUARANTEED, ARE NOT DEPOSITS, ARE NOT INSURED BY ANY FEDERAL GOVERNMENT AGENCY, ARE NOT A CONDITION TO ANY BANKING SERVICE OR ACTIVITY, AND MAY LOSE VALUE.

©2026 Teachers Insurance and Annuity Association of America-College Retirement Equities Fund, New York, NY

00030657 | 5254350 | 09 2026