

A Mental Model for AI's Monumental Rise

Report for the week ending November 14,
2025

Dylan Smith

Monologue

We should all be bracing for several weeks of churn as markets and the media receive, ingest, and debate the informational deluge ensuing from the breaking of the data dam that was the US federal government shutdown... before realizing that it's all out of date anyway, and moving back to the central market question of AI and valuations.

I have some reflections to share about where we are in the technology and investment cycle centered on AI. First, though, my take on the government reopening, which was the biggest news of the week gone by:

- *Nobody wins a shutdown:* Talking heads will try to say that one party or the other gained an edge from their handling of the shutdown, and perhaps the Democrats are slightly better positioned on 2026 mid-term election issues than they were going in. In truth, everyone loses. Federal employees' lives have been disrupted, millions of people were inconvenienced to varying degrees, and the US has lost yet more standing on the global stage.
- *The Fed loses:* The release of semi-stale or under-sampled data over the next few weeks will make the Fed's already difficult decision that much harder to communicate come the December 10 meeting.
- *ACA-dependent Americans (and inflation forecasters) lose:* The central point of conflict that triggered the shutdown – whether to extend COVID-19-era healthcare rebates – has been punted. Hence, a key point of uncertainty for many American households over whether healthcare premiums will soar next year remains unresolved.
- *Doomers lose:* Overall, the shutdown ended before any durable damage to the economic outlook was inflicted.

Hopefully that's behind us now, and we can re-focus on the big questions, like the one everyone has been asking this week ("is AI a bubble"). Although... the party poopers are already pointing out that the next funding deadline is January 30, less than three months away...

So, is AI a bubble? The answer at arcMacro remains "probably." But if it is, we have learned from market action this week that it may be a while before it pops. After AI "superscalars" like Nvidia and Palantir dragged the market down last week, Monday saw a surge of dip-buying, and the rest of the week was defined by a series of more minor dips and recoveries. The magical appearance of strong demand whenever the market falls is preventing valuations from undergoing a proper correction.

All we can know right now is that at some point (we don't know when), that correction/crash will happen (we don't know how deep or sudden it will be).

At this stage, it's worth taking a step back and assessing how we're thinking about AI dynamics and the potential bubble. I've been following a relatively simple mental model of how major technological innovation drives markets and the economy, inspired in part by [Robert J Gordon's](#) research on long-run growth and productivity.

The framework has three overlapping phases. A simple way to understand each phase is by analogy to the invention of the steam engine and the development of the railway network.

- *Phase 1* – Core technology and infrastructure (locomotives and rail networks <-> LLMs and data centers). These are the companies that build the infrastructure and own the core, patented technology. Heavily capital-intensive. Transparent projections. Cash or credit financed.
- *Phase 2* – Operators and propagators (railways, liners, and freight companies <-> Microsoft & Perplexity). These are the companies that commercialize the core technology and scale B2B and B2C access. Less capital-intensive, often large existing companies, largely transparent, public market, and/or PE/VC financed.
- *Phase 3* – Disruptors and productive absorbers (news agencies & commercial farming <-> [?]). These companies build business models leveraging the new technology, some completely new, others changing how existing industries operate. For AI, we don't yet know who they are. Capital light. Rapid growth and scaling. Opaque. Angel, VC, or internally financed.

Is this mental model oversimplified? Yes. Is it useful? Absolutely. This framework can help us understand where investment is directed, at what relative scale, how that drives valuations, where risk pools up, and how capital structures are defined. It also gives us a reference for gauging the overall cycle's maturity.

Phase transition: Based on historical technological breakthroughs, the bubble tends to form around Phase 1 companies. A subsequent market crash clears out irrational pricing, revealing the Phase 2 winners and clarifying the themes (if not yet the companies) that will dominate Phase 3. Think Yahoo vs. Google as the Phase 2 story of the dotcom crash.

Where we are now: The AI cycle is still relatively immature. Phase 1 investments are eating up a giant share of the capital directed at AI, and are still growing. The Phase 1 infrastructure is usually needed and will be utilized for decades; issues arise when it becomes overvalued.

Overvaluation ("the bubble") comes from opacity and financial market structure in Phase 1. The most important insight from this framework is that the long-term Phase 3 winners are often difficult to imagine, never mind predict, during Phase 1. It takes the specialized skills of VC firms – who can take on risk, hold many small positions, and identify strong founders – to make early bets on Phase 3 targets. Most investors can't do that, but they want to invest in the theme. So they invest in the big, publicly traded Phase 1 companies. Nobody saw Facebook or Netflix coming in 1996. The end winners of the internet were uninvestable, because they did not exist. But people *could* buy Cisco shares, which became massively overvalued.

The key takeaway is that overvaluation stems from inefficient capital deployment, when the value of early underlying infrastructure companies is confused with the value of the innovation itself. That seems to be happening now with AI.

The investing implications are startlingly clear:

- It's OK to ride the infrastructure bull market for a while; it's carrying a real signal about the transformative potential of the technology and the degree to which it can scale.
- As soon as these investments start to look topky (I'd argue we're there now), take profits.
- Put some cash in reserve or in defensive investments and deploy the rest to high-conviction phase 2 or phase 3 bets (depending on risk appetite).
- Deploy reserves after the correction/crash to take advantage of low valuations.

This also explains why private equity and VC returns are lagging public markets: they struggle to participate in Phase 1, which drives public valuations above fundamentals, making capital deployment in Phase 2 and 3 companies (where private markets shine) more expensive. PE and VC firms enable the "creative destruction" that helps these technologies permeate the economy (by restructuring companies around the new processes enabled by new technology or consolidating redundant sub-industries). But in the early stages, they are actually harmed relative to their public benchmark.

I'll leave it there for now. There will be much more to come on this theme, and this probably won't be the last time I reference this AI mental model.

By the way, if you like mental models, this week's memo is for you. In it, we revisit the "wartime economy" analogy that proved so helpful during the COVID-19 pandemic. It still offers some valuable guidance and acts as a guard against recency bias.

Reads of the Week

- **Fiscal Fantasies: Four Incredible Projections in the November 2025 Federal Budget**: Our Memo last week, in which we made the case that Canada is positioning itself to outperform the rest of the G7 over the coming decade, received a lot of attention. In the interest of balance, here is the skeptical argument from the C.D. Howe Institute. There is one thing we agree on: execution will be everything.
 - **The State of Generative AI Adoption in 2025**: Since September last year, the St. Louis Fed has been incorporating questions on AI usage into its quarterly Real Time Population Survey. At-work usage still lags home usage, but it's trending up, and might (*might*) be starting to show up in the productivity numbers for some industries.
 - **How markets could topple the global economy**: Like us, The Economist is worried about a market crash. And like us, they don't think it would be catastrophic (we've outlined how we think it would play out in Scenario 2 in our Q4 Outlook).
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Market Monitor

We discussed the pattern in equities in this week's Monologue. After a lot of up-and-down, the S&P 500 closed essentially flat, with a strong showing for industrials offsetting a poor week for the technology and consumer sectors. In the small-cap universe, the Russell 2000 fell -1.3%, underlining a perception of broad-based loss of risk appetite.

Dynamics across the macro asset classes (fixed income, currencies, and commodities) were actually more interesting than those in stocks.

In the week that the US government reopened – ostensibly a positive development for the US – gold spiked, the Swiss franc climbed, the dollar fell a touch, and the Treasury curve shifted up. That's not exactly a warm "welcome back" from the global community.

The price action implies that investors are not happy about the lingering uncertainty over the direction of the US fiscal deficit. We're seeing a continuation of a slow, grinding trend in demand away from US assets and toward alternative safe havens and diversification sources – the so-called "debasement trade." Just as AI is the underlying theme in equities, "debasement" is the underlying theme in the macro complex.

The Week in Markets

As of Friday October 31, 2025

	Latest*	Change since last week (units)	Change since last week (%)	Change since last month (units)	Change since last month (%)	Year-to-date change (units)	Year-to-date change (%)
Equity							
S&P 500	6734	13.8	0.2	268	4.1	852	14.5
Information Technology			0.2		6.9		24.5
Financials			0.0		-0.6		8.3
Consumer Discretionary			-2.7		2.0		2.7
Communication Services			-1.6		5.4		22.7
Health Care			4.0		13.9		10.1
Industrials			-0.4		-0.3		15.2
Consumer Staples			1.9		-5.0		0.8
Energy			4.1		7.2		7.1
Utilities			0.1		2.6		16.8
Real Estate			0.4		-0.6		0.8
Materials			2.2		-4.9		3.6
Nasdaq Composite	22901	-153	-0.7	1187	5.5	3590	18.6
Dow Jones Industrial Average	47147	235	0.5	2225	5.0	4603	10.8
Russell 2000	5935	-76	-1.3	150	2.6	393	7.1
Sovereign Fixed Income							
US: 2-year Treasury Note	3.62	0.050		-0.050		-0.63	
US: 5-year Treasury Note	3.74	0.050		-0.030		-0.64	
US: 10-year Treasury Note	4.14	0.030		-0.1		-0.44	
FRA: 10-year OAT benchmark	3.45	0		0.12		0.27	
GER: 10-year Bund benchmark	2.71	0.050		0.0100		0.32	
CHN: 10-year CGB benchmark	1.81	0.00400		0.0878		0.139	
CAN: 10-year GoC benchmark	3.18	0.020		-0.25		-0.050	
Corporate Bond Spreads							
US: A-rated	74.3	-0.6		1.1		0.2	
US: BBB-rated	110	0.7		5.4		8.2	
Leveraged Loan Spreads							
US: B-rated	403	2.03		0.827		-6.53	
US: BB rated	261	-1.2		0.206		5.42	
US: CCC-rated	1434	41.9		145		163	
Foreign Exchange Rates							
DXY US Dollar Index	99.3		-0.4		1.5		-8.5
EUR/USD	1.16		1.1		0.1		11.8
USD/CAD	1.4		-0.7		1.8		-2.4
USD/CNY	7.1		-0.4		-1.3		-2.8
USD/JPY	155		1.0		4.4		-1.1
GBP/USD	1.31		0.9		-2.3		4.8
USD/CHF	0.799		-1.4		-1.5		-10.9
Commodities							
WTI Crude	59.8	0.26	0.4	-2.3	-3.7	-11.7	-16.4
Gold	4071	84.6	2.1	707	21.0	1462	56.0
S&P GSCI Commodities			1.3		4.9		1.8
S&P GSCI Industrial Metals			0.8		8.4		13.6
S&P GSCI Agriculture			-0.3		1.5		-9.1

* Weekly closing value. Color indicates positive (green) or negative (red) change since prior week.

Source: S&P Global, Russell Investment Group, Nasdaq, U.S. Department of Treasury, Macrobond Financial AB, Central Bank of Germany (Deutsche Bundesbank), Bank of Canada, Intercontinental Exchange (ICE), International Monetary Fund (IMF), LBMA (London Bullion Market Association), Robert Shiller, Chicago Board Options Exchange (CBOE), U.S. Department of Labor, Pitchbook | LCD, arcMacro



Macro Monitor

Interest rate expectations continue to drift towards less easing in the near future.

Boston Fed President Susan Collins on Wednesday all but came out against an interest rate cut at the December meeting, taking the count of public hawks with a vote in the next meeting to three, against three guaranteed doves (several non-voting members have also struck a hawkish tone). There are a few more suspected

hawks in the balance, but that group is likely to vote with Chair Powell, who has proven difficult to read.

Forward markets are now pricing no move in December as marginally more likely than a cut, which chimes with our view that the Fed will realize it's been underestimating inflation risk and raise its forward guidance a bit.

There was very little of note on the macro data front this week, but that's set to change as a slew of official data embargoed under the shutdown comes due for publication in the next couple of weeks.

The following two weeks' updates to our arcMacro Factors will be important, as they will summarize the overall impact of the withheld data on economic activity, inflation, and financial conditions.

It's worth saying a few words about the data we'll get when federal workers return to the office. We expect to initially see the September data that were already collected and were close to being compiled. This is fairly stale data, but good to have.

September nonfarm payrolls will be the most-watched of this class of reports. Next will be data that was collected as of the end of the shutdown, but not compiled.

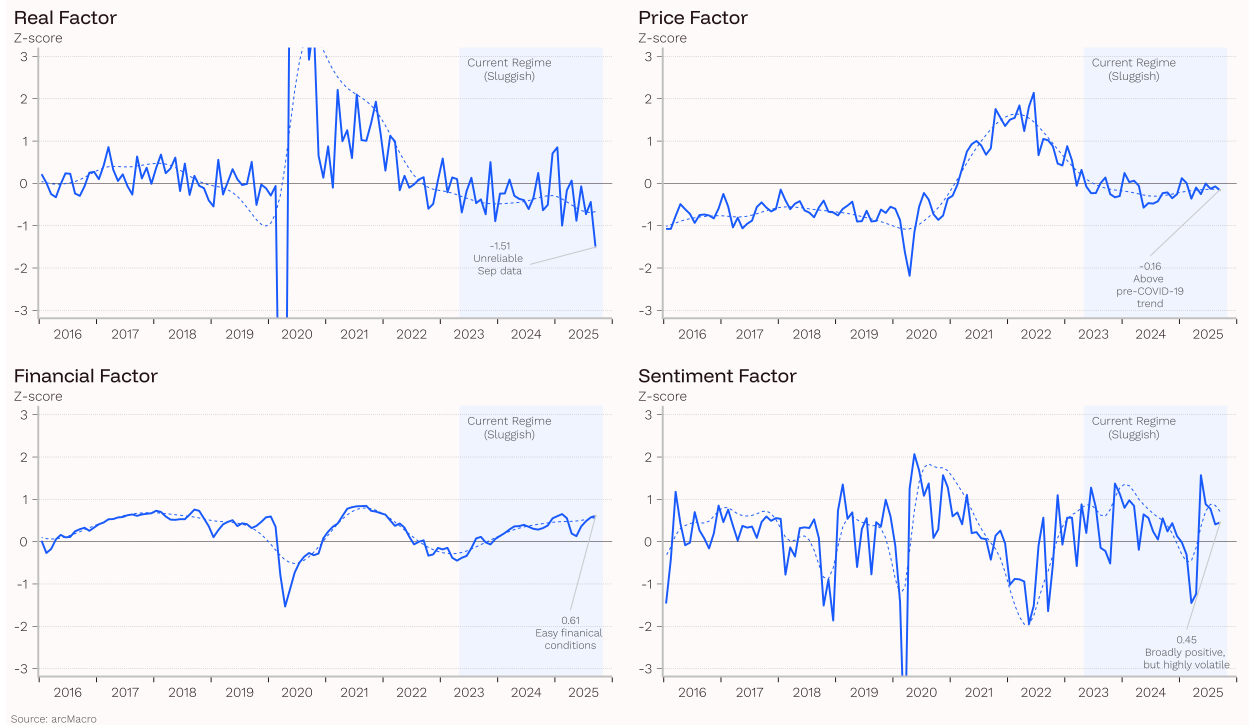
This will likely mostly be bundled with October releases. Many key data sets (including the key labor market releases) have a delayed reporting schedule, which allows October data to be collected retroactively (hence why we typically get such big revisions on these series). Others may skip October altogether. November data can be collected, but some series will have shorter sample periods and therefore be less reliable.

Rushing these data out will be resource-intensive, so we may see some delays to the usual publication schedule for several weeks.

The upshot is that our "real-time" picture of the economy will only be back up to date when the clean monthly data for December are released in January, although we'll have a pretty good overall picture before then based on catch-up releases and non-Federal data.

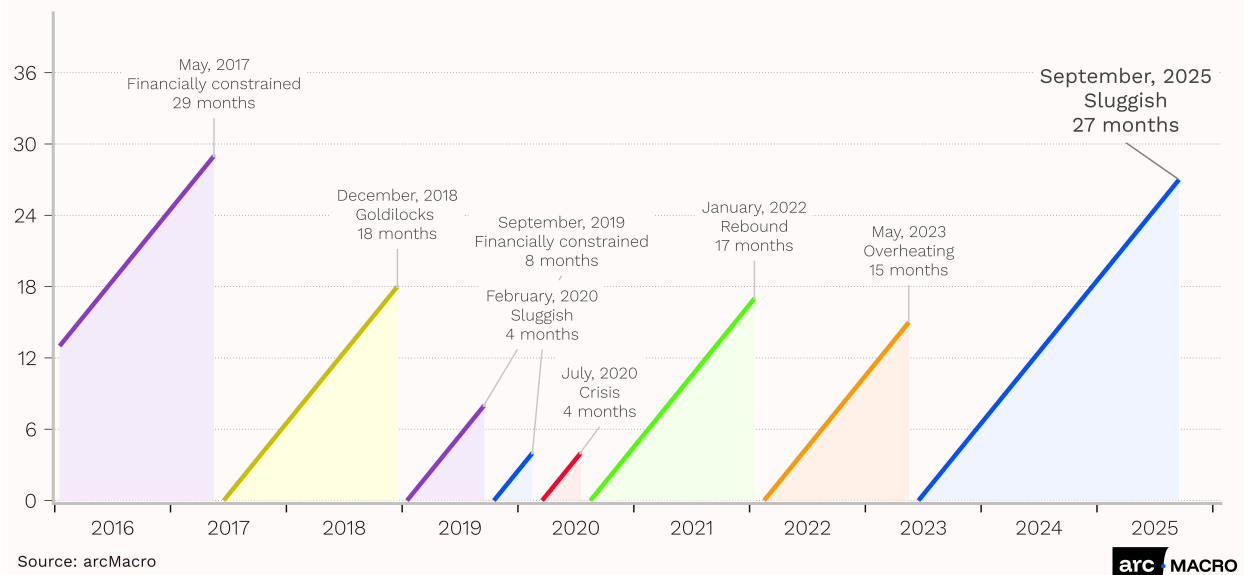
One thing we're concerned about and will be watching very closely is survey response rates, which would likely have dipped during the shutdown. In previous episodes that triggered lower responses (COVID-19, prior shutdowns), a component of the reduction proved permanent. We'll only be able to assess whether we're back

to pre-shutdown data quality by January.



arcMacro Regime Summary United States

— Stagflation — Sluggish — Rebound — Overheating — Goldilocks — Financially constrained — Crisis



See the appendix for the top macroeconomic indicators tracking chart

What we'll be watching next week

Precisely what US data will be released next week is a moving target at the time of publication. It looks like we'll mainly be receiving tier 2 and 3 data, not the biggest market-moving releases, at least according to the latest data calendar providers. We know for sure that we will get the Minutes of the October Fed meeting on Wednesday, though they are a bit stale given all the speechifying from the Fed at the moment (FOMC voters Barr, Waller, and Logan are scheduled to speak on Monday).

There is more certainty on the international front, where Canadian, UK, and Japanese inflation numbers are set to be published.

It was a messy week for Keir Starmer's government in the UK, where a reversal of a previously telegraphed income tax rise sent yields on 10-year bonds above 4.8%, after starting the week below 4.5%. In the run-up to the November 26 Autumn Budget, gilt markets look set for a bumpy ride, and we'll be watching for spillover into the broader fixed-income space.

Memo

REDUX: What (post-)wartime economic trends teach us about (post-)pandemic economic trends

Bottom line: Heuristic and narrative models of the economy can help override recency bias when thinking about macro and markets. We revisit the "wartime analogy," which was such a helpful guide to navigating the COVID-19 economy, to see if it still has anything to say; it suggests that public balance sheets and inflation volatility could define the next decade.

During COVID-19, there was a "wartime analogy" that compared major economic and policy developments to those during and after major conflicts (especially WWII). Those of us who kept this framework top of mind had a model for understanding how and why the simultaneous surge in public debt, massive workforce re-allocation, and supply chain disruption would prove inflationary, and also why the rebound and adjustment phase would prove so productive.

Five years on, is the wartime analogy still a useful framework? We think yes. One recent development that has strengthened the analogy: a critical technological breakthrough. In this case, it's AI and not related to the pandemic. Still, the fact that large-scale wars are times of intense innovation means the post-war period is usually defined by heavy investment in commercializing breakthroughs.

Comparing the post-war and post-pandemic economies

Trend analogy	Pandemic era	Wartime era	Applicability	Status
Immediate impact				
Government Fiscal Expansion	Direct stimulus, new social supports, industrial subsidies	GI Bill, reconstruction programs	High	Ongoing
Household Saving & Consumption Shift	Increased saving, shifting consumption (goods vs. services)	Wartime rationing, forced saving, consumption limits	High	Complete
Labor Market	Sectoral reallocation, remote work, expanded female workforce	Female participation increase, labor mobilization	High	Waning
Technology	Crisis-driven adoption of new tech (remote work, digitalization, cloud)	Military-directed innovation and industrialization	Medium	Complete
Prices	Major inflation episode with sustained high inflation	Wartime inflation and repeated post-war inflation surges	High	Ongoing
Long-term impact				
Institutional and political changes	Political polarization, lack of clear intuitional consensus	Expansion of social security, labor rights	Low	N/A
Productivity growth	AI-led digitization and automation	Major shift from agriculture to industry/services (postwar)	High	Early
Trade and globalization	Stalled globalization, more emphasis on regional/national interests	Liberalization post-WWII fostered global growth	Low	N/A
Investment boom	COVID-era saving and liquidity fueled short-run investment boom	Postwar investment surges (housing, infrastructure, tech)	Medium	Waning
Inflation & Deflation Cycles	Sharp inflation and disinflation spike; failure to return to pre-pandemic level	Inflation spikes, followed by periods of disinflation as economies adjusted.	High	Ongoing

Source: arcMacro

Here are some of the conclusions I draw from this analogy.

- Shocks of this magnitude play out over the long term via the public sector balance sheet, which was deployed to absorb the shock of the initial crisis; we're not wrong to worry about gradual currency debasement.
- Inflation and public debt are closely intertwined, and we should expect both higher average inflation and periodic inflation spikes that will deflate debt and debase currencies.
- Successful countries will harness innovation for productivity-led growth as governments are forced to rationalize.

Of course, these are observations derived from comparative reasoning, not historiographical certainties. They need to be more rigorously analyzed and tested before serving as the basis for any investment thesis.

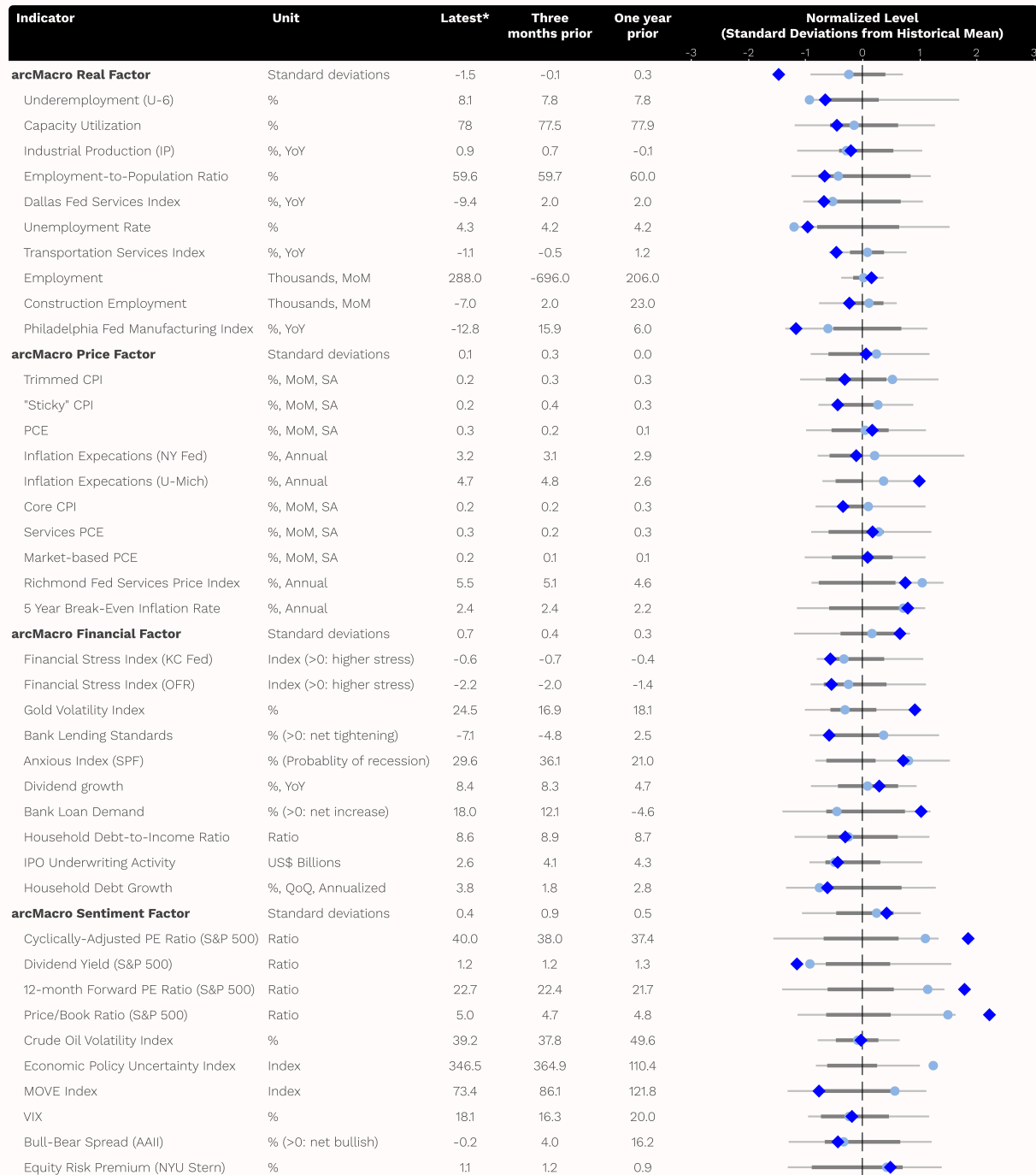
Nonetheless, the fact that some of the current economic patterns that feel so unfamiliar have happened before gives us a good jumping-off point as we think through how the next decade could play out.

Whether you call them models, narratives, or analogies, keeping these types of frameworks in one's back pocket is a smart move. If nothing else, they help mitigate recency bias and enable one to imagine a world different from the one that prevailed over the last few decades.

Appendix 1: Key Macro Indicators Tracker

arcMacro Factor Input Monitor

Top 10 inputs by factor loading



■ 10th-90th Percentile ■ 25th to 75th Percentile ● Mean of past 5 years ◆ Latest Value

Source: arcMacro, BLS, Fed, Dallas Fed, DOT, Philadelphia Fed, Cleveland Fed, Atlanta Fed, BEA, New York Fed, University of Michigan, Richmond Fed, Macrobond, Kansas City Fed, The Office of Financial Research (OFR), CBOE, S&P Global, SIFMA, Robert Shiller, Economic Policy Uncertainty, ICE BofAML, LJKmfma, AAIL
*Most recent published data point. Time period and frequency do not necessarily align.

Appendix 2: US Private Equity Statistics

Private Equity Trends: Deals United States

		Month to date*	Prior month	Same month last year	Quarter-to-date	Prior quarter	Same quarter last year	Year-to-date	Current run rate**	Prior year	Run rate as a % of prior year
		Nov 2025	Oct 2025	Nov 2024	Q4 2025	Q3 2025	Q4 2024	2025	2025	2024	2025
Buyout/LBO	Count (#)	200	446	577	646	1700	1970	5938	7126	7485	95%
	Capital (\$B)	12.3	15.6	42.8	27.8	167.5	130.3	397.0	476.0	375.2	127%
Add-on	Count (#)	165	336	398	501	1216	1368	4383	5260	5440	97%
	Capital (\$B)	0.4	3.4	10.9	3.8	32.0	19.3	92.3	111.0	61.4	181%
Growth/Expansion	Count (#)	52	134	139	186	459	477	1632	1958	1958	100%
	Capital (\$B)	7.3	9.9	3.7	17.3	14.9	24.1	86.0	103.0	97.9	105%
Public-to-Private	Count (#)	-	4	8	4	18	18	58	70	59	119%
	Capital (\$B)	No data	4.0	24.2	4.0	73.1	55.5	133.1	160.0	103.3	155%
PIPE	Count (#)	72	335	243	407	594	787	2187	2624	2587	101%
	Capital (\$B)	1.5	8.9	8.1	10.4	23.0	26.8	59.5	71.0	72.6	98%

* Incomplete data
** Calculated based on month prior due to current month incompleteness

Pitchbook, arcMacro

Private Equity Trends: Exits United States

		Month to date*	Prior month	Same month last year	Quarter-to-date	Prior quarter	Same quarter last year	Year-to-date	Current run rate**	Prior year	Run rate as a % of prior year
		Nov 2025	Oct 2025	Nov 2024	Q4 2025	Q3 2025	Q4 2024	2025	2025	2024	2025
Corporate M&A	Count (#)	18	66	57	84	172	211	554	665	842	79%
	Capital (\$B)	13.1	20.2	3.5	33.3	109.6	31.2	332.0	398.0	150.8	264%
Secondary buyout	Count (#)	14	39	33	53	98	136	349	419	417	100%
	Capital (\$B)	4.5	46.6	6.4	51.1	35.4	17.5	128.3	154.0	62.0	248%
IPO	Count (#)	-	-	-	0	1	2	2	2	6	33%
	Capital (\$B)	0.0	0.0	0.0	0.0	0.6	0.6	0.8	1.0	7.8	13%

* Incomplete data
** Calculated based on month prior due to current month data incompleteness

Pitchbook, arcMacro