

Macroeconomic Forecasts, 4Q2025
Domestic Metrics



Prepared by: Capitalytics, LLC
217 Country Club Park, #734
Birmingham, AL 35213

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Summary

Our previous three installments of this report for 2025 discussed the 6 (or 5) signals that the economy was headed for a recession and the two signals that the economy was not. For purposes of a review, the recession-heavy signals were:

- Stubborn Inflation
- Consumer Sentiment
- Consumer Savings and Loan Delinquencies
- An Active Federal Reserve
- The Labor Market (unemployment rate and labor force participation)

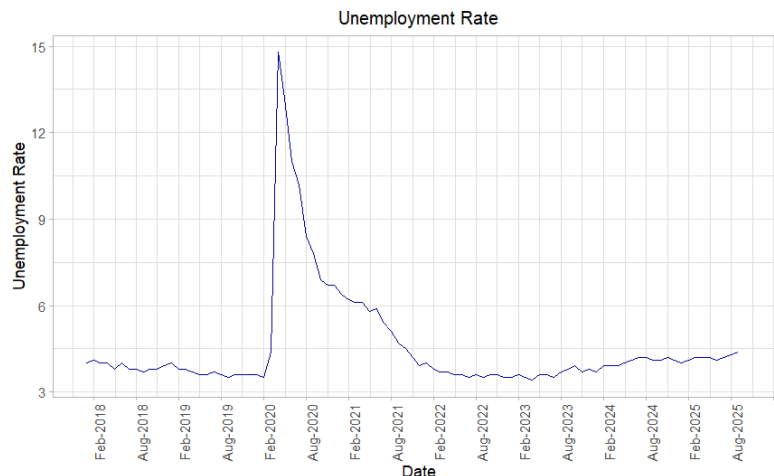
The two signals that the economy is doing fine are:

- The Equities and Bond Markets
- Trump is Trump

We Are Heading Toward A Recession

Signal 1: The Labor Market & The Unemployment Rate

Figure 1: US Nationwide Average Unemployment Rate



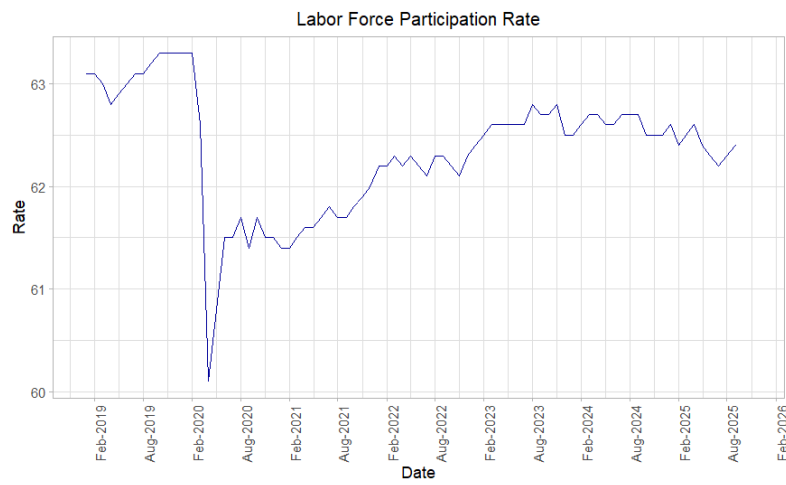
Source: Federal Reserve Economic Database (<https://fred.stlouis.org>)

The current unemployment rate is hovering around 4.6%. (See Figure 1 through Figure 4.) It is difficult to generate much confidence regarding the trend of the unemployment rate because the government shut-down created a small gap in the unemployment rate statistic. There are essentially three possibilities:

- 1) the unemployment rate is creeping up, gradually;
- 2) the unemployment rate is holding constant; and
- 3) the unemployment rate is starting to fall.

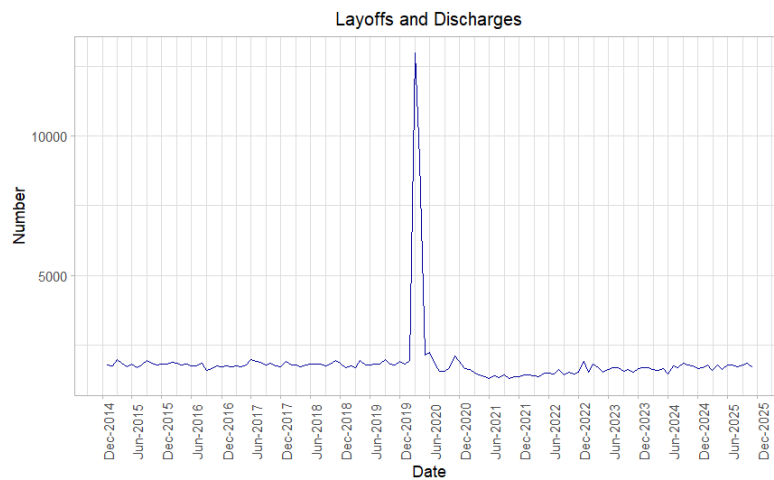
We are fairly confident that scenarios 1) or 2) are most likely occurring (given the lack of continuity in the unemployment statistic). Tracking the unemployment rate through February 2026 will reveal if the market rebounded during the 4Q2026 (driven by a robust holiday shopping season), or if the unemployment rate has continued to tick upwards. The labor force participation rate has leveled off as has the number of persons fired or discharged in the economy. Additionally, we can see that the number of persons hired has been falling steadily. This “No-Hire-No-Fire” labor market is likely driven by the level of uncertainty driven by tariff policies and, we anticipate going forward, US political involvement in Venezuela.

Figure 2: US Labor Force Participation Rate



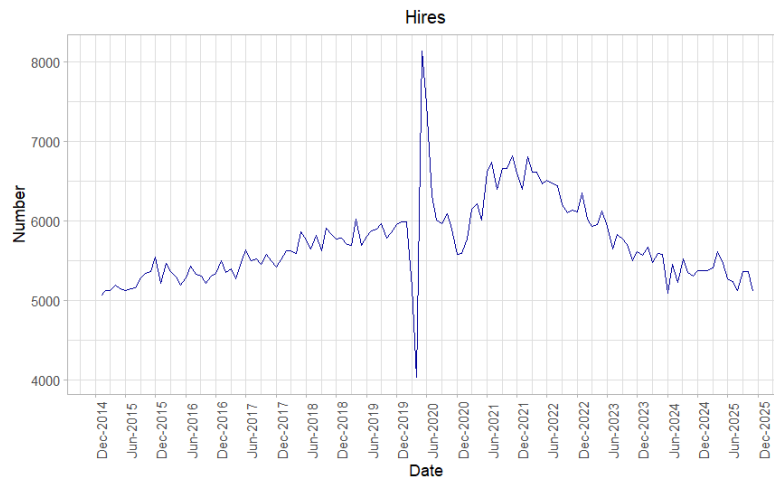
Source: Federal Reserve Economic Database (<https://fred.stlouis.org>)

Figure 3: US Layoffs & Discharges (000s)



Source: Federal Reserve Economic Database (<https://fred.stlouis.org>)

Figure 4: US Nationwide Hires (000s)

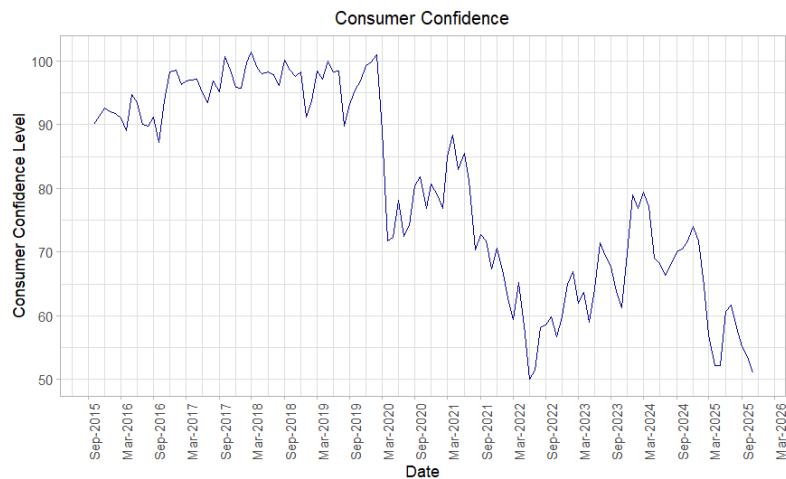


Source: Federal Reserve Economic Database (<https://fred.stlouis.org>)

Signal 2: Consumers are Less Content and Becoming Pessimistic Towards the Future

Consumer confidence is trending down and is reaching record lows. The University of Michigan Consumer sentiment (Figure 5) spiked briefly after Trump won the election in November 2024, but has dropped steadily since his inauguration. 70% of GDP is comprised of consumer spending and a drop in consumer confidence will likely translate to lower consumer spending. If consumers lose confidence in the future economic condition, they could very well reduce spending and, in turn, drive the economy towards a recession.

Figure 5: US Nationwide Consumer Confidence (per University of Michigan)

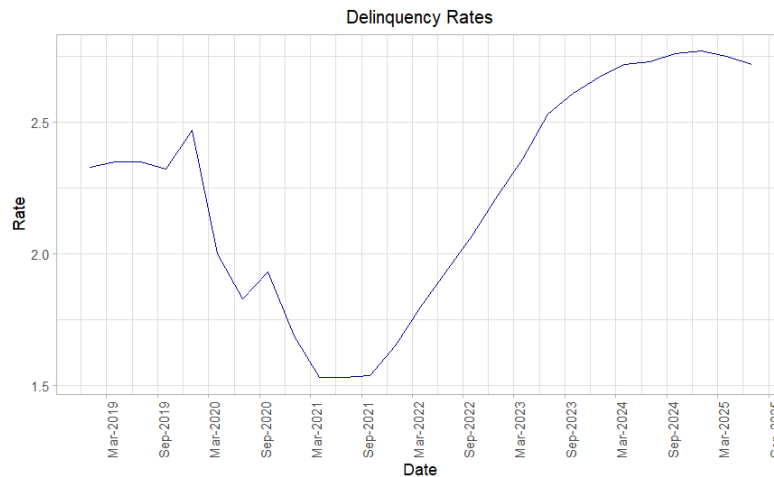


Source: Federal Reserve Economic Database (<https://fred.stlouis.org>)

Signal 3: Consumers Have Less Savings, Are Savings Less as a Percentage of their Income, and are More Delinquent on Loans

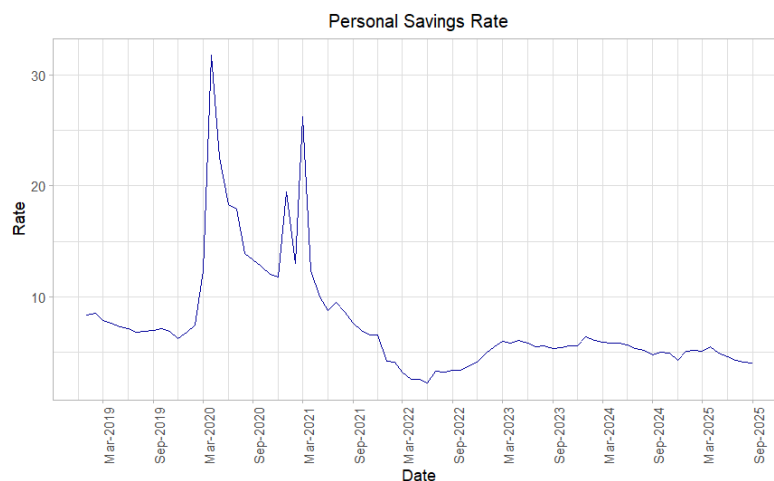
Delinquency rates on all consumer loans are higher than they have been since the great recession. This is a troubling trend and one that should concern financial institutions. Consumers accumulated savings at unprecedented rates during the COVID recession and have been steadily dis-saving since. Consumers have been consistently more delinquent on loans since the COVID recession. Although the equities market shows gains, most individuals have small (marginal) brokerage accounts. The increase in delinquencies and lower savings rates (see Figure 6 and Figure 7) could indicate that consumers are on a razor's edge with respect to staying afloat. One modest economic shock could create a surge in delinquencies.

Figure 6: US Nationwide Delinquency Rates



Source: Federal Reserve Economic Database (<https://fred.stlouis.org>)

Figure 7: US Average Personal Savings Rate

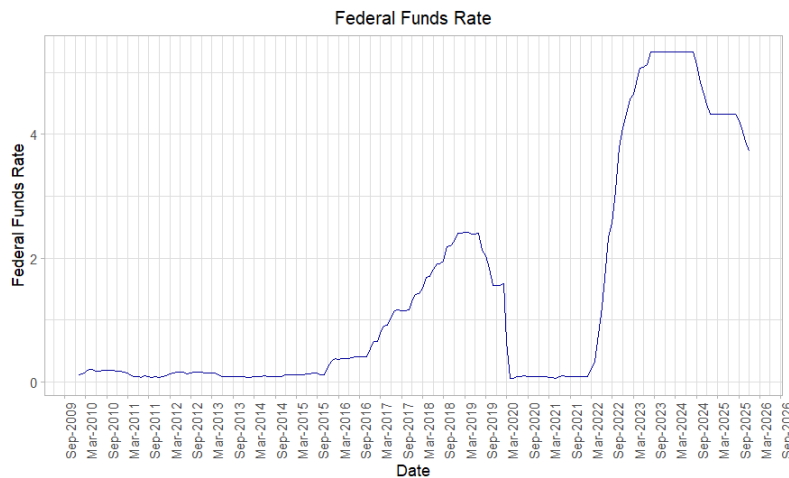


Source: Federal Reserve Economic Database (<https://fred.stlouis.org>)

Signal 4: An Active Federal Reserve

Until very recently, the Federal Reserve had placed a strong emphasis on monetary policy aimed at keeping inflationary pressures contained. However, an additional 25 bps drop in the Federal Funds Target Rate (December 9, 2025, see Figure 8) signals that the Federal Reserve has changed its focus from containing inflation to preventing further increases in unemployment and decreases in GDP. These changes, although small in magnitude, are a strong sign that the economy is either slipping or has already slipped into an economic recession. The current chair of the Federal Reserve has made it clear that the Fed is now focused on preventing an escalation in unemployment. As such, the economy is likely to continue to feel upward pressure in prices. Inflation is not subsiding and, if the US is not careful in its monetary policy early next year, the US could start seeing inflation in the 4-5% range.

Figure 8: US Target Federal Funds Rate

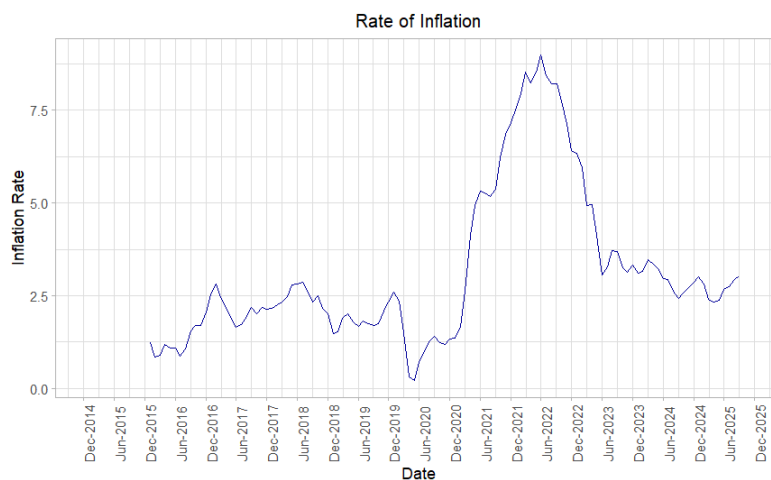


Source: Federal Reserve Economic Database (<https://fred.stlouis.org>)

Signal 5: Stubborn Inflation

In Figure 9, we see that the rate of inflation has remained above the Fed's 2% target since early 2022. The Fed was able to contain the level of inflation to 2.5% – 3.5% since summer 2023, but has made little significant headway since. The tariff policies implemented (and then retracted, then re-implemented) have created a considerable amount of uncertainty within businesses and have always created upward pressure on prices. As such, it is not likely that the Fed can put downward pressure on prices until tariff policies are shored up.

Figure 9: US Nationwide Inflation



Source: Federal Reserve Economic Database (<https://fred.stlouis.org>)

We are Not Heading Toward A Recession

Signal 1: The Equities Market and the Bond Market

Figure 10: SP500 Index, 2H2026



Source: TradingView (<https://www.tradingview.com/>)

The equities market has shown significant growth during the last quarter. (See Figure 10.) Although there was a significant drop in the market in August, the index has rebounded and the market is currently sitting at an all-time-high. Although the equities market is not the economy, it can often foreshadow movements in the economy. Although there have been “hints” that the market is currently experiencing an “AI” bubble, this bubble has not burst and investors continue to push money into the market. The 15.48% return on the S&P 500 over the last 365 days suggests that the market is strong and that the economy is not weak.

Signal 2: President Trump Initiates Policies Only to “Take them Back”

Trump is Trump. It doesn't really matter what we say about the current president – he will likely announce and then rescind any number of policies in the next 90 days. The one policy “umbrella” that the President is sticking to is some combination of tariffs and quotas. The Chinese response to these policies is to purchase \$0 of US soy. However, Trump has negotiated a significant purchase of soy between the US and China. This latter point suggests that what Trump initiates is likely to lead to some re-maneuvering.

Disruptive (“Black Swan”) Events

The past ten years have seen several unusual events that have had a substantial impact on the national and/or global events that warrant mentioning. We mention them from the perspective of considering whether any of these types of events could occur again in the near future, and planning for their potential impact on the economy and or business operations would seem prudent.

1. Biological Events: The world has seen a number of new “Influenza-Like Illnesses” (ILI), with the latest now directly affecting virtually every country on the global in a crippling fashion.

- A. SARS (2002 & 2004)
- B. “Swine flu” (H1N1, 2009)
- C. “Avian flu” (H5N1 in 1997; H7N9 in 2013; H5N6 in 2014; H5N8 in 2016)
- D. COVID-19 (2019-2022), with several different strains

While questions during the handling of the COVID-19 emergency have shone a light on the globe’s ability to address a new pathogen under pressure, any answer is still a function of the contagiousness of the pathogen. Depending on how quickly a new pathogen spreads, along with its incubation period and symptoms, could mean the difference between survival and massive devastation. “Avian flu” (strain H5N1) has been recently reported as being found in a human in Louisiana¹.

2. Disinformation Campaigns: A staple of international conflicts (both military and otherwise), organized campaigns based on disinformation or propaganda have been around for hundreds of years. In the recent past, the U.S. has made allegations against foreign governments that there has been interference in federal elections (and caused social unrest) by using freely available social networks².
3. Disruptive Malware and Ransomware: Over the past five years, sophisticated attacks on businesses have (literally) become a business for some entities, foreign and domestic. “Ransomware” is the latest version of malware that “... [locks and encrypts] a victim’s computer or device data, then demand a ransom to restore access.”³ In software security company Semperis’ 2024 Ransomware Risk Report, 83% of 900 survey respondents reported being targeted in the past year⁴, with an average cost of about \$5M per breach globally⁵.
4. Societal Unrest, including Domestic Social Changes and Terrorism: Since 2020, we saw many social protests turn violent on both ends of the political spectrum. Without warning, these movements have caused rapid and unexpected upheavals in social climates, and upended assumptions on which financial decisions were made. As these questions have been explored socially and officially, the discussions have led to questions of how deep the disdain in the

¹ <https://www.nbcnews.com/health/health-news/h5n1-bird-flu-mutations-human-transmission-cdc-rcna185554> and <https://www.nytimes.com/2025/01/02/us/politics/bird-flu-biden-trump.html>

² See, e.g., <https://www.cnn.com/2024/10/30/europe/russian-disinformation-harris-walz-us-election-intl/index.html> and <https://www.nytimes.com/2024/07/09/business/russian-bots-artificial-intelligence-propaganda.html>

³ See <https://us.norton.com/internetsecurity-malware-ransomware-5-dos-and-donts.html>

⁴ <https://www.forbes.com/sites/heatherwishartsmith/2024/12/09/the-persistent-ransomware-threat-2024-trends-and-high-profile-attacks/>

⁵ <https://assets.sophos.com/X24WTUEQ/at/9brgj5n44hqvgsp5f5bqcps/sophos-state-of-ransomware-2024-wp.pdf>

country remains on both sides of the political fence, and what societal and legislative impacts these investigations may carry.⁶

5. **Unanticipated Changes in Leadership:** Donald Trump is currently 78 years old, and is currently the oldest President-Elect in the history of the United States. Given his age, his polarizing opinions, and the fact that there were two attempted assassinations against him during his campaign during 2024, one should consider the possibility of him not being able to serve out his Presidential term (which began in January of 2025)⁷. While the rules for succession are clear in the event that he is not able to complete his term, the confusion surrounding any event that calls for succession always inject some ambiguity. Further, despite there being a fully Republican-dominated Congress as of 2025, positions on all issues are never perfectly aligned, allowing for discord if/when a leadership change does occur.
6. **Supply Chain Disruptions:** Several straits and canals are considered major trade bottlenecks because they are crucial waterways that connect different continents, meaning any disruptions in their operations can significantly impact global trade flows, causing delays and price fluctuations. Some most key bottlenecks are the Panama Canal, the Suez Canal, the Strait of Hormuz, the Strait of Malacca, the Turkish Straits (Bosporus and Dardanelles), and the English Channel. To emphasize this point, heightened hostilities between Israel and Iran in June 2025 have transformed the Strait of Hormuz into an acute chokepoint risk. Roughly 20 million barrels per day of crude and petroleum liquids (about 20% of global consumption), along with one-fifth of worldwide LNG volumes, now transit the corridor under a cloud of potential closure⁸. Further, the threat of war has doubled war-risk insurance premiums for vessels traversing the Gulf⁹, spot ocean-freight rates from East Asia to UAE gateways have surged by 76%¹⁰, and container rates into Gulf ports are running 55% above previous levels¹¹. Carriers including Maersk and Hapag-Lloyd have suspended or curtailed calls at Israeli ports and placed vessels transiting Hormuz on heightened alert, with reroutes via the Cape of Good Hope adding 10–14 days and effectively removing up to 15% of global box-ship capacity¹².
7. **Cryptocurrencies:** With the increasing visibility of distributed cryptocurrencies, several countries are currently investigating the benefits of implementing their own cryptocurrencies based on their own hard currencies. Over the past few years, several Caribbean countries have launched successful cryptocurrencies, including the Bahamas, Grenada, and St. Kitt's & Nevis¹³. Ecuador, Senegal, and China have canceled or withdrawn their currencies¹⁴. Along these lines, on January 10, 2024, the SEC approved the listing and trading of a number of spot bitcoin exchange-traded product (ETP) shares¹⁵.

⁶ See <https://www.insurancebusinessmag.com/us/risk-management/news/global-civil-unrest-on-the-rise-as-costofliving-crisis-intensifies-449683.aspx>

⁷ <https://www.nytimes.com/2024/10/03/health/trump-health-records.html>

⁸ <https://www.eia.gov/todayinenergy/detail.php?id=65504> and <https://www.lngindustry.com/liquid-natural-gas/25062025/eia-about-one-fifth-of-global-lng-trade-flows-through-strait-of-hormuz/>

⁹ <https://english.aawsat.com/business/5155964-insurance-costs-ships-strait-hormuz-rise-over-60> and <https://www.ainvest.com/news/hormuz-tensions-double-cargo-insurance-premiums-0-5-2506/>

¹⁰ <https://www.cnn.com/2025/06/23/mideast-ocean-freight-rates-soar-on-iran-strait-of-hormuz-risks.html>

¹¹ <https://customer-hub.ligentia.com/hc/en-gb/articles/20871625011228-Customer-Update-Pending-Closure-of-Strait-of-Hormuz>

¹² <https://supplychaindigital.com/news/middle-east-conflict-impact-on-air-sea-freight> and <https://blogs.tradlinx.com/?p=10053>

¹³ <https://www.atlanticcouncil.org/cbdctracker/>

¹⁴ Ibid.

¹⁵ See <https://www.reuters.com/technology/spot-bitcoin-etfs-start-trading-big-boost-crypto-industry-2024-01-11/> and <https://www.sec.gov/news/statement/gensler-statement-spot-bitcoin-011023>

8. Global unrest: As we have now seen, Russia's (now stagnant) invasion of the Ukraine has led to a dramatic impact on the energy and grain sectors globally¹⁶. The impact of the Israel's current conflict(s) (with Hamas, Lebanon, and Iran) has also been speculated as impacting global economies¹⁷. Speculation regarding Iran's motives entails that Iran is interested in furthering its nuclear weapons program in order to supply arms to Russia to help with their aforementioned conflict in Ukraine¹⁸; this agenda has also immediately fueled Iran's conflict with Israel (and, now, the United States). Regardless, Iran's unwillingness to work with the International Atomic Energy Agency (as called for by a United Nations resolution)¹⁹ is causing concerns that could lead to actions that would significantly alter the U.S. consumer's economic balance, directly and indirectly.
9. Natural disaster risks: While there has been a significant amount of propaganda about climate warning and similar risks, this comment is intended to focus on events such as strong hurricanes and the recent California wildfires. While we are not passing judgment on the surrounding issues and whether the activities of people are contributing to some disasters, we are more concerned about the financial impact of these events. FEMA's national flood insurance program is at risk of being scuttled, resulting in the elimination of over 4.7M flood insurance policies and over \$1.3T in coverage, despite the program being over \$22B in arrears since its introduction.²⁰ State Farm is the primary insurer in California aside from the state's FAIR Plan, and is currently estimating payouts at \$7.6B as of this writing.²¹ Other disasters are similarly testing financial infrastructures around the country.
10. Governmental shutdown: The recent shutdown of the U.S. federal government halted the operation of most federal agencies not deemed essential, resulting in the suspension of key services and delays in significant economic reporting. Among the agencies that were most acutely affected were the Bureau of Labor Statistics, the Census Bureau, and the Bureau of Economic Analysis — all of which ceased data collection activities and pause the release of major reports (e.g., monthly jobs data and inflation statistics). The disruption in data collection and reporting substantially impaired the ability of decision-makers to gauge the state of the economy and make informed choices regarding policy. Recovering from the significant gap in data publication introduces significant ambiguity, with missed survey windows also affecting the accuracy and integrity of future reports, complicating trend analysis and policy evaluation.

¹⁶ <https://www.brookings.edu/articles/how-would-trump-and-harris-handle-the-russia-ukraine-war/>

¹⁷ <https://www.washingtonpost.com/world/2024/09/30/israel-lebanon-hezbollah-hamas-war-news-gaza/> and <https://www.nytimes.com/live/2024/10/01/world/israel-lebanon-hezbollah>

¹⁸ <https://www.heritage.org/middle-east/report/iran-inching-toward-nuclear-weapons-breakout-what-does-mean-the-united-states>

¹⁹ Per <https://www.iaea.org/sites/default/files/24/06/gov2024-39.pdf> and https://www.iaea.org/sites/default/files/unsc_resolution2231-2015.pdf

²⁰ <https://www.bloomberg.com/news/newsletters/2025-03-31/what-fema-s-demise-could-mean-for-flood-insurance>

²¹ <https://www.coverager.com/state-farm-pays-out-over-2-5-billion-for-ca-wildfire-claims/>

Data Analysis

As part of the Dodd-Frank Act, larger banking institutions in the United States are required to use government specified variables, and approved proprietary processes, to determine if they are adequately prepared for unexpected “systemic failures”. Some banking institutions are also incorporating portions or components of their forecasting processes to estimate future profitability; in order to do so, however, realistic forecasts (as opposed to extremes) are required. While arguments could be made about the variables included in this study, as stated in Jiang, et al., “... a conclusion that can be made for ... U.S. data is that there is little to no improvement in forecast accuracy when the number of predictors is expanded beyond 20-40 variables.”

Capitalytics provides the results of a rigorous analysis of every variable that is included in our quarterly macroeconomic study. These variables include the following²²:

1. Real GDP growth
2. Nominal GDP growth
3. Real disposable income growth
4. Nominal disposable income growth
5. Unemployment rate
6. CPI inflation rate
7. 1-month Treasury yield
8. 3-month Treasury yield
9. 6-month Treasury yield
10. 1-year Treasury yield
11. 3-year Treasury yield
12. 5-year Treasury yield
13. 7-year Treasury yield
14. 10-year Treasury yield
15. 20-year Treasury yield
16. 30-year Treasury yield
17. BBB corporate yield
18. Mortgage rate
19. Prime rate
20. US Average Retail Gasoline Price (\$/gal; all grades, all formulations)
21. S&P 500 Stock Price Index
22. Cost of Federal Funds (Primary Credit Rate)
23. Moody’s AAA Rate
24. Moody’s BAA Rate
25. Dow Jones Total Stock Market Index
26. House Price Index
27. Commercial Real Estate Price Index
28. Market Volatility Index (VIX)

²² This study is motivated by the Federal Reserve Board’s Dodd-Frank Act, which includes requirements to consider various international factors; however, those factors will not be discussed extensively in this particular report based on the target use and audience of this report.

Our procedure is as follows:

1. Data is collected per the information in Appendix A, “Data sources”.
2. Correlations between variables are identified to determine which variables are may be considered as “dependent” (upon other variables, i.e., highly correlated with other variables as part of their nature).
3. Multiple forecast analyses are performed per the procedure in Section I of Appendix B for all variables, with the results of corresponding forecasts aggregated.
4. Regressions are performed per the procedure in Section III of Appendix B for all variables.
5. The rationale for these analyses, modifications, and the conclusions thereto are documented in the following section of this report, “Data Series Conclusions”.

Correlations

Part of Capitalytics’ analysis of macro-economic variables entails computing the correlation between variables, to establish the existence and level of interdependence of variables. In Appendix C of this document, we document the 133 pairs of variables that showed absolute correlation values greater than or equal to 0.6. As part of this portion of the study, Capitalytics identified the following sets of strong dependencies (correlations with magnitudes greater than 0.95) between variables that were subsequently validated as significant, long-term, recurring correlations as part of the nature of the variables; these pairings of variables are viewed as extremely significant based on the respective definitions of the variables and will be leveraged as discussed in Section I of Appendix B.

Table 14: Variable Dependencies

Regression (Dependent) Variable		Independent Variable ²³
1-month, 3-month, 6-month, 3-year Treasury yield	... depends on ...	1-year Treasury yield
5-year Treasury yield		3-year Treasury yield*
7-year Treasury yield		5-year Treasury yield*
10-year Treasury yield		7-year Treasury yield*
20-year and 30-year Treasury yield, and		10-year Treasury yield*
30-year Mortgage rate		7-year Treasury yield*
Moody’s AAA yield		30-year Mortgage rate*
Prime Rate and Fed Funds Rate		1-year Treasury yield

²³ It should be immediately apparent that some of the variables that are listed as “independent” are, in fact, dependent on other variables; these “independent” variables that actually have dependencies are noted by a trailing “*”.

Real & Nominal GDP Growth, Real & Nominal Disposable Income Growth, and CPI Inflation Rate

Analysis

The U.S. economy experienced robust expansion during the third quarter of 2025, though substantial uncertainty clouds the fourth-quarter outlook due to unprecedented data collection disruptions stemming from the October-November federal government shutdown.

Real and Nominal GDP

The delayed release of 3Q2025 GDP data warrants emphasis. The Bureau of Economic Analysis originally scheduled the advance estimate for October 30, 2025, with the second estimate planned for November 26. However, the 43-day federal government shutdown halted critical data collection activities across multiple agencies, preventing BEA from obtaining sufficient source data to produce timely estimates. The initial estimate was ultimately published on December 22, 2025, replacing both the advance and second estimate releases and employing a hybrid methodology combining data typically used for both reporting stages. BEA explicitly noted that substantial gaps remained in key source data series, necessitating increased reliance on modeling assumptions and imputations.²⁴

Real gross domestic product increased at an annualized rate of 4.3% during 3Q2025, representing the strongest quarterly performance in two years and a meaningful acceleration from the 3.8% growth recorded during 2Q2025²⁵. This figure substantially exceeded consensus forecasts²⁶, which had projected a drop to approximately 3.0% to 3.3%. Nominal GDP expanded by 8.2% (ann.) during 3Q2025, reaching \$7.77T.^{27,28}

The composition of 3Q2025 growth reflected several significant shifts in underlying economic activity. (See Figure 11.) Personal consumption expenditures accelerated to 3.5% growth (ann.), up notably from 2.5% during 2Q2025, indicating sustained consumer resilience despite elevated interest rates and persistent inflationary pressures.²⁹ Export activity contributed positively to growth, while government spending reversed prior-quarter declines with modest expansion.³⁰ Investment activity remained weak, continuing to subtract from overall growth, though the magnitude of the drag diminished relative to 1Q2025.³¹ Notably, imports declined during the quarter—a technical positive contribution to GDP calculations—likely reflecting the exhaustion of inventory stockpiles accumulated during early 2025 ahead of anticipated tariff implementations.³²

²⁴ <https://www.bea.gov/sites/default/files/2025-12/gdp3q25-ini.pdf>

²⁵ <https://fred.stlouisfed.org/series/GDPC1>

²⁶ See <https://www.bloomberg.com/news/articles/2025-08-28/us-economy-expands-at-revised-3-3-rate-as-investment-improved> and <https://www.cnbc.com/2025/08/28/us-economy-grew-3point3percent-in-q2-growth-was-stronger-than-initially-thought.html>

²⁷ <https://fred.stlouisfed.org/series/NGDPSAXDCUSQ>

²⁸ <https://www.bea.gov/news/2025/gross-domestic-product-3rd-quarter-2025-initial-estimate-and-corporate-profits>

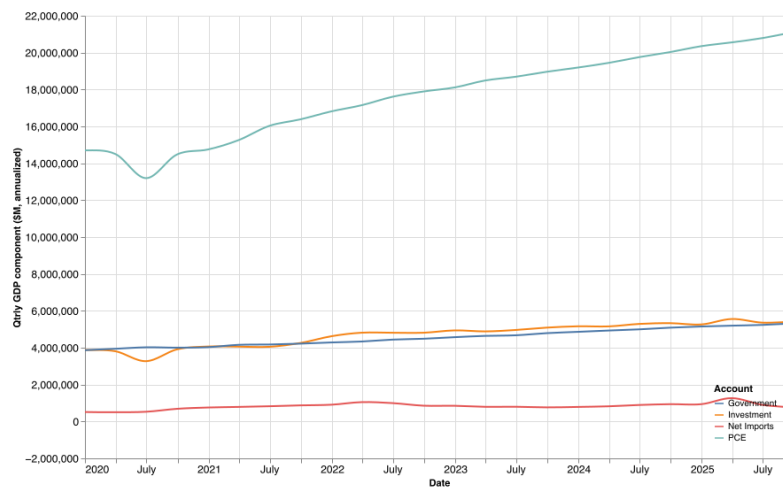
²⁹ <https://www.reuters.com/world/us/us-economic-growth-likely-remained-strong-third-quarter-2025-12-23>

³⁰ <https://www.independent.org/article/2025/12/31/third-quarter-gdp-growth/>

³¹ <https://www.wsj.com/economy/federal-reserve-outlook-charts-a5fc28f2>

³² <https://www.bea.gov/data/gdp/gross-domestic-product>

Figure 11: Quarterly GDP Components

Source: Bureau of Economic Analysis (<https://www.bea.gov>)

In the absence of official data, several real-time tracking models and private-sector estimates provide useful estimations on 4Q2025 economic activity.³³ The Federal Reserve Bank of Atlanta's GDPNow model projected 4Q2025 real GDP growth of 3.0% (ann.) as of its December 23 initialization.³⁴ This estimate incorporates the modest amount of November and early-December data released following the shutdown's conclusion.³⁵

The Congressional Budget Office produced scenario-based estimates of the shutdown's direct economic impact prior to its resolution. CBO projected that the 43-day shutdown would reduce 4Q2025 annualized real GDP growth by 1.5 to 2.0 percentage points relative to a no-shutdown baseline, with the drag stemming from federal worker furloughs, suspended government contractor payments, and curtailed consumer spending by affected households.³⁶ Importantly, CBO anticipated that most of this reduction would reverse during 1Q2026 as back-pay was disbursed and deferred spending occurred, creating a temporary rebound that would artificially inflate 1Q2026 growth figures.³⁷

Private forecasters have converged on estimates suggesting 4Q2025 real GDP growth being between 2.0% and 3.0%, down modestly from 3Q2025 but remaining positive.³⁸ The Conference Board's Leading Economic Index dropped during the fourth quarter, consistent with slowing—though not contracting—economic activity.³⁹ Survey-based measures, including purchasing managers' indices for manufacturing and services, showed mixed signals, with manufacturing output growth persisting through October despite broader softness in new orders and employment components.⁴⁰

Nominal GDP growth during 4Q2025 likely decelerated from the 8.2% (ann.) pace recorded during 3Q2025, reflecting both moderating real activity and cooler inflation. Based on the 3Q2025 level of

³³ https://www.richmondfed.org/research/national_economy/macro_minute/2025/phantom_figures_missing_data_in_october

³⁴ <https://www.atlantafed.org/cqer/feature/2025/12/23-gdpnow>

³⁵ <https://www.atlantafed.org/cqer/research/gdpnow>

³⁶ <https://www.cbo.gov/publication/61823>

³⁷ <https://www.cbo.gov/system/files/2025-10/61823-Shutdown.pdf>

³⁸ See <https://www.spglobal.com/ratings/en/regulatory/article/economic-outlook-us-q4-2025-below-trend-growth-persists-amid-a-swirl-of-policy-shifts-s101646549> and <https://www.philadelphiafed.org/surveys-and-data/real-time-data-research/spf-q3-2025>

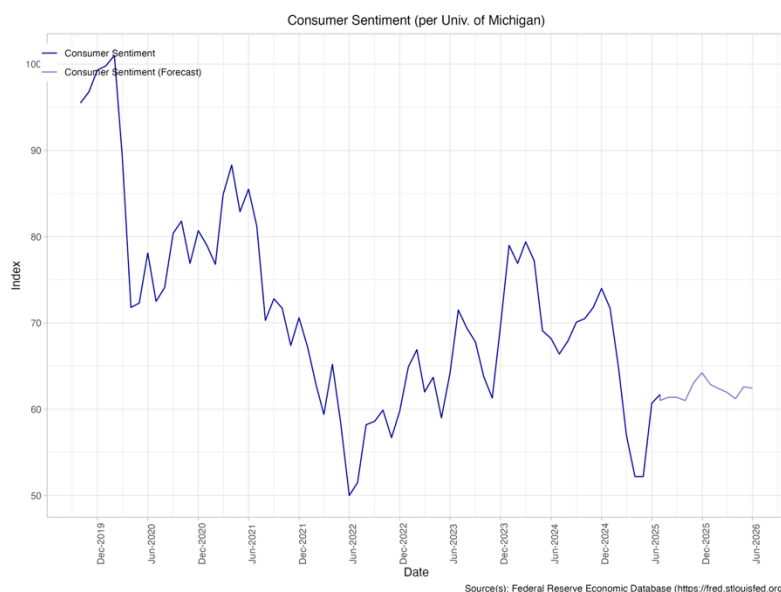
³⁹ <https://www.conference-board.org/topics/us-leading-indicators/>

⁴⁰ See <https://tradingeconomics.com/united-states/business-confidence>, <https://www.economy.com/united-states/purchasing-managers-index>, and <https://tradingeconomics.com/united-states/manufacturing-pmi>

\$7.77T and assuming 4Q2025 growth in line with private forecasts, nominal GDP was likely between \$7.85T and \$7.90T by year-end, implying growth between 4% and 6% (ann.). This estimate carries substantial uncertainty given the assumptions listed, missing October data, and the shutdown's distortionary effects on both production and price measurement.⁴¹

Economic forecasters project continued slowing GDP growth during 2026. The median forecast from the Federal Reserve Board of Governors' December 2025 Summary of Economic Projections anticipates real GDP growth of 1.7% during 2026⁴², down from an estimated $\pm 2.0\%$ during 2025. Private-sector forecasts span a somewhat wider range with divergent assumptions, with, e.g., Deloitte estimating 1.9%⁴³ and Goldman Sachs projecting 2.6% growth⁴⁴.

Figure 12: US Nationwide Consumer Confidence (per University of Michigan)



Real and Nominal Disposable Personal Income

Real disposable personal income per capita exhibited modest growth during 3Q2025, though precise figures remain subject to revision as BEA incorporates delayed source data.⁴⁵ Real disposable personal income appears to have exhibited effectively zero growth during 3Q2025.⁴⁶ (Real disposable income per capita stood at \$52,635 during August and September 2025⁴⁷, presenting only 1.4% growth since January, and down from 2.8% growth Y/Y in August 2024.⁴⁸) This lack of growth represented a marked deceleration from the slim positive growth rates recorded during 1H2025, and signaled the intensification of headwinds confronting household budgets. On a Y/Y basis, real disposable income growth continued downward, registering just 1.5% growth during 3Q2025, down from 1.8% during

⁴¹ <https://fred.stlouisfed.org/series/NGDPSPAXDCUSQ>

⁴² <https://www.federalreserve.gov/monetarypolicy/files/fomcproptabl20251210.pdf>

⁴³ <https://www.deloitte.com/us/en/insights/topics/economy/us-economic-forecast/united-states-outlook-analysis.html>

⁴⁴ <https://www.foxbusiness.com/economy/us-economy-expected-grow-faster-2026-despite-stagnant-job-market-goldman-sachs>

⁴⁵ <https://www.bls.gov/cpi/additional-resources/2025-federal-government-shutdown-impact-cpi.htm>

⁴⁶ <https://fred.stlouisfed.org/series/A067RO1Q156NBEA>

⁴⁷ <https://fred.stlouisfed.org/series/A229RX0>

⁴⁸ <https://fred.stlouisfed.org/series/A229RX0>

2Q2025 and 2.0% during 1Q2025.⁴⁹ This pattern of deceleration reflects structural pressures rather than temporary volatility, suggesting persistent constraints on real income expansion.⁵⁰

Nominal disposable income per capita reached \$67,453 per capita in September, reflecting monthly gains of 0.4% (M/M) in both August and September.⁵¹ The widening gap between nominal and real figures directly captures the inflationary environment's impact on household purchasing power.⁵² Nominal disposable income likely continued expanding during 4Q2025, supported by wage gains in a still-tight labor market⁵³ and cost-of-living adjustments to Social Security benefits implemented in January 2026⁵⁴. However, the acceleration in inflation during the second half of 2025⁵⁵ eroded purchasing power, constraining real income growth and contributing to deteriorating consumer sentiment (see Figure 12) measures throughout the period.

The Bureau of Economic Analysis reported total personal savings of \$1.09T in September 2025, with the personal savings rate registering 4.7%. Notably, the savings rate had compressed sharply during the third quarter, falling from 5.0% during 2Q2025 to just 4.2% during 3Q2025.⁵⁶ This 80-basis-point decline in a single quarter indicates that households increasingly financed consumption through withdrawals rather than current income, drawing down accumulated buffers to maintain spending levels amid stagnant real income growth. The pattern suggests that consumer spending's apparent resilience during 3Q2025 was achieved through **unsustainable balance sheet adjustments** rather than genuine income expansion, and **the quarter's robust GDP growth is not likely continue**.⁵⁷

The assessment of 4Q2025 disposable income dynamics confronts the same data collection disruptions that affected GDP measurement. The available September data provide the last reliable observation before the data blackout. Personal income increased \$94.5B in September, or increasing by 0.4% (M/M), while disposable personal income (after taxes) rose \$75.9B, or 0.3%. Personal consumption expenditures increased by \$65.1B, or 0.3%, during the month. The relationship between these figures (i.e., with consumption growth roughly matching disposable income growth) supports the point that households maintained spending with either meager savings added, or by slightly depleting savings during September, with little margin provided in either case for absorbing additional negative shocks.⁵⁸

Inflation

While inflation is no longer in crisis territory in late 2025, it has not yet fully returned to the Federal Reserve's 2% target. Current data show 3Q2025 as an inflection point where underlying price pressures re-accelerated, and 4Q2025 is a quarter of renewed disinflation. Finally, projections point to a slow glide path toward that "2% target" over several years rather than a rapid normalization.^{59,60}

⁴⁹ Ibid.

⁵⁰ <https://www.nytimes.com/2025/12/23/business/us-economy-consumer-spending.html>

⁵¹ <https://fred.stlouisfed.org/series/A229RC0>

⁵² https://www.ey.com/en_us/insights/strategy/macro/economics/personal-income-and-spending

⁵³ <https://www.bbvaresearch.com/en/publicaciones/us-downward-revisions-to-job-gains-show-a-weakening-labor-market/>

⁵⁴ <https://www.ssa.gov/news/en/press/releases/2025-10-24.html>

⁵⁵ <https://www.usinflationcalculator.com/inflation/current-inflation-rates/>

⁵⁶ <https://www.bea.gov/news/2025/personal-income-and-outlays-data-update-september-2025>

⁵⁷ <https://www.independent.org/article/2025/12/31/third-quarter-gdp-growth/>

⁵⁸ <https://www.bea.gov/news/2025/personal-income-and-outlays-data-update-september-2025>

⁵⁹ https://www.ey.com/en_us/insights/strategy/macro/economics/cpi-report

⁶⁰ <https://fredblog.stlouisfed.org/2025/12/fomc-summary-of-economic-projections-december-2025/>

As we discussed earlier, the 3Q2025 GDP release shows that the price index for GDP rose at a 4.3% (ann.) rate, a notable increase from the 3.8% seen in 2Q2025.⁶¹ The PCE price index accelerated from 2.1% in 2Q2025 to 2.8% (Q/Q ann.)⁶², while core PCE (excluding food and energy) increased to 2.9% from 2.6% during the same periods⁶³. On a 12-month basis, the PCE price index was up 2.8% in September 2025, with core PCE at roughly the same value; the Dallas Fed’s trimmed-mean PCE inflation measure registered 2.7% over the same period⁶⁴, reinforcing the view that underlying inflation pressures had become moderately consistent on the upper end between 2.0% and 3.0%.

This pattern of “3Q” data suggests that, after a period of disinflation earlier in 2024 and early 2025, the combination of robust demand (real GDP up 4.3% annualized) and cost pressures—including tariff-related price increases—**pushed inflation away from the Fed’s target and back towards consistent “3% values”**. The fact that core PCE (2.9%) slightly exceeded headline PCE (2.8%) underscores that the “stickiness” is not simply an energy story; services, shelter, and certain goods categories continued to experience elevated price growth.⁶⁵

The picture shifts noticeably as more detailed 4Q2025 data become available for CPI. The November 2025 CPI report shows that headline CPI rose 2.7% Y/Y, down from 3.0% in September.⁶⁶ Core CPI (excluding food and energy) dropped to 2.6% Y/Y in November, down 0.4 percentage points from 3.0% in September.⁶⁷ On a three-month annualized basis, TD Economics estimates that core inflation slowed to just 1.6% through November⁶⁸, indicating that near-term momentum in underlying inflation had weakened substantially by late 4Q.⁶⁹

The Cleveland Fed’s inflation nowcasting model, which fills in missing official data (including the October CPI report delayed by the shutdown), projects 4Q2025 inflation rates of about 2.45% for headline CPI, 2.13% for core CPI, 2.26% for PCE, and 2.18% for core PCE on a Y/Y basis.⁷⁰ These nowcasts imply that, despite the earlier 3Q acceleration, both headline and core inflation measures were tracking slightly above but reasonably close to the Fed’s “2% target” by the end of 2025. In short, 4Q2025 appears to mark a renewed disinflation phase, with the average level of inflation still somewhat elevated but clearly cooling in the short term.

The government shutdown has created a structural break in the continuity of U.S. economic statistics during a period of significant policy transitions and elevated uncertainty. October 2025 will permanently remain a partial blind spot in the official economic record, complicating efforts to assess the economy’s true trajectory and introducing lasting ambiguity into retrospective analyses of this period. While the robust 3Q2025 performance provides some reassurance about underlying economic resilience, the opacity surrounding 4Q2025 underscores the critical importance of reliable, timely statistical infrastructure for informed economic decision-making.

⁶¹ <https://fred.stlouisfed.org/series/GDPC1>

⁶² <https://fred.stlouisfed.org/series/PCEPI>

⁶³ <https://fred.stlouisfed.org/series/DPCCRV1Q225SBEA>

⁶⁴ <https://www.dallasfed.org/research/pce>

⁶⁵ See <https://www.bea.gov/news/2025/personal-income-and-outlays-data-update-september-2025> and <https://econsnapshot.com/2025/12/28/q3-gdp-reveals-strong-growth/>

⁶⁶ <https://www.bls.gov/news.release/pdf/cpi.pdf>

⁶⁷ <https://tradingeconomics.com/united-states/core-inflation-rate>

⁶⁸ <https://economics.td.com/us-cpi>

⁶⁹ <https://www.cnbc.com/2025/12/18/cpi-inflation-report-november-2025.html>

⁷⁰ <https://www.clevelandfed.org/indicators-and-data/inflation-nowcasting>

Other Commentary

- “Third quarter GDP surprised to the upside and the mix of growth was broad and healthy. Questions remain as to whether households can continue to power growth as consumption outpaced income. But this is a positive report that will ease concerns of a looming slowdown, and credit unions stand ready to support their members to take advantage of a more favorable economic environment—whether that’s in the form of helping consumers better plan for the future, opening new businesses, or preparing to make important purchases for themselves and their families,” said America’s Credit Unions Chief Economist Curt Long.”
(<https://www.americascreditunions.org/news-media/news/gdp-increased-43-third-quarter-2025>; Jan. 2, 2026)
- “Fourth-quarter [GDP] growth should be weak, though. Consumer and business spending will pull back to some degree, after rising earlier in the year to get ahead of Washington’s new tariffs. Motor vehicle sales in particular will come in lower, given the surge in the third quarter. Of course, government spending will be affected by the federal shutdown. Government employees will receive back pay, but government contractors will not, unless they were on previously funded projects. But one positive is that strong stock market gains this year should keep wealthier consumers spending freely.” (<https://www.kiplinger.com/economic-forecasts/gdp>; Dec. 30, 2025)
- “Consumer spending growth is likely to be weaker going into next year because there are too many economic headwinds. Consumer sentiment measures appear to be softening again. The hiring slowdown in the labor market is creating job anxiety, even among those who are employed. Households tend to cut spending and add to savings when the possibility of losing a job looms. If the unemployment rate or initial claims for unemployment rise, that fear will intensify. Also, price increases caused by tariffs are starting to show up among home furnishings and other imported goods in the Consumer Price Index (CPI). Price increases could become more prevalent as inventories of goods that were stockpiled ahead of the tariffs start to run down and merchants begin passing on the cost of tariffs on goods they have imported recently. Consumers should pull back on buying imported goods as this happens.”
(<https://www.kiplinger.com/economic-forecasts/retail-sales>; Dec 18.2025)

Employment

Analysis

The national unemployment rate averaged 4.3% in 3Q2025, ticking up from 4.2% in 2Q2025. By August and September, the rate stood at 4.4%, notably higher than the 4.1% recorded in September 2024.⁷¹ This drift reflected a labor market characterized by a "low-hire, low-fire" dynamic, where firms hesitated to expand payrolls rather than aggressively shedding existing staff.⁷²

As we have mentioned, the 43-day federal government shutdown left economists in a lurch beginning October 1. When official reporting resumed in mid-December, the data confirmed a material deterioration in the employment data; the unemployment rate had climbed to 4.6% in November 2025, the highest level since September 2021.⁷³ (See Figure 13 and Figure 14.)

⁷¹ <https://fred.stlouisfed.org/series/UNRATE>

⁷² <https://finance.yahoo.com/news/the-us-labor-market-ground-to-a-halt-in-2025-the-risk-in-2026-is-that-it-cracks-140026614.html>

⁷³ <https://www.bls.gov/news.release/pdf/empst.pdf>

Figure 13: US Nationwide monthly unemployment rate

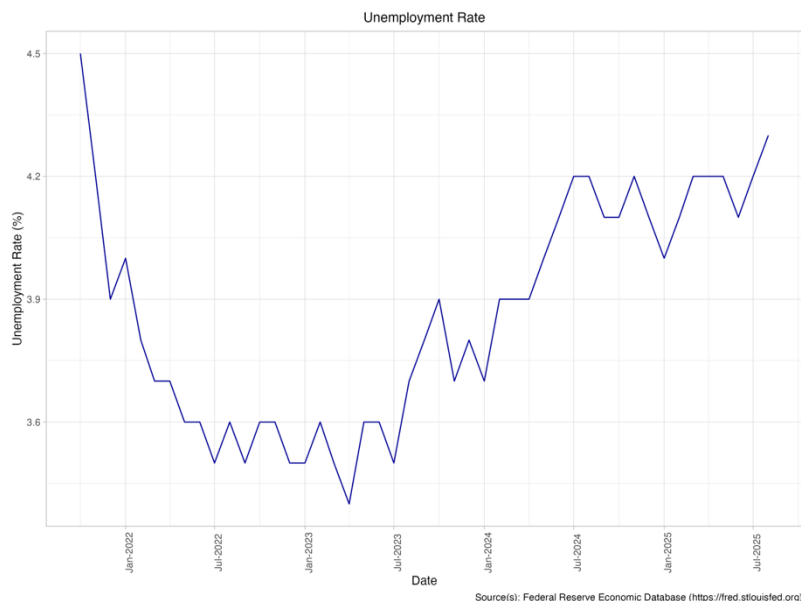
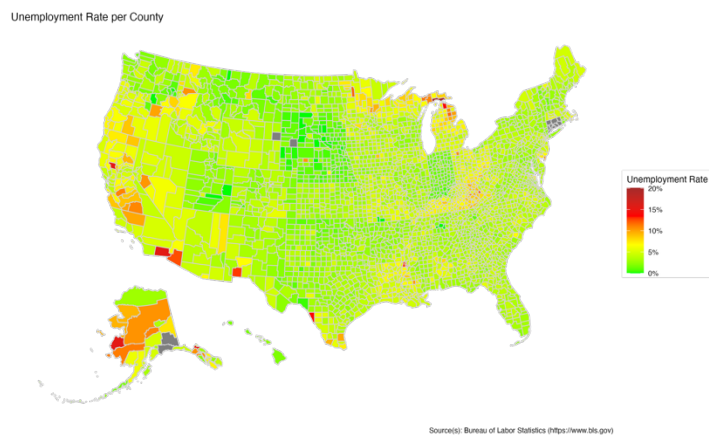


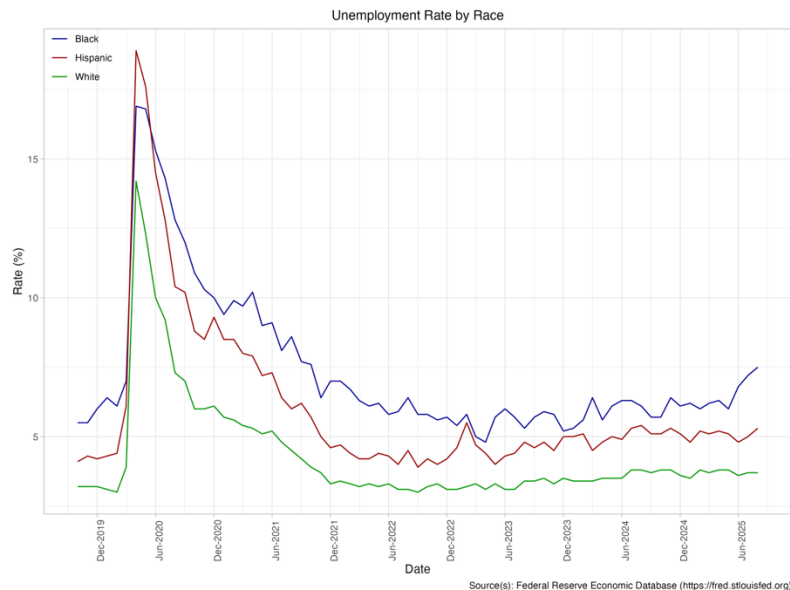
Figure 14: Nationwide unemployment per county



Underlying demographic data revealed widening fractures beneath the aggregate stability. The Black-white unemployment ratio widened to 1.9-to-1 during the quarter, signaling that the softening demand for labor was disproportionately impacting marginalized groups. Hispanic unemployment rates exceeded 6.0 percent in ten states, further evidencing uneven economic stress.⁷⁴ (See Figure 15.) While the total number of unemployed persons reached 7.6 million in September—an increase of roughly 700,000 year-over-year—the stock of long-term unemployed remained relatively stable.

⁷⁴ <https://www.epi.org/indicators/state-unemployment-by-race-and-ethnicity/>

Figure 15: Unemployment Rate by Race



Private sector data helped to fill the official vacuum of 4Q2025 data. The ADP National Employment Report revealed that private employers shed 32,000 jobs in November, a stark reversal from the upwardly revised 47,000 gain in October. This contraction was heavily concentrated among small businesses (fewer than 50 employees), which eliminated 120,000 positions, while large firms managed to add 90,000 roles—a divergence that highlights the unequal burden of the current credit and tariff environment.⁷⁵ Sectoral weakness was broad-based, with manufacturing, information, and professional services all posting net job losses.⁷⁶

Most troubling was the rapid erosion of gains for specific demographics. The unemployment rate for Black women surged to 8.1% in November, a 2.0 percentage point spike from September, while teenage unemployment jumped to 16.3%. These shifts suggest a structural "erasure" of vulnerable workers from the middle class rather than a mere cyclical cooling.⁷⁷

Looking ahead to 2026, **the labor market appears poised for continued stagnation rather than a swift recovery.** Forecasters project the unemployment rate to average roughly 4.5% throughout the coming year, with risks tilted to the upside. The "no-hire" environment is expected to persist, with hiring intentions for the Class of 2026 projected to rise by a negligible 1.6%.⁷⁸

The Federal Reserve's updated projections anticipate the unemployment rate stabilizing in the 4.4%-4.5% range by late 2026, before trending gradually toward a long-run average of 4.3% by 2027.⁷⁹ However, this baseline assumes no further severe shocks from the trade or fiscal policy spheres. Given

⁷⁵ <https://mediacenter.adp.com/2025-12-03-ADP-National-Employment-Report-Private-Sector-Employment-Shed-32,000-Jobs-in-November-Annual-Pay-was-Up-4-4>

⁷⁶ <https://www.cnbc.com/2025/12/03/adp-jobs-report-november-2025-private-payrolls-unexpectedly-fell-by-32000-.html>

⁷⁷ <https://fortune.com/2025/12/31/soft-landing-economic-narrative-wrong-black-women-unemployment/>

⁷⁸ <https://finance.yahoo.com/news/the-us-labor-market-ground-to-a-halt-in-2025-the-risk-in-2026-is-that-it-cracks-140026614.html?guccounter=1>

⁷⁹ <https://finance.yahoo.com/news/the-us-labor-market-ground-to-a-halt-in-2025-the-risk-in-2026-is-that-it-cracks-140026614.html>

the proven sensitivity of small business hiring to the current macro environment, the path to stabilization remains precarious.

Other Commentary

- “[David Rosenberg, owner of Rosenberg Research] said the collapse of the labor market and a subsequent recession will force the Fed to cut rates by 125 basis points to 2.25% by the end of the year. ... ‘It will not be politics that determines where the Fed’s interest rate is going to be going. It is not whether Kevin Hassett, Kevin Warsh or Kevin Costner [is] Fed chair,’ he said. ‘The data will drive the Fed.’” (<https://www.marketwatch.com/story/u-s-on-verge-of-unemployment-surge-that-forces-fed-to-slash-rates-wall-street-veteran-says-e4bd0be1>; Jan. 3, 2026)
- “Expect the unemployment rate to continue to edge up through the first half of 2026, peaking at 4.8% before retreating to 4.5% by year-end. Wage growth looks like it will end this year at about 3.5% and continue to weaken gradually, ending at 3.0% by the end of 2026. Wage growth tends to lag other labor market indicators.” (<https://www.kiplinger.com/economic-forecasts/jobs>; Dec. 17, 2025)
- “The first half of 2026 will likely deliver uncomfortably slow growth in the labor market, with unemployment peaking at 4.5% in early 2026. The quits rate, or the rate at which people are voluntarily leaving their jobs, is lower than pre-COVID, indicating decreased confidence in finding new roles. The low ratio of job openings to the unemployed reflects this sentiment.” (<https://www.jpmorgan.com/insights/global-research/outlook/labor-market-forecast-2026>; Dec. 10, 2025)

Federal Funds (Primary Credit) Rate

Analysis

When a depository institution has a shortfall and need for liquidity, it may borrow funds on a short-term basis from the Federal Reserve. The “discount rate” is the interest rate charged to commercial banks and other depository institutions on loans they receive from their regional Federal Reserve Bank’s “discount window”. The Federal Reserve Banks offer three discount window programs to depository institutions: Primary Credit, Secondary Credit, and Seasonal Credit, each with its own interest rate. Under the Primary Credit program, loans are extended for a very short term (usually overnight) to depository institutions in generally sound financial condition. (Secondary Credit & Seasonal Credit may be available to institutions that do not meet the “sound financial condition” criteria.) The discount rate charged for primary credit (the primary credit rate) is set above the usual level of short-term market interest rates.

Inter-bank loan rates will also track with the primary credit rate for overnight lending. The rate for inter-bank loans is generally driven by the target federal funds rate; the target federal funds rate is the target interest rate set by the Federal Open Market Committee (FOMC), and is intended as a guide for the rate at which commercial banks borrow and lend their excess reserves to each other on an overnight basis. The FOMC sets the target federal funds rate periodically based on key economic indicators that may show signs of inflation, recession, or other issues that can affect sustainable economic growth. The actual interest rate that a lending bank will charge is determined through negotiations between the two

banks. The weighted average of interest rates across all transactions of this type is known as the effective federal funds rate.

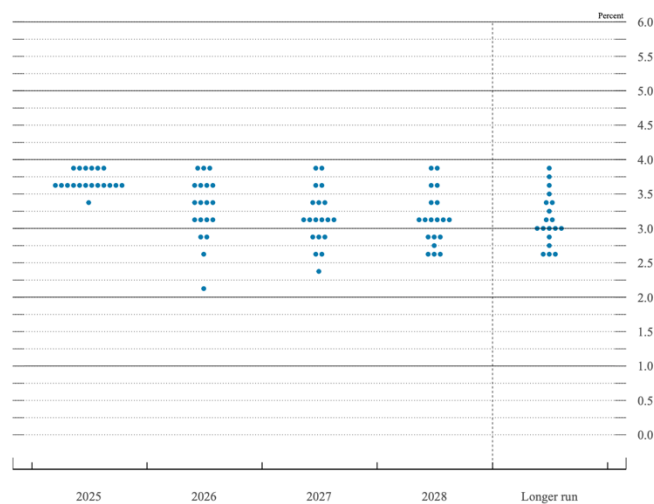
The Federal Reserve entered the 4Q2025 in a state of evident tension between its dual mandate of full employment and price stability. After holding the federal funds rate steady for much of the first half of the year, the FOMC pivoted decisively to rate reductions beginning in September, implementing three consecutive 25-basis-point cuts that reduced the target range from 4.25% - 4.50% to 3.50% - 3.75% by YE2025. This action marked a substantive shift in monetary policy, even as the economic rationale for such cuts remains contested and the leadership transition looming in May 2026 has introduced considerable uncertainty.

Figure 16: FOMC "Dot Plot" from September 2025 Board of Governors' Meeting



Source: <https://www.federalreserve.gov/monetarypolicy/files/fomcproptabl20250917.pdf>

Figure 17: FOMC "Dot Plot" from December 2025 Board of Governors' Meeting



Source: <https://www.federalreserve.gov/monetarypolicy/files/fomcproptabl20250917.pdf>

In September 2025, the FOMC made its first rate cut since the pandemic recovery, reducing the federal funds rate by 25 bp. (See Figure 16.) This decision came amid clear deterioration in labor market momentum⁸⁰ and mounting evidence that the prior year's inflation-fighting policy stance had done its work⁸¹. By the time of the September meeting, headline inflation was approximately 2.7% - 2.9% Y/Y⁸², and core inflation was about 3.0%⁸³. Simultaneously, the unemployment rate had risen to $\pm 4.4\%$, and private payrolls were decelerating sharply.

Fed Chair Jerome Powell justified the cut by citing significant “downside risks” to the labor market, indicating that the central bank was shifting its policy bias toward supporting employment even as inflation, while declining, remained above the 2% target. The FOMC signaled an expectation of “additional adjustments” to the target range in the quarters ahead, implying a gradual easing cycle rather than a single corrective move.⁸⁴

4Q2025 brought further rate cuts despite considerable internal FOMC dissent and heightened external controversy. In October and December, the committee cut rates by an additional 25 bp at each meeting, bringing the year-end target to 3.50–3.75%. This marked the third consecutive reduction in the policy rate, a tightening-to-easing reversal occurring amid increasing unemployment and tariff-driven cost pressures that were beginning to feed through the economy.

The December 2025 decision proved contentious internally. While most members supported the quarter-point cut, one member voted in favor of a 50-basis-point reduction, citing labor market weakness, while two others dissented in favor of holding rates steady, citing persistent inflation risk.⁸⁵ (See Figure 17.)

More notably, the Fed's forward guidance in December shifted subtly but significantly. Previous statements referred simply to additional “adjustments” to the target range for the federal funds rate. The December statement instead refers to “the extent and timing of additional adjustments,”⁸⁶ a word choice that market observers interpreted as signaling less confidence about further cuts in the near term. Chair Powell amplified this message in his post-meeting press conference, stating that “the federal funds rate is now within a broad range of estimates of its neutral value” and that the FOMC is “well positioned to wait and see how the economy evolves.”⁸⁷ This language, combined with the committee's decision to initiate Treasury bill purchases of \$40 billion per month to maintain adequate banking-system reserves⁸⁸, indicated a policy pause and a shift to a more defensive posture.

Despite the hawkish tilt to the December statement, the FOMC's median projection (the “dot plot” shown in Figure 17) maintains an expectation of one additional rate cut in 2026, bringing the target range to approximately 3.25% - 3.50% by year-end. However, this projection masks significant disagreement among committee members. The December dot plot showed a wide dispersion of views: three members expect a rate hike, four expect no change, four expect one cut, four expect two cuts,

⁸⁰ https://www.bls.gov/news.release/archives/empst_09052025.htm

⁸¹ <https://www.cnbc.com/2025/09/26/pce-inflation-august-2025.html>

⁸² <https://www.bls.gov/charts/consumer-price-index/consumer-price-index-by-category-line-chart.htm>

⁸³ <https://tradingeconomics.com/united-states/core-inflation-rate>

⁸⁴ <https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20250917.pdf>

⁸⁵ <https://tradingeconomics.com/united-states/interest-rate>

⁸⁶ <https://www.federalreserve.gov/mediacenter/files/FOMCpresconf20251210.pdf>

⁸⁷ Ibid.

⁸⁸ <https://www.reuters.com/business/finance/fed-says-will-start-reserve-management-treasury-bill-buying-2025-12-10/>

two expect three cuts, one expects four cuts, and one expects more than four cuts, i.e., there is no consensus on the likely policy path for 2026.

The committee's economic projections provide context for this scattered outlook. FOMC members expect real GDP growth to accelerate to 2.3% in 2026 (up from 1.7% in 2025), unemployment to stabilize around 4.5%, and core PCE inflation to moderate to 2.5% (from an estimated 3.0% for 2025). If those forecasts prove accurate, they would support a patient approach to further rate reductions. However, if tariff pass-through accelerates or employment deteriorates more sharply, the case for additional cuts would strengthen materially.⁸⁹

Complicating the 2026 outlook is the certainty that Jerome Powell's tenure as Fed Chairman will end on May 15, 2026. President Trump has indicated that a nomination for Powell's successor will likely be announced in early 2026, with Senate confirmation expected shortly thereafter. The frontrunner for the role is Kevin Hassett, Trump's National Economic Council Director and a long-time Trump adviser who has historically advocated for lower interest rates and fiscal stimulus.⁹⁰

This transition introduces material uncertainty. If Hassett is confirmed, markets widely expect a more accommodative monetary policy stance, potentially including additional rate cuts beyond those currently projected by the committee.⁹¹ Conversely, if a more hawkish candidate is selected, the policy trajectory could be materially different. The period after the end of Powell's tenure, both until the nomination process ends, and until he completely steps down from the FOMC (which could be in 2028, the end of his term as a board member) could also turn into a period of leadership limbo.⁹²

For 2026, the most likely path involves one or two additional 25-basis-point cuts, likely spaced across multiple meetings and contingent on incoming labor and inflation data. However, the impending leadership transition and the wide dispersion of FOMC member forecasts mean that policy remains uncomfortably uncertain. **We expect the Fed to remain cautious, and will likely implement two 25 bp cuts during 2026.** Should labor conditions deteriorate sharply, the new leadership (likely Hassett) may pursue additional easing; conversely, if tariff-driven inflation reemerges, the committee may pause or even reverse course.

In Figure 18, we see the historical and projected relationship between the target federal funds rate and the 1-year T-bill yield.

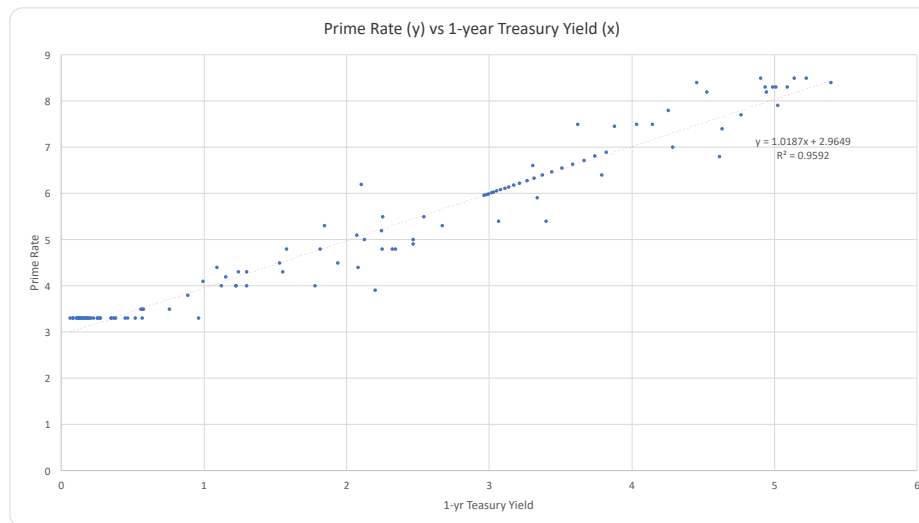
⁸⁹ <https://www.federalreserve.gov/monetarypolicy/files/fomcproptabl20251210.pdf>

⁹⁰ <https://www.cnbc.com/2025/12/15/hassetts-fed-chair-candidacy-received-pushback-from-high-level-people-close-to-trump-sources-say.html>

⁹¹ <https://www.validusrm.com/2025/12/10/kevin-hassett-a-potential-shift-in-federal-reserve-leadership>

⁹² <https://www.investopedia.com/what-to-expect-from-the-fed-in-2026-11875776>

Figure 18: Primary Credit, as a function of 1-year Treasury yield



Source: Authors' calculation

Other Commentary

- “White House economic adviser Kevin Hassett is a frontrunner to be President Donald Trump’s choice to chair the Federal Reserve, but some in the administration are questioning whether he’s up to the job. ... Hassett’s detractors believe he has not been effective as head of the National Economic Council other than as a public messenger for the president’s agenda, playing little part in driving policies, according to three people familiar with the administration’s internal dynamics. That’s causing concern that he is ill-suited to take the helm of the central bank at a time when it is playing such a pivotal role in the economy, ... ”
(<https://www.politico.com/news/2025/12/16/trump-officials-privately-raise-doubts-about-hassett-for-fed-chair-00692766>; December 16, 2025)
- “Chair Jerome Powell feels the Fed is getting close to what he calls “the neutral rate,” which is neither expansionary nor contractionary for the economy. As a result, Powell apparently wants to stop cutting now and let economic trends determine the Fed’s next move. Part of that is waiting for pending government reports on the economy, which have been delayed by the recent shutdown, to provide some guidance. ... Powell was willing to cut in December despite the lack of recent economic data because economists at the Fed expect that there will be future downward revisions of the recent and coming monthly employment numbers. It has been well known that the jobs data produced by the Bureau of Labor Statistics often gets revised down later, sometimes a year after the initial reports, at times when the economy is going through a transition, as it may be now. Part of the problem is how many jobs BLS assumes are created by new firms, since it takes time for actual data to come in. BLS will be revising its procedures for making these estimates early in 2026.” (<https://www.kiplinger.com/economic-forecasts/interest-rates> ; December 12, 2025)
- “[Kevin Hassett’s] ultra dovish bias contrasts with Powell's cautious approach. Hassett has suggested aggressive easing to align with the current administration’s pro-growth agenda, potentially prioritizing stimulus over inflation control. Critics worry this could erode Fed independence, with likely Hassett likely to face resistance from Federal Open Market Committee (FOMC) members if he pushes for cuts beyond what the data justify.”

(<https://www.validusrm.com/2025/12/10/kevin-hassett-a-potential-shift-in-federal-reserve-leadership>; December 10, 2025)

Treasury Yields (1, 3, & 6-month; 1, 3, 5, 7, 10, 20, & 30-year series)

Analysis

The U.S. government raises money to operate the federal government through the sale of U.S. Treasury Securities; these are debt instruments that are offered at fixed interest rates. Rates are expected to generally rise as maturity durations increase. The interest rates vary from day-to-day, and, when collected across all maturities, may be documented as a line chart (rate versus maturity) called a “yield curve”. There are several different types of “Treasuries” (a generic name for “Treasury bonds”, “Treasury notes”, and “Treasury bills”), and most may be re-sold on the open secondary market.

Initial interest rates offered for Treasury Securities (“yields”) are set when the security is initially sold, and may be affected by several factors, including (for example)

- The published target federal funds rate;
- Investor sentiment (i.e., supply and demand);
- Currently outstanding debt levels; and
- Anticipated future events (e.g., investors’ beliefs regarding economic growth, inflation, and other geopolitical trends).

The 10-year Treasury yield underwent a notable shift in character during 3Q2025, transitioning from a period of tariff-induced volatility to a more settled range defined by the Federal Reserve's dovish pivot. After peaking near 4.80% in early 2025 and revisiting 4.50% in July amid "Liberation Day" tariff anxieties, the benchmark yield began a steady descent.⁹³ By the end of the third quarter, it had settled at 4.15%, reflecting a market that had begun to discount future inflation risks in favor of immediate policy support.⁹⁴

This downward trajectory continued into 4Q2025. The 10-year yield fluctuated within a narrow band of 4.00% to 4.20% through November and December, ending the year at 4.18%.⁹⁵ The yield curve, while still inverted by some measures, began to steepen as short-term rates fell faster than long-term rates. (See Figure 19.)

The Federal Reserve's actions were the primary driver of this price action. The initiation of rate cuts in September, followed by additional easing in October and December, limited the upside for yields. Additionally, the Fed signaled a shift in its balance sheet strategy. In December 2025, the FOMC announced the conclusion of its quantitative tightening (QT) program, replacing the passive runoff of assets with a new program of purchasing \$40–60 billion per month in short-term Treasury bills. This move was designed to arrest the decline in reserve balances and stabilize money market conditions, effectively transitioning the Fed's stance from contractionary to neutral-to-supportive.⁹⁶

⁹³ <https://fred.stlouisfed.org/series/dgs10>

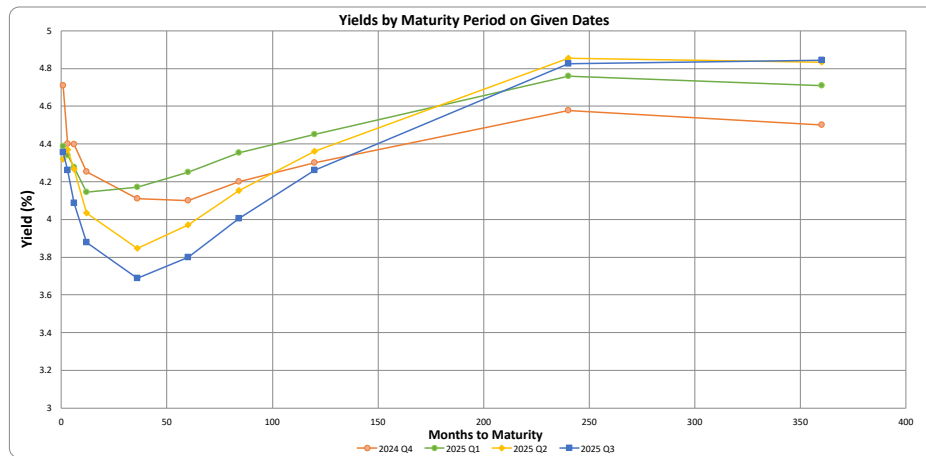
⁹⁴ <https://riverbridge.com/fixed-commentary-q3-2025/>

⁹⁵ <https://fred.stlouisfed.org/series/dgs10>

⁹⁶ <https://www.pimco.com/us/en/insights/moving-from-cuts-to-caution-fed-enters-2026-in-wait-and-see-mode>

As such, the Fed is expected to expand its balance sheet organically to match the growth of currency in circulation and the rising demand for reserves from the banking system and stablecoin issuers. This strategy aims to prevent liquidity stress in the repo market without providing the aggressive stimulus associated with crisis-era quantitative easing (QE). Unless the economy deteriorates much faster than currently anticipated, the Fed will likely avoid large-scale asset purchases of long-term bonds, preferring instead to manage liquidity at the short end of the curve.⁹⁷

Figure 19: Recent Yield Curves from Selected Quarters



Source: Federal Reserve Economic Database (<https://fred.stlouis.org>)

Looking ahead to 2026, **the path for Treasury yields appears to have a downward tendency**, though a return to the ultra-low rates of the pre-pandemic era is unlikely. Market consensus and forward pricing suggest the 10-year yield will drift toward 3.90% - 4.00% over the next 12 months. This projected decline assumes that the Fed continues to cut rates, bringing the policy rate closer to 3.00% by YE2026.⁹⁸

However, the premium that investors demand for holding long-term debt is likely to remain elevated. Structural factors such as the "K-shaped" economy, where capital investment remains robust even as consumption softens, and the sheer volume of Treasury supply needed to fund the deficit will prevent long-end yields from falling as fast as short-end rates.⁹⁹

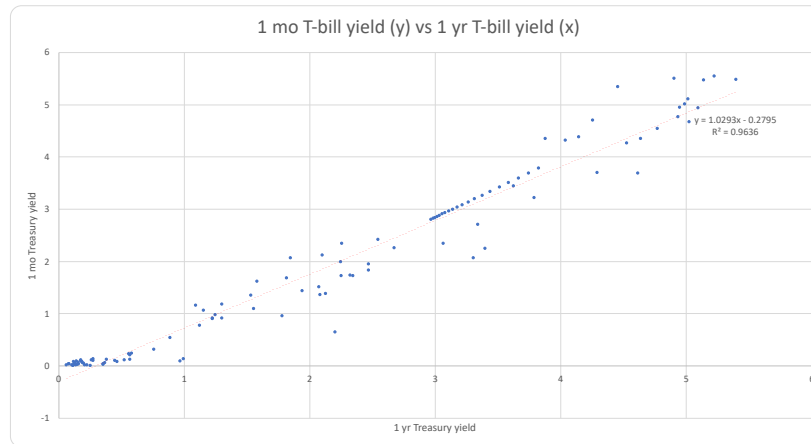
Figure 20 through Figure 28 illustrate the most significant correlations between Treasury yields.

⁹⁷ <https://www.ishares.com/us/insights/fed-outlook-2026-interest-rate-forecast>

⁹⁸ <https://www.wsj.com/finance/jgbs-edge-higher-tracking-gains-in-u-s-treasuries-8eb91370>

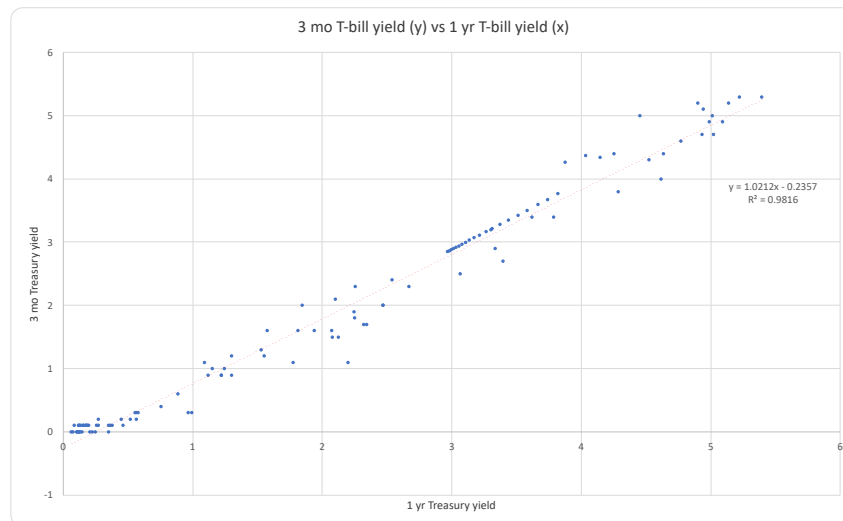
⁹⁹ <https://www.tdsecurities.com/ca/en/global-strategy-outlook-2026>

Figure 20: 1-month Treasury yield rates, as a function of 1-year Treasury yield rates



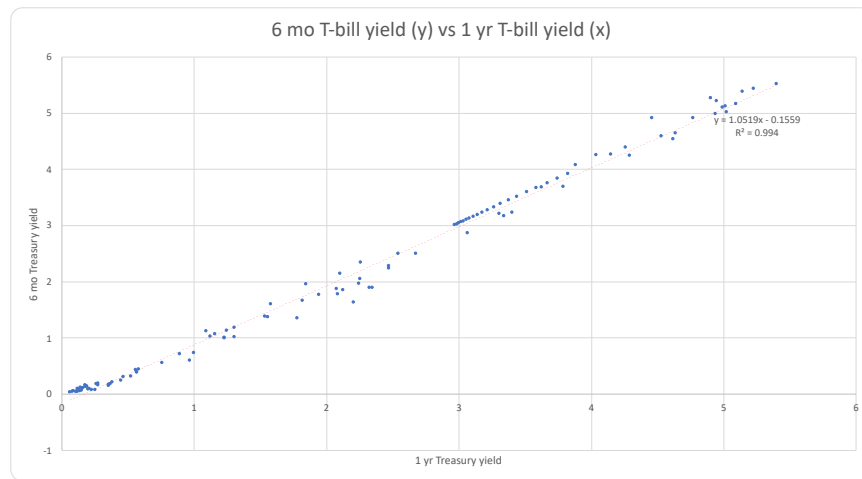
Source: Authors' calculation

Figure 21: 3-month Treasury yields, as a function of 1-year Treasury yields



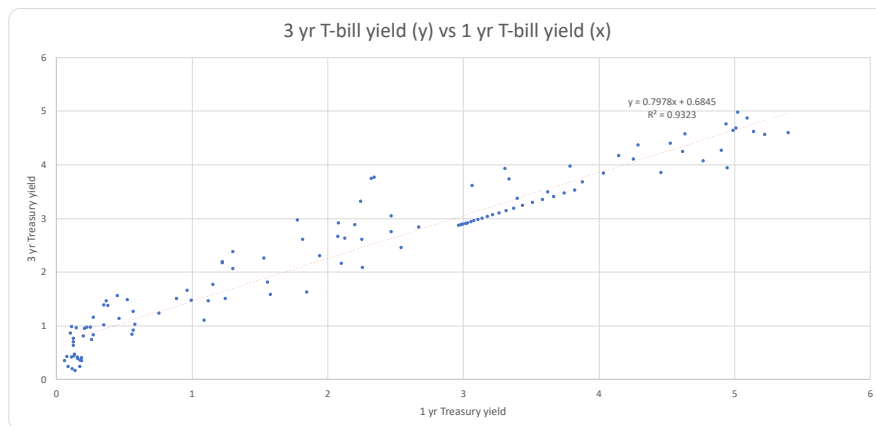
Source: Authors' calculation

Figure 22: 6-month Treasury yields, as a function of 1-year Treasury yields



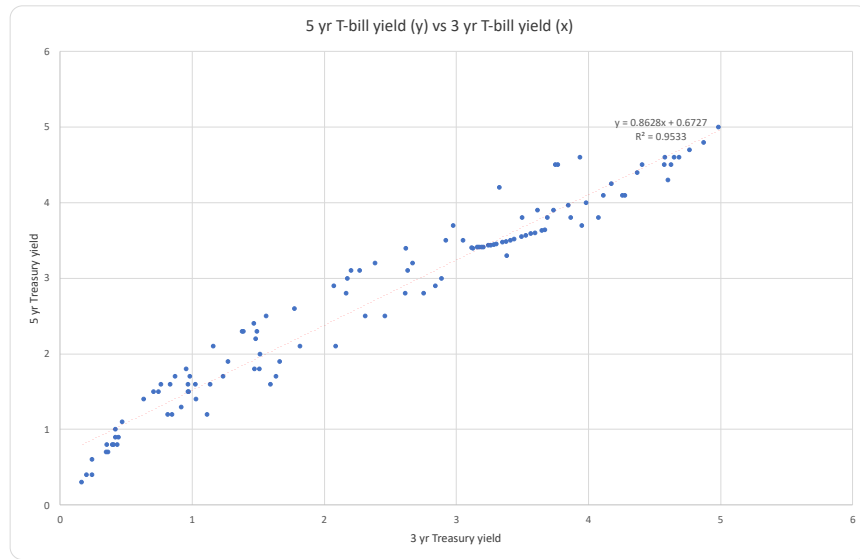
Source: Authors' calculation

Figure 23: 3-year Treasury yields, as a function of 1-year Treasury yields



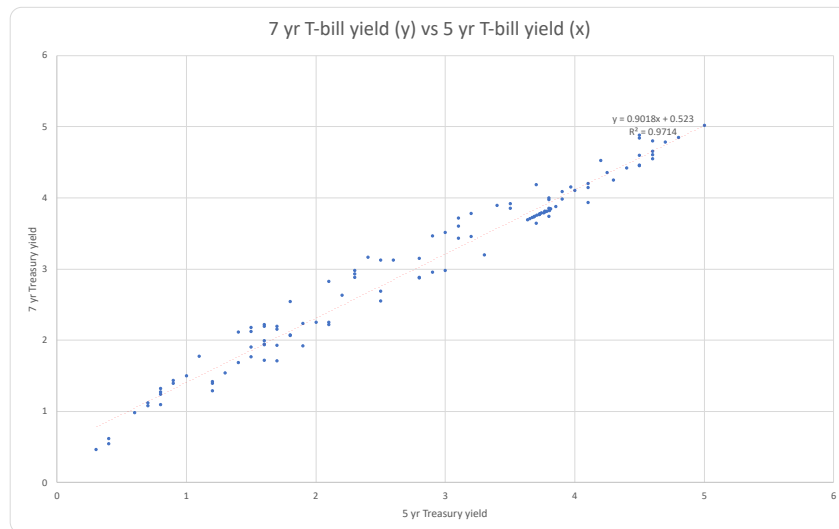
Source: Authors' calculation

Figure 24: 5-year Treasury yields, as a function of 3-year Treasury yields



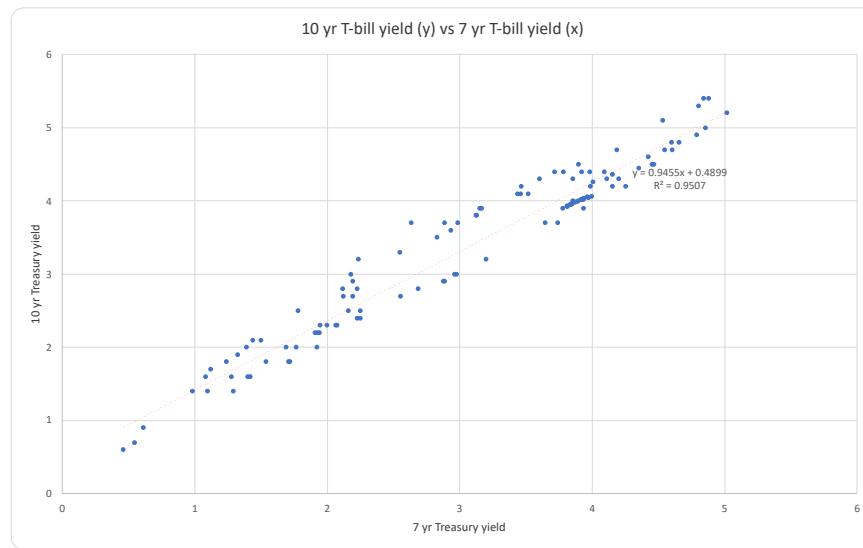
Source: Authors' calculation

Figure 25: 7-year Treasury yields, as a function of 5-year Treasury yields



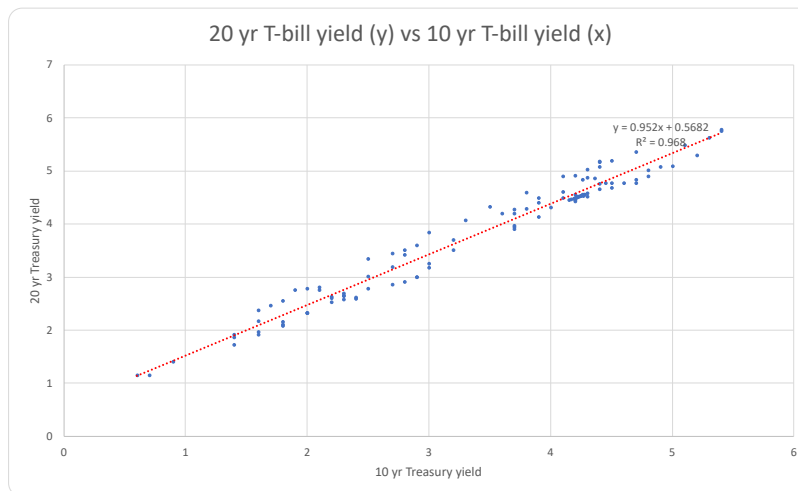
Source: Authors' calculation

Figure 26: 10-year Treasury yields, as a function of 7-year Treasury yields



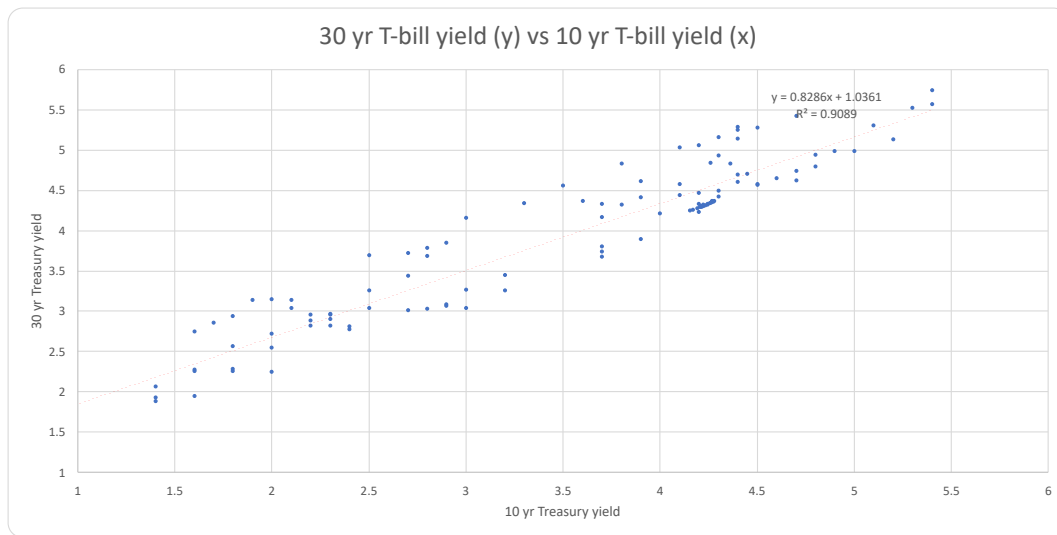
Source: Authors' calculation

Figure 27: 20-year Treasury yields, as a function of 10-year Treasury yields



Source: Authors' calculation

Figure 28: 30-year Treasury yields, as a function of 10-year Treasury yields



Source: Authors' calculation

Other Commentary

- “The bond market’s yield curve will become fully upward-sloping sometime next year. Bond investors’ concern that an economic slowdown looms is shown by the fact that current one- to three-year Treasury notes have lower yields than short-term Treasury bills that mature in a few months. But 20- and 30-year bond yields have picked up by more than the 10-year yield in recent months, indicating that both long-term inflation and government deficits are a rising concern among bond traders. The result is a U-shaped yield curve, with higher short and long yields than medium-term ones. As the uncertainties surrounding tariff policy gradually get resolved, fears of a recession will diminish and medium-term rates are likely to pick up a bit. The long end of the yield curve is likely to stay elevated. We expect short rates to fall next year, so the yield curve by the end of 2026 is likely to be upward-sloping along its entire length for the first time since 2021.” (<https://www.kiplinger.com/economic-forecasts/interest-rates> ; December 12, 2025)
- “While risks abound and the economy is stumbling through a fog of no data to end 2025, we expect U.S. growth to beat consensus expectations for 2026. However, it would remain just a hair below potential and expect a better disinflationary trend to take over in H2. This would still leave U.S. inflation above target for the sixth year in a row. This outlook is also supported by our expectation that the Federal Reserve (Fed), after remaining patient through tariff-induced inflation upsidies in 2025, will be able to ease more than expected over the next year.” (<https://www.tdsecurities.com/ca/en/global-strategy-outlook-2026>; November 18, 2025)

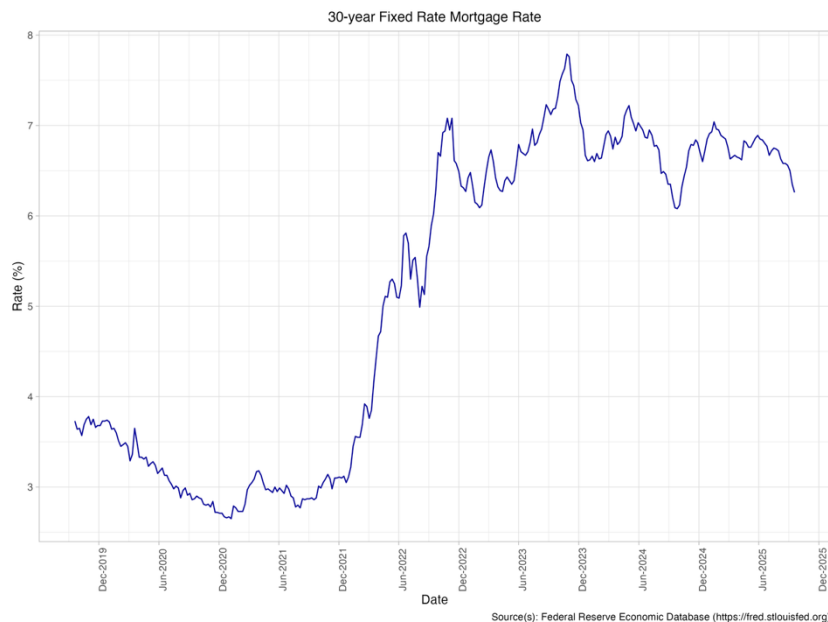
30-year Mortgage Rate & Residential Home Price Index

Analysis

Mortgage rates have traditionally been tightly correlated with mid-duration Treasury yields, given the typical sources of funding and duration of held mortgages. Day-to-day, offered mortgage rates are driven by traditional supply-and-demand forces between mortgage providers, and they are also influenced by the releases of various metrics (and the reactions of investors).

The trajectory of the 30-year fixed mortgage rate during 2H2025 (Figure 29) has been characterized by a gradual but persistent decline, offering modest relief to a housing market constrained by affordability challenges. After starting the year near 7%, the 30-year fixed rate trended downward, averaging 6.57% in 3Q2025 and ending 2025 at $\pm 6.15\%$ ¹⁰⁰. This decline of approximately 85 basis points through 2025 reflects the market's digestion of the Federal Reserve's dovish pivot and the stabilizing Treasury yield environment.¹⁰¹

Figure 29: US Nationwide Average 30-Year Fixed Rate Mortgage Rate



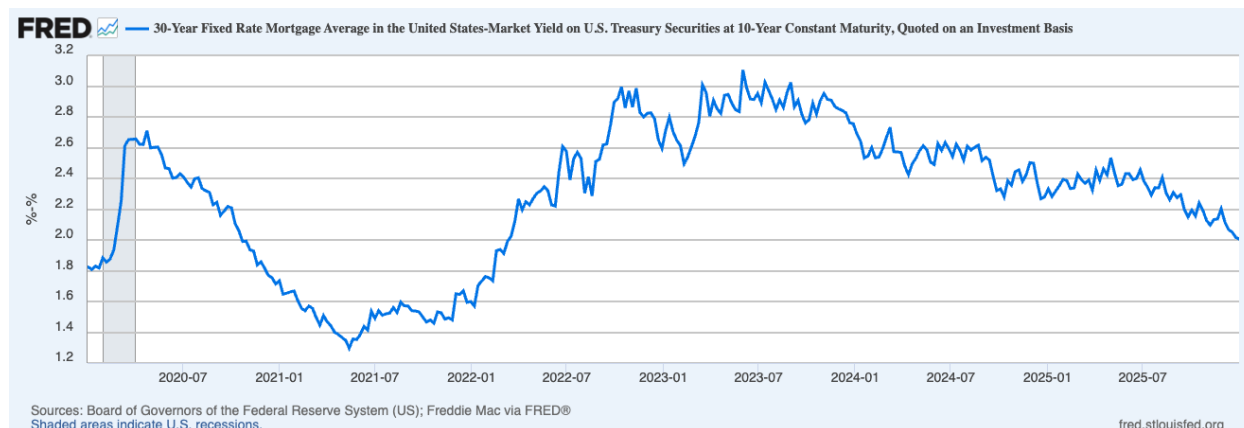
The spread between the 30-year mortgage rate and the 10-year Treasury yield, a key indicator of mortgage market stress, has compressed by roughly 25 basis points Y/Y over the past three years. (See Figure 30) The spread covers mortgage origination, servicing, and guarantee fees (the primary-secondary spread), plus the added risks of mortgage-backed securities (MBS) compared to Treasuries (the secondary spread). This narrowing spread signals improving liquidity in the mortgage-backed securities market and a reduction in the risk premium that lenders demand for holding long-duration housing debt. Despite this improvement, rates remain elevated by historical standards, continuing to lock in many existing homeowners and constraining inventory turnover.¹⁰²

¹⁰⁰ <https://fred.stlouisfed.org/series/MORTGAGE30US>

¹⁰¹ <https://www.milliman.com/en/insight/mortgage-market-and-housing-trends-q3-2025>

¹⁰² <https://www.cmegroup.com/openmarkets/interest-rates/2025/Why-Mortgage-Rates-Remain-High-Despite-Fed-Cuts.html>

Figure 30: 30-year mortgage rate / 10Y bond yield spread



Foreclosure activity, while rising, remains below crisis levels but warrants close monitoring as a lagging indicator of economic stress. Foreclosure filings increased 5.8% in the first half of 2025 compared to the prior year, and August 2025 marked the sixth consecutive month of year-over-year increases.¹⁰³ By late 2025, foreclosure starts were tracking toward 188,000 filings for the first half of the year, with activity concentrated in states like Florida, Texas, and California.¹⁰⁴

Looking ahead to 2026, baseline forecasts suggest foreclosure volume could decrease by approximately 8% if home prices continue to appreciate modestly and unemployment remains stable. However, alternative scenarios modeling a cooling economy and rising unemployment project a potential 10% to 32% increase in foreclosure volume. This divergence underscores the housing market's sensitivity to the broader labor market health, which showed signs of softening in late 2025.¹⁰⁵

The consensus outlook for 2026 points to a continued normalization of housing dynamics. **Mortgage rates are projected to stabilize in the low- to mid-6% range.**¹⁰⁶ Home price appreciation is expected to remain subdued, with forecasts calling for a 1.2% to 2.5% increase for the full year, effectively flat in real terms.¹⁰⁷ This "soft landing" scenario for housing assumes that the Federal Reserve manages to calibrate policy without precipitating a sharp rise in unemployment, allowing income growth to slowly catch up to home prices.

¹⁰³ <https://www.kaplancollectionagency.com/blog/64-foreclosure-statistics-for-2025/>

¹⁰⁴ <https://www.cbsnews.com/news/housing-market-foreclosure-increasing-attom-august-2025/>

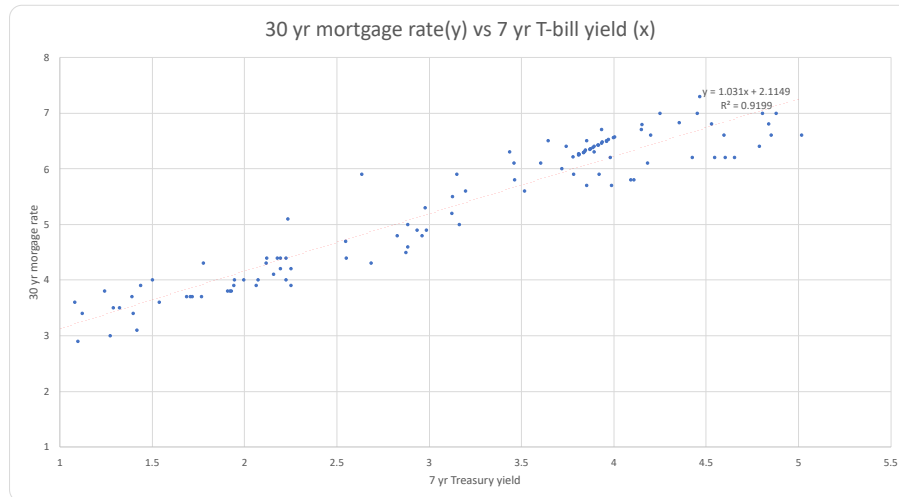
¹⁰⁵ <https://themortgagepoint.com/2025/02/05/forecasting-foreclosure-volume-in-2025/>

¹⁰⁶ <https://www.cnbc.com/2025/12/31/housing-market-outlook-for-2026and-10-cities-where-prices-may-fall.html>

¹⁰⁷ Ibid.

See Figure 31 regarding the correlation between the US 30-year fixed-rate mortgage rates and 7-year Treasury yields.

Figure 31: US 30-year (fixed rate) mortgage rate, as a function of a 7-year Treasury yield



Source: Authors' calculation

Other Commentary

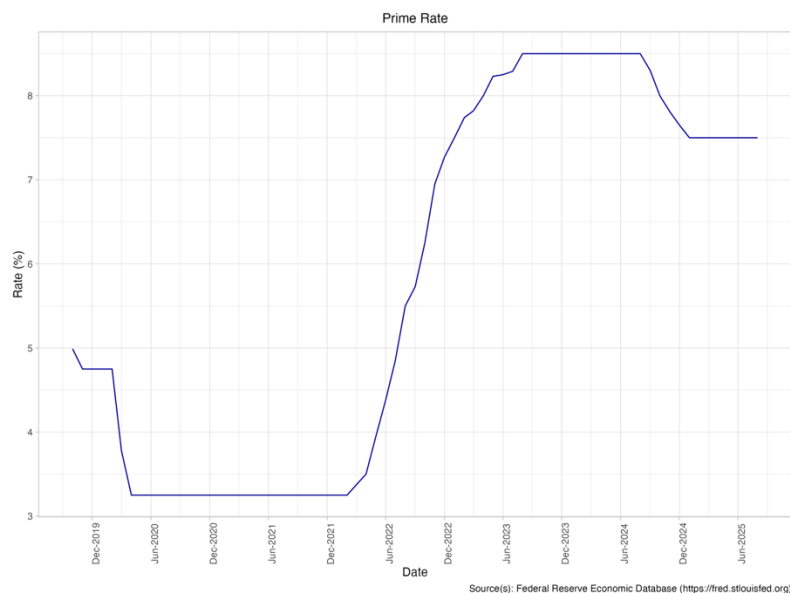
- "... Homes are sitting on the market longer, negotiations are becoming more common, and builders are offering discounts in markets where the supply of newly constructed homes has increased, according to Realtor.com. ... That doesn't mean homes will suddenly become affordable nationwide. Median home prices are still too high for many buyers after rising by 25% since 2020, according to U.S. Census data. Thirty-year fixed mortgage rates are also expected to remain elevated above 6% in 2026, limiting how much relief buyers are likely to see." (<https://www.cnbc.com/2025/12/31/housing-market-outlook-for-2026and-10-cities-where-prices-may-fall.html>; December 31, 2025)
- "Mortgage rates have dipped as the 10-year Treasury's yield has stayed around 4%. Thirty-year fixed-rate mortgages are currently around 6.2%. Fifteen-year loans are at 5.5% for borrowers with good credit. If the economy weakens, then rates should decline further, but odds are that rates at the end of 2026 will be close to where they are today." (<https://www.kiplinger.com/economic-forecasts/interest-rates>; December 12, 2025)
- "More families will renovate their homes to comfortably accommodate multiple generations. In a November Thumbtack survey of more than 100 home renovation professionals, multigenerational features, like separate suites for extended family, were the most commonly cited response when asked to predict the most popular design trend of 2026. Picture a garage that's converted into a second primary suite for adult children moving back in with their parents. Redfin agents in places like Los Angeles and Nashville say more homeowners are planning to tailor their homes to share with extended family." (<https://www.redfin.com/news/housing-market-predictions-2026/>; December 2, 2025)

Prime Rate

Analysis

The Prime Rate is a benchmark rate that many banks use for setting consumer credit rates for creditworthy customers. It is generally based on the federal funds rate, and a spread (typically 3%) is dictated by banks as a matter of policy to specify lending rates for mortgages, small business loans, and personal loans¹⁰⁸. Mirroring the Federal Reserve's pivot to a more accommodative monetary stance, the Prime Rate declined by a cumulative 75 basis points in 2H2025. After holding steady at 7.50% through August, the rate fell to 7.25% on September 19 following the Fed's initial 25-basis-point cut, then to 7.00% on October 31, and finally to 6.75% on December 11.¹⁰⁹ (See Figure 32.)

Figure 32: Prime Rate



The reduction in the Prime Rate translates directly into lower interest expenses for households and businesses carrying floating-rate debt. For the average consumer with credit card balances or a HELOC, the 75-basis-point reduction provides tangible, albeit modest, cash flow relief. However, lending standards remain tight. While the price of credit has fallen, the availability of credit has not necessarily expanded at the same pace, as banks continue to exercise caution amid mixed economic signals and rising delinquency rates in certain consumer segments.¹¹⁰

Looking ahead to 2026, the trajectory of the Prime Rate will remain mechanically linked to the Federal Reserve's policy path. Current market forecasts and the Fed's own "dot plot" projections suggest a continued, gradual decline; the consensus expectation is for the federal funds rate to decrease by an additional 25 to 50 basis points over the course of 2026, implying that **the Prime Rate could fall to between 6.25% and 6.50% by YE2026**. However, the pace of these reductions is likely to be slower than the rapid adjustments seen in late 2025. The Fed has signaled a "data-dependent" approach, meaning

¹⁰⁸ <https://www.investopedia.com/terms/p/primerate.asp>

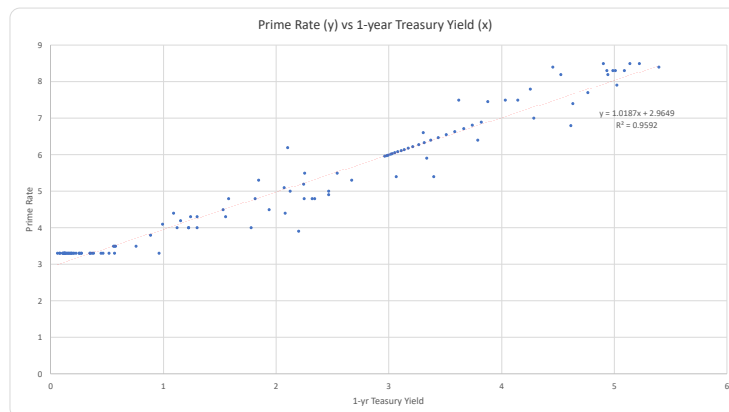
¹⁰⁹ <https://fred.stlouisfed.org/series/DPRIME>

¹¹⁰ <https://www.wsj.com/buyside/personal-finance/mortgage/fed-rate-decision-december-2025-savings-cds-mortgages>

that future cuts will be contingent on continued disinflation and labor market cooling. If inflation proves stickier than anticipated—perhaps driven by tariff-related cost pressures or resilient consumer demand—the descent of the Prime Rate could stall. Conversely, a sharper economic downturn could precipitate faster cuts. For now, borrowers should anticipate a trending decline in borrowing costs, but should not bank on a return to near-zero rates.¹¹¹

See Figure 33 for the relationship between the Prime Rate and 1-year Treasury yield.

Figure 33: Prime Rate as a function of 1-year Treasury yields



Source: Authors' calculations

Moody's AAA & BAA Rates; and the BofA BBB Corporate Yield

Analysis

During 2Q2025 and 4Q2025, yields on corporate bonds, including Moody's AAA and BAA rates and the BofA BBB Corporate Yield, reflected changing economic policy conditions. Moody's AAA corporate bond yield ended 3Q2025 at 5.22%, and rose to 5.35% by YE2025.¹¹² Moody's BAA corporate bond yield ended 3Q2025 at 5.98%, and ended 2025 at 5.83%.¹¹³ The BofA BBB corporate index yield was 5.13% at the end of 3Q2025, and 5.00% at the end of 4Q2025.¹¹⁴ (See Figure 34.)

Spreads tell a more important story. By year-end 2025, the AAA–10-year Treasury spread sat near 1.2 percentage points, while the BAA–10-year spread was about 1.75 percentage points. Both are wider than the compressed pre-2022 regime, but far from crisis territory.

Three forces shaped investment-grade yields in 3Q and 4Q 2025: First, the Federal Reserve's move from a restrictive to a more neutral stance pulled the entire yield curve lower. The series of rate cuts beginning in September reduced short-end rates and anchored expectations for a lower policy path through 2026, which in turn eased term premiums embedded in long-dated corporate yields.¹¹⁵ AAA and

¹¹¹ <https://www.realtor.com/news/trends/fed-rate-cut-forecast-2026-mortgages/>

¹¹² <https://fred.stlouisfed.org/series/DAAA>

¹¹³ <https://fred.stlouisfed.org/series/DBAA>

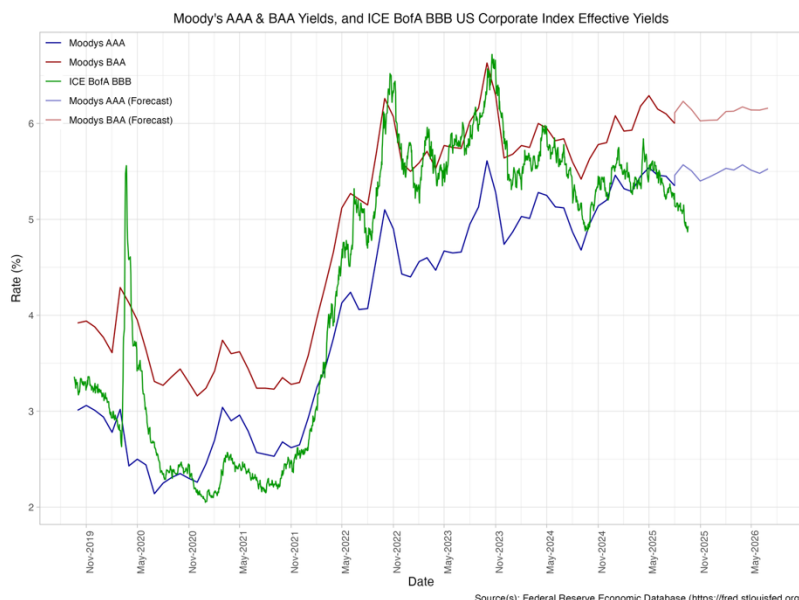
¹¹⁴ <https://fred.stlouisfed.org/series/BAMLC0A4CBBBEY>

¹¹⁵ <https://www.federalreserve.gov/newsevents/pressreleases/monetary20251210a.htm>

upper-tier investment-grade borrowers benefited most from this shift, seeing outright declines in yields without needing to pay materially wider spreads.

Second, growth expectations moderated. As real GDP growth decelerated from the outsized 3Q print and labor-market data softened, forward curves began to price a classic “soft-landing or shallow-downturn” scenario. This environment is typically constructive for high-grade credit: default probabilities remain low, but the bid for safety and income favors large, stable issuers over equity or high-yield risk. The migration of risk capital into quality compressed corporate–Treasury spreads relative to their mid-2023 wide spreads, even as nominal yields moved sideways to modestly lower.¹¹⁶

Figure 34: Moody's AAA, BAA, and ICE BBB Average Bond yields



Third, tariff policy and geopolitical uncertainty kept a floor under credit risk premia, particularly in the BAA/BBB segment. While these risks did not translate into an immediate wave of downgrades, they limited how far spreads could compress: investors demanded incremental compensation for the possibility that slower trade and margin pressure could erode coverage ratios over the next cycle.

Looking into 2026, the baseline expectation is for modestly lower all-in yields on investment-grade corporates, driven primarily by a further drift down in risk-free rates rather than aggressive spread tightening.¹¹⁷

Most major houses and the Fed’s own projections anticipate another 75 - 100 bp of policy easing over the course of 2026, which, if realized, would likely bring the 10-year Treasury into the high-3 to very low-4 percent range.¹¹⁸ In that environment, it is reasonable to expect:

¹¹⁶ <https://blog.swbc.com/investmenthub/q3-2025-economic-summary>

¹¹⁷ <https://madisoninvestments.com/fixed-income-market-update-q3-2025/>

¹¹⁸ <https://www.tdsecurities.com/ca/en/global-strategy-outlook-2026>

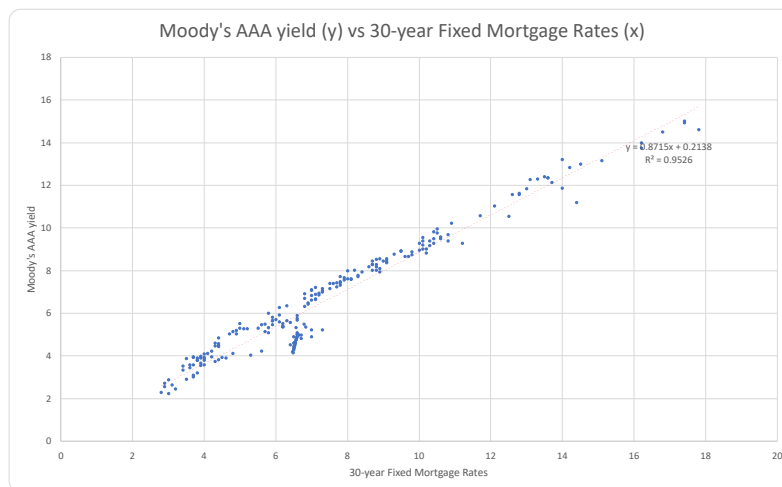
- Aaa corporate yields settling in the 4.7% - 5.1% band, provided inflation continues to edge lower and default risk remains negligible.
- Baa corporate yields gravitating toward the 5.4% - 5.8% range, with spreads oscillating around current levels as rating agencies and investors reassess cyclically sensitive sectors.
- BBB effective yields drifting into the high-4s to low-5s, roughly 75 - 125 bp over Treasuries, preserving a meaningful but not outsized credit premium.

The main upside risk to spreads is a more pronounced economic slowdown or policy misstep. If growth undershoots current forecasts, or if tariff escalations and political uncertainty in 2026 push margins and capex plans off course, BAA/BBB spreads could widen by 50 - 100 bp from current levels, particularly in sectors already showing leverage strain. Conversely, a cleaner disinflation path and a smoother Fed transition could allow selective tightening, especially in higher-quality A and AA names that have already demonstrated resilient free cash flow and conservative balance sheets.

See Figure 35 and

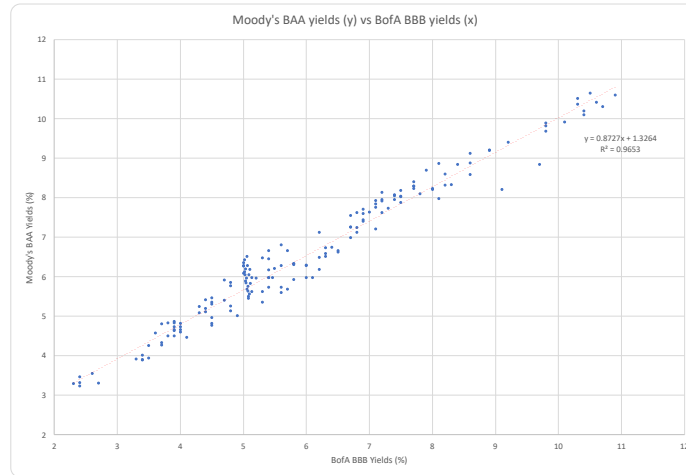
Figure 36 for how Moody's AAA & BAA Corporate Bond yields have historically correlated with other macroeconomic metrics.

Figure 35: Moody's AAA-grade investment yields, as a function of 30-year Fixed Interest Mortgage Rates



Source: Authors' calculation

Figure 36: Moody's BAA-grade investment yields, as a function of BofA BBB yields



Source: Authors' calculation

Other Commentary

- “Top-rated corporate bond yields have also been following Treasury yields. AAA-rated long-term corporate bonds are yielding 4.7%, BBB-rated bonds are at 5.0%, and CCC-rated bonds are at 12.5%. CCC-rated bond rates tend to rise when the risk of recession rises, and fall when either the economy strengthens or the Fed cuts rates, which eases financing costs for businesses that are heavily indebted.” (<https://www.kiplinger.com/economic-forecasts/interest-rates>; December 12, 2025)
- “Yields for higher-rated investments still appear attractive today. The average yield of the Bloomberg US Corporate Bond Index is below 5%, after hitting a peak of 6.4% in late 2023, but is still near the high end of its 15-year range. It's also well above its 15-year average of 3.6%. ... High-yield bond yields don't appear as attractive when viewing them through that 15-year lens. The average yield of the Bloomberg US Corporate High-Yield Bond Index is well below its 15-year peak, and its average yield of 6.6% at the end of November 2025 is now below its 15-year average. ... In short, investment-grade corporate bonds and preferred securities still offer average yields near the upper end of their 15-year range, but high-yield bond yields are below their 15-year averages. Given that trend, we still suggest investors generally favor an up-in-quality approach to corporate bond investing.” (<https://www.schwab.com/learn/story/corporate-bond-outlook>; December 4, 2025)

US Average Retail Gasoline Price

Analysis

The second half of 2025 marked a decisive inflection point for U.S. gasoline prices, with pump prices moving surprisingly low as global crude benchmarks softened and domestic supply remained ample.

After hovering in the low-\$3 range for much of the year, the national average price of regular gasoline broke below the psychologically important \$3.00 per gallon threshold at the start of December and continued sliding into year-end.¹¹⁹ The U.S. average retail price for regular unleaded gasoline is approximately \$2.81 per gallon for regular unleaded as of this writing¹²⁰, down approximately 8.2% Y/Y.

The late-year decline in pump prices was driven primarily by three factors: softer crude prices, robust gasoline inventories, and seasonal demand patterns. First, crude oil benchmarks fell materially into year-end. EIA's Short-Term Energy Outlook projects Brent crude prices drifting down to an average of roughly \$55 per barrel in 2026, with the easing already evident in late 2025 as prices hovered near \$60.¹²¹ Lower feedstock costs transmit to gasoline prices with a lag, and the December move below \$3.00 reflects cumulative pass-through of these declines.¹²²

Second, domestic gasoline supply remained ample even as holiday travel surged. AAA highlighted that as of early December, gasoline demand had increased from 8.32M barrels per day (b/d) to 8.45M b/d, while total domestic gasoline stocks rose from 214.4M barrels to 220.8M barrels—an unusual combination of rising demand and rising inventories that put downward pressure on wholesale and retail prices.¹²³ EIA's weekly data confirm that, by late December, the national average retail gasoline price was about 19.5 cents per gallon lower than a year earlier despite record holiday traffic volumes.^{124,125}

Third, the transition to cheaper-to-produce winter gasoline blends and seasonally softer driving outside of holiday peaks contributed to the price relief. Winter grades typically reduce refining costs, and when combined with robust refinery utilization and adequate import flows, they help cap price spikes absent a major supply disruption.¹²⁶

Looking forward into 2026, the outlook for gasoline prices is anchored in divergent views about the global oil market. OPEC+ continues to project robust demand growth, expecting global oil consumption to rise by around 1.4 million b/d in 2026, with demand reaching approximately 106 million b/d. In its monthly oil market report, OPEC+ forecasts demand for its crude at about 43.0 million b/d in 2026—essentially in line with current production—implying a broadly balanced market from its perspective.¹²⁷ This view, if realized, would argue for crude prices stabilizing near current levels, consistent with moderate, not collapsing, gasoline prices.

By contrast, the International Energy Agency (IEA) and some market analysts anticipate a sizeable surplus, particularly given the evolving conditions with regard to Venezuela. One recent assessment (prior to the US' actions in assuming control of tankers transporting Venezuelan exports) suggests that global oil supply could exceed demand by as much as 3.8 million b/d in 2026—nearly 4% of world consumption—if planned capacity additions and non-OPEC growth materialize as scheduled.¹²⁸ EIA's own outlook is somewhat more tempered but still expects enough non-OPEC supply growth to push

¹¹⁹ https://www.eia.gov/dnav/pet/pet_pri_gnd_a_epmr_pte_dpgal_m.htm

¹²⁰ <https://gasprices.aaa.com/>

¹²¹ <https://www.eia.gov/outlooks/steo/>

¹²² <https://newsroom.aaa.com/2025/12/national-average-dips-below-3-a-gallon-for-first-time-in-4-years/>

¹²³ <https://gasprices.aaa.com/outside-the-snow-is-falling-and-so-are-gas-prices/>

¹²⁴ <https://fred.stlouisfed.org/series/GASREGW>

¹²⁵ <https://www.cnn.com/2025/12/23/oil-prices-holiday-road-trip-december-aaa.html>

¹²⁶ <https://gasprices.aaa.com/outside-the-snow-is-falling-and-so-are-gas-prices/>

¹²⁷ <https://oilprice.com/Latest-Energy-News/World-News/OPEC-Holds-Firm-on-Bullish-Oil-Demand-Outlook-for-2026.html>

¹²⁸ <https://www.spragueenergy.com/world-oil-supply-will-match-demand-next-year-due-to-production-increases/>

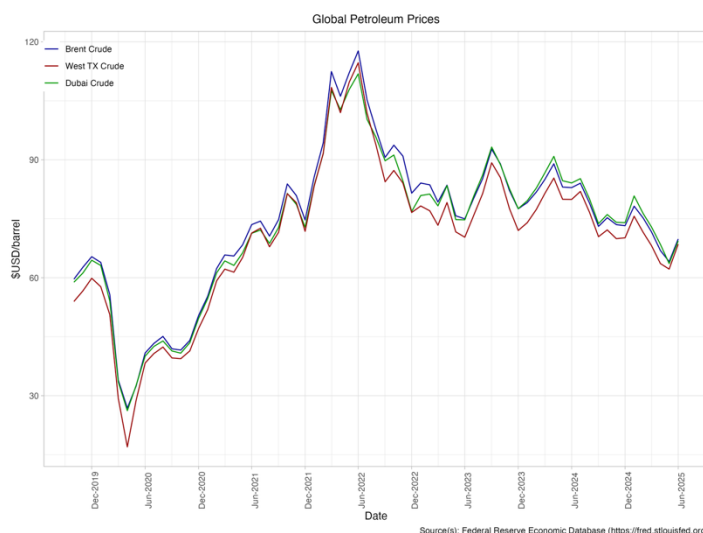
Brent prices down and keep them near the mid-\$50s on average in 2026.¹²⁹ In such a scenario, the bias for U.S. gasoline prices would remain to the downside, barring a shock.

Reconciling these perspectives, the most probable baseline is a loosely balanced global oil market with mild downside risk to crude prices. OPEC+ appears committed to modulating output to avoid a deep glut¹³⁰, while non-OPEC production growth is slowing relative to prior years.¹³¹ This combination—tempered supply growth and steady but not explosive demand—supports a view of Brent trading in a range consistent with U.S. retail gasoline prices staying below the extreme peaks of 2022 and closer to the levels seen in late 2025.¹³²

Given current projections, U.S. drivers should expect 2026 to look more like late 2025 than mid-2022. If Brent averages around \$55 per barrel and domestic refining capacity and logistics remain intact, national average gasoline prices are likely to oscillate around the high-\$2 to low-\$3 range, with regional outliers on both coasts.¹³³ Seasonal patterns will still matter—prices typically rise modestly into the summer driving season and ease in the winter—but the ceiling on prices is likely lower than in recent years so long as global supply disruptions are avoided.¹³⁴

The primary upside risks to this benign outlook are geopolitical shocks that constrain supply (for example, escalations in key producing regions or major refinery outages) and policy changes that materially alter fuel taxation or carbon pricing. On the downside, a sharper-than-expected global slowdown—particularly if the IEA’s surplus projections prove accurate—could push crude and refined product prices lower than current forecasts, modestly easing the cost of living for consumers but potentially straining the upstream and refining sectors.¹³⁵

Figure 37: Global Crude Oil Prices



¹²⁹ <https://www.eia.gov/outlooks/steo/>

¹³⁰ <https://www.spragueenergy.com/world-oil-supply-will-match-demand-next-year-due-to-production-increases/>

¹³¹ <https://oilprice.com/Latest-Energy-News/World-News/OPEC-Holds-Firm-on-Bullish-Oil-Demand-Outlook-for-2026.html>

¹³² <https://www.investing.com/analysis/brent-stays-pressured-by-surplus-fears-even-as-shipping-and-product-risks-rise-200672366>

¹³³ Ibid.

¹³⁴ <https://www.eia.gov/finance/markets/products/balance.php>

¹³⁵ <https://www.reuters.com/markets/commodities/five-energy-market-trends-track-2026-year-glut-2025-12-29/>

We expect oil prices to remain close to \$55/bbl to \$60/bbl range under expected circumstances, less if the circumstances related to Venezuela become a protracted situation.

Other Commentary

- “We expect global oil inventories to continue to rise through 2026, putting downward pressure on oil prices in the coming months. We forecast the Brent crude oil price will fall to an average of \$55 per barrel (b) in the first quarter of 2026 (1Q26) and remain near that price for the rest of next year. Although we expect crude oil prices to continue to fall in the coming months, we assess that both the OPEC+ production policy and China’s continued inventory builds will limit price declines.” (<https://www.eia.gov/outlooks/steo/>; December 9, 2025)
- “The International Energy Agency said global oil and gas demand could grow until 2050, departing from its previous expectations of a speedy transition to cleaner fuels and predicting that the world will likely fail to achieve climate goals. In its annual World Energy Outlook, the IEA predicted under a current policies scenario that oil demand will reach 113 million bpd by mid-century, up around 13% from 2024 consumption.” (<https://www.spragueenergy.com/world-oil-supply-will-match-demand-next-year-due-to-production-increases/>; November 13, 2025)

Commercial Real Estate Price Index

The US Commercial Real Estate Price Index has not been released since 2Q2025 due to the intervening government shutdown.¹³⁶ Based on other sources, commercial real estate pricing appears to have moved from an outright correction phase into a fragile stabilization pattern during 3Q and 4Q of 2025. Most broad all-property indices are now modestly higher than a year ago, but values in several core segments remain well below their cycle peaks, and the recovery is highly uneven across property types and regions.

The RCA CPPI US National All-Property Index increased 2.6% Y/Y in 3Q2025 and 0.7% Q/Q, indicating that aggregate commercial property prices are rising again, but at a very modest pace.¹³⁷ Green Street’s Commercial Property Price Index shows a similar picture: the all-property index was up roughly 2.7% through August Y/Y, 3.1% through October Y/Y, and 2.4% through November Y/Y, with M/M changes of –1.0%, +0.2%, and +0.8%, respectively.¹³⁸ As Green Street’s researchers note, “commercial real estate is fairly valued versus corporate bonds,” and most of this year’s price appreciation reflects higher net operating income rather than cap-rate compression.¹³⁹ In other words, pricing has stopped falling and is now grinding slowly higher, but the market is not experiencing a V-shaped rebound.

Repeat-sale indices underscore that point, particularly the bifurcation between prime, institutionally held assets and the broader universe. CoStar’s equal-weighted U.S. Composite Index—dominated by smaller, secondary-market properties—fell 0.9% M/M and 1.0% Y/Y in September 2025, the first negative Y/Y reading since 2012 and 2% below its March 2025 all-time high. By contrast, CoStar’s

¹³⁶ <https://fred.stlouisfed.org/series/COMREPUSQ159N>

¹³⁷ https://www.msci.com/downloads/web/msci-com/research-and-insights/paper/rca-commercial-property-price-indexes-rca-cppi/2510_RCACPI_US.pdf

¹³⁸ <https://www.credaily.com/briefs/green-street-cre-index-edges-higher-as-market-stabilizes/>

¹³⁹ <https://info.greenstreet.com/hubfs/GSCPPI-20251204press.pdf>

value-weighted sub-indices, which are more heavily influenced by larger, institutional-quality assets, show industrial and retail pricing near recent highs while multifamily values are roughly 23% below and office values roughly 44% below their post-pandemic peaks. In short, capital is rewarding income durability and asset quality, and penalizing functionally or locationally obsolete properties.¹⁴⁰

By property type, 3Q2025 data confirm that industrial and multifamily continue to lead the modest recovery, while office and portions of retail remain structurally challenged. CoStar’s equal-weighted industrial index rose 1.3% Q/Q and 2.4% Y/Y, with the value-weighted industrial index up 0.2% Q/Q and 2.9% Y/Y. Multifamily showed a similar pattern: the equal-weighted index increased 1.2% Q/Q and 2.2% Y/Y, while the value-weighted multifamily index slipped 1.9% Q/Q but remained 1.4% higher Y/Y -- evidence that smaller properties and secondary markets are holding up better than large, institutionally priced assets that had been bid up aggressively earlier in the cycle. Retail is bifurcated: equal-weighted retail prices declined 2.1% Q/Q and 2.6% Y/Y, while value-weighted retail rose 1.7% Q/Q and 3.6% Y/Y, reflecting relative strength in prime, necessity-anchored formats and continued weakness in smaller, tertiary assets.¹⁴¹

Office continues to be the epicenter of pricing stress, though even here the data suggest that the worst of the immediate repricing may be behind us. CoStar’s equal-weighted office index fell 1.8% in 3Q2025 and 2.0% year-over-year, bringing cumulative losses to 8.5% from the 3Q2022 high. In the value-weighted segment—where large, high-quality buildings dominate—prices actually rose 1.8% in the quarter and 0.2% versus the prior year, but remain an extraordinary 43.9% below their 4Q2021 all-time high.¹⁴² NCREIF’s Property Index (NPI) provides additional context: total office returns in 3Q2025 were a positive 0.90%, up slightly from 0.78% in 2Q, marking a fifth consecutive quarter of positive total returns across the broader index, but office appreciation remains close to flat and cap rates are drifting only marginally higher as appraisals slowly catch up with transaction evidence.¹⁴³ The implication is that valuation discovery is ongoing: trophy and well-located assets are stabilizing, while lower-tier and commodity offices continue to bleed value.

From a capital-markets standpoint, there are nascent signs that price stabilization is being supported by improving transaction activity and clearer bid-ask dynamics. Altus Group reports that large CRE deals “made a comeback” in 3Q2025, with median price per square foot rising 0.6% quarter-over-quarter and year-over-year across all property types¹⁴⁴ -- another marker of a market that has moved from free-fall to recalibration. However, systemic vulnerabilities remain significant. Kaplan’s survey of commercial and office real estate statistics notes that core U.S. CRE values are still roughly 24% below their peak on Green Street’s CPPI¹⁴⁵, that nearly \$950B of CRE mortgages mature in 2025 and around \$600B per year through 2028¹⁴⁶, and that bank CRE lending is down 58% from pre-pandemic averages (and 65% lower for office) as of the end of 1H2025¹⁴⁷. This looming refinancing wall is perhaps the single most important macro driver of future price action: properties that cannot be refinanced on acceptable terms will either trade at distressed prices or move to special servicers and alternative capital providers.

¹⁴⁰ <https://www.costargroup.com/press-room/2025/large-office-prices-rose-third-quarter-2025>

¹⁴¹ Ibid.

¹⁴² Ibid.

¹⁴³ [https://ncreif.org/_static/jdj5jdewjflcvw1vytcymnhroukxdzvp/NPI-3Q2025-Press-Release\(3\).pdf](https://ncreif.org/_static/jdj5jdewjflcvw1vytcymnhroukxdzvp/NPI-3Q2025-Press-Release(3).pdf) and <https://www.connectcre.com/stories/ncreif-property-index-posts-fourth-consecutive-quarter-of-positive-returns/>

¹⁴⁴ <https://www.altusgroup.com/insights/large-us-cre-deals-make-a-come-back-in-q3-2025/>

¹⁴⁵ <https://agorareal.com/blog/commercial-real-estate-lending-trends/>

¹⁴⁶ <https://www.spglobal.com/market-intelligence/en/news-insights/research/cre-maturity-wall-reaches-950b-in-2024-peaks-in-2027>

¹⁴⁷ <https://www.kaplancollectionagency.com/business-advice/52-commercial-office-real-estate-statistics-for-2025/>

Looking ahead to 2026, the base-case expectation across most major research providers is for continued, but slow, improvement in all-property pricing, with most of the gains again coming from net operating income growth. Industrial and necessity-based retail are expected to remain strong. Multifamily should benefit from constrained for-sale housing affordability and steady renter demand. Office, in contrast, is widely expected to lag: even optimistic forecasts call for a more tangible recovery beginning in 2026, with substantial differentiation between premier properties with amenities, as opposed to older buildings that may ultimately be converted or demolished.^{148,149}

For now, **the broad message from the major commercial property price indices is consistent:** the U.S. commercial real estate market has exited the acute correction phase and entered a prolonged, uneven healing process, with price trajectories increasingly driven by asset quality, sector fundamentals, and access to capital rather than by a single, monolithic “CRE cycle.”¹⁵⁰

Other Commentary

- “Looking specifically at the U.S., the commercial real estate sector is entering 2026 with renewed momentum, clearer visibility, and growing optimism across both leasing and the capital markets landscape, according to a forecast from Cushman & Wakefield. It notes that despite uncertainty surrounding tariffs, a volatile policy backdrop, tightening immigration and episodes of financial market stress this year, the economy was more resilient than expected, driven in large part by artificial intelligence. ... ‘As we head into 2026, the tone has shifted meaningfully,’ said Kevin Thorpe, chief economist at Cushman & Wakefield. ‘There is still risk on both sides of the outlook, but we’ve moved past the peak levels of uncertainty, and confidence in the CRE sector is building. Capital is flowing again, interest rates are moving lower, and leasing fundamentals are generally stabilizing or improving. If 2025 was a test of resilience, 2026 has real potential to reward it.’” (<https://www.cnbc.com/2025/12/30/commercial-real-estate-2026-what-to-expect.html>; December 30, 2025)
- “Commercial real-estate investors are becoming increasingly aligned with the AI boom—enabling them to rake in profits on the upside, but also making their funds more vulnerable to a correction in AI that disrupts demand for data centers. ... Spending on data-center construction looks poised to surpass office-building construction as soon as next year, according to U.S. Census Bureau data.” (<https://www.wsj.com/real-estate/the-ai-boom-is-making-real-estate-investors-rich-and-exposing-them-to-risk-b6e65b0c>; December 22, 2025)
- “[Home Depot] expects sales to rise between 2.5% to 4.5% in fiscal 2026, the midpoint of which is up from its guidance for 3% growth this fiscal year. Analysts polled by FactSet were looking for growth of 4.5%. ... The company also guided for earnings per share to range between flat to up 4% and for comparable-sales growth of flat to up 2%..” (<https://www.wsj.com/business/retail/home-depot-expects-higher-sales-if-housing-activity-grows-70d587a2>; December 9, 2025)

¹⁴⁸ <https://www.kaplancollectionagency.com/business-advice/52-commercial-office-real-estate-statistics-for-2025/>

¹⁴⁹ <https://www.jpmorgan.com/insights/real-estate/commercial-real-estate/commercial-real-estate-trends>

¹⁵⁰ <https://www.capright.com/a-contrast-of-two-decades-navigating-the-reset-in-commercial-real-estate/>

Dow Jones Total Stock Market Index; S&P 500; and the Market Volatility Index (VIX)

Analysis

During 2H2025, returns remained robust even as macro uncertainty, policy volatility, and an unusually noisy data environment would have justified a far more hesitant tape. By year-end, broad U.S. equities delivered another year of impressive gains, led once again by a narrow cohort of mega-cap growth stocks, while surface-level volatility (as shown by the VIX) belied the scale of processed surprises.

The Dow Jones Total Stock Market Index ended 2Q2025 at 61,309.50, 3Q2025 at 65,753.15, and 4Q2025 at 67,501.51. This represents a quarterly gain of about 7.23% in 3Q2025 and 2.66% in 4Q2025. The typical daily point change averaged about 107 points in 2Q2025, 71 points in 3Q2025, and 28 points in 4Q2025.¹⁵¹

The S&P 500 closed 2Q2025 at 6204.95, 3Q2025 near 6460.26, and 4Q2025 at 6845.49. These values record the following percent changes by quarter: Q2 saw a gain of 4.12%, Q3 had a gain of 4.11%, and Q4 gained 5.96%. The index moved, on average, approximately 12.6 points per workday in 2Q2025, 10.9 points per workday in 3Q2025, and 6.2 points per workday in 4Q2025.¹⁵²

During 3Q2025, performance was unequivocally strong and broad-based, including gains in the Dow Jones U.S. Total Stock Market Index, the S&P 500, the NASDAQ (gained more than 11%), the Dow Jones Industrial Average (gained about 5%), and the Russell 2000 (grew roughly 12%).¹⁵³ S&P 500 earnings grew at about 13% in 3Q2025, marking a fourth consecutive quarter of positive earnings growth.¹⁵⁴

The fourth quarter delivered more muted, but still positive, returns. Large caps once again outperformed mid- and small-caps, which finished the year with gains of 5.9% (S&P MidCap 400) and 4.23% (S&P SmallCap 600), respectively.¹⁵⁵

Beneath these headline numbers, concentration risk intensified. S&P Global's "Market Attributes" report notes that the so-called "Magnificent 7" accounted for approximately 55 percent of the S&P 500's three-year total return; without them, the index's 2025 return would have fallen from 17.9 percent (total) to roughly 10.4 percent. Forward-looking sell-side targets embed even more dependence: consensus bottom-up estimates for 2026 envision the S&P 500 at 8,001—implying a further 16.9 percent gain—with just two names, NVIDIA and Microsoft, expected to deliver around 30 percent of that increase. The Dow Jones U.S. Total Stock Market index, while broader by construction, is subject to the same gravitational pull; gains are increasingly a function of a small cadre of mega-cap platforms rather than a uniformly rising tide.¹⁵⁶ From a risk-management perspective, this leaves equity investors highly exposed to idiosyncratic shocks in a handful of firms and sectors, even when index-level volatility appears benign.

The behavior of volatility itself in 3Q2025 and 4Q2025 underscores that point. The first half of the year was marked by a sharp spike in implied volatility when tariff announcements in early April drove the VIX

¹⁵¹ <https://www.marketwatch.com/investing/index/dwcf>

¹⁵² <https://www.marketwatch.com/investing/index/spx> and <https://finance.yahoo.com/news/does-q4-hold-u-economy-172500870.html>

¹⁵³ <https://www.lpl.com/research/blog/q3-recap-10-key-takeaways.html>

¹⁵⁴ <https://www.blackrock.com/us/financial-professionals/insights/q3-earnings-equity-market-outlook>

¹⁵⁵ <https://www.spglobal.com/spdji/en/commentary/article/us-equities-market-attributes/>

¹⁵⁶ Ibid.

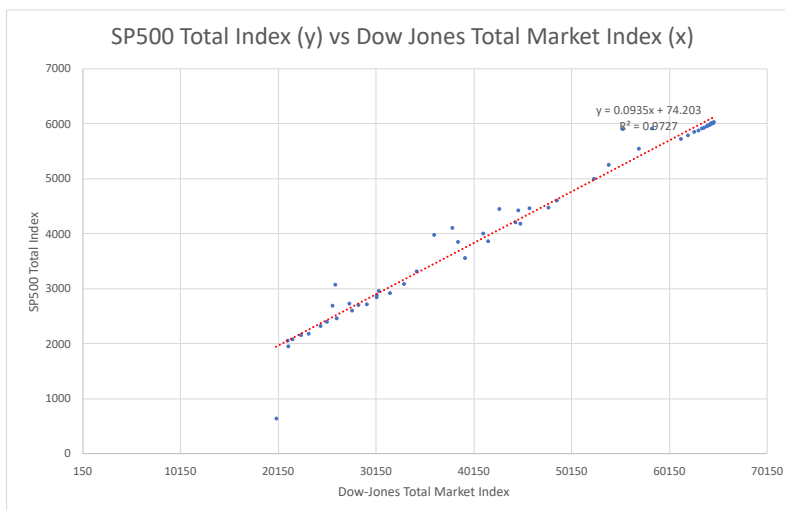
briefly above 60, rivaling pandemic-era extremes; in contrast, it returned to a level of 15.37 by the end of 1H2025, and, by the time 3Q closed, realized and implied volatility had collapsed.¹⁵⁷ Reuters reports that the S&P 500's one-month realized volatility averaged just 10.8 during the quarter—the lowest reading in nearly six years—even as equity indices set successive record highs.¹⁵⁸ The VIX then dropped during 3Q2025 to 15.29, and closed 2025 at 14.95¹⁵⁹

The VIX' average level during 2025 was only slightly above the subdued averages of 2023–24. Further, looking at full-year data show that 2025's average VIX level, at roughly 20.8 through mid-July, was still meaningfully higher than in those prior two years, reflecting the long shadow of the April shock and other policy-related air pockets.¹⁶⁰

Taken together, 3Q and 4Q2025 left U.S. equities priced for a continuation of favorable conditions but with increasingly asymmetric risks. On the one hand, a combination of strong earnings growth, a late-year pivot toward easier monetary policy, and lower long-term yields¹⁶¹ provided fundamental and technical support for both the S&P 500 and the Dow Jones U.S. Total Stock Market index. On the other, the growing dependence on a narrow leadership cohort, the persistence of tariff-driven macro noise, and the capacity for volatility to reprice abruptly¹⁶² mean that the apparently placid year-end VIX reading understates the underlying fragility of the current theme.¹⁶³

Figure 38 shows the relationship between the discussed market indexes.

Figure 38: SP500 as a function of the Dow-Jones Total Market Index



Source: Authors' calculation

¹⁵⁷ <https://fred.stlouisfed.org/series/VIXCLS>

¹⁵⁸ <https://www.reuters.com/business/after-lull-wall-street-eyes-volatility-pickup-risks-build-2025-09-30/>

¹⁵⁹ <https://fred.stlouisfed.org/series/VIXCLS>

¹⁶⁰ <https://finance.yahoo.com/news/vix-too-low-again-190002552.html>

¹⁶¹ <https://www.jpmorgan.com/insights/global-research/outlook/market-outlook>

¹⁶² <https://am.jpmorgan.com/content/dam/jpm-am-aem/americas/us/en/institutional/insights/portfolio-insights/lcma-full-report.pdf>

¹⁶³ <https://www.spglobal.com/spdji/en/commentary/article/us-equities-market-attributes/>

Regression Analyses

The following section documents the linear regression coefficients found for each of the aforementioned variables, as a function of other variables (which are not significantly correlated with the control variable). With this report, we have also included the natural log and the square of all variables as experimental (dependent) variables; these variables are denoted by a “LN_” prefix and a “_2” suffix below (respectively).

To compare the effectiveness of these regressions, we calculate the percentage error between the forecasted value (based on the given regression, using the values from the immediately preceding quarter) and the actual value for the period between 4Q2016 and 3Q2025, inclusive.

Table 4: Regression Aggregate Errors for 4Q2016 through 3Q2025

Variable	Min Abs. Error	Average Error	Max Abs. Error
Real GDP Growth	***	***	***
Nominal GDP Growth	4.5%	80.2%	506.5%
Real Disposable Income Growth	91.5%	***	***
Nominal Disposable Income Growth	19.3%	***	***
Inflation	0.6%	12.9%	469.6%
Unemployment Rate	6.0%	-62.6%	169.9%
1-month Treasury Yield	316.2%	**	***
3-month Treasury Yield	0.0%	**	***
6-month Treasury Yield	206.6%	**	***
1-year Treasury Yield	7.5%	447.6%	***
3-year Treasury Yield	2.7%	164.3%	***
5-year Treasury Yield	0.1%	2.2%	174.6%
7-year Treasury Yield	1.5%	16.2%	208.6%
10-year Treasury Yield	0.5%	4.7%	73.1%
20-year Treasury Yield	0.6%	6.0%	45.3%
30-year Treasury Yield	0.7%	9.4%	34.8%
30-year Mortgage Rate	0.2%	6.2%	41.4%
Moody's AAA Curve	0.6%	1.5%	19.8%
Moody's BAA Curve	1.3%	-36.2%	74.9%
BBB Corporate Yield	4.2%	-30.7%	73.8%
Prime Rate	96.9%	-234.3%	487.1%
US Average Retail Gasoline Price	0.3%	-0.7%	42.6%
Cost of Federal Funds	420.1%	**	***
Dow Jones Total Stock Market Index	39.7%	7.5%	169.0%
S&P 500 Stock Price Index	59.2%	349.8%	***
Commercial Real Estate Price Index	48.1%	139.0%	228.6%
Residential Home Price Index	73.3%	229.5%	413.7%
Market Volatility Index	0.5%	12.9%	119.4%

** The indicated value has a percentage error less than -1000%.

*** The indicated value has a percentage error greater than 1000%.

Real & Nominal GDP Growth, Real & Nominal Disposable Income Growth, and CPI Inflation Rate

REGRESSION FOR REAL GDP GROWTH	
	<i>Dependent variable (+/- SE):</i>
	Real GDP growth
Constant	440.757 (+/- 50.593) p = 0.00000***
US Fed Reserve O-N Loan Rate	113.347 (+/- 16.436) p = 0.00001***
Moody's AAA Curve	-86.086 (+/- 17.293) p = 0.0002***
Moody's BAA Curve	64.610 (+/- 8.975) p = 0.00001***
Nominal disposable income growth	-0.200 (+/- 0.048) p = 0.001***
CPI Inflation Rate	4.786 (+/- 0.455) p = 0.000***
30-year Mortgage Rate	21.282 (+/- 5.173) p = 0.001***
Dow Total Stock Market Index	-0.001 (+/- 0.0003) p = 0.006***
Home Price Index	-0.387 (+/- 0.101) p = 0.002***
Commercial Real Estate Price Index	-0.782 (+/- 0.095) p = 0.00000***
30-year Treasury Yield	167.728 (+/- 24.732) p = 0.00001***
LN_30-year Treasury Yield	-1,162.490 (+/- 125.256) p = 0.00000***
LN_20-year Treasury Yield	707.261 (+/- 77.371) p = 0.00000***
LN_10-year Treasury Yield	-51.153 (+/- 14.536) p = 0.003***
1-month Treasury Yield	-78.265 (+/- 14.162) p = 0.00004***
7-year Treasury Yield	-86.280 (+/- 15.494) p = 0.00004***
LN_7-year Treasury Yield	185.740 (+/- 42.222)

	p = 0.0004***
5-year Treasury Yield	-22.239 (+/- 6.310)
	p = 0.003***
LN_5-year Treasury Yield	84.477 (+/- 13.900)
	p = 0.00002***
LN_6-month Treasury Yield	44.487 (+/- 5.913)
	p = 0.00000***
LN_3-year Treasury Yield	-124.277 (+/- 19.155)
	p = 0.00001***
1-year Treasury Yield	-67.745 (+/- 9.576)
	p = 0.00001***
3-year Treasury Yield_2	11.257 (+/- 1.851)
	p = 0.00002***
Observations	40
R ²	0.955
Adjusted R ²	0.896
Residual Std. Error	2.413 (df = 17)
F Statistic	16.230*** (df = 22; 17)
Note:	* p ** p *** p<0.01

REGRESSION FOR NOMINAL GDP GROWTH	
	<i>Dependent variable (+/- SE):</i>
	Nominal GDP growth
Constant	27.567 (+/- 7.666) p = 0.002***
Real disposable income growth	-3.779 (+/- 0.581) p = 0.00000***
Nominal disposable income growth	3.443 (+/- 0.576) p = 0.00000***
Home Price Index	-0.139 (+/- 0.042) p = 0.003***
LN_7-year Treasury Yield	-15.485 (+/- 3.997) p = 0.0005***
7-year Treasury Yield_2	2.054 (+/- 0.556) p = 0.001***
Observations	40
R ²	0.654
Adjusted R ²	0.603
Residual Std. Error	5.367 (df = 34)
F Statistic	12.868*** (df = 5; 34)
Note:	*p<0.1 **p<0.05 ***p<0.01

REGRESSION FOR REAL DISPOSABLE INCOME GROWTH	
	<i>Dependent variable (+/- SE):</i>
	Real disposable income growth
Constant	676.723 (+/- 74.251) p = 0.00001***
SP500 Stock Price Index	-0.033 (+/- 0.003) p = 0.00001***
US Fed Reserve O-N Loan Rate	-33.479 (+/- 10.055) p = 0.007***
Moody's AAA Curve	-68.034 (+/- 14.234) p = 0.001***
Real GDP growth	16.282 (+/- 2.401) p = 0.00004***
Nominal GDP growth	-15.506 (+/- 2.151) p = 0.00002***
BBB corporate yield	-55.950 (+/- 10.480) p = 0.0003***
Prime Rate	-120.303 (+/- 13.103) p = 0.00001***
Home Price Index	1.586 (+/- 0.235) p = 0.00004***
Commercial Real Estate Price Index	-0.744 (+/- 0.109) p = 0.00003***
Market Volatility Index	-1.558 (+/- 0.181) p = 0.00001***
LN_Market Volatility Index	24.137 (+/- 5.298) p = 0.001***
30-year Treasury Yield	146.922 (+/- 32.799) p = 0.001***
LN_30-year Treasury Yield	-666.720 (+/- 90.356) p = 0.00002***
LN_20-year Treasury Yield	460.885 (+/- 101.107) p = 0.001***
10-year Treasury Yield	263.663 (+/- 26.034) p = 0.00000***
LN_10-year Treasury Yield	-720.738 (+/- 56.046) p = 0.00000***
LN_1-month Treasury Yield	14.517 (+/- 3.149)

	p = 0.001***
7-year Treasury Yield	-276.366 (+/- 38.875)
	p = 0.00002***
LN_7-year Treasury Yield	599.387 (+/- 67.352)
	p = 0.00001***
5-year Treasury Yield	-177.718 (+/- 17.522)
	p = 0.00000***
LN_5-year Treasury Yield	479.559 (+/- 33.694)
	p = 0.00000***
3-year Treasury Yield	515.490 (+/- 49.287)
	p = 0.00000***
LN_3-year Treasury Yield	-527.664 (+/- 28.013)
	p = 0.000***
1-year Treasury Yield	-156.804 (+/- 15.071)
	p = 0.00000***
LN_1-year Treasury Yield	131.737 (+/- 9.580)
	p = 0.00000***
3-month Treasury Yield_2	15.212 (+/- 1.507)
	p = 0.00000***
7-year Treasury Yield_2	-28.724 (+/- 4.599)
	p = 0.0001***
1-month Treasury Yield_2	6.677 (+/- 0.942)
	p = 0.00003***
Observations	40
R ²	0.990
Adjusted R ²	0.963
Residual Std. Error	2.493 (df = 11)
F Statistic	37.752*** (df = 28; 11)
Note:	* p ** p *** p<0.01

REGRESSION FOR NOMINAL DISPOSABLE INCOME GROWTH	
	<i>Dependent variable (+/- SE):</i>
	Nominal disposable income growth
Constant	45.064 (+/- 14.704) p = 0.005***
Nominal GDP growth	-0.860 (+/- 0.202) p = 0.0002***
LN_30-year Treasury Yield	-112.945 (+/- 33.350) p = 0.002***
LN_7-year Treasury Yield	172.793 (+/- 43.936) p = 0.0004***
LN_3-year Treasury Yield	-115.181 (+/- 26.989) p = 0.0002***
LN_1-year Treasury Yield	32.463 (+/- 8.169) p = 0.0004***
Observations	40
R ²	0.471
Adjusted R ²	0.393
Residual Std. Error	10.131 (df = 34)
F Statistic	6.055*** (df = 5; 34)
Note:	* p ** p *** p<0.01

REGRESSION FOR CPI INFLATION RATE	
	<i>Dependent variable (+/- SE):</i>
	CPI Inflation Rate
Constant	-4.870 (+/- 1.101) p = 0.0001***
Real disposable income growth	-1.007 (+/- 0.049) p = 0.000***
Nominal disposable income growth	0.942 (+/- 0.050) p = 0.000***
Commercial Real Estate Price Index	0.019 (+/- 0.004) p = 0.00005***
1-year Treasury Yield_2	-0.121 (+/- 0.023) p = 0.00001***
20-year Treasury Yield_2	0.108 (+/- 0.026) p = 0.0002***
Observations	40
R ²	0.973
Adjusted R ²	0.969
Residual Std. Error	0.455 (df = 34)
F Statistic	244.266*** (df = 5; 34)
Note:	*p**p***p<0.01

Unemployment Rate

REGRESSION FOR UNEMPLOYMENT RATE	
	<i>Dependent variable (+/- SE):</i>
	Unemployment Rate
Constant	5.563 (+/- 0.533) p = 0.000***
Real disposable income growth	0.428 (+/- 0.053) p = 0.000***
Nominal disposable income growth	-0.404 (+/- 0.053) p = 0.000***
LN_10-year Treasury Yield	-5.506 (+/- 1.380) p = 0.0004***
3-month Treasury Yield	1.774 (+/- 0.509) p = 0.002***
LN_5-year Treasury Yield	3.505 (+/- 1.257) p = 0.009***
3-year Treasury Yield	3.170 (+/- 0.619) p = 0.00002***
LN_3-year Treasury Yield	-3.792 (+/- 0.575) p = 0.00000***
1-year Treasury Yield	-3.029 (+/- 0.564) p = 0.00001***
Observations	40
R ²	0.925
Adjusted R ²	0.906
Residual Std. Error	0.526 (df = 31)
F Statistic	47.820*** (df = 8; 31)
Note:	* p ** p *** p<0.01

Treasury Yields (1, 3, & 6-month; 1, 3, 5, 7, 10, 20, & 30-year series)

REGRESSION FOR 1-MONTH TREASURY YIELD	
	<i>Dependent variable (+/- SE):</i>
	1-month Treasury Yield
Constant	-8.491 (+/- 1.669) p = 0.00002***
Moody's AAA Curve	-2.766 (+/- 0.461) p = 0.00001***
Real disposable income growth	-0.505 (+/- 0.120) p = 0.0003***
Nominal disposable income growth	0.470 (+/- 0.114) p = 0.0003***
CPI Inflation Rate	-0.566 (+/- 0.100) p = 0.00001***
Dow Total Stock Market Index	0.00004 (+/- 0.00001) p = 0.00001***
Commercial Real Estate Price Index	0.027 (+/- 0.005) p = 0.00001***
LN_30-year Treasury Yield	23.485 (+/- 3.802) p = 0.00000***
LN_20-year Treasury Yield	-18.612 (+/- 3.070) p = 0.00001***
LN_10-year Treasury Yield	-0.952 (+/- 0.321) p = 0.007***
7-year Treasury Yield	2.901 (+/- 0.336) p = 0.000***
Observations	40
R ²	0.979
Adjusted R ²	0.972
Residual Std. Error	0.336 (df = 29)
F Statistic	135.699*** (df = 10; 29)
Note:	* p ** p *** p<0.01

REGRESSION FOR 3-MONTH TREASURY YIELD	
	<i>Dependent variable (+/- SE):</i>
	3-month Treasury Yield
Constant	-3.665 (+/- 1.213) p = 0.006***
Moody's AAA Curve	-3.706 (+/- 0.566) p = 0.00000***
Moody's BAA Curve	0.918 (+/- 0.278) p = 0.003***
Real GDP growth	0.141 (+/- 0.040) p = 0.002***
Nominal GDP growth	-0.123 (+/- 0.037) p = 0.003***
Dow Total Stock Market Index	-0.0001 (+/- 0.00001) p = 0.0004***
Home Price Index	0.036 (+/- 0.005) p = 0.00000***
LN_Market Volatility Index	-0.406 (+/- 0.126) p = 0.004***
LN_30-year Treasury Yield	13.233 (+/- 3.399) p = 0.001***
LN_20-year Treasury Yield	-10.910 (+/- 2.990) p = 0.002***
7-year Treasury Yield	3.678 (+/- 0.574) p = 0.00000***
7-year Treasury Yield_2	-0.212 (+/- 0.074) p = 0.008***
Observations	40
R ²	0.989
Adjusted R ²	0.985
Residual Std. Error	0.232 (df = 28)
F Statistic	239.659*** (df = 11; 28)
Note:	* p ** p *** p<0.01

REGRESSION FOR 6-MONTH TREASURY YIELD	
	<i>Dependent variable (+/- SE):</i>
	6-month Treasury Yield
Constant	-6.836 (+/- 1.584) p = 0.0002***
Moody's AAA Curve	-2.003 (+/- 0.445) p = 0.0001***
Real disposable income growth	-0.414 (+/- 0.105) p = 0.0005***
Nominal disposable income growth	0.385 (+/- 0.099) p = 0.001***
CPI Inflation Rate	-0.498 (+/- 0.089) p = 0.00001***
Home Price Index	0.007 (+/- 0.002) p = 0.007***
Commercial Real Estate Price Index	0.021 (+/- 0.005) p = 0.0002***
LN_30-year Treasury Yield	15.671 (+/- 3.435) p = 0.0001***
LN_20-year Treasury Yield	-13.242 (+/- 2.790) p = 0.00005***
7-year Treasury Yield	2.433 (+/- 0.301) p = 0.000***
Observations	40
R ²	0.981
Adjusted R ²	0.975
Residual Std. Error	0.306 (df = 30)
F Statistic	169.681*** (df = 9; 30)
Note:	* p ** p *** p<0.01

REGRESSION FOR 1-YEAR TREASURY YIELD	
	<i>Dependent variable (+/- SE):</i>
	1-year Treasury Yield
Constant	-3.884 (+/- 0.630) p = 0.00000***
Unemployment Rate	-0.352 (+/- 0.066) p = 0.00001***
CPI Inflation Rate	-0.198 (+/- 0.027) p = 0.00000***
20-year Treasury Yield	9.435 (+/- 0.747) p = 0.000***
LN_20-year Treasury Yield	-12.391 (+/- 1.347) p = 0.000***
30-year Treasury Yield_2	-0.692 (+/- 0.072) p = 0.000***
Observations	40
R ²	0.968
Adjusted R ²	0.964
Residual Std. Error	0.344 (df = 34)
F Statistic	208.168*** (df = 5; 34)
Note:	* p ** p *** p<0.01

REGRESSION FOR 3-YEAR TREASURY YIELD	
	<i>Dependent variable (+/- SE):</i>
	3-year Treasury Yield
Constant	-10.738 (+/- 1.114) p = 0.000***
Real GDP growth	-0.022 (+/- 0.005) p = 0.0002***
Unemployment Rate	-0.355 (+/- 0.049) p = 0.00000***
Home Price Index	-0.009 (+/- 0.002) p = 0.002***
Commercial Real Estate Price Index	0.010 (+/- 0.003) p = 0.001***
20-year Treasury Yield	16.066 (+/- 1.783) p = 0.000***
LN_20-year Treasury Yield	-21.786 (+/- 2.497) p = 0.000***
20-year Treasury Yield_2	-1.162 (+/- 0.156) p = 0.00000***
Observations	40
R ²	0.986
Adjusted R ²	0.983
Residual Std. Error	0.195 (df = 32)
F Statistic	315.044*** (df = 7; 32)
<i>Note:</i>	* p** p*** p<0.01

REGRESSION FOR 5-YEAR TREASURY YIELD

	<i>Dependent variable (+/- SE):</i>
	5-year Treasury Yield
Constant	-3.206 (+/- 0.455) p = 0.00000***
Real GDP growth	0.373 (+/- 0.052) p = 0.00000***
Nominal GDP growth	-0.348 (+/- 0.047) p = 0.000***
US Avg Retail Gasoline Price (\$-gal; all grades, all formulations)	2.290 (+/- 0.166) p = 0.000***
Market Volatility Index_2	-0.0003 (+/- 0.0001) p = 0.002***
Observations	40
R ²	0.861
Adjusted R ²	0.845
Residual Std. Error	0.520 (df = 35)
F Statistic	54.132*** (df = 4; 35)
<i>Note:</i>	* p ** p *** p<0.01

REGRESSION FOR 7-YEAR TREASURY YIELD	
	<i>Dependent variable (+/- SE):</i>
	7-year Treasury Yield
Constant	-2.110 (+/- 0.321) p = 0.00000***
Moody's BAA Curve	0.797 (+/- 0.068) p = 0.000***
CPI Inflation Rate	0.090 (+/- 0.016) p = 0.00001***
Dow Total Stock Market Index	0.00002 (+/- 0.00000) p = 0.0001***
LN_1-month Treasury Yield	0.276 (+/- 0.036) p = 0.000***
Observations	40
R ²	0.969
Adjusted R ²	0.965
Residual Std. Error	0.229 (df = 35)
F Statistic	269.988*** (df = 4; 35)
<i>Note:</i>	* p ** p *** p<0.01

REGRESSION FOR 10-YEAR TREASURY YIELD	
	<i>Dependent variable (+/- SE):</i>
	10-year Treasury Yield
Constant	0.808 (+/- 0.224) p = 0.002***
Real GDP growth	0.377 (+/- 0.078) p = 0.00005***
Nominal GDP growth	-0.371 (+/- 0.078) p = 0.0001***
Real disposable income growth	-0.328 (+/- 0.081) p = 0.0004***
Nominal disposable income growth	0.317 (+/- 0.078) p = 0.0004***
Dow Total Stock Market Index	0.00004 (+/- 0.00001) p = 0.00001***
Market Volatility Index	-0.015 (+/- 0.004) p = 0.0002***
1-month Treasury Yield	-1.784 (+/- 0.254) p = 0.00000***
1-year Treasury Yield	2.131 (+/- 0.220) p = 0.000***
6-month Treasury Yield_2	-0.216 (+/- 0.041) p = 0.00002***
1-month Treasury Yield_2	0.243 (+/- 0.042) p = 0.00001***
Observations	40
R ²	0.962
Adjusted R ²	0.949
Residual Std. Error	0.264 (df = 29)
F Statistic	74.166*** (df = 10; 29)
Note:	* p ** p *** p<0.01

REGRESSION FOR 20-YEAR TREASURY YIELD	
	<i>Dependent variable (+/- SE):</i>
	20-year Treasury Yield
Constant	3.284 (+/- 0.389) p = 0.000***
Real disposable income growth	0.171 (+/- 0.047) p = 0.002***
Nominal disposable income growth	-0.159 (+/- 0.045) p = 0.002***
Unemployment Rate	-0.106 (+/- 0.023) p = 0.0002***
CPI Inflation Rate	0.123 (+/- 0.044) p = 0.009***
Home Price Index	0.008 (+/- 0.001) p = 0.000***
Commercial Real Estate Price Index	-0.010 (+/- 0.001) p = 0.00000***
LN_Market Volatility Index	-0.249 (+/- 0.056) p = 0.0002***
LN_6-month Treasury Yield	0.993 (+/- 0.346) p = 0.008***
3-year Treasury Yield	2.109 (+/- 0.331) p = 0.00000***
1-year Treasury Yield	-1.121 (+/- 0.274) p = 0.0004***
LN_1-year Treasury Yield	-1.349 (+/- 0.372) p = 0.002***
1-year Treasury Yield_2	0.129 (+/- 0.034) p = 0.001***
3-year Treasury Yield_2	-0.165 (+/- 0.051) p = 0.004***
Observations	40
R ²	0.993
Adjusted R ²	0.990
Residual Std. Error	0.112 (df = 26)
F Statistic	292.940*** (df = 13; 26)
Note:	* p ** p *** p<0.01

REGRESSION FOR 30-YEAR TREASURY YIELD	
	<i>Dependent variable (+/- SE):</i>
	30-year Treasury Yield
Constant	4.752 (+/- 0.326) p = 0.000***
Real GDP growth	0.059 (+/- 0.021) p = 0.009***
Nominal GDP growth	-0.059 (+/- 0.020) p = 0.006***
Unemployment Rate	-0.082 (+/- 0.020) p = 0.0004***
Home Price Index	0.009 (+/- 0.001) p = 0.000***
Commercial Real Estate Price Index	-0.013 (+/- 0.002) p = 0.000***
LN_Market Volatility Index	-0.306 (+/- 0.066) p = 0.0001***
LN_1-month Treasury Yield	-0.208 (+/- 0.043) p = 0.00004***
3-year Treasury Yield	0.665 (+/- 0.059) p = 0.000***
Observations	40
R ²	0.984
Adjusted R ²	0.980
Residual Std. Error	0.140 (df = 31)
F Statistic	240.936*** (df = 8; 31)
Note:	* p ** p *** p<0.01

30-year Mortgage Rate

REGRESSION FOR 30-YEAR MORTGATE RATE	
	<i>Dependent variable (+/- SE):</i>
	30-year Mortgage Rate
Constant	3.107 (+/- 0.248) p = 0.000***
SP500 Stock Price Index	0.0004 (+/- 0.0001) p = 0.00001***
1-month Treasury Yield	-2.189 (+/- 0.276) p = 0.000***
6-month Treasury Yield	1.624 (+/- 0.227) p = 0.00000***
LN_6-month Treasury Yield	0.532 (+/- 0.122) p = 0.0002***
1-month Treasury Yield_2	0.154 (+/- 0.029) p = 0.00001***
Observations	40
R ²	0.953
Adjusted R ²	0.947
Residual Std. Error	0.344 (df = 34)
F Statistic	139.111*** (df = 5; 34)
<i>Note:</i>	* ** *** p<0.01

Moody's AAA & BAA Rates

REGRESSION FOR MOODY'S AAA CURVE	
	<i>Dependent variable (+/- SE):</i>
	Moody's AAA Curve
Constant	1.774 (+/- 0.281) p = 0.00000***
US Fed Reserve O-N Loan Rate	1.608 (+/- 0.479) p = 0.003***
Real GDP growth	0.153 (+/- 0.025) p = 0.00001***
Nominal GDP growth	-0.142 (+/- 0.023) p = 0.00000***
Home Price Index	0.006 (+/- 0.001) p = 0.0003***
Market Volatility Index	-0.012 (+/- 0.003) p = 0.0002***
1-month Treasury Yield	-2.079 (+/- 0.494) p = 0.0003***
3-month Treasury Yield	-0.447 (+/- 0.108) p = 0.0003***
3-year Treasury Yield	1.248 (+/- 0.114) p = 0.000***
1-month Treasury Yield_2	0.056 (+/- 0.014) p = 0.0004***
Observations	40
R ²	0.971
Adjusted R ²	0.962
Residual Std. Error	0.180 (df = 30)
F Statistic	111.716*** (df = 9; 30)
Note:	* ** *** p<0.01

REGRESSION FOR MOODY'S BAA CURVE	
	<i>Dependent variable (+/- SE):</i>
	Moody's BAA Curve
Constant	4.205 (+/- 0.624) p = 0.00000***
SP500 Stock Price Index	-0.001 (+/- 0.0001) p = 0.00000***
Real GDP growth	0.108 (+/- 0.038) p = 0.008***
Nominal GDP growth	-0.105 (+/- 0.034) p = 0.005***
Home Price Index	0.025 (+/- 0.003) p = 0.000***
Commercial Real Estate Price Index	-0.014 (+/- 0.003) p = 0.00004***
LN_7-year Treasury Yield	0.475 (+/- 0.154) p = 0.005***
6-month Treasury Yield	-1.017 (+/- 0.299) p = 0.002***
1-year Treasury Yield	1.183 (+/- 0.326) p = 0.001***
Observations	40
R ²	0.965
Adjusted R ²	0.956
Residual Std. Error	0.193 (df = 31)
F Statistic	107.181*** (df = 8; 31)
Note:	* p ** p *** p<0.01

BBB Corporate Yield

REGRESSION FOR BBB CORPORATE YIELD	
	<i>Dependent variable (+/- SE):</i>
	BBB corporate yield
Constant	7.573 (+/- 1.492) p = 0.00003***
Real GDP growth	0.156 (+/- 0.033) p = 0.0001***
Nominal GDP growth	-0.142 (+/- 0.030) p = 0.00005***
Prime Rate	-2.751 (+/- 0.394) p = 0.00000***
Dow Total Stock Market Index	-0.0001 (+/- 0.00001) p = 0.00000***
Home Price Index	0.021 (+/- 0.004) p = 0.00001***
LN_1-month Treasury Yield	-0.210 (+/- 0.056) p = 0.001***
7-year Treasury Yield	2.035 (+/- 0.237) p = 0.000***
3-month Treasury Yield	2.508 (+/- 0.373) p = 0.00000***
7-year Treasury Yield_2	-0.279 (+/- 0.049) p = 0.00001***
1-month Treasury Yield_2	0.075 (+/- 0.014) p = 0.00002***
Observations	40
R ²	0.978
Adjusted R ²	0.970
Residual Std. Error	0.199 (df = 29)
F Statistic	127.224*** (df = 10; 29)
Note:	* ** *** p<0.01

Prime Rate

REGRESSION FOR PRIME RATE	
	<i>Dependent variable (+/- SE):</i>
	Prime Rate
Constant	-1.664 (+/- 1.593) p = 0.305
Moody's AAA Curve	-3.511 (+/- 0.709) p = 0.00003***
Moody's BAA Curve	1.254 (+/- 0.295) p = 0.0003***
Real GDP growth	0.194 (+/- 0.049) p = 0.0005***
Nominal GDP growth	-0.171 (+/- 0.045) p = 0.001***
Home Price Index	0.029 (+/- 0.004) p = 0.00000***
LN_Market Volatility Index	-0.470 (+/- 0.150) p = 0.005***
LN_30-year Treasury Yield	13.177 (+/- 3.665) p = 0.002***
LN_20-year Treasury Yield	-9.959 (+/- 2.959) p = 0.003***
7-year Treasury Yield	3.091 (+/- 0.334) p = 0.000***
20-year Treasury Yield_2	-0.231 (+/- 0.070) p = 0.003***
Observations	40
R ²	0.985
Adjusted R ²	0.979
Residual Std. Error	0.278 (df = 29)
F Statistic	185.098*** (df = 10; 29)
Note:	* p ** p *** p<0.01

US Average Retail Gasoline Price

REGRESSION FOR US AVG RETAIL GASOLINE PRICE (-GAL; ALL GRADES, ALL FORMULATIONS)

	<i>Dependent variable (+/- SE):</i>
	US Avg Retail Gasoline Price (\$-gal; all grades, all formulations)
Constant	1.129 (+/- 0.352) p = 0.004***
SP500 Stock Price Index	-0.0002 (+/- 0.0001) p = 0.005***
Moody's BAA Curve	-0.248 (+/- 0.078) p = 0.004***
Home Price Index	0.017 (+/- 0.002) p = 0.000***
10-year Treasury Yield	-0.410 (+/- 0.128) p = 0.004***
LN_5-year Treasury Yield	0.718 (+/- 0.145) p = 0.00003***
6-month Treasury Yield	-1.104 (+/- 0.228) p = 0.00004***
1-year Treasury Yield	1.237 (+/- 0.260) p = 0.00004***
Observations	40
R ²	0.935
Adjusted R ²	0.921
Residual Std. Error	0.174 (df = 32)
F Statistic	65.663*** (df = 7; 32)

Note:

* ** *** p<0.01

US Federal Reserve Overnight Lending Rate

REGRESSION FOR US FED RESERVE O-N LOAN RATE	
	<i>Dependent variable (+/- SE):</i>
	US Fed Reserve O-N Loan Rate
Constant	-26.988 (+/- 4.336) p = 0.00001***
Moody's AAA Curve	-2.816 (+/- 0.604) p = 0.0001***
Unemployment Rate	-0.508 (+/- 0.083) p = 0.00001***
CPI Inflation Rate	-0.202 (+/- 0.035) p = 0.00001***
Dow Total Stock Market Index	0.0001 (+/- 0.00002) p = 0.001***
Commercial Real Estate Price Index	0.022 (+/- 0.005) p = 0.0003***
LN_30-year Treasury Yield	25.244 (+/- 4.147) p = 0.00001***
20-year Treasury Yield	43.037 (+/- 9.186) p = 0.0001***
LN_20-year Treasury Yield	-78.400 (+/- 13.045) p = 0.00001***
7-year Treasury Yield	-8.462 (+/- 3.010) p = 0.010***
LN_7-year Treasury Yield	10.209 (+/- 2.987) p = 0.003***
7-year Treasury Yield_2	0.992 (+/- 0.299) p = 0.003***
20-year Treasury Yield_2	-3.502 (+/- 0.731) p = 0.0001***
Observations	40
R ²	0.984
Adjusted R ²	0.976
Residual Std. Error	0.297 (df = 27)
F Statistic	135.238*** (df = 12; 27)
Note:	* ** *** p<0.01

Dow Jones Total Stock Market Index (end-of-quarter) and S&P 500 (quarterly average)

REGRESSION FOR DOW TOTAL STOCK MARKET INDEX	
	<i>Dependent variable (+/- SE):</i>
	Dow Total Stock Market Index
Constant	58,716.430 (+/- 13,696.580) p = 0.0003***
US Fed Reserve O-N Loan Rate	10,390.740 (+/- 1,087.279) p = 0.000***
Real GDP growth	-1,699.621 (+/- 323.618) p = 0.00002***
Nominal GDP growth	1,577.535 (+/- 292.442) p = 0.00002***
Unemployment Rate	1,492.695 (+/- 403.892) p = 0.002***
30-year Mortgage Rate	6,369.336 (+/- 1,999.790) p = 0.004***
LN_Market Volatility Index	3,752.768 (+/- 935.924) p = 0.0005***
30-year Treasury Yield	-70,564.960 (+/- 10,148.450) p = 0.00000***
LN_20-year Treasury Yield	52,503.790 (+/- 13,012.240) p = 0.0005***
10-year Treasury Yield	-11,536.030 (+/- 3,951.036) p = 0.008***
LN_10-year Treasury Yield	22,828.550 (+/- 5,116.658) p = 0.0002***
LN_1-year Treasury Yield	-5,356.232 (+/- 926.024) p = 0.00001***
1-year Treasury Yield_2	-1,254.959 (+/- 251.724) p = 0.00004***
7-year Treasury Yield_2	-1,622.254 (+/- 459.356) p = 0.002***
30-year Treasury Yield_2	9,809.616 (+/- 1,035.446) p = 0.000***
Observations	40
R ²	0.990
Adjusted R ²	0.985

Residual Std. Error	1,543.060 (df = 25)
F Statistic	179.607*** (df = 14; 25)
<i>Note:</i>	*p**p***p<0.01

REGRESSION FOR SP500 STOCK PRICE INDEX	
	<i>Dependent variable (+/- SE):</i>
	SP500 Stock Price Index
Constant	2,105.605 (+/- 339.123) p = 0.00000***
US Fed Reserve O-N Loan Rate	962.514 (+/- 190.151) p = 0.00002***
CPI Inflation Rate	170.422 (+/- 33.367) p = 0.00002***
LN_30-year Treasury Yield	-8,110.888 (+/- 1,005.460) p = 0.000***
20-year Treasury Yield	3,440.814 (+/- 411.399) p = 0.000***
1-year Treasury Yield	-1,192.409 (+/- 209.187) p = 0.00001***
Observations	40
R ²	0.899
Adjusted R ²	0.884
Residual Std. Error	450.453 (df = 34)
F Statistic	60.512*** (df = 5; 34)
Note:	* p ** p *** p<0.01

House and Commercial Real Estate Price Indexes

REGRESSION FOR HOME PRICE INDEX	
	<i>Dependent variable (+/- SE):</i>
	Home Price Index
Constant	185.503 (+/- 16.985) p = 0.000***
US Fed Reserve O-N Loan Rate	82.279 (+/- 14.797) p = 0.00002***
Moody's BAA Curve	23.189 (+/- 4.709) p = 0.0001***
Real GDP growth	-9.327 (+/- 0.994) p = 0.000***
Nominal GDP growth	8.405 (+/- 0.925) p = 0.000***
BBB corporate yield	10.464 (+/- 2.887) p = 0.002***
Market Volatility Index	0.284 (+/- 0.073) p = 0.001***
30-year Treasury Yield	93.071 (+/- 15.056) p = 0.00001***
LN_30-year Treasury Yield	-601.217 (+/- 53.208) p = 0.000***
LN_20-year Treasury Yield	429.948 (+/- 45.642) p = 0.000***
1-month Treasury Yield	-73.534 (+/- 13.550) p = 0.00002***
7-year Treasury Yield	-153.358 (+/- 15.816) p = 0.000***
LN_5-year Treasury Yield	22.358 (+/- 4.260) p = 0.00003***
6-month Treasury Yield	81.020 (+/- 20.701) p = 0.001***
1-year Treasury Yield	-64.112 (+/- 17.752) p = 0.002***
6-month Treasury Yield_2	-3.669 (+/- 0.604) p = 0.00001***
7-year Treasury Yield_2	17.667 (+/- 2.398) p = 0.00000***

Observations	40
R ²	0.996
Adjusted R ²	0.994
Residual Std. Error	4.136 (df = 23)
F Statistic	402.862 ^{***} (df = 16; 23)
<i>Note:</i>	* p ** p *** p<0.01

REGRESSION FOR COMMERCIAL REAL ESTATE PRICE INDEX	
	<i>Dependent variable (+/- SE):</i>
	Commercial Real Estate Price Index
Constant	421.723 (+/- 24.499) p = 0.000***
Real disposable income growth	8.878 (+/- 2.347) p = 0.001***
Nominal disposable income growth	-8.307 (+/- 2.211) p = 0.001***
Unemployment Rate	-4.652 (+/- 1.312) p = 0.002***
CPI Inflation Rate	7.026 (+/- 1.885) p = 0.001***
30-year Mortgage Rate	21.506 (+/- 4.111) p = 0.00002***
LN_Market Volatility Index	-9.877 (+/- 3.471) p = 0.009***
LN_30-year Treasury Yield	-469.198 (+/- 42.044) p = 0.000***
LN_20-year Treasury Yield	392.126 (+/- 40.668) p = 0.000***
10-year Treasury Yield	-20.724 (+/- 4.936) p = 0.0003***
3-month Treasury Yield	11.399 (+/- 3.662) p = 0.005***
3-year Treasury Yield	-37.558 (+/- 6.346) p = 0.00001***
3-year Treasury Yield_2	5.391 (+/- 0.869) p = 0.00001***
Observations	40
R ²	0.978
Adjusted R ²	0.969
Residual Std. Error	5.848 (df = 27)
F Statistic	101.527*** (df = 12; 27)
Note:	* p ** p*** p<0.01

Market Volatility Index

REGRESSION FOR MARKET VOLATILITY INDEX	
	<i>Dependent variable (+/- SE):</i>
	Market Volatility Index
Constant	44.068 (+/- 6.173) p = 0.00000***
30-year Treasury Yield	-5.433 (+/- 1.913) p = 0.008**
Observations	40
R ²	0.175
Adjusted R ²	0.153
Residual Std. Error	11.842 (df = 38)
F Statistic	8.067*** (df = 1; 38)
Note:	* ** *** p<0.01

Appendix A: Data Sources

The following table lists the attributes provided by Capitalytics as part of its macro-economic forecast service. The sources for data that are defined by the document “2025 Stress Test Scenarios” (found at <https://www.federalreserve.gov/publications/files/2025-stress-test-scenarios-20250205.pdf>) are listed. Please note that shaded attributes are not discussed within this report.

Table 16: Data Values and Referenced Sources

Attribute	Referenced Source ¹⁶⁴
Real GDP growth	Bureau of Economic Analysis (NIPA table 1.1.6, line 1)
Nominal GDP growth	Bureau of Economic Analysis (NIPA table 1.1.5, line 1)
Real disposable income growth	Bureau of Economic Analysis (NIPA table 2.1, line 27, and NIPA table 1.1.4, line 2)
Nominal disposable income growth	Bureau of Economic Analysis (NIPA table 2.1, line 27)
Unemployment rate	Bureau of Labor Statistics (series LNS14000000)
CPI inflation rate	Bureau of Labor Statistics (series CUSR0000SA0)
3-month Treasury yield	Quarterly average of 3-month Treasury bill secondary market rate on a discount basis, H.15 Release, Selected Interest Rates, Federal Reserve Board (series RIFSGFSM03_N.B)
5-year Treasury yield	Quarterly average of the yield on 5-year U.S. Treasury bonds, constructed for the FRB/U.S. model by Federal Reserve staff based on the Svensson smoothed term structure model; see Lars E. O. Svensson (1995), “Estimating Forward Interest Rates with the Extended Nelson-Siegel Method,” Quarterly Review, no. 3, Sveriges Riksbank, pp. 13–26
10-year Treasury yield	Quarterly average of the yield on 10-year U.S. Treasury bonds, constructed for the FRB/U.S. model by Federal Reserve staff based on the Svensson smoothed term structure model; see Lars E. O. Svensson (1995), “Estimating Forward Interest Rates with the Extended Nelson-Siegel Method,” Quarterly Review, no. 3, Sveriges Riksbank, pp. 13–26
BBB corporate yield	Ice Data Indices, LLC, ICE BofA BBB US Corporate Index Effective Yield [BAMLC0A4CBBBEY], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/BAMLC0A4CBBBEY ¹⁶⁵

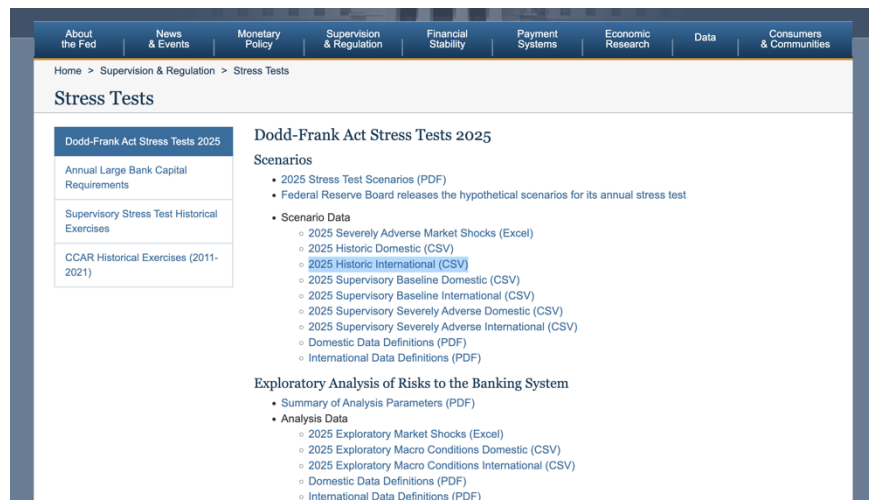
¹⁶⁴ Per <https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20190213a1.pdf>

¹⁶⁵ Capitalytics does not have license to use the data referenced in <https://www.federalreserve.gov/newsevents/pressreleases/files/bcreg20210212a1.pdf>, specifically “Quarterly average of ICE BofAML U.S. Corporate 7-10 Year Yield-to-Maturity Index, ICE Data Indices, LLC, used with permission. (C4A4 series.)”, but we use the referenced series as a proxy.

Mortgage rate	Quarterly average of weekly series for the interest rate of a conventional, conforming, 30-year fixed-rate mortgage, obtained from the Primary Mortgage Market Survey of the Federal Home Loan Mortgage Corporation.
Prime rate	Quarterly average of monthly series, H.15 Release, Selected Interest Rates, Federal Reserve Board (series RIFSPBLP_N.M).
Dow Jones Total Stock Market Index (end-of-qtr value)	Dow-Jones
House Price Index	Price Index for Owner-Occupied Real Estate, CoreLogic National, Z.1 Release (Financial Accounts of the United States), Federal Reserve Board (series FL075035243.Q divided by 1000).
Commercial Real Estate Price Index	Commercial Real Estate Price Index, Z.1 Release (Financial Accounts of the United States), Federal Reserve Board (series FL075035503.Q divided by 1000).
Market Volatility Index (VIX)	VIX converted to quarterly frequency using the maximum close-of-day value in any quarter, Chicago Board Options Exchange.
Euro Area Real GDP Growth	Percent change in real gross domestic product at an annualized rate, staff calculations based on Statistical Office of the European Communities via Haver, extended back using ECB Area Wide Model dataset (ECB Working Paper series no. 42).
Euro Area Inflation	Percent change in the quarterly average of the harmonized index of consumer prices 16 Federal Reserve Supervisory Scenarios at an annualized rate, staff calculations based on Statistical Office of the European Communities via Haver.
Euro Area Bilateral Dollar Exchange Rate (USD/Euro)	End-of-quarter rates from the H.10 Release, Foreign Exchange Rates, Federal Reserve Board.
Developing Asia Real GDP Growth	Percent change in real gross domestic product at an annualized rate, staff calculations based on Bank of Korea via Haver; Chinese National Bureau of Statistics via CEIC; Indian Central Statistical Organization via CEIC; Census and Statistics Department of Hong Kong via CEIC; and Taiwan Directorate-General of Budget, Accounting, and Statistics via CEIC.
Developing Asia Inflation	Percent change in the quarterly average of the consumer price index, or local equivalent, at an annualized rate, staff calculations based on Chinese National Bureau of Statistics via CEIC; Indian Ministry of Statistics and Programme Implementation via Haver; Labour Bureau of India via CEIC; National Statistical Office of Korea via CEIC; Census and Statistic Department of Hong Kong via CEIC; and Taiwan Directorate General of Budget, Accounting, and Statistics via CEIC.

Developing Asia bilateral dollar exchange rate (F/USD, index)	End-of-quarter rates from the H.10 Release, Foreign Exchange Rates, Federal Reserve Board.
Japan Real GDP Growth	Percent change in gross domestic product at an annualized rate, Cabinet Office via Haver.
Japan Inflation	Percent change in the quarterly average of the consumer price index at an annualized rate, staff calculations based on Ministry of Internal Affairs and Communications via Haver.
Japan Bilateral Dollar Exchange Rate (Yen/USD)	End-of-quarter rates from the H.10 Release, Foreign Exchange Rates, Federal Reserve Board.
UK Real GDP Growth	Percent change in gross domestic product at an annualized rate, Office for National Statistics via Haver.
UK Inflation	Percent change in the quarterly average of the consumer price index at an annualized rate, staff calculations based on Office for National Statistics via Haver.
UK Bilateral Dollar Exchange Rate (USD/Pound)	End-of-quarter rates from the H.10 Release, Foreign Exchange Rates, Federal Reserve Board.

The above dataset from the Federal Reserve can be downloaded manually or automatically. Manual downloads are available at https://www.federalreserve.gov/supervisionreg/files/2025-Table_1A_Historic_Domestic.csv and https://www.federalreserve.gov/supervisionreg/files/2025-Table_1B_Historic_International.csv (shown below, as of March 2025) by clicking the links marked “2025 Historical Domestic (CSV)” and “2025 Historical International (CSV)”¹⁶⁶.



Since the CCAR dataset is only released annually (through 4Q2024 as of this writing), and Capitalytics provides quarterly updates to its forecasts, the CCAR dataset is supplemented by the data sources shown below on a quarterly basis.

¹⁶⁶ Again, due to the requirements of this client, international data elements are not being discussed in this document.

Table 17: Supplementary Data Sources for Data Attributes

Attribute	Supplementary Data Source
Real GDP growth	Bureau of Economic Analysis (NIPA table 1.1.6, line 1)
Nominal GDP growth	Bureau of Economic Analysis (NIPA table 1.1.5, line 1)
Real disposable income growth	Bureau of Economic Analysis (NIPA table 2.1, line 27, and NIPA table 1.1.4, line 2)
Nominal disposable income growth	Bureau of Economic Analysis (NIPA table 2.1, line 27)
Unemployment rate	Bureau of Labor Statistics (series LNS14000000)
CPI inflation rate	Bureau of Labor Statistics (series CUSR0000SA0)
3-month Treasury yield	Quarterly average of 3-month Treasury bill secondary market rate on a discount basis, H.15 Release
5-year Treasury yield	Federal Reserve Economic Research website (https://fred.stlouisfed.org/series/GS5), with “Quarterly” frequency and “Average” aggregation method
10-year Treasury yield	Federal Reserve Economic Research website (https://fred.stlouisfed.org/series/GS10), with “Quarterly” frequency and “Average” aggregation method
BBB corporate yield	Federal Reserve Economic Research website (https://fred.stlouisfed.org/series/BAMLC0A4CBBBEY), with “Quarterly” frequency and “Average” aggregation method
Mortgage rate	Federal Reserve Economic Research website (https://fred.stlouisfed.org/series/MORTGAGE30US), with “Quarterly” frequency and “Average” aggregation method
Prime rate	Federal Reserve Economic Research website (https://fred.stlouisfed.org/series/MPRIME), with “Quarterly” frequency and “Average” aggregation method
Dow Jones Total Stock Market Index (end-of-qtr value)	Dow-Jones as provided by the Wall Street Journal (https://quotes.wsj.com/index/DWCF/advanced-chart)
House Price Index	https://data.nasdaq.com/data/FED/FL075035243_Q-interest-rates-and-price-indexes-owneroccupied-real-estate-corelogic-national-sa-quarterly-levels-nsa
Commercial Real Estate Price Index	https://data.nasdaq.com/data/FED/FL075035503_Q-interest-rates-and-price-indexes-commercial-real-estate-price-index-quarterly-levels-nsa
Market Volatility Index (VIX)	Federal Reserve Economic Research website (https://fred.stlouisfed.org/series/VIXCLS), with “Quarterly” frequency and “Average” aggregation method
Euro Area Real GDP Growth	Quarterly series for “European Union GDP Annual Growth Rate” per tradingeconomics.com
Euro Area Inflation	Quarterly average of monthly series for “European Union Inflation Rate” per tradingeconomics.com

Euro Area Bilateral Dollar Exchange Rate (USD/Euro)	End-of-quarter rates from the H.10 Release, Foreign Exchange Rates, Federal Reserve Board.
Developing Asia Real GDP Growth	The nominal GDP-weighted aggregate of the Real GDP growth for China, India, South Korea, Hong Kong Special Administrative Region, and Taiwan per OECD
Developing Asia Inflation	The nominal GDP-weighted aggregate of the inflation rate for China, India, South Korea, Hong Kong Special Administrative Region, and Taiwan per OECD
Developing Asia bilateral dollar exchange rate (F/USD, index)	End-of-quarter rates from the H.10 Release, Foreign Exchange Rates, Federal Reserve Board.
Japan Real GDP Growth	Quarterly average of monthly series for “Japan GDP Growth Rate” per tradingeconomics.com
Japan Inflation	Quarterly average of monthly series for “Japan Inflation Rate” per tradingeconomics.com
Japan Bilateral Dollar Exchange Rate (Yen/USD)	End-of-quarter rates from the H.10 Release, Foreign Exchange Rates, Federal Reserve Board.
UK Real GDP Growth	Quarterly average of monthly series for “United Kingdom GDP Growth Rate” per tradingeconomics.com
UK Inflation	Quarterly average of monthly series for “United Kingdom Inflation Rate” per tradingeconomics.com
UK Bilateral Dollar Exchange Rate (USD/Pound)	End-of-quarter rates from the H.10 Release, Foreign Exchange Rates, Federal Reserve Board.

While all data that is required for the Annual Stress Tests is available from at https://www.federalreserve.gov/supervisionreg/files/2024-Table_2A_Historic_Domestic.csv and https://www.federalreserve.gov/supervisionreg/files/2024-Table_2B_Historic_International.csv, Capitalytics provides 13 additional metrics per the information in the following table. These values are available from the point at which they are collected (which varies from metric to metric) through (and including) 3Q2024.

Table 17: Supplementary Data Attributes and Sources

Attribute	Capitalytics’ Source
1-month Treasury yield	https://fred.stlouisfed.org/series/dgs1mo
6-month Treasury yield	https://fred.stlouisfed.org/series/dgs6mo
1-year Treasury yield	https://fred.stlouisfed.org/series/dgs1
3-year Treasury yield	https://fred.stlouisfed.org/series/dgs3
7-year Treasury yield	https://fred.stlouisfed.org/series/dgs7
20-year Treasury yield	https://fred.stlouisfed.org/series/dgs20
30-year Treasury yield	https://fred.stlouisfed.org/series/dgs30
US Average Retail Gasoline Price (\$/gal; all grades, all formulations)	https://fred.stlouisfed.org/series/gasallm
S&P 500 Stock Price Index	https://fred.stlouisfed.org/series/sp500

Primary Credit	https://fred.stlouisfed.org/series/FEDFUNDS
Moody's AAA Rate	https://fred.stlouisfed.org/series/aaa
Moody's BAA Rate	https://fred.stlouisfed.org/series/baa
Dow Jones Total Industrial Average	https://fred.stlouisfed.org/series/djia

Appendix B: Methodologies

Capitalytics uses non-structured macroeconomic forecasting techniques in order to prepare its clients for what trends and relationships drive certain metrics, and what values those metrics may take on in the coming months.

Section I: General Forecasting Methodology

Generally, the most effective overall forecasting techniques have been found to be a hybridization of multiple other techniques. Capitalytics uses several forecasting schemes, and aggregates the results, as part of its analysis methodology. This section describes the process that is executed for generating these results.

For each metric, four distinct forecasts are produced.

1. The first forecast uses the full quarterly history of the metric as an input to an additive exponential smoothing representation. The process that is executed is that provided by R's¹⁶⁷ "forecast" package¹⁶⁸; specifically, the "ets" function (see p.39 of <https://cran.r-project.org/web/packages/forecast/forecast.pdf>)¹⁶⁹ is designed to automatically determine the best fitting representation out of the "Generic 'ETS' Methodology" (discussed later in this section), including optimal parameters thereto, given a sequence of values. In our work, we have restricted our study to only "additive" forms (i.e., we set "additive.only=TRUE" in our calls), and our optimization criteria is set to the mean of absolute residuals (i.e., "opt.crit=mae"). Therefore, calls to generate our estimates through this procedure look something like the following command, where "s" is an appropriately populated array, vector, time series, or similar object.

```
> m<-ets(s, model='ZZZ', opt.crit=c('mae'), additive.only=TRUE)
```

The results of this call are shown above each dataset, including the representation type returned (as described later this section), the initial values that are used by the software, the optimal smoothing parameters estimated, and the $n+1^{\text{st}}$ forecasted value given the first n values of the metric's sequence (the "fitted" values)¹⁷⁰, and the determined parameters. While fitting forecasts to previous values,

- "forecast error" is defined as being actual values less forecasted values,
- "% error" is defined as forecast error divided by actual value, and

¹⁶⁷ As of this writing, v.4.1.2 of the "R" language is available at <https://cran.r-project.org/>.

¹⁶⁸ As of this writing, v.8.16 of the forecast package is available at <https://CRAN.R-project.org/package=forecast>.

¹⁶⁹ It should be noted that Microsoft's Excel software includes a FORECAST.ETS function which is documented as potentially producing comparable results; however, we have not been able to re-create its output independently, and, given the documentation, flexibility, and source availability of the R packages, Capitalytics has decided that it is a preferable option at this time.

¹⁷⁰ While this procedure does generate fitted values for intermediate samples within a sequence -- and allow for generating a forecasted set of samples to extend a sequence -- according to the identified parameter set, it does not directly provide for determining the optimal parameter set of a sub-sequence. Capitalytics is currently codifying the process herein so that we may prescribe a "most likely" long term representation for each forecast, and determine the likely effects of errors in the forecasts by estimating the "recent term" values of dy/dx_i (where y is the metric being estimated and x_i is each of the parameters within the representation) and then compensating for recent quantified errors. We can also consider how "finite" a window to account for in building a set of parameters; these representations are theoretically using all history in building a forecast, but the values for alpha, beta, etc. implicitly give an indication of how much history of a metric is truly impacting a specific value.

- “score” is defined as mean absolute forecast error over an appropriate range (generally the duration of the collected past values, less the first two to four years of collected values)¹⁷¹.
2. The second forecast uses the differences between successive quarterly values in order to forecast the future quarterly differences. It should be noted that these sequences are (obviously) one data-point shorter than those in the preceding procedure. These values are forecasted using the same procedure as described in the first section, with forecasted values for the actual metric being built using the last known value for the metric and forecasts of incremental changes to the metric provided.

An edited example for loading the SP500 end-of quarter values, and the differences between successive quarterly values, is shown below.

```
> sp<-c(130.659129, 1250.520109, 998.4076848, 812.047, 799.5264066, 927.5045326,
1041.372826, ... )
> sp_ts<-ts(sp,freq=4,end=c(2017,4))
> sp_ts
      Qtr1      Qtr2      Qtr3      Qtr4
2008    130.6591 1250.5201  998.4077
2009  812.0470  799.5264  927.5045 1041.3728
...

> m<-ets(sp_ts,model='ZZZ',opt.crit=c('mae'),additive.only=TRUE)
> dsp_ts<-diff(sp_ts)
> dsp_ts
      Qtr1      Qtr2      Qtr3      Qtr4
2008    1119.860980 -252.112424
2009 -186.360685  -12.520593  127.978126  113.868293
...

> m<-ets(dsp_ts,model='ZZZ',opt.crit=c('mae'),additive.only=TRUE)
```

3. The third forecast uses the sequence of numbers from the second forecast, but partitions the dataset based on the quarter in which they are incurred. Assuming that the differences between quarters are associated with the ending points of each quarter (i.e., the difference between third and fourth quarter values are associated with a date of December 31st), four sequences of numbers are now created, with annual forecasts now being produced for each sequence using the same procedures as previously outlined. The final sequence appropriately interleaves the forecasted data-points.
4. The fourth forecast builds three sequences of values based the history of the metric to an observed point:
 - the slope of the “best fitting” line (based on minimizing the total absolute error) using the immediately preceding 2 years of values¹⁷²;
 - the same slope using the immediately preceding 4 years of values; and,
 - the same slope using the immediately preceding 8 years of values.

While two years of data would provide for a relatively responsive change in aggregate values to be reflected given a change in the economic conditions, eight years of data (a not unreasonable

¹⁷¹ It bears noting that a lower value for the “score” indicates better accuracy of an algorithm.

¹⁷² The value for this slope is calculated using Microsoft Excel’s SLOPE function, with the first argument being the appropriate number of preceding values for the metric, and the second argument being the same number of corresponding “end-of-quarter” dates.

estimate for an “economic cycle”) would allow for a much more slowly moving change in average window for a counterbalance.

Using these datasets independently, we are able to use our previous procedure to generate forecasts for each slope, and then average the results on a quarterly basis. Multiplying the average slope by the duration of the following quarter (in days) provides an estimate for the change in the metric’s value during that following quarter, just as in our second forecast.

Obviously, this technique requires at least eight years of data to pass before being able to produce any data. However, in order to err on the side of conservatism, we generally allow a sequence to “mature” for two to four years before believing that its initial transience has become less significant and its results are trustworthy. If a dataset does not have enough data to complete one of these analyses, the analysis is dropped. In other words, if the metric does not have +/-11 years of data available, the 8-year slopes cannot be reliably calculated, and the average slope is only based on the 2- & 4-year slopes¹⁷³.

5. In some cases, we may find variables with extremely tight cross-connections that can be justified as part of their nature (treasury bill yield rates, for example, with a magnitude or correlation greater than ~0.95). In these cases, we are able to additionally enhance our forecast by building a forecast that expresses one variable (the “dependent” variable, $y(t)$) in terms of another (the “independent” variable, $x(t)$) with a coefficient of determination (R^2), such that

$$y(t) = m(t) * x(t) + b(t).$$

Notice that the “slope” and “intercept” terms in this expression are time varying expressions that are re-evaluated with each data-point, not simply constants.

By averaging the results of these distinct forecasts in order to provide an aggregate forecast, the error for which can be characterized and measured, Capitalytics aims to provide a robust dataset that can be used for future business decisions.

It was stated earlier that Capitalytics uses each metric’s complete history in order to generate a matching representation and forecast. It should be recognized that we also perform the same analyses for periods starting no more than 100, 80, 60, and 40 quarters prior to the forecasted period. However, we have found the results of all of these analyses are more reactionary and less coherent than that already presented within this report.

Section II: Exponentially Smoothed State Space Representations & Generic “ETS” Methodology

Exponential smoothing was proposed in the late 1950s (Brown 1959, Holt 1957 and Winters 1960 are key pioneering works) and has motivated some of the most successful forecasting methods. Forecasts produced using exponential smoothing methods are weighted averages of past observations, with the weights decaying exponentially as the observations get older. In other words, the more recent the observation the higher the associated weight. (See the following equation for one example of this type of equation which requires $0 \leq \alpha \leq 1$, and estimates future values of $\hat{y}$ given a history of values denoted as y_t . The ε_{T+1} term denotes an error term, the *residual*, which determines the value of the forecasting function.) This framework generates reliable forecasts quickly and for a wide spectrum of time series.

$$\hat{y}_{T+1|T} = \alpha y_T + \alpha(1-\alpha)y_{T-1} + \alpha(1-\alpha)^2 y_{T-2} + \dots + \varepsilon_{T+1}$$

¹⁷³ See the SP500 metric’s analysis.

In this study, the relevance of quarterly samples more than 3 years old is eliminated by setting the number of terms in this type of expression to no more than 13.

The challenge with these forecasting techniques is to estimate the value of α such that some criteria is optimized, e.g., minimizing the sum of squared errors (SSE), across all values of a set of historical values. There are other forms of exponential smoothing methods that may account for any combination of forecasting *levels* (as in the Theta method), *trends* (for which a metric may, for instance, be growing or lessening according to a linear or higher order function), and *seasonality* (for which a metric may have engrained “cycles” on, e.g., a monthly, quarterly, or annual basis).

By considering variations in the combination of the trend and seasonal components, fifteen exponential smoothing methods are possible. Each method is labelled by a pair of letters (T,S) defining the type of ‘Trend’ and ‘Seasonal’ components. For example, (A,M) is the method with an additive trend and multiplicative seasonality; (M,N) is the method with multiplicative trend and no seasonality; and so on. Per Section 7.6 of Hyndman & Athanasopoulos, some of these methods are well known per the following table.

Table 18: Mathematical Methods Associated with Trend & Seasonal Components

Trend & Seasonal Components	Method
(N,N)	simple exponential smoothing
(A,N)	Holts linear method
(M,N)	Exponential trend method
(A _d ,N)	additive damped trend method
(M _d ,N)	multiplicative damped trend method
(A,A)	additive Holt-Winters method
(A,M)	multiplicative Holt-Winters method
(A _d ,M)	Holt-Winters damped method

Additionally, the following table (again from Section 7.6 of Hyndman & Athanasopoulos) gives the recursive formulae for applying all possible fifteen exponential smoothing methods. Each cell includes the forecast equation for generating h -step-ahead forecasts and the smoothing equations for applying the method. By recursively applying the appropriate expressions to generate consecutive forecasts, this framework can be an extremely powerful tool.

Section III: Regression Construction

Capitolytics also generates a regression to estimate future values of the variables that we track in terms of current-day values. By using R’s “lm” function, we estimate the next quarter’s values for each variable in terms of the preceding set of variables’ values. These regressions are built using the immediately preceding 57 sets of variables’ values.

Each output variable is considered in turn as the response variable, with all other variables as possibilities for the control (independent) variables *excluding* any variables that have an 80% correlation with the response variable. Successive linear regressions are built; if any of the control variables’ p-

values exceed 5%, or if the model's p-value exceeds 5% and the number of considered control variables is greater than one, the most offensive control variable is dropped, and the regression is re-run.

Trend	N	Seasonal A	M
N	$\hat{y}_{t+h t} = \ell_t$ $\ell_t = \alpha y_t + (1 - \alpha)\ell_{t-1}$	$\hat{y}_{t+h t} = \ell_t + s_{t-m+h_m^+}$ $\ell_t = \alpha(y_t - s_{t-m}) + (1 - \alpha)\ell_{t-1}$ $s_t = \gamma(y_t - \ell_{t-1}) + (1 - \gamma)s_{t-m}$	$\hat{y}_{t+h t} = \ell_t s_{t-m+h_m^+}$ $\ell_t = \alpha(y_t/s_{t-m}) + (1 - \alpha)\ell_{t-1}$ $s_t = \gamma(y_t/\ell_{t-1}) + (1 - \gamma)s_{t-m}$
A	$\hat{y}_{t+h t} = \ell_t + hb_t$ $\ell_t = \alpha y_t + (1 - \alpha)(\ell_{t-1} + b_{t-1})$ $b_t = \beta^*(\ell_t - \ell_{t-1}) + (1 - \beta^*)b_{t-1}$	$\hat{y}_{t+h t} = \ell_t + hb_t + s_{t-m+h_m^+}$ $\ell_t = \alpha(y_t - s_{t-m}) + (1 - \alpha)(\ell_{t-1} + b_{t-1})$ $b_t = \beta^*(\ell_t - \ell_{t-1}) + (1 - \beta^*)b_{t-1}$ $s_t = \gamma(y_t - \ell_{t-1} - b_{t-1}) + (1 - \gamma)s_{t-m}$	$\hat{y}_{t+h t} = (\ell_t + hb_t)s_{t-m+h_m^+}$ $\ell_t = \alpha(y_t/s_{t-m}) + (1 - \alpha)(\ell_{t-1} + b_{t-1})$ $b_t = \beta^*(\ell_t - \ell_{t-1}) + (1 - \beta^*)b_{t-1}$ $s_t = \gamma(y_t/(\ell_{t-1} + b_{t-1})) + (1 - \gamma)s_{t-m}$
A_d	$\hat{y}_{t+h t} = \ell_t + \phi_h b_t$ $\ell_t = \alpha y_t + (1 - \alpha)(\ell_{t-1} + \phi b_{t-1})$ $b_t = \beta^*(\ell_t - \ell_{t-1}) + (1 - \beta^*)\phi b_{t-1}$	$\hat{y}_{t+h t} = \ell_t + \phi_h b_t + s_{t-m+h_m^+}$ $\ell_t = \alpha(y_t - s_{t-m}) + (1 - \alpha)(\ell_{t-1} + \phi b_{t-1})$ $b_t = \beta^*(\ell_t - \ell_{t-1}) + (1 - \beta^*)\phi b_{t-1}$ $s_t = \gamma(y_t - \ell_{t-1} - \phi b_{t-1}) + (1 - \gamma)s_{t-m}$	$\hat{y}_{t+h t} = (\ell_t + \phi_h b_t)s_{t-m+h_m^+}$ $\ell_t = \alpha(y_t/s_{t-m}) + (1 - \alpha)(\ell_{t-1} + \phi b_{t-1})$ $b_t = \beta^*(\ell_t - \ell_{t-1}) + (1 - \beta^*)\phi b_{t-1}$ $s_t = \gamma(y_t/(\ell_{t-1} + \phi b_{t-1})) + (1 - \gamma)s_{t-m}$
M	$\hat{y}_{t+h t} = \ell_t b_t^h$ $\ell_t = \alpha y_t + (1 - \alpha)\ell_{t-1}b_{t-1}$ $b_t = \beta^*(\ell_t/\ell_{t-1}) + (1 - \beta^*)b_{t-1}$	$\hat{y}_{t+h t} = \ell_t b_t^h + s_{t-m+h_m^+}$ $\ell_t = \alpha(y_t - s_{t-m}) + (1 - \alpha)\ell_{t-1}b_{t-1}$ $b_t = \beta^*(\ell_t/\ell_{t-1}) + (1 - \beta^*)b_{t-1}$ $s_t = \gamma(y_t - \ell_{t-1}b_{t-1}) + (1 - \gamma)s_{t-m}$	$\hat{y}_{t+h t} = \ell_t b_t^h s_{t-m+h_m^+}$ $\ell_t = \alpha(y_t/s_{t-m}) + (1 - \alpha)\ell_{t-1}b_{t-1}$ $b_t = \beta^*(\ell_t/\ell_{t-1}) + (1 - \beta^*)b_{t-1}$ $s_t = \gamma(y_t/(\ell_{t-1}b_{t-1})) + (1 - \gamma)s_{t-m}$
M_d	$\hat{y}_{t+h t} = \ell_t b_t^{\phi_h}$ $\ell_t = \alpha y_t + (1 - \alpha)\ell_{t-1}b_{t-1}^{\phi}$ $b_t = \beta^*(\ell_t/\ell_{t-1}) + (1 - \beta^*)b_{t-1}^{\phi}$	$\hat{y}_{t+h t} = \ell_t b_t^{\phi_h} + s_{t-m+h_m^+}$ $\ell_t = \alpha(y_t - s_{t-m}) + (1 - \alpha)\ell_{t-1}b_{t-1}^{\phi}$ $b_t = \beta^*(\ell_t/\ell_{t-1}) + (1 - \beta^*)b_{t-1}^{\phi}$ $s_t = \gamma(y_t - \ell_{t-1}b_{t-1}^{\phi}) + (1 - \gamma)s_{t-m}$	$\hat{y}_{t+h t} = \ell_t b_t^{\phi_h} s_{t-m+h_m^+}$ $\ell_t = \alpha(y_t/s_{t-m}) + (1 - \alpha)\ell_{t-1}b_{t-1}^{\phi}$ $b_t = \beta^*(\ell_t/\ell_{t-1}) + (1 - \beta^*)b_{t-1}^{\phi}$ $s_t = \gamma(y_t/(\ell_{t-1}b_{t-1}^{\phi})) + (1 - \gamma)s_{t-m}$

Appendix C: Variable Correlations

The following table shows the correlation factors between all of the listed variables for which the absolute value of the correlation is greater than 0.6, indicating a noteworthy degree of correlation. As is discussed in Appendix B of this report, (absolute) correlations greater than 0.95 warrant further investigation as the relationship between variables may be useful for our research.

Table 1: Correlation Factors found as of 4Q2025

Variable 1	Variable 2	Correlation
S&P 500 Stock Price Index	Cost of Federal Funds	0.640554
S&P 500 Stock Price Index	US 30-year Fixed Interest Mortgage Rate	0.629096
S&P 500 Stock Price Index	Prime Rate	0.652890
S&P 500 Stock Price Index	Dow-Jones Total Stock Market Index	0.966585
S&P 500 Stock Price Index	US Nat'l Residential Home Price Index	0.927186
S&P 500 Stock Price Index	US Nat'l Commercial Real Estate Index	0.643708
S&P 500 Stock Price Index	Average Retail Gasoline Price (all grades)	0.665903
S&P 500 Stock Price Index	20-year Treasury Yield	0.637441
S&P 500 Stock Price Index	1-month Treasury Yield	0.647897
S&P 500 Stock Price Index	3-month Treasury Yield	0.643443
S&P 500 Stock Price Index	6-month Treasury Yield	0.618115
S&P 500 Stock Price Index	1-year Treasury Yield	0.608668
Cost of Federal Funds	Moody's AAA Yield	0.755315
Cost of Federal Funds	Moody's BAA Yield	0.694570
Cost of Federal Funds	BofA BBB Corporate Yield	0.727111
Cost of Federal Funds	US 30-year Fixed Interest Mortgage Rate	0.869055
Cost of Federal Funds	Prime Rate	0.996297
Cost of Federal Funds	10-year Treasury Yield	0.823319
Cost of Federal Funds	1-month Treasury Yield	0.991412
Cost of Federal Funds	7-year Treasury Yield	0.781307
Cost of Federal Funds	3-month Treasury Yield	0.995636
Cost of Federal Funds	5-year Treasury Yield	0.901780
Cost of Federal Funds	6-month Treasury Yield	0.989209
Cost of Federal Funds	3-year Treasury Yield	0.924392
Cost of Federal Funds	1-year Treasury Yield	0.980055
Moody's AAA Yield	Moody's BAA Yield	0.978903
Moody's AAA Yield	BofA BBB Corporate Yield	0.947512
Moody's AAA Yield	US 30-year Fixed Interest Mortgage Rate	0.958048
Moody's AAA Yield	Prime Rate	0.729620
Moody's AAA Yield	Dow-Jones Total Stock Market Index	-0.625864
Moody's AAA Yield	US Nat'l Residential Home Price Index	-0.697678
Moody's AAA Yield	US Nat'l Commercial Real Estate Index	-0.812701
Moody's AAA Yield	Average Retail Gasoline Price (all grades)	-0.692718
Moody's AAA Yield	30-year Treasury Yield	0.967985
Moody's AAA Yield	20-year Treasury Yield	0.967369
Moody's AAA Yield	10-year Treasury Yield	0.982744
Moody's AAA Yield	7-year Treasury Yield	0.858685
Moody's AAA Yield	3-month Treasury Yield	0.749079
Moody's AAA Yield	5-year Treasury Yield	0.935860
Moody's AAA Yield	3-year Treasury Yield	0.632727
Moody's BAA Yield	BofA BBB Corporate Yield	0.983302
Moody's BAA Yield	US 30-year Fixed Interest Mortgage Rate	0.928118
Moody's BAA Yield	Prime Rate	0.667938
Moody's BAA Yield	Dow-Jones Total Stock Market Index	-0.656163
Moody's BAA Yield	US Nat'l Residential Home Price Index	-0.699901
Moody's BAA Yield	US Nat'l Commercial Real Estate Index	-0.796474
Moody's BAA Yield	Average Retail Gasoline Price (all grades)	-0.663778
Moody's BAA Yield	30-year Treasury Yield	0.863384
Moody's BAA Yield	20-year Treasury Yield	0.870488
Moody's BAA Yield	10-year Treasury Yield	0.944845

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Moody's BAA Yield	7-year Treasury Yield	0.732740
Moody's BAA Yield	3-month Treasury Yield	0.686085
Moody's BAA Yield	5-year Treasury Yield	0.883439
Real GDP Growth Rate	Nominal GDP Growth Rate	0.958143
Real Disposable Income Growth Rate	Nominal Disposable Income Growth Rate	0.972803
US Nat'l Unemployment Rate (annualized)	6-month Treasury Yield	-0.613362
US Nat'l Unemployment Rate (annualized)	1-year Treasury Yield	-0.622743
BofA BBB Corporate Yield	US 30-year Fixed Interest Mortgage Rate	0.926970
BofA BBB Corporate Yield	Prime Rate	0.702880
BofA BBB Corporate Yield	US Nat'l Residential Home Price Index	-0.617624
BofA BBB Corporate Yield	US Nat'l Commercial Real Estate Index	-0.700750
BofA BBB Corporate Yield	30-year Treasury Yield	0.768780
BofA BBB Corporate Yield	20-year Treasury Yield	0.804282
BofA BBB Corporate Yield	10-year Treasury Yield	0.924080
BofA BBB Corporate Yield	7-year Treasury Yield	0.728670
BofA BBB Corporate Yield	3-month Treasury Yield	0.720179
BofA BBB Corporate Yield	5-year Treasury Yield	0.881809
US 30-year Fixed Interest Mortgage Rate	Prime Rate	0.850332
US 30-year Fixed Interest Mortgage Rate	US Nat'l Commercial Real Estate Index	-0.641134
US 30-year Fixed Interest Mortgage Rate	30-year Treasury Yield	0.876364
US 30-year Fixed Interest Mortgage Rate	20-year Treasury Yield	0.920847
US 30-year Fixed Interest Mortgage Rate	10-year Treasury Yield	0.980823
US 30-year Fixed Interest Mortgage Rate	1-month Treasury Yield	0.760192
US 30-year Fixed Interest Mortgage Rate	7-year Treasury Yield	0.957317
US 30-year Fixed Interest Mortgage Rate	3-month Treasury Yield	0.873040
US 30-year Fixed Interest Mortgage Rate	5-year Treasury Yield	0.977516
US 30-year Fixed Interest Mortgage Rate	6-month Treasury Yield	0.780629
US 30-year Fixed Interest Mortgage Rate	3-year Treasury Yield	0.886475
US 30-year Fixed Interest Mortgage Rate	1-year Treasury Yield	0.802358
Prime Rate	10-year Treasury Yield	0.799560
Prime Rate	1-month Treasury Yield	0.991410
Prime Rate	7-year Treasury Yield	0.767156
Prime Rate	3-month Treasury Yield	0.992586
Prime Rate	5-year Treasury Yield	0.882887
Prime Rate	6-month Treasury Yield	0.988056
Prime Rate	3-year Treasury Yield	0.915162
Prime Rate	1-year Treasury Yield	0.977070
Dow-Jones Total Stock Market Index	US Nat'l Residential Home Price Index	0.937884
Dow-Jones Total Stock Market Index	US Nat'l Commercial Real Estate Index	0.871060
Dow-Jones Total Stock Market Index	Average Retail Gasoline Price (all grades)	0.601803
US Nat'l Residential Home Price Index	US Nat'l Commercial Real Estate Index	0.947350
US Nat'l Residential Home Price Index	Average Retail Gasoline Price (all grades)	0.710498
US Nat'l Residential Home Price Index	10-year Treasury Yield	-0.612774
US Nat'l Commercial Real Estate Index	Average Retail Gasoline Price (all grades)	0.755386
US Nat'l Commercial Real Estate Index	10-year Treasury Yield	-0.742436
US Nat'l Commercial Real Estate Index	5-year Treasury Yield	-0.636748
Average Retail Gasoline Price (all grades)	10-year Treasury Yield	-0.661373
Average Retail Gasoline Price (all grades)	5-year Treasury Yield	-0.626678
30-year Treasury Yield	20-year Treasury Yield	0.990559
30-year Treasury Yield	10-year Treasury Yield	0.957415
30-year Treasury Yield	7-year Treasury Yield	0.889013
30-year Treasury Yield	5-year Treasury Yield	0.803909
30-year Treasury Yield	3-year Treasury Yield	0.670732
20-year Treasury Yield	10-year Treasury Yield	0.983279
20-year Treasury Yield	7-year Treasury Yield	0.929297
20-year Treasury Yield	5-year Treasury Yield	0.858703
20-year Treasury Yield	3-year Treasury Yield	0.738800
10-year Treasury Yield	1-month Treasury Yield	0.644252
10-year Treasury Yield	7-year Treasury Yield	0.976347
10-year Treasury Yield	3-month Treasury Yield	0.824020
10-year Treasury Yield	5-year Treasury Yield	0.978611
10-year Treasury Yield	6-month Treasury Yield	0.668040
10-year Treasury Yield	3-year Treasury Yield	0.833438

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10-year Treasury Yield	1-year Treasury Yield	0.698637
1-month Treasury Yield	7-year Treasury Yield	0.763615
1-month Treasury Yield	3-month Treasury Yield	0.995826
1-month Treasury Yield	5-year Treasury Yield	0.836068
1-month Treasury Yield	6-month Treasury Yield	0.990321
1-month Treasury Yield	3-year Treasury Yield	0.917649
1-month Treasury Yield	1-year Treasury Yield	0.979485
7-year Treasury Yield	3-month Treasury Yield	0.777557
7-year Treasury Yield	5-year Treasury Yield	0.985521
7-year Treasury Yield	6-month Treasury Yield	0.789277
7-year Treasury Yield	3-year Treasury Yield	0.927299
7-year Treasury Yield	1-year Treasury Yield	0.817908
3-month Treasury Yield	5-year Treasury Yield	0.906937
3-month Treasury Yield	6-month Treasury Yield	0.997268
3-month Treasury Yield	3-year Treasury Yield	0.932953
3-month Treasury Yield	1-year Treasury Yield	0.989746
5-year Treasury Yield	6-month Treasury Yield	0.865705
5-year Treasury Yield	3-year Treasury Yield	0.975294
5-year Treasury Yield	1-year Treasury Yield	0.892451
6-month Treasury Yield	3-year Treasury Yield	0.945958
6-month Treasury Yield	1-year Treasury Yield	0.996748
3-year Treasury Yield	1-year Treasury Yield	0.965408

References

- Fiorucci, Jose A., Tiago R. Pellegrini, Francisco Louzada, Fotios Petropoulos, Anne B. Koehler, “Models for optimising the theta method and their relationship to state space models”, In International Journal of Forecasting, Volume 32, Issue 4, 2016, Pages 1151-1161, ISSN 0169-2070, <https://doi.org/10.1016/j.ijforecast.2016.02.005>. (<http://www.sciencedirect.com/science/article/pii/S0169207016300243>)
- De Livera, Alysha M. “Automatic forecasting with a modified exponential smoothing state space framework.” Monash Econometrics and Business Statistics Working Papers 10, no. 10 (2010).
- De Livera, Alysha M., Rob J Hyndman, Ralph D Snyder, “Forecasting time series with complex seasonal patterns using exponential smoothing”, Journal of the American Statistical Association, Volume 106, Number 496, pp 1513-1527, (2011)
- Hyndman, R.J. and Athanasopoulos, G, Forecasting: principles and practice. OTexts: Melbourne, Australia. <http://otexts.org/fpp/>. Accessed on December 23, 2017 (2013)
- Hyndman, Rob J., Baki Billah, “Unmasking the Theta method”, In International Journal of Forecasting, Volume 19, Issue 2, 2003, Pages 287-290, ISSN 0169-2070, [https://doi.org/10.1016/S0169-2070\(01\)00143-1](https://doi.org/10.1016/S0169-2070(01)00143-1). (<http://www.sciencedirect.com/science/article/pii/S0169207001001431>)
- Jiang, Bin, George Athanasopoulos, Rob J Hyndman, Anastasios Panagiotelis, Farshid Vahid, “Macroeconomic forecasting for Australia using a large number of predictors”, Unpublished working paper, <http://business.monash.edu/econometrics-and-business-statistics/research/publications/ebs/wp02-17.pdf>. Accessed on December 27, 2017 (2017)