

Piano Cleveland

January 15, 2025

Review as of December 31, 2024

Presented by:

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- I. Investment Policy Statement
 - II. Portfolio Review
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 - IV. Taking Stock of the Markets
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Investment Policy Statement



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**Piano International Association of North Ohio
dba Cleveland International Piano Competition (CIPC)
Endowment Fund**

This Investment Policy Statement covers the Cleveland International Piano Competition (CIPC) Endowment Fund (Fund), which comprises the following account(s):

CLEVELAND INTL PIANO COMPETITION 21-75-073-5983568

I. Purpose

The purposes of this Investment Policy Statement (IPS) are (i) to document PNC's and CIPC's understanding of the investment goals and guidelines for the portfolio, including the investment objective, risk tolerance, investment restrictions and asset allocation ranges, (ii) to communicate CIPC's investment goals and guidelines to the Fund's Investment Adviser (currently PNC Institutional Asset Management, or PNC), and (iii) to establish a basis upon which to evaluate the attainment of portfolio objectives.

The purposes of the Fund are to perpetuate and support CIPC and to assure the financial security and long-term success of CIPC.

II. Investor Profile

A. Investment Time Horizon:

The period of time during which the assets will be invested is expected to be for perpetuity.

B. Portfolio Risk Tolerance:

Investment theory and historical capital market return data suggest that over long periods of time there is a relationship between the level of risk assumed and the level of return that can be expected in a portfolio, although there can be no guarantee of returns. In general, higher risk (e.g. return volatility) is associated with higher return. Given this relationship between risk and return, a fundamental step in determining the investment policy is the determination of an appropriate risk tolerance profile. There are a number of factors that influence the risk profile for a portfolio, including: sustainability of income, liquidity, return objectives, time horizon and investment experience. Based on CIPC's and PNC's understanding, CIPC advises PNC that the portfolio risk tolerance is best described as: Willing to take moderate risk as long as the investments have a greater potential for growth over time.

C. Investment Objectives:

The overall investment objective for this portfolio is Growth.

CIPC established the Fund to cover emergency needs intending to withdraw no more than 5% of the Fund's value annually. Donors have made additional contributions to endow specific prizes or activities, making those funds restricted in nature. CIPC will withdraw those restricted funds pursuant to applicable restrictions on such withdrawals and for the use of such funds for the designated prizes and activities.

The Fund shall be operated in accordance with all federal laws and regulations applicable to an endowment fund of an Internal Revenue Code 501(c)(3) entity. It is subject to Internal Revenue Service reporting requirements.

It is the intent of the CIPC Investment Committee that the Fund's Investment Advisor provide a diversified investment portfolio that will enable the Fund to replace

withdrawals over time through total returns (dividends plus interest minus fees, plus or minus price changes affecting the value of securities).

III. Restrictions and Limitations

- No security (other than an index fund) shall comprise more than 10% of the Fund
- All securities will be liquid (i.e. can be turned into cash in three business days)
- No securities will be purchased on margin (The Fund may not borrow for any purpose)
- Fixed income vehicles (except commingled "junk" bond vehicles) must hold a majority of securities rated single-A or better
- Direct investments in derivative securities, futures, or options are not permitted (Mutual funds that utilize these vehicles for the purpose of hedging, rather than speculation, are permitted)
- No Security position where a loss in excess of 100% is possible (e.g. short sales) may be utilized (Mutual funds that short may be purchased, since the Fund's maximum downside exposure is 100% for any mutual fund purchases)
- Stocks, bonds, exchange traded funds (ETFs), cash equivalent vehicles and no-load mutual funds are permissible investments
- Mutual funds which carry a load (i.e. sales charge) are prohibited

IV. Strategic Asset Allocation

Based on the Fund's risk tolerance and investment objective, CIPC expects that the Fund's Investment Adviser will use a Growth with Alternative Investments blend strategy. CIPC understands that the growth strategy seeks capital appreciation, and is designed for investors with intermediate to long-term financial goals. The strategy pursues its investment objective by investing primarily in equity securities, with some fixed income and alternative investments to assist in moderating the volatility typically experienced in an all equity portfolio. The absolute level of income generated by this strategy is expected to be modest.

Asset Class Proposed Allocation (%)

Asset Classes	Minimum	Maximum	Strategic Target
Equities	50%	70%	65%
Fixed Income	5%	20%	10%
Alternative Assets	15%	35%	25%
			100%

V. Strategic Considerations

CIPC understands that the Strategic Asset Allocation represents a customized investment framework with baseline allocation percentages for each major asset class that the Fund's Investment Adviser has developed. The Fund's Investment Adviser has developed the allocation using both quantitative and qualitative input, data and processes. CIPC expects the Fund's Investment Adviser to invest the assets of this portfolio among various diversified classes of investments. The baseline Strategic Asset

Allocation is a long-term strategic asset allocation that considers equity, fixed income, alternative assets and cash according to the Fund's risk profile. The Fund's Investment Adviser may make tactical changes from time to time in the baseline Strategic Asset Allocation. In addition, the Fund's investments may vary from the baseline allocation due to changes in the value of assets in the account, market conditions and account specific events, such as instructions from CIPC.

VI. Investment Authority

CIPC has appointed PNC as the Fund's Investment Adviser. PNC's investment authority for the accounts in the portfolio is defined as:

Account Name Account Number

CLEVELAND INTL PIANO COMPETITION 21-75-073-5983568

Investment Authority

Full/Sole Discretion

VII. Performance Measurement

The Fund's performance will be measured in accordance with industry standards and against appropriate benchmarks.

VIII. Additional Comments

No Additional Comments

IX. Signator's Role

CIPC understands that as financial circumstances, goals, investment objectives and preferences change, it is important that CIPC communicate those changes to the Fund's Investment Adviser so that appropriate adjustments can be made in the portfolio. The undersigned agree(s) that this IPS applies to all of the accounts that constitute the Fund in the aggregate. The Fund's Investment Adviser may manage each account to its stated investment objective as long as all accounts in the aggregate comply with this IPS. Each of CIPC and the Fund's Investment Adviser is signing this IPS in the capacity defined by the governing instrument for each account listed in this IPS. This IPS is subject to the terms and conditions, including the standard of care and limitations of liability, of the documents, which constitute the governing instruments for the applicable account(s). This IPS has been accepted and approved

By:


Petrus Van Der Westhulzen,
Chief Executive Officer and President

4/18/17
Date

Portfolio Review

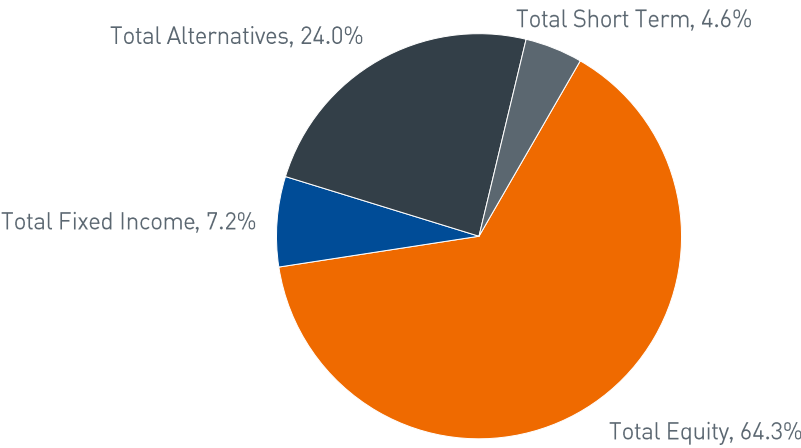


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Asset Allocation

Piano Cleveland

As of December 31, 2024

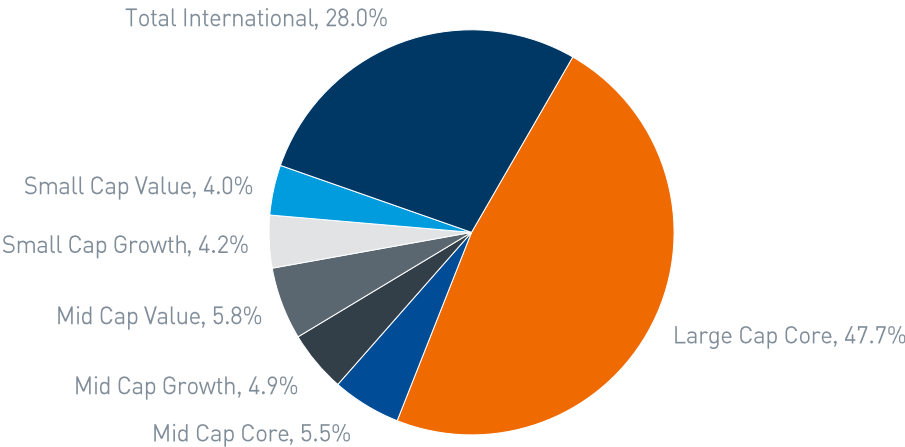


Description	Market Value (\$)	Portfolio Allocation	Policy Target	Policy Range
Total Equity	917,479	64.3%	65%	50-70%
Large Cap Equity	437,978	30.7%	30%	
Mid Cap Equity	148,045	10.4%	10%	
Small Cap Equity	74,799	5.2%	5%	
Total International	256,657	18.0%	20%	
Total Fixed Income	103,141	7.2%	10%	5-20%
Total Alternatives	342,187	24.0%	25%	15-35%
Total Short Term	64,901	4.6%		
Total Portfolio	1,427,708	100.0%	100.0%	

Equity Asset Allocation

Piano Cleveland

As of December 31, 2024

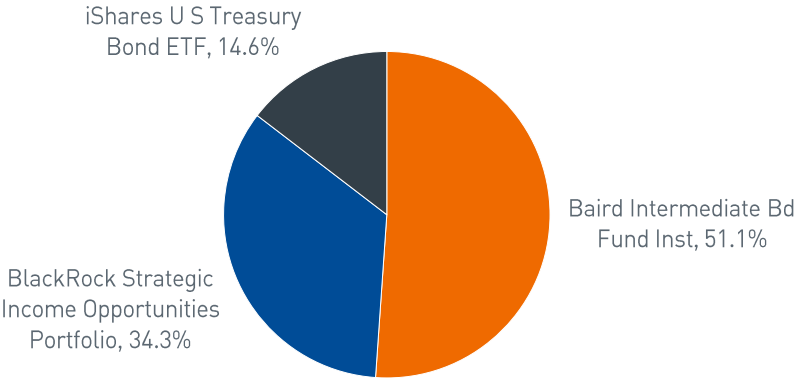


Description	Market Value (\$)	Equity Allocation	Portfolio Allocation
Large Cap Core	437,978	47.7%	30.7%
Mid Cap Core	50,323	5.5%	3.5%
Mid Cap Growth	44,951	4.9%	3.2%
Mid Cap Value	52,771	5.8%	3.7%
Small Cap Growth	38,506	4.2%	2.7%
Small Cap Value	36,293	4.0%	2.5%
Total International	256,657	28.0%	18.0%
Total Equity	917,479	100.0%	64.3%

Fixed Income Asset Allocation

Piano Cleveland

As of December 31, 2024



Description	Market Value (\$)	Fixed Income Allocation	Portfolio Allocation
Baird Intermediate Bd Fund Inst	52,710	51.1%	3.7%
BlackRock Strategic Income Opportunities Portfolio	35,357	34.3%	2.5%
iShares U S Treasury Bond ETF	15,075	14.6%	1.1%
Total Fixed Income	103,141	100.0%	7.2%

Alternative Asset Allocation

Description	Market Value (\$)	Alternative Allocation	Portfolio Allocation
American Beacon Mgd	53,509	15.6%	3.7%
Angel Oak Multi-Strategy Income Fund Instl Class	89,458	26.1%	6.3%
BlackRock Event Driven Eq Inst	105,625	30.9%	7.4%
Eaton Vance Global Macro Absolute Return Advantage	93,595	27.4%	6.6%
Total Alternatives	342,187	100.0%	24.0%

Portfolio Holdings

Piano Cleveland

As of December 31, 2024

Description	Ticker	Units	Market Value (\$)	% of Market Value
Large Cap Core				
iShares Core S&P 500 ETF	IVV	744	437,978	30.7%
Mid Cap Core				
Principal MidCap R6	PMAQX	1,128	50,323	3.5%
Mid Cap Growth				
Madison Mid Cap Fund-R6	MMCRX	2,665	44,951	3.1%
Mid Cap Value				
Harbor Mid Cap Value-Ret	HNMVX	2,051	52,771	3.7%
Small Cap Growth				
Meridian Small Cap Grow-Rtr	MSGRX	2,829	38,506	2.7%
Small Cap Value				
AMG Rr Sm Cap Val-I	ARSIX	2,244	36,293	2.5%
Total International				
Artisan International Small Mid Institutional	APHJX	964	16,781	1.2%
iShares MSCI EAFE Value ETF	EFV	1,408	73,878	5.2%
Oakmark Intl Sm Cap-R6	OAZEX	893	15,870	1.1%
Pzena Emerg Mkts Value-Inst	PZIEX	2,151	25,552	1.8%
Seafarer Overseas Growth & Income Inst	SIGIX	2,810	32,656	2.3%
Touchstone Sands Cptl Emerging Markets Gr Inst	TSRMX	1,857	26,699	1.9%
WCM Focused Intl Growth-Ins	WCMIX	2,997	65,222	4.6%
Total Equity			917,479	64.3%

Portfolio Holdings (Continued)

Piano Cleveland

As of December 31, 2024



Description	Ticker	Units	Market Value (\$)	% of Market Value
Fixed Income				
Baird Intermediate Bd Fund Inst	BIMIX	5,132	52,710	3.7%
BlackRock Strategic Income Opportunities Portfolio	BSIIX	3,734	35,357	2.5%
iShares U S Treasury Bond ETF	GOVT	656	15,075	1.1%
Total Fixed Income			103,141	7.2%
Alternatives				
American Beacon Mgd	AHLIX	5,319	53,509	3.7%
Angel Oak Multi-Strategy Income Fund Instl Class	ANGIX	10,414	89,458	6.3%
BlackRock Event Driven Eq Inst	BILPX	10,562	105,625	7.4%
Eaton Vance Global Macro Absolute Return Advantage	EGRSX	9,061	93,595	6.6%
Total Alternatives			342,187	24.0%
Short Term				
Cash & Equiv	TFDXX	2,759	2,759	0.2%
Cash & Equivl	-	62,143	62,143	4.4%
Total Short Term			64,901	4.6%
Total Portfolio			1,427,708	100.0%

Investment Performance

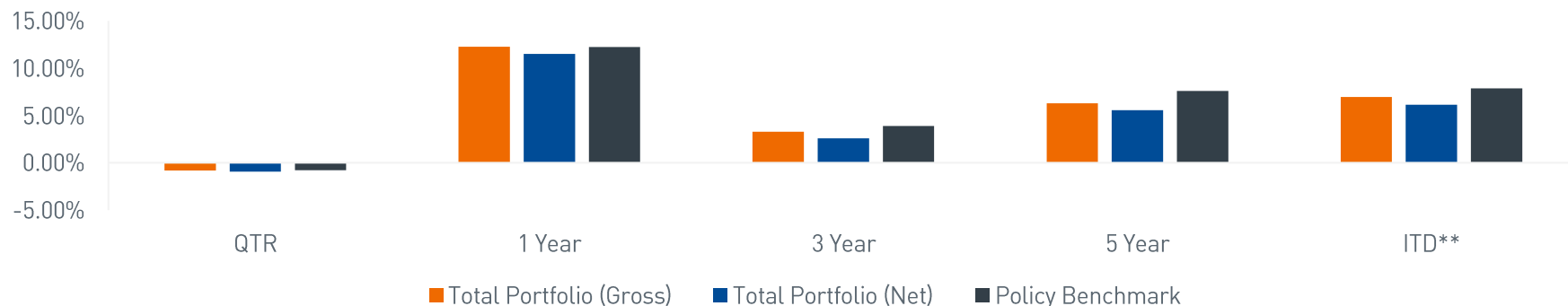


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Total Portfolio Performance

Piano Cleveland

As of December 31, 2024



Description	QTR	1 Year	3 Year	5 Year	ITD**
Total Portfolio (Gross)	-0.82%	12.28%	3.28%	6.30%	6.97%
Total Portfolio (Net)	-0.95%	11.51%	2.59%	5.57%	6.13%
Policy Benchmark*	-0.79%	12.25%	3.89%	7.61%	7.87%
Blended Benchmark*	-0.74%	12.89%	4.04%	7.53%	7.60%
Allocation Benchmark*	-0.67%	12.53%	3.13%	6.14%	6.82%
Total Equity	-1.25%	16.27%	4.10%	8.73%	9.50%
Equity Policy Benchmark*	-1.04%	16.33%	5.09%	10.09%	10.63%
S&P 500 TR	2.41%	25.02%	8.94%	14.53%	14.14%
Russell Midcap	0.62%	15.34%	3.79%	9.92%	10.62%
Russell 2000	0.33%	11.54%	1.24%	7.40%	8.56%
MSCI EAFE Net	-8.11%	3.82%	1.65%	4.73%	5.67%
Total Fixed Income	-1.15%	4.03%	0.44%	1.34%	2.07%
Bloomberg Int Govt/Credit	-1.60%	3.00%	-0.18%	0.86%	1.73%
Total Alternatives	0.10%	5.66%	2.93%	2.30%	3.05%
HFRX Global Hedge	0.18%	5.27%	1.24%	2.81%	2.47%

*See Appendix – Policy Benchmark Composition for description of benchmarks.

**Inception date is 12/01/2015

Total Portfolio (Gross) shows performance gross of advisory fees and separately managed account (SMA) fees. Total Portfolio (Net) shows performance net of advisory fees, transaction costs, and all manager fees. Performance reflects reinvestment of dividends, interest and capital gain distributions and rebalancing. Indices are unmanaged, are not available for direct investment, and are not subject to management fees, transaction costs or other types of expenses that an account may incur. Past performance is not guarantee of future results.

Manager Performance

Piano Cleveland

As of December 31, 2024

Description	QTR	1 Year	3 Year	5 Year
Large Cap Core	2.42%	24.92%	8.93%	14.40%
iShares Core S&P 500 ETF	2.42%	24.92%	8.66%	14.36%
S&P 500 TR	2.41%	25.02%	8.94%	14.53%
Mid Cap Growth	-1.84%	10.51%	6.53%	10.95%
Madison Mid Cap Fund-R6	-1.84%	10.51%	6.53%	10.95%
Russell Midcap Growth	8.14%	22.10%	4.04%	11.47%
Mid Cap Core	0.23%	14.11%	1.39%	7.82%
Principal MidCap R6	0.23%	-	-	-
Russell Midcap	0.62%	-	-	-
Mid Cap Value	-1.90%	14.87%	-	-
Harbor Mid Cap Value-Ret	-1.90%	-	-	-
Russell Midcap Value	-1.75%	-	-	-
Small Cap Growth	2.89%	11.23%	-2.61%	7.58%
Meridian Small Cap Grow-Rtr	2.89%	-	-	-
Russell 2000 Growth	1.70%	-	-	-
Small Cap Value	7.41%	14.37%	-	-
AMG Rr Sm Cap Val-I	7.41%	14.37%	-	-
Russell 2000 Value	-1.06%	8.05%	-	-
Total International	-8.28%	2.45%	-2.24%	2.33%
iShares MSCI EAFE Value ETF	-7.19%	5.65%	-	-
MSCI EAFE Value Net	-7.12%	5.68%	-	-
Artisan International Small Mid Institutional	-7.24%	-	-	-
MSCI ACWI Ex USA SMID Growth Net USD	-7.28%	-	-	-

Performance is shown gross of advisory fees and separately managed account (SMA) fees. The effect of advisory fees on the portfolio could be material. If these fees were reflected, returns would be lower. Indices are unmanaged, are not available for direct investment, and are not subject to management fees, transaction costs or other types of expenses that an account may incur. Past performance is not guarantee of future results.

Manager Performance (Continued)

Piano Cleveland

As of December 31, 2024

Description	QTR	1 Year	3 Year	5 Year
Pzena Emerg Mkts Value-Inst	-10.32%	4.62%	-	-
<i>MSCI Emerging Market Net</i>	-8.01%	7.50%	-	-
Oakmark Intl Sm Cap-R6	-10.86%	-2.69%	0.02%	4.68%
<i>MSCI ACWI ex USA SMID Value Net USD</i>	-7.77%	3.67%	1.72%	3.76%
Seafarer Overseas Growth & Income Inst	-9.24%	-5.39%	-1.52%	2.65%
<i>MSCI Emerging Market Net</i>	-8.01%	7.50%	-1.92%	1.70%
Touchstone Sands Cptl Emerging Markets Gr Inst	-10.14%	2.80%	-9.33%	-
<i>MSCI Emerging Market Net</i>	-8.01%	7.50%	-1.92%	-
WCM Focused Intl Growth-Ins	-7.34%	6.95%	-3.94%	6.62%
<i>MSCI ACWI ex USA Growth Net</i>	-7.88%	5.07%	-2.67%	3.44%
Fixed Income	-1.15%	4.03%	0.44%	1.34%
BlackRock Strategic Income Opportunities Portfol	-0.71%	5.37%	-	-
<i>Bloomberg US Universal</i>	-2.73%	2.04%	-	-
Baird Intermediate Bd Fund Inst	-1.50%	3.45%	-0.01%	1.15%
<i>Bloomberg Int Govt/Cr</i>	-1.60%	3.00%	-0.18%	0.86%
iShares U S Treasury Bond ETF	-0.91%	4.24%	-	-
<i>ICE U.S. Treasury Core Bond Index</i>	-3.16%	0.70%	-	-
Total Alternatives	0.10%	5.66%	2.93%	2.30%
Eaton Vance Global Macro Absolute Return Advanta	1.78%	9.40%	5.17%	4.79%
<i>HFRX Macro-CTA Index</i>	-0.01%	3.76%	1.98%	1.87%
American Beacon Mgd	-0.34%	2.08%	4.70%	-
<i>HFRX Macro-CTA Index</i>	-0.01%	3.76%	1.98%	-
BlackRock Event Driven Eq Inst	-0.60%	2.19%	2.50%	-
<i>HFRX Event Driven</i>	-0.12%	3.74%	-1.13%	-
Angel Oak Multi-Strategy Income Fund Instl Class	-0.65%	7.73%	-0.20%	-
<i>HFRX Relative Value Arbitrage Index</i>	0.44%	4.90%	0.47%	-

Performance is shown gross of advisory fees and separately managed account (SMA) fees. The effect of advisory fees on the portfolio could be material. If these fees were reflected, returns would be lower. Indices are unmanaged, are not available for direct investment, and are not subject to management fees, transaction costs or other types of expenses that an account may incur. Past performance is not guarantee of future results.

Manager Performance (Continued)

Piano Cleveland

As of December 31, 2024



Description	QTR	1 Year	3 Year	5 Year
Total Short Term	1.14%	5.14%	4.09%	2.51%
Blackrock Liquid Funds FedFund	1.14%	5.16%	-	-
<i>Bloomberg US Treasury Bill 1-3 Month Blend</i>	1.19%	5.32%	-	-
Cash & Equivl	1.14%	5.14%	4.10%	2.51%
<i>Bloomberg US Treasury Bill 1-3 Month Blend</i>	1.19%	5.32%	3.98%	2.50%

Performance is shown gross of advisory fees and separately managed account (SMA) fees. The effect of advisory fees on the portfolio could be material. If these fees were reflected, returns would be lower. Indices are unmanaged, are not available for direct investment, and are not subject to management fees, transaction costs or other types of expenses that an account may incur. Past performance is not guarantee of future results.

Benchmark Composition

Piano Cleveland

As of December 31, 2024

Total Portfolio

Policy Benchmark

December 2015	%
S&P 500 TR	30.00
HFRX Global Hedge	25.00
MSCI ACWI Ex US Net	20.00
Russell Midcap	10.00
Bloomberg Int Govt/Cr	10.00
Russell 2000	5.00

Blended Benchmark

December 2015	%
MSCI ACWI Net	65.00
Bloomberg Int Govt/Cr	10.00
HFRX Global Hedge	25.00

Allocation Benchmark

December 2024	%
S&P 500 TR	30.70
Russell 2000 Value	2.75
Russell 2000 Growth	2.73
Russell Midcap	3.70
Russell Midcap Growth	3.45
Russell Midcap Value	3.89
MSCI Emerging Market Net	6.12
Bloomberg Int Govt/Cr	3.63
HFRX Weighted Composite	3.58
HFRX Event Driven	7.29
HFRX Relative Value Arbitrage Index	6.11
HFRX Macro-CTA Index	6.68
MSCI EAFE Value Net	5.26
MSCI ACWI ex USA Growth Net	4.86
Bloomberg US Universal	2.43
ICE U.S. Treasury Core Bond Index	1.03
Bloomberg US Treasury Bill 1-3 Mon	3.39
MSCI ACWI Ex USA SMID Growth Net USD	1.20
MSCI ACWI ex USA SMID Value Net USD	1.17

Indices are unmanaged, are not available for direct investment, and are not subject to management fees, transaction costs or other types of expenses that an account may incur. Indices performance results do not represent, and are not necessarily indicative of, the results that may be achieved in accounts investing in the corresponding investment strategy; actual account returns may vary significantly.

For definitions of Indices/Benchmarks used in this presentation, please refer to www.pnc.com/indexdefinitions.

Benchmark Composition

Piano Cleveland

As of December 31, 2024



Equity:

45SP5/30ACWIxUS/15RMid/10R2 - December 2015	%
S&P 500 TR	45.00
MSCI ACWI Ex US Net	30.00
Russell Midcap	15.00
Russell 2000	10.00

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Thank you for your business.

How can we better serve your needs?



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Taking Stock of the Markets

Investment Strategy

January 2025



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Key Macro and Market Themes

Top 10 investor themes for 2025

10. Normalizing price correlations

9. Private market rebound

8. Reassessing cash allocations

7. Expanded artificial intelligence use cases

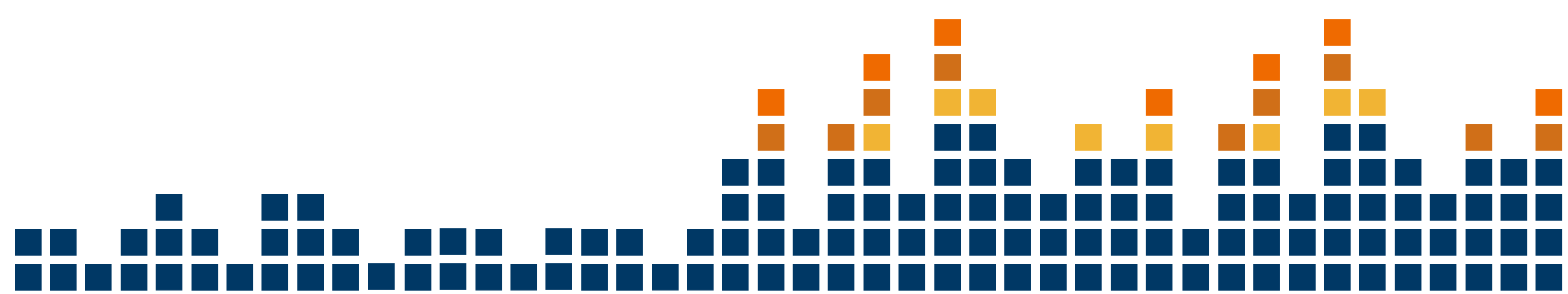
6. Broader earnings growth
5. Valuation headwinds

4. Secondary wave of inflation concerns

3. Less accommodative monetary policy

2. Deficit & debt levels

1. Fiscal policy uncertainty



Investment Process and Asset Allocation Views

Each facet of analysis plays a critical role in our decision-making

As global central banks cut interest rates and “recalibrate” monetary policy to support the business cycle, we believe the reward/risk balance at elevated valuations supports diversified, high-quality portfolios.

Investment Process Insights



Business Cycle

Most global central banks continue to ease monetary policy

We continue to believe the path forward is less about inflation, and more dependent on labor markets normalizing back to pre-pandemic trends, rather than signaling a slowdown.



Valuations

A global earnings reacceleration is needed to bring down multiples

As financial conditions have eased ahead of central bank rate cuts, valuations are rising. Earnings growth reacceleration is needed to prevent valuations from becoming extended.

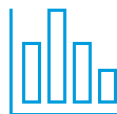


Technicals

Long-term momentum remains positive as markets sit near all-time highs

In our view, equity markets sitting near all-time highs should be viewed positively as global equity market momentum remains a tailwind.

Asset Allocation Views



Equities

The global outlook is dependent on earnings growth

We continue to favor quality, global allocations that can weather elevated inflation and high interest rates amid a slowing economy.



Fixed Income

Rate cuts and easing financial conditions support credit markets

As the Federal Reserve (Fed) eases interest rates and interest rate volatility falls, we believe credit markets look attractive given improving fundamentals and high income generation.



Alternatives

Broad opportunity set for long-term investors

Alternative investments offer various return/risk correlation and liquidity profiles for differentiated alpha, potentially aiding risk-adjusted performance and dampening volatility.

Economic and Equity Markets Dashboard

Markets driven by resilient economic data and loosening monetary policy

Rising interest rates and a steepening yield curve point to strengthening economic growth, however that also prompted a “hawkish” rate cut by the Fed in December as recent inflation data is getting stickier.

Economic Data Dashboard

3.1% <i>PRIOR: 3.0%</i> U.S. REAL GDP 3Q 2024	4.2% <i>PRIOR: 4.1%</i> UNEMPLOYMENT RATE	2.7% <i>PRIOR: 2.6%</i> CONSUMER PRICE INDEX (CPI) ANNUAL CHANGE
4.57% <i>PRIOR: 4.17%</i> 10-YEAR U.S. TREASURY YIELD	4.0% <i>PRIOR: 4.0%</i> ANNUAL HOURLY WAGE GROWTH	4.0% <i>PRIOR: 4.6%</i> ANNUAL U.S. RETAIL SALES GROWTH
33 BPS <i>PRIOR: 1 BASIS POINT</i> 2YR/10YR YIELD CURVE INVERSION	227,000 <i>PRIOR: 36,000 (REVISED)</i> MONTHLY PAYROLL REPORT ADDITIONS	\$3.06/GAL <i>PRIOR: \$3.05/GAL</i> NATIONAL AVERAGE GASOLINE PRICE

Equity Market Highlights

Consensus Estimates Earnings Growth		
	2025E	
	EPS GROWTH	NTM P/E
S&P 500	14.5%	21.5x
“Magnificent 7”[*] stocks	45.3%	36.4x
Russell 2000[®]	44.4%	24.2x
MSCI World ex USA	7.4%	13.9x
MSCI EM IMI	14.8%	12.1x
S&P 500 2025 EPS Strategists’ Median Est.	12/31/24 \$271	
Bull Case	\$282	
Bear Case	\$254	

^{*}“Magnificent 7” stocks includes Microsoft Corp.; Apple, Inc.; Nvidia Corp.; Alphabet, Inc.; Amazon.com, Inc.; Meta Platforms, Inc. and Tesla, Inc.
As of 12/31/2024. Source: Bloomberg L.P., FactSet[®], FactSet[®] is a registered trademark of FactSet Research Systems, Inc., and its affiliates. Indices are unmanaged, not available for direct investment and not subject to management fees, transaction costs or other types of expenses that an account may incur.

Easing Cycle Makes Cash Yields Less Attractive

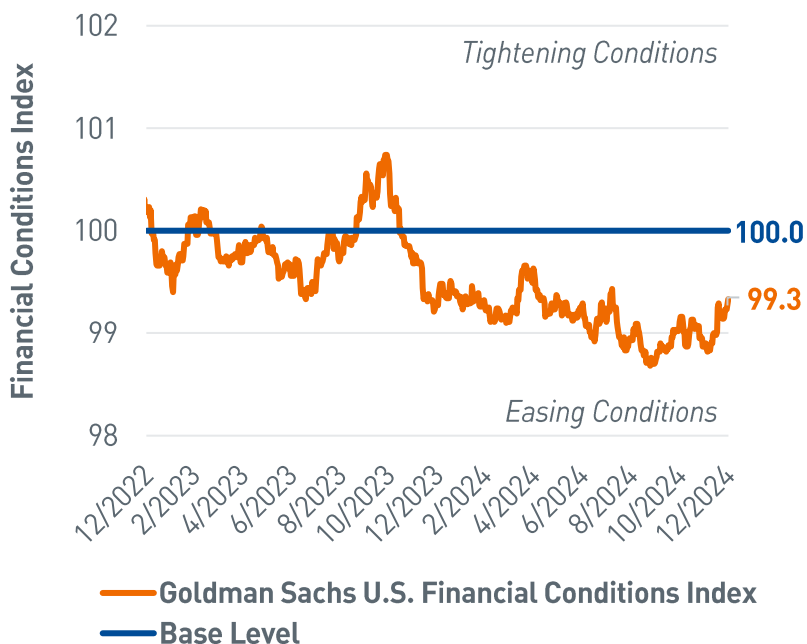
Fed rate cuts support valuations as cash yields are expected to keep falling

Money market yields will continue to follow the path of the Fed's policy rate

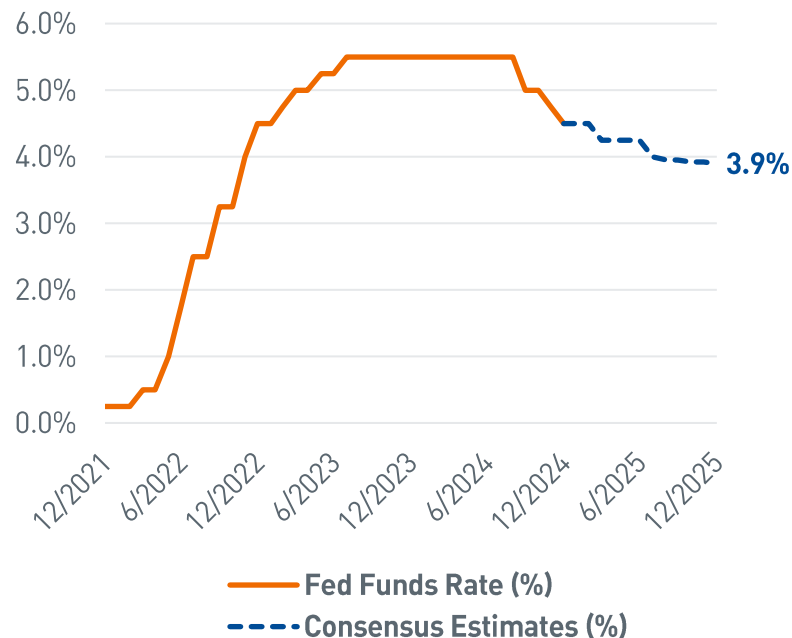
As the Fed loosens monetary policy with interest rate cuts, albeit at a slower pace, it should continue to ease financial conditions.

Should the Fed continue to cut interest rates as consensus expects, cash yields should keep falling over the next year.

Core Fixed Income Yield is Attractive Again



Cash Yields Expected to Keep Falling in 2025



2025 Asset Class Views

Opportunities remain even after a strong year of multi-asset returns

Asset Class	View	Notes
EQUITY		
U.S. Equities	Very Favorable	Earnings growth should broaden, but the business cycle is still in a slowing expansion which favors quality stocks
Developed International	Unfavorable	Geopolitical risks, strong U.S. dollar and foreign trade risks dependent on rebound in China
Emerging Markets	Neutral	Most central banks are easing policy, which is a tailwind for equities even as China's economy remains weak
FIXED INCOME		
Core Fixed Income	Neutral	Interest rate volatility should remain moderately above average, while still generating meaningful income
Credit	Favorable	Strong earnings = strong fundamentals for credit = spreads can stay low
ALTERNATIVES		
Private Equity	Favorable	Innovation cycle is still in the early innings, and capital markets activity should rebound from a slow 2024
Private Credit	Favorable	Traditional creditors still have tight lending standards, which is expected to keep pushing activity to private markets
Private Real Estate	Neutral	Heterogeneous asset class offers opportunities as return dispersion among managers remains wide
Hedge Funds	Favorable	After two years of price correlation headwinds, mean-reversion should be a tailwind for active managers

Scan the QR code using your smartphone's camera app to watch a video in which Dan Brady, PNC's Managing Director of Investment Strategy, discusses 2025 Asset Class Views.



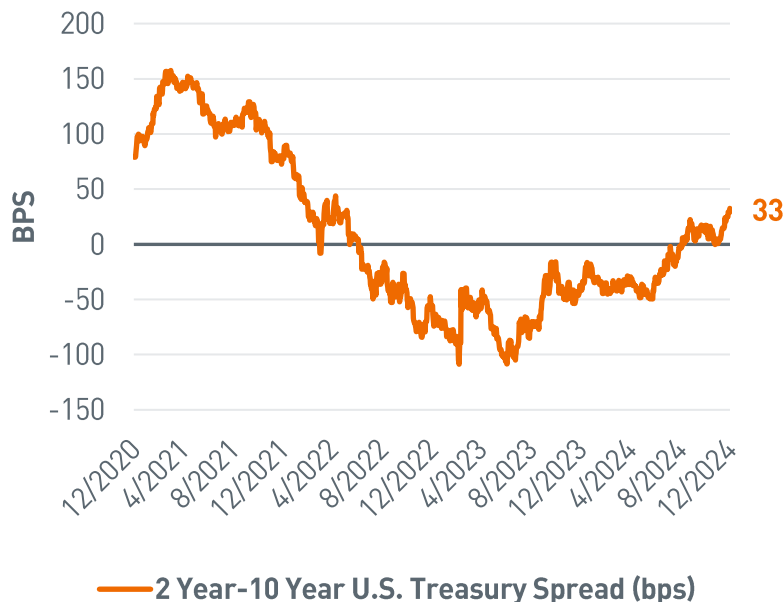
From Yield Curve Inversion to Normalization

The path to a steeper yield curve does not always lead to recession

While no longer inverted, the yield curve remains flat at this stage of the cycle

The inverted yield curve has been a significant headwind for the Financials and Real Estate sectors, but the degree of steepening has depended on Fed rate cuts. While a normalized yield curve historically occurs before most recessions, like any other leading indicator, it does not have a perfect track record.

Longest Yield Curve Inversion on Record



Inverted Yield Curve Head Fakes

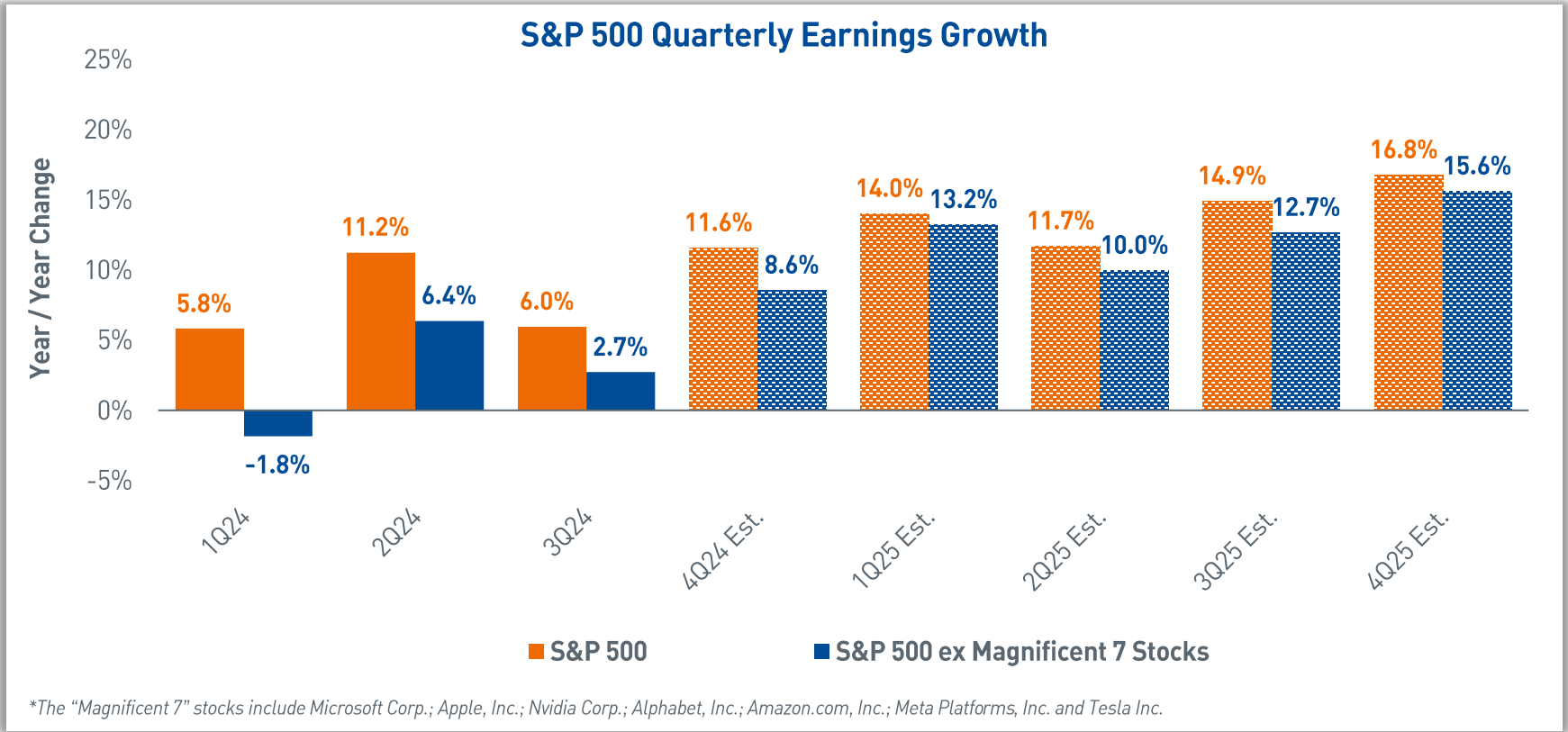
Date Inversion Ended	Did a recession start in nine months?	S&P 500 1-year return
June 30, 1989	No	9.6%
July 28, 1998	No	19.4%
March 28, 2006	No	11.3%

Earnings Growth Should Broaden in 2025

Notably, mega-cap tech earnings should still be very strong

Concentrated earnings growth in 2024 could broaden out in 2025

The concentrated earnings growth of the Magnificent 7 stocks has led to narrow market leadership for most of 2024. We believe this could potentially broaden out in 2025 as cyclical sectors, like Financials and Industrials, rebound.



Scan the QR code using your smartphone's camera app to watch a video in which Dan Brady, PNC's Managing Director of Investment Strategy, discusses how Earnings Growth Should Broaden in 2025.



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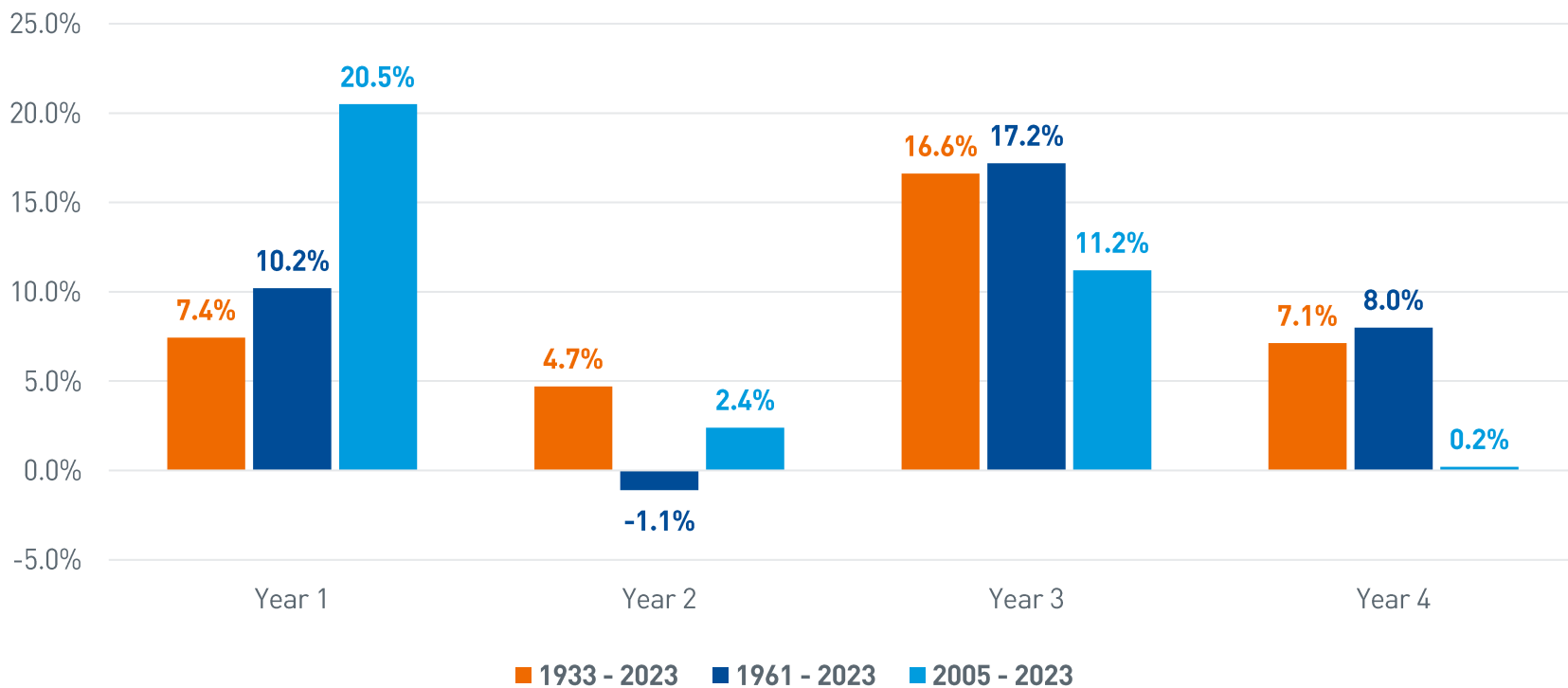
Presidential Cycles and Stock Market Returns

Market cycles have shifted with presidential cycles over time

**Recently, the first year
of presidential term
has become strongest**

Historically, markets used to perform best in the latter half of a presidential term; however, as politics have evolved, so too has the use of political capital in the first half of a term, looking to carry momentum before mid-term elections become the focus.

S&P 500 Average Annual Price Returns By Presidential Cycle



As of 12/31/2024. Source: Strategas Research Partners, Inc. Indices are unmanaged, not available for direct investment and not subject to management fees, transaction costs or other types of expenses that an account may incur.

Thinking Through Potential Scenarios

Where do we go from here?

We have high conviction that our base case remains in place for some time, with a low probability that macroeconomic headwinds or tailwinds could pull the business cycle in a different direction.

Factors	Base case: Decelerating growth (60%)	Downside case: Stagflation (15%)	Upside case: Growth reaccelerates (25%)
Inflation	Choppy, but lower	Reaccelerates	Moderately higher as demand improves
Monetary policy	Steadily loosens with rate cuts	Tightens along with potential rate hikes	Remains supportive
Labor market	Fewer workers, but higher wage growth	Unemployment rises, wage growth slows	Productivity improves
Earnings outlook	Modest decline, but uneven across sectors	Broad-based decline	Broad-based reacceleration
2025 S&P 500 earnings growth rate	7% to 10%	0% to 5%	10% to 13%
Trough forward P/E	19x - 20x	15x - 17x	20x - 22x
Path of long-term interest rates	Choppy, but range-bound	Range-bound due to inflation	Moderately higher as demand improves

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Fiscal and Monetary Policy Stimulus

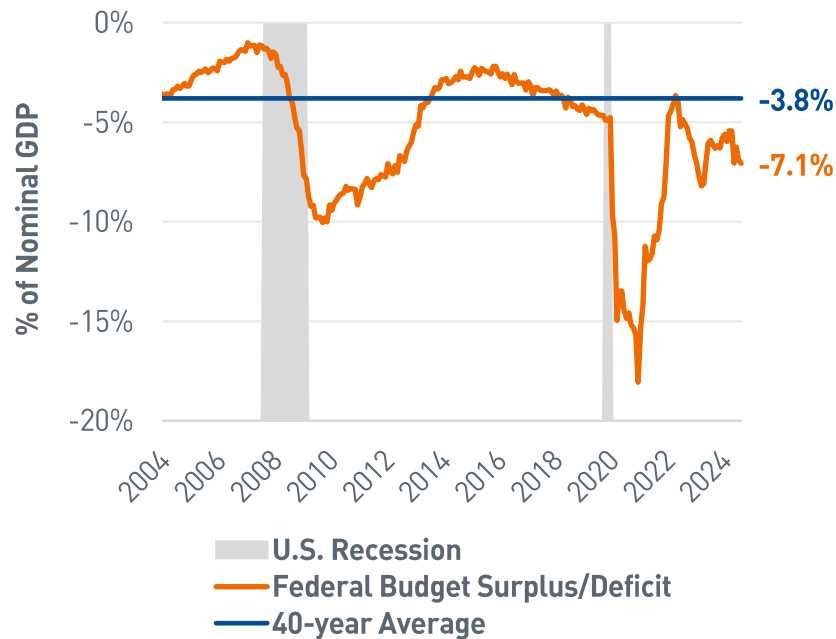
Unprecedented stimulus raised liquidity, demand and prices

The federal deficit has been a material short-term tailwind for the U.S. economy

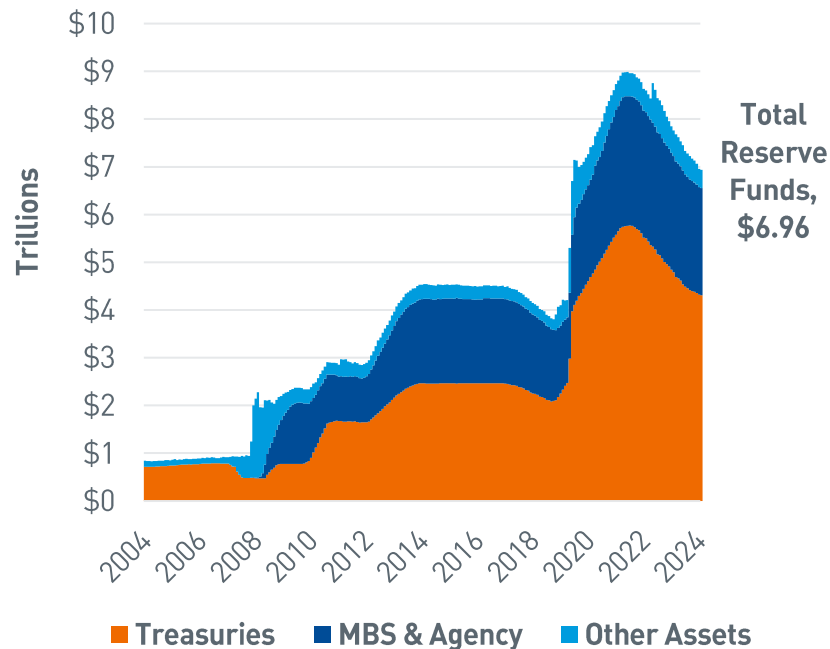
The federal deficit is currently much wider than its 40-year average, and near levels typically found during, or shortly after, a recession.

In our view, outsized deficit spending and the Fed's balance sheet will continue to support economic growth and global market liquidity.

Federal Budget Surplus/Deficit



Fed Balance Sheet

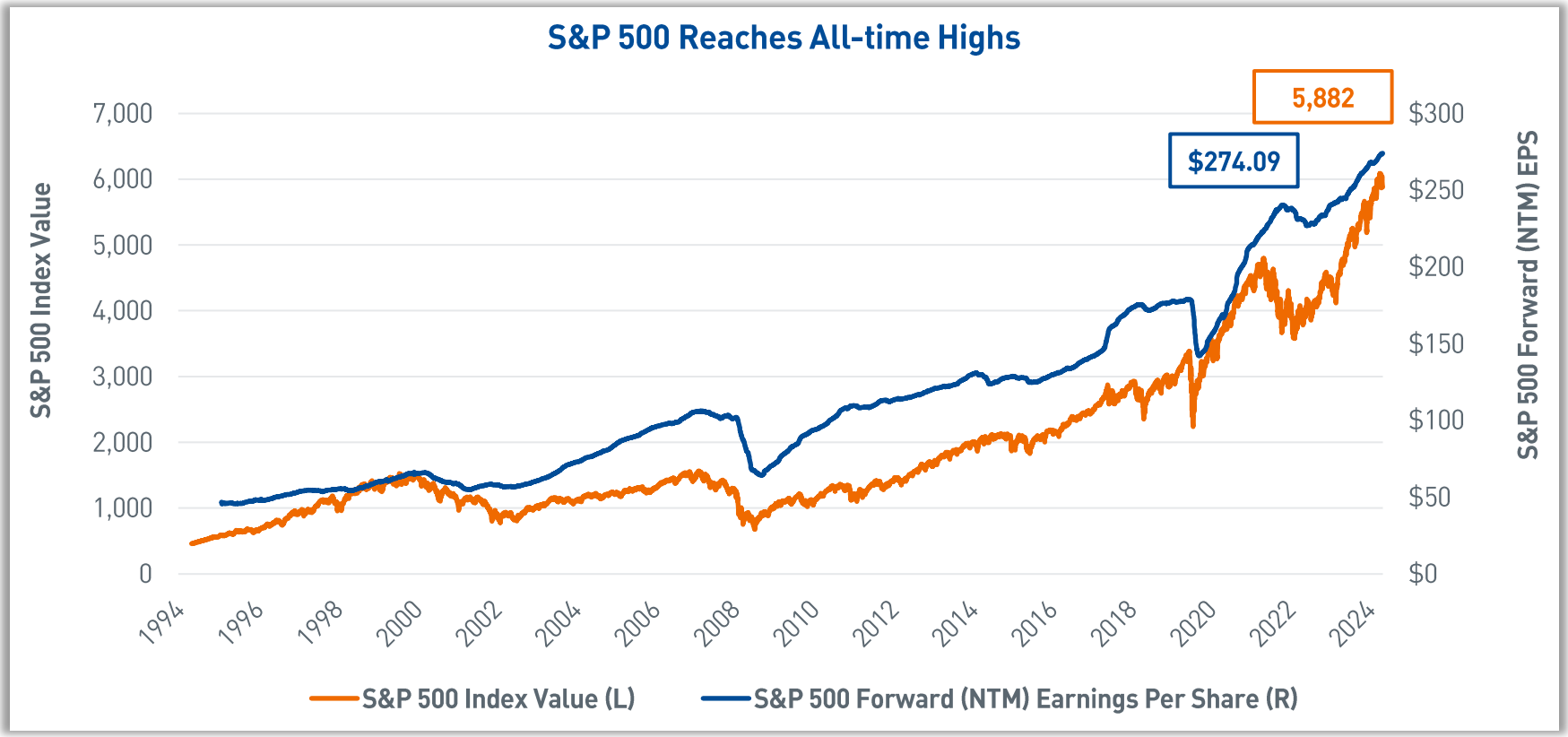


S&P 500 Index and Forward Earnings

Earnings drive stock prices in the long run

Consensus earnings estimates for the S&P 500 continue to rise

Consensus earnings estimates for the S&P 500 have pushed to all-time highs, however earnings growth has yet to meaningfully broaden. As we embark on 2025, we expect the slowing expansion phase of the cycle to continue.



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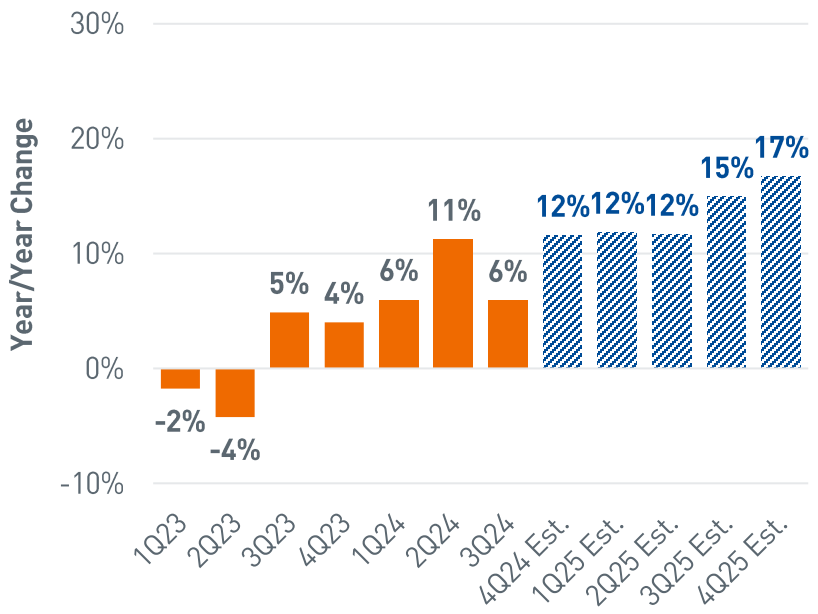
S&P 500 Earnings Outlook

The positive trend in earnings revisions masks narrow market breadth

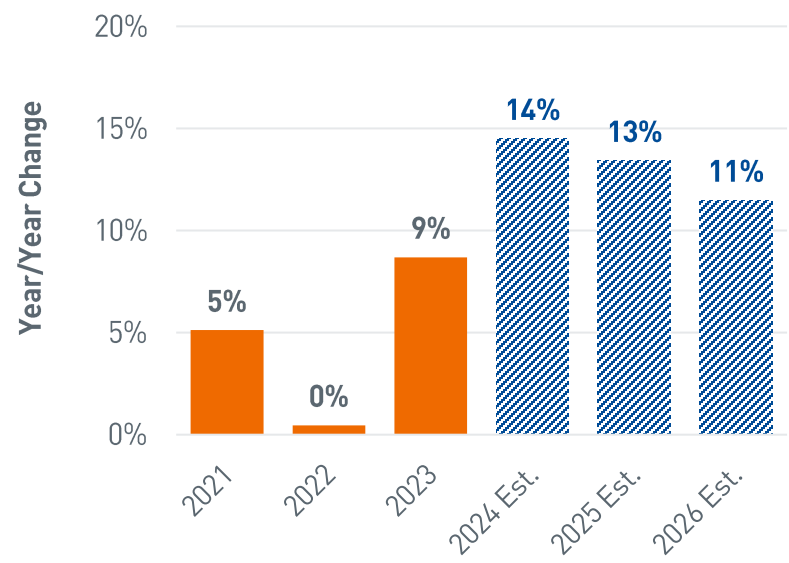
The S&P 500 reaches all-time highs as forward earnings estimates rise

Consensus earnings growth for the fourth quarter stands at 11.6%, but excluding the “Magnificent 7” stocks*, it falls to just 8.6%.
The consensus 2025 outlook suggests earnings growth should broaden beyond the largest stocks, helping to bring down stretched valuations.

Quarterly S&P 500 Earnings Growth



Annual S&P 500 Earnings Growth



*“Magnificent 7” stocks include Microsoft Corp.; Apple Inc.; Nvidia Corp.; Alphabet Inc.; Amazon.com, Inc.; Meta Platforms, Inc. and Tesla Inc.
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S&P 500 Earnings and Valuations

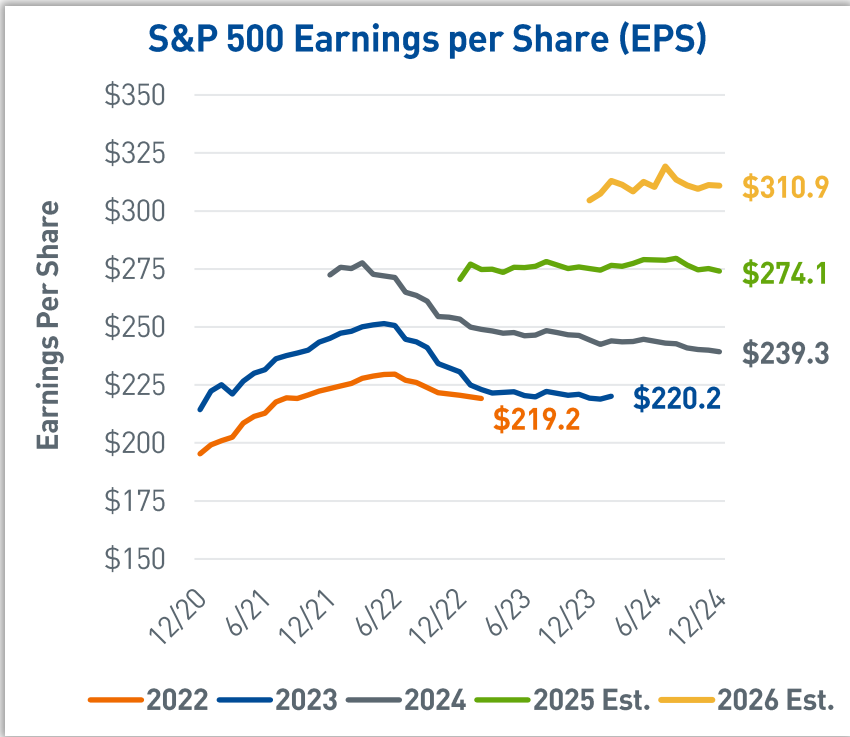
Valuation scenario analysis and the equity risk premium



Risks are rising for future multiple expansion should earnings growth fade

Accelerating earnings in 2024 has been primarily driven by the strong earnings growth of a concentrated number of mega-cap growth stocks.

An expectation for broadening of earnings across sectors in 2025 should help ease extended valuations and maintain positive market momentum.



Implied S&P 500 Price Level using EPS and Forward Price-to-Earnings (P/E)

NTM EPS	Hypothetical Scenario	Price to Earnings (P/E NTM)				
		18.5x	20.0x	21.5x	23.0x	24.5x
\$206	25% downside	3,795	4,103	4,411	4,720	5,028
\$247	10% downside	4,554	4,924	5,294	5,664	6,034
\$274	NTM consensus est.	5,060	5,471	5,882	6,293	6,704
\$302	10% upside	5,566	6,018	6,470	6,922	7,375
\$343	25% upside	6,324	6,838	7,352	7,866	8,380

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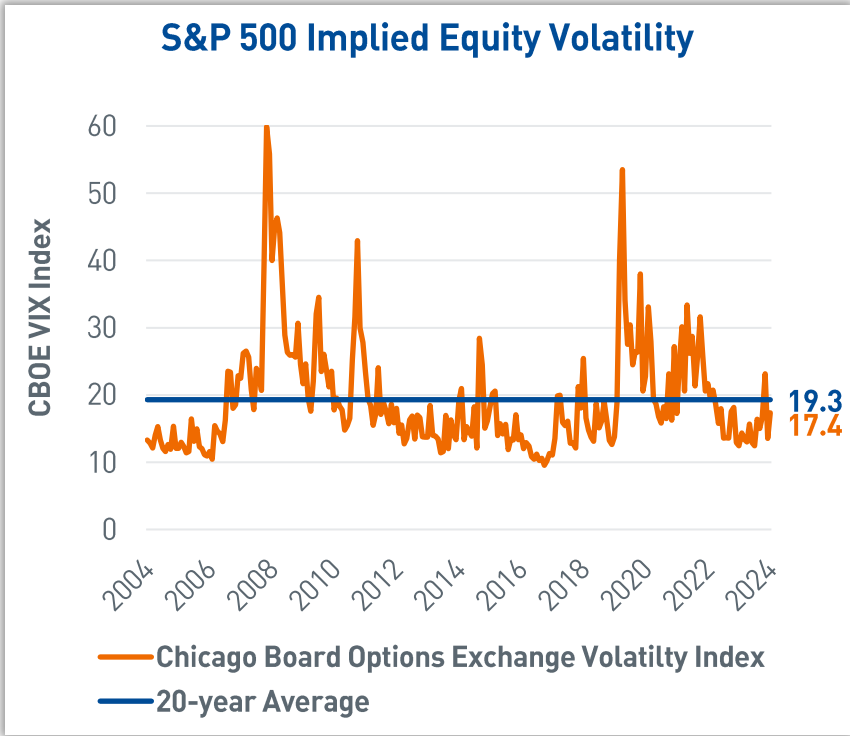
S&P 500 Volatility Measurements

Volatility measures reflect uncertainty on Fed policy

Volatility gauges help frame investor sentiment and provide context

Once U.S. election uncertainty faded, market volatility declined rapidly. In our view, lower volatility is now a risk should the Fed need to maintain higher rates.

In 2024, the S&P 500 experienced a 5% pullback in April and another 8.5% sell-off in August, which is in-line with historical averages for market corrections.



S&P 500: Market Days without a Correction (1/3/1928 - 12/31/2024)			
Market days without a correction	Correction Level		
	-5%	-10%	-20%
Current Case	88	280	542
Mean Average	51	173	701
Multiple of Avg.	1.7	1.6	0.8

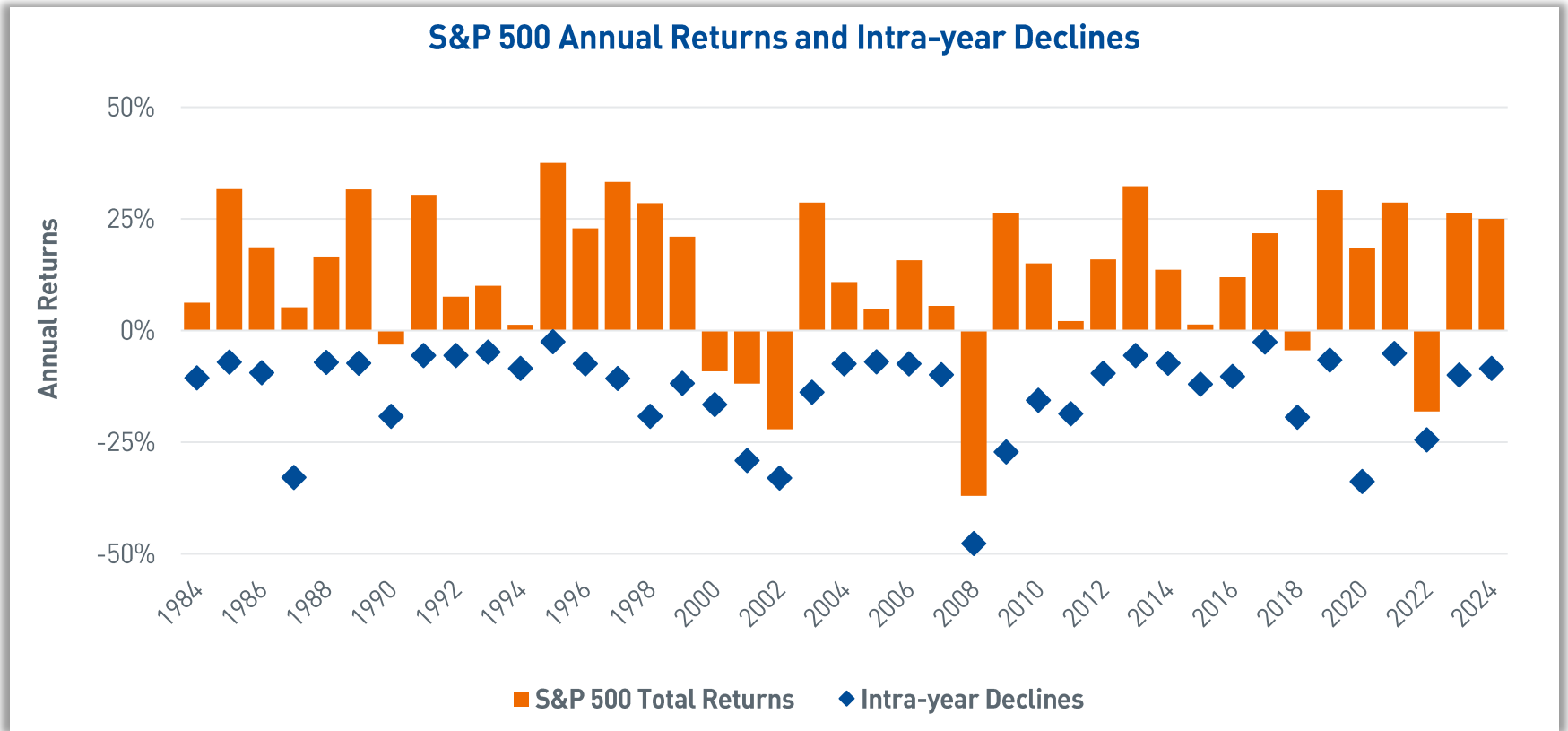
As of 12/31/2024. Source: Source: Bloomberg L.P., Ned Davis Research, PNC. Indices are unmanaged, not available for direct investment, and not subject to management fees, transaction costs or other types of expenses that an account may incur.

S&P 500 Market Volatility

The future path of volatility remains dependent on the path of monetary policy

**Pullbacks happen,
even in positive
returning years**

Even in years of positive performance, intra-year pullbacks can be sizeable, so it is critical to analyze pullbacks in different phases of the cycle. Drawdowns are a poor guide for how a year ultimately turns out, so it is important to stay invested.

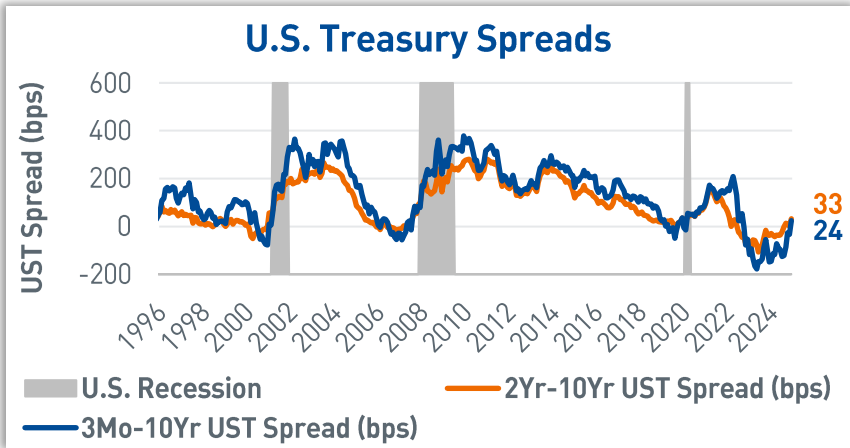
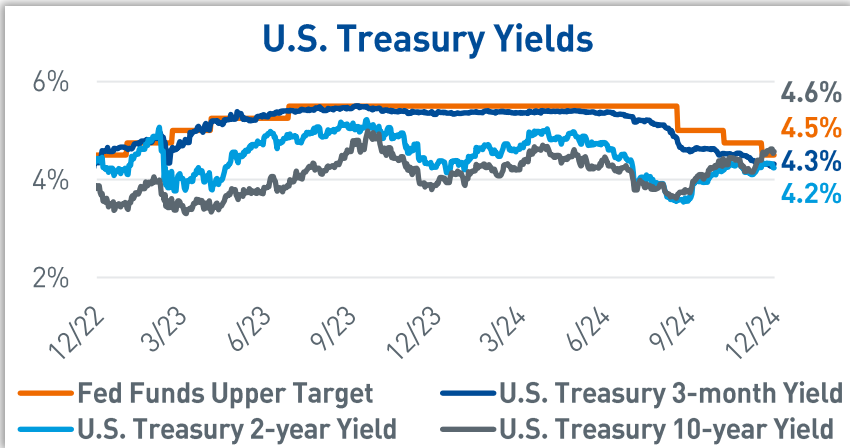
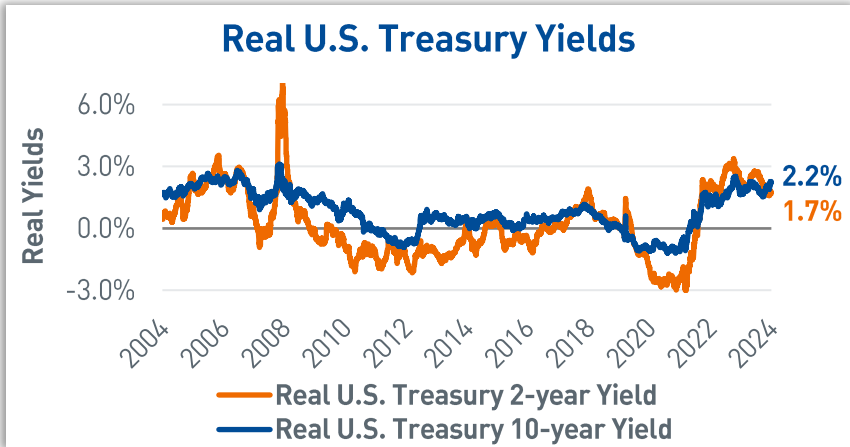
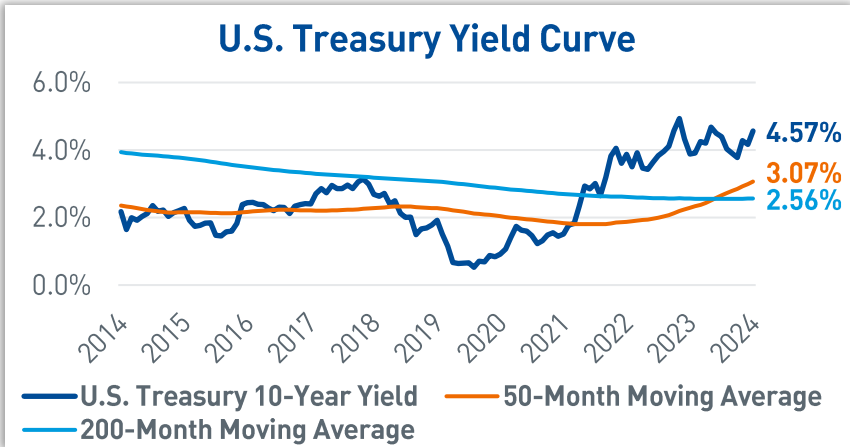


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Interest Rates

U.S. Treasury markets still suggest the economic outlook remains uncertain

While parts of the yield curve have normalized, monetary policy is still quite restrictive when comparing the fed funds rate to U.S. Treasury yields, and real yields are also still elevated.



As of 12/31/2024. Source: Bloomberg L.P. Indices are unmanaged, not available for direct investment, and not subject to management fees, transaction costs or other types of expenses that an account may incur.

Asset Class Performance

Leadership is cyclical and changes with the business cycle

While the first half of 2024 had concentrated performance leadership, the second half of the year showcased the importance of diversification in a highly uncertain business cycle.

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	LEGEND	
EM 82.36	Small-Cap 26.85		EM 18.68				Small-Cap 21.31	EM 36.83		Large Value 31.93	Large Growth 33.47			Large Growth 30.03	Large Growth 36.07	Large Cap	S&P 500®
High Yield 58.21	Mid-Cap 26.64		Mid-Cap 17.88				Mid-Cap 20.74	Large Growth 27.44		Large Cap 31.49	Small-Cap 19.96			Large Cap 26.29	Large Cap 25.02	Large Growth	S&P 500 Growth
Mid-Cap 37.38	EM 19.90		Large Value 17.68	Small-Cap 38.82	Large Growth 14.89		Large Value 17.40	Intl Dev 24.21		Large Growth 31.13	Large Cap 18.40	Large Growth 32.01		Large Value 22.23	60/40 15.51	Large Value	S&P 500 Value
Intl Dev 33.67	High Yield 15.12		Intl Dev 16.41	Mid-Cap 33.50	Large Cap 13.69		High Yield 17.13	Large Cap 21.83		Mid-Cap 26.20	EM 18.39	Large Cap 28.71		60/40 17.98	Mid-Cap 13.93	Mid-Cap	S&P 400®
Large Growth 31.57	Large Value 15.10		Small-Cap 16.35	Large Growth 32.75	Large Value 12.36		Large Cap 11.96	Mid-Cap 16.24		Small-Cap 25.52	60/40 14.04	Large Value 24.90		Intl Dev 17.94	Large Value 12.29	Small-Cap	Russell 2000®
Small-Cap 27.17	Large Cap 15.06	Core Bond 7.84	Large Cap 16.00	Large Cap 32.39	60/40 10.60		EM 9.90	Large Value 15.36		Intl Dev 22.49	Mid-Cap 13.66	Mid-Cap 24.76		Small-Cap 16.93	Small-Cap 11.54	Intl Dev	MSCI World ex USA
Large Cap 26.46	Large Growth 15.05	High Yield 4.98	High Yield 15.81	Large Value 31.99	Mid-Cap 9.77	Large Growth 5.52	60/40 8.23	Small-Cap 14.65		60/40 22.38	Intl Dev 7.59	60/40 16.61		Mid-Cap 16.44	High Yield 8.19	EM	MSCI EM
Large Value 21.18	60/40 11.65	Large Growth 4.65	Large Growth 14.61	Intl Dev 21.02	Core Bond 5.97	Large Cap 1.38	Large Growth 6.89	60/40 14.52		EM 17.65	Core Bond 7.51	Small-Cap 14.82		High Yield 13.44	EM 7.09	Core Bond	Bloomberg US Aggregate
60/40 18.25	Intl Dev 8.95	60/40 4.40	60/40 11.29	60/40 18.62	Small-Cap 4.89	60/40 1.05	Intl Dev 2.75	High Yield 7.50		High Yield 14.32	High Yield 7.11	Intl Dev 12.62		EM 11.67	Intl Dev 4.70	High Yield	Bloomberg US Corp High Yield
Core Bond 5.93	Core Bond 6.54	Large Cap 2.11	Core Bond 4.21	High Yield 7.44	High Yield 2.45	Core Bond 0.55	Core Bond 2.65	Core Bond 3.54	Core Bond 0.01	Core Bond 8.72	Large Value 1.36	High Yield 5.28		Core Bond 5.53	Core Bond 1.25	60/40	60% S&P 500 / 40% Bloomberg US AGG
		Large Value -0.48		Core Bond -2.02	EM -1.79	Mid-Cap -2.18			Large Growth -0.01			EM -0.28	Large Value -5.22			POSITIVE RETURNS	
		Mid-Cap -1.73		EM -2.20	Intl Dev -4.32	Intl Dev -3.04			High Yield -2.08			Core Bond -1.54	High Yield -11.19				
		Small-Cap -4.18				Large Value -3.13			60/40 -2.63				Core Bond -13.01				
		Intl Dev -12.21				Small-Cap -4.41			Large Cap -4.38				Mid-Cap -13.06				
		EM -19.49				High Yield -4.47			Large Value -8.95				Intl Dev -14.29				
						EM -13.86			Small-Cap -11.01				60/40 -16.07				
									Mid-Cap -11.08				Large Cap -18.11				
									Intl Dev -14.09				EM -19.83				
									EM -15.05				Small-Cap -20.44				
													Large Growth -29.41				
																NEGATIVE RETURNS	

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Index Total Returns - Equity

Softer inflation and resilient economic data helped equities rally in 2024

PNC Capital Market
Projections
10-year Forecast (2025-34)

		Trailing Total Returns										10-year Forecast (2025-34)	
		Index	1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Return	Volatility
U.S. EQUITY	U.S. Equity	Russell 3000	-3.1%	2.6%	23.8%	23.8%	8.0%	13.9%	12.5%	13.6%	10.2%		
	LCC	S&P 500	-2.4%	2.4%	25.0%	25.0%	8.9%	14.5%	13.1%	13.9%	10.4%	7.50%	17.30%
	LCG	S&P 500 Growth	0.9%	6.2%	36.1%	36.1%	7.7%	17.1%	15.3%	15.5%	11.9%		
	LCV	S&P 500 Value	-6.8%	-2.7%	12.3%	12.3%	9.2%	10.5%	10.0%	11.6%	8.4%		
	Sector	S&P 500 Communication Services	3.6%	8.9%	40.2%	40.2%	9.5%	14.6%	11.2%	11.3%	8.8%		
	Sector	S&P 500 Consumer Discretionary	2.4%	14.3%	30.1%	30.1%	5.3%	14.1%	13.6%	16.1%	11.3%		
	Sector	S&P 500 Consumer Staples	-5.0%	-3.3%	14.9%	14.9%	4.7%	8.6%	8.4%	10.9%	9.6%		
	Sector	S&P 500 Energy	-9.5%	-2.4%	5.7%	5.7%	20.0%	12.1%	4.9%	6.2%	7.2%		
	Sector	S&P 500 Financials	-5.4%	7.1%	30.6%	30.6%	9.4%	11.7%	11.4%	12.1%	5.6%		
	Sector	S&P 500 Health Care	-6.2%	-10.3%	2.6%	2.6%	0.9%	8.0%	9.1%	12.5%	9.9%		
	Sector	S&P 500 Industrials	-7.9%	-2.3%	17.5%	17.5%	9.5%	12.0%	10.7%	13.0%	9.3%		
	Sector	S&P 500 Information Technology	1.2%	4.8%	36.6%	36.6%	15.7%	24.5%	22.4%	19.8%	15.4%		
	Sector	S&P 500 Materials	-10.7%	-12.4%	0.0%	0.0%	-0.4%	8.7%	7.9%	9.0%	7.8%		
	Sector	S&P 500 Real Estate	-8.6%	-7.9%	5.2%	5.2%	-4.4%	4.6%	6.6%	10.4%	7.5%		
	Sector	S&P 500 Utilities	-7.9%	-5.5%	23.4%	23.4%	5.2%	6.6%	8.4%	10.0%	9.0%		
	MCC	S&P MidCap 400	-7.1%	0.3%	13.9%	13.9%	4.9%	10.3%	9.7%	11.9%	9.7%	9.00%	21.10%
	MCG	S&P MidCap 400 Growth	-7.6%	-0.8%	15.9%	15.9%	3.3%	10.0%	9.9%	12.1%	9.9%		
	MCV	S&P MidCap 400 Value	-6.7%	1.5%	11.7%	11.7%	6.3%	10.2%	9.1%	11.5%	9.2%		
	SCC	Russell 2000	-8.3%	0.3%	11.5%	11.5%	1.2%	7.4%	7.8%	10.3%	7.8%	8.00%	23.20%
	SCG	Russell 2000 Growth	-8.2%	1.7%	15.2%	15.2%	0.2%	6.9%	8.1%	10.9%	8.3%		
	SCV	Russell 2000 Value	-8.3%	-1.1%	8.1%	8.1%	1.9%	7.3%	7.1%	9.5%	7.0%		
	REITs	MSCI USA IMI REAL ESTATE 25-50	-8.4%	-7.9%	3.9%	3.9%	-5.6%	2.0%	--	--	--	8.75%	24.10%
NON-U.S. EQUITY	Non-U.S. Equity	MSCI ACWI Ex USA IMI	-2.0%	-7.6%	5.2%	5.2%	0.5%	4.1%	4.9%	4.8%	5.1%		
	ILCC	MSCI World ex USA	-2.7%	-7.4%	4.7%	4.7%	1.9%	5.1%	5.3%	5.2%	5.0%	9.25%	19.10%
	ILCG	MSCI World Ex USA Growth	-3.2%	-8.3%	2.8%	2.8%	-2.3%	4.3%	5.7%	5.8%	5.4%		
	ILCV	MSCI World Ex USA Value	-2.1%	-6.5%	6.6%	6.6%	6.0%	5.5%	4.5%	4.5%	4.4%		
	ISCC	MSCI World Ex USA Small Cap	-2.6%	-7.9%	2.8%	2.8%	-2.8%	2.9%	5.5%	6.3%	5.7%	9.75%	21.30%
	ISCG	MSCI World Ex USA Small Cap Growth	-2.6%	-7.6%	2.6%	2.6%	-6.1%	2.1%	5.7%	6.5%	5.8%		
	ISCV	MSCI World Ex USA Small Cap Value	-2.6%	-8.1%	3.0%	3.0%	0.5%	3.4%	5.1%	6.0%	5.8%		
	EM	MSCI Emerging Markets IMI	-0.3%	-7.9%	7.1%	7.1%	-1.4%	2.5%	3.9%	3.2%	6.2%	9.50%	24.60%
	Global Equity	MSCI All Country	-2.4%	-1.0%	17.5%	17.5%	5.4%	10.1%	9.2%	9.2%	7.7%		
INFRA	S&P Global Infrastructure	-4.5%	-2.6%	14.0%	14.0%	6.1%	4.4%	5.0%	6.0%	6.4%			

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Capital market projections have been furnished for illustrative purposes only and are not intended as investment advice. Past performance is not indicative of future returns. Indices are unmanaged, not available for direct investment, and not subject to management fees, transaction costs or other types of expenses that an account may incur.

Index Total Returns – Fixed Income and Alternatives

Fixed income aided by cooling economic data and a decline in interest rates

**PNC Capital Market
Projections
10-year Forecast (2025-34)**

			Trailing Total Returns									10-year Forecast (2025-34)	
Index			1 Month	QTD	YTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Return	Volatility
FIXED INCOME	SHORT MUNI	Bloomberg Municipal 1-3 Year	-0.1%	-0.1%	2.5%	2.5%	1.3%	1.3%	1.3%	1.3%	1.9%	3.10%	1.50%
	MUNI	Bloomberg Municipal Bond	-1.5%	-1.2%	1.1%	1.1%	-0.6%	1.0%	2.3%	3.2%	3.5%	3.50%	5.10%
	SHORT	Bloomberg US Aggregate 1-3 Year	0.2%	0.0%	4.4%	4.4%	1.7%	1.5%	1.6%	1.5%	2.3%	3.40%	1.50%
	CORE	Bloomberg US Aggregate	-1.6%	-3.1%	1.3%	1.3%	-2.4%	-0.3%	1.3%	2.4%	3.0%	4.60%	4.40%
	INTERM	Bloomberg US Govt/Credit Intermediate	-0.6%	-1.6%	3.0%	3.0%	-0.2%	0.9%	1.7%	2.3%	2.9%		
	LONG	Bloomberg US Govt/Credit Long	-4.8%	-7.4%	-4.2%	-4.2%	-9.2%	-3.3%	1.0%	3.8%	4.1%	6.50%	11.40%
	TIPS	Bloomberg US Treasury US TIPS	-1.6%	-2.9%	1.8%	1.8%	-2.3%	1.9%	2.2%	2.9%	3.3%	4.50%	6.10%
	BILLS	Bloomberg US Treasury Bills 1-3 Month	0.4%	1.2%	5.3%	5.3%	4.0%	2.5%	1.8%	1.2%	1.6%		
	HY	Bloomberg US Corporate High Yield	-0.4%	0.2%	8.2%	8.2%	2.9%	4.2%	5.2%	6.4%	6.4%	6.75%	10.50%
	LLOAN	Morningstar LSTA U.S. Leveraged Loan	0.6%	2.3%	9.0%	9.0%	7.0%	5.9%	5.1%	5.3%	5.0%		
IBND	Bloomberg Global Aggregate	-2.1%	-5.1%	-1.7%	-1.7%	-4.5%	-2.0%	0.2%	1.0%	1.9%			
EMD	Bloomberg EM USD Aggregate	-1.2%	-1.5%	6.6%	6.6%	-0.5%	0.6%	3.2%	4.6%	5.5%	6.00%	9.70%	
ALTERNATIVES	Hedge Funds	HFRX Global Hedge Fund (USD)	0.0%	0.1%	5.2%	5.2%	1.2%	2.8%	2.0%	1.7%	1.3%	5.50%	5.75%
	Equity Hedge	HFRX Equity Hedge	-0.4%	0.3%	7.8%	7.8%	3.7%	5.5%	3.5%	2.6%	1.9%		
	Event Driven	HFRX Event Driven	0.4%	-0.2%	3.6%	3.6%	-1.2%	1.1%	1.2%	1.6%	1.6%		
	Macro-CTA	HFRX Macro	0.2%	-0.1%	3.7%	3.7%	1.9%	1.8%	0.8%	0.2%	0.8%		
	Relative Value	HFRX Relative Value Arbitrage	-0.3%	0.4%	4.9%	4.9%	0.5%	1.9%	1.7%	1.5%	1.2%		
	Private Capital*	MSCI Global Private Capital	2.7%	4.9%	7.6%	4.0%	12.7%	11.7%	12.3%	12.1%			
	Private Equity*	MSCI Global Private Equity	2.9%	4.9%	8.0%	2.6%	15.0%	14.1%	14.5%	14.0%		12.00%	22.00%
		MSCI Global Private Equity ex-Venture Capital	3.3%	5.7%	9.5%	5.7%	15.0%	13.9%	14.2%	14.3%			
		MSCI Global Venture Capital	1.9%	2.8%	3.6%	-5.0%	15.0%	15.0%	15.4%	12.6%			
		MSCI Global Early-Stage Venture Capital	1.4%	1.5%	0.8%	-4.4%	15.1%	14.6%	15.0%	12.1%			
		MSCI Global Late-Stage Venture Capital	2.5%	3.6%	6.0%	-5.8%	15.4%	16.1%	17.0%	15.5%			
		MSCI Global Expansion Capital	4.0%	5.4%	8.0%	-0.3%	8.7%	7.7%	8.7%	8.6%			
		MSCI Global Buyout	3.3%	5.7%	9.8%	6.7%	15.5%	14.3%	14.5%	14.6%			
	Private Debt*	MSCI Global Private Credit	2.5%	6.5%	9.7%	7.8%	8.8%	7.6%	9.3%	9.5%	8.75%	12.60%	
	Private Real Assets*	MSCI Global Private Real Assets	0.7%	-0.5%	-2.8%	1.2%	4.7%	7.0%	7.7%	6.6%	9.75%	14.50%	
		MSCI Global Private Real Estate	4.2%	7.1%	11.4%	10.2%	9.7%	9.5%	9.1%	9.6%	7.70%	10.00%	
MSCI Global Private Infrastructure		2.2%	3.8%	4.5%	6.9%	7.4%	7.1%	7.9%	8.0%				
MSCI Global Private Natural Resources		-1.3%	4.9%	3.4%	11.8%	8.7%	3.6%	6.1%	9.3%				

*Private alternative investments are subject to reporting lag; Private Index data is available as of most recent reported data as of 9/30/2024.

As of 12/31/2024. Source: Morningstar, Inc., FactSet®, FactSet® is a registered trademark of FactSet Research Systems, Inc., and its affiliates, MSCI Inc.

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Capital Market Assumptions: Methodology

Methodology & Key Assumptions

Results in this report incorporate PNC's Capital Market Assumptions (CMA) for calendar year 2025. These assumptions represent the PNC Asset Management Group's 10-year projections of risk and return for the respective asset classes. These estimates are updated on an annual basis and take into account economic fundamentals, long-term historical trends, as well as other relevant factors.

Methodology

CMA returns reflect combining market-implied equilibrium returns with PNC's subjective views using a technique known as Black-Litterman¹. Black Litterman Methodology blends subjective and market-implied views using a Bayesian approach that takes account of cross-asset-class relationships to help determine an internally consistent set of final estimates. In general, the expected return on every asset class is adjusted so that it is as consistent as possible with both the market-implied equilibrium and our subjective views, even if we do not express a specific subjective view on that asset class. This methodology is an imperfect model of market behavior. Among the simplifications is the assumption that asset returns are adequately summarized by constant means, variances, and correlations. Empirical evidence generally indicates that these statistics are not sufficient to fully characterize asset returns.

The projected returns for hedge funds, private debt, private equity, and private real estate (property) include premiums for the fact that these classes are, in varying degrees, illiquid. The mean returns shown should be interpreted as arithmetic average returns. They are not compounded rates of return. The difference between these two concepts is approximately equal to one-half the asset's volatility squared.

Key Assumptions

Risk-free Rate — As we perform our 2025 CMA analysis, the risk-free rate remains unchanged from last year at 3.0%. We believe this is a reasonable expectation as the Fed has started to normalize the interest rate environment and is expected to continue leading to a terminal rate of 3.0% over the period of this analysis.

Inflation — We use an inflation expectation of 2.25% per year, based on our estimated Consumer Price Index (CPI)² level over the forecast period. This is consistent with last year's analysis, but slightly higher than the Fed's long-run inflation target level of 2%. While CPI has fallen recently, we believe structural forces will keep inflation elevated relative to the last 20 years, normalizing around 2.25%. This is also consistent with market expectations based on inflation breakeven rates³, which are currently at 2.45% for five years and 2.35% for 10 years (as of November 22, 2024).

U.S. Dollar — We have assumed the Fed's nominal Trade-Weighted U.S. Dollar Index⁴ remains flat over the forecast horizon. Given the significant interest rate differentials around the globe, we expect the dollar to maintain its current position of relative strength against most other major currencies.

¹ The Black-Litterman methodology was introduced by Fischer Black and Robert Litterman of Goldman Sachs in 1990. It avoids problems inherent in some other methods by incorporating market-implied equilibrium returns consistent with the risk structure of the asset classes. The model works by blending subjective and market-implied views using a Bayesian approach that takes account of cross-asset-class relationships to help determine an internally consistent set of final estimates. In general, the expected return on every asset class is adjusted so that it is as consistent as possible with both the market-implied equilibrium and our subjective views, even if we do not express a specific subjective view on that asset class.

² The CPI measures changes in the price level of a weighted average market basket of consumer goods and services purchased by households. It is usually calculated and reported by the U.S. Bureau of Labor Statistics, or its equivalent in countries outside the United States, on a monthly and annual basis.

³ The inflation breakeven rate is derived as a discount rate that equates the nominal return on a dollar of investment to the real return (not as an arithmetic difference between the nominal rate and the real rate).

⁴ The Trade-Weighted U.S. Dollar Index, also known as the broad index, is a measure of the value of the dollar relative to other world currencies. It is a trade-weighted index that improves on the older U.S. Dollar Index by using more currencies and updating the weights annually rather than on an ad hoc basis.

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Capital Market Assumptions: Key Assumptions

Methodology & Key Assumptions

Currency Impacts — For U.S. investors, international equities generally involve currency exposure, which can increase volatility. However, compensation for this additional risk may not be adequate or reliable, and international equities have not historically offered consistent purchasing power protection. Over the short term, when the dollar is strengthening, U.S. equities and fixed income investments tend to outperform their international counterparts. Conversely, when the dollar is weakening, international investments tend to outperform. This holds true from the perspective of a U.S.-based investor (defined as an investor whose local currency is the U.S. dollar, whether an individual or institution).

In an international equity portfolio with exposure to a basket of currencies, it is likely some securities will have positive returns in local currency terms, while others will have negative returns. In theory, this counterbalancing effect should result in currency exposures generally offsetting themselves over time. Additionally, currency returns do not exhibit strong positive correlations and, as such, tend to help diversify equity portfolios. Furthermore, there is ample empirical evidence, cited by the CFA Institute, among others, suggesting the standard deviation (i.e., volatility) of currency prices is only about half the standard deviation of stock prices. This suggests that an unhedged currency exposure may help reduce the volatility of an international equity portfolio over time. As currencies also tend to revert to a theoretical fair value/mean over time, currency-related volatility risk tends to fall, becoming a less critical component of equity risk. Thus, over the long term, our preference is to be unhedged to potential currency exposures.

Cash and Cash Equivalents — We use the 3-month U.S. Treasury bill (T-bill) as our proxy for cash, despite it being subject to inflation and interest rate risk. Although T-bills do not typically generate positive real returns (i.e., inflation-adjusted) over time, they do offer liquidity, safety of principal and exemption from state and local taxes. T-bills tend to carry higher yields than what are available in cash accounts, such as money market funds or deposit accounts, but are comparable on a risk-adjusted basis. Our expected return and volatility assumptions for the 3-month T-bill are 3.0% and 0.56%, respectively, for the 2025 CMAs.

Volatility — Our volatility assumptions are primarily driven by a historical blend of both turbulent and quiet market periods. According to Windham Portfolio Advisors, turbulent periods are identified by statistically unusual asset movements, based on their proprietary methodology. Based on our analysis of historical market volatility over the past 20-plus years, we use a blend of 60% quiet periods, 40% turbulent periods to derive our assumed asset class volatilities. This methodology is consistent with last year's CMA process.

Capital Market Assumptions: 10-Year Forecast

2025-2034

Asset Class	Index	Projected	
		Annual Return	Annual Volatility ⁵
U.S. EQUITY			
U.S. Large Cap – Core	S&P 500	7.50%	17.30%
U.S. Mid Cap – Core	S&P MidCap 400	9.00%	21.10%
U.S. Small Cap – Core	Russell 2000	8.00%	23.20%
Real Estate Investment Trusts	MSCI USA IMI Real Estate 25-50	8.75%	24.10%

INTERNATIONAL EQUITY

Int'l Large/Mid – Core	MSCI World ex USA	9.25%	19.10%
Int'l Small – Core	MSCI World ex USA Small Cap	9.75%	21.30%
Emerging Markets	MSCI Emerging Markets IMI	9.50%	24.60%

Asset Class	Index	Projected	
		Annual Return	Annual Volatility ⁵
FIXED INCOME			
Municipal Short-term	Bloomberg Municipal Bond (1-3 Y)	3.10%	1.50%
Municipal	Bloomberg Municipal Bond	3.50%	5.10%
Core Short-term	Bloomberg US Aggregate (1-3 Y)	3.40%	1.50%
Core	Bloomberg US Aggregate	4.60%	4.40%
Taxable Long	Bloomberg US Government/Corporate Long	6.50%	11.40%
U.S. High Yield	Bloomberg US Corporate High Yield	6.75%	10.50%
Emerging Markets	Bloomberg Emerging Markets USD Aggregate	6.00%	9.70%
Inflation-linked Bonds	Bloomberg US Treasury TIPS	4.50%	6.10%

ALTERNATIVES

Private Equity	MSCI Global Private Equity	12.00%	22.00%
Private Debt	MSCI Global Private Credit	8.75%	12.60%
Private Real Estate	MSCI Global Private Real Estate	9.75%	14.50%
Private Infrastructure	MSCI Global Private Infrastructure	7.70%	10.00%
Hedge Funds	HFRI Fund of Funds Composite Index	5.50%	5.75%

⁵ The volatilities for each asset class shown in this table represent our projections for annual volatilities. In performing the underlying analysis, we used historical monthly volatilities (as opposed to daily or weekly) spanning the last 20+ years as a key input.

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Appendix



PNC
INSTITUTIONAL
ASSET MANAGEMENT

I-Hub Online Solutions

Overview and Enhancements

PNC Institutional Asset Management invests in technology to help institutional investors. Our I-Hub solution includes:

ONLINE ACCOUNT ACCESS	REPORTING CAPABILITIES
<ul style="list-style-type: none">• Access from any device• Customized access for each user• Dedicated technical support• Messaging including sending documents securely• Document retrieval for statements, investment policy statement, fee invoices and more.	<ul style="list-style-type: none">• Customizable reporting of key account information• Benefit payment inquiry access and reporting• Paperless statements for authorized persons
OPERATIONAL CAPABILITIES	SECURITY FEATURES
<ul style="list-style-type: none">• Ability to initiate and manage cash processing• Ability to initiate and manage benefit payments• Ability to process mutual fund, equity, and fixed income trades• Ability to process wires for alternative investment capital calls	<ul style="list-style-type: none">• Unique login credential with strict password parameters• Dual authentication with each login requires additional one-time passcode be sent to email, phone (voice) or text• Customizable approval flows for your organization• Emails sent to authorized persons for withdrawals that exceed thresholds by withdrawal type
LATEST SYSTEM ENHANCEMENTS	
<ul style="list-style-type: none">• Requirement for One-Time Passcode (OTP) with each login to assist with preventing fraud. Expanded options to receive the OTP include voice call or text message.• Allowing a current authorized person to utilize I-Hub to request a new authorized signer be added. The new Authorized Signers form is executed within I-Hub using e-Sign.• Messaging enhancement to include the Investment Advisor in addition to the existing options of the Institutional Trust Officer and I-Hub Support.	

If you have questions, or would like an I-Hub demo, please reach out to your
Institutional Trust Officer or contact

I-Hub Support at 1-877-636-9703 or pnc.i-hub.support@pnc.com

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