# Piano Cleveland

January 24, 2024
Review as of December 31, 2023

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PNC INSTITUTIONAL ASSET MANAGEMENT

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# Investment Policy Statement

PNC
INSTITUTIONAL
ASSET MANAGEMENT

CLEVELAND INTERNATIONAL PIANO COMPETITION

# 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:

4/18/17

Petrus Van Der Westhuizen,
Chief Executive Officer and President

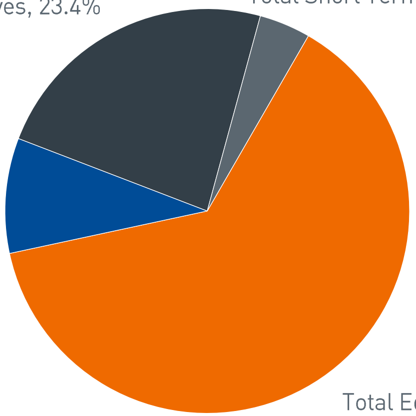
Date

# Portfolio Review

# Asset Allocation

Piano Cleveland

As of December 31, 2023

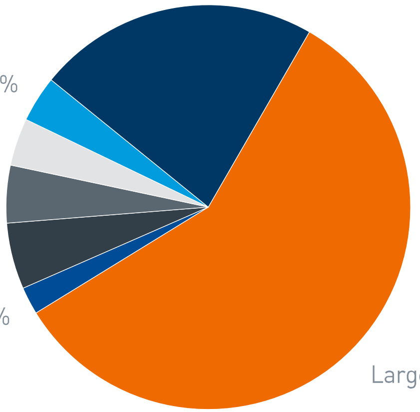



| Description | Market Value ($) | Portfolio Allocation | Policy Target | Policy Range |
|---|---|---|---|---|
| **Total Equity** | **732,909** | **63.3%** | **65%** | **50-70%** |
| *Large Cap Equity* | *424,613* | *36.7%* | | |
| *Mid Cap Equity* | *88,543* | *7.7%* | | |
| *Small Cap Equity* | *55,224* | *4.8%* | | |
| *Total International* | *164,530* | *14.2%* | | |
| **Total Fixed Income** | **106,607** | **9.2%** | **10%** | **5-20%** |
| **Total Alternatives** | **271,123** | **23.4%** | **25%** | **15-35%** |
| **Total Short Term** | **47,279** | **4.1%** | | |
| **Total Portfolio** | **1,157,919** | **100.0%** | **100.0%** | |

# Equity Asset Allocation

Piano Cleveland

As of December 31, 2023

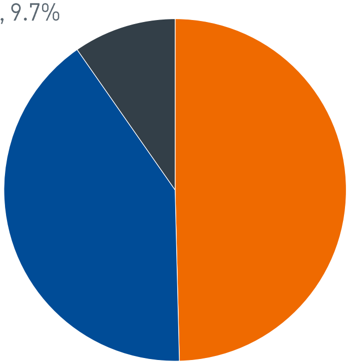



| Description | Market Value ($) | Equity Allocation | Portfolio Allocation |
|---|---|---|---|
| Large Cap Core | 424,613 | 57.9% | 36.7% |
| Mid Cap Core | 16,266 | 2.2% | 1.4% |
| Mid Cap Growth | 38,694 | 5.3% | 3.3% |
| Mid Cap Value | 33,582 | 4.6% | 2.9% |
| Small Cap Growth | 28,052 | 3.8% | 2.4% |
| Small Cap Value | 27,172 | 3.7% | 2.4% |
| Total International | 164,530 | 22.5% | 14.2% |
| **Total Equity** | **732,909** | **100.0%** | **63.3%** |

# Fixed Income Asset Allocation

Piano Cleveland

As of December 31, 2023




| Description | Market Value ($) | Fixed Income Allocation | Portfolio Allocation |
|---|---|---|---|
| Baird Intermediate Bd Fund Inst | 52,885 | 49.6% | 4.6% |
| BlackRock Strategic Income Opportunities Portfolio | 43,408 | 40.7% | 3.8% |
| iShares 7-10 Year Treasury Bond ETF | 10,314 | 9.7% | 0.9% |
| **Total Fixed Income** | **106,607** | **100.0%** | **9.2%** |

# Alternative Asset Allocation

| Description | Market Value ($) | Alternative Allocation | Portfolio Allocation |
|---|---|---|---|
| AMERICAN BEACON MGD | 45,207 | 16.7% | 3.9% |
| Angel Oak Multi-Strategy Income Fund Instl Class | 67,911 | 25.1% | 5.9% |
| BlackRock Event Driven Eq Inst | 93,540 | 34.5% | 8.1% |
| Eaton Vance Global Macro Absolute Return Advantage | 64,465 | 23.8% | 5.6% |
| **Total Fixed Income** | **271,123** | **100.0%** | **23.5%** |

# Portfolio Holdings

Piano Cleveland

As of December 31, 2023

PNC INSTITUTIONAL ASSET MANAGEMENT

| Description | Ticker | Units | Market Value ($) | % of Market Value |
|---|---|---|---|---|
| **Large Cap Core** | | | | |
| iShares Core S&P 500 ETF | IVV | 889 | 424,613 | 36.7% |
| **Mid Cap Core** | | | | |
| Hennessy Focus Fund Class Inst | HFCIX | 359 | 16,266 | 1.4% |
| **Mid Cap Growth** | | | | |
| Madison Mid Cap Fund-R6 | MMCRX | 2,397 | 38,694 | 3.3% |
| **Mid Cap Value** | | | | |
| Allspring Special Mid Cap Value Fund Cl I | WFPRX | 730 | 33,582 | 2.9% |
| **Small Cap Growth** | | | | |
| Transamerica Small Cap Growth | TSPIX | 4,237 | 28,052 | 2.4% |
| **Small Cap Value** | | | | |
| AMG Rr Sm Cap Val-I | ARSIX | 1,777 | 27,172 | 2.3% |
| **Total International** | | | | |
| iShares MSCI EAFE Value ETF | EFV | 581 | 30,270 | 2.6% |
| Oakmark Intl Sm Cap-R6 | OAZEX | 1,069 | 20,785 | 1.8% |
| Pzena Emerg Mkts Value-Inst | PZIEX | 1,609 | 19,616 | 1.7% |
| Seafarer Overseas Growth & Income Inst | SIGIX | 1,937 | 24,557 | 2.1% |
| Touchstone Sands Cptl Emerging Markets Gr Inst | TSRMX | 1,352 | 18,958 | 1.6% |
| Wasatch Intl Opportunit-Inst | WIIOX | 6,499 | 20,603 | 1.8% |
| WCM Focused Intl Growth-Ins | WCMIX | 1,307 | 29,740 | 2.6% |
| **Total Equity** | | | **732,909** | **63.3%** |

# Portfolio Holdings (Continued)

Piano Cleveland

As of December 31, 2023

| Description | Ticker | Units | Market Value ($) | % of Market Value |
|---|---|---|---|---|
| **Fixed Income** | | | | |
| Baird Intermediate Bd Fund Inst | BIMIX | 5,125 | 52,885 | 4.6% |
| BlackRock Strategic Income Opportunities Portfolio | BSIIX | 4,603 | 43,408 | 3.7% |
| iShares 7-10 Year Treasury Bond ETF | IEF | 107 | 10,314 | 0.9% |
| **Total Fixed Income** | | | **106,607** | **9.2%** |
| **Alternatives** | | | | |
| AMERICAN BEACON MGD | AHLIX | 4,562 | 45,207 | 3.9% |
| Angel Oak Multi-Strategy Income Fund Instl Class | ANGIX | 8,018 | 67,911 | 5.9% |
| BlackRock Event Driven Eq Inst | BILPX | 9,363 | 93,540 | 8.1% |
| Eaton Vance Global Macro Absolute Return Advantage | EGRSX | 6,434 | 64,465 | 5.6% |
| **Total Alternatives** | | | **271,123** | **23.5%** |
| **Short Term** | | | | |
| Blackrock Liquid Funds FedFund | TFDXX | 2,623 | 2,623 | 0.2% |
| Cash & Equivalents | - | 44,656 | 44,656 | 3.9% |
| **Total Short Term** | | | **47,279** | **4.1%** |
| **Total Portfolio** | | | **1,157,919** | **100.0%** |

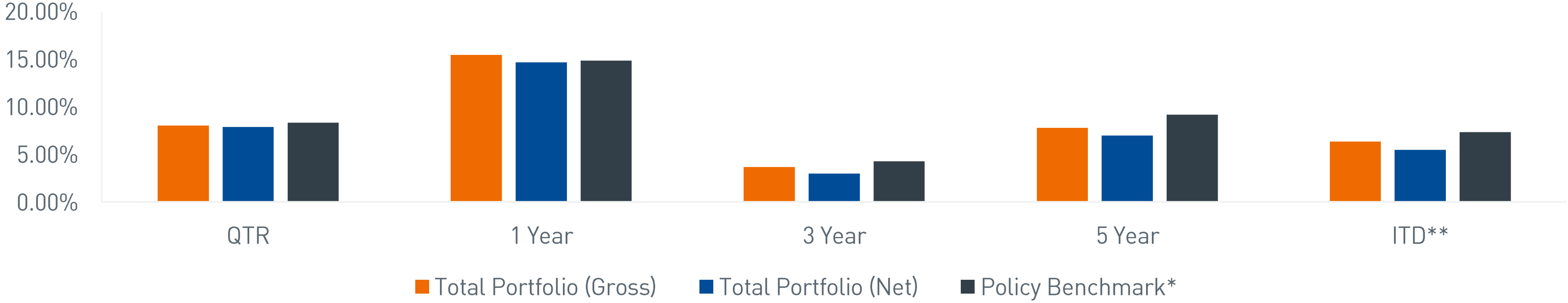
# Investment Performance

# Total Portfolio Performance

Piano Cleveland

As of December 31, 2023

PNC INSTITUTIONAL ASSET MANAGEMENT




| Description | QTR | 1 Year | 3 Year | 5 Year | ITD** |
|---|---|---|---|---|---|
| **Total Portfolio (Gross)** | **8.03%** | **15.47%** | **3.69%** | **7.78%** | **6.34%** |
| **Total Portfolio (Net)** | **7.89%** | **14.68%** | **3.00%** | **6.97%** | **5.49%** |
| *Policy Benchmark** | *8.35%* | *14.86%* | *4.29%* | *9.19%* | *7.34%* |
| *Blended Benchmark** | *8.06%* | *15.62%* | *3.96%* | *8.85%* | *6.96%* |
| *Allocation Benchmark** | *7.82%* | *14.26%* | *2.83%* | *7.29%* | *6.14%* |
| **Total Equity** | **11.14%** | **22.55%** | **5.07%** | **10.87%** | **8.70%** |
| *Equity Policy Benchmark** | *11.55%* | *20.85%* | *6.16%* | *12.17%* | *9.95%* |
| *S&P 500 TR* | *11.69%* | *26.29%* | *10.00%* | *15.69%* | *12.87%* |
| *Russell Midcap* | *12.82%* | *17.23%* | *5.92%* | *12.68%* | *10.05%* |
| *Russell 2000* | *14.03%* | *16.93%* | *2.22%* | *9.97%* | *8.20%* |
| *MSCI EAFE Net* | *10.42%* | *18.24%* | *4.02%* | *8.16%* | *5.91%* |
| **Total Fixed Income** | **5.16%** | **6.00%** | **-1.30%** | **1.86%** | **1.83%** |
| *Bloomberg Int Govt/Credit* | *4.56%* | *5.24%* | *-1.63%* | *1.59%* | *1.57%* |
| **Total Alternatives** | **2.22%** | **4.43%** | **2.19%** | **3.52%** | **2.73%** |
| *HFRX Global Hedge* | *1.70%* | *3.10%* | *0.71%* | *3.46%* | *2.12%* |

**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, 2023

| Description | QTR | 1 Year | 3 Year | 5 Year | ITD** |
|---|---|---|---|---|---|
| **Large Cap Core** | **11.67%** | **25.81%** | **9.87%** | **15.55%** | **12.77%** |
| iShares Core S&P 500 ETF | 11.67% | 25.61% | 9.78% | 15.50% | 12.75% |
| *S&P 500 TR* | *11.69%* | *26.29%* | *10.00%* | *15.69%* | *12.87%* |
| **Mid Cap Growth** | **14.76%** | **27.10%** | **11.62%** | **-** | **-** |
| Madison Mid Cap Fund-R6 | 14.76% | 27.10% | 11.62% | - | - |
| *Russell Midcap Growth* | *14.55%* | *25.87%* | *1.31%* | - | - |
| **Mid Cap Core** | **12.46%** | **21.31%** | **6.44%** | **11.47%** | **-** |
| Hennessy Focus Fund Class Inst | 12.46% | 21.31% | 6.44% | 11.56% | - |
| *Russell Midcap* | *12.82%* | *17.23%* | *5.92%* | *12.68%* | - |
| **Mid Cap Value** | **9.32%** | **9.62%** | **-** | **-** | **-** |
| Allspring Special Mid Cap Value Fund Cl I | 9.32% | 9.62% | - | - | - |
| *Russell Midcap Value* | *12.11%* | *12.71%* | - | - | - |
| **Small Cap Growth** | **9.21%** | **20.02%** | **-0.69%** | **-** | **-** |
| Transamerica Small Cap Growth | 9.21% | 20.02% | -0.69% | - | - |
| *Russell 2000 Growth* | *12.75%* | *18.66%* | *-3.50%* | - | - |
| **Small Cap Value** | **8.69%** | **15.09%** | **-** | **-** | **-** |
| AMG Rr Sm Cap Val-I | 8.69% | 15.09% | - | - | - |
| *Russell 2000 Value* | *15.26%* | *14.65%* | - | - | - |
| **Total International** | **10.02%** | **16.67%** | **-1.92%** | **6.59%** | **5.12%** |
| iShares MSCI EAFE Value ETF | 8.43% | 18.77% | - | - | - |
| *MSCI EAFE Value Net* | *8.22%* | *18.95%* | - | - | - |
| Pzena Emerg Mkts Value-Inst | 9.52% | 24.87% | - | - | - |
| *MSCI Emerging Market Net* | *7.86%* | *9.83%* | - | - | - |
| Oakmark Intl Sm Cap-R6 | 11.64% | 19.86% | 7.08% | - | - |
| *MSCI ACWI ex USA SMID Value Net USD* | *9.55%* | *16.72%* | *4.26%* | - | - |

***Inception date is 12/01/2015*

*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, 2023

| Description | QTR | 1 Year | 3 Year | 5 Year | ITD** |
|---|---|---|---|---|---|
| Wasatch Intl Opportunit-Inst | 14.86% | 10.45% | -11.63% | - | - |
| *MSCI ACWI Ex USA SMID Growth Net USD* | *10.29%* | *14.88%* | *-2.50%* | - | - |
| Seafarer Overseas Growth & Income Inst | 8.43% | 14.31% | -0.47% | - | - |
| *MSCI Emerging Market Net* | *7.86%* | *9.83%* | *-5.08%* | - | - |
| Touchstone Sands Cptl Emerging Markets Gr Inst | 6.13% | 11.01% | -13.27% | - | - |
| *MSCI Emerging Market Net* | *7.86%* | *9.83%* | *-5.08%* | - | - |
| WCM Focused Intl Growth-Ins | 11.79% | 16.56% | -1.02% | - | - |
| *MSCI ACWI ex USA Growth Net* | *11.13%* | *14.03%* | *-2.67%* | - | - |
| **Fixed Income** | **5.16%** | **6.00%** | **-1.30%** | **1.86%** | **1.83%** |
| BlackRock Strategic Income Opportunities Portfol | 5.51% | 7.18% | - | - | - |
| *Bloomberg US Universal* | *6.83%* | *6.17%* | - | - | - |
| Baird Intermediate Bd Fund Inst | 4.64% | 5.78% | -1.60% | 1.84% | 1.84% |
| *Bloomberg Int Govt/Cr* | *4.56%* | *5.24%* | *-1.63%* | *1.59%* | *1.57%* |
| iShares 7-10 Year Treasury Bond ETF | 6.39% | - | - | - | - |
| *ICE/BOFA US Treasury 7-10 TR* | *6.39%* | - | - | - | - |
| **Total Alternatives** | **2.22%** | **4.43%** | **2.19%** | **3.52%** | **2.73%** |
| Eaton Vance Global Macro Absolute Return Advanta | 2.97% | 8.47% | 3.32% | - | - |
| *HFRX Macro-CTA Index* | *-1.26%* | *-1.49%* | *0.45%* | - | - |
| AMERICAN BEACON MGD | -2.63% | -3.85% | 5.73% | - | - |
| *HFRX Macro-CTA Index* | *-1.26%* | *-1.49%* | *0.45%* | - | - |
| BlackRock Event Driven Eq Inst | 3.65% | 5.37% | 2.42% | - | - |
| *HFRX Event Driven* | *1.36%* | *0.48%* | *-2.17%* | - | - |
| Angel Oak Multi-Strategy Income Fund Instl Class | 2.91% | 5.34% | -1.30% | - | - |
| *HFRX Relative Value Arbitrage Index* | *1.88%* | *4.77%* | *-0.98%* | - | - |

***Inception date is 12/01/2015*

*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, 2023

| Description | QTR | 1 Year | 3 Year | 5 Year | ITD** |
|---|---|---|---|---|---|
| **Total Short Term** | **1.31%** | **5.14%** | **2.37%** | **1.86%** | **1.43%** |
| Blackrock Liquid Funds FedFund | 1.33% | 8.61% | - | - | - |
| *Bloomberg US Treasury Bill 1-3 Month Blend* | *1.38%* | *5.17%* | - | - | - |
| Cash & Equivl | 1.31% | 5.18% | 2.38% | 1.87% | 1.43% |
| *Bloomberg US Treasury Bill 1-3 Month Blend* | *1.38%* | *5.17%* | *2.22%* | *1.89%* | *1.54%* |

***Inception date is 12/01/2015*

*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, 2023

**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 2023 | % |
|---|---|
| S&P 500 TR | 36.55 |
| Russell 2000 Value | 2.33 |
| Russell 2000 Growth | 2.40 |
| Russell Midcap | 1.42 |
| Russell Midcap Growth | 3.32 |
| Russell Midcap Value | 2.91 |
| MSCI Emerging Market Net | 5.53 |
| Bloomberg Int Govt/Cr | 4.65 |
| HFRX Event Driven | 8.24 |
| HFRX Relative Value Arbitrage Index | 5.99 |
| HFRX Macro-CTA Index | 9.87 |
| MSCI EAFE Value Net | 2.63 |
| MSCI ACWI ex USA Growth Net | 2.54 |
| Bloomberg US Universal | 3.79 |
| Bloomberg US Treasury Bill 1-3 Mon | 3.41 |
| ICE/BOFA US Treasury 7-10 TR | 0.90 |
| MSCI ACWI Ex USA SMID Growth Net USD | 1.72 |
| MSCI ACWI ex USA SMID Value Net USD | 1.78 |

*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, 2023

**Equity:**

| Equity Policy Benchmark - December 2015 | % |
|---|---|
| S&P 500 TR | 45.00 |
| MSCI ACWI Ex US Net | 30.00 |
| Russell Midcap | 15.00 |
| Russell 2000 | 10.00 |

*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](www.pnc.com/indexdefinitions).*

# Taking Stock of the Markets

Investment Strategy

January 2024

PNC INSTITUTIONAL ASSET MANAGEMENT

# Asset Class Playbook Highlights

## Thoughts and Takeaways for Broad Asset Classes

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Investors kick off the new year with a number of unanswered macroeconomic questions, and we maintain our guidance for broadly diversified portfolios with tactical, opportunistic adjustments.

### Equities

*Global outlook 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

*Core fixed income remains attractive at this phase in the credit cycle*

Given elevated long-term interest rates, we believe core fixed income remains attractive, diminishing the reward for outsized, below-investment-grade credit exposure.

### Alternatives

*Broad opportunity set for long-term investors*

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

***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 our current thoughts on asset allocation positioning.***

*As of 12/31/2023. Source: PNC*

# The Good, The Bad and The Ugly

A Quick Tour Around the Globe

PNC INSTITUTIONAL ASSET MANAGEMENT

| The Good | The Bad | The Ugly |
|---|---|---|
| ▪ Labor market strength supports economy | — Weak Leading Economic Indicators | — Global populism and election risks |
| ▪ Positive inflation-adjusted wage growth | ▪ Tightening lending standards & loan growth | ▪ Global geopolitical conflicts |
| + Easing financial conditions | ▪ Inverted yield curve | ▪ Global deficits / debt levels |
| ▪ Resiliency of U.S. consumer spending | ▲ Decelerating, but still elevated inflation | ▪ U.S.-China power struggle |
| ▪ Emerging artificial intelligence technology | + Tight global monetary policy | ▪ De-globalization trends building |
| ▪ Durability of quality investments | ▪ Commercial real estate under pressure | |
| | ▪ Negative global earnings revisions | |
| | ▪ Commodity supply / demand imbalances | |
| | ▪ Weakening consumer & business confidence | |
| | ▪ Underwhelming economic recovery in China | |
| | ▪ Elevated multi-asset volatility | |
| | ▪ Falling savings; rising credit delinquencies | |

*Higher* ↑ *Lower* — Ordered by importance / potential for biggest market impact

▲ Denotes change in description or new additions relative to the prior version
+ Denotes positive change relative to the prior version
— Denotes negative change relative to the prior version

*As of 12/31/2023. Source: PNC*

# Views Through Our Investment Process Lens

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

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### Business Cycle

- Different phases of the cycle offer tactical asset allocation opportunities.
- Puts valuations in context.

### Valuations

- Identify opportunities while maintaining a long-term view.
- Set return expectations.

### Technicals

- Uncover momentum trends and near-term market behavior.

## Business Cycle: Tight labor market extends the cycle

- Leading economic indicators point to contracting manufacturing activity, whereas strong labor markets are supporting consumer spending, the largest component of U.S. GDP.

## Valuations: Global earnings multiples expand above long-term averages

- Equity valuations remain tied to the path of inflation and long-term interest rates, both of which fell rapidly in late 2023. If the earnings growth outlook continues to weaken in 2024, we expect valuations to remain rich.

## Technicals: January performance is not an indicator for the rest of 2024

- The global market rally into year-end was finally broad-based, albeit with thin liquidity, thus it would not be surprising if volatility returns in January. Regardless, longer-term momentum remains positive for global equities as financial conditions have eased materially in recent months.

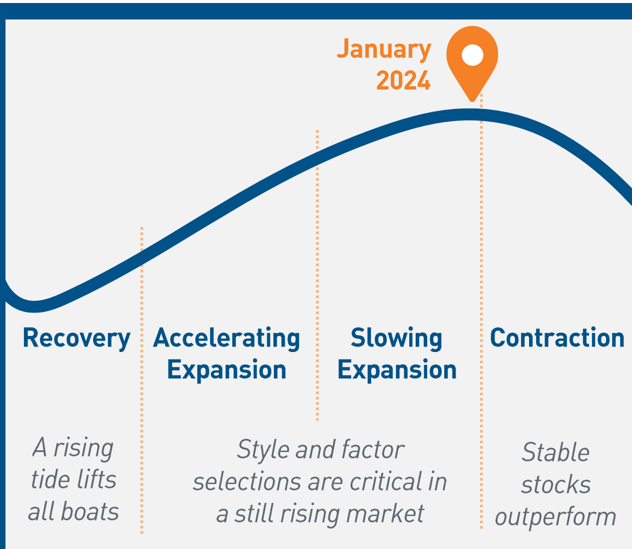
***Scan the QR code using your smartphone's camera app to watch a video in which Dan Brady, PNC's Managing Director of Investment Strategy, provides views through our investment process lens.***

*As of 12/31/2023. Source: PNC*

# Business Cycle Outlook

## Potential Fed Pivot Could Lead to a "Slower for Longer" Cycle

We believe cyclical movements of the business cycle drive markets and impact asset allocation decisions.




**Slowing Expansion Phase:**

- Unemployment falling
- Wages rising
- Financial conditions less accommodative
- Credit tightening
- Confidence peaking
- Economic activity positive, but decelerating
- Profit growth slowing

### Leading indicators still pointing to a mild contraction

- The last six months have seen no change in leading economic indicators, and the easing of financial conditions in recent months takes considerable pressure off concerns of a material, imminent recession.

### Coincident indicators supported by consumer spending

- Strong holiday season spending data indicates consumers remain confident, and supported by a stable labor market.

### Lagging indicators positive but still weakening

- Inflation is a lagging indicator, and a decelerating growth rate is not necessarily positive at this stage in the cycle; it may indicate companies are no longer able to raise prices due to softening demand.

### Conference Board Economic Indicators

| | 1-Month Growth Rate | 6-Month Trend |
|---|---|---|
| Leading | -7.6% | Flat |
| Coincident | 1.7% | Flat |
| Lagging | 1.3% | Weakening |

*As of 12/31/2023. Source: PNC, Bloomberg, L.P.*

# Economic Outlook Dashboard

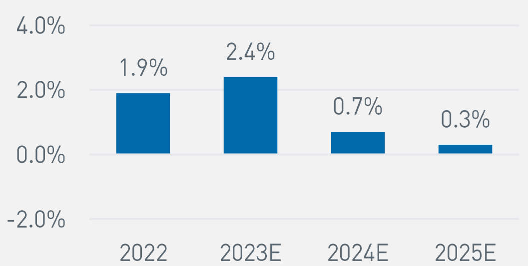
Expectations from PNC Economics

**Easing financial conditions reduces recession risk in 2024:**

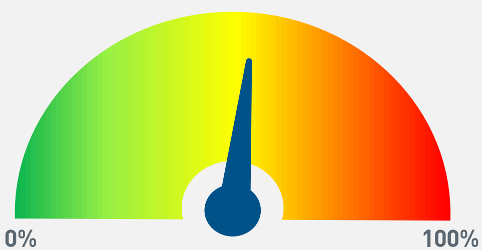
- Labor market remains tight relative to history.
- Higher borrowing costs and elevated inflation remain a risk to the outlook.

### U.S. Output

Real GDP, Annualized Change




### Likelihood of Recession in the next 12 Months

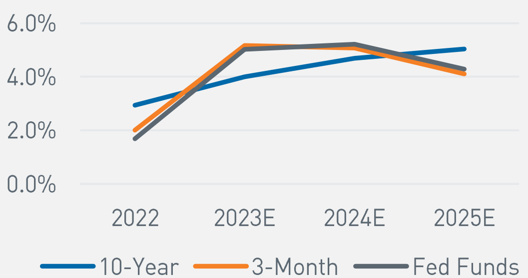



### Consensus Estimates Earnings Growth

| | 2023E | 2024E |
|---|---|---|
| S&P 500 | 0.1% | 11.5% |
| Russell 2000® | -9.3% | 25.1% |
| MSCI World ex USA | 2.2% | 6.2% |
| MSCI Emerging Markets IMI | -9.8% | 19.1% |
| Strategists' Median S&P 500 EPS Estimates | $218 | $231 |
| Bull Case | $230 | $250 |
| Bear Case | $185 | $221 |

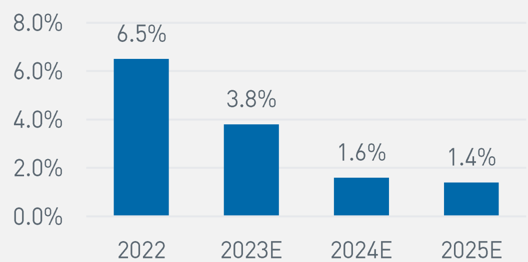
### Interest Rates

10-Year / 3-Month U.S. Treasury Yield




### Inflation

PCE Price Index, Annualized Change




### Unemployment Rate and Payroll

| | Unemployment | Payroll (Mil) |
|---|---|---|
| 2022 | 3.6% | 152.6 |
| 2023E | 3.7% | 156.1 |
| 2024E | 4.4% | 156.4 |
| 2025E | 5.1% | 155.4 |

*As of 12/31/2023. Source: PNC, FactSet®. FactSet® is a registered trademark of FactSet Research Systems, Inc. and its affiliates., Bloomberg L.P.*

# Taking Stock of the Markets

## Executive Summary

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- Key catalysts for the path forward continue to be easing inflation pressures and monetary policy.
- Markets face a number of macro headwinds including a busy global election cycle in 2024.

### U.S. Economy

- Third quarter U.S. GDP growth was revised back down to 4.9% as personal consumption – the largest component of GDP – was revised lower from 3.6% to 3.1%. Government spending was revised higher as the federal deficit remains well above the long-term average.
- The consensus outlook expects GDP to slow rapidly in the coming quarters, and culminate with our view of a slowdown in mid-2024.

### International Economy

- Germany's GDP turned negative in the third quarter as restrictive monetary policy weighed on economic growth.
- China's GDP remains on target with the government's outlook despite an uneven economic reopening; however, the lack of stimulus, property woes and weakening global economic activity is keeping a lid on the pace of recovery.

### Global Monetary and Fiscal Policy

- Most global central banks appear near the end of their hiking cycle. Their path forward will depend on the direction of inflation and economic activity.
- The U.S. Continuing Resolution passed in November, begins to expire on January 19, 2024, and in full on February 2, 2024, opening the possibility for renewed market volatility until a longer-term spending solution is achieved.

### U.S. Corporate Earnings

- Fourth quarter earnings estimates continue to be revised lower as economic data weakens, shaping up for a similar outcome as in the prior quarter where earnings were driven by a concentrated number of mega cap companies.
- Consensus earnings estimates for 2024 remain optimistic in our view, leaving valuations quite rich in the event of a slowdown.

### U.S. Equity Markets

- Domestic equities extended their holiday rally posting their ninth straight week of positive gains. The S&P 500 rose 4.5% in December, while the all-cap Russell 3000® gained 5.3%, as the Federal Reserve (Fed) Chairman Powell all but affirmed policy interest rate hikes were finished.
- What differentiated this month's rally from much of 2023 was the broadening of market leadership, largely due to the decline in long-term interest rates.

### International Equity Markets

- Developed international equities rallied in December as falling inflation increased expectations for rate cuts in 2024 and weakened the U.S. dollar.
- Emerging markets lagged on a relative basis, primarily due to equities in China, which continue to be challenged by a slowing economy and mixed messaging regarding potential stimulus support.

### Fixed Income Markets

- 10-year U.S. Treasury yields declined 45 basis points (bps) during the month and are now 111 bps below the 16-year highs reached in mid-October.
- This dramatic decline over a short period, supported another strong monthly return for the Bloomberg U.S. Aggregate Index, which gained 3.8%, marking its best quarterly performance since 1989.

### Alternative Investments

- Alternatives typically provide value by offering diversification and returns that are uncorrelated with traditional markets.
- We expect valuations to continue to adjust to the higher cost of capital and lower market liquidity, making transactions more attractively priced and current vintage year funds compelling.

*As of 12/31/2023. Source: PNC*

# Thinking Through Potential Scenarios

## Where Do We Go From Here?

| Factors | Base Case: Decelerating Growth | Bear Case: Deep and Long Recession | Bull Case: No Recession and Reacceleration |
|---|---|---|---|
| **Inflation** | **Inflation decelerates at a manageable pace – not a straight line down – as global earnings growth contracts.** | **Stagflation of high inflation and low global employment sinks the economy into a challenging recession.** | **Inflation falls rapidly, as a mid-cycle slowdown turns to a reacceleration of the business cycle.** |
| **Monetary Policy** | Not only are additional rate hikes no longer expected, but the Federal Reserve (Fed) shifts its focus to an opportune time to cut rates and ease monetary policy. | Central banks ease financial conditions too soon, and inflation rebounds higher just as labor markets weaken, which limits the options of monetary policy to stimulate the economy. | Global central banks are able to ease monetary policy as lower inflation has been achieved without dipping into recession. |
| **Geopolitics** | Multiple global wars do not materially impact global markets; U.S. political landscape remains uncertain in a presidential election year. | Multiple global wars potentially lead to higher inflation, in addition to the probability of a longer-than-expected U.S. government shutdown in an election year. | Multiple global wars do not materially impact global markets, a U.S. government shutdown continues to be avoided as investors focus on the election. |
| **Earnings Outlook** | Revisions for late 2023 and early 2024 decline as decelerating inflation remains a headwind to corporate margins. | Revisions for 2024 decline meaningfully as an economic slowdown is not fully reflected in consensus estimates. | A mid-cycle reacceleration leads to positive earnings revisions. |
| **2024 S&P 500 Earnings Growth Rate** | **4% to 7%** | **-5% to 0%** | **8% to 12%** |
| **Trough Forward P/E** | **16x - 18x** | **12x -15x** | **19x - 21x** |
| **Path of Long-Term Interest Rates** | **Volatile and modestly higher** | **Materially lower** | **Volatile and moderately lower** |

*As of 12/31/2023. Source: PNC*

# Investors Overcome Headwinds in 2023

## Markets try to fight uncertainty about what is in store for the year ahead

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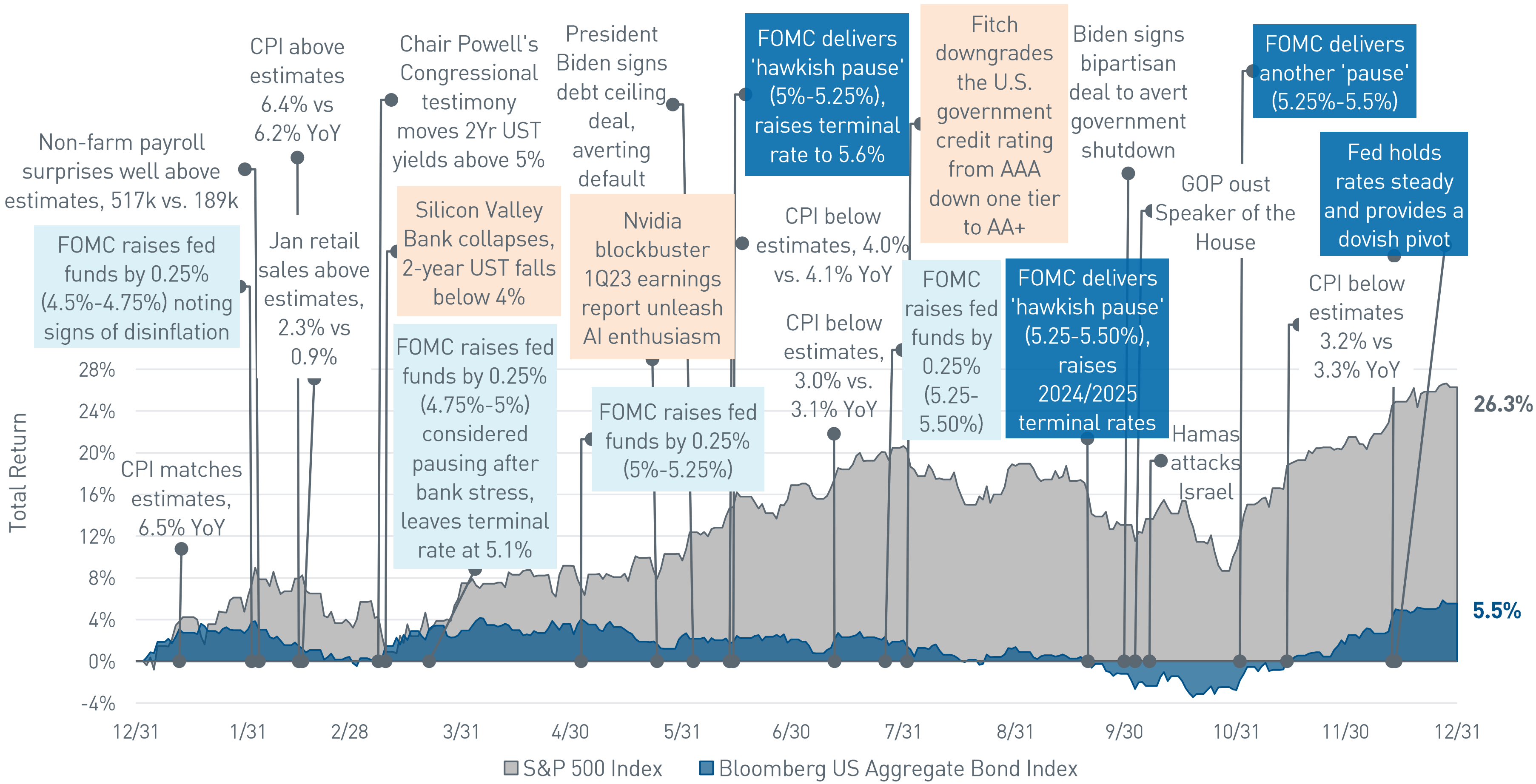
**The U.S. economy has been remarkably resilient with recession expectations delayed. As we begin 2024, uncertainty about where the economy is headed and how it will impact financial markets, remains.**




*As of 12/31/2023. Source: Morningstar, 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.*

# Was 2023 a Really Strong Year for Markets?

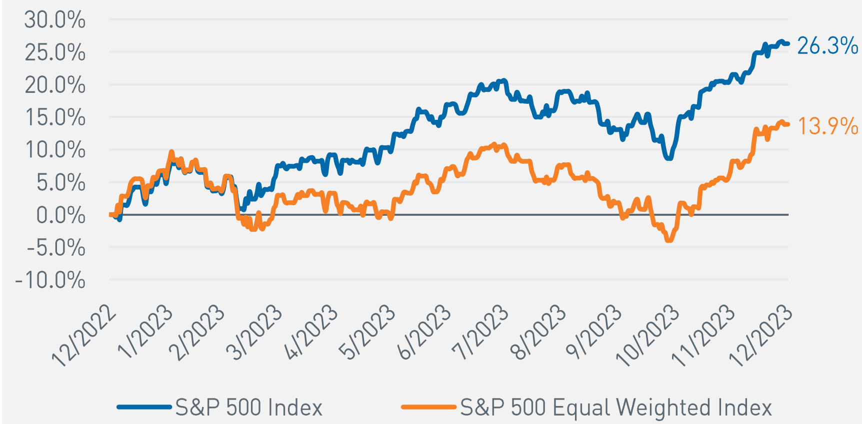
A concentrated number of mega cap stocks are driving performance

## Year-to-date performance of the S&P 500® has been driven by the largest companies

- The divergence in returns between the S&P 500 and its Equal Weight counterpart in 2023 was the widest since 1998. We continue to believe concentrated returns are not a sign of a healthy market, and look to see a broader sustained rally in 2024 in order for momentum to remain positive.
- While mean reversion between the two indices has proven out over time – the Equal Weight Index is only lagging by 15 bps annualized over the past 20 years – return differentials can persist for multiple years before a trend reversal occurs.

## A reacceleration from the “bottom 493” is warranted for a successful 2024

- The largest companies, coined the “Magnificent 7” — Apple Inc.; Microsoft Corp.; Amazon.com, Inc.; Alphabet Inc.; Nvidia Corp.; Tesla Inc. and Meta Platforms, Inc. – have driven earnings growth in 2023, propelling the S&P 500 higher.
- In our view, success in 2024 requires global markets to catch up to those mega cap companies, which even in spite of the strength of returns in 2023 have yet to recover the all-time highs set in November 2021.




**U.S. Equity Market Performance**

| Index | 2023 Total Return |
| --- | --- |
| “Magnificent 7” (weighted average) | 90.6% |
| Nasdaq Composite Index | 44.7% |
| S&P 500 Index | 26.3% |
| S&P 500 Equal Weight | 13.9% |
| Median S&P 500 stock return | 9.7% |

*As of 12/31/2023. Source: FactSet®, FactSet® is a registered trademark of FactSet Research Systems, Inc., and its affiliates.*

# Business Cycle Summary

## The Slowing Expansion is Weakening, Yet Labor Markets Remain Strong

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| | |
|---|---|
| **United States**<br>*Growth remains positive, but is weakening* | Strength in the labor market continues to support the economic backdrop and fuel consumer spending, yet leading economic indicators remain in negative territory and are still pointing towards a contraction. |
| **Developed International**<br>*Macroeconomic headwinds remain a concern* | We remain cautious about the asset class as the Eurozone continues to face numerous macroeconomic challenges, and the Bank of Japan is reaching a monetary policy crossroads. |
| **Emerging Markets (EM)**<br>*Increasing signs that global growth is slowing* | In addition to China, there are signs of a global economic slowdown in EM as five of the six major EM economies we monitor, are reporting manufacturing PMIs in contraction territory. |

*As of 12/31/2023. Source: PNC*

# Gross Domestic Product (GDP)

U.S. economic growth remains positive as the business cycle moderates

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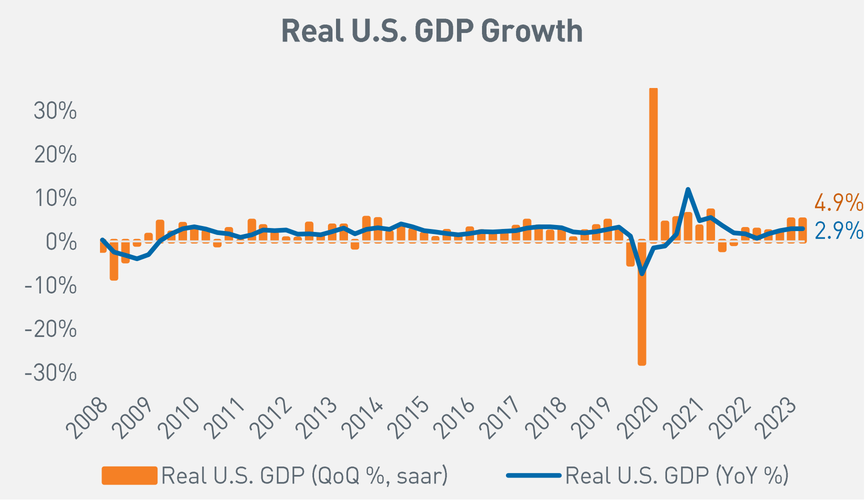
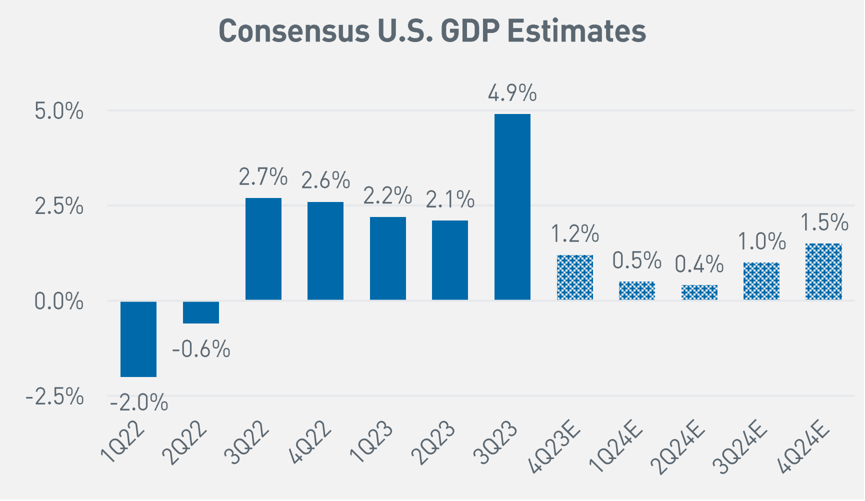
## Real U.S. GDP remains resilient

- Third quarter GDP was revised lower to 4.9% from a 5.2% annualized rate in its final revision. The revision was driven by personal consumption falling from 3.6% to 3.1%, although business investment and government spending increased.
- That said, personal consumption was still the second strongest reading in two years as the service economy remained resilient to elevated inflation and interest rates.

## Consensus estimates expect a soft landing

- We believe tighter credit conditions and the cumulative effects of the Fed's aggressive monetary policy will cool economic activity as growth and inflation slow.




*As of 12/31/2023. Source: Bloomberg L.P., PNC*

# Labor Market

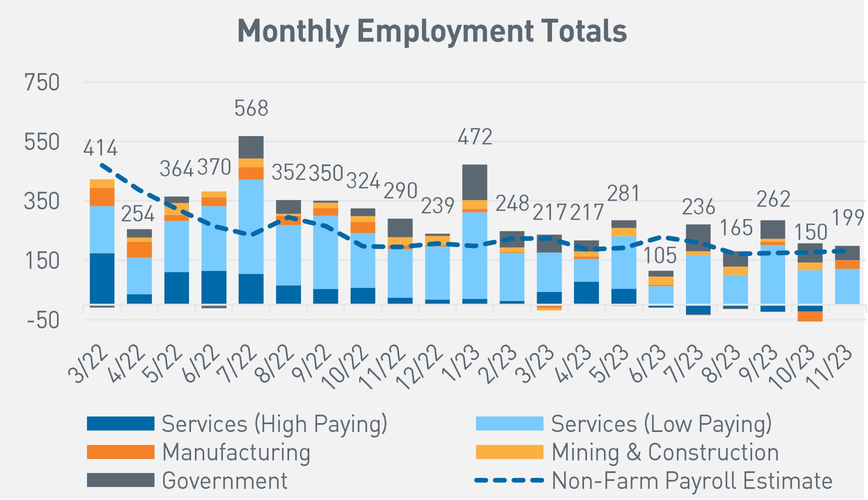
Data is softening, but not yet weakening

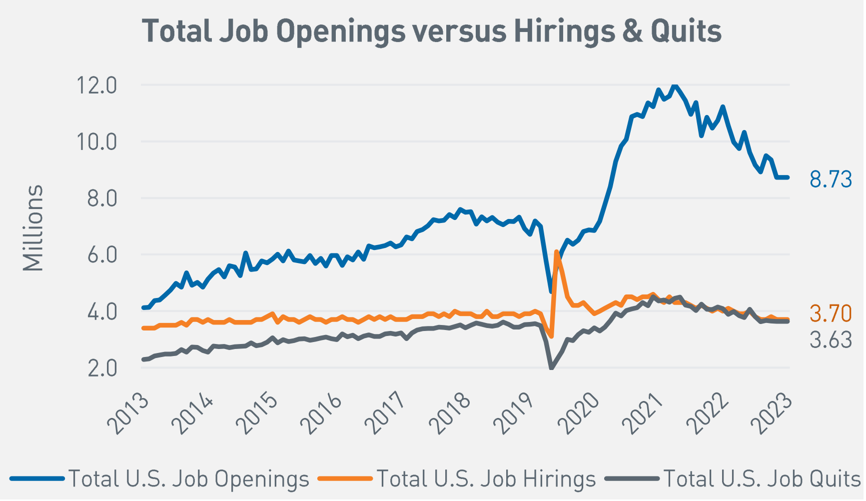
## A resilient labor market fuels consumer spending

- The labor market is beginning to show signs of weakness. Despite the December payroll report showing the unemployment rate fell to 3.7% from 3.9% with an addition of 199,000 net new jobs, the 6-month moving average payroll report has now fallen to 186,000 which is below the pre-pandemic levels.
- Weekly initial jobless claims are rising off the 2023 lows, while continuing claims reached the highest level in two years. We expect further weakening of the labor market to weigh on consumer spending and inflation.

## A tight labor market showing signs of loosening

- The loosening of the labor market has largely manifested in the drop in demand for job openings. Postings remain well off peak levels seen in 2022.
- Additionally, the level of job postings might be overstating the strength of the labor market and the pressure on wages, as hiring and quit totals are falling as companies reduce their workforces.




*As of 12/31/2023. Source: Bloomberg L.P.*

# Equity Market Themes and Outlook

## Equities Move Higher as Central Banks Near the End of their Hiking Cycles

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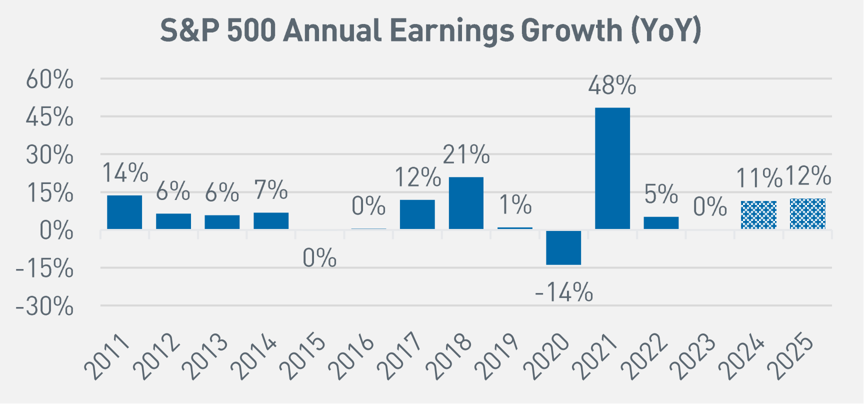
| | |
|---|---|
| **Outlook**<br>*Consensus earnings estimates are too optimistic, as market leadership narrows* | We believe the anticipated economic slowdown is not yet fully reflected in consensus earnings estimates, which still imply positive growth for 2024. |
| **Market Cap**<br>*Sector composition is driving valuation differences across market caps* | Large-cap exposures are performing well relative to small- and mid-cap stocks (SMID), but favorable aspects of SMID include their relative U.S.-centric revenue exposure. |
| **Factors**<br>*Emphasize quality over other factors* | When growth becomes scarce, we prefer quality growth companies with strong balance sheets, low leverage and those expected to grow faster than the overall market. |
| **Geography**<br>*U.S. overweight, emerging market tilt* | The consistency and leadership of U.S. markets continues to support a favorable view relative to other regions. This is not a "domestic bias," but the view that U.S. fundamentals remain strongest at this time. |

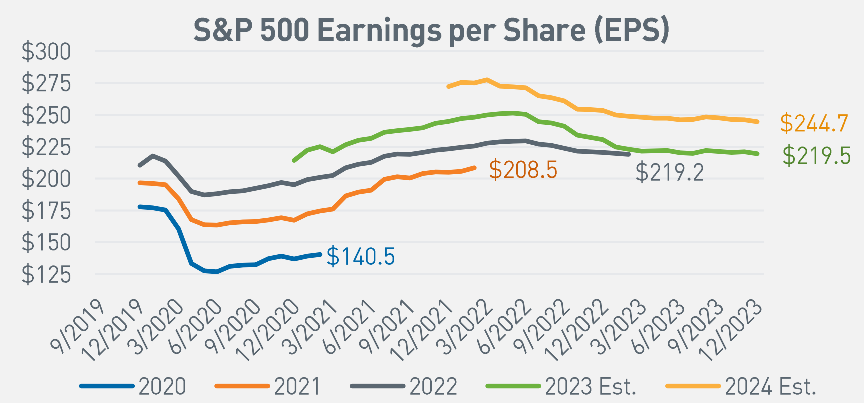
*As of 12/31/2023. Source: PNC*

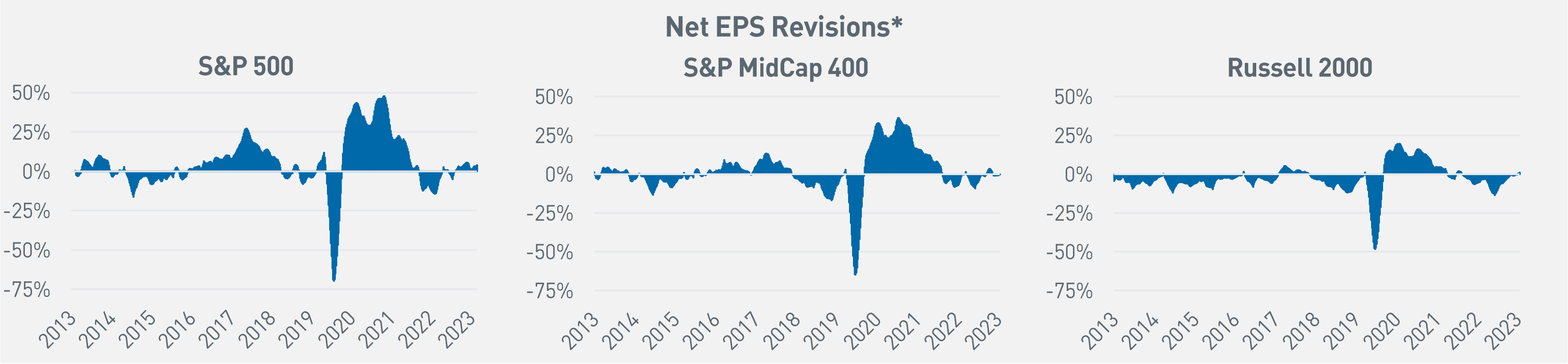
# U.S. Earnings Outlook

## Revisions Trend Lower, Yet 2024 Growth Expectation Remains Positive

With leading economic indicators still pointing toward a contraction, we believe the 2024 earnings growth estimate of 11.5% remains overly optimistic and suggests valuations have only priced in a perfect scenario, and not accounted for alternative risks.



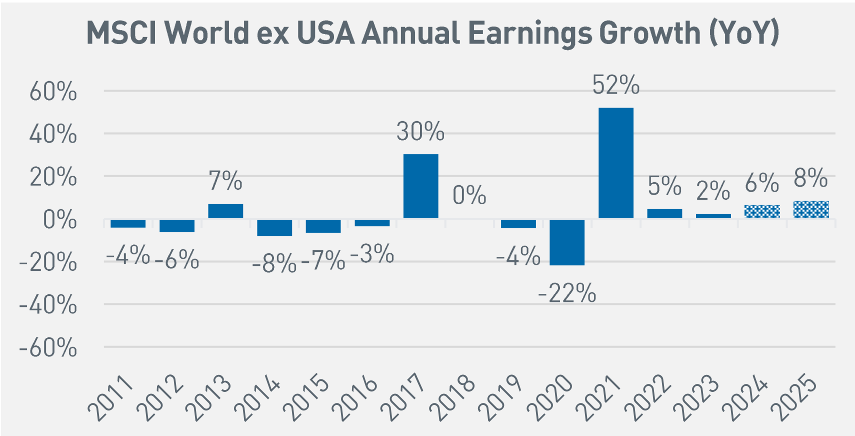

*Three-month moving average of the number of companies upgrading guidance minus those downgrading guidance over the total number of companies revising guidance.

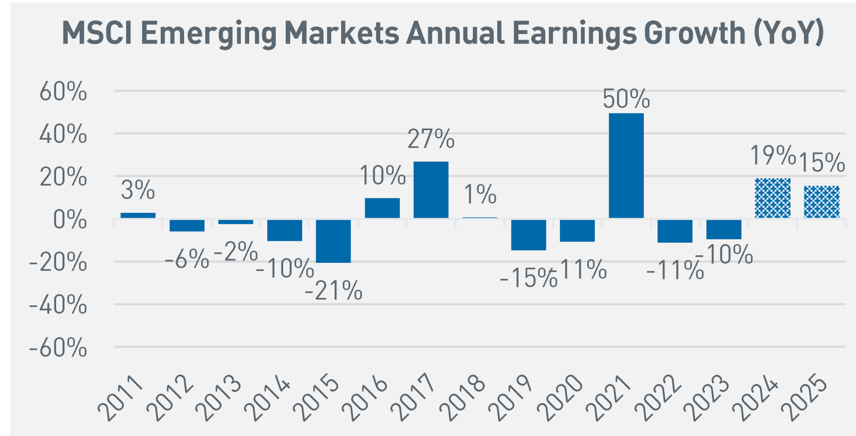
As of 12/31/2023. Source: FactSet®, FactSet® is a registered trademark of FactSet Research Systems, Inc., and its affiliates.

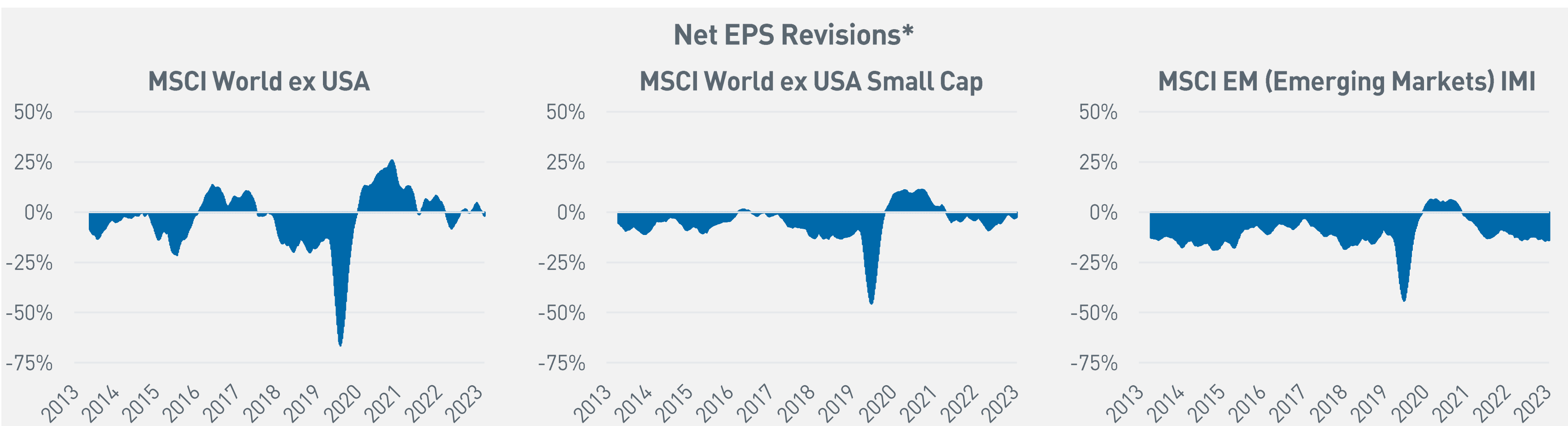
# International Earnings Outlook

## An earnings growth rebound at risk as revisions remain negative

The developed market earnings outlook is positive despite signs of slowing economic growth, whereas the emerging markets growth rate remains at risk of ongoing negative revisions, primarily from China.




**Three-month moving average of the number of companies upgrading guidance minus those downgrading guidance over the total number of companies revising guidance.*

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# Elevated Market Volatility

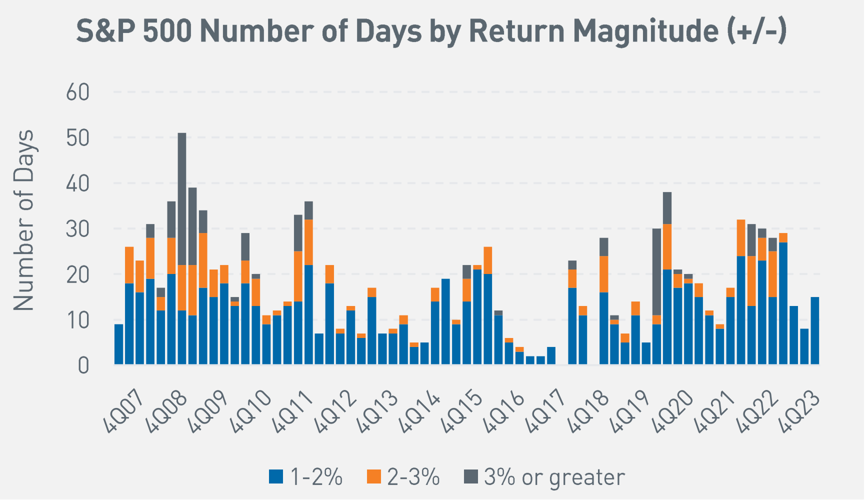
Heightened Volatility Remains Dependent on the Path of Monetary Policy

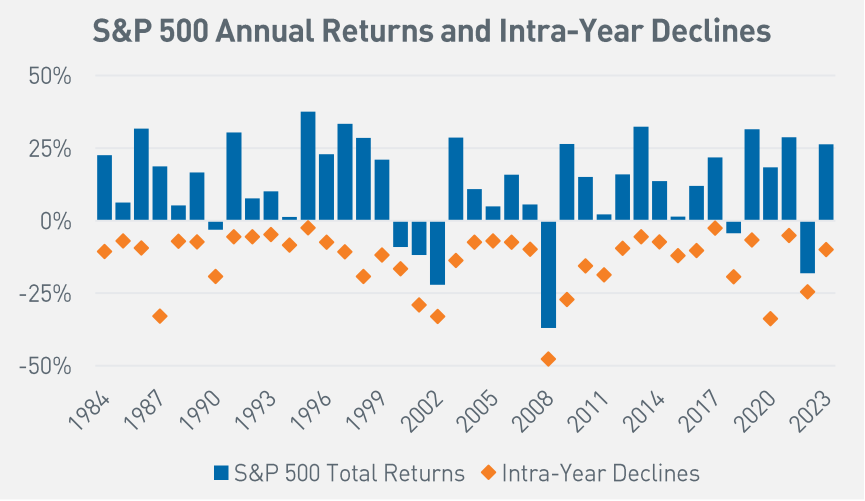
## Market volatility is the rule, not the exception

- The business cycle prior to the pandemic (which ended in February 2020) was characterized by unusually low volatility.
- Over the past few years, we have not seen many large single-day moves. In periods of heightened volatility, it is critical to remain focused on the underlying fundamentals that drive stocks in the long term.

## Pullbacks happen, even in positive returning years

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




*As of 12/31/2023. Source: Bloomberg L.P.*

# Fixed Income Themes and Outlook

## Outlook dependent on future path of inflation and the Fed's hiking cycle

| | |
|---|---|
| **Core Fixed Income**<br>*Neutral duration, increase high-quality core allocation* | Investment grade corporate credit and securitized bonds offer compelling yield that has not been available for nearly 15 years. |
| **U.S. High Yield**<br>*Credit cycle remains tied to earnings cycle* | Debt rollovers face significant interest rate risk starting in 2024, and consensus earnings estimates remain overly optimistic, in our view. |
| **Emerging Market (EM) Debt**<br>*Valuations remain rich as macroeconomic headwinds mount* | EM debt offers an attractive yield pickup relative to core fixed income, however credit spreads appear rich in our view, similar to those of U.S. high yield. |

*As of 12/31/2023. Source: PNC*

# U.S. Corporates

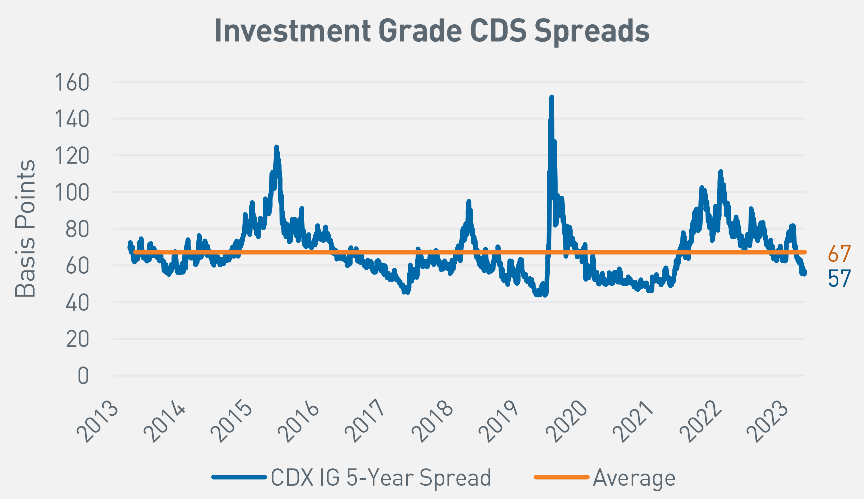
Low spreads point to strength in investment grade credit

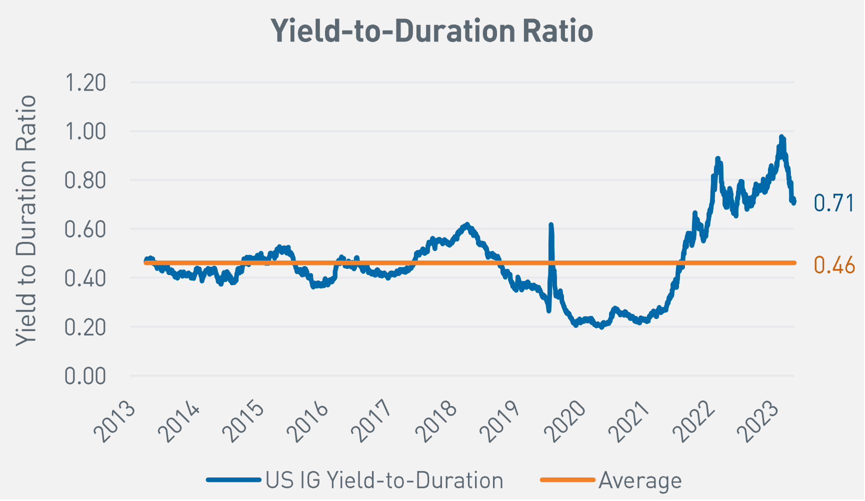
## Credit spreads remain within long-term averages

- Credit default swap (CDS) spreads remain narrow, a characteristic typical of the later innings of a business cycle.
- Despite metrics such as interest coverage and net debt to earnings before interest, taxes, depreciation and amortization clearly weakening as the credit cycle matures, investment grade issuers remain well-positioned should a mild recession take hold.

## Duration risk remains improved

- One valuation method for investment grade credit is the yield-to-duration ratio, as a higher ratio indicates a security is better positioned in a volatile interest rate environment.
- The Bloomberg US Corporate Index's yield-to-duration ratio has fallen alongside interest rates in recent months, however duration risk should remain relatively low at this phase of the business cycle.




*As of 12/31/2023. Source: Bloomberg L.P.*

# Alternatives Themes and Outlook

## Broad Opportunity Set for Long-Term Investors

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| | |
|---|---|
| **Private Investments**<br>*Lower valuations create opportunities in 2024* | We expect valuations to continue to adjust to the higher cost of capital and lower market liquidity, making transactions more attractively priced. |
| **Real Assets**<br>*Can serve as a diversified inflation hedge* | Given the high degree of heterogeneity in real estate, we prefer opportunistic, value-add strategies rather than those focused solely on income generation. |
| **Infrastructure**<br>*Hybrid equity and fixed income-like opportunities* | Private infrastructure offers hybrid equity and fixed income-like characteristics, including cash flows typically indexed to inflation, allowing the asset class to play a key defensive role in portfolios. |
| **Hedge Funds**<br>*Favor volatility and macro strategies* | Select strategies should benefit from the high volatility regime, and while interest rates remain elevated, leverage opportunities may present themselves to help enhance returns. |

*As of 12/31/2023. Source: PNC*

# Broad Opportunity Set Beyond Public Markets

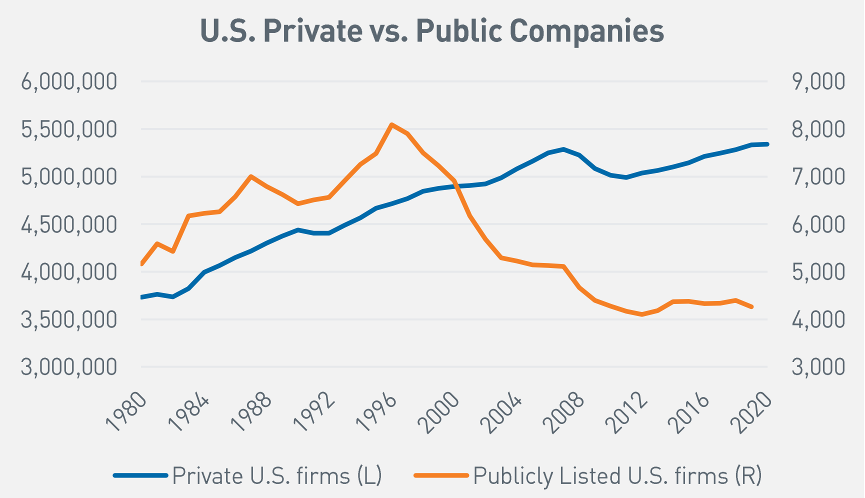
Alternatives provide access to a larger set of private companies

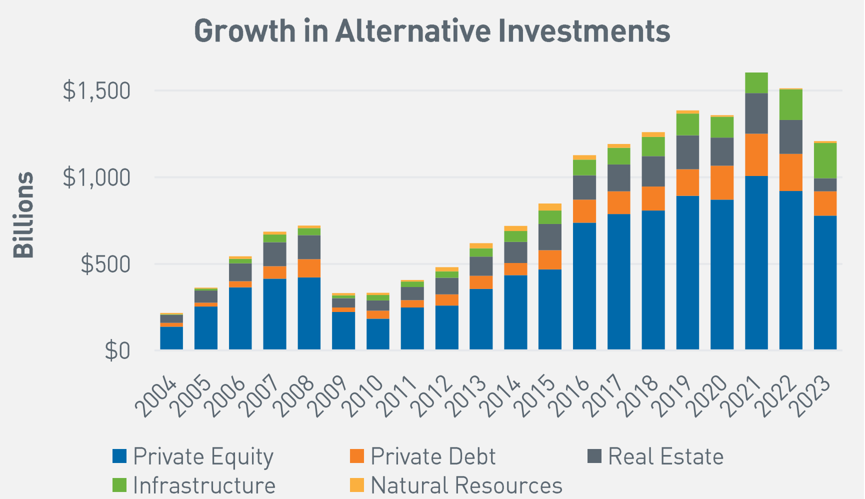
## Number of private versus public companies

- The number of publicly-traded companies in the United States declined by almost 50% between 1996 and 2020. Meanwhile, the number of privately held firms increased to over five million companies.
- In the U.S., there are over 20,000 private companies with annual revenues of over $100 million whereas there are only approximately 3,000 public companies with the same annual revenues.

## Continued growth in alternative investments

- Looking at the year ahead, we expect private debt fundraising to continue to be impacted by higher interest rates and heightened market volatility.
- Despite these ongoing headwinds for private investments, we believe lower valuations could create attractive long-term investment opportunities in vintage year 2024 funds.




*As of 12/31/2023. Source: U.S. Census Bureau, The World Bank*

# Asset Allocation Playbook

## Equities, Fixed Income, Alternatives and Cash


*As of 12/31/2023. Source: PNC*

# Asset Class Performance

## Leadership is Cyclical and Changes with the Business Cycle

After 2022 marked one of the worst years in market history, driven by a number of macro headwinds impacting both stocks and bonds, financial markets rallied in 2023 as investors believed the Fed to be nearing the end of its tightening cycle.

| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|
| Core Bond 5.24 | EM 82.36 | Small-Cap 26.85 | Core Bond 7.84 | EM 18.68 | Small-Cap 38.82 | Real Estate 24.91 | Large Growth 5.52 |
| High Yield -26.16 | High Yield 58.21 | Mid-Cap 26.64 | High Yield 4.98 | Real Estate 18.59 | Mid-Cap 33.50 | Large Growth 14.89 | Large Cap 1.38 |
| Small-Cap -33.79 | Mid-Cap 37.38 | Real Estate 25.93 | Real Estate 4.92 | Mid-Cap 17.88 | Large Growth 32.75 | Large Cap 13.69 | Core Bond 0.55 |
| Large Growth -34.92 | Intl Dev 33.67 | EM 19.90 | Large Growth 4.65 | Large Value 17.68 | Large Cap 32.39 | Large Value 12.36 | Real Estate 0.21 |
| Mid-Cap -36.23 | Large Growth 31.57 | High Yield 15.12 | Large Cap 2.11 | Intl Dev 16.41 | Large Value 31.99 | Mid-Cap 9.77 | Mid-Cap -2.18 |
| Large Cap -37.00 | Real Estate 27.22 | Large Value 15.10 | Large Value -0.48 | Small-Cap 16.35 | Intl Dev 21.02 | Core Bond 5.97 | Intl Dev -3.04 |
| Large Value -39.22 | Small-Cap 27.17 | Large Cap 15.06 | Mid-Cap -1.73 | Large Cap 16.00 | High Yield 7.44 | Small-Cap 4.89 | Large Value -3.13 |
| Real Estate -40.29 | Large Cap 26.46 | Large Growth 15.05 | Small-Cap -4.18 | High Yield 15.81 | Real Estate 1.93 | High Yield 2.45 | Small-Cap -4.41 |
| Intl Dev -43.56 | Large Value 21.18 | Intl Dev 8.95 | Intl Dev -12.21 | Large Growth 14.61 | Core Bond -2.02 | EM -1.79 | High Yield -4.47 |
| EM -53.78 | Core Bond 5.93 | Core Bond 6.54 | EM -19.49 | Core Bond 4.21 | EM -2.20 | Intl Dev -4.32 | EM -13.86 |

| 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|---|
| Small-Cap 21.31 | EM 36.83 | Core Bond 0.01 | Large Value 31.93 | Large Growth 33.47 | Real Estate 39.35 | Large Value -5.22 | Large Growth 30.03 |
| Mid-Cap 20.74 | Large Growth 27.44 | Large Growth -0.01 | Large Cap 31.49 | Small-Cap 19.96 | Large Growth 32.01 | High Yield -11.19 | Large Cap 26.29 |
| Large Value 17.40 | Intl Dev 24.21 | High Yield -2.08 | Large Growth 31.13 | Large Cap 18.40 | Large Cap 28.71 | Core Bond -13.01 | Large Value 22.23 |
| High Yield 17.13 | Large Cap 21.83 | Large Cap -4.38 | Real Estate 27.62 | EM 18.39 | Large Value 24.90 | Mid-Cap -13.06 | Intl Dev 17.94 |
| Large Cap 11.96 | Mid-Cap 16.24 | Real Estate -5.75 | Mid-Cap 26.20 | Mid-Cap 13.66 | Mid-Cap 24.76 | Intl Dev -14.29 | Small-Cap 16.93 |
| EM 9.90 | Large Value 15.36 | Large Value -8.95 | Small-Cap 25.52 | Intl Dev 7.59 | Small-Cap 14.82 | Large Cap -18.11 | Mid-Cap 16.44 |
| Large Growth 6.89 | Small-Cap 14.65 | Small-Cap -11.01 | Intl Dev 22.49 | Core Bond 7.51 | Intl Dev 12.62 | EM -19.83 | High Yield 13.44 |
| Real Estate 6.74 | Real Estate 7.77 | Mid-Cap -11.08 | EM 17.65 | High Yield 7.11 | High Yield 5.28 | Small-Cap -20.44 | EM 11.67 |
| Intl Dev 2.75 | High Yield 7.50 | Intl Dev -14.09 | High Yield 14.32 | Large Value 1.36 | EM -0.28 | Real Estate -26.90 | Real Estate 10.61 |
| Core Bond 2.65 | Core Bond 3.54 | EM -15.05 | Core Bond 8.72 | Real Estate -5.57 | Core Bond -1.54 | Large Growth -29.41 | Core Bond 5.53 |

POSITIVE RETURNS

NEGATIVE RETURNS

**LEGEND**

| | |
|---|---|
| Large Cap | S&P 500® |
| Large Growth | S&P 500 Growth |
| Large Value | S&P 500 Value |
| Mid-Cap | S&P 400® |
| Small-Cap | Russell 2000 ® |
| Intl Dev | MSCI World ex USA |
| EM | MSCI EM |
| Core Bond | Bloomberg US Aggregate |
| High Yield | Bloomberg US Corp High Yield |
| Real Estate | MSCI USA IMI Real Estate 25/50 |

*As of 12/31/2023. Source: Morningstar, PNC. MSCI USA IMI Real Estate 25/50 Index includes the historical results of the MSCI USA IMI Real Estate Index prior to 2017.*
*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 - Equity

## Narrow 2023 Performance Leadership Masks Underlying Weakness

PNC INSTITUTIONAL ASSET MANAGEMENT

| | | Index | Trailing Total Returns 1 Month | QTD | YTD | 1 Year | 3 Years | 5 Years | 10 Years | 15 Years | 20 Years | PNC Capital Market Projections 10 Year Forecast (2024-33) Return | Volatility |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| U.S. EQUITY | **U.S. Equity** | **Russell 3000** | **5.3%** | **12.1%** | **26.0%** | **26.0%** | **8.5%** | **15.2%** | **11.5%** | **13.8%** | **9.7%** | | |
| | LCC | S&P 500 | 4.5% | 11.7% | 26.3% | 26.3% | 10.0% | 15.7% | 12.0% | 14.0% | 9.7% | 8.30% | 16.90% |
| | LCG | S&P 500 Growth | 3.7% | 10.1% | 30.0% | 30.0% | 6.6% | 16.2% | 13.4% | 15.3% | 10.5% | 8.45% | 17.30% |
| | LCV | S&P 500 Value | 5.5% | 13.6% | 22.2% | 22.2% | 13.1% | 14.1% | 10.0% | 12.2% | 8.5% | 8.15% | 17.80% |
| | Sector | S&P 500 Communication Services | 4.8% | 11.0% | 55.8% | 55.8% | 4.4% | 13.3% | 7.8% | 9.4% | 8.0% | | |
| | Sector | S&P 500 Consumer Discretionary | 6.1% | 12.4% | 42.4% | 42.4% | 3.7% | 13.7% | 11.7% | 16.8% | 10.6% | | |
| | Sector | S&P 500 Consumer Staples | 2.7% | 5.5% | 0.5% | 0.5% | 5.8% | 10.9% | 8.5% | 10.9% | 9.2% | | |
| | Sector | S&P 500 Energy | 0.0% | -6.9% | -1.3% | -1.3% | 36.2% | 13.4% | 3.5% | 6.7% | 8.3% | | |
| | Sector | S&P 500 Financials | 5.4% | 14.0% | 12.1% | 12.1% | 10.7% | 12.0% | 10.0% | 11.3% | 4.8% | | |
| | Sector | S&P 500 Health Care | 4.3% | 6.4% | 2.1% | 2.1% | 8.1% | 11.6% | 11.4% | 13.6% | 9.8% | | |
| | Sector | S&P 500 Industrials | 7.0% | 13.1% | 18.1% | 18.1% | 10.6% | 14.2% | 10.0% | 13.2% | 9.3% | | |
| | Sector | S&P 500 Information Technology | 3.8% | 17.2% | 57.8% | 57.8% | 15.1% | 26.9% | 20.8% | 21.2% | 13.8% | | |
| | Sector | S&P 500 Materials | 4.6% | 9.7% | 12.5% | 12.5% | 7.9% | 13.6% | 8.6% | 11.9% | 8.4% | | |
| | Sector | S&P 500 Real Estate | 8.7% | 18.8% | 12.4% | 12.4% | 6.7% | 8.9% | 8.9% | 11.8% | 8.6% | | |
| | Sector | S&P 500 Utilities | 1.9% | 8.6% | -7.1% | -7.1% | 3.6% | 7.1% | 8.9% | 9.3% | 9.1% | | |
| | MCC | S&P 400 | 8.7% | 11.7% | 16.4% | 16.4% | 8.1% | 12.6% | 9.3% | 13.3% | 9.8% | 9.00% | 20.80% |
| | MCG | S&P 400 Growth | 7.4% | 9.9% | 17.5% | 17.5% | 4.2% | 11.9% | 9.0% | 13.6% | 9.9% | 8.95% | 20.20% |
| | MCV | S&P 400 Value | 10.2% | 13.6% | 15.4% | 15.4% | 12.0% | 12.9% | 9.2% | 12.8% | 9.6% | 9.05% | 22.30% |
| | SCC | Russell 2000 | 12.2% | 14.0% | 16.9% | 16.9% | 2.2% | 10.0% | 7.2% | 11.3% | 8.1% | 9.40% | 22.00% |
| | SCG | Russell 2000 Growth | 12.0% | 12.7% | 18.7% | 18.7% | -3.5% | 9.2% | 7.2% | 12.1% | 8.3% | 9.45% | 23.90% |
| | SCV | Russell 2000 Value | 12.4% | 15.3% | 14.6% | 14.6% | 7.9% | 10.0% | 6.8% | 10.3% | 7.7% | 9.00% | 23.70% |
| | REITs | MSCI USA IMI REAL ESTATE 25-50 | 9.2% | 17.8% | 10.6% | 10.6% | 4.1% | 6.3% | -- | -- | -- | 8.00% | 23.60% |
| NON-U.S. EQUITY | **Non-U.S. Equity** | **MSCI ACWI Ex USA IMI** | **5.2%** | **9.8%** | **15.6%** | **15.6%** | **1.5%** | **7.2%** | **4.0%** | **7.0%** | **5.9%** | | |
| | ILCC | MSCI World ex USA | 5.5% | 10.5% | 17.9% | 17.9% | 4.4% | 8.5% | 4.3% | 7.0% | 5.7% | 8.80% | 18.80% |
| | ILCG | MSCI World Ex USA Growth | 5.7% | 12.5% | 17.5% | 17.5% | 0.4% | 8.9% | 5.1% | 7.5% | 6.0% | 8.90% | 18.30% |
| | ILCV | MSCI World Ex USA Value | 5.2% | 8.6% | 18.5% | 18.5% | 8.2% | 7.5% | 3.3% | 6.3% | 5.2% | 8.70% | 20.20% |
| | ISCC | MSCI World Ex USA Small Cap | 7.2% | 10.6% | 12.6% | 12.6% | -0.2% | 7.1% | 4.6% | 9.0% | 6.9% | 9.30% | 21.40% |
| | ISCG | MSCI World Ex USA Small Cap Growth | 7.3% | 11.2% | 10.6% | 10.6% | -4.2% | 6.7% | 4.9% | 9.2% | 6.9% | 9.50% | 21.40% |
| | ISCV | MSCI World Ex USA Small Cap Value | 7.0% | 10.0% | 14.7% | 14.7% | 3.8% | 7.1% | 4.2% | 8.8% | 7.2% | 9.10% | 21.60% |
| | EM | MSCI Emerging Markets IMI | 4.0% | 8.0% | 11.7% | 11.7% | -3.7% | 4.5% | 3.0% | 7.0% | 7.1% | 9.80% | 24.60% |
| | **Global Equity** | **MSCI All Country** | **4.8%** | **11.0%** | **22.2%** | **22.2%** | **5.7%** | **11.7%** | **7.9%** | **10.2%** | **7.5%** | | |
| | INFRA | S&P Global Infrastructure | 4.2% | 10.7% | 5.8% | 5.8% | 5.2% | 6.5% | 4.8% | 6.6% | 7.1% | 8.50% | 17.60% |

*As of 12/31/2023. Source: Morningstar, Inc., FactSet ®*

# Index Total Returns – Fixed Income and Alternatives

Elevated interest rate volatility impacts returns and valuations

| | | Index | Trailing Total Returns | | | | | | | | | PNC Capital Market Projections 10 Year Forecast (2024-33) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 Month | QTD | YTD | 1 Year | 3 Years | 5 Years | 10 Years | 15 Years | 20 Years | Return | Volatility |
| FIXED INCOME | MUNI | Bloomberg Municipal Bond | 2.3% | 7.9% | 6.4% | 6.4% | -0.4% | 2.3% | 3.0% | 4.0% | 3.7% | 3.20% | 4.95% |
| | SHORT MUNI | Bloomberg Municipal 1-3 Year | 0.7% | 2.7% | 3.3% | 3.3% | 0.5% | 1.3% | 1.1% | 1.4% | 1.8% | 2.40% | 1.40% |
| | **CORE** | **Bloomberg US Aggregate** | **3.8%** | **6.8%** | **5.5%** | **5.5%** | **-3.3%** | **1.1%** | **1.8%** | **2.7%** | **3.2%** | **4.50%** | **4.30%** |
| | SHORT | Bloomberg US Aggregate 1-3 Year | 1.2% | 2.7% | 4.6% | 4.6% | 0.1% | 1.5% | 1.3% | 1.6% | 2.1% | 3.70% | 1.45% |
| | INTERM | Bloomberg US Govt/Credit Intermediate | 2.3% | 4.6% | 5.2% | 5.2% | -1.6% | 1.6% | 1.7% | 2.5% | 2.9% | 4.20% | 3.40% |
| | LONG | Bloomberg US Govt/Credit Long | 7.9% | 13.2% | 7.1% | 7.1% | -8.7% | 1.1% | 3.2% | 4.3% | 4.8% | 5.80% | 11.10% |
| | TIPS | Bloomberg US Treasury US TIPS | 2.7% | 4.7% | 3.9% | 3.9% | -1.0% | 3.2% | 2.4% | 3.5% | 3.6% | 4.90% | 6.50% |
| | BILLS | Bloomberg US Treasury Bills 1-3 Month | 0.5% | 1.4% | 5.1% | 5.1% | 2.2% | 1.9% | 1.2% | 0.8% | 1.4% | 3.50% | 0.50% |
| | HY | Bloomberg US Corporate High Yield | 3.7% | 7.2% | 13.4% | 13.4% | 2.0% | 5.4% | 4.6% | 9.2% | 6.6% | 6.30% | 10.50% |
| | LLOAN | Morningstar LSTA U.S. Leveraged Loan | 1.6% | 2.9% | 13.3% | 13.3% | 5.8% | 5.8% | 4.4% | 7.6% | 4.8% | 4.90% | 7.75% |
| | IBND | Bloomberg Global Aggregate | 4.2% | 8.1% | 5.7% | 5.7% | -5.5% | -0.3% | 0.4% | 1.5% | 2.4% | 5.50% | 8.80% |
| | EMD | Bloomberg EM USD Aggregate | 4.2% | 8.1% | 9.1% | 9.1% | -3.1% | 1.8% | 3.0% | 6.2% | 5.7% | 6.30% | 9.60% |
| ALTERNATIVES | Hedge Funds | HFRX Global Hedge Fund (USD) | 1.4% | 1.7% | 3.1% | 3.1% | 0.7% | 3.5% | 1.4% | 2.2% | 1.2% | 5.60% | 7.00% |
| | Equity Hedge | HFRX Equity Hedge | 1.6% | 3.6% | 6.9% | 6.9% | 5.1% | 6.1% | 2.9% | 2.9% | 1.6% | | |
| | Event Driven | HFRX Event Driven | 1.1% | 1.3% | 0.4% | 0.4% | -2.2% | 2.3% | 0.4% | 2.4% | 1.7% | | |
| | Macro-CTA | HFRX Macro | 0.4% | -1.1% | -1.3% | -1.3% | 0.5% | 2.1% | 1.0% | -0.6% | 0.6% | | |
| | Relative Value | HFRX Relative Value Arbitrage | 2.1% | 1.9% | 4.7% | 4.7% | -1.0% | 2.3% | 0.8% | 3.4% | 1.0% | | |
| | Private Equity | Burgiss Global Private Equity ex-Venture | -- | -0.1% | 4.9% | 8.3% | 16.6% | 15.2% | 14.6% | 12.8% | 15.0% | 10.65% | 21.90% |
| | Private Debt | Burgiss Global Private Debt | -- | 2.1% | 6.8% | 10.1% | 10.9% | 7.6% | 7.9% | 8.6% | 10.0% | 7.70% | 15.00% |
| | Private RE | Burgiss Global Private Real Estate | -- | -2.4% | -3.9% | -4.5% | 8.9% | 6.4% | 8.6% | 4.0% | 7.4% | 8.30% | 12.70% |
| | Commodities | Bloomberg Commodity | -2.7% | -4.6% | -7.9% | -7.9% | 10.8% | 7.2% | -1.1% | -0.2% | -0.1% | 6.20% | 17.50% |

*Private alternative investments are subject to reporting lag; data is available as of most recent reported data; Burgiss Global Private Equity ex-Venture Capital Funds Index, Burgiss Global Private Debt Funds Index, and Burgiss Global Real Estate Funds Index as of 9/30/2023.*

*As of 12/31/2023. Source: Morningstar, Inc., The Burgiss Group, LLC, FactSet ®*

# Key Takeaways in Periods of Market Volatility

## The Most Important Point: Stay Invested

| | |
|---|---|
| **Consider the timeline** | Pullbacks are a healthy, normal part of long-term investing. |
| **Market volatility is the rule, not the exception** | In periods of heightened volatility, it is critical to remain focused on the underlying fundamentals that drive stocks in the long term. |
| **Occasional pullbacks are normal** | Even in years of positive performance, intra-year pullbacks can be sizeable, thus it is important to distinguish between pullbacks in different phases of the cycle. |
| **Stay diversified and invested** | The interaction effect of multi-asset portfolios adds value in times of stress, so consider using volatility to your advantage. |

*As of 12/31/2023. Source: PNC*

# Capital Market Assumptions: Methodology

## Methodology & Key Assumptions

Results in this report incorporate PNC's Capital Market Assumptions (CMA) for calendar year 2024. These assumptions represent PNC Bank'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-Litterman[1]. 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** — At the time we performed our 2023 CMA analysis (August 31, 2022), the yield on the 10-year UST was above 4.00%, which we used as an approximation for the risk-free rate. We believe this is a reasonable expectation as the Fed normalizes the interest rate environment, likely starting in 2024.

**Inflation** — PNC Economics assumes the Fed will achieve its inflation targets over the longer term, as measured by the Personal Consumption Expenditure Price Index (PCE)[2], which converges to 2.0%, and the Consumer Price Index (CPI)[3], which converges to 2.25%.

**U.S. Dollar** — We have assumed the Fed's nominal Trade-Weighted U.S. Dollar Index[4] remains flat over the forecast horizon. Given the significant interest rate differentials around the globe, we expect the dollar to largely maintain its current position of relative strength against most other major currencies.

**Cash and Cash Equivalents** — We use the 3-month Treasury bill (T-bill) as our proxy for cash, despite it being subject to inflation and interest rate risk. Although T-bills typically do not generate positive real returns (i.e., inflation-adjusted), 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.

*[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 PCE measure is the component statistic for consumption in GDP collected by the U.S. Bureau of Economic Analysis. It consists of the actual and imputed expenditures of households and includes data pertaining to durable and nondurable goods and services.*

*[3] 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 Bureau of Economic Analysis and Statistics of a country on a monthly and annual basis.*

*[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 yearly rather than on an ad-hoc basis.*

# Capital Market Assumptions: Key Assumptions

## Methodology & Key Assumptions

**Currency Impacts** — International equities generally entail currency exposure, which potentially adds volatility for U.S. investors. 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 is all 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, some will likely have positive returns in local currency terms, while others will be negative. In theory, this counterbalancing effect should result in currency exposures netting themselves out over time. In addition, currency returns are largely uncorrelated (or at least not strongly positively correlated) 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 to us 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.

**Volatility** — Our volatility assumptions are primarily driven by a historical blend of both turbulent and quiet market periods, defined within the Windham Portfolio Advisor technology platform as the 30% most statistically unusual observations, which are then classified as turbulent. 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 has been consistently implemented in our CMA process.

The volatility backdrop over the last five years has increased, even with declines in 2023 relative to 2022. As a result, we expect an increase in overall volatility for the forecasted 10-year horizon. Persistently higher volatility has developed into a "new normal," brought on, in part, by technological enhancements to financial markets overall. However, the volatility backdrop is not significant enough, in our view, to shift our split between quiet and turbulent periods, given we are forecasting a 10-year horizon.

*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. Source: PNC*

# Capital Market Assumptions: 10-Year Forecast

2024-2033

PNC INSTITUTIONAL ASSET MANAGEMENT

| Asset Class | Index | Projected Annual Return | Projected Annual Volatility[5] |
|---|---|---|---|
| **U.S. EQUITY** | | | |
| US Large Cap – Growth | S&P 500 Growth | 8.45% | 17.30% |
| US Large Cap – Core | S&P 500 | 8.30% | 16.90% |
| US Large Cap – Value | S&P 500 Value | 8.15% | 17.80% |
| US Mid Cap – Growth | S&P Mid Cap 400 Growth | 8.95% | 20.20% |
| US Mid Cap – Core | S&P Mid Cap 400 | 9.00% | 20.80% |
| US Mid Cap – Value | S&P Mid Cap 400 Value | 9.05% | 22.30% |
| US Small Cap – Growth | Russell 2000 Growth | 9.45% | 23.90% |
| US Small Cap – Core | Russell 2000 | 9.40% | 22.00% |
| US Small Cap - Value | Russell 2000 Value | 9.00% | 23.70% |
| Real Estate Investment Trusts | MSCI USA IMI Real Estate 25-50 | 9.80% | 23.60% |
| **INTERNATIONAL EQUITY** | | | |
| Int'l Large/Mid – Growth | MSCI World ex USA Growth | 8.90% | 18.30% |
| Int'l Large/Mid – Core | MSCI World ex USA | 8.80% | 18.80% |
| Int'l Large/Mid – Value | MSCI World ex USA Value | 8.70% | 20.20% |
| Int'l Small – Growth | MSCI World ex USA Small Cap Growth | 9.50% | 21.40% |
| Int'l Small – Core | MSCI World ex USA Small Cap | 9.30% | 21.40% |
| Int'l Small – Value | MSCI World ex USA Small Cap Value | 9.10% | 21.60% |
| Emerging Markets | MSCI Emerging Markets IMI | 9.80% | 24.60% |

| Asset Class | Index | Projected Annual Return | Projected Annual Volatility[5] |
|---|---|---|---|
| **FIXED INCOME** | | | |
| Municipal Short-Term | Bloomberg Municipal Bond (1-3 Y) | 3.70% | 1.40% |
| Municipal | Bloomberg Municipal Bond | 4.50% | 4.95% |
| Core Short-Term | Bloomberg US Aggregate (1-3 Y) | 3.70% | 1.45% |
| Core | Bloomberg US Aggregate | 4.50% | 4.30% |
| Taxable Intermediate | Bloomberg US Government/Corporate Intermediate | 4.20% | 3.40% |
| Taxable Long | Bloomberg US Government/Corporate Long | 5.80% | 11.10% |
| U.S. Leveraged Loans | Morningstar LSTA U.S. Leveraged Loan | 4.90% | 7.75% |
| U.S. High Yield | Bloomberg US Corporate High Yield | 6.30% | 10.50% |
| Int'l Developed Markets | Bloomberg Global Aggregate Ex-US | 5.50% | 8.80% |
| Emerging Markets | Bloomberg Emerging Markets USD Aggregate | 6.30% | 9.60% |
| Inflation-Linked Bonds | Bloomberg US Treasury TIPS | 4.90% | 6.50% |
| **ALTERNATIVES** | | | |
| Private Equity | Burgiss Global Private Equity ex-Venture Capital[6] | 10.65% | 21.90% |
| Private Debt | Burgiss Global Private Debt[6] | 7.70% | 15.00% |
| Private Real Estate | Burgiss Global Real Estate[6] | 8.30% | 12.70% |
| Infrastructure | S&P Global Infrastructure Index | 8.50% | 17.60% |
| Commodities | Bloomberg Commodity Index | 6.20% | 17.50% |
| Hedge Funds | HFRI Fund of Funds Composite Index | 5.60% | 7.00% |

*[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.*

*[6] The Private Equity, Private Debt, and Private Real Estate indices have been de-smoothed and the resulting index returns generally tracks the return patterns of the original index, but with greater volatility.*

*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. Source: PNC*

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# Thank you for your business.

## How can we better serve your needs?

PNC INSTITUTIONAL ASSET MANAGEMENT

# Appendix

| ONLINE ACCOUNT ACCESS | REPORTING CAPABILITIES |
|---|---|
| • Access from any device<br>• Customized access for each user<br>• Dedicated technical support<br>• Messaging capabilities<br>• Document retrieval for statements, investment policy statement, fee invoices and more. | • Customizable reporting of key account information<br>• Benefit payment inquiry access and reporting<br>• Paperless statements for authorized persons |
| **OPERATIONAL CAPABILITIES** | **SECURITY FEATURES** |
| • Ability to initiate and manage cash processing<br>• Ability to initiate and manage benefit payments<br>• Ability to process mutual fund, equity, and fixed income trades | • Unique login credential with strict password parameters<br>• Each login requires additional one-time passcode be sent to email, phone (voice) or text<br>• Customizable approval flows for your organization |

**DECEMBER 2022 SYSTEM ENHANCEMENTS**

- 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.

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