HFMA Wisconsin Spring Conference - Global Economic and Markets Outlook

May 2024

Presenter – Matthew Rice, CFA, CAIA

- Matt Rice, CFA, CAIA, returns to First Business Bank as Chief Investment Officer with a wealth of knowledge and more than two decades of fostering close-knit, effective financial teams that find creative solutions to complex problems.

- Originally from Middleton, WI, Matt began his career at First Business Bank in the late 1990s. Most recently, Matt served for twenty years as Managing Partner and Chief Investment Officer at Fiducient Advisors, a $300 billion investment advisory firm based in Chicago. He is the author of two published books: "Nonprofit Asset Management" and "The Practical Guide to Managing Nonprofit Assets," both published by John Wiley & Sons.

- Matt holds a bachelor's degree in economics from Northwestern University. He is a CFA Charterholder, a member of the CFA Society of Chicago, and is a Chartered Alternative Investment Analyst (CAIA). In his leisure time, Matt enjoys reading, writing, spending time with his family, and watching college and professional football.

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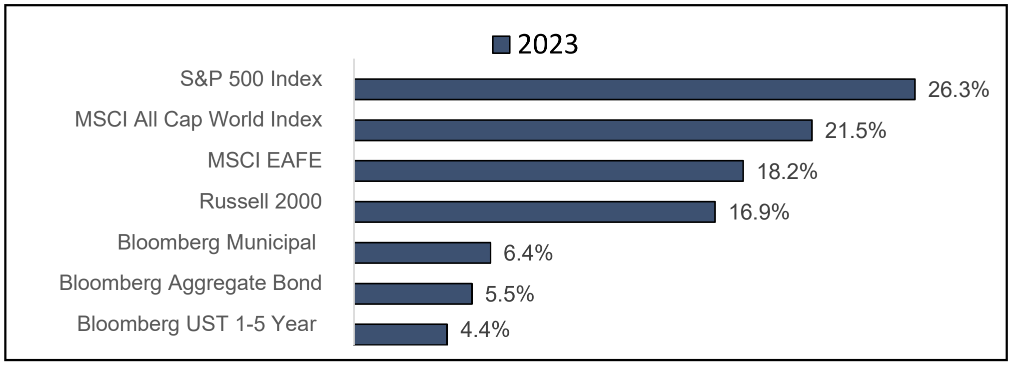
Macroeconomic Backdrop

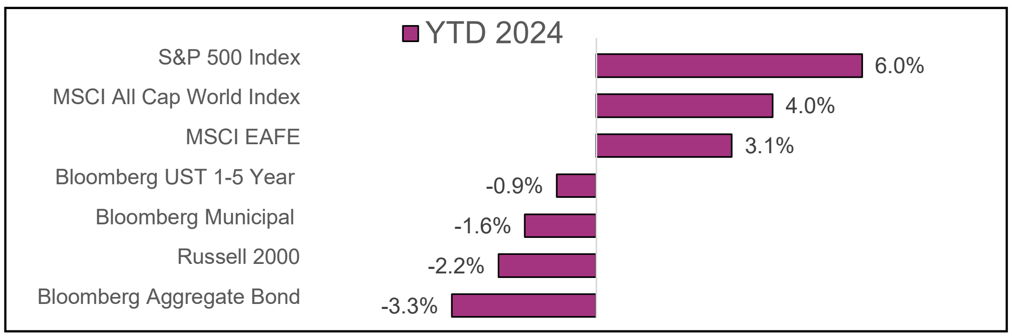
Macro Backdrop

- Macro backdrop remains resilient despite higher rates
- Recession worries receding
- Corporate profits remain solid
- Evolving narrative around Fed Rate cuts

Market Environment

CAPITAL MARKET RETURNS
Through 04/30/2024





Source: Morningstar Direct

KEY ECONOMIC RELEASES

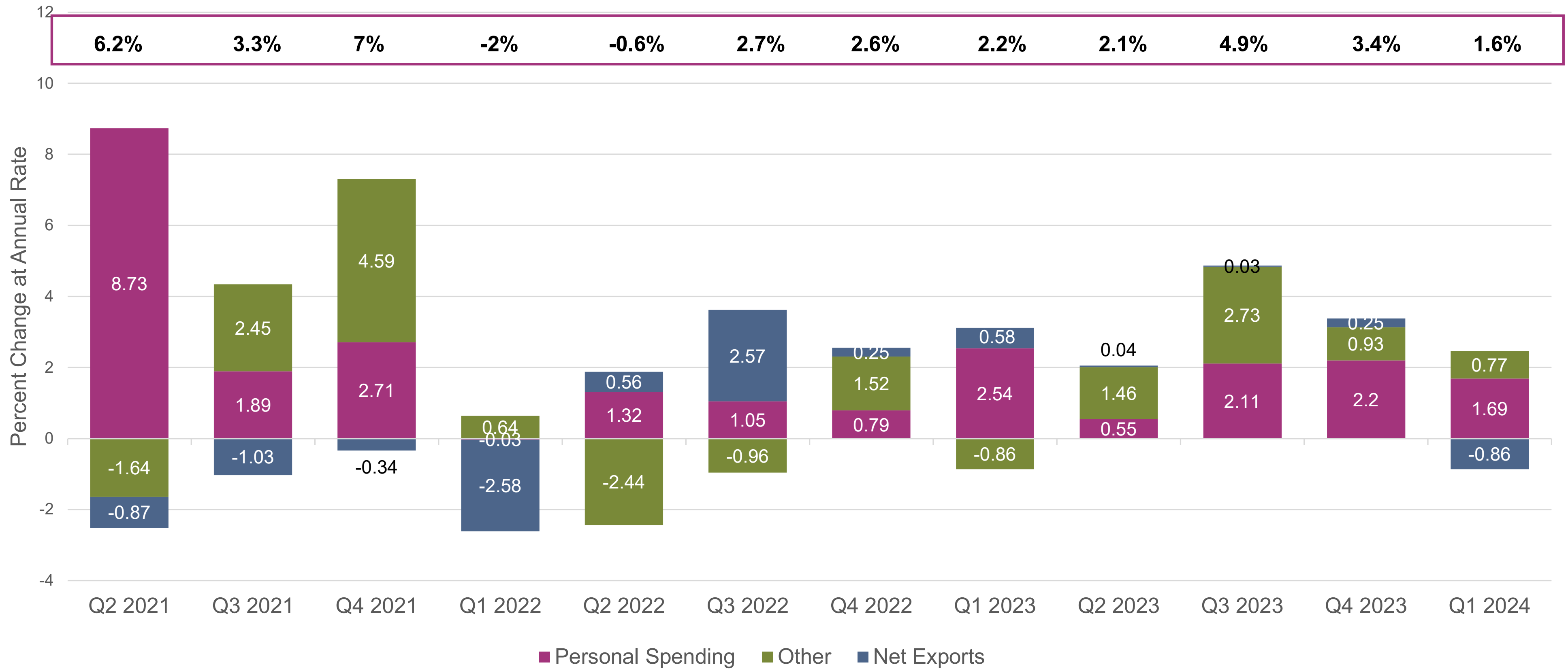
- Real GDP slowed to 1.6% annualized in the first quarter, with continued consumer spending and fixed investment partially offset by a decrease in inventories and increased imports.
- The annual inflation rate in the U.S. is 3.5% year-over-year as of March. Producer prices were up .2% in March, up 2.1% for the year.
- FOMC has held rates steady at a target of 5.25-5.5% for six straight meetings.
- The University of Michigan consumer sentiment index surged in January but settled slightly lower in the following months.
- The pace of job growth slowed in April but remains firm at 175,000 net new jobs.

MARKET OVERVIEW

- Financial markets posted a strong finish in 2023 and a solid start to the new year despite an outlook complicated by higher prices, higher interest rates, and ongoing global conflict.
- Bond yields have drifted higher, and the yield curve has flattened, as investors anticipate a slower pace of rate decreases due to persistent inflation, strong growth, and a strong job market.

GDP Growth

Contributions to Percent Change in Real GDP

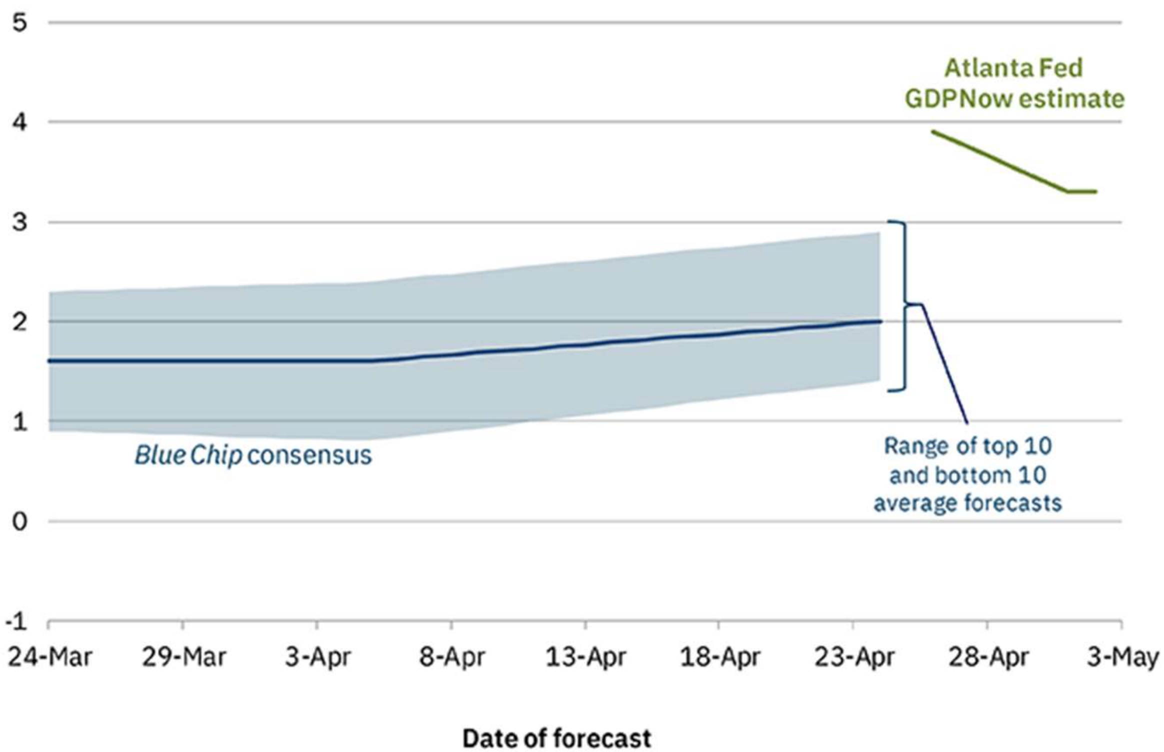


“Other” category includes residential and non-residential spending, inventory adjustments, and government spending.

Source: U.S. Bureau of Economic Analysis

GDPNow (Federal Reserve Bank of Atlanta)

Evolution of Atlanta Fed GDPNow real GDP estimate for 2024: Q2
Quarterly percent change (SAAR)

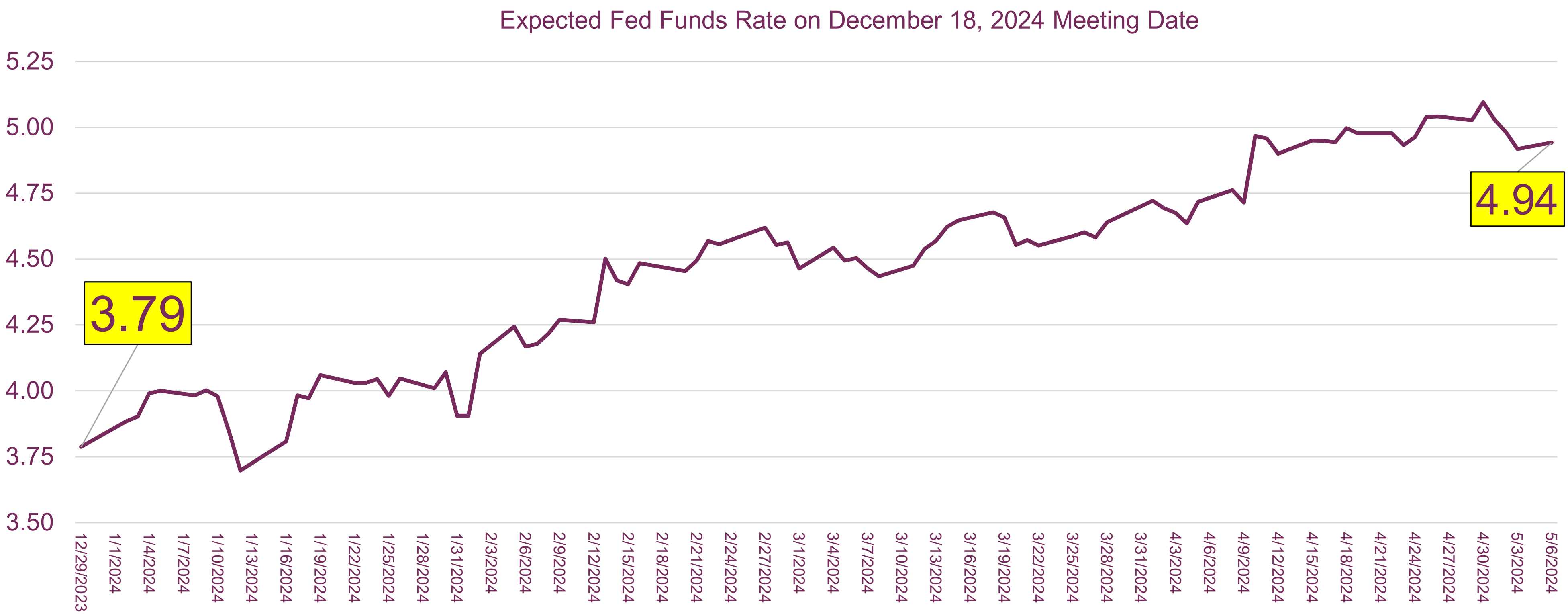


Sources: *Blue Chip Economic Indicators* and *Blue Chip Financial Forecasts*
Note: The top (bottom) 10 average forecast is an average of the highest (lowest) 10 forecasts in the *Blue Chip* survey.

- 2nd QTR GDPNow = 3.3% (May 2 update)

Fed Funds Rate Expectations

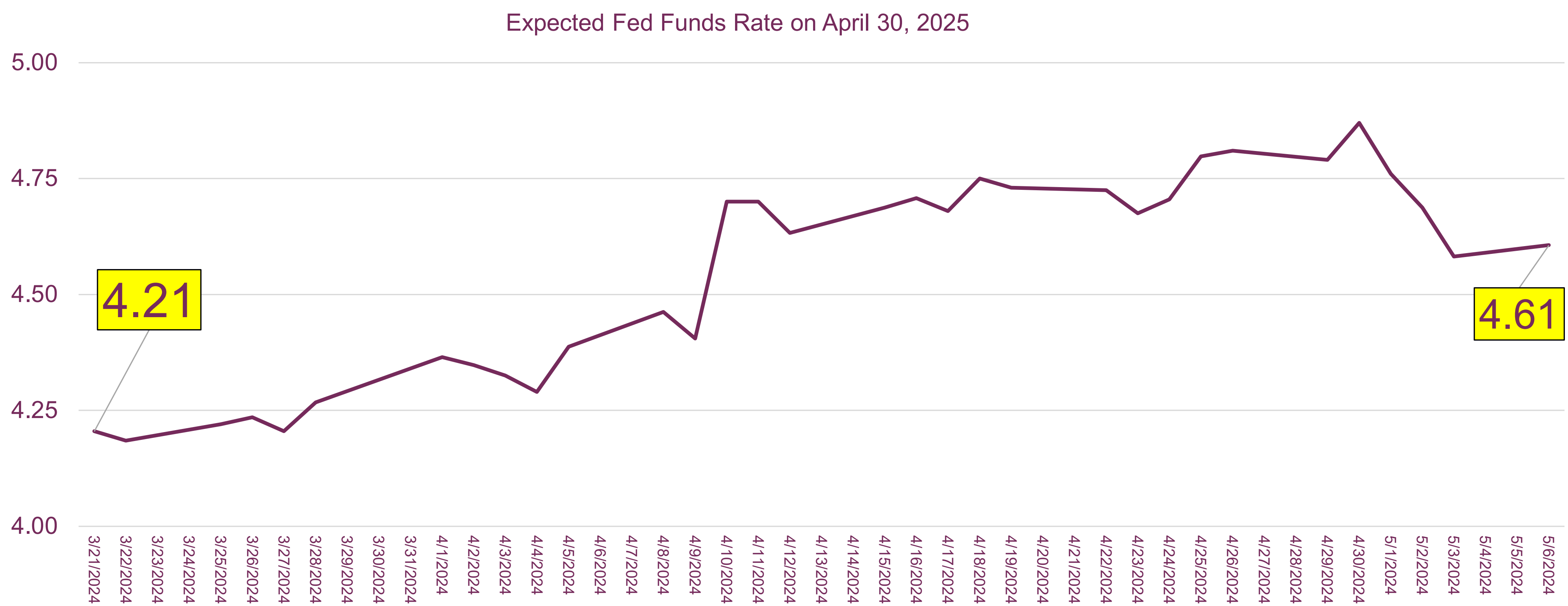
December 2023 expectations versus May 6 (2024) Expectations for Year-end Fed Funds 2024 Rate



- Current Fed Funds Rate = 5.25 – 5.50%
- Between 1/1/24 and 5/3/24, expectations about the 2024-year end Fed Funds rate has change by 1.15%.
- This equates to perhaps four and a half 0.25% rate cuts that were expected at year end 2023 that are no longer predicted expected today (as of May 6).
- Source: CME Fedwatch Tool

Fed Funds Rate Expectations

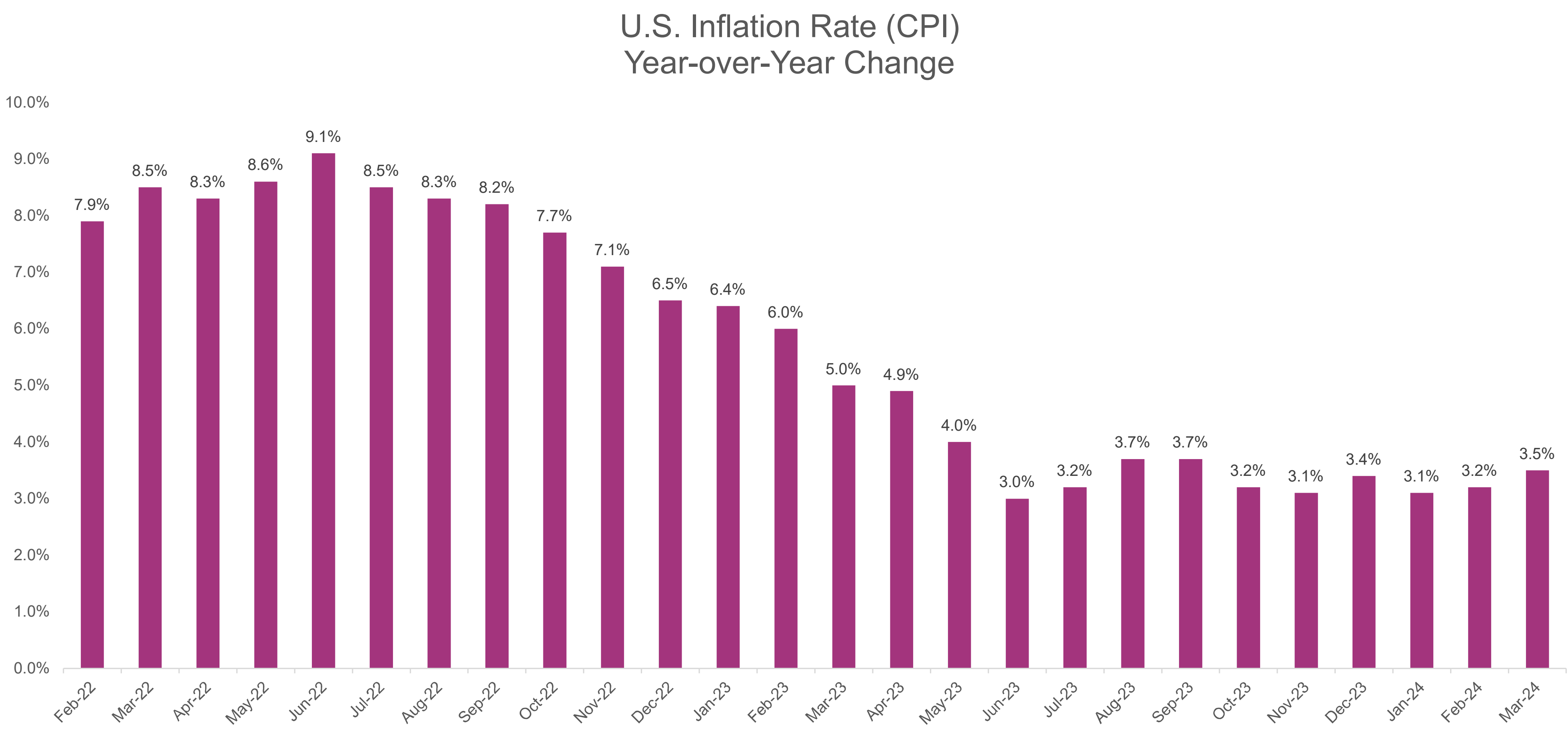
March 2024 expectations versus May 6 (2024) Expectations for April 30, 2025 Fed Funds Rate



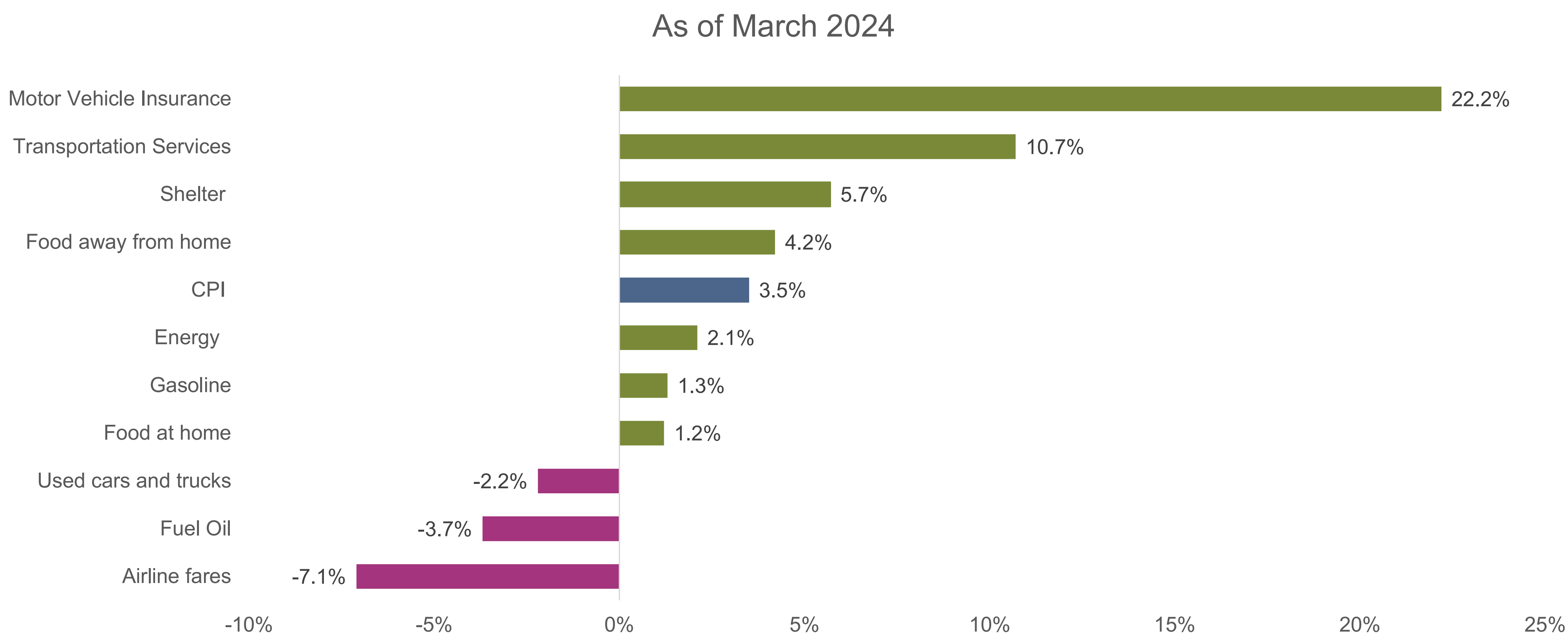
- Current Fed Funds Rate = 5.25 – 5.50%
- Between 3/21/24 and 5/6/24, expectations about the 2024-year end Fed Funds rate has change by 0.40%.
- The market is now pricing in a 4.61% Fed Funds rate at the end of April 2025, which is ~three 0.25% Fed Cuts between now and then.
- Source: CME Fedwatch Tool

Inflation

Fed target = 2.0%



Notable Year over Year Price Changes



Source: U.S. Bureau of Labor Statistics

Inflation Heat Map

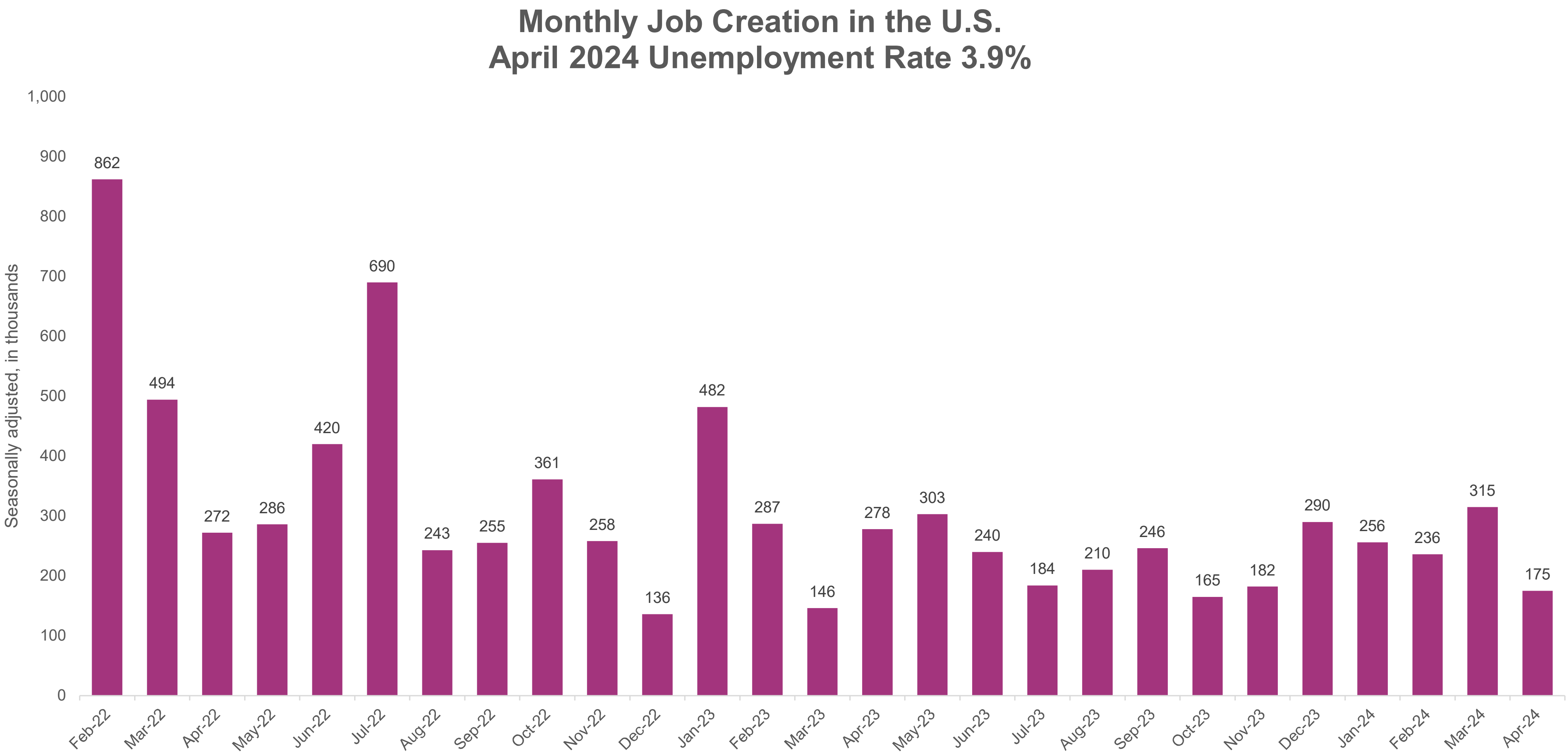
Consumer Price Index, components

m/m % change, seasonally adjusted

		2022									2023												2024	
	Weight	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Headline CPI, y/y	100.0	8.2%	8.5%	8.9%	8.4%	8.2%	8.2%	7.8%	7.1%	6.4%	6.3%	6.0%	5.0%	5.0%	4.0%	3.0%	3.2%	3.7%	3.7%	3.2%	3.1%	3.4%	3.1%	3.2%	3.5%
Core CPI, y/y	79.6	6.1%	6.0%	5.9%	5.9%	6.3%	6.6%	6.3%	6.0%	5.7%	5.5%	5.5%	5.6%	5.5%	5.3%	4.8%	4.7%	4.4%	4.1%	4.0%	4.0%	3.9%	3.9%	3.8%	3.8%
Headline CPI, m/m	100.0	0.4%	0.9%	1.2%	0.0%	0.2%	0.4%	0.5%	0.2%	0.1%	0.5%	0.4%	0.1%	0.4%	0.1%	0.2%	0.2%	0.5%	0.4%	0.1%	0.2%	0.2%	0.3%	0.4%	0.4%
Core CPI, m/m	79.6	0.5%	0.6%	0.6%	0.3%	0.6%	0.6%	0.3%	0.3%	0.4%	0.4%	0.5%	0.4%	0.4%	0.4%	0.2%	0.2%	0.2%	0.3%	0.2%	0.3%	0.3%	0.4%	0.4%	0.4%
Energy	7.0	-1.0%	3.4%	6.9%	-4.7%	-3.9%	-1.7%	1.7%	-1.4%	-3.1%	2.0%	-0.6%	-3.5%	0.6%	-3.6%	0.6%	0.0%	4.4%	1.2%	-2.1%	-1.6%	-0.2%	-0.9%	2.3%	1.1%
Gasoline	3.4	-3.1%	3.2%	10.3%	-8.1%	-8.4%	-4.2%	3.4%	-2.3%	-7.0%	2.4%	1.0%	-4.6%	3.0%	-5.6%	1.0%	-0.2%	8.3%	1.6%	-4.3%	-4.0%	-0.6%	-3.3%	3.8%	1.7%
Electricity	2.6	0.9%	1.3%	1.5%	1.5%	1.2%	0.8%	0.5%	0.5%	1.3%	0.5%	0.5%	-0.7%	-0.7%	-1.0%	0.9%	-0.4%	0.2%	0.8%	0.4%	1.0%	0.6%	1.2%	0.3%	0.9%
Utility Gas	0.7	2.5%	7.2%	7.5%	-3.8%	3.5%	2.2%	-3.7%	-3.4%	3.5%	6.7%	-8.0%	-7.1%	-4.9%	-2.6%	-1.7%	1.5%	-0.3%	-1.4%	0.3%	1.2%	-0.6%	2.0%	2.3%	0.0%
Food	13.4	0.8%	1.1%	1.0%	1.1%	0.8%	0.8%	0.7%	0.6%	0.4%	0.5%	0.4%	0.0%	0.0%	0.2%	0.1%	0.2%	0.2%	0.2%	0.3%	0.2%	0.2%	0.4%	0.0%	0.1%
Food at Home	8.6	0.9%	1.3%	1.0%	1.3%	0.8%	0.7%	0.5%	0.6%	0.5%	0.4%	0.3%	-0.3%	-0.2%	0.1%	0.0%	0.2%	0.2%	0.1%	0.3%	0.0%	0.1%	0.4%	0.0%	0.0%
Food away from home	4.8	0.6%	0.7%	0.9%	0.7%	0.9%	0.9%	0.9%	0.5%	0.4%	0.6%	0.6%	0.6%	0.4%	0.5%	0.4%	0.2%	0.3%	0.4%	0.4%	0.4%	0.3%	0.5%	0.1%	0.3%
Core Goods	21.2	0.1%	0.6%	0.6%	0.1%	0.4%	0.0%	-0.1%	-0.2%	-0.1%	0.1%	0.0%	0.2%	0.6%	0.6%	0.2%	-0.3%	-0.2%	-0.2%	0.0%	-0.2%	-0.1%	-0.3%	-0.1%	0.4%
Apparel	2.5	-1.0%	0.4%	0.7%	-0.1%	0.3%	0.0%	-0.2%	0.1%	0.2%	0.8%	0.8%	0.3%	0.3%	0.3%	0.3%	0.1%	0.2%	-0.3%	0.0%	-0.6%	0.0%	-0.7%	0.6%	0.7%
New vehicles	4.3	0.4%	0.6%	0.5%	0.5%	0.8%	0.7%	0.6%	0.5%	0.6%	0.2%	0.2%	0.4%	-0.2%	-0.1%	0.0%	0.0%	0.2%	0.2%	-0.1%	0.0%	0.2%	0.0%	-1.0%	-0.2%
Used Cars	2.8	-0.7%	1.9%	0.5%	-0.8%	-0.2%	-1.1%	-1.7%	-2.0%	-2.0%	-1.9%	-2.8%	-0.9%	4.4%	4.4%	-0.5%	-1.5%	-1.9%	-1.8%	-0.4%	1.4%	0.6%	-3.4%	0.5%	-1.1%
Medical care commodities	1.5	0.1%	0.3%	0.4%	0.6%	0.2%	-0.1%	0.0%	0.2%	0.1%	1.1%	0.1%	0.6%	0.5%	0.6%	0.2%	0.5%	0.6%	-0.3%	0.4%	0.5%	-0.1%	-0.6%	0.1%	0.2%
Core services	58.4	0.6%	0.6%	0.6%	0.4%	0.6%	0.8%	0.5%	0.5%	0.6%	0.5%	0.6%	0.4%	0.4%	0.4%	0.3%	0.4%	0.4%	0.5%	0.3%	0.5%	0.4%	0.7%	0.4%	0.5%
Shelter	34.8	0.5%	0.6%	0.6%	0.6%	0.7%	0.7%	0.7%	0.6%	0.8%	0.7%	0.8%	0.6%	0.4%	0.6%	0.4%	0.5%	0.3%	0.6%	0.3%	0.4%	0.4%	0.6%	0.4%	0.4%
Rent of primary residance	7.6	0.6%	0.6%	0.8%	0.7%	0.7%	0.8%	0.7%	0.8%	0.8%	0.7%	0.8%	0.5%	0.6%	0.5%	0.5%	0.4%	0.5%	0.5%	0.5%	0.4%	0.4%	0.4%	0.5%	0.4%
Owners equivalent rent	25.6	0.5%	0.6%	0.7%	0.6%	0.7%	0.8%	0.6%	0.7%	0.8%	0.7%	0.7%	0.5%	0.5%	0.5%	0.4%	0.5%	0.4%	0.6%	0.4%	0.5%	0.5%	0.6%	0.4%	0.4%
Medical care services	6.3	0.5%	0.4%	0.7%	0.4%	0.7%	0.8%	-0.4%	-0.5%	0.3%	-0.7%	-0.7%	-0.5%	-0.1%	-0.1%	0.0%	-0.3%	0.0%	0.2%	0.2%	0.5%	0.5%	0.7%	-0.1%	0.6%
Transportation services	5.9	2.2%	1.6%	1.8%	-0.4%	0.1%	1.9%	0.6%	0.3%	0.6%	0.9%	1.1%	1.4%	-0.2%	0.8%	0.1%	0.8%	1.6%	0.7%	0.9%	1.0%	0.1%	1.0%	1.4%	1.5%

Source: Bureau of Labor Statistics. Heatmap shading is relative to the two-year period shown.

Employment


Monthly Job Creation in the U.S.
April 2024 Unemployment Rate 3.9%
Seasonally adjusted, in thousands
1,000
900
800
700
600
500
400
300
200
100
0
862
494
272
286
420
690
243
255
361
258
136
482
287
146
278
303
240
184
210
246
165
182
290
256
236
315
175
Feb-22
Mar-22
Apr-22
May-22
Jun-22
Jul-22
Aug-22
Sep-22
Oct-22
Nov-22
Dec-22
Jan-23
Feb-23
Mar-23
Apr-23
May-23
Jun-23
Jul-23
Aug-23
Sep-23
Oct-23
Nov-23
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Jan-24
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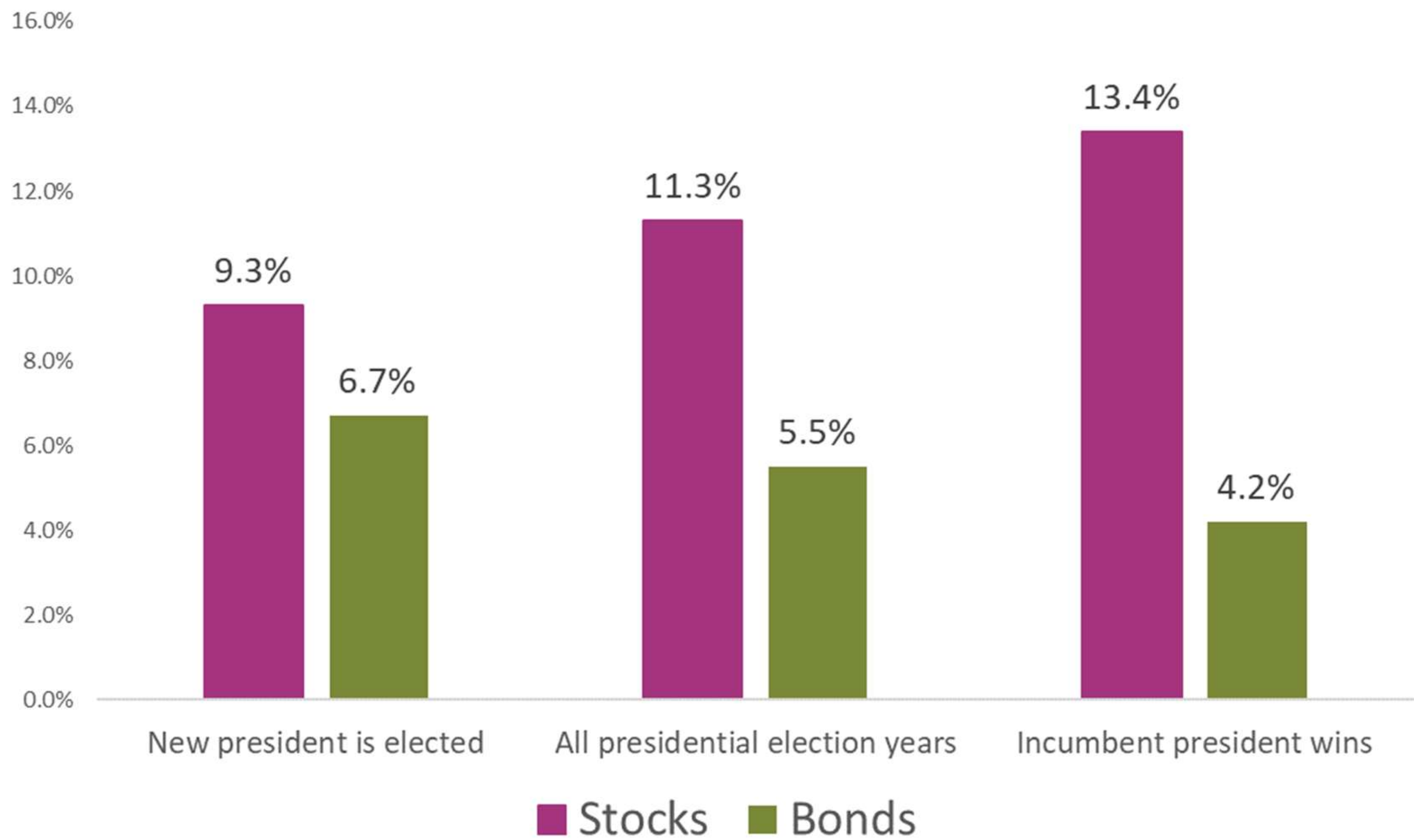
Mar-24
Apr-24

Presidential Election Years Throughout History

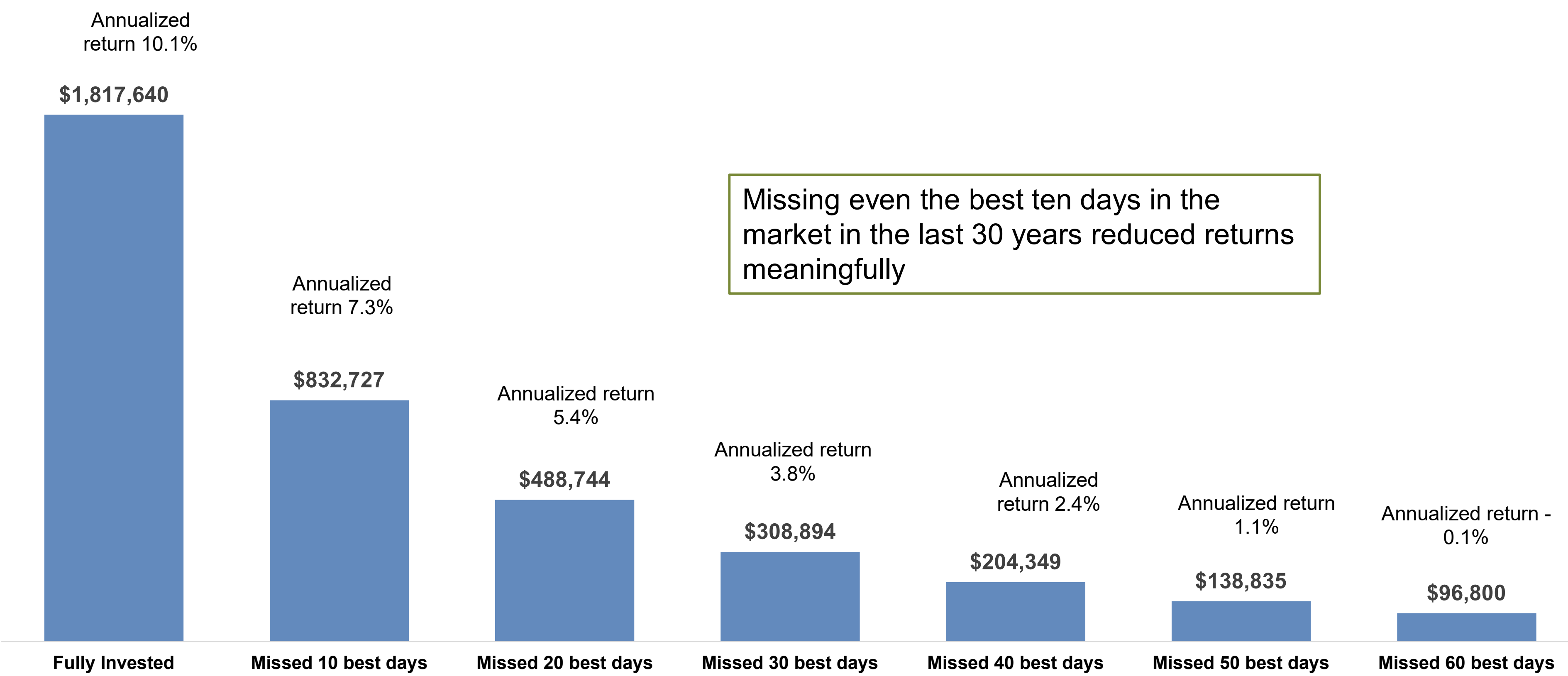
Calendar year performance during presidential election years (1928 – 2019)



Morningstar as of 12/31/2019. Stock market represented by S&P 500 and the IA SBBI US Large Cap Index. US Bonds by the IA SBBI US IT Bond Index and the BdgBarc US Aggregate Bond Index.

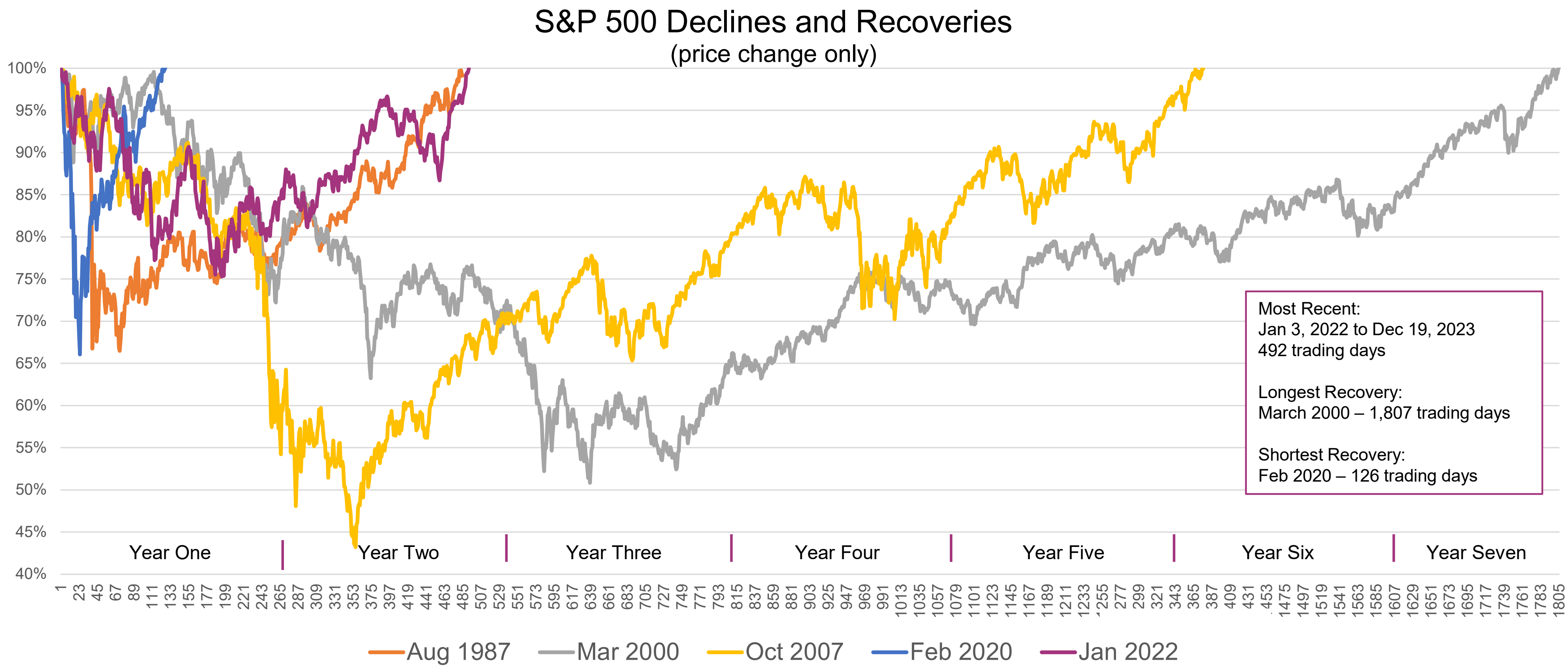
Market Timing Can Be Costly

S&P 500 Index: Annualized total returns and growth of $100,000 investment (1993 – 2023)

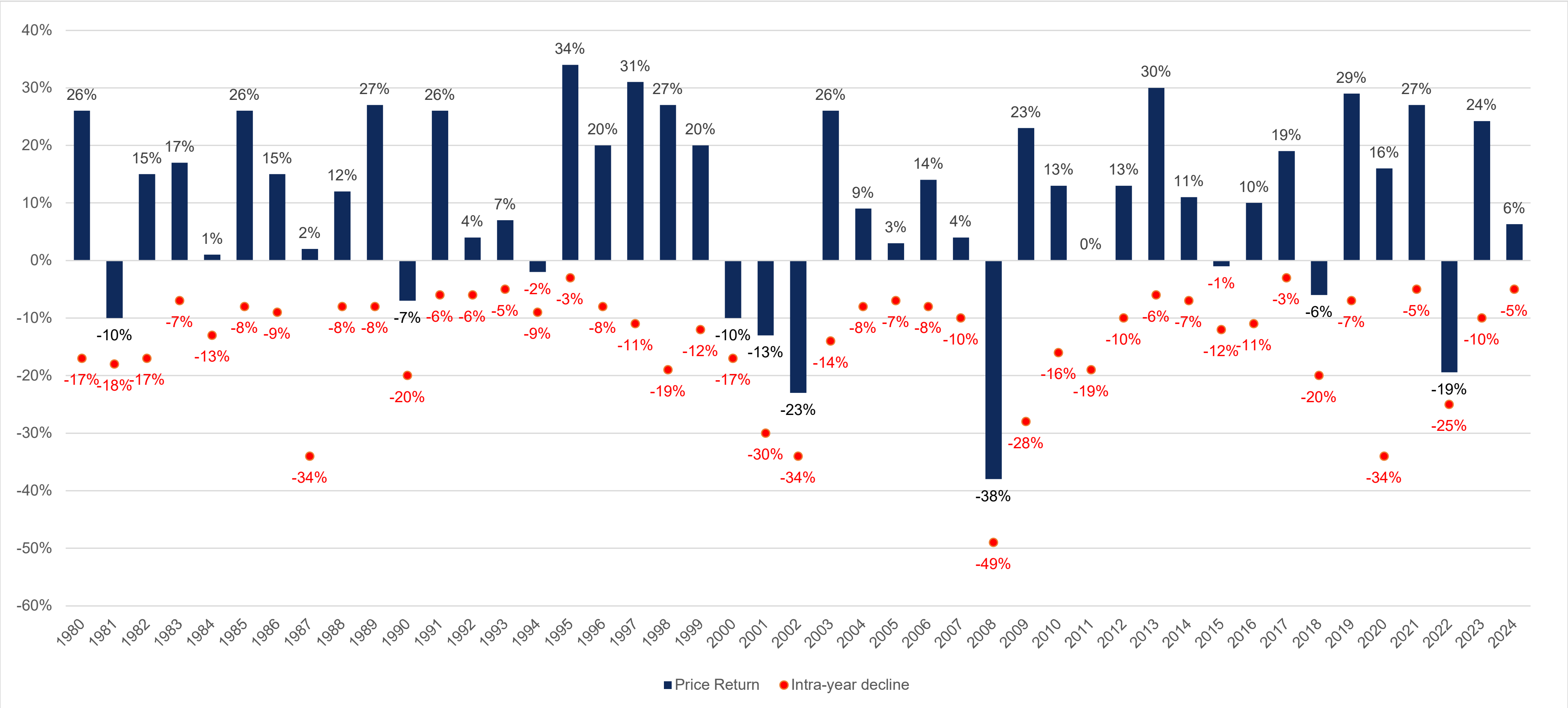


Missing even the best ten days in the market in the last 30 years reduced returns meaningfully

Equity Market Time To Full Recovery



S&P 500 Annual Returns and Intra-Year Declines



Intra-year decline refers to the largest percentage market decline from a peak to a trough during the year.

Source: Standard & Poor's – **Price return only**, no dividends, as of January 31, 2024

The Road Ahead

- The economy is currently leaning towards a "soft landing." Plentiful job opportunities and rising wages have helped consumers stay afloat amid rising costs. Consumer spending may decline as cash reserves wane.
- Measures of the commercial and industrial economy -- including the PMI, durable goods orders, industrial production data, and small-business confidence -- have moderated from their highs in the pandemic-recovery phase, but generally remain at levels consistent with modest growth.
- Decreases in inflation have moderated and we remain above the Federal Reserve's target of 2%. The Federal Reserve executed an aggressive rate tightening cycle, raising rates by 525 basis points since March 2022. Bond futures are currently pricing in a single rate cut by late 2024.
- The job market remains firm, but estimates are that the job market will soften, and the unemployment rate will likely trend higher into 2024 as economic growth slows.
- Although recession risk is elevated, most recessions since the Great Depression have been short-lived and the GDP decline relatively small. Ultimately it is more important to be well-positioned for expansions, which, on average, last much longer.

First Business Bank®

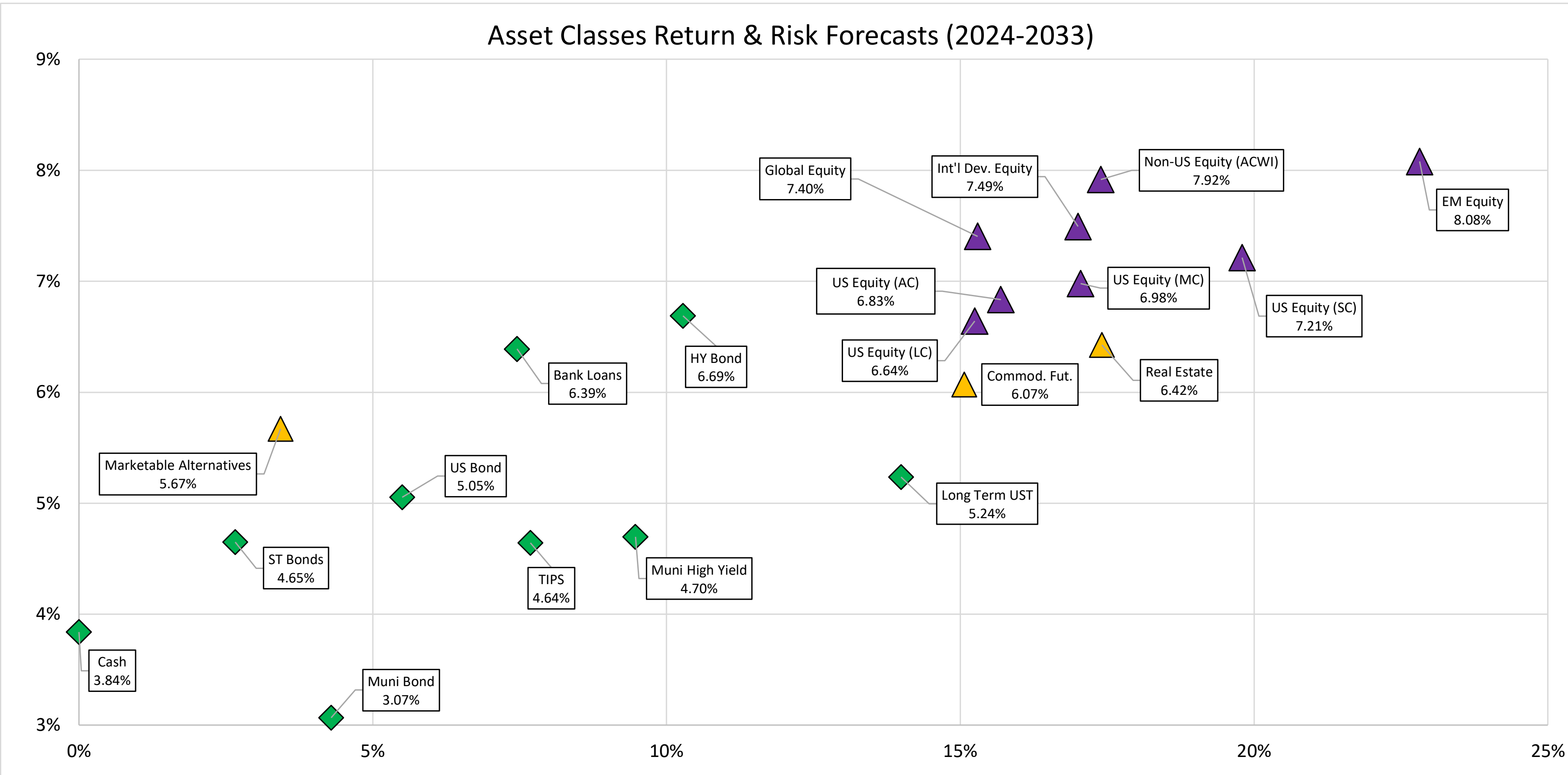
2024-2033 Ten-Year Capital Market Assumptions

January 2024

Ten-Year Capital Market Assumptions Purpose

- Drive Strategic Investment Decisions Over Time
- Transparency to the “Building Blocks” Behind Investment Decisions
- Help Frame Expectations about Portfolio Returns and Risks
- Keep Investors Focused on Longer-Term Investment Objectives
- Help Non-Profit Organization Plan Spending Capacity from Its Portfolios

2024 – 2033 Ten-Year Capital Market Forecasts



2024 – 2033 Capital Market Forecasts

Asset Class	Ten-Year Arithmetic Return Forecast	Ten-Year Geometric Return Forecast	Ten-Year Standard Deviation Forecast
Cash	3.84%	3.84%	0.0%
TIPS	4.94%	4.64%	7.7%
ST Bonds	4.68%	4.65%	2.7%
US Bond	5.20%	5.05%	5.5%
Long Term UST	6.21%	5.24%	14.0%
Muni Bond	3.16%	3.07%	4.3%
Muni High Yield	5.15%	4.70%	9.5%
Bank Loans	6.67%	6.39%	7.5%
HY Bond	7.22%	6.69%	10.3%
Global Equity	8.57%	7.40%	15.3%
US Equity (AC)	8.07%	6.83%	15.7%
US Equity (LC)	7.80%	6.64%	15.2%
US Equity (MC)	8.43%	6.98%	17.0%
US Equity (SC)	9.17%	7.21%	19.8%
Non-US Equity (ACWI)	9.43%	7.92%	17.4%
Int'l Dev. Equity	8.94%	7.49%	17.0%
EM Equity	10.68%	8.08%	22.8%
Real Estate	7.94%	6.42%	17.4%
Commod. Fut.	7.21%	6.07%	15.1%
Liquid Alts	5.73%	5.67%	3.4%

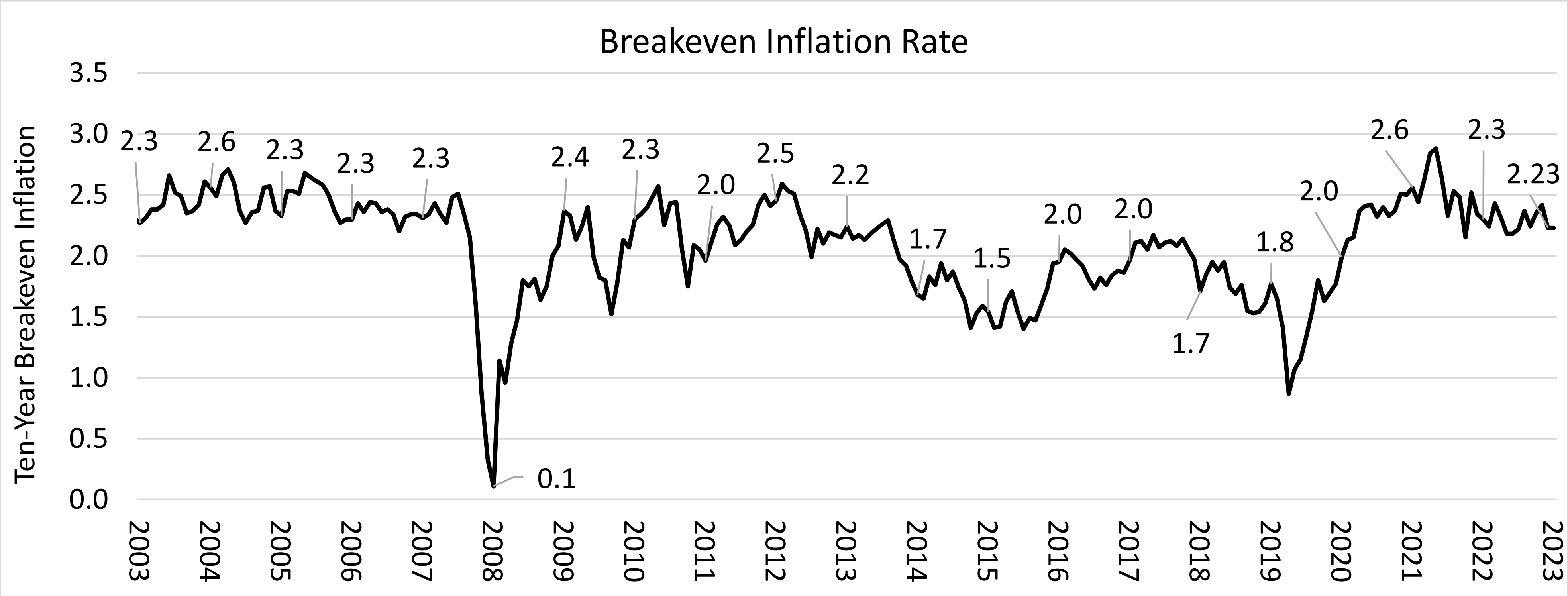
2024 – 2033 Capital Market Forecasts

	Cash	TIPS	ST Bonds	US Bond	Long Term UST	Muni Bond	Muni High Yield	Bank Loans	HY Bond	Global Equity	US Equity (AC)	US Equity (LC)	US Equity (MC)	US Equity (SC)	Non-US Equity	Int'l Dev. Equity	EM Equity	Real Estate	Commod. Fut.	Liquid Alts
Cash	1.00	0.03	0.41	0.17	0.06	0.15	(0.02)	(0.01)	0.01	(0.00)	0.02	0.02	0.01	0.00	(0.01)	0.02	0.03	0.00	0.02	(0.44)
TIPS	0.03	1.00	0.62	0.77	0.63	0.62	0.45	0.20	0.36	0.20	0.16	0.16	0.19	0.10	0.22	0.20	0.21	0.33	0.27	0.34
ST Bonds	0.41	0.62	1.00	0.89	0.63	0.69	0.26	(0.06)	0.22	0.07	0.13	0.14	0.13	0.07	0.07	0.14	0.05	0.12	0.03	(0.06)
US Bond	0.17	0.77	0.89	1.00	0.88	0.79	0.47	0.03	0.34	0.19	0.23	0.23	0.23	0.14	0.17	0.20	0.11	0.23	0.02	0.14
Long Term UST	0.06	0.63	0.63	0.88	1.00	0.62	0.29	(0.24)	0.03	(0.05)	(0.05)	(0.03)	(0.06)	(0.13)	(0.06)	(0.08)	(0.08)	0.11	(0.16)	0.04
Muni Bond	0.15	0.62	0.69	0.79	0.62	1.00	0.58	0.12	0.31	0.17	0.17	0.18	0.18	0.10	0.16	0.16	0.12	0.25	(0.03)	0.16
Muni High Yield	(0.02)	0.45	0.26	0.47	0.29	0.58	1.00	0.56	0.51	0.34	0.30	0.30	0.34	0.26	0.35	0.34	0.31	0.39	0.18	0.25
Bank Loans	(0.01)	0.20	(0.06)	0.03	(0.24)	0.12	0.56	1.00	0.76	0.51	0.50	0.47	0.56	0.50	0.51	0.48	0.45	0.51	0.40	0.31
HY Bond	0.01	0.36	0.22	0.34	0.03	0.31	0.51	0.76	1.00	0.65	0.65	0.63	0.69	0.64	0.61	0.56	0.59	0.62	0.37	0.42
Global Equity	(0.00)	0.20	0.07	0.19	(0.05)	0.17	0.34	0.51	0.65	1.00	0.91	0.91	0.87	0.78	0.96	0.95	0.77	0.59	0.43	0.56
US Equity (AC)	0.02	0.16	0.13	0.23	(0.05)	0.17	0.30	0.50	0.65	0.91	1.00	0.99	0.97	0.89	0.78	0.70	0.68	0.64	0.35	0.56
US Equity (LC)	0.02	0.16	0.14	0.23	(0.03)	0.18	0.30	0.47	0.63	0.91	0.99	1.00	0.94	0.84	0.77	0.70	0.66	0.61	0.34	0.56
US Equity (MC)	0.01	0.19	0.13	0.23	(0.06)	0.18	0.34	0.56	0.69	0.87	0.97	0.94	1.00	0.94	0.77	0.69	0.69	0.69	0.40	0.58
US Equity (SC)	0.00	0.10	0.07	0.14	(0.13)	0.10	0.26	0.50	0.64	0.78	0.89	0.84	0.94	1.00	0.70	0.63	0.66	0.66	0.35	0.55
Non-US Equity (ACWI)	(0.01)	0.22	0.07	0.17	(0.06)	0.16	0.35	0.51	0.61	0.96	0.78	0.77	0.77	0.70	1.00	0.99	0.78	0.54	0.48	0.53
Int'l Dev. Equity	0.02	0.20	0.14	0.20	(0.08)	0.16	0.34	0.48	0.56	0.95	0.70	0.70	0.69	0.63	0.99	1.00	0.71	0.52	0.44	0.53
EM Equity	0.03	0.21	0.05	0.11	(0.08)	0.12	0.31	0.45	0.59	0.77	0.68	0.66	0.69	0.66	0.78	0.71	1.00	0.47	0.44	0.44
Real Estate	0.00	0.33	0.12	0.23	0.11	0.25	0.39	0.51	0.62	0.59	0.64	0.61	0.69	0.66	0.54	0.52	0.47	1.00	0.28	0.65
Commod. Fut.	0.02	0.27	0.03	0.02	(0.16)	(0.03)	0.18	0.40	0.37	0.43	0.35	0.34	0.40	0.35	0.48	0.44	0.44	0.28	1.00	0.51
Liquid Alts	(0.44)	0.34	(0.06)	0.14	0.04	0.16	0.25	0.31	0.42	0.56	0.56	0.56	0.58	0.55	0.53	0.53	0.44	0.65	0.51	1.00

Inflation

1. First Business Bank's ten-year CPI forecast is derived from the breakeven inflation rate between the ten-year nominal and ten-year treasury inflation protected security.
2. The difference between the ten-year nominal yield and ten-year TIPS yield is the bond markets implied inflation rate expectation over the next ten years.
3. 10 Year Nominal Yield = 4.37 (as of 11/30/23)
4. 10 Year TIPS Yield = 2.14 (as of 11/30/2023)
5. Breakeven Inflation = 2.23

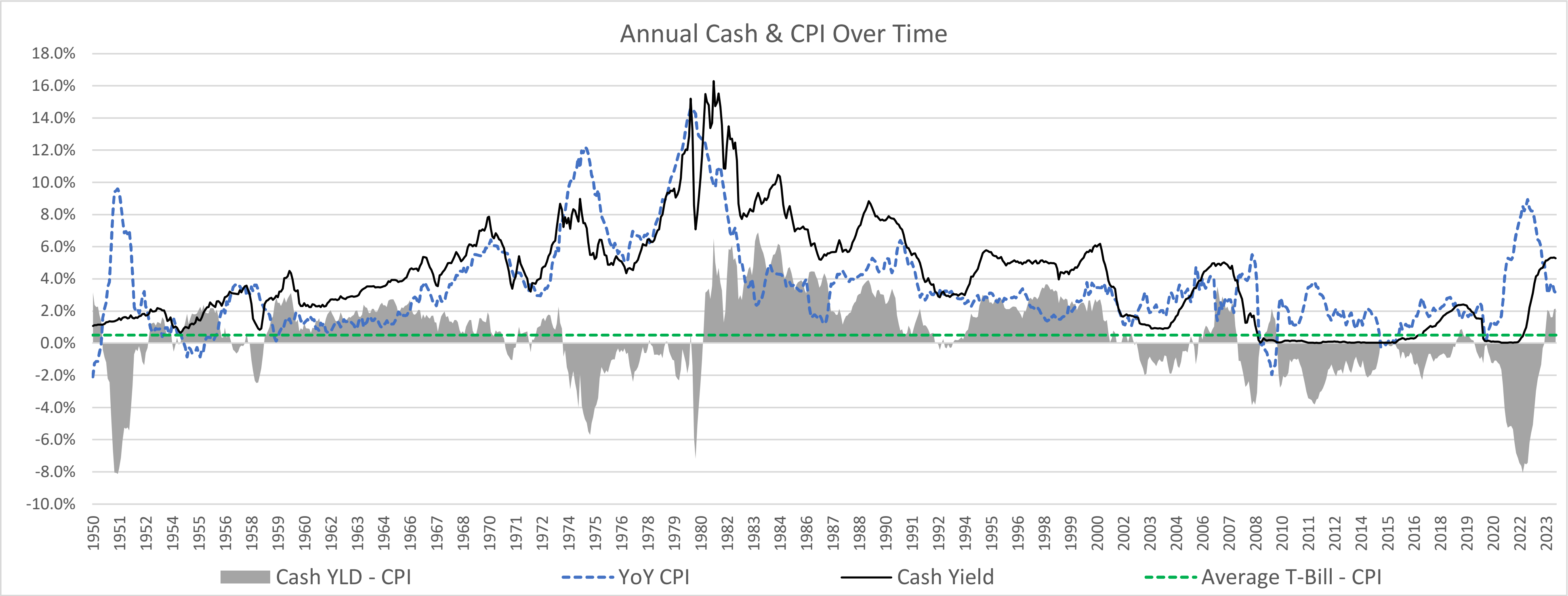
Ten-Year Inflation Forecast = 2.23



Cash

1. Since 1950, cash yields have exceeded YoY CPI by 0.50% on average. Over the past 25 years, cash yields have been lower than 12-month inflation by 0.76%.
2. Over the 12-month period ending 11/30/2023, cash yields have exceeded the past 12 months' inflation by 2.2%.
3. Built into FBB's cash return forecast is the assumption that the current cash yield (5.45%) are expected to revert to the expected inflation rate (2.23%) over the next ten-years.
4. Three-Month T-Bill = 5.45
5. The ten-year CPI forecast = 2.23
6. Average of 5.45 & 2.23 = 3.84

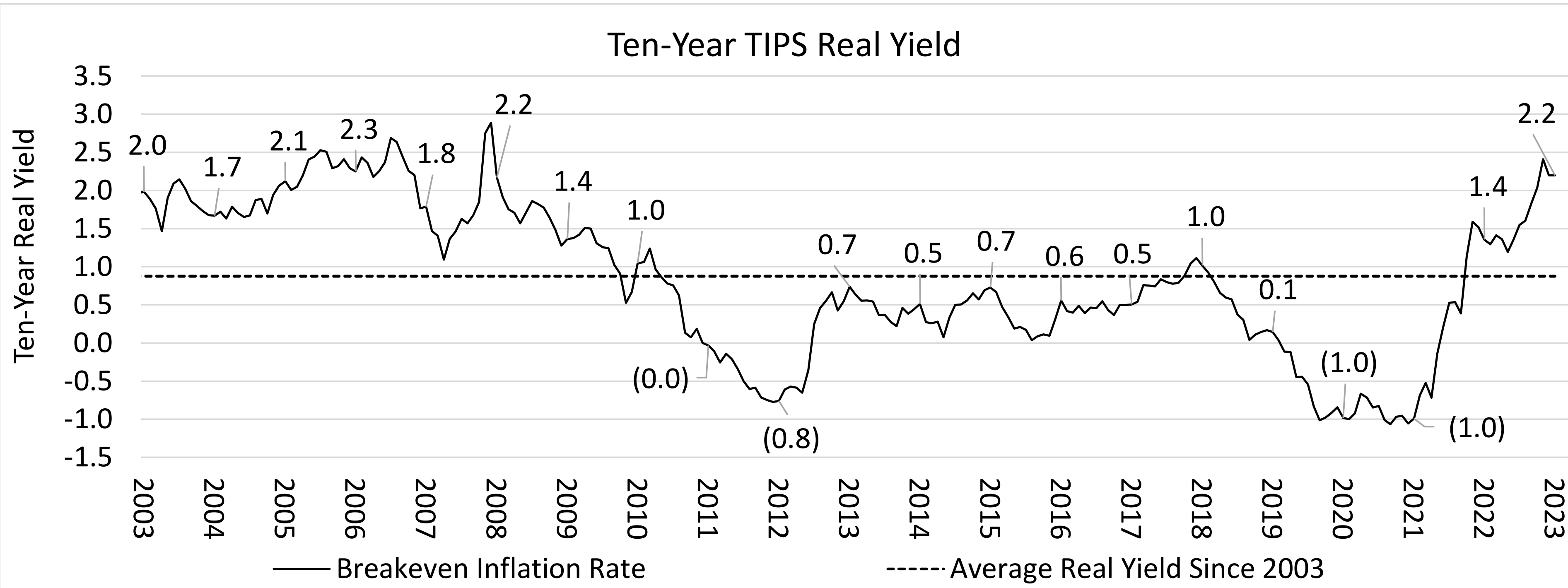
Ten-Year Cash Forecast = 3.84



Treasury Inflation-Protected Securities (TIPS)

1. First Business Bank's Ten-Year TIPS market forecasted return is a function of the (current) real return of the index plus the expected inflation rate over the next decade.
2. Ten-year forecasted inflation = 2.23
3. The average ten-year TIPS Real Yield was +0.88 since 2003, and it is 2.2 as of 11/30/2024. This is up from -1.0 at YE 2021.
4. By comparison, the investible Bloomberg US Treasury US TIPS TR USD Real Yield is +2.36 as of 11/30 (via SPDR® Bloomberg U.S. TIPS UCITS ETF)
5. TIPS Return = (1+ CPI) X (1+ Real Yield) - 1
6. TIPS Return = (1+2.23%) X (1+2.36%) – 1 = 4.64

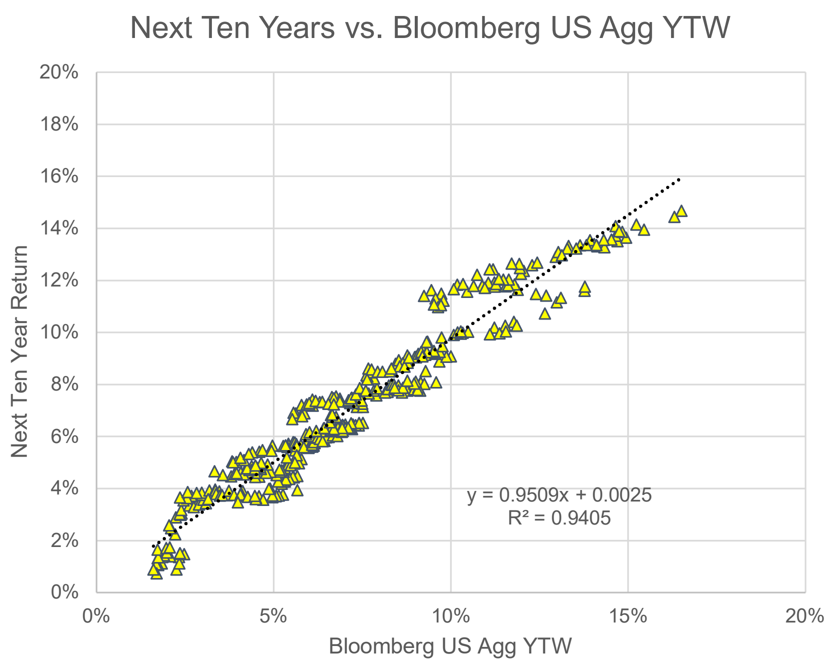
Ten-Year TIPS Forecast = 4.64

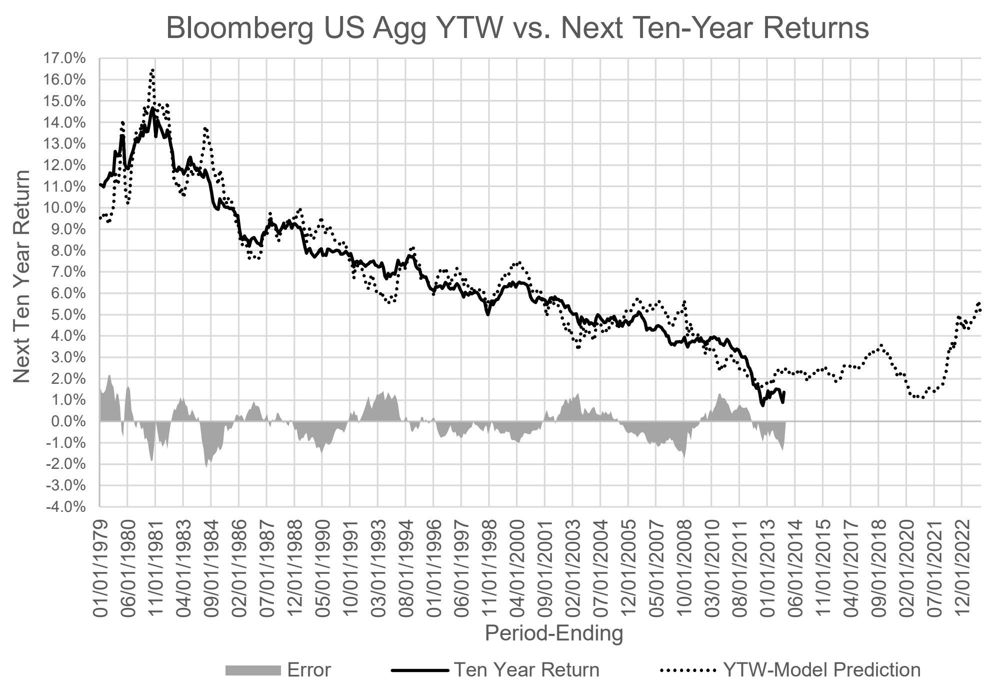


US Investment Grade Intermediate Bonds

1. First Business Bank's ten-year return forecast of the US IG intermediate bond market is the current yield-to-worst (YTW) of the Bloomberg US Aggregate Bond Index.
2. Bloomberg US Aggregate Bond Index YTW = 5.05% (as of 11/30/2024)
3. If we used the best fit regression formula (y=0.9509 X 5.05% + 0.00254), the forecasted return would be 5.06%.
4. Bloomberg US Aggregate Bond Index Duration = 6.11 years
5. Bloomberg US Aggregate Bond Index Maturity = 8.48 years

Ten-Year US Investment Grade Intermediate US Bonds Forecast = 5.05

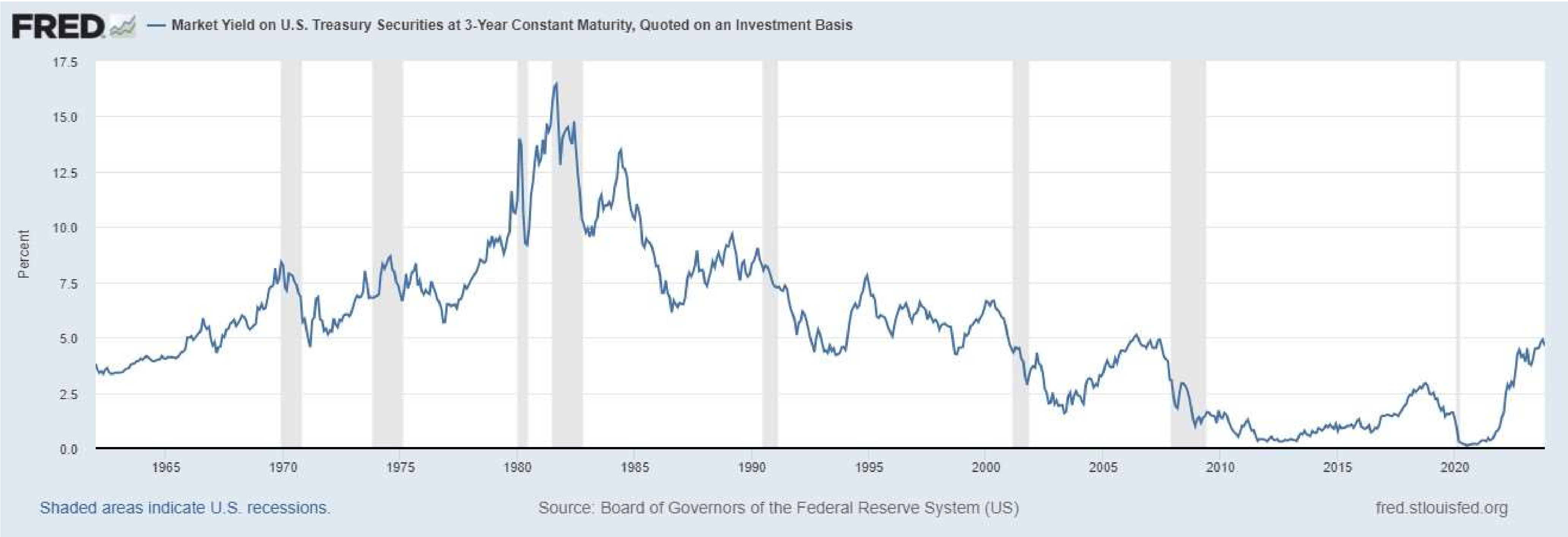




Short Term Investment Grade Bonds

1. The Short-Term Bond (Bloomberg US Govt/Credit 1-3 Yr TR USD) Forecast is 2/3rd the Bloomberg US Agg forecast and 1/3rd the Cash Forecast.
2. 2/3 X 5.05 (Bloomberg US Agg) + 1/3 X 3.84 (Cash) = 4.64

Ten-Year US Investment Grade Short Duration US Bonds Forecast = 4.65

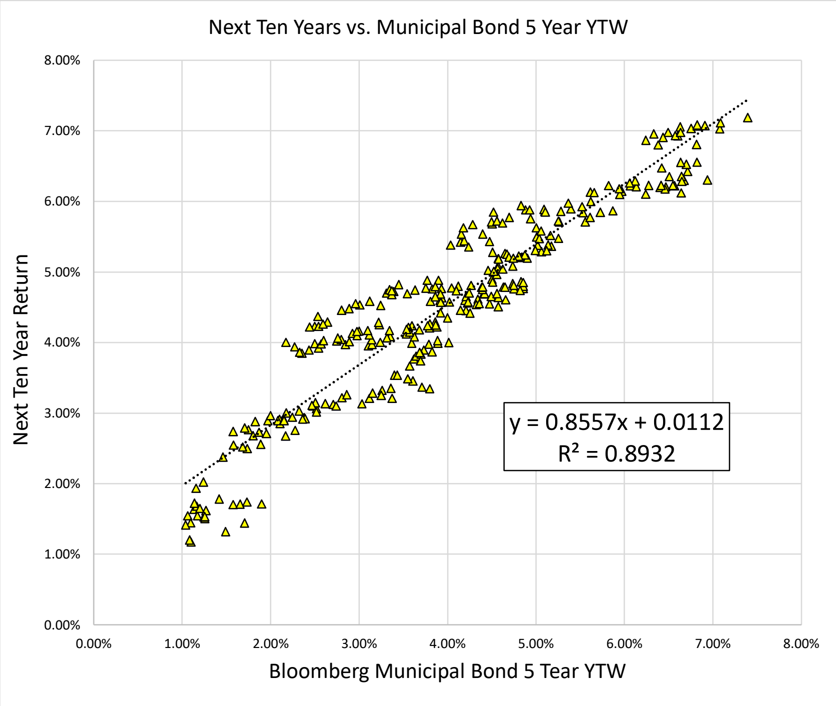


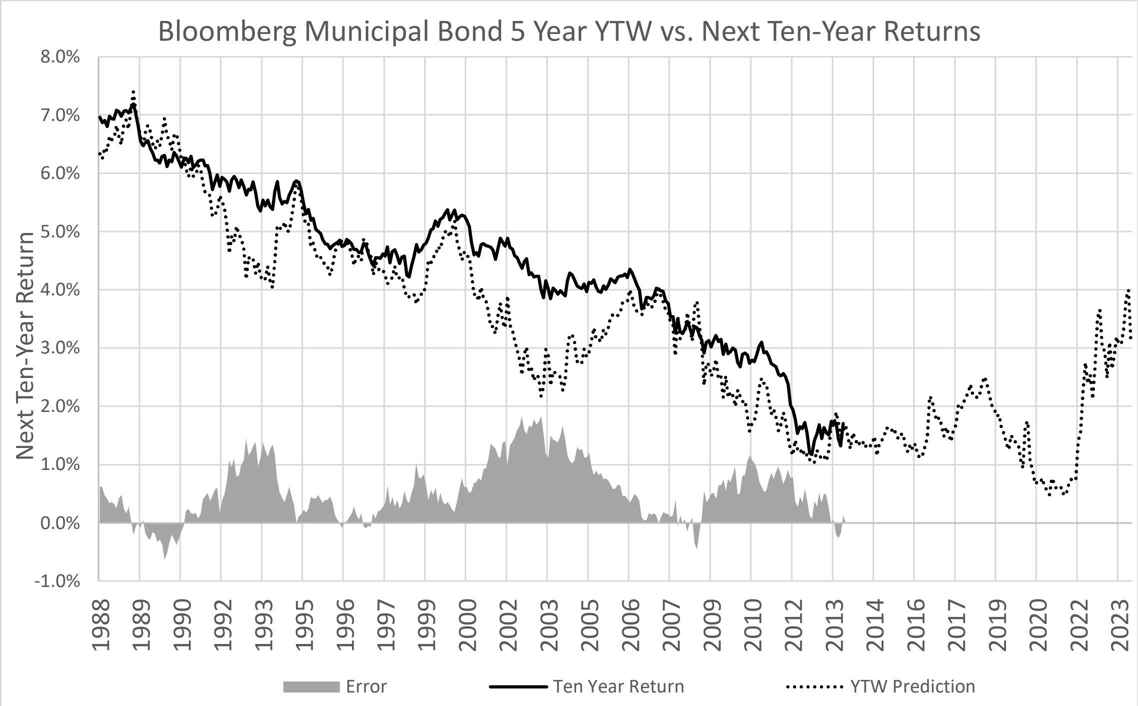
Municipal Bonds

1. The ten-year return forecast of investment grade intermediate bonds is the current YTW of the Bloomberg Municipal Bond 5 Year.
2. Bloomberg Municipal Bond 5 Year index has a YTW of 3.07
3. Factoring in a 37% highest marginal rate, we divide this yield by (1-0.37) to get the tax-boosted YTW.

Ten-Year Muni Bond Forecast = 3.07

Ten-Year Muni Bond *Tax-Boosted* Forecast = 4.87

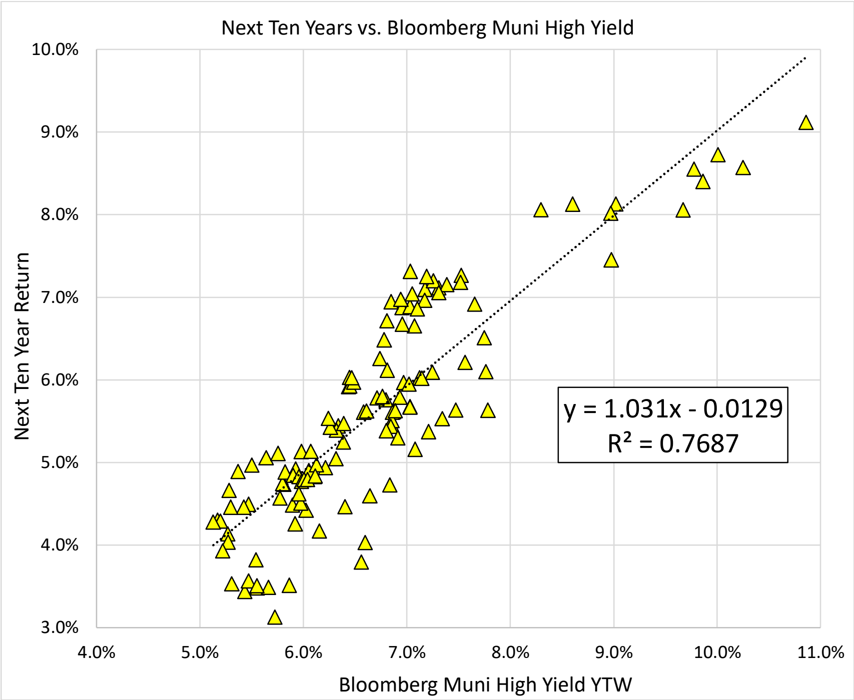


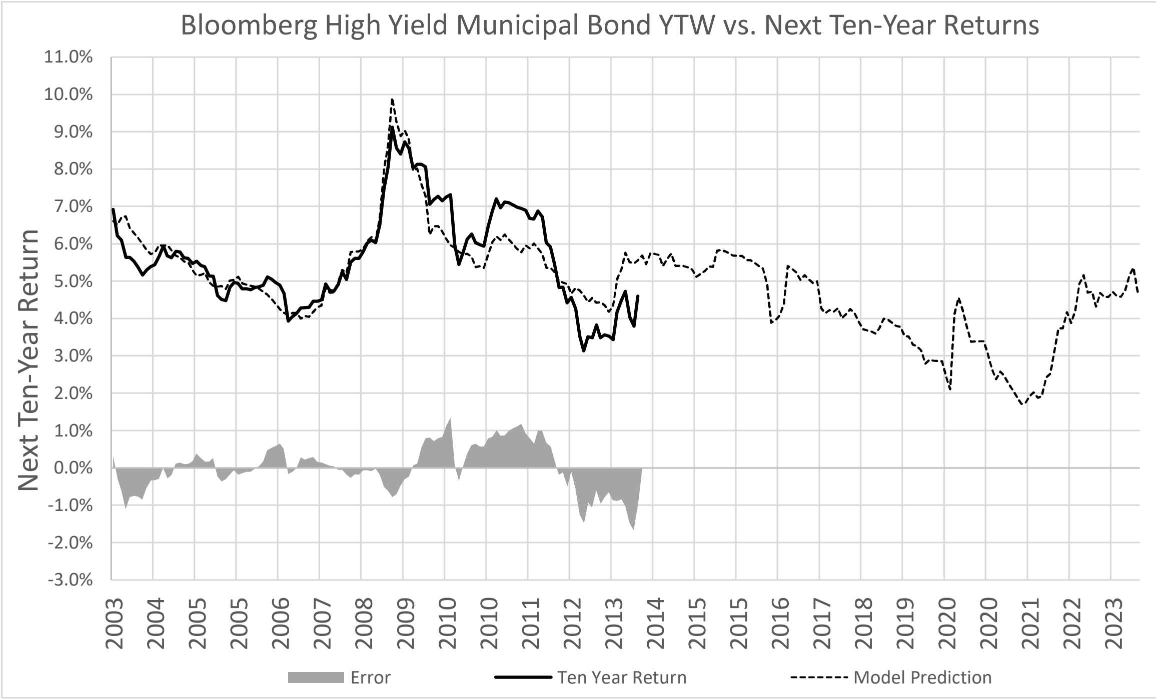


High Yield Municipal Bonds

1. The HY Municipal Bond Return ten-year forecast is derived by regressing the historical YTW of the index by the subsequent ten-year annualized return of the index.
2. The ten-year return forecast = 1.031025 X YTW – 0.012917.
3. Bloomberg Muni High Yield Index has a YTW of 5.81 as of 11/30/23. Using the regression, the forecasted return =1.031025 X 5.81% - 0.012917= 4.7%.
4. Factoring in a 37% highest marginal rate, we divide this yield by (1-0.37) to get the tax-boosted YTW.

Ten-Year High Yield Municipal Bond Forecast = 4.7
Ten-Year Muni Bond *Tax-Boosted* Forecast = 7.46

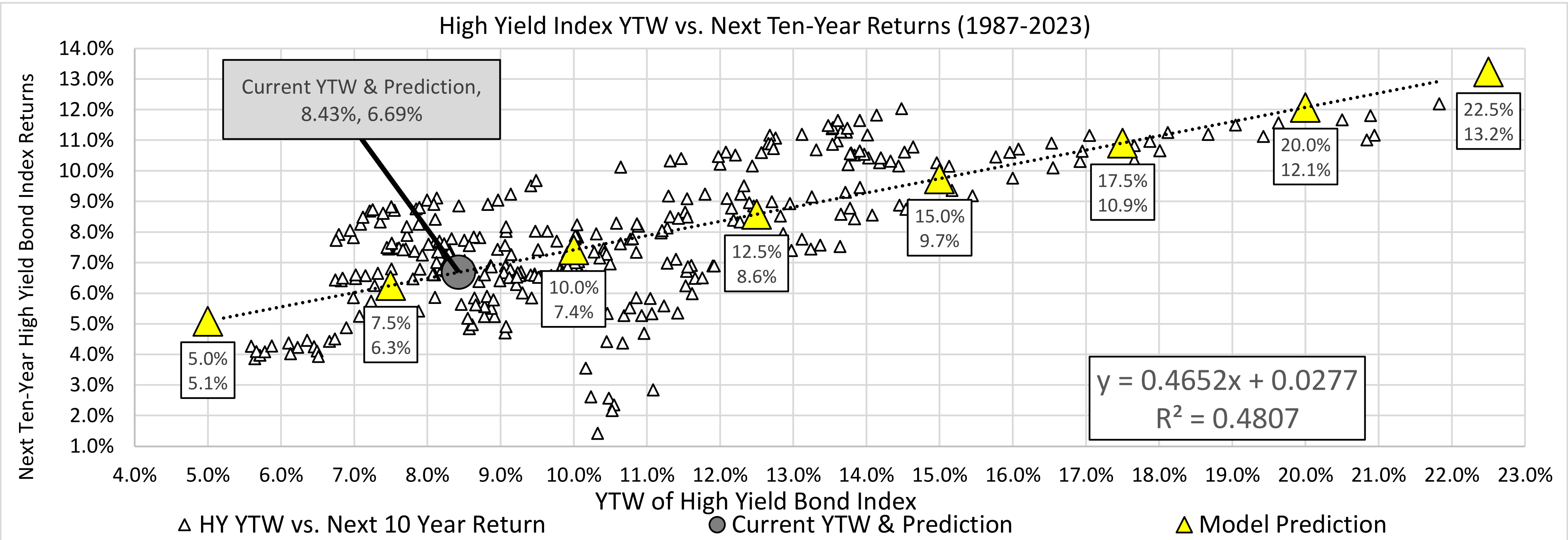




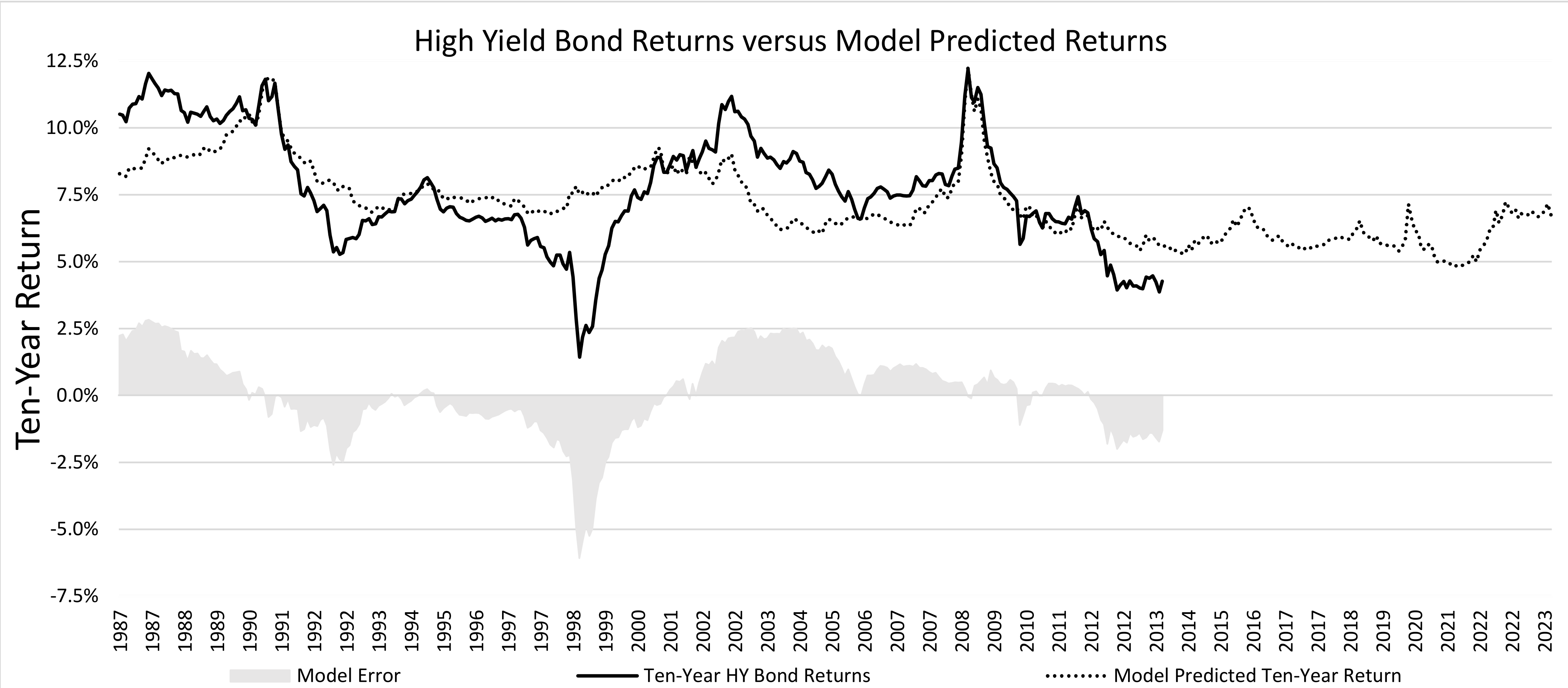
High Yield Bonds

1. The Bloomberg US Corporate High Yield Bond Index Yield-to-Worst (YTW) was 8.43 on 11/30/2023.
2. The HY Bond Return Forecast is derived by regressing the historical YTW of the HY Bond Index by the subsequent ten-year annualized return of the index.
3. The YTW of the Bloomberg HY Bond Index was higher than it is now (8.43%) during 58% of month end periods since 1987. The median YTW was 8.97% during this period.
4. The regression from 1/1/1987 to 11/30/2013 leads to a best fit formula = 0.4652 X [YTW] + 0.0277 with an R^2 of 0.4807.
5. 0.4652 X [8.43] + 0.0277 = a forecasted 6.69% annualized return over the next decade.
6. The 6.69% return implies a ~1.74% loss "drag" rate from the current YTW of the HY bond Index.

Ten-Year US High Yield Bonds Forecast = 6.69



High Yield Bonds



Bank Loans

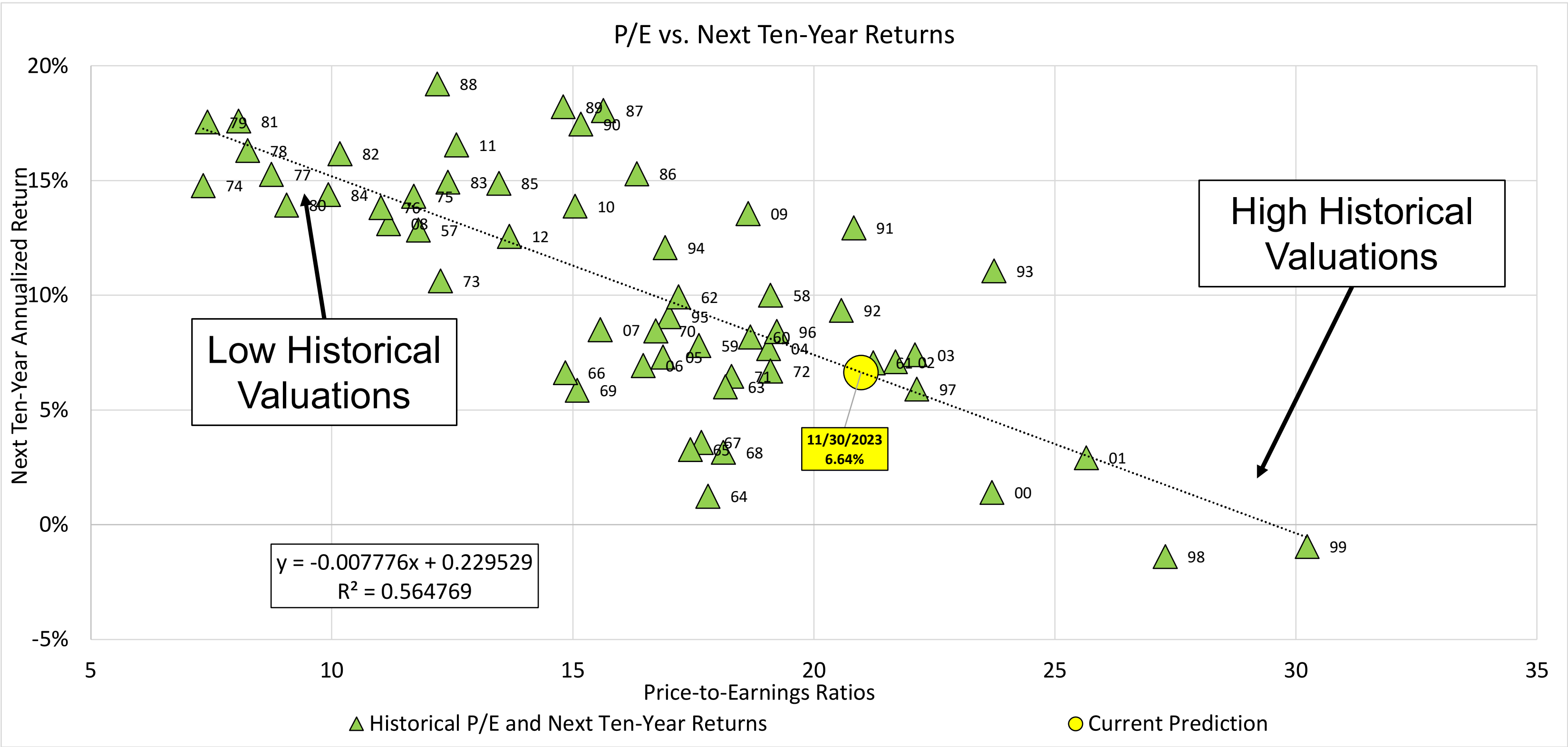
1. S&P/LSTA Leveraged Loan 100 TR = 9.79 YTM
2. Given the floating nature, we assume mean interest rate mean-reversion on par with cash (5.45 current 3 Mo T-Bill vs. 3.84% forecast reversion towards CPI).
3. 9.79 - 1.61 (cash mean reversion) = 8.13
4. From there, we apply the implied high yield bond loss: 8.13 – 1.74 (HY Bond Loss) = 6.39

Ten-Year Bank Loans Forecast = 6.39

Large Cap US Equity

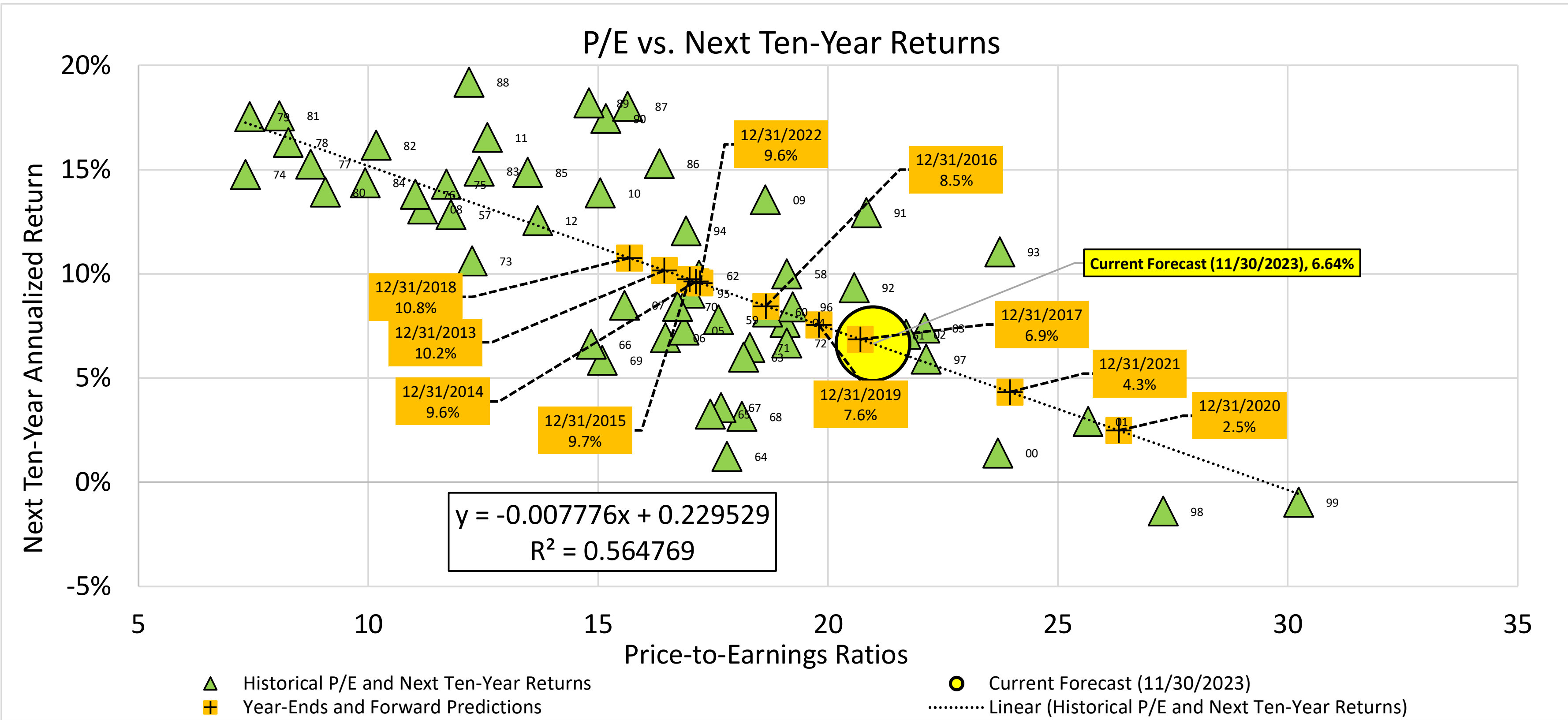
1. Large Cap US Equity Ten-Year forecasted returns will be determined by regressing the S&P 500 Index Price-to-Earnings Ratio by the subsequent ten-year returns since 1957. The linear regression results in an R^2 of 0.56.
2. Based on the 11/30/2023 Price-to-Earnings Ratio (20.98), the prediction is -0.007776 X 20.98 + 0.229529 = 6.64%.

Ten-Year Large Cap US Equity Forecast = 6.64



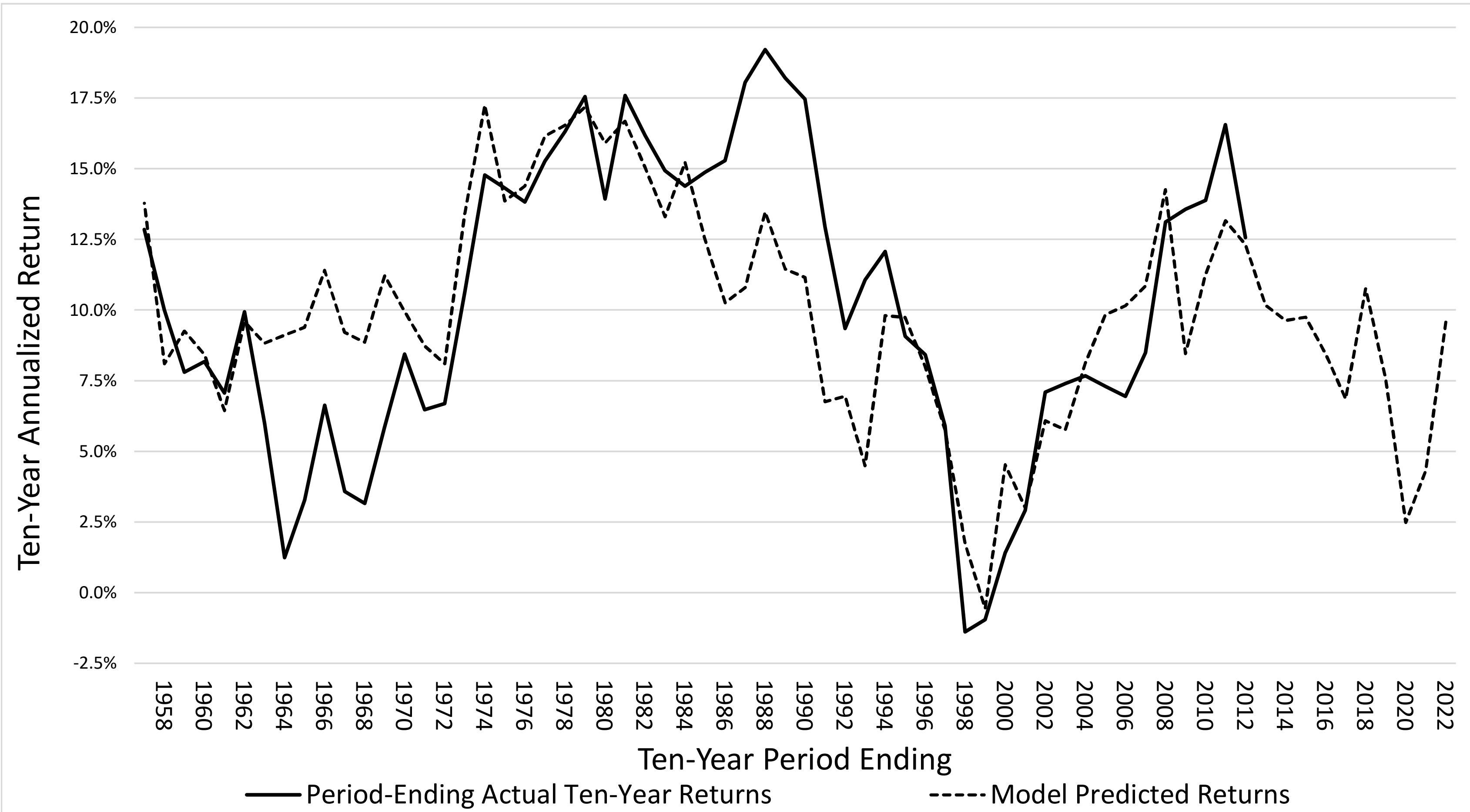
Large Cap US Equity

1. The Current Valuation of the S&P 500 Index (20.98) is on the 16.4% highest range of historical norms (since 1957).
2. The Average Price-to-Earnings ratio between 1957 and 2023 was 16.76, which would predict a 9.92% return = -0.007776 X 16.75 + 0.229529 = 9.92%.
3. The current expected forecasted return is about 3.3% lower than long-term averages.



Large Cap US Equity

Period-Ending Ten-Year Returns vs. Model Predicted Returns.



US Equity All, Large, Mid & Small Cap

1. The Large Cap US Equity forecasted geometric return is 6.64 as previously derived.
2. Using a 6.64 expected return as a large cap equity “plug” for the Black-Litterman methodology with US equity market cap weights of 70% large cap, 20% mid cap and 10% small cap (Russell 3000) representing a mean-variance efficient portfolio with a forward risk-free rate assumption of 3.84, the following represents the All Cap, Large Cap, Mid Cap and Small Cap returns.

Asset Class	Arithmetic Returns	Geometric Returns	Volatility
US Equity (AC)	8.07%	6.83%	15.7%
US Equity (LC)	7.80%	6.64%	15.2%
US Equity (MC)	8.43%	6.98%	17.0%
US Equity (SC)	9.17%	7.21%	19.8%

US Equity, International & EM Equity

1. The All-Cap US Equity forecasted geometric return is 6.83 as previously derived.

2. Using a 6.83 expected return as an All-Cap equity "plug" for the Black-Litterman methodology with global equity market (MSCI ACWI) cap weights of 62.7% US, 26.8% International Developed and 10.5% Emerging Markets representing a mean-variance efficient portfolio with a forward risk-free rate assumption of 3.84%, the following represents the markets implied US, International Developed & Emerging Markets forecasts.

3. Given global economic and geopolitical headwinds, we believe that the market's implied risk premiums for international developed and emerging markets warrant moderation (by 0.30% for international developed and 0.40% for emerging markets). These modified capital market assumptions lead to approximately 5% underweights in both international developed and emerging market equities versus global market cap weights.

Implied Market Forecasts from Market Cap Weights

Asset Class	Arithmetic Returns	Geometric Returns	Volatility
Global Equity	8.70%	7.53%	15.30%
US Equity (AC)	8.07%	6.83%	15.69%
Int'l Dev. Equity	9.24%	7.79%	17.01%
EM Equity	11.09%	8.48%	22.82%

First Business Bank Forecasts

Asset Class	Arithmetic Returns	Geometric Returns	Volatility
Global Equity	8.57%	7.40%	15.30%
US Equity (AC)	8.07%	6.83%	15.69%
Int'l Dev. Equity	8.94%	7.49%	17.01%
EM Equity	10.68%	8.08%	22.82%

Global, US Equity, International & EM Equity

Ten-Year Global Equity Forecast = 7.4
Ten-Year US Equity (AC) Forecast = 7.8
Ten-Year US Equity (LC) Forecast = 6.6
Ten-Year US Equity (MC) Forecast = 7.0
Ten-Year US Equity (SC) Forecast = 7.2
Ten-Year Non-US Equity Forecast = 7.9
Ten-Year Int'l Dev. Equity Forecast = 7.5
Ten-Year EM Equity Forecast = 8.1

Asset Class	Arithmetic Returns	Geometric Returns	Volatility
Global Equity	8.57%	7.40%	15.30%
US Equity (AC)	8.07%	6.83%	15.69%
US Equity (LC)	7.80%	6.64%	15.24%
US Equity (MC)	8.43%	6.98%	17.05%
US Equity (SC)	9.17%	7.21%	19.80%
Non-US Equity (ACWI)	9.43%	7.92%	17.39%
Int'l Dev. Equity	8.94%	7.49%	17.01%
EM Equity	10.68%	8.08%	22.82%

Real Estate

1. FTSE NAREIT All Equity REITS Index Div Yield = 4.19
2. We expect REITs to increase earnings by rents (CPI) over time.
3. 4.19 + 2.23 = 6.42

Ten-Year REIT Forecast = 6.42

Commodity Futures

1. Over time, we expect the commodity index return to equal the cash return + commodities spot returns + commodity roll returns.
2. The ten-year cash forecast is 3.84.
3. We expect commodity spot returns to approximate the CPI rate (of 2.23) over the next ten years.
4. We conservatively estimate a roll return of zero over the next decade.
5. 3.84 + 2.23 + 0.0 = 6.07

Ten-Year Commodity Futures Forecast = 6.07

Liquid Alternatives Portfolio

1. Based on the liquid alternative vehicles being used, we expect the volatility of this portfolio to annualize at 3.43% over the next ten-years.
2. Over the same period, we expect a 77.5% Cash portfolio and 22.5% Large Cap US Equity Portfolio to have a 3.43% standard deviation and 4.67% annualized return over the next ten-years.
3. We believe the liquid alternatives portfolio will add 1.0% in risk-adjusted return above the cash (77.5%) and large cap (22.5%) portfolio for an expected return of 5.67%

Ten-Year Liquid Alternatives Forecast = 5.67

Thank You!

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