Borrow Now or Wait?

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Interest Rates: Past, Present, and Future

Section 1

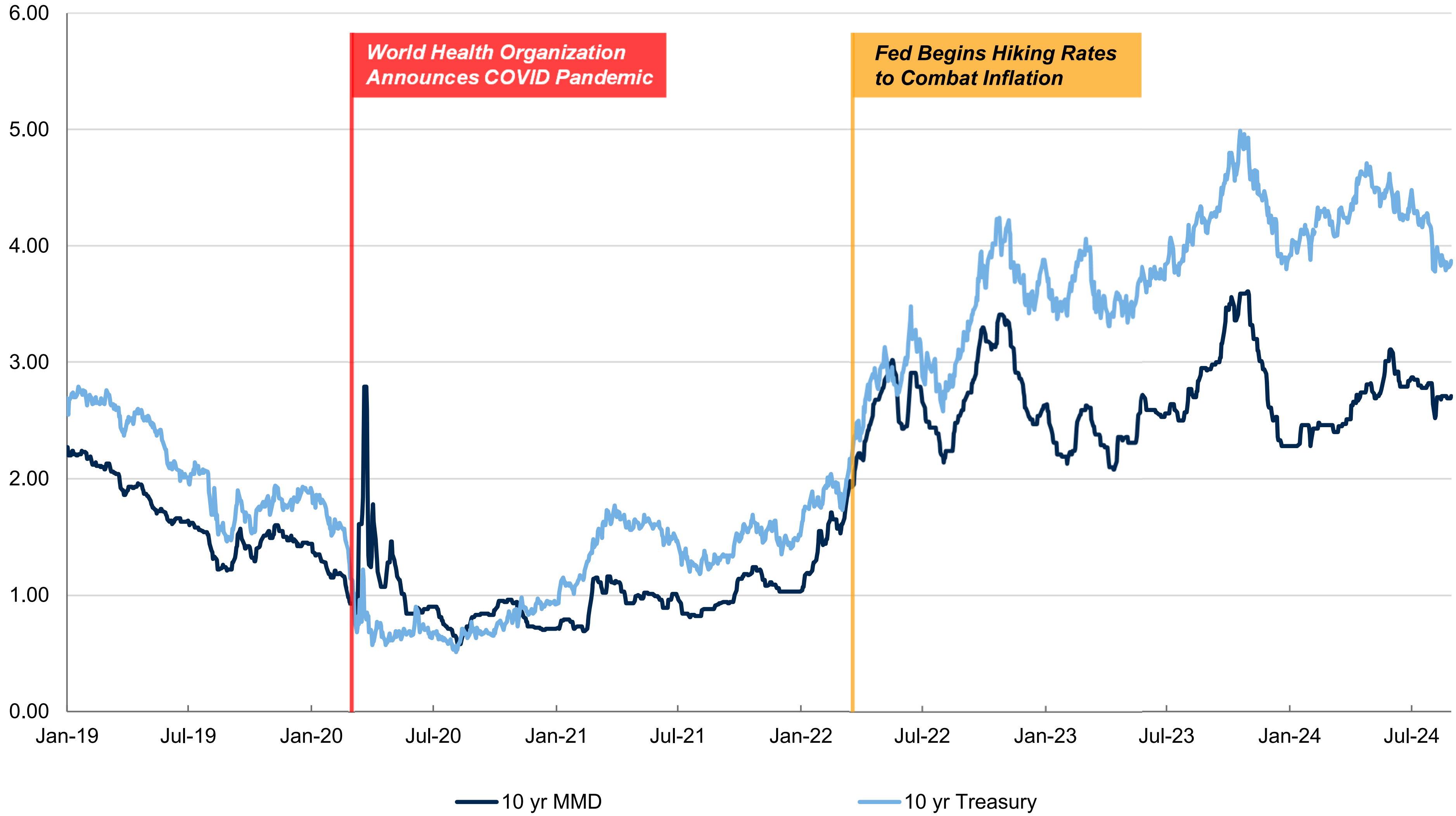
Determining If and When to Borrow

- A municipality's decision if and when to borrow to finance capital improvements is complex and involves a careful analysis of many factors

- If municipality should borrow? – Should your municipality use existing funds or borrow
  - Determining if your municipality should borrow or use some source of funds on hand is the first important question
  - Factors include availability of existing funds, opportunity costs of using existing funds for capital, borrowing rates, and public policy questions
  - Ability to borrow on a tax exempt basis typically presents a benefit for public issuers

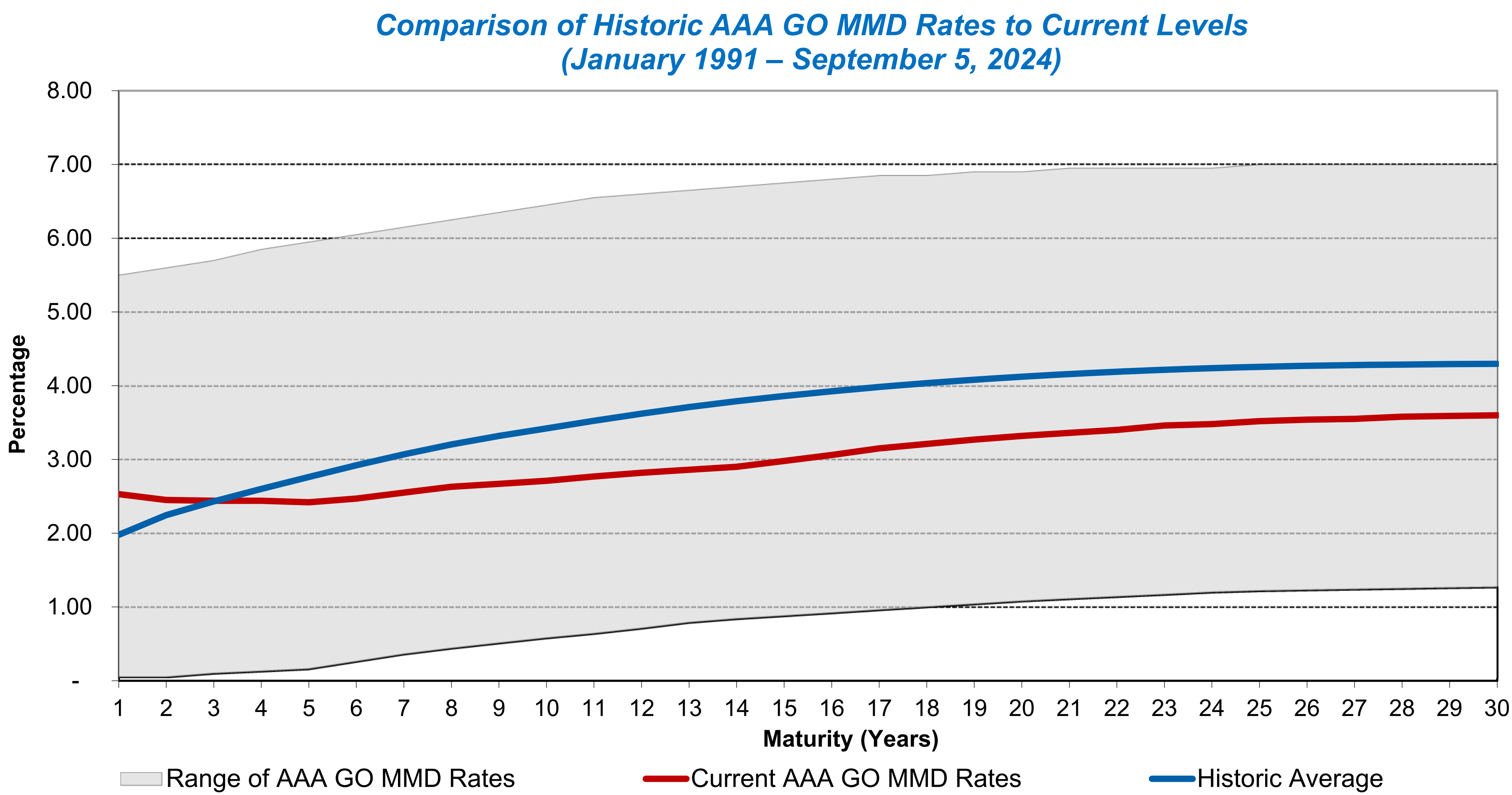
- When should a municipality borrow? - If there is a need to borrow, and you have determined borrowing is desirable, the next question is timing
  - Borrowing timing may or may not be flexible. If funds are needed immediately, and borrowing is desired, then flexibility is limited
  - If borrowing is desired, but there is flexibility in the timing of projects, many factors can be considered to determine the optimal time to borrow
  - We will discuss the macroeconomic environment, factors that could impact interest rates in the near and long term, and market expectations for interest rates

Recent Interest Rate Environment



Source: Refinitiv, TM3

Current Tax Exempt Interest Rates vs. Historic Range



- While recent news has emphasized high inflation and interest rates, rates are actually very close to long term averages
- In fact, after year 3, long term rates are actually lower than historical averages
- Issuers should not let volatility on the short end of the curve present undue influence on long term financing decisions

Source: Refinitiv, TM3

Different Types of Inflation

Consumer Price Index (CPI)

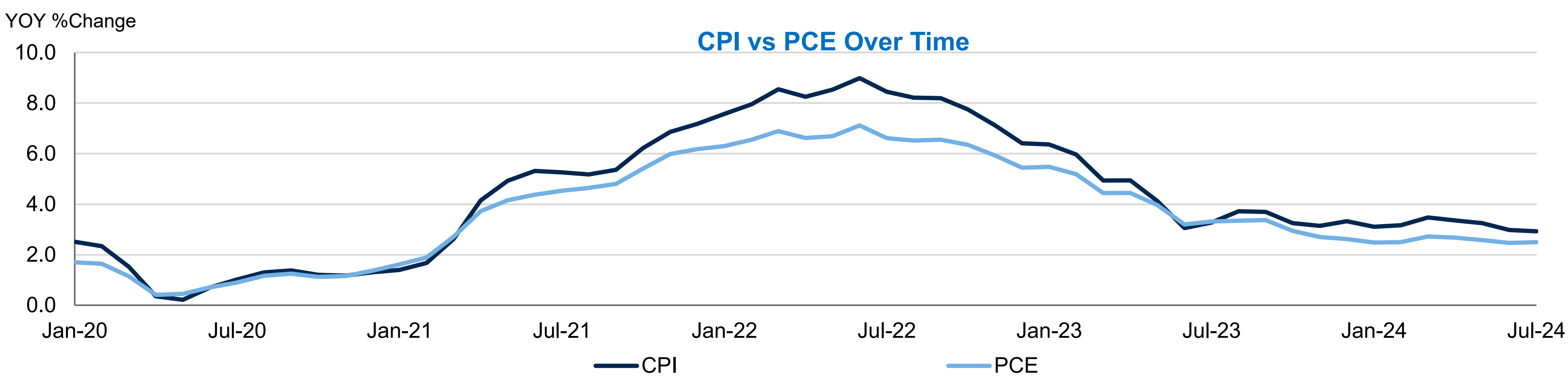
- A measure of the average change over time in the prices paid by **urban** consumers for a market basket of consumer goods and services
- includes only out-of-pocket spending made directly by consumers
- Adjusts its weighting methodology annually
- Often used to adjust income payments, such as social security and food stamp payments

Personal Consumption Expenditures Index (PCE)

- The preferred inflation measure of the Fed
- Adjusts its weighting methodology monthly
- Includes purchases made by **urban and rural** consumers
- Includes a broader subset of goods and services prices
- can more quickly reflect the impact of new technology or an abrupt change in consumer spending patterns

Producer Price Index (PPI)

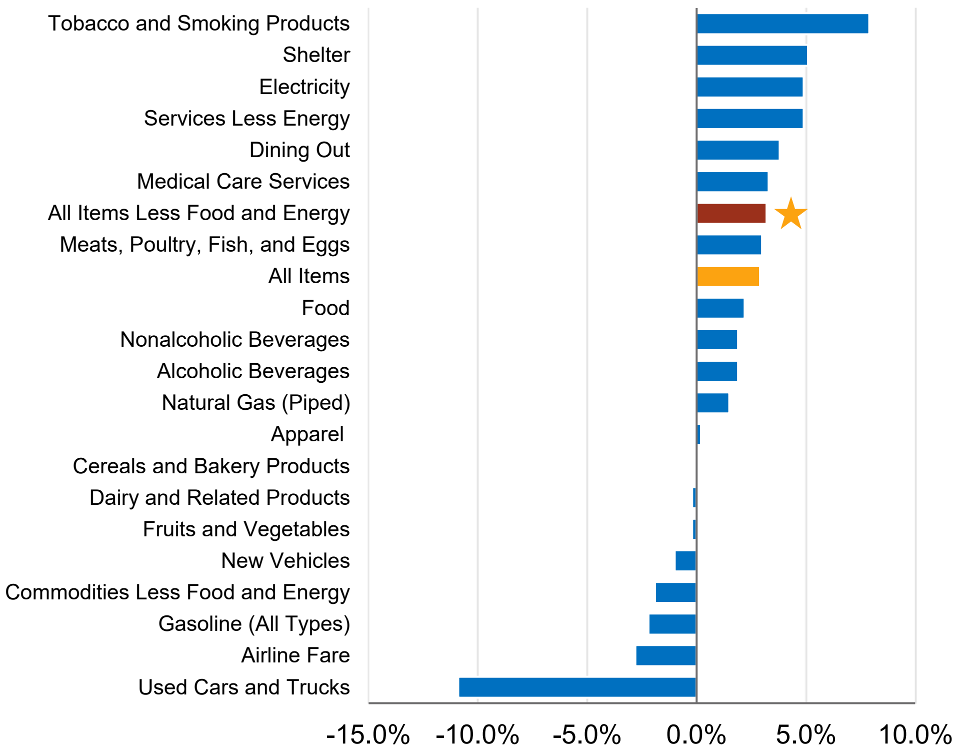
- Measures the change in the prices paid to U.S. producers of goods and services
- A measure of wholesale vs retail inflation
- Heavily influences the costs consumers will eventually pay as producers pass on price increases
- Seen as a precursor of trends for the other two indices



Sources: Bureau of Labor Statistics, US Department of Labor, https://www.morningstar.com/markets/whats-difference-between-cpi-pce, U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: All Items in U.S. City Average [CPIAUCSL], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/CPIAUCSL, September 5, 2024

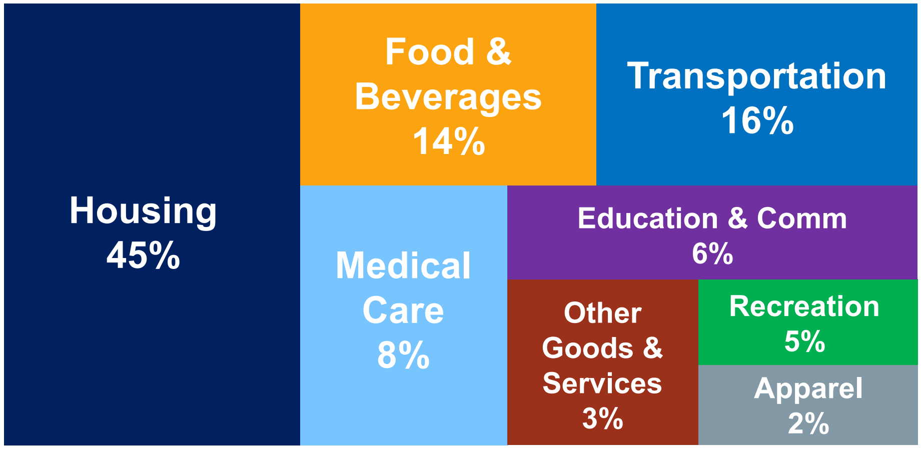
What is Going on with Inflation?

12 Month % Change in Price, July 2024, not Seasonally Adjusted



Source: U.S. Bureau of Labor Statistics, September 5, 2024.

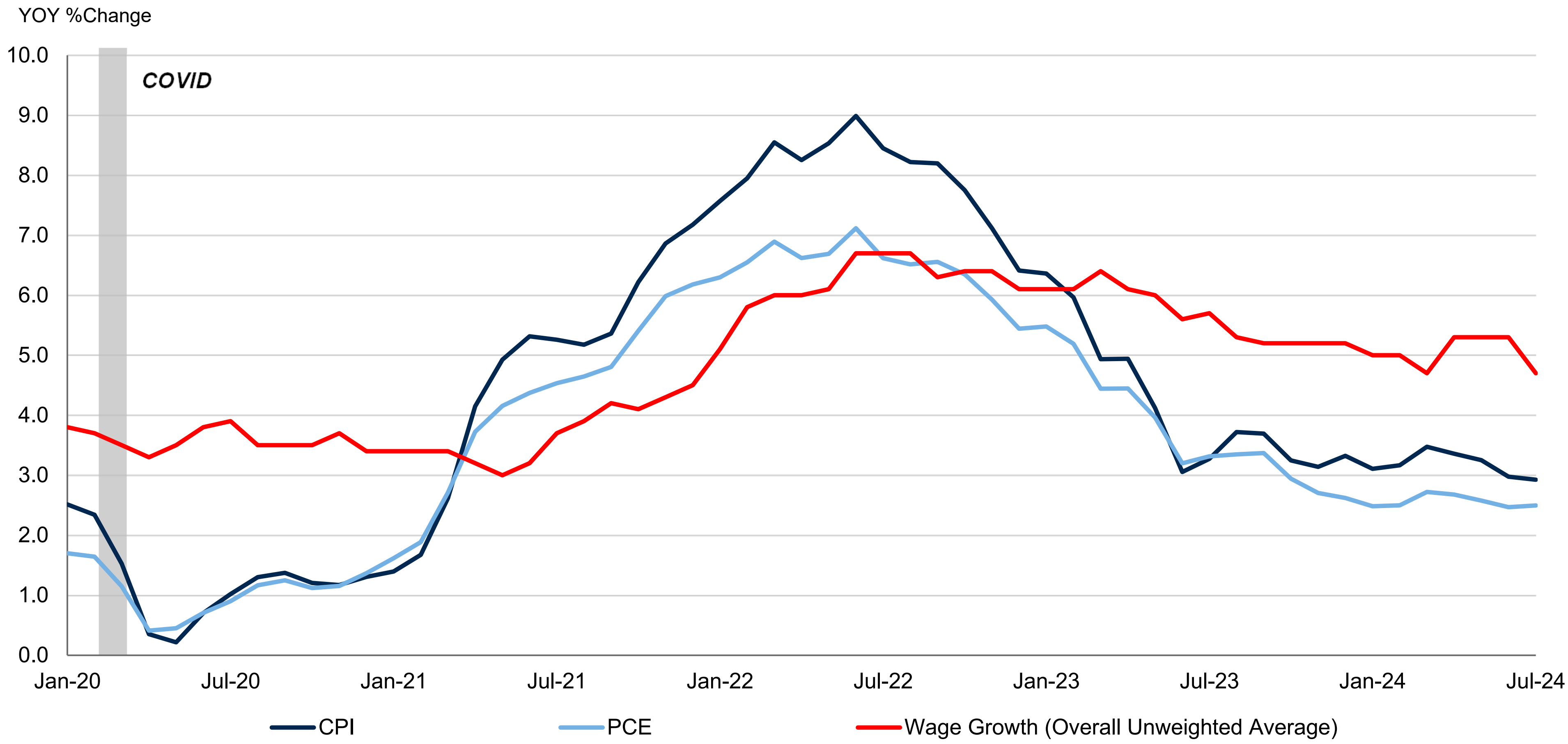
Relative Importance of Inflation Components



U.S. Bureau of Labor Statistics, https://www.bls.gov/cpi/tables/relative-importance/2023.htm, September 5, 2024.

- Both “all items” inflation (2.9%) and “Core inflation” (3.2%) are close to the Feds long term-target of 2.00%
- Core inflation removes food and energy because of the volatility of those components. It provides a more stable view of inflation and is useful for central bank decision making
- A significant amount of categories are experiencing 0.0 – 2.0% or negative inflation
- This data increases the chances of multiple interest rate cuts before the end of the year

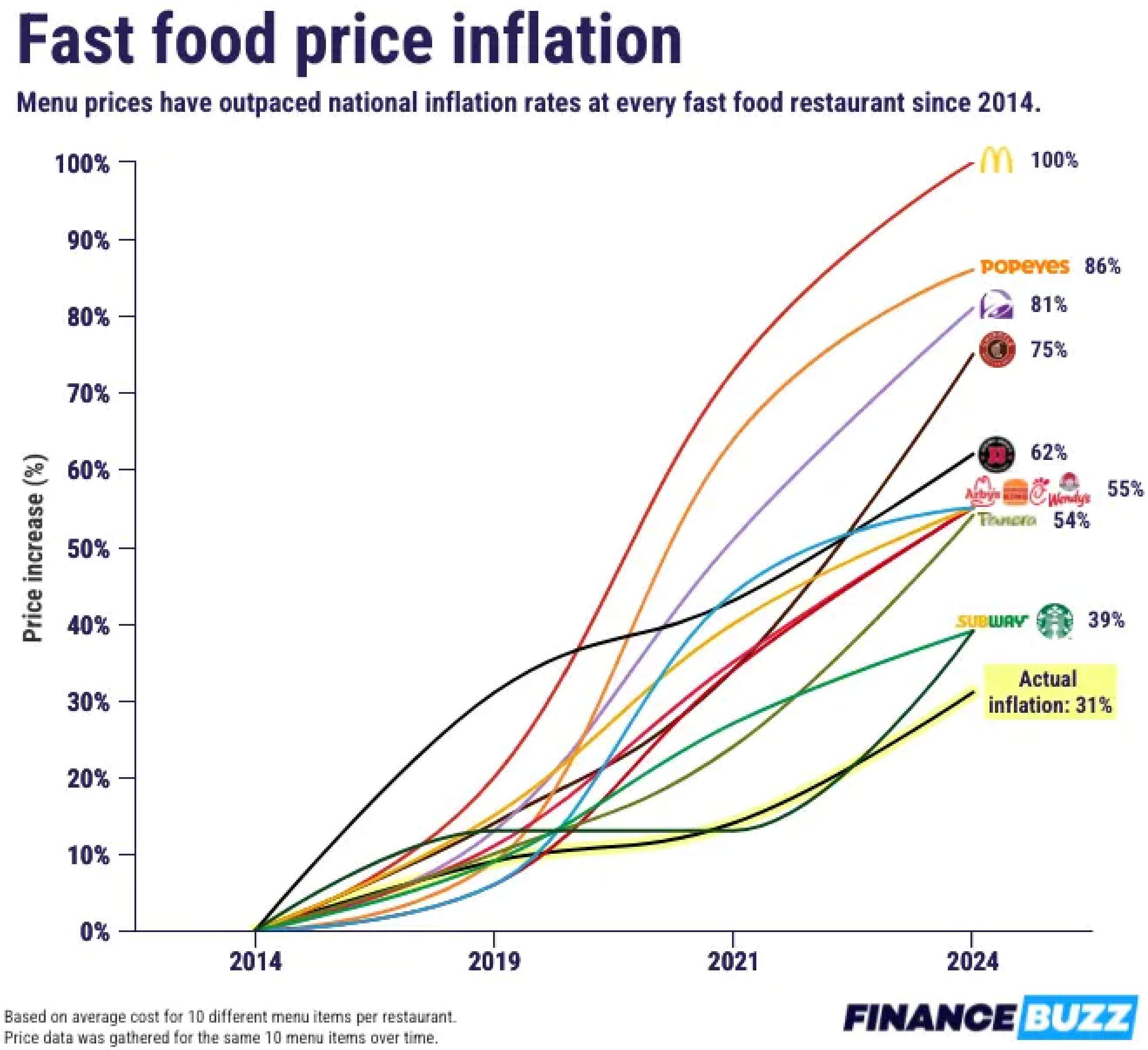
Change in Inflation



- Each gauge of inflation has a different set of components
- For a household with typical sources of wage income, how inflation impacts the overall budget is a combined factor of growth in wages and growth in expenses
- Inflation impacts each household differently depending on their individual wage growth and growth in their expenses

Source: U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: All Items in U.S. City Average [CPIAUCSL], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/CPIAUCSL, September 4, 2024; Current Population Survey, Bureau of Labor Statistics, https://www.atlantafed.org/chcs/wage-growth-tracker, September 6, 2024

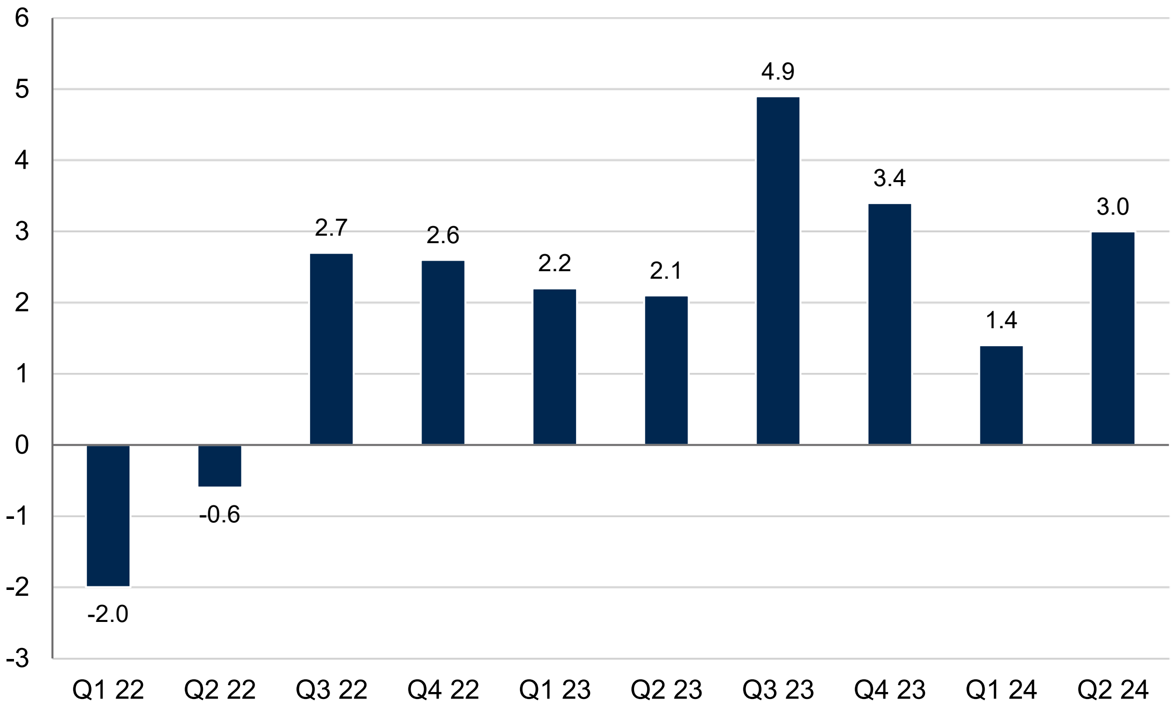
The Impact of Inflation Depends on What You Buy



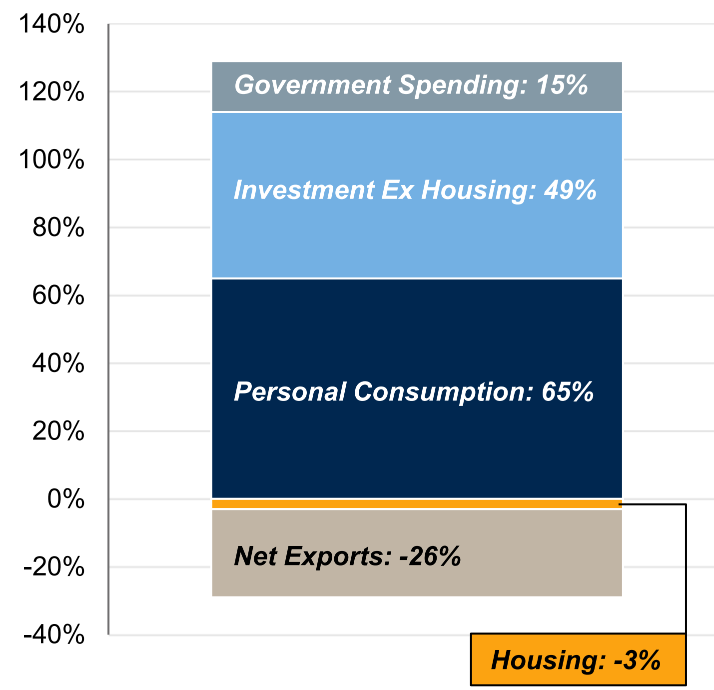
Source: FinanceBuzz

GDP Growth Has Remained Strong

Recent Quarterly GDP Growth



Q2 2024 GDP Components

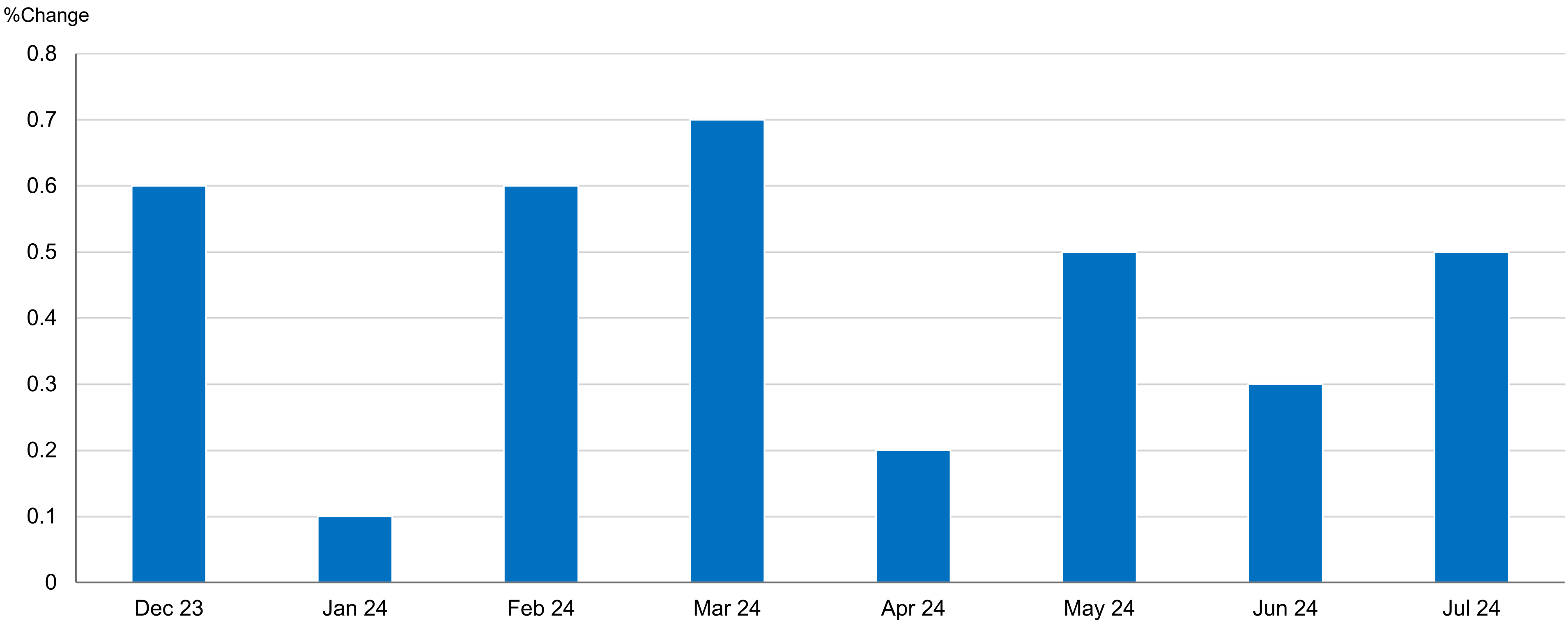


- Real Gross Domestic Product increased at an annual rate of 3.0% in the second quarter of 2024
- That brought 1-year, cumulative GDP growth to 3.2%, in line with long term averages and showing further signs of economic normalization
- Personal consumption and business investment are largely the main drivers of US GDP growth

Sources: U.S. Bureau of Economic Analysis

Consumer Spending

Monthly Change in Consumer Spending

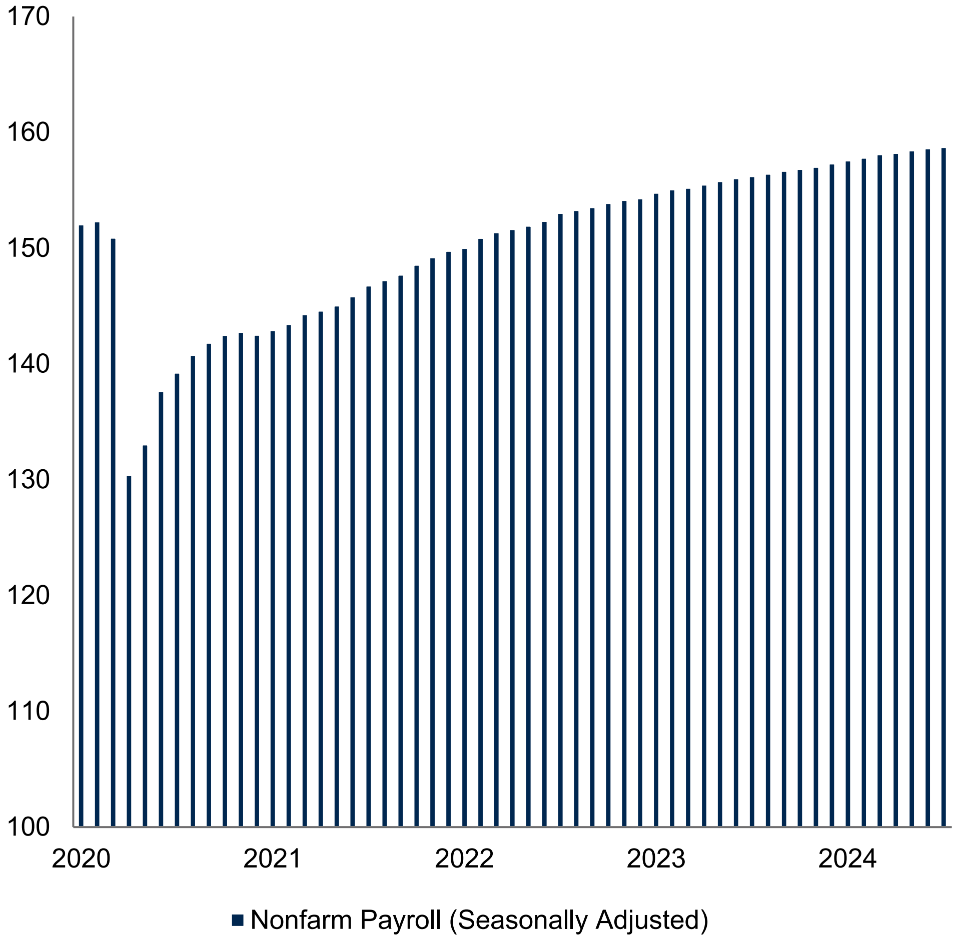


- Consumer spending remains consistent, increasing in each of the last 8 months
- This coincides with a positive trend in consumer confidence, which would ideally translate into greater personal consumption
- Consumer Spending makes up approximately 70% of the nation’s economy, making it an important measure of the overall economy

Sources: U.S. Bureau of Economic Analysis

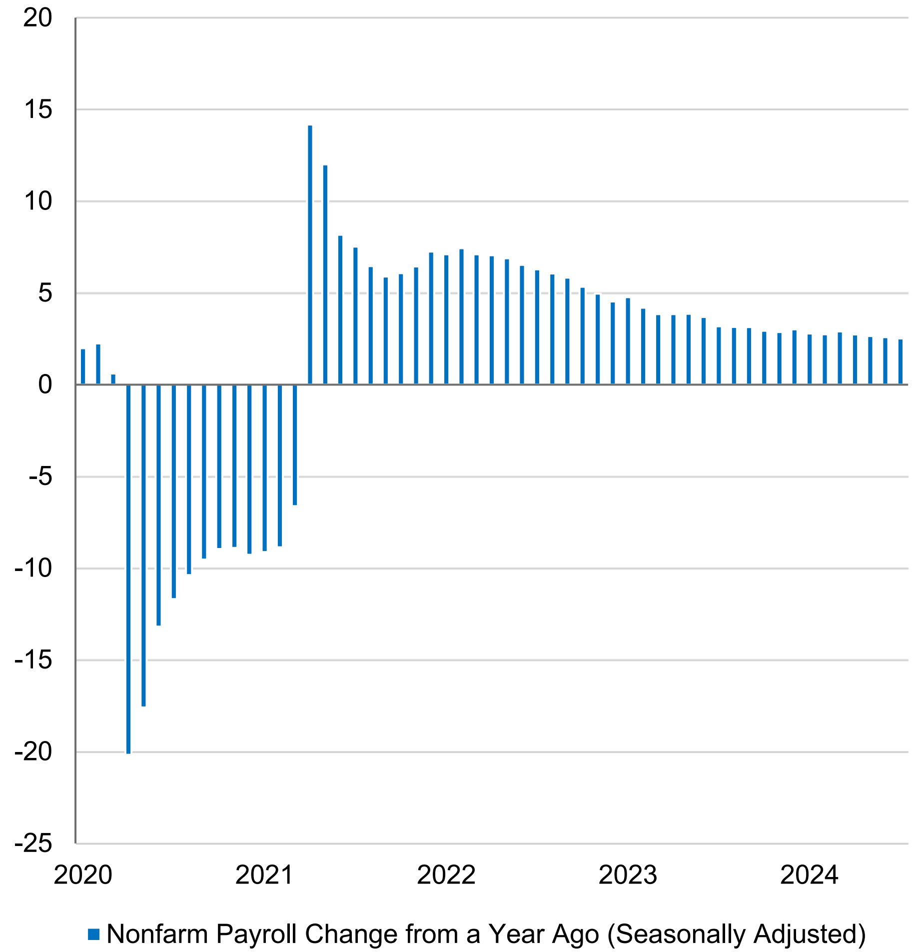
Current Employment Landscape

Nonfarm Payroll (Thousands)



U.S. Bureau of Labor Statistics, All Employees, Total Nonfarm [PAYEMS], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/ PAYEMS, September 4, 2024.

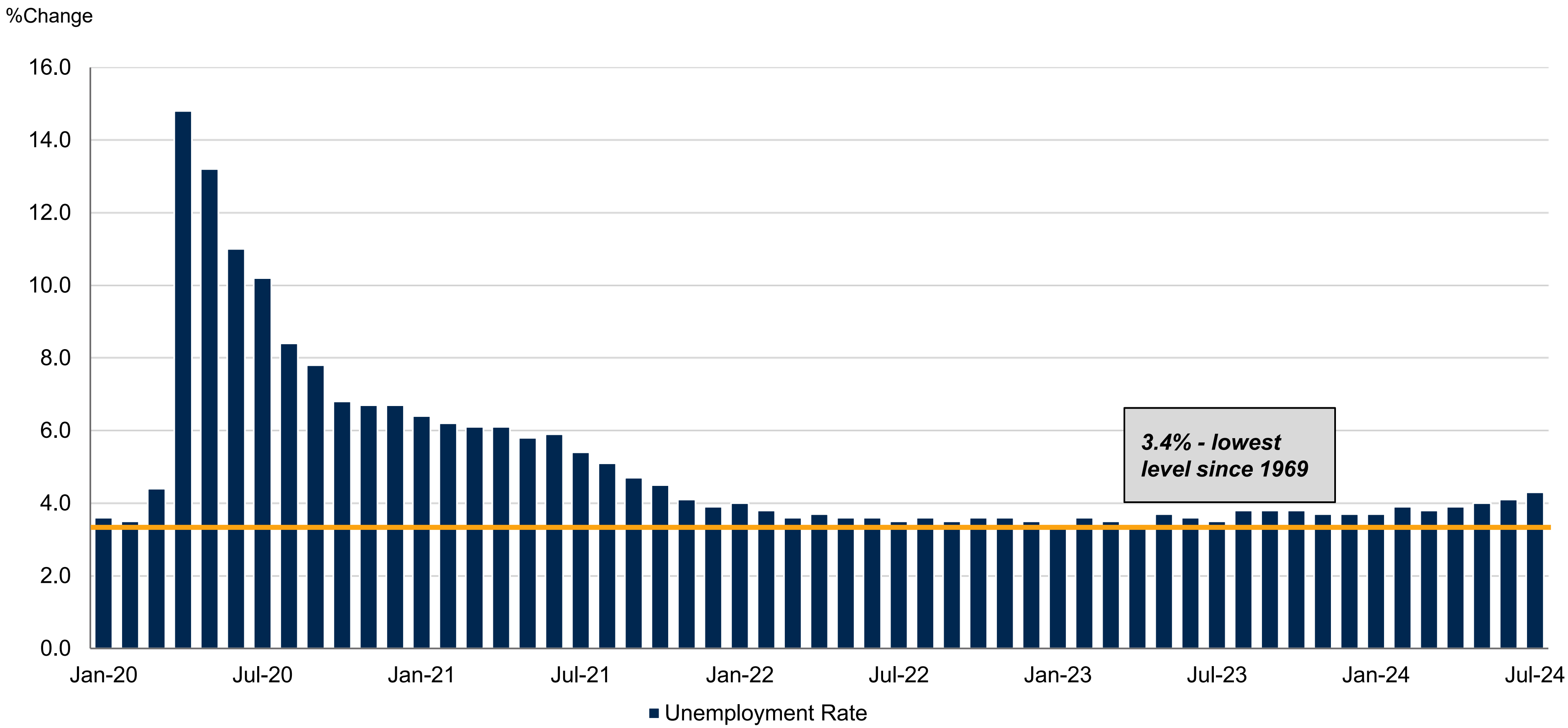
Change in Nonfarm Payroll (Thousands)



U.S. Bureau of Labor Statistics, All Employees, Total Nonfarm [PAYEMS], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/ PAYEMS, September 4, 2024.

- Payroll figures are calculated based on a survey of roughly 119,000 companies and 60,000 households which makes them subject to sampling error
- This sampling error can be significant, BLS estimates the sampling error is within +/- 130,000

Unemployment

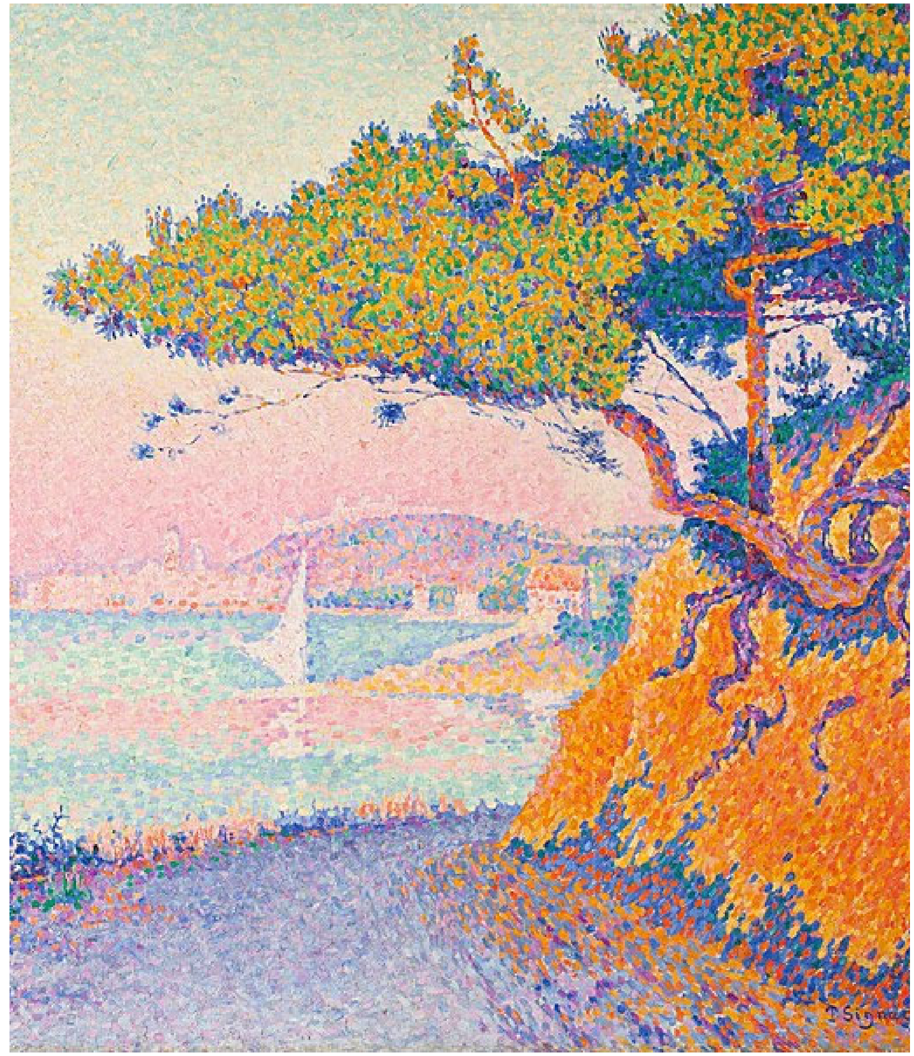


- The Fed's "dual mandate" is the maximization of employment and stabilization of prices
- With unemployment near historic lows and inflation declining, the current market seems potentially conducive to interest rate cuts
- A "soft landing" is considered a slowdown in economic growth – needed to combat inflation – without sending the economy into a recession
- Currently, employment remains relatively strong, while inflation appears to trend toward the Fed's 2.00% long term target

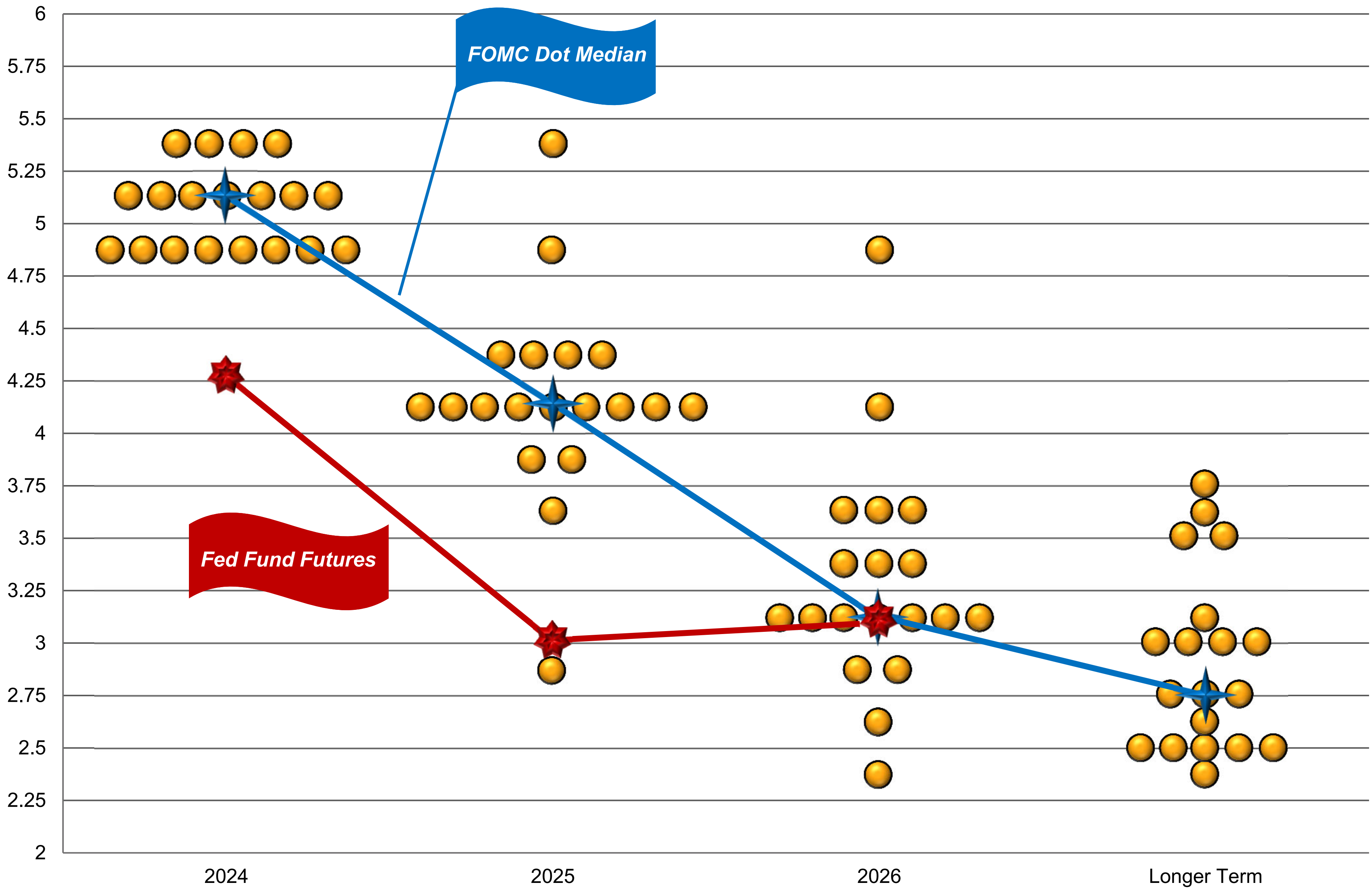
Sources: U.S. Bureau of Labor Statistics, Unemployment Rate [UNRATE], retrieved from FRED, Federal Reserve Bank of St. Louis; https://fred.stlouisfed.org/series/UNRATE, September 5, 2024

What is a Dot Plot?

- The Fed dot plot is an aggregate projection of the Feds projections for the short-term and long-term Fed Funds rate
- Each dot represents a central banker's opinion of the fed funds midpoint rate at various times
- Like pointillism, while each individual dot may not be meaningful, together they paint a picture of the future inflation expectations from Fed officials
- This gives unique insight into how the Fed is reacting to data and can be useful for businesses and consumers making financial decisions



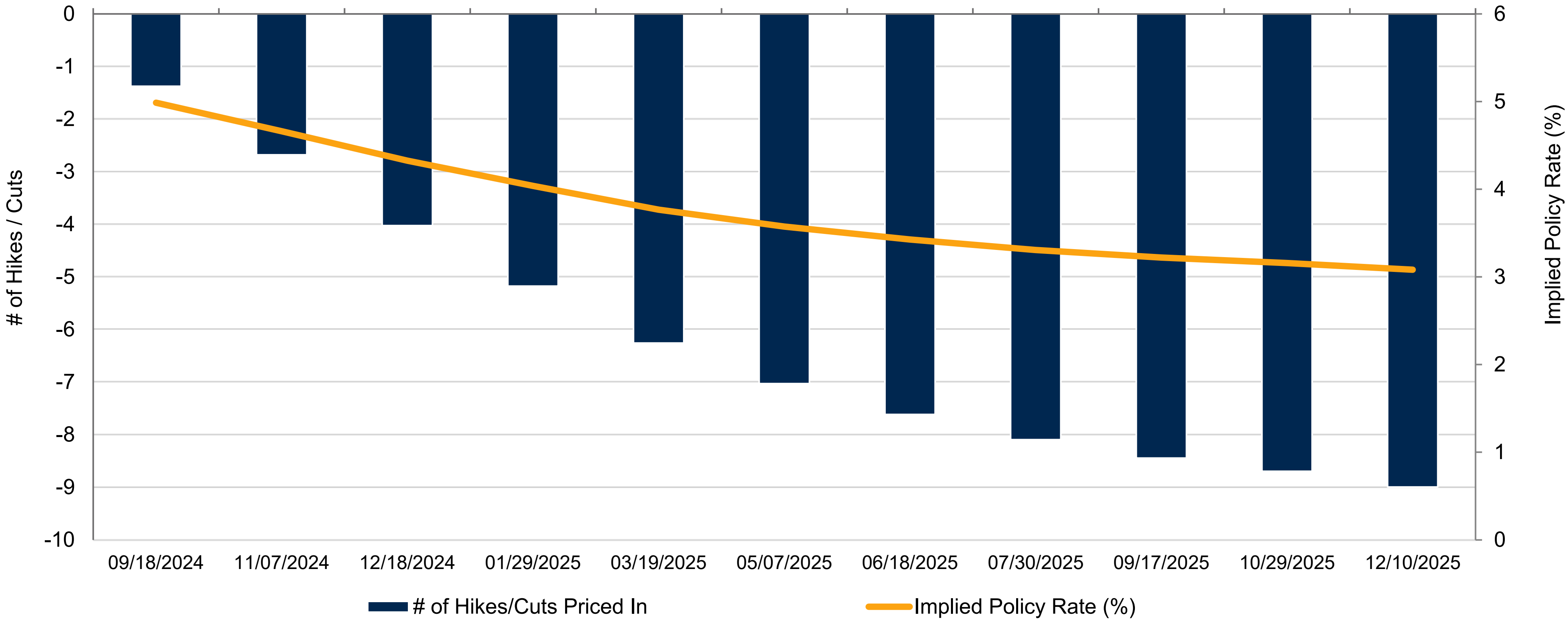
Fed Dot Plot



Source: Bloomberg

Market Predictions for Fed Action

Bloomberg World Interest Rate Probabilities

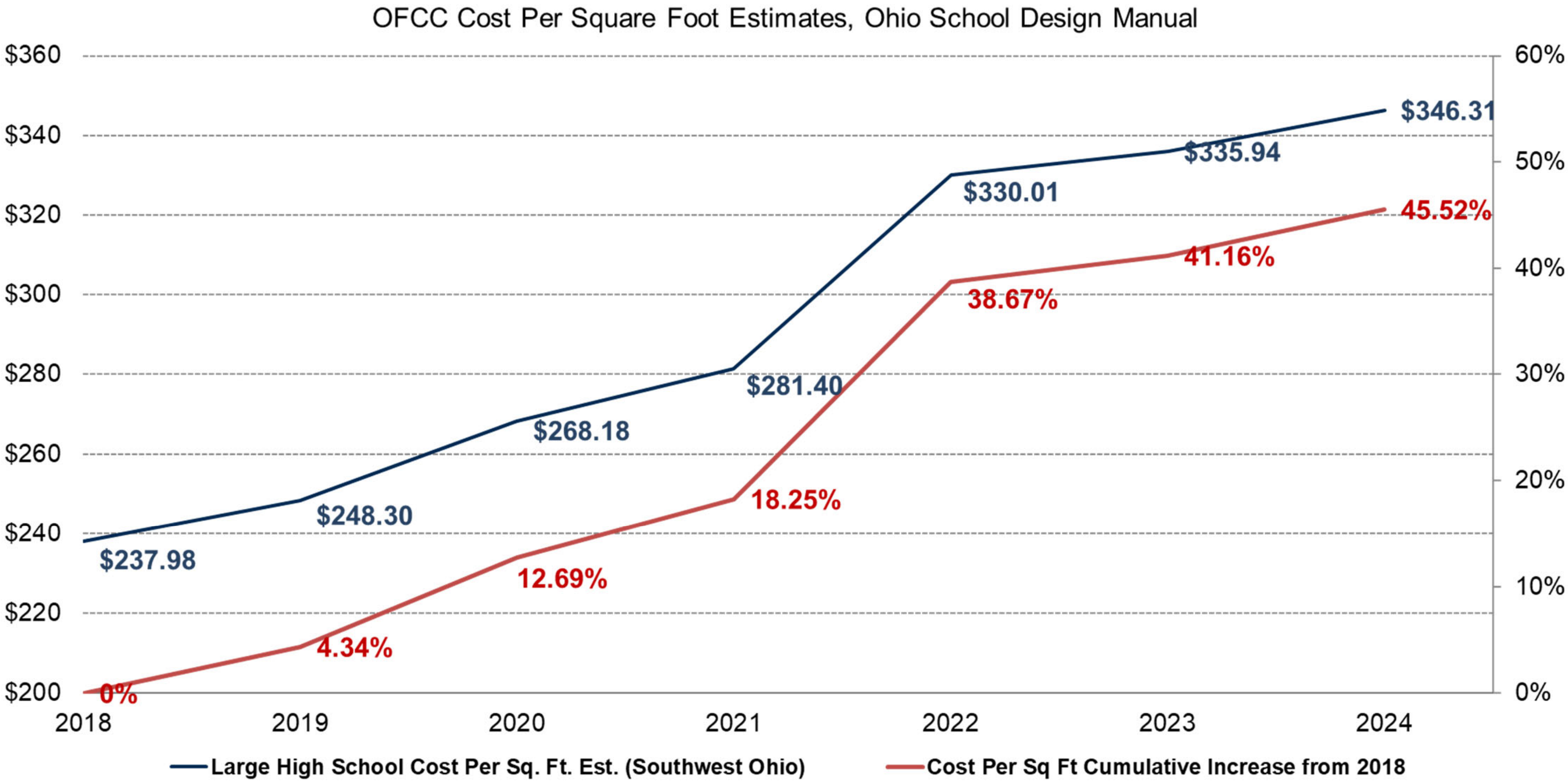


- Calculates the implicit forecast for central bank rate actions based on pricing in futures and overnight swaps markets
- Fed fund futures are pricing in 4 cuts for a total of 100 basis points in 2025
- At the Federal Reserve meeting at Jackson Hole Wyoming on August 23, citing weakening in the labor market as well as significant progress in fighting inflation, Jerome Powell signaled that the “time has come” for interest rate cuts, although remained unspecific about timing and size
- Lower inflation and lower Fed Funds rates are typically considered “good” for the overall economy; however, lowering rates would need to be done carefully.

Sources: Bloomberg, https://www.federalreserve.gov/newsevents/speech/powell20240823a.htm

Construction Inflation's Significant Impact on Construction Projects

- The Ohio Facilities Construction Commission works with many Ohio K-12 school districts co-funding local school construction
- Annually OFCC publishes the OFCC Ohio School Design Manual which contains data on the average cost of construction for K-12 school projects in Ohio
- Since 2018 the cost of construction as estimated by OFCC has increased by over 45% but have begun to stabilize in the past few years, as shown in the below chart



Source: OFCC Ohio School Design Manual, "Square Foot Cost Chart" 2024 data: https://dam.assets.ohio.gov/image/upload/ofcc.ohio.gov/Portals/0/2023-Cost-Set.pdf

Future Construction Inflation Depends on Many Factors

- Industry observers point to a number of factors and trends that may influence the cost of construction going forward:
  - Higher interest rates and higher construction costs could potentially temper demand for some types of new construction in the coming year
  - The Infrastructure Investment and Jobs Act provides $1.2 trillion in funding for a variety of construction projects over the next 5 years, providing a pipeline for large infrastructure projects
  - Inflation as measured by the CPI has declined significantly but remains above the Federal Reserve 2% target. Construction inflation has consistently exceeded overall inflation over the past few years.
  - While supply chains have largely bounced back from the early part of the pandemic, certain construction materials may still continue to be in short supply and potentially at elevated prices
  - Labor shortages – According to the annual Associated General Contractors of America 2023 annual survey there are significant shortages of skilled and unskilled tradespeople which has contributed to limited capacity and higher wages. 85% of surveyed construction firms have open positions and of those 88% are having a hard time filling those positions. 81% have increased base pay. Only 17% of surveyed firms have experienced "no significant delays" because of labor, material or other issues.
  - Slow technology adoption – While future adoption of technology may increase worker productivity, the construction industry can be slow to adopt new technology

Sources: Bureau of Labor Statistics,
https://www.constructiondive.com/news/new-year-challenges-for-iija-infrastructure-act-projects/640021/;
https://www.brookings.edu/essay/infrastructure-workforce/;
https://www.agc.org/sites/default/files/Files/Communications/2023_Workforce_Survey_National_Final.pdf

Interest Rate Forecasts – RBC Economics and Bloomberg Consensus

Anticipated market conditions through 2024

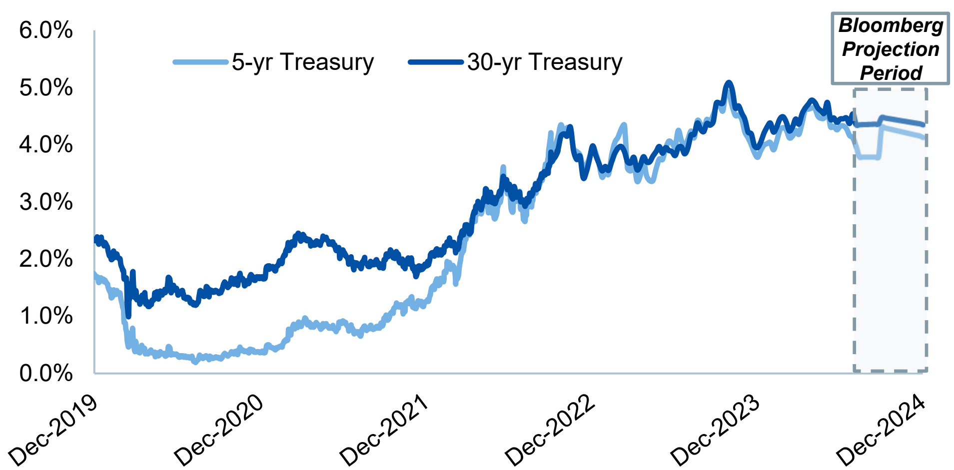
RBC Economics U.S. Interest Rate Forecast - August 2024

	Actual						Forecast					
End of Quarter	**23Q1**	**23Q2**	**23Q3**	**23Q4**	**24Q1**	**24Q2**	**24Q3**	**24Q4**	**25Q1**	**25Q2**	**25Q3**	**25Q4**
Fed funds	4.88	5.13	5.38	5.38	5.38	5.38	5.13	4.88	4.63	4.38	4.38	4.38
Three-month	4.85	5.43	5.55	5.40	5.45	5.48	4.96	4.70	4.50	4.28	4.35	4.36
Two-year	4.06	4.87	5.03	4.23	4.66	4.71	4.50	4.60	4.65	4.75	4.80	4.70
Five-year	3.60	4.13	4.60	3.84	4.28	4.33	4.10	4.25	4.20	4.25	4.20	4.10
10-year	3.48	3.81	4.59	3.88	4.27	4.36	4.15	4.30	4.25	4.20	4.15	4.05
30-year	3.67	3.85	4.73	4.03	4.41	4.51	4.40	4.60	4.55	4.45	4.35	4.25

Bloomberg Economic Interest Rate Forecast

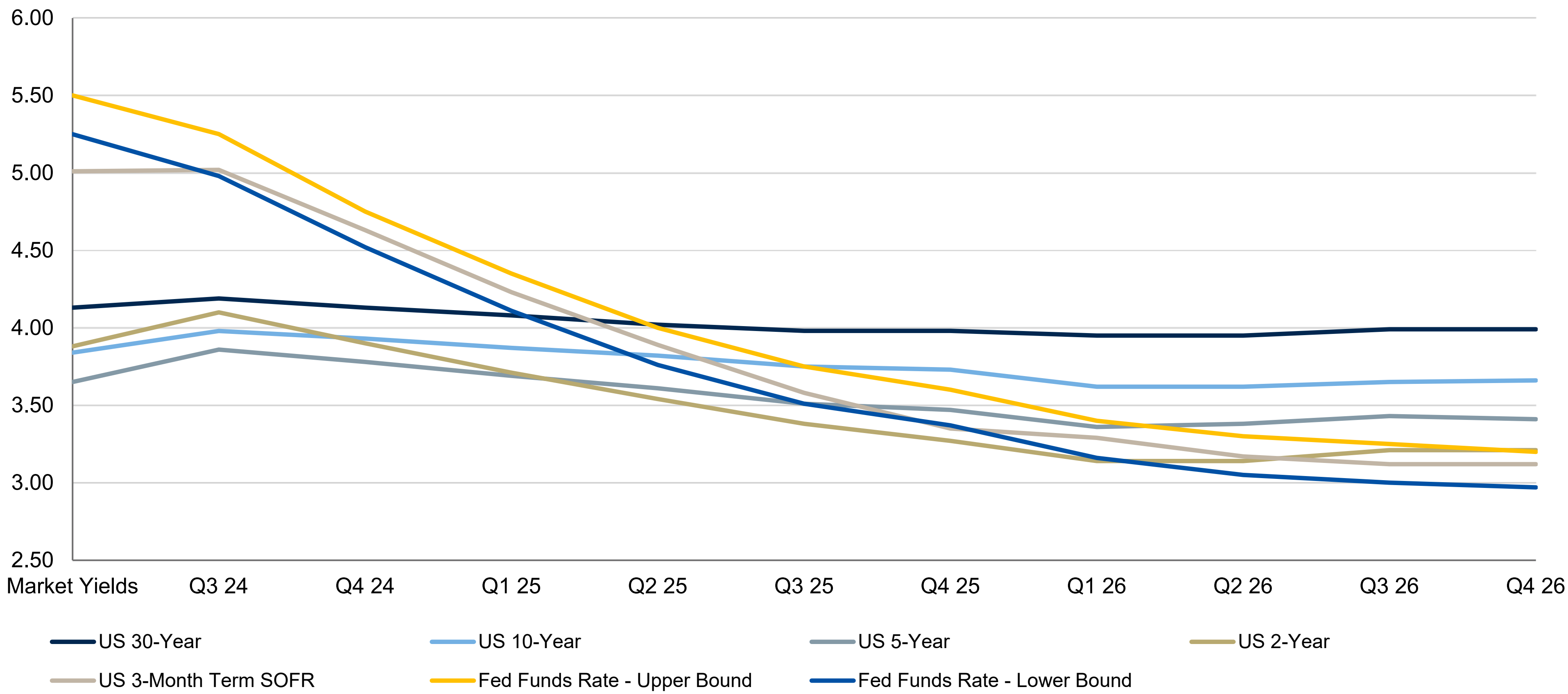
Tenor	Current[1]	March 2025	Change
Fed Funds Upper Bound	5.50%	4.45%	**-1.05%**
3-Month SOFR	5.13%	4.53%	**-0.60%**
5-Year Treasury	3.77%	3.89%	**0.12%**
10-Year Treasury	3.89%	4.02%	**0.13%**
30-Year Treasury	4.15%	4.23%	**0.08%**
10 to 30-yr Spread (bps)	26	10	**-16**

Historical and Projected Treasury Yields



Sources: RBC Capital Markets as of August 14, 2024, RBC Thought Leadership; Bloomberg as of August 16, 2024

Bloomberg Consensus Interest Rate Forecast



- Based on economist consensus forecasts there seems to be broad agreement that short term rates will decline over the next two years but long term rates are predicted to remain stable
- The market expectation is for the yield curve to normalize with US Treasury yields ranging from 3% on the short end to 4% on the long end

Source: Bloomberg

Example Borrow Now or Wait Model

	Borrow Sooner	Defer Borrowing
Borrowing Year	2025	2027
2025 Project Cost		100,000,000
Annual Construction Inflation	N/A	4.00%
Project Cost	100,000,000	108,160,000
Borrowing All In Interest Rate	4.50%	4.00%
Years to Maturity	30	30
Annual Payment	$6,139,154	$6,254,904
Total Bond Payments	$184,174,629	$187,647,106
+ Annual Maintenance on Old Buildings	N/A	$1,000,000
+ Annual Operating Cost Savings		$2,000,000
Total Operating & Maintenance Savings		$6,000,000
Total Costs	**$184,174,629**	**$193,647,106**

Result	**Borrow Sooner**
Savings	**$9,472,477**

- The above model looks at a couple of the key factors that could help in analyzing whether a project should be pursued today or deferred
- Important considerations include: assumed borrowing costs now and in the future, assumed construction inflation, and estimated operational and maintenance savings on new buildings
- Changes in the model input assumptions change the financial results of each scenario. Under certain scenarios deferring borrowing may result in a lower overall borrowing cost
- This model does not factor in different assumptions on the investment of bond proceeds as they are spent down over a typical period of 2-3 years

Source: RBC Capital Markets Model and Assumptions

What Conclusions Can We Make From This Data?

- As previous data has indicated, the overall economy continues to perform relatively well in the face of elevated interest rates and a moderating labor environment

- The Federal Reserve has stated, "The upside risks to inflation have diminished. The downside risks to employment have increased. … The time has come for policy to adjust. The direction of travel is clear, and the timing and pace of rate cuts will depend on incoming data, the evolving outlook, and the balance of risks."[1]
  - The Bloomberg Consensus Interest Rate Forecast expects the Fed Funds rate to drop to around 4% by around March 2025 and to around 3% by the end of 2026[2]
  - The Bloomberg Consensus Interest Rate Forecast does not expect long term interest rates to decline significantly over this period[2]

- Municipalities should plan for changes in interest rates
  - Investments: through consultation with your investment professionals, consider opportunities to lock in interest rates when and where appropriate to limit uncertainty as short term rates are expected to decline
  - Borrowing: Given expectations of stable long term rates, consider moving forward with planned financings and deferred projects as needed

Sources:
1) https://www.federalreserve.gov/newsevents/speech/powell20240823a.htm
2)Bloomberg, BYFC screen accessed 09/05/24

Borrowing Tools

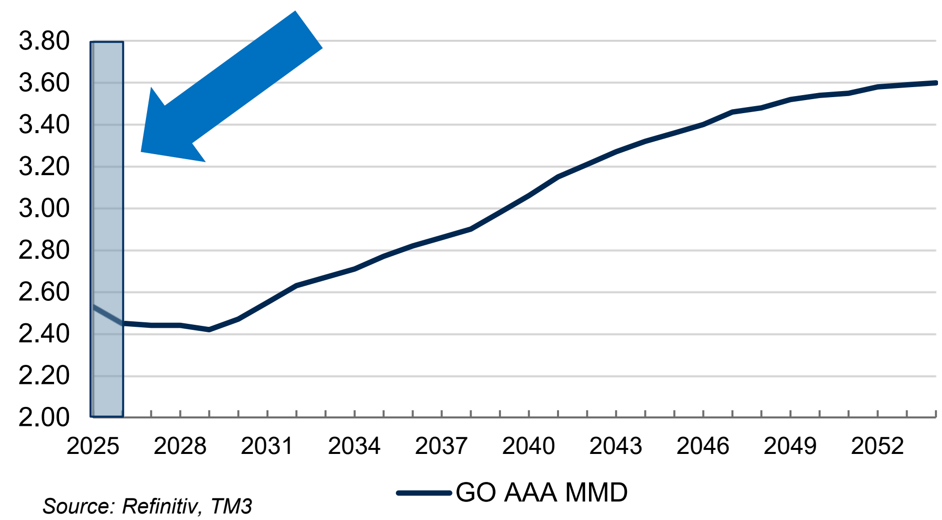
Section 2

Notes

Characteristics

- Short term financial instruments
- Usually mature in 1 year or less
- Give access to the short end of the yield curve
- Can be backed by various credits: such as Bond Anticipation Notes (BANs), Revenue Anticipation Notes (RANs), Tax Anticipation Notes (TANs), etc.

30 Year AAA MMD Yield Curve

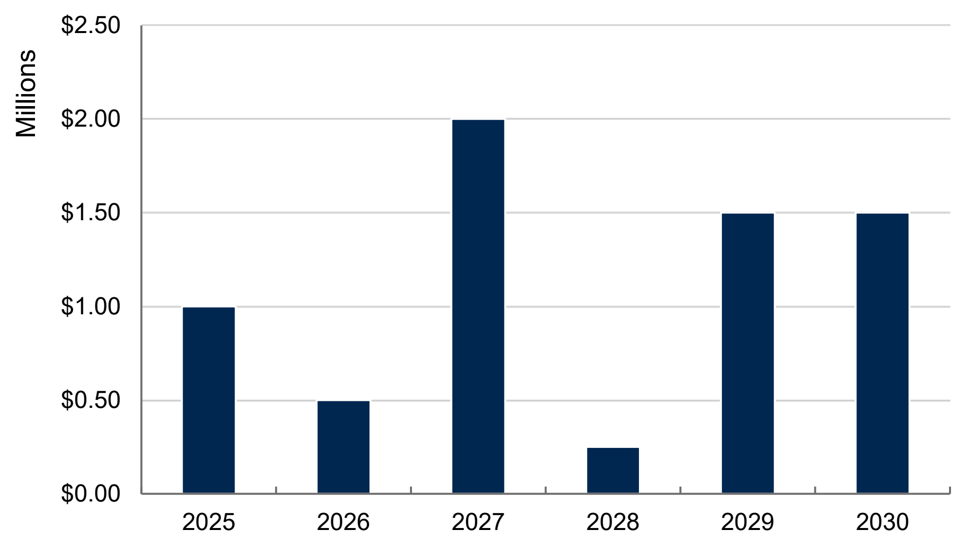


Source: Refinitiv, TM3

Benefits

- Provide flexibility if a fixed payment schedule is not desired
- Can be a good way to bridge a financing gap before longer term solution is enacted
- Can often issue without a credit rating or official statement, although both can provide a pricing benefit
- If the yield curve normalizes, notes usually provide attractive rates
- Can be enhanced with vehicles such as the Ohio Market Access Program (OMAP)

Sample Note Principal Payment Schedule



BAN Credit Enhancement Program: Ohio Market Access Program (OMAP)

Benefits

LOWER BORROWING COSTS

Helps municipal issuers lower borrowing costs

STRENGTHENED CREDIT QUALITY

Credit enhancement program for Ohio local governments

IMPROVED MARKETABILITY

Leverages the state's high short-term credit rating to help improve market access

How it Works

Submit Application

Application Review

State Signs SNPA

S&P Rates the Issuance

Source: https://tos.ohio.gov/omap/

Fixed Rate Bonds

Characteristics

- Commonly used to finance capital projects in Ohio
- Typically have a maturity of 5-40 years
- Usually have a fixed interest rates
- Often have a call option, allowing for the refunding of bonds for restructuring or savings 7 to 10 years after initial issuance
- Can be backed by a variety of different sources including property taxes, sales taxes, utility revenue, general receipts, special taxes, annual appropriations, etc.

Benefits / Considerations

- Interest rates are fixed for the life of the issue so the payment schedule is known and can be budgeted for
- Interest rate risk is eliminated, as the borrower knows its financing costs for the duration of the issue
- Financing is completed once, without the need for annual financings and the administrative burden that comes with annual financings
- Can incorporate a call option, allowing the issuer to refinance the transaction

Revenue Bonds

Types of Revenue Bonds

- Issued and backed by a specific revenue stream
- Examples of a specific revenue stream include:
  - Income Taxes
  - Sales Taxes
  - Non-tax Revenues
- Many municipalities also operate water or sewer systems, and debt can be issued based on the revenues of those systems
- Tax Increment Financing Obligations

Benefits / Considerations

- Exempt from Ohio general obligation debt limitations
- Depending on the revenue source, coverage levels and financial characteristics rating agencies may rate revenue debt higher than general obligation debt
- May carry lower interest rates than GO debt
- Water and Sewer system debt may be eligible for loans from Ohio Water Development Authority, many times at below market rates

Questions