



Global Economic Activity

2Q 2023 Update
As of April 1, 2023

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2Q 2023

U.S. Economics

Consumers, Business Sentiment, Housing, & Inflation

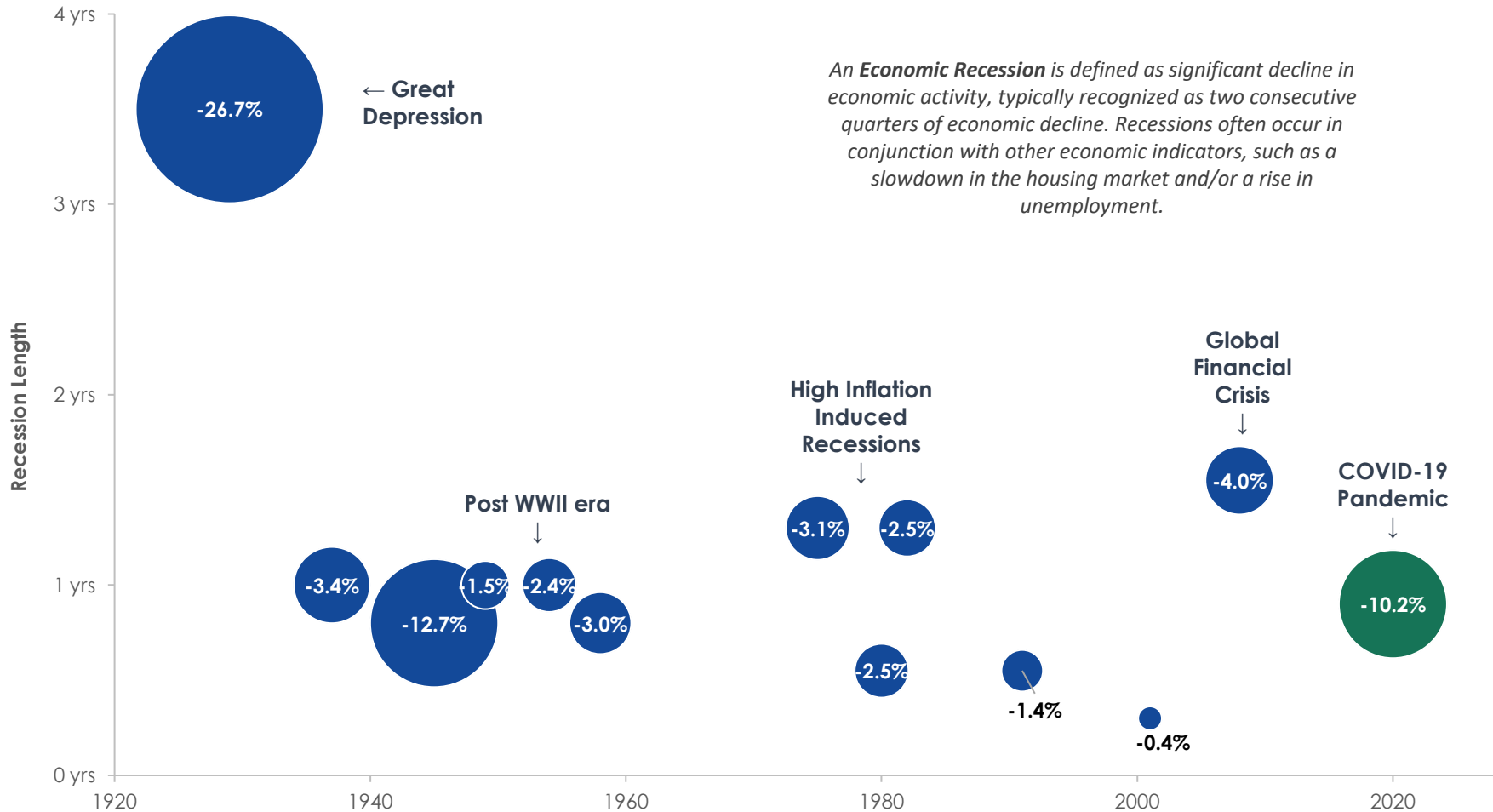
U.S. Economic Indicators

2Q 2023

Category	Economic Indicator	Report Date	Latest Report	1-Month Trend	6-Month Trend	10-Year Historical Percentile			
						Current	Current (●) & 1-Month Change(-)	0%	50%
Employment	Nonfarm Payrolls	2/28	+311k	▼193k	▼41k	83%	-20,514k	●	+4,565k
	Unemployment Rate	2/28	3.6%	▲0.2%	▼0.1%	2%	3.4%	●	14.8%
	Average Workweek	2/28	39	▲0.1	▲0.0	65%	38	●	39
	Average Hourly Earnings	2/28	\$33.09	▲\$0.08	▲\$0.66	100%	\$24	●	\$33
	Initial Jobless Claims	2/28	+193k	▲01k	▲48k	0%	+0.2m	●	+4.7m
	Continuing Jobless Claims	2/28	+1,678k	▲16k	▼257k	2%	+1.3m	●	+20.3m
Consumer	Personal Income	1/31	\$23B	▲\$0.1B	▲\$0.6B	83%	\$14B	●	\$24B
	Personal Spending	1/31	\$18B	▲\$0.3B	▲\$0.5B	100%	\$11B	●	\$18B
	Consumer Confidence Index	2/28	102.9	▼3.1	▼0.7	54%	62	●	138
	Michigan Confidence Index	2/28	67.0	▲2.1	▲8.8	33%	50	●	101
Housing	New Home Sales	2/28	+640k	▲07k	▼06k	40%	+0.4m	●	+1.0m
	Housing Starts	2/28	+1,450k	▲129k	▼58k	63%	+0.8m	●	+1.8m
	Building Permits	2/28	+1,550k	▲211k	▲08k	64%	+0.9m	●	+1.9m
	Monthly Supply (# of months)	1/31	2.9mos	▼0.1	▼0.3	32%	2mos	●	6mos
Manufacturing	Industrial Production (m/m%)	2/28	0.0%	▼0.3%	▲0.1%	68%	-13%	●	6.3%
	ISM Manufacturing PMI	2/28	47.7	▲0.3	▼5.2	27%	42	●	64
	Capacity Utilization	2/28	78%	▲0.0%	▼1.8%	85%	65%	●	80%
	Durable Goods (New Orders)	1/31	\$250B	▼\$47B	▼\$29B	67%	\$157B	●	\$297B
Inflation (y/y%)	CPI	2/28	6.00%	▼0.4%	▼2.3%	67%	-0.2%	●	9.1%
	Core CPI	2/28	5.50%	▼0.1%	▼0.8%	80%	1.2%	●	6.6%
	PPI	2/28	4.58%	▼1.1%	▼4.1%	46%	-1.5%	●	11.7%
	Core PPI	2/28	4.40%	▼0.6%	▼2.8%	44%	0.2%	●	9.7%
	PCE	1/31	5.38%	▲0.1%	▼0.9%	77%	0.1%	●	7.0%
	Core PCE	1/31	4.71%	▲0.1%	▼0.2%	84%	0.9%	●	5.4%
	GDP Price Index (q/q% an.)	12/30	3.90%	▼0.5%	▼0.5%	50%	-1.3%	●	9.0%

Disclosures: As of 3/24/2023. Data sourced from Federal Reserve, NBER, Institute for Supply Management, University of Michigan, DOL, U.S. Census

History of U.S. Recessions

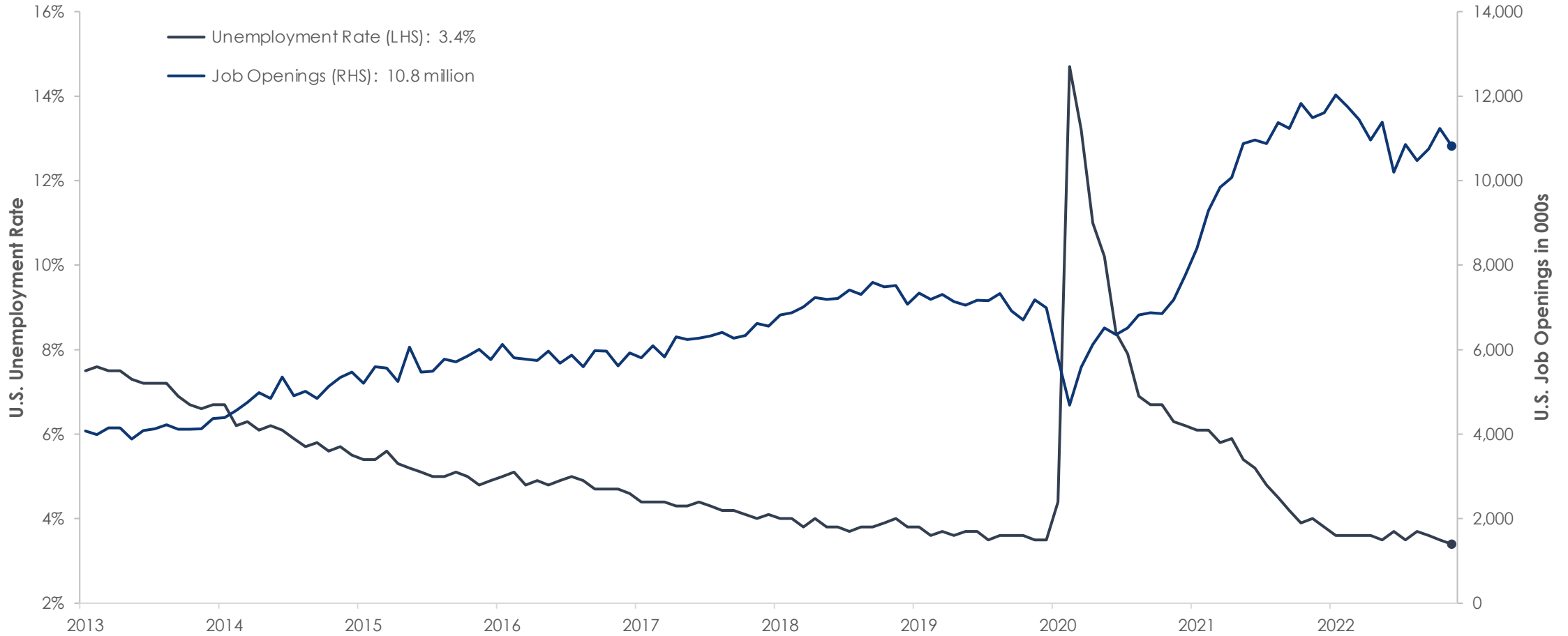


Disclosures: Data sourced from the Federal Reserve. This analysis is based on nominal GDP growth and contractions. The severity of each recession is calculated as the change in GDP from the peak quarter (before the recession) to the trough quarter (end of the recession). The Great Depression is the only recession that is calculated from 1929 to 1933.

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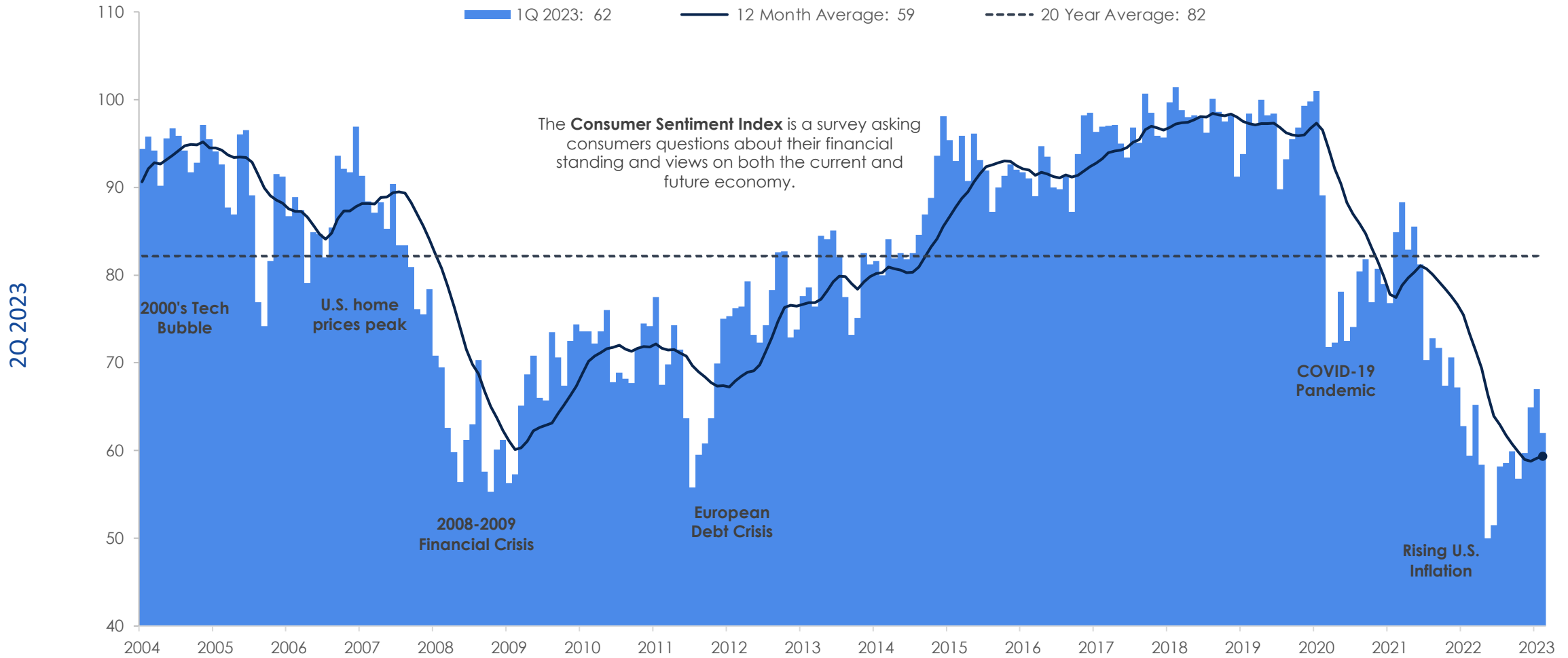
Unemployment Rate & Job Openings

2Q 2023



Disclosures: The Unemployment Rate represents the number of unemployed as a percentage of the labor force. Labor force data is restricted to people 16 years of age and older, who currently reside in 1 of the 50 states or the District of Columbia, who do not reside in institutions (e.g., penal and mental facilities, homes for the aged), and who are not on active duty in the Armed Forces. Job Openings (Total Nonfarm) is provided by the U.S. Bureau of Economic Analysis (St. Louis Federal Reserve identifier: JTSJOL). Data sourced from Federal Reserve and U.S. Bureau of Economic Analysis. RHS = right hand side. LHS = left hand side.

Consumer Confidence



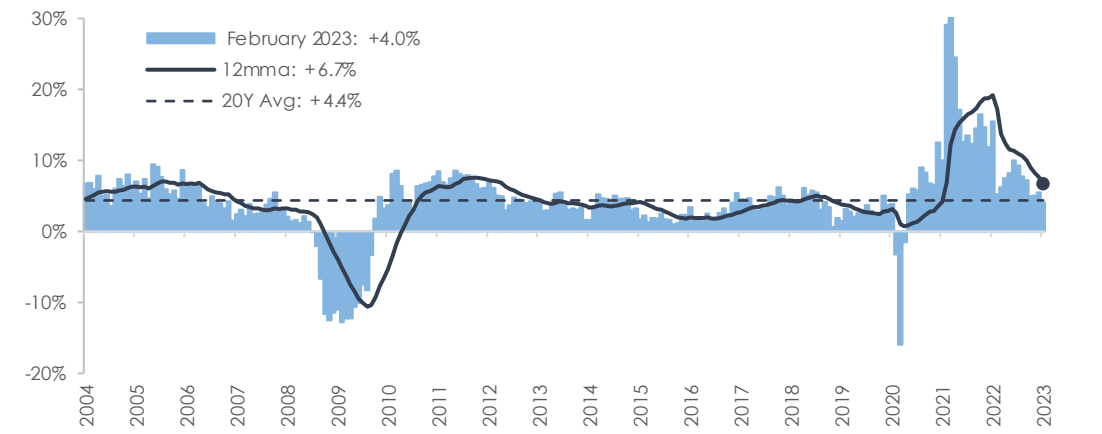
Disclosures: The University of Michigan Consumer Sentiment Index is a monthly survey that asks consumers questions about their financial standing and views on both the current and future economy.

Retail Sales & Personal Finances

2Q 2023

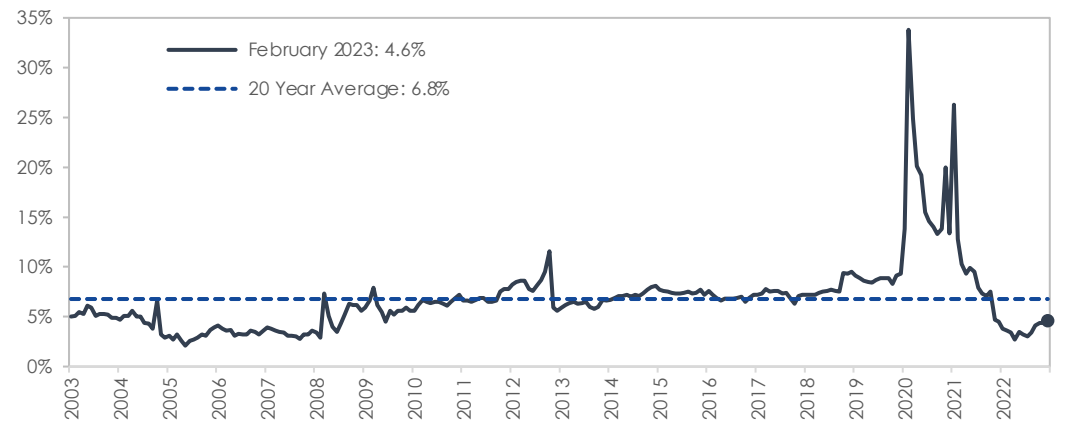
Year over Year Growth in Retail Sales

20 years of data (retail sales excluding food); 12mma = 12 month moving average



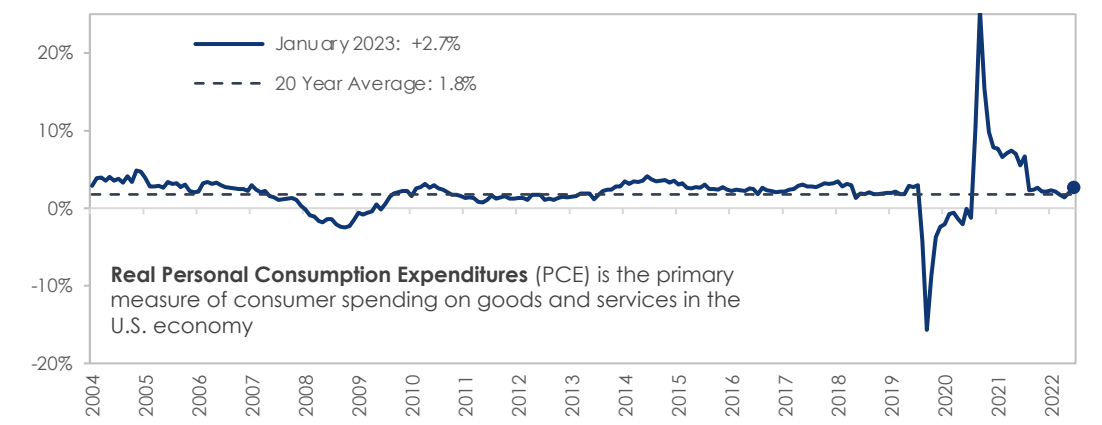
Personal Savings Rate

20 years of data; % of disposable income



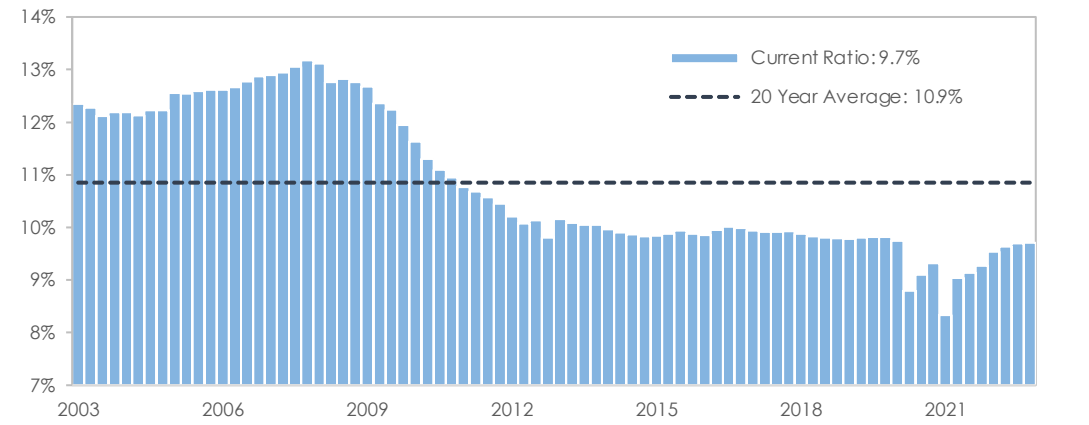
Real Personal Consumption Expenditures

20 years of data adjusted for inflation



Household Debt Service Ratio

Percent of disposable personal income



Disclosures: Data sourced from U.S. Bureau of Economic Analysis, U.S. Census Bureau, and the Federal Reserve.



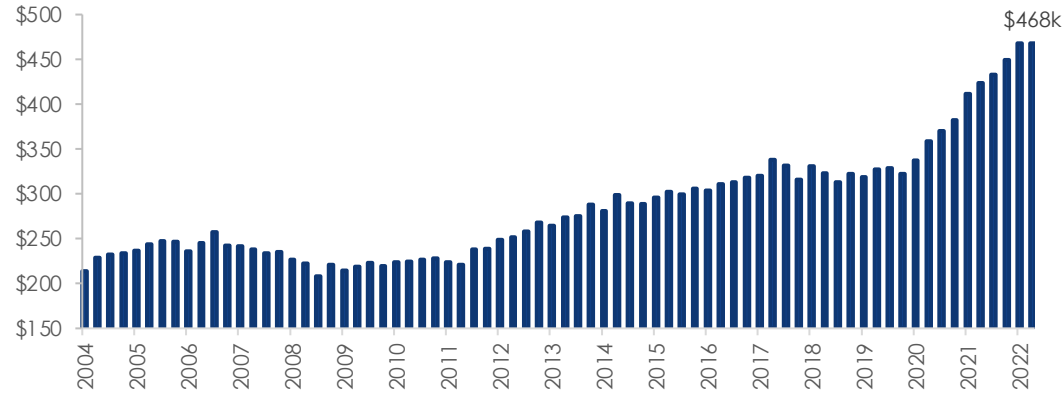
Please see disclosures at end of presentation

Housing Market Update

2Q 2023

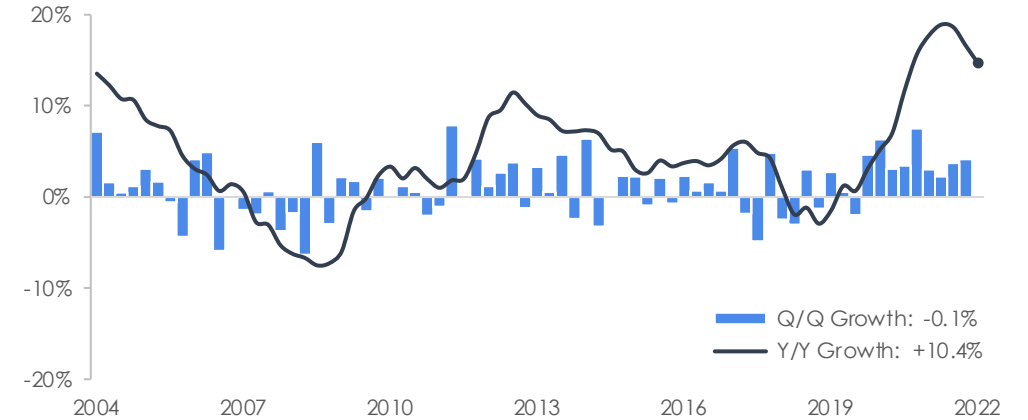
Median Sales Price for Homes Sold in the U.S.

USD in thousands, seasonally adjusted



Rolling Changes in U.S. Home Prices

Year over year growth rate is an average of the past 4 quarters



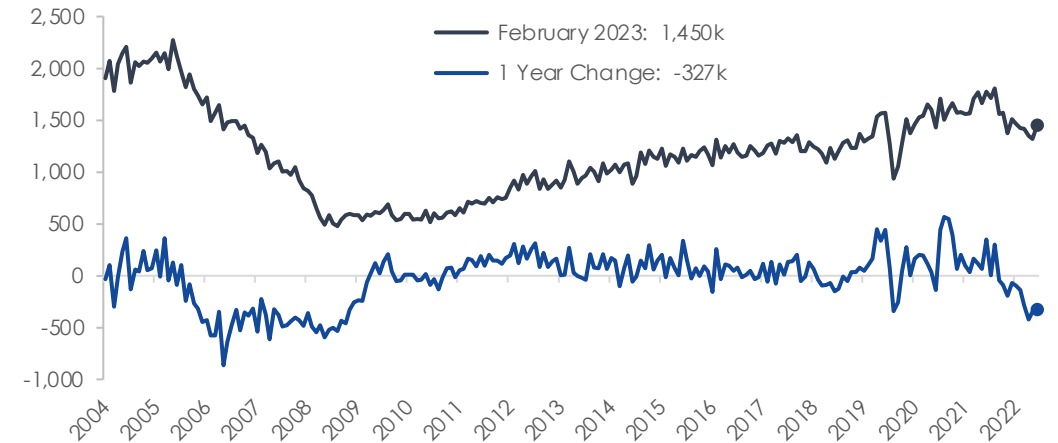
U.S. Home Inventory (in months)

Ratio of Houses for Sale to Houses Sold



Housing Starts in 000s

Current level and year over year growth in housing starts

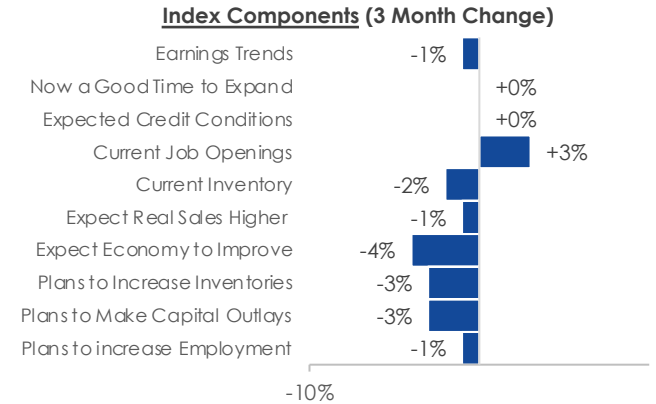
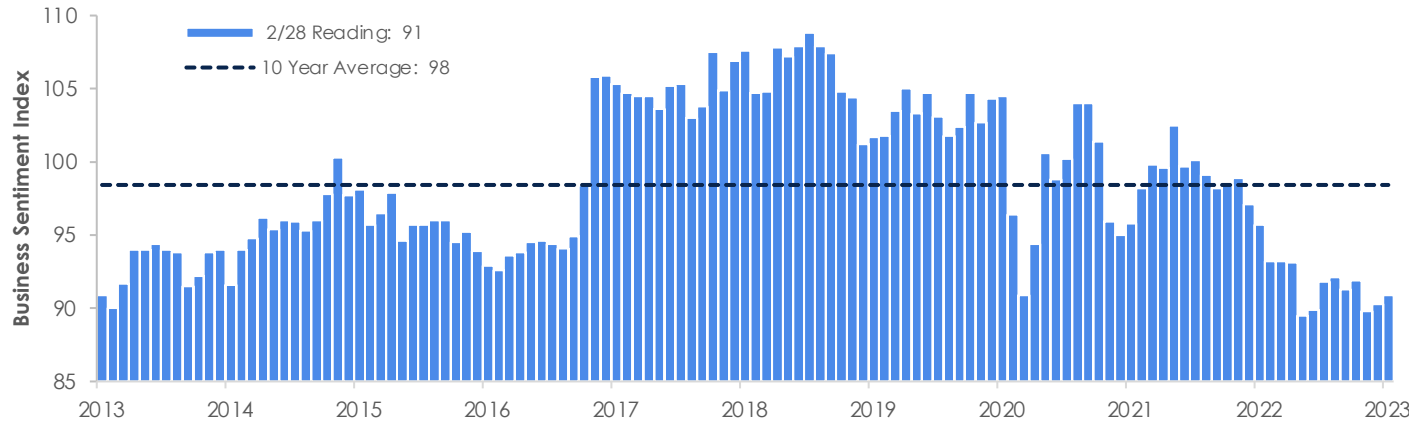


Disclosures: Data sourced from National Association of Realtors and Federal Reserve.

Business Activity & Sentiment

National Federation of Independent Business (NFIB) Small Business Optimism Index & Components

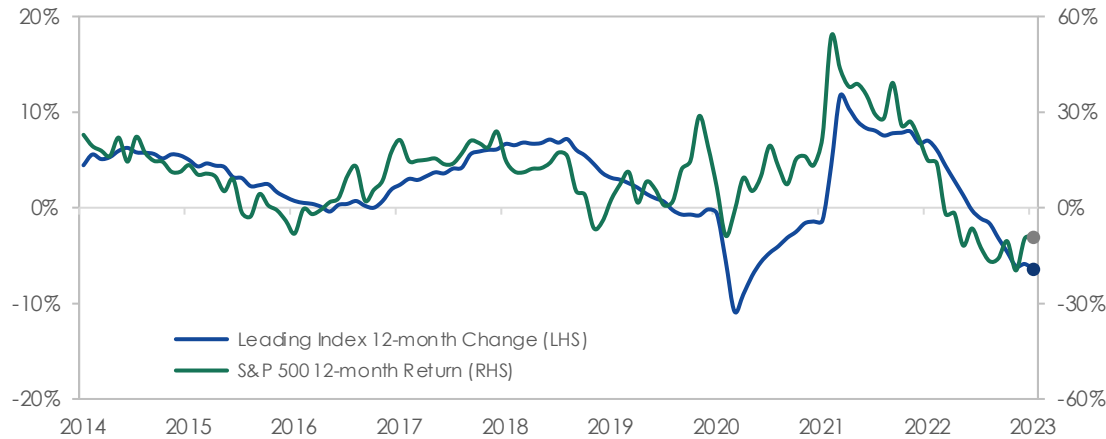
Small businesses make up ~50% of the U.S. workforce. This index provides a pulse on small business owners' outlook



2Q 2023

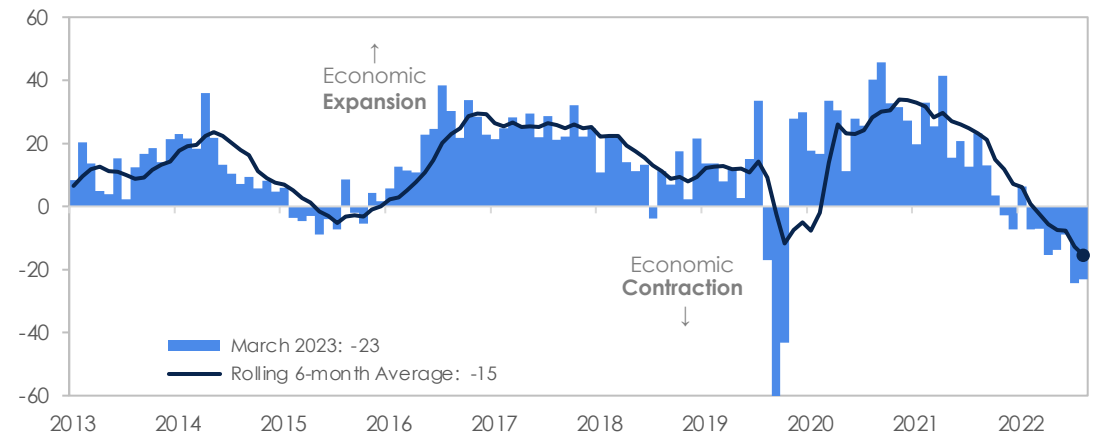
Leading Economic Index vs S&P 500 Return

Last 10 years of monthly data from Federal Reserve



Philadelphia Federal Reserve Business Index

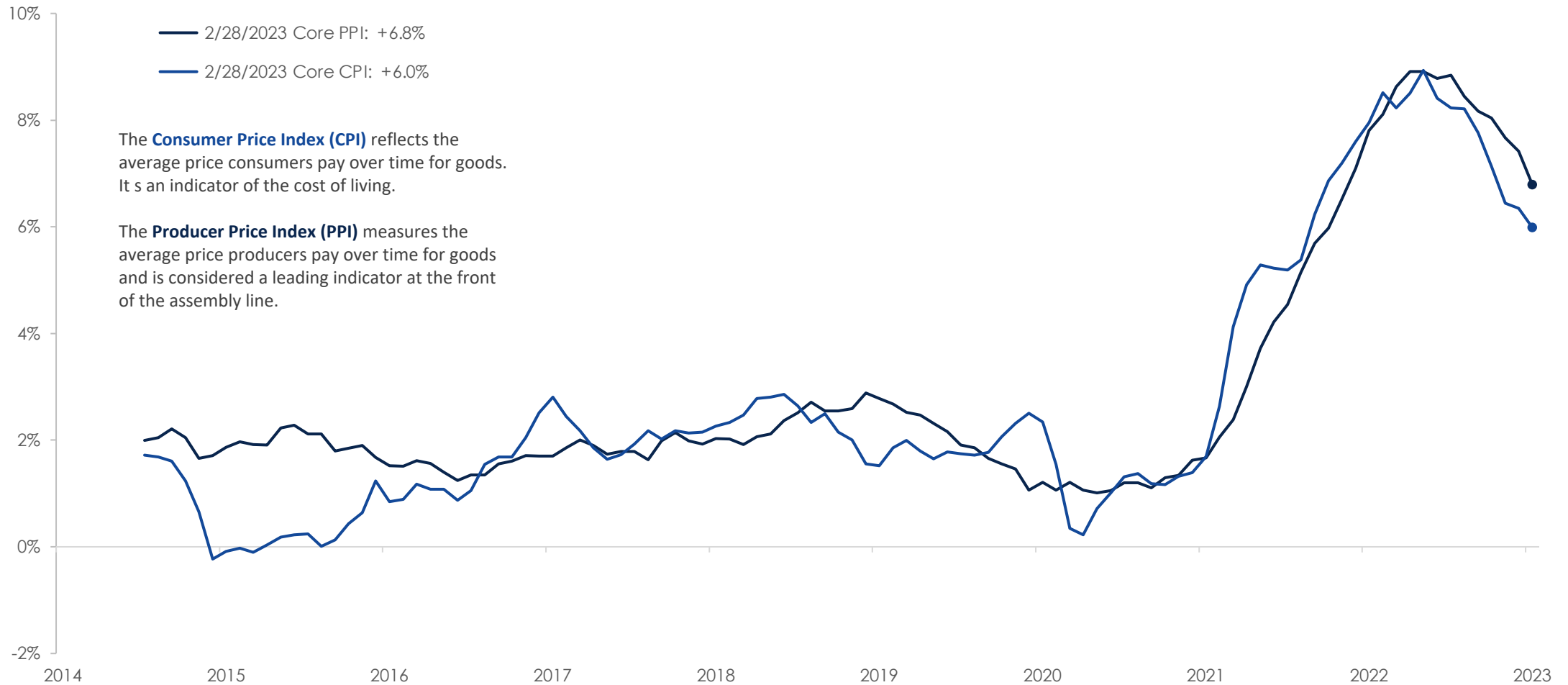
Readings of more (less) than zero signal expansion (contraction)



Disclosures: Data sourced from Federal Reserve. S&P 500 performance is based on price returns of the State Street SPDR S&P 500 ETF (SPY).

CPI vs PPI

2Q 2023



Disclosures: Data sourced from the Federal Reserve, U.S. Bureau of Labor Statistics. The Consumer Price Index (CPI) measures the changes in the price level of a basket of consumer goods and services purchased by households. The Producer Price Index (PPI) measures the average changes in prices received by domestic producers for their output (based on Final Demand: Finished Goods Less Foods and Energy).

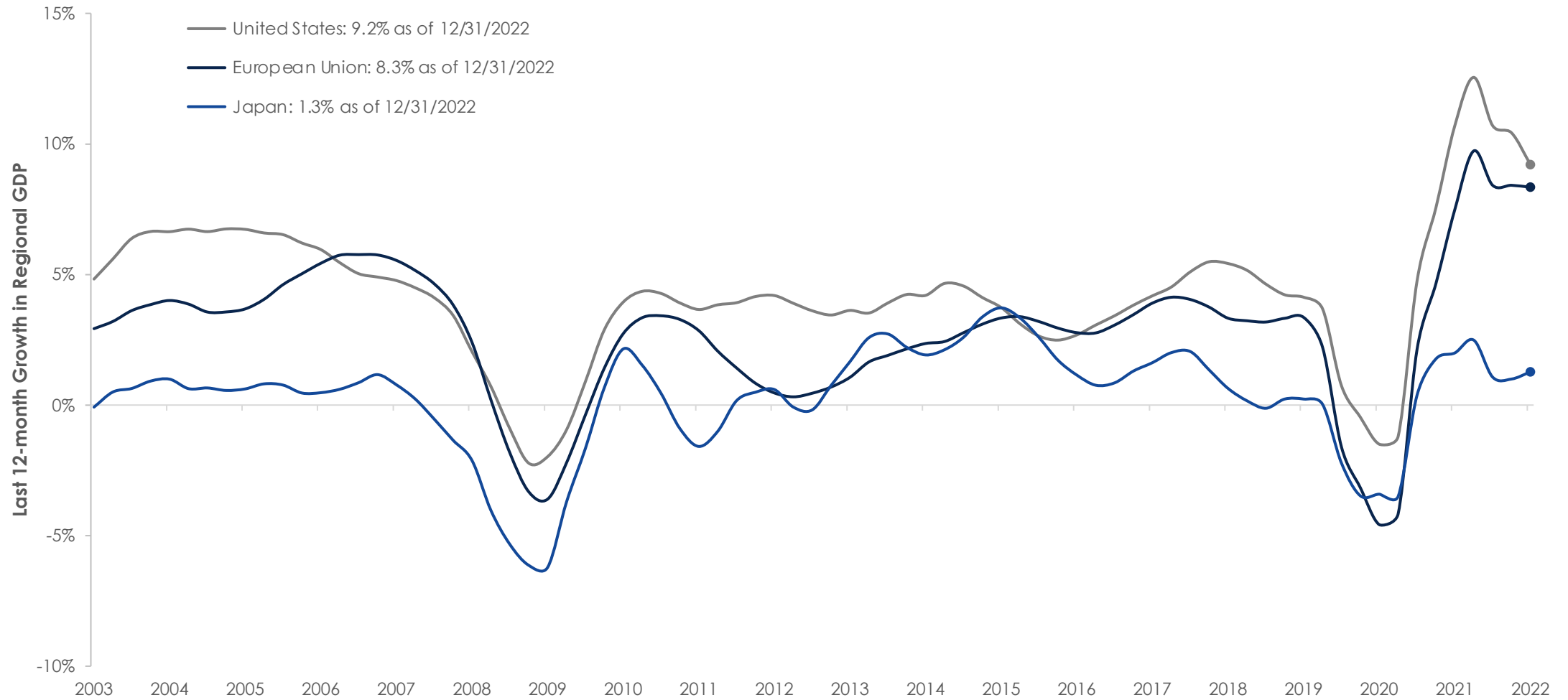
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Global Economics

GDP, Manufacturing, & Oil Industry

Global GDP Growth

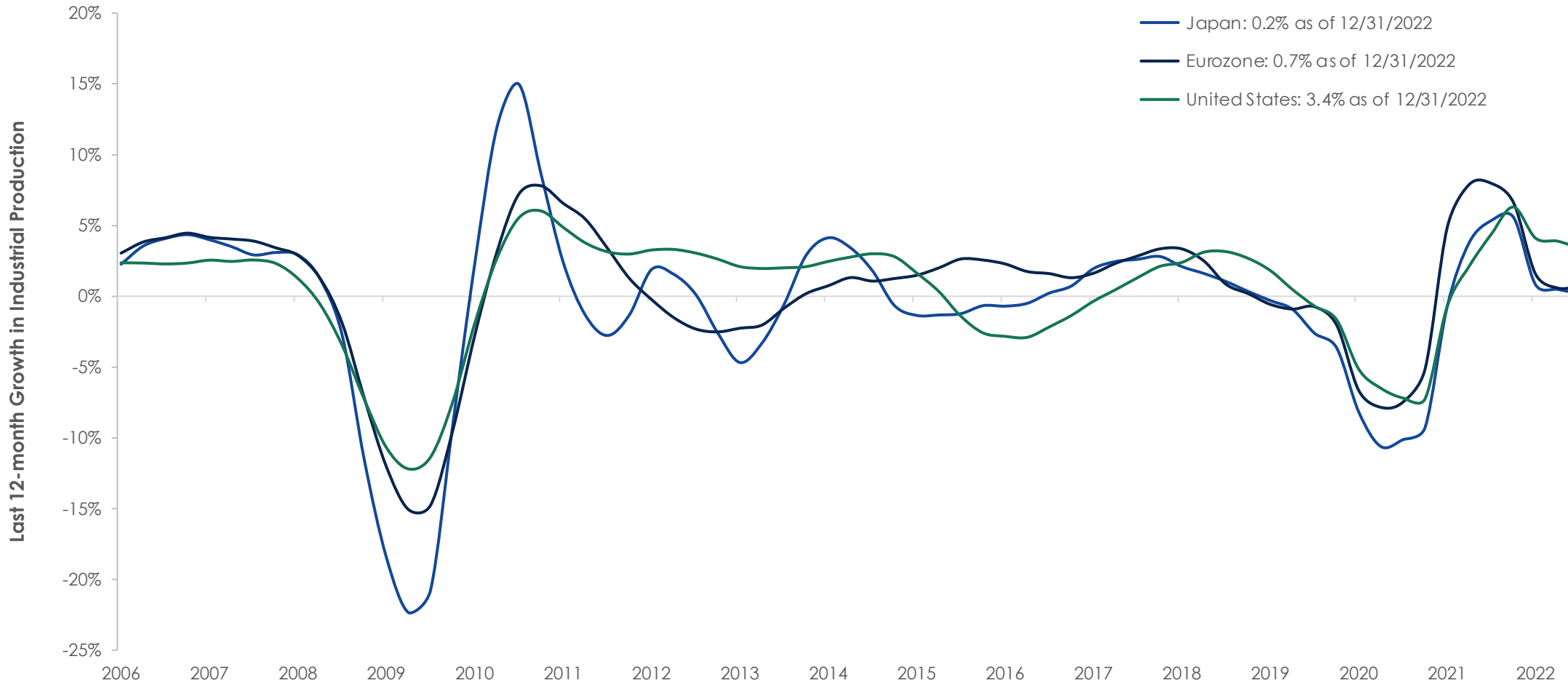
2Q 2023



Disclosures: Data from the Federal Reserve, European Central Bank, and Bank of Japan. Growth is calculated as the rolling last 12-month growth in Gross Domestic Product (GDP).

Global Industrial Production

2Q 2023

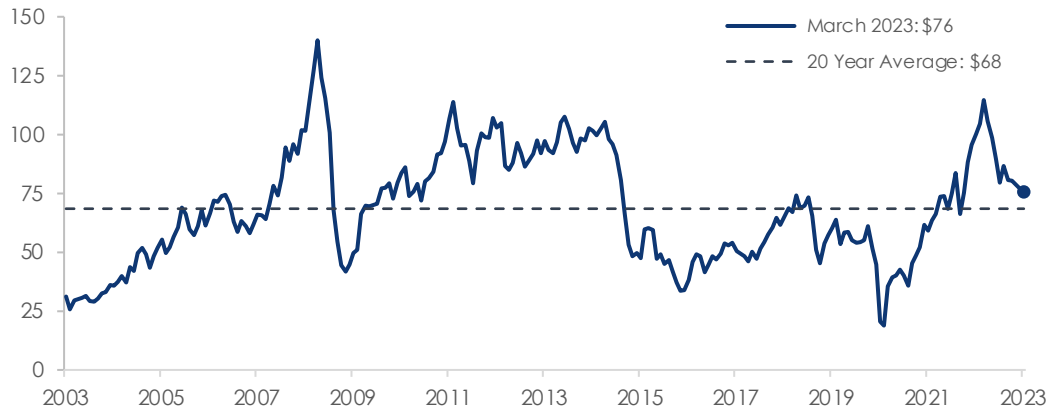


Disclosures: Data from the Federal Reserve, European Central Bank, and Bank of Japan. Growth is calculated as the rolling last 12-month growth in industrial production.

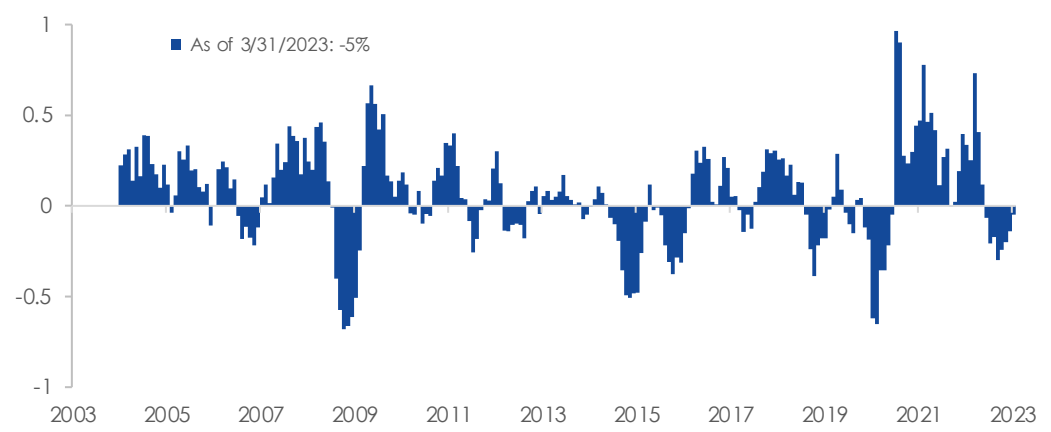
Oil Update

2Q 2023

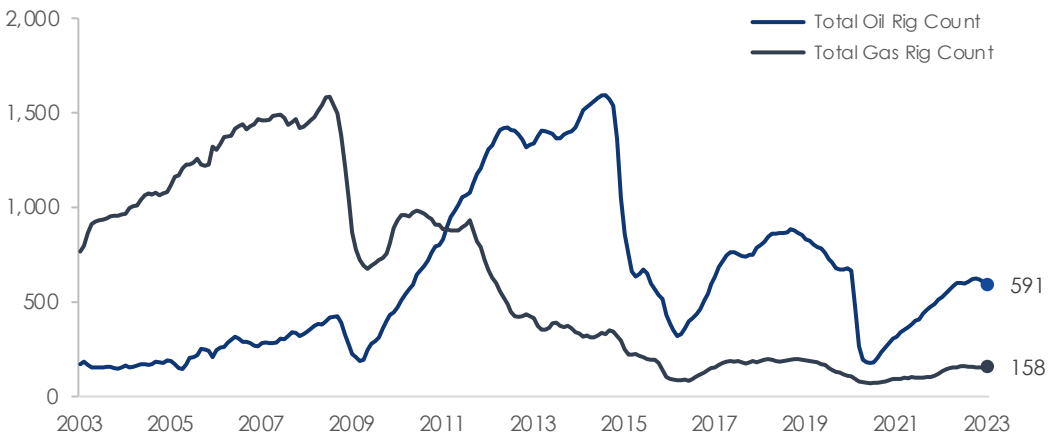
Price of WTI Crude Oil
20 years of monthly datapoints



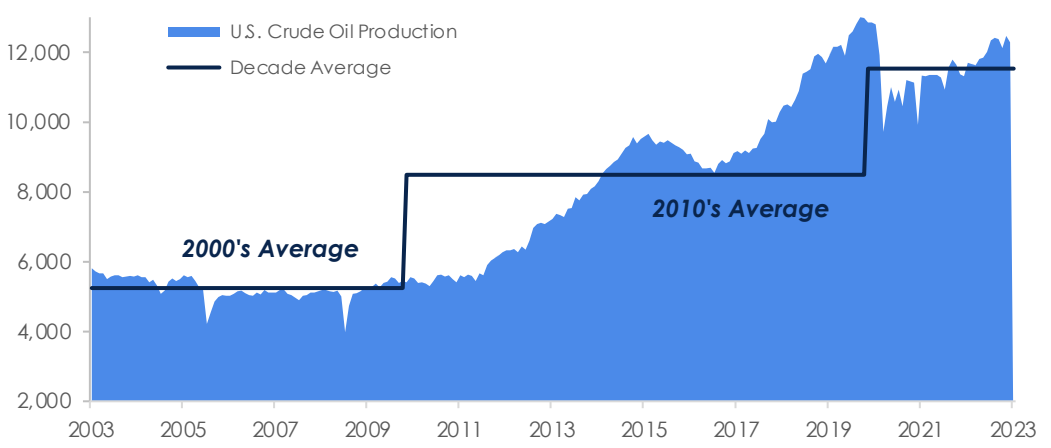
Rolling 6 Month Change in Oil Prices
20 years of monthly datapoints



Total U.S. Rig Count
Oil & Gas Rig Count from Energy Information Administration (EIA)



U.S. Crude Oil Production
Barrels per day in 000s



Disclosures: Data sourced from the Federal Reserve and the Energy Information Administration (EIA).

Definitions

Consumer Price Index (CPI)	Measures the changes in the price level of a basket of consumer goods and services purchased by households. .
Economic Contraction	A phase of the economic business cycle, typically after the peak, in which the economy as a whole declines.
Economic Expansion	A phase of the economic business cycle, typically after the trough, in which the economy as a whole grows.
Home Price Index	A broad measure of the movement of single-family house prices in each city across the United States.
Home Sales (Existing)	An economic indicator that reflects the number of homes that have previously been constructed and are now being resold.
Home Sales (Pending)	An economic indicator that reflects the number of homes that are being sold but have not been finalized.
Household Debt Service Ratio	The ratio of total required household debt payments to total disposable income
Inflation	A general rise in price level relative to available goods and services
Inventory to Sales Ratio	A measure of the amount of inventory companies are holding versus the number of sales
Leading Economic Index	An economic leading indicator intended to forecast future economic activity calculated by The Conference Board, a non-governmental organization. The value of the index is derived from the values of ten key variables.
NFIB Small Business Optimism Index	A measure of small business health in the United States.
Personal Savings Rate	A percentage of disposable personal income for the broad population
Philadelphia Fed Business Index:	A regional federal reserve bank index measuring changes in business growth. A value above (below) zero indicates growth (contraction).
Producer Price Index (PPI)	Measures the average changes in prices received by domestic producers for their output.
Real Yield:	Calculated as the Nominal Yield minus CPI rate
Retail Sales	A measure of consumer demand for goods based on purchases of durable and non-durable goods over a defined period of time
Unemployment Rate	A lagging economic indicator which is calculated as the percent of the labor force that is jobless
University of Michigan Consumer Sentiment Index	A monthly survey that asks consumers questions about their financial standing and views on both the current

2Q 2023

Disclosures and Legal Notice

- **Investing involves risk, including the possible loss of principal.** Stock markets can be volatile. Investments in securities of small and medium capitalization companies may involve greater risk of loss and more abrupt fluctuations in market price than investments in larger companies. Investments in fixed-income instruments are subject to the possibility that interest rates could rise, causing their values to decline. High yield and unrated debt securities are at a greater risk of default than investment grade bonds and may be less liquid, which may increase volatility. Investors in asset-backed securities, including mortgage-backed securities and collateralized loan obligations (“CLOs”), generally receive payments that are part interest and part return of principal. These payments may vary based on the rate loans are repaid. Some asset-backed securities may have structures that make their reaction to interest rates and other factors difficult to predict, making their prices volatile and they are subject to liquidity and valuation risk. CLOs bear similar risks to investing in loans directly, such as credit, interest rate, counterparty, prepayment, liquidity, and valuation risks. Loans are often below investment grade, may be unrated, and typically offer a fixed or floating interest rate.
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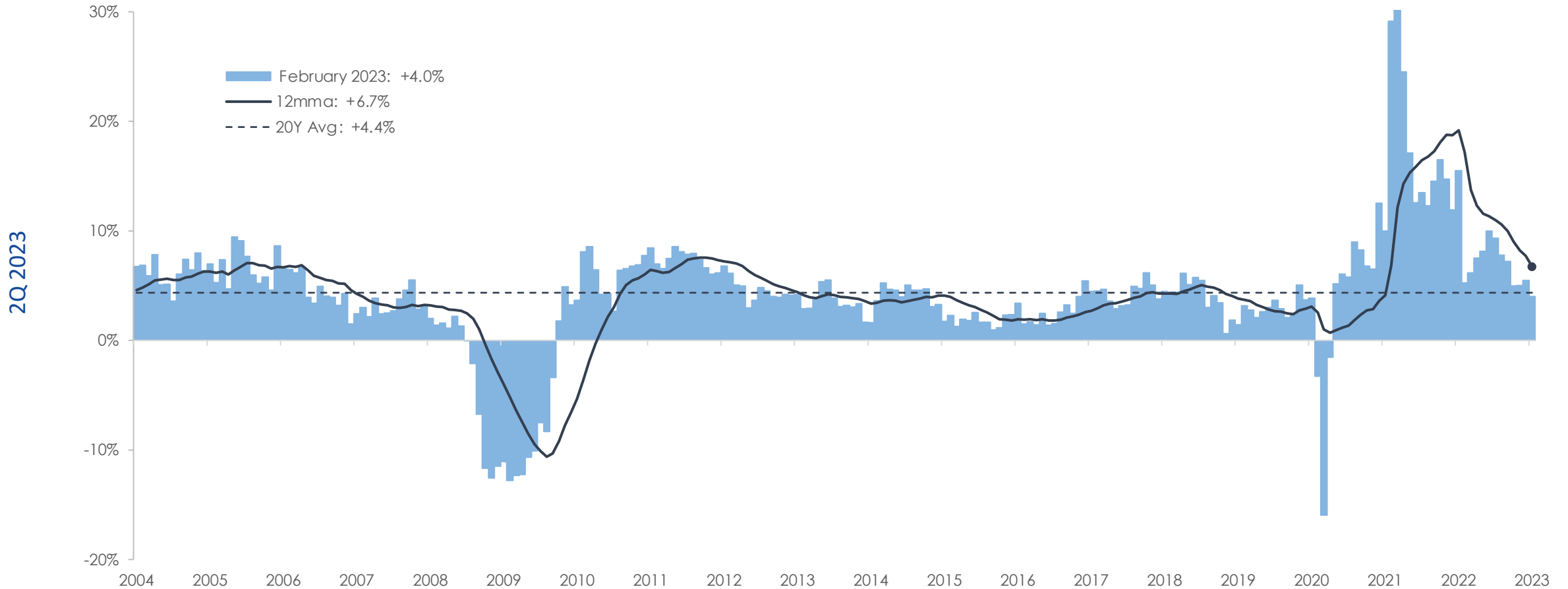
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Larger Chart Versions



Year over Year Growth in Retail Sales

Year over Year Growth in Retail Sales
20 years of data (retail sales excluding food); 12mma = 12 month moving average



Disclosures: Data sourced from U.S. Bureau of Economic Analysis, U.S. Census Bureau, and the Federal Reserve.

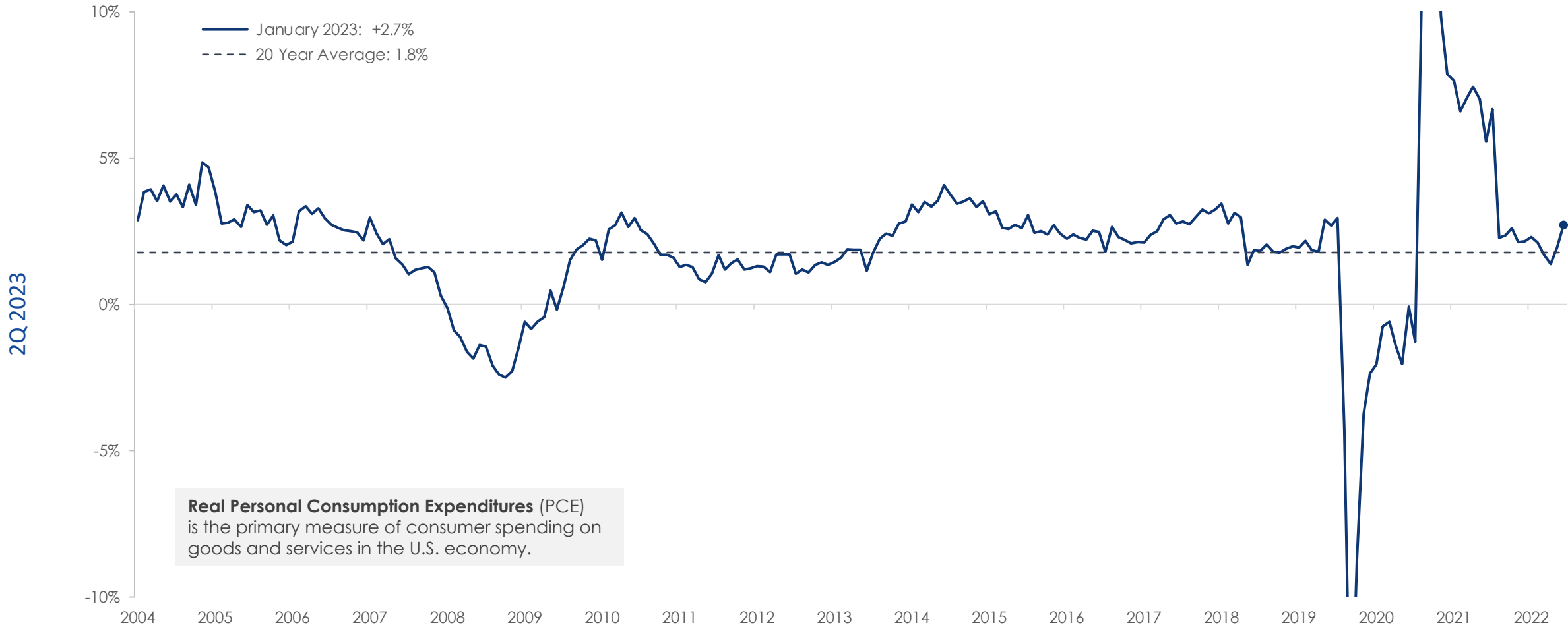
Personal Savings Rate (% of disposable income)

2Q 2023



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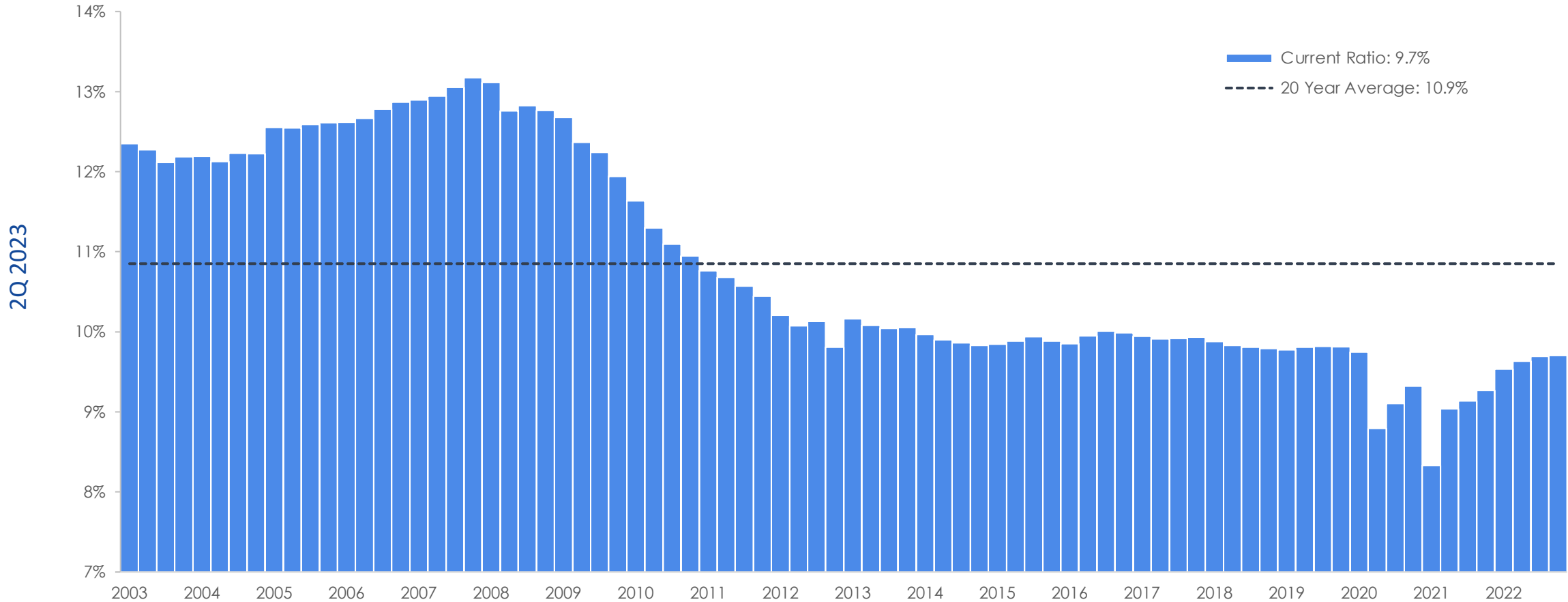
Real Personal Consumption Expenditures



Disclosures: Data sourced from U.S. Bureau of Economic Analysis, U.S. Census Bureau, and the Federal Reserve.

Household Debt Service Ratio (% of Disposable Personal Income)

Household Debt Service Ratio
Percent of disposable personal income



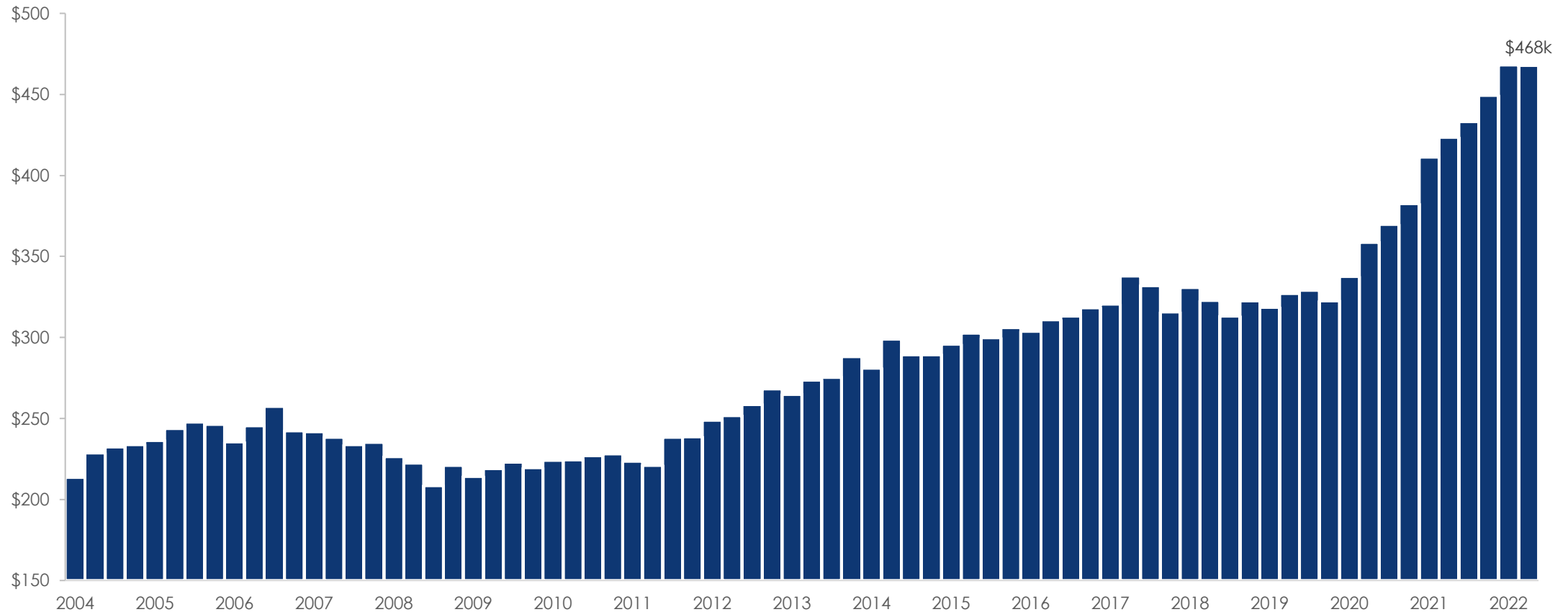
Disclosures: Data sourced from U.S. Bureau of Economic Analysis, U.S. Census Bureau, and the Federal Reserve.

Median Sales Price for Homes Sold in the U.S.

Median Sales Price for Homes Sold in the U.S.

USD in thousands, seasonally adjusted

2Q 2023



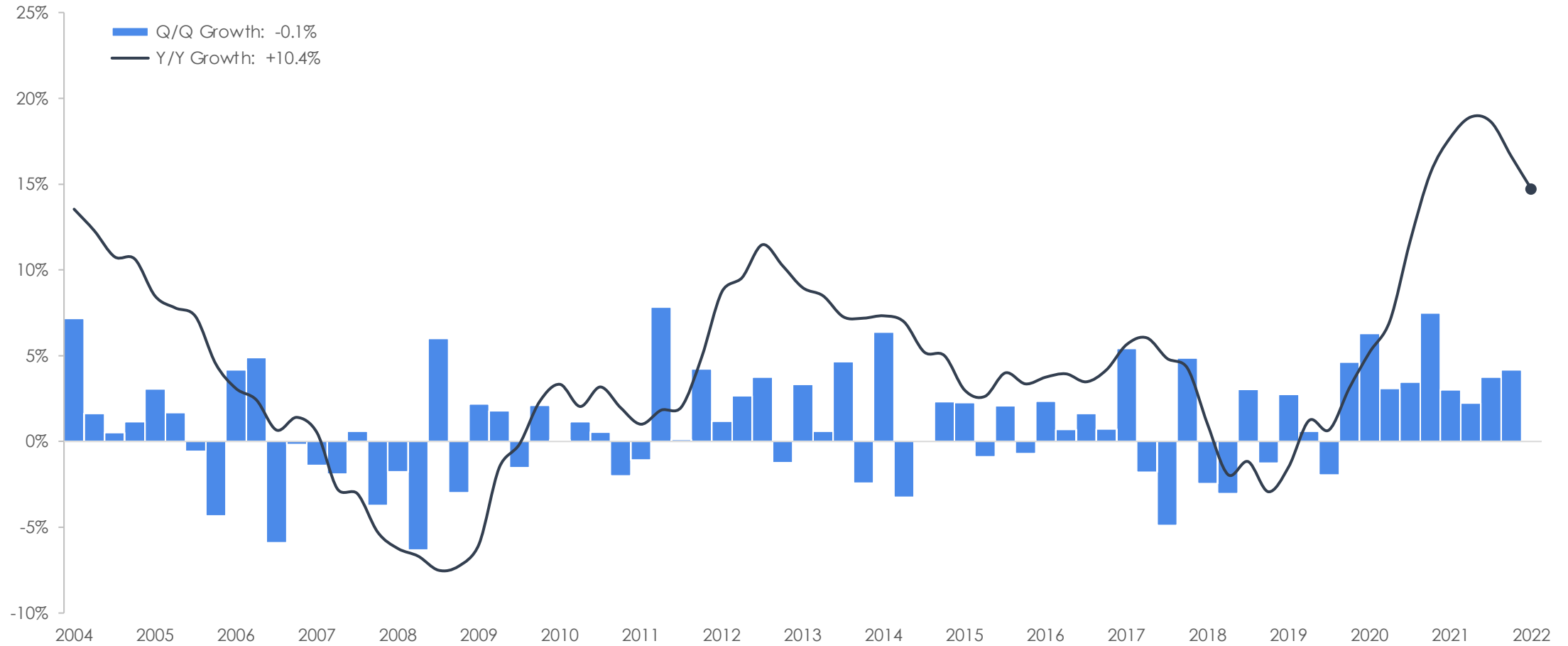
Disclosures: Data sourced from National Association of Realtors and Federal Reserve.

U.S. Home Prices

Rolling Changes in U.S. Home Prices

Year over year growth rate is an average of the past 4 quarters

2Q 2023



Disclosures: Data sourced from National Association of Realtors and Federal Reserve.

U.S. Home Inventory

U.S. Home Inventory (in months)

Ratio of Houses for Sale to Houses Sold

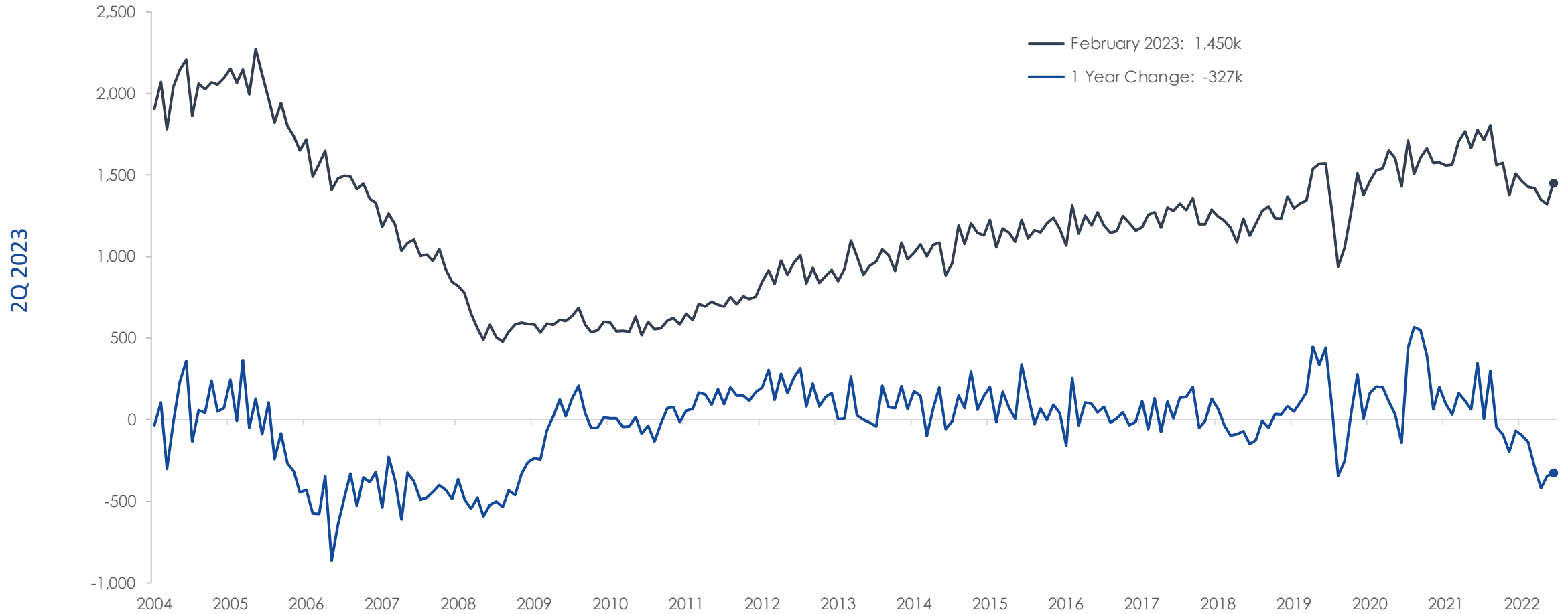


Disclosures: Data sourced from National Association of Realtors and Federal Reserve.

Housing Starts in 000s

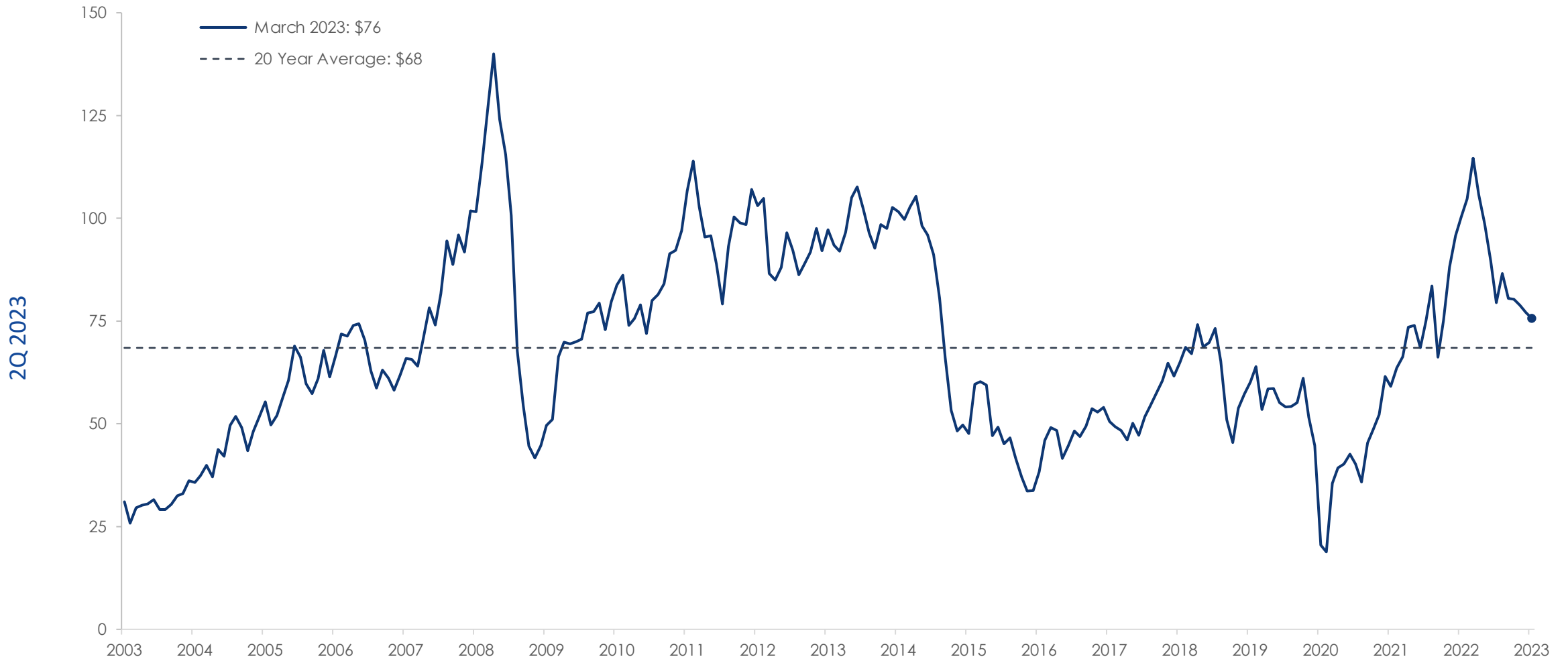
Housing Starts in 000s

Current level and year over year growth in housing starts



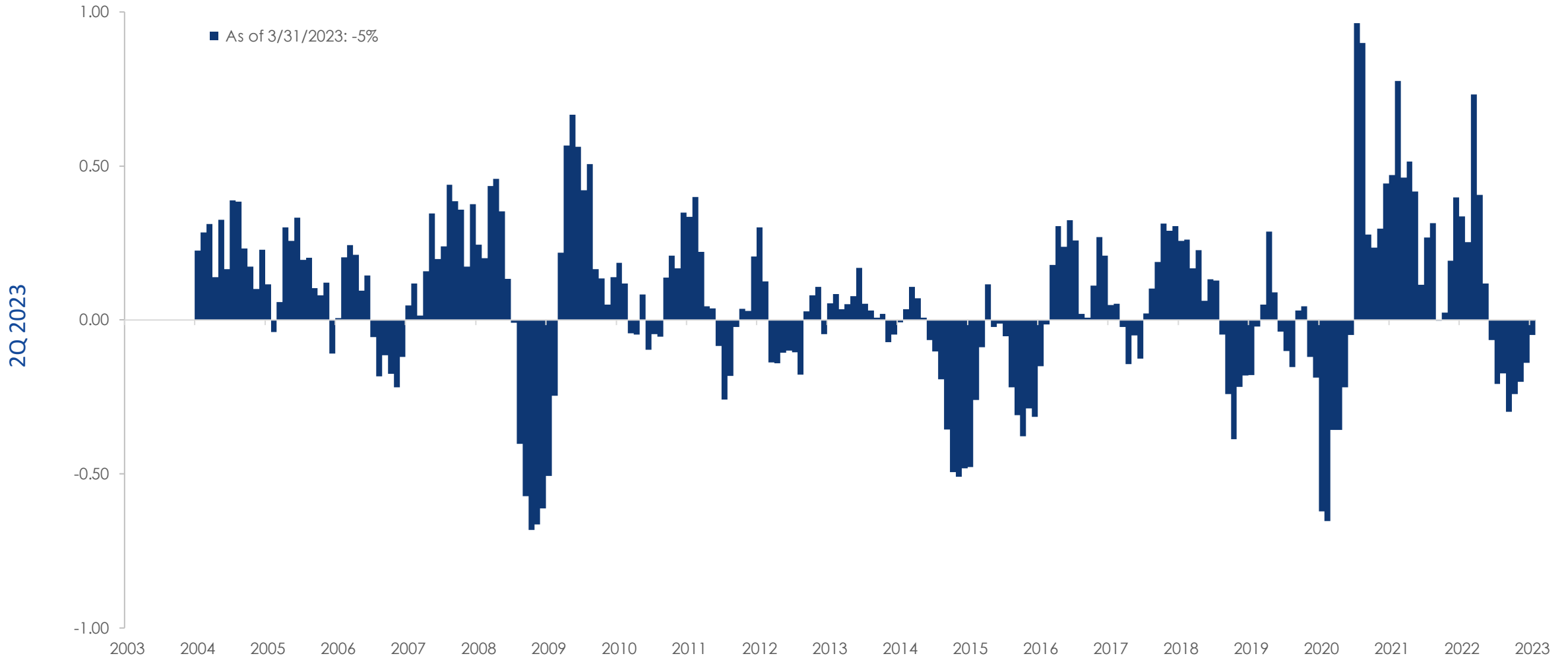
Disclosures: Data sourced from National Association of Realtors and Federal Reserve.

Price of WTI Crude Oil



Disclosures: Data sourced from the Energy Information Administration (EIA).

Rolling 6 Month Change in Oil Prices



Disclosures: Data sourced from the Energy Information Administration (EIA).

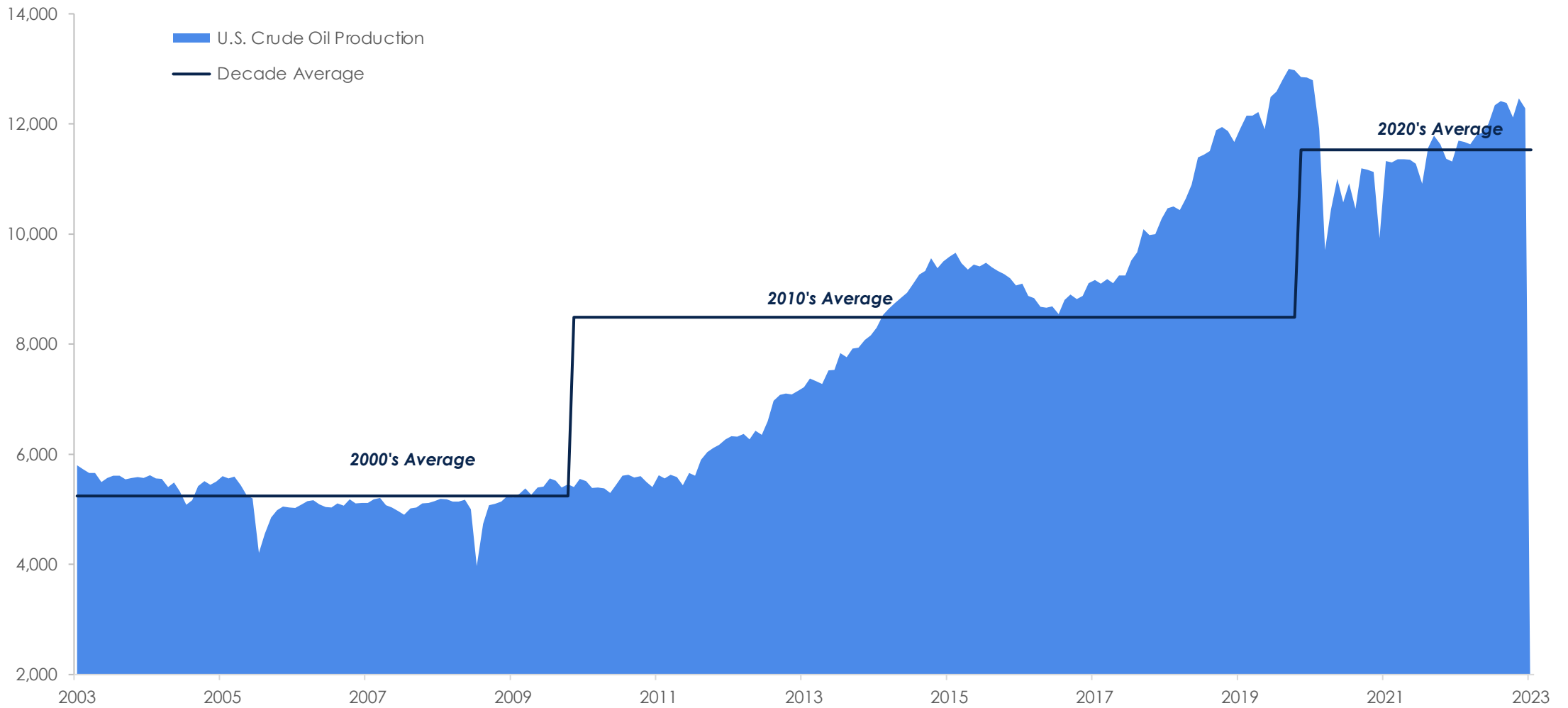
Total U.S. Rig Count



Disclosures: Data sourced from the Energy Information Administration (EIA).

U.S. Crude Oil Production (Barrels per day in 000s)

2Q 2023



Disclosures: Data sourced from the Energy Information Administration (EIA).

A hand holding a pen pointing at a financial chart on a screen. The background is a dark blue, blurred image of a computer monitor displaying various financial data, including a line graph and some text like 'SP10G12'.

Thank You

The logo for Arrowroot Family Office, consisting of three white, slanted parallel lines of increasing height from left to right, resembling an arrow or a stylized 'A'.

ARROWROOT
Family Office