Capital Markets Strategy
Essential inCights for the C-Suite

Looking Under the Hood

The Transition from COVID to Conflict Inflation

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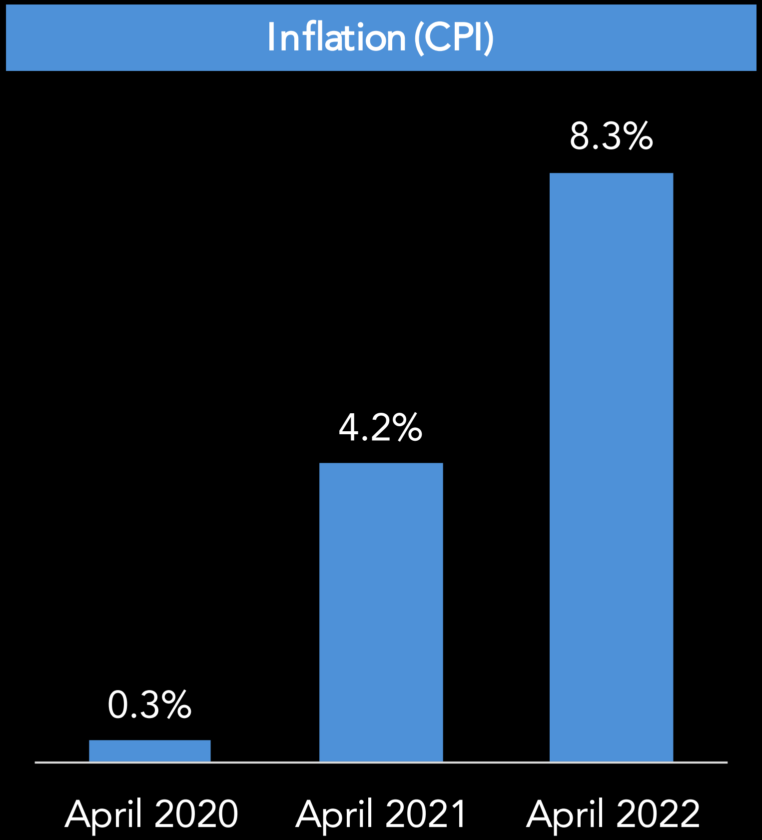
Looking Under the Hood

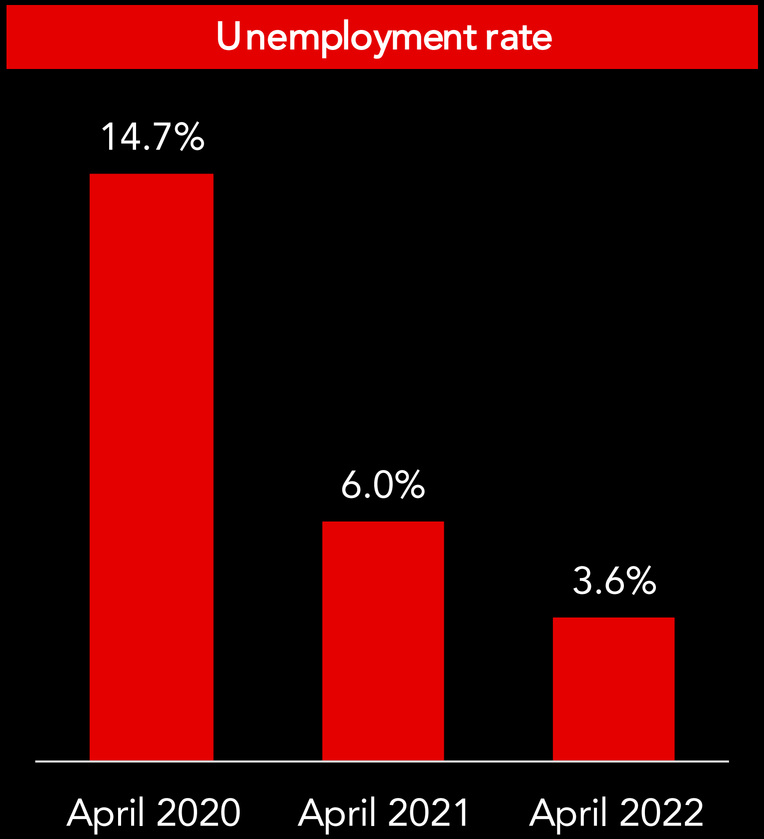
For much of the last two years, "COVID" inflation was centered largely around increased demand for "durable goods", which by definition, was more "discretionary", more "transitory," and therefore "less" detrimental to growth. Demand surges, in turn, exacerbated COVID-related supply chain dislocations. Following Russia-Ukraine and China's Omicron lockdowns, COVID inflation has now combined with "conflict inflation", which by comparison is more driven by services and commodities, and unfortunately, likely to be more "enduring" and "more" detrimental to US growth.

"COVID" Inflation	"Conflict" Inflation
• COVID related demand & supply shocks	• More supply side and commodity driven
• More durable goods & discretionary in source	• More services & less discretionary in source
• More transitory in nature	• More "enduring" in nature (de-globalization, ESG, supply side)
• Less detrimental to growth	• More detrimental to growth

Inflation & Unemployment

As the economy has recovered closer to full employment during the two year COVID crisis, successive demand and supply shocks (COVID, Ukraine, China lockdown) have driven inflation sharply higher

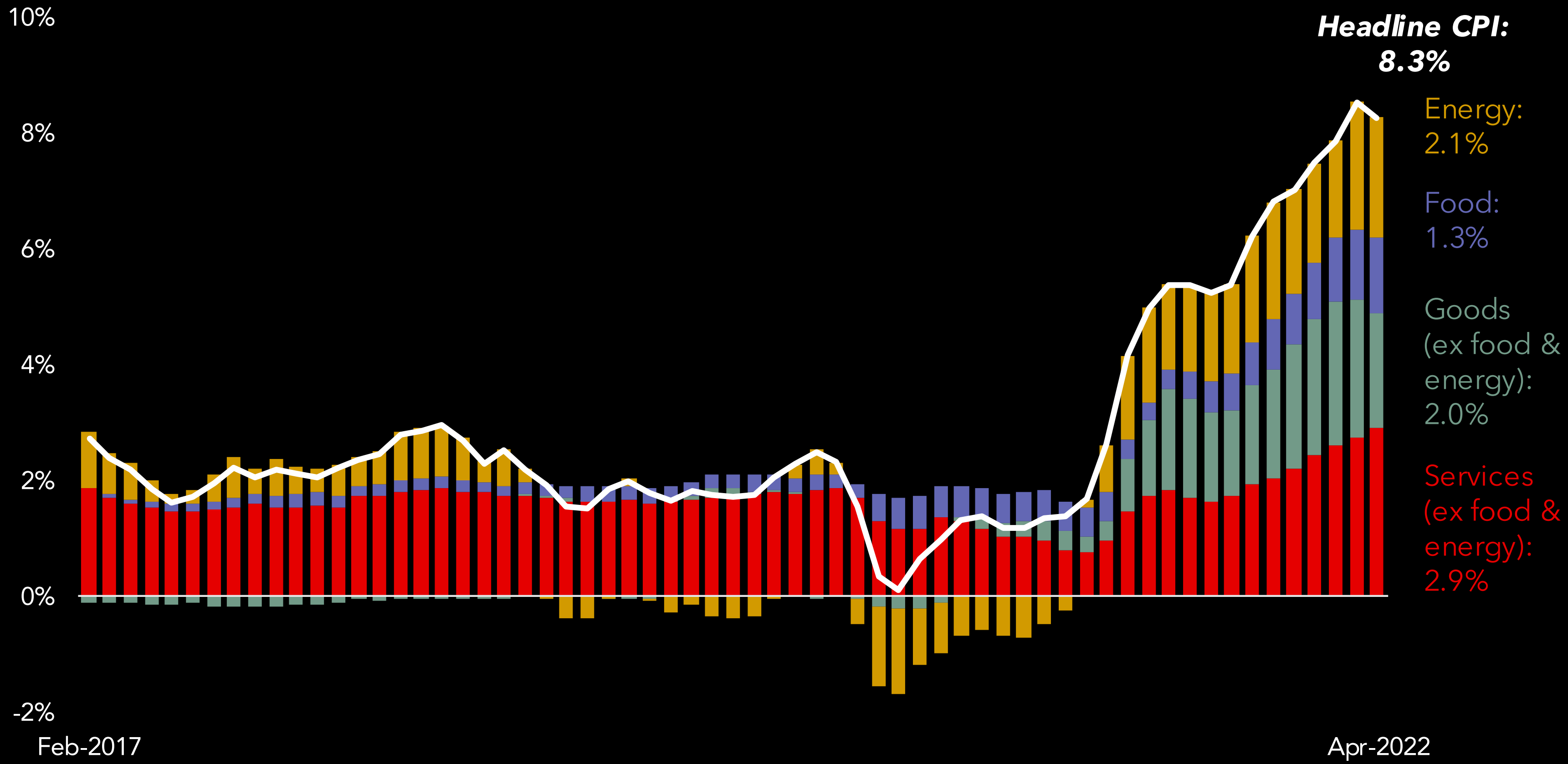




Source: (1-2) Bloomberg. Data as of May 12, 2022.

US Inflation Near 40 Year Highs

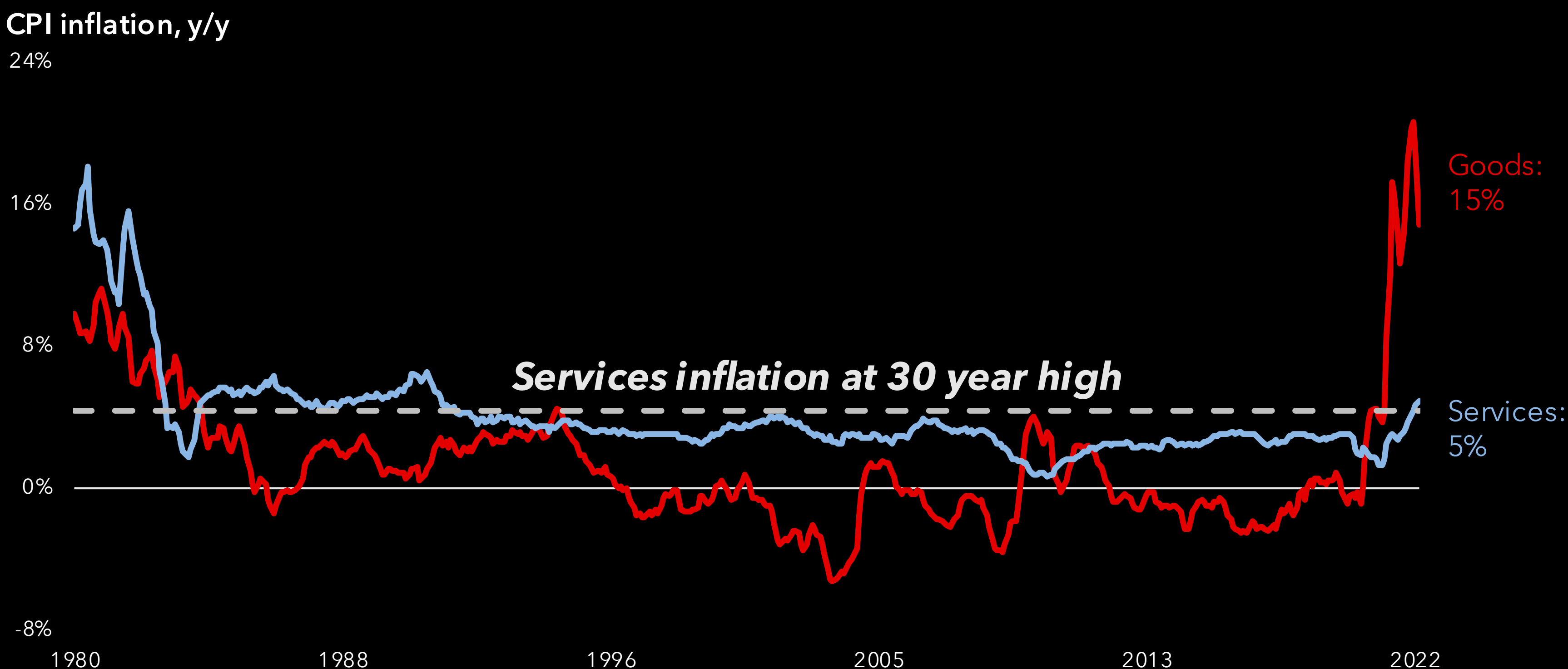
US Headline inflation slowed to 8.3% in April, down from a 40 year high of 8.5% in March, though persistently high and above consensus expectations of 8.1%. While the composition of inflation has shifted in recent months from goods to commodities and services, the modest moderation in April's inflation numbers benefitted from a 6.1% retreat in gasoline prices, following an 18.3% surge in March.



Source: (1-2) Bloomberg. Data as of May 13, 2022. John Authers. Sticky inflation is US CPI all items less food, shelter, energy & used cars & trucks is NSA.

Services Inflation at 30 Year High

While goods inflation continues to surge, services inflation has recently risen to 30 year highs. As the price of durable goods moderated within a high range in April, the cost of services accelerated rapidly as consumers emerged from a third COVID winter, with high vaccination rates and strong pent-up demand for travel, leisure and "experiences."



The CPI basket is comprised of approximately 60% services, 20% goods and 20% food and energy

Source: (1) Bloomberg. Data as of Mary 13, 2022. Services inflation is CPI services ex energy. Goods inflation is CPI durables.

Inflation Pressures Vary by Sector

Inflation pressures, which centered around durable goods during the early phase of COVID, have since shifted to services and commodity prices, which by definition, are likely to be more "enduring" and "detrimental" to growth.

US inflation by sector (y/y)

Energy | Food | Core goods | Core services

Energy commodities	45%
Motor fuel	44%
Airline fares	33%
Energy	30%
Used cars and trucks	23%
Utility gas service	23%
Eggs	23%
Public transportation	22%
Lodging away from home	20%
Tires	16%
Furniture & bedding	15%
Milk	15%
Motor vehicle parts and equipment	15%
Meats	14%

Delivery services	14%
Energy services	14%
New vehicles	13%
New trucks	13%
Vehicle accessories	13%
Outdoor equip. & supplies	12%
Electricity	11%
Food at home	11%
Household furnishings & supplies	11%
Car & truck rental	10%
Tools, hardware & supplies	10%
Health insurance	10%
Laundry & cleaning services	10%
Cereals & bakery products	10%

Veterinarian services	10%
Nonalcoholic beverages	10%
Transportation services	9%
Housekeeping supplies	8%
Fruits and vegetables	8%
Appliances	8%
Sporting goods	8%
Domestic services	7%
Tobacco & smoking products	7%
Food away from home	7%
Pets & pet products	7%
Moving, storage, freight expense	7%
Financial services	7%
Music instruments & acces.	7%

Source: (1) Bureau of Labor Statistics. CPI Report April 2022.

Inflation Pressures Vary by Sector (Cont.)

Inflation pressures, which centered around durable goods during the early phase of COVID, have since shifted to services and commodity prices, which by definition, are likely to be more "enduring" and "detrimental" to growth.

US inflation by sector (y/y)

Energy | Food | Core goods | Core services

Legal services	7%
Land-line phone services	6%
Apparel	5%
Motor vehicle maint. & Repair	5%
Rent of shelter	5%
Shelter	5%
Services less energy services	5%
Owners' equivalent rent	5%
Footwear	5%
Garbage & trash collection	5%
Recreation services	4%
Motor vehicle insurance	4%
Water & sewerage maint.	4%
Alcoholic beverages	4%
Day care and preschool	4%
Nursing homes	4%
Hospital services	4%
Medical care services	4%
Funeral expenses	3%
Photo equipment & supplies	3%
School tuition	3%
Educational books	2%
Medicinal drugs	2%
Recreational reading	2%
Personal care products	2%
College tuition and fees	2%
Intracity mass transit	2%
Professional services	2%
Internet services	2%
Physicians' services	1%
Technical & bus. school tuition	1%
Jewelry and watches	0%
Computers and smart home assistants	0%
Toys	0%
Cosmetics	(-1%)
Wireless phone services	(-1%)
Audio equipment	(-3%)
Computer software and accessories	(-4%)
TVs	(-6%)
Smartphones	(-16%)

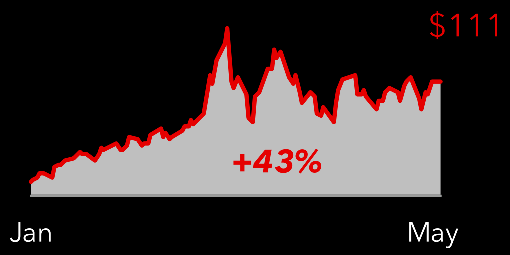
Source: (1) Bureau of Labor Statistics. CPI Report April 2022.

Commodity Prices Surging Higher

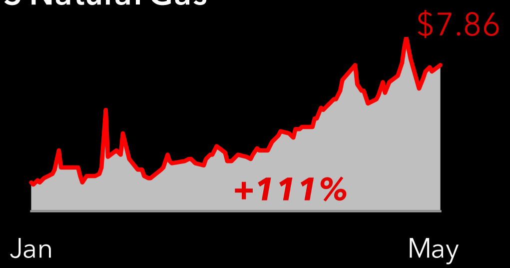
2022 YTD performance

Energy

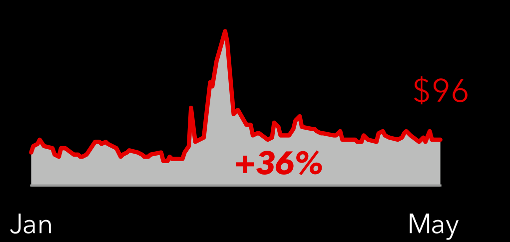
Brent



US Natural Gas

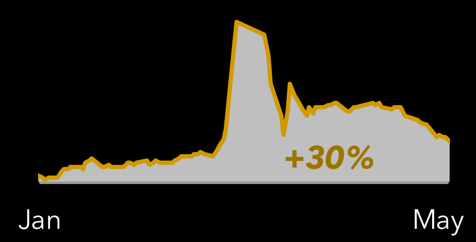


European Natural Gas (TTF)

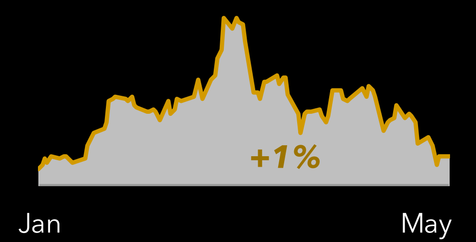


Industrial metals

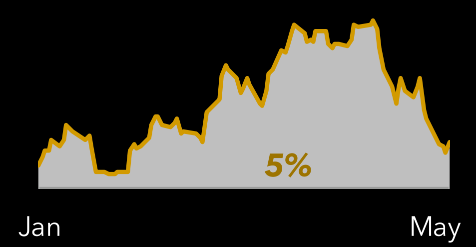
Nickel



Palladium

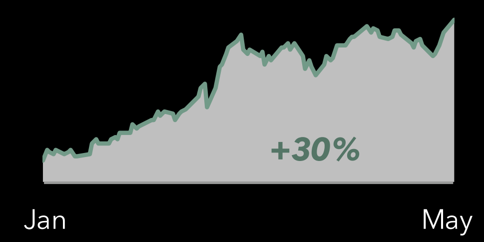


Steel

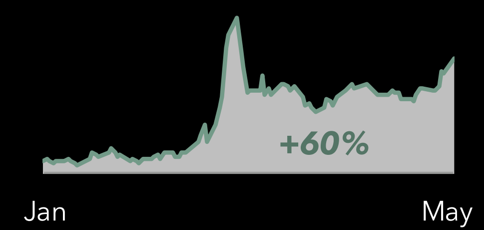


Agriculture

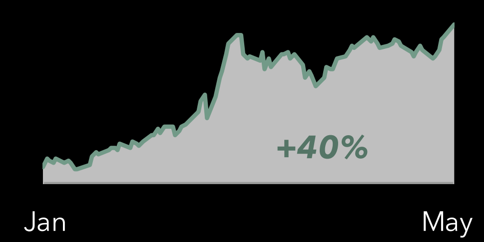
Agriculture Index



Wheat



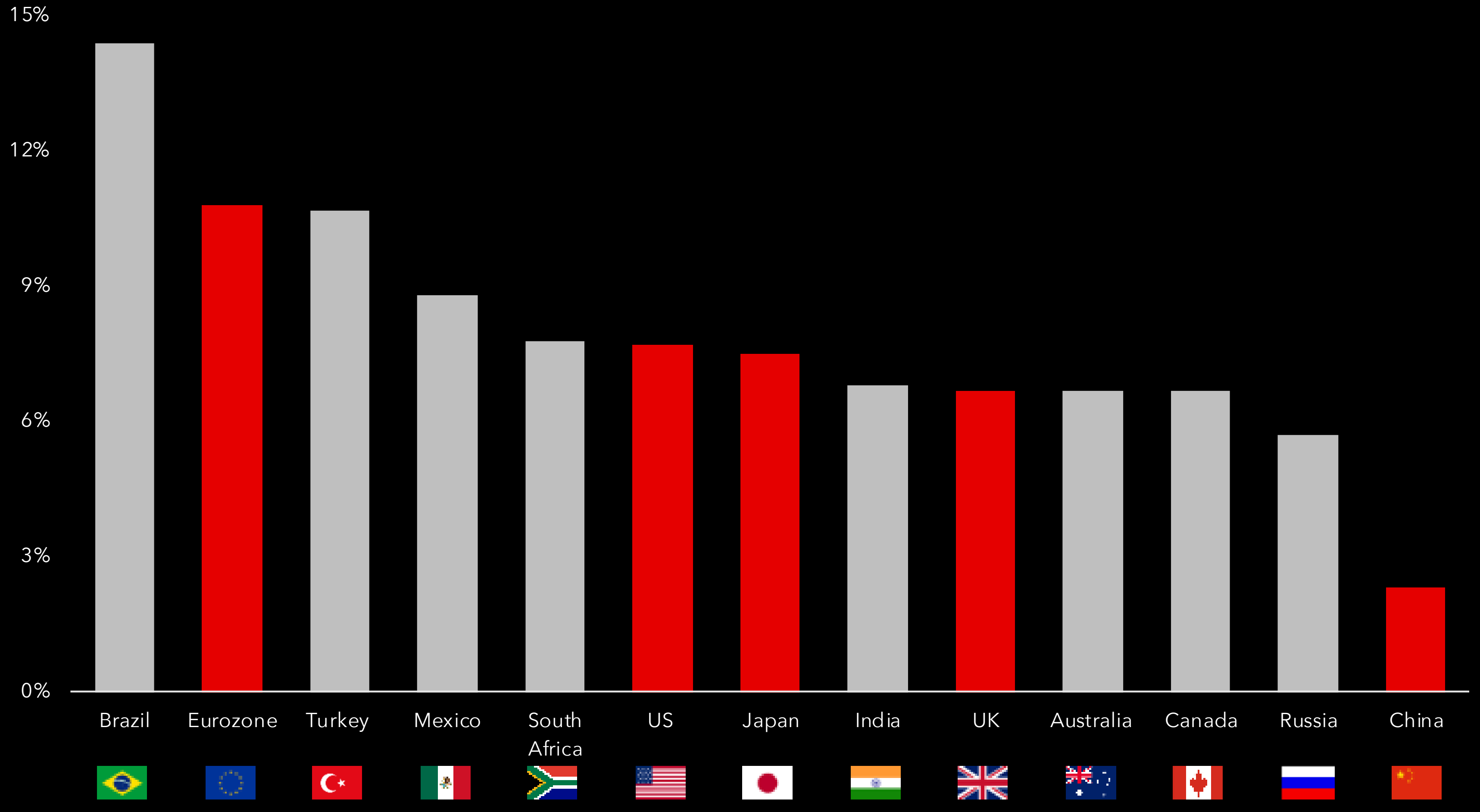
Grains



Source: (1-9) Bloomberg. Data as of May 16, 2022.

Energy as % of Total Inflation Basket

By comparison to other large economies (US, UK, Japan, China), Europe's economy is much more vulnerable to rising energy prices



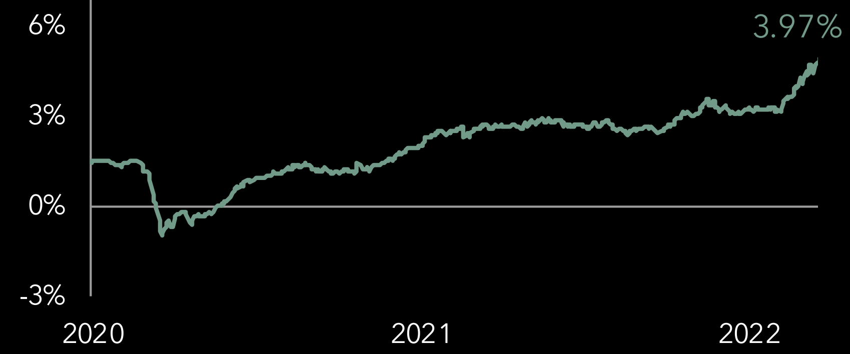
Source: (1) Bloomberg.

Near Term Inflation Expectations Rising More Rapidly

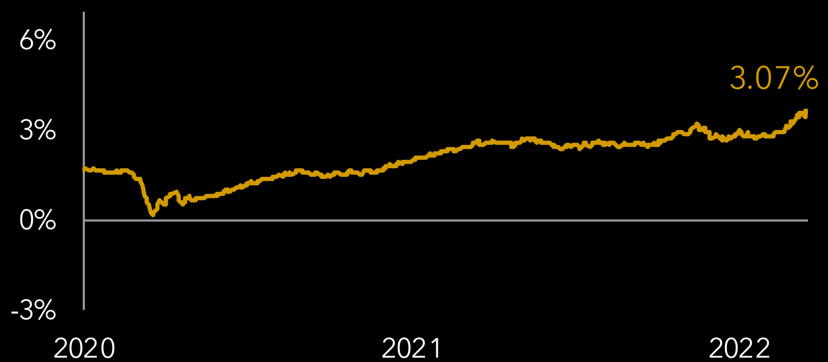
While the Fed has abandoned use of the term "transitory," inflation breakevens are still trading with more optimism of a "soft landing"

US 1 year breakeven

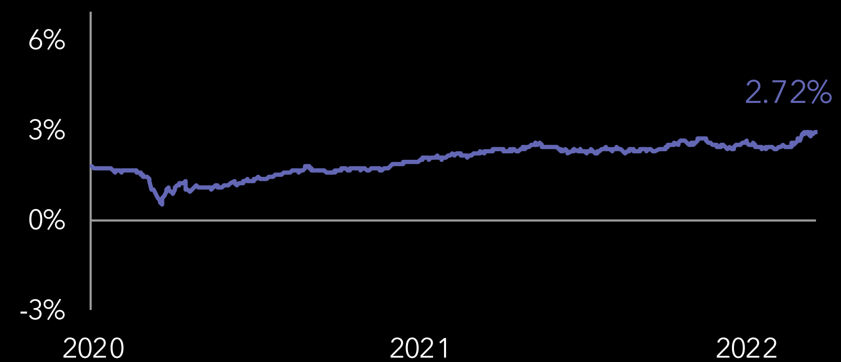
US 2 year breakeven



US 5 year breakeven



US 10 year breakeven

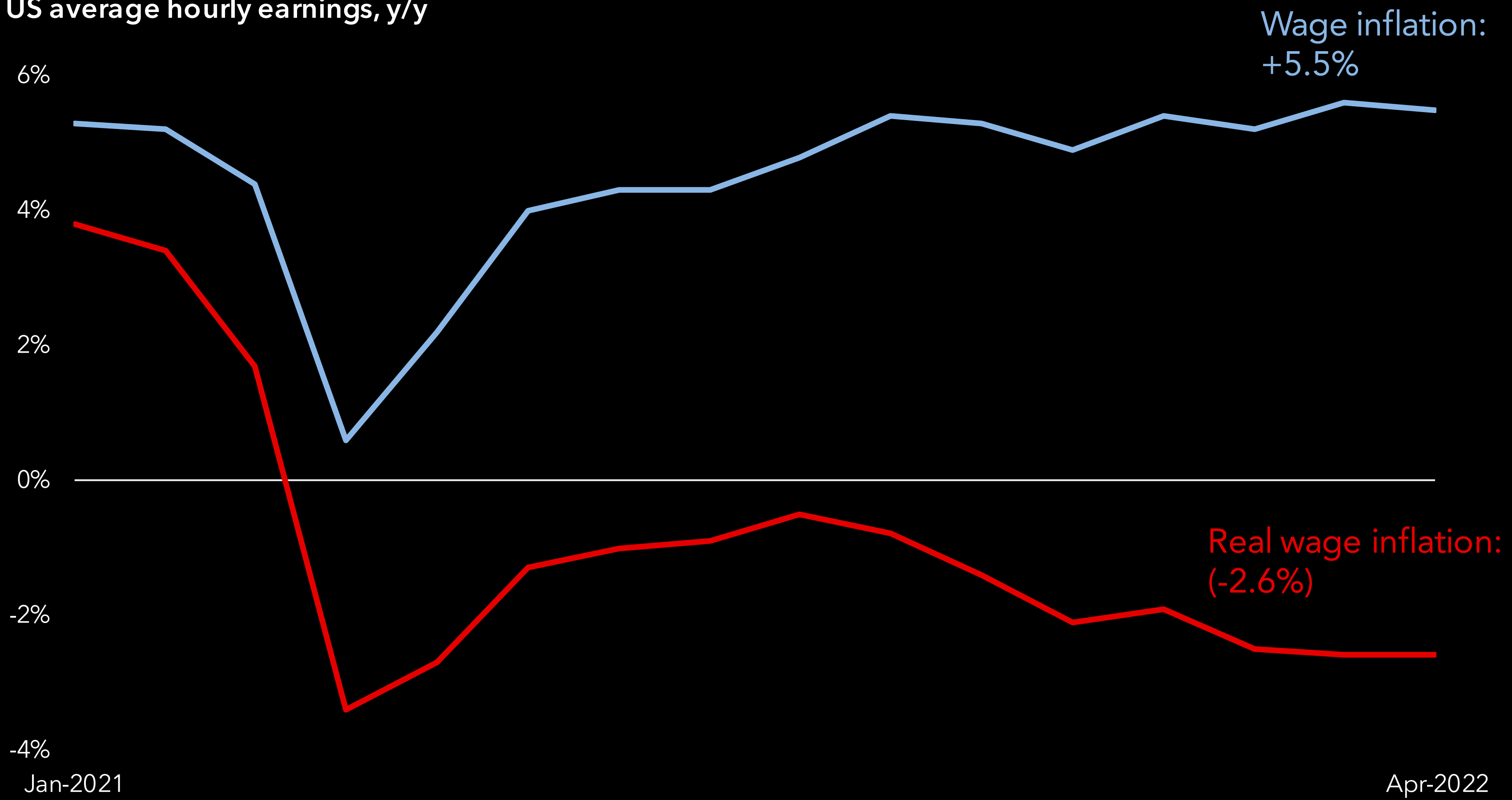


Source: (1-4) Bloomberg. Data as of May 16, 2022.

Real Wage Inflation Still Negative

As wages continue to rise at the fastest pace in two decades, they are having the two-fold adverse effect of dragging corporate earnings lower, while not keeping pace with inflation

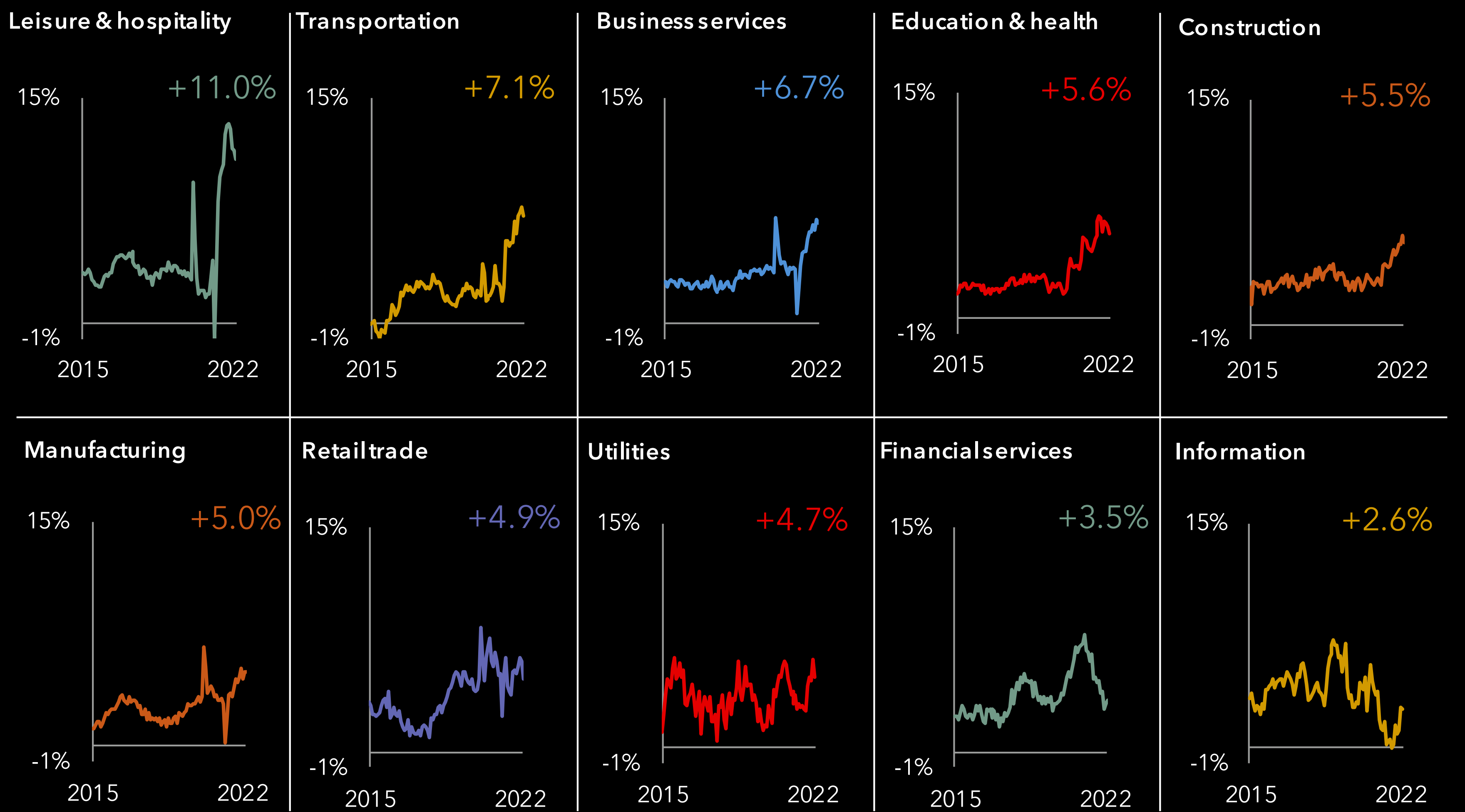
US average hourly earnings, y/y



Source: (1) Bloomberg. Data as of May 12, 2022.

Wage Inflation Varies by Sector

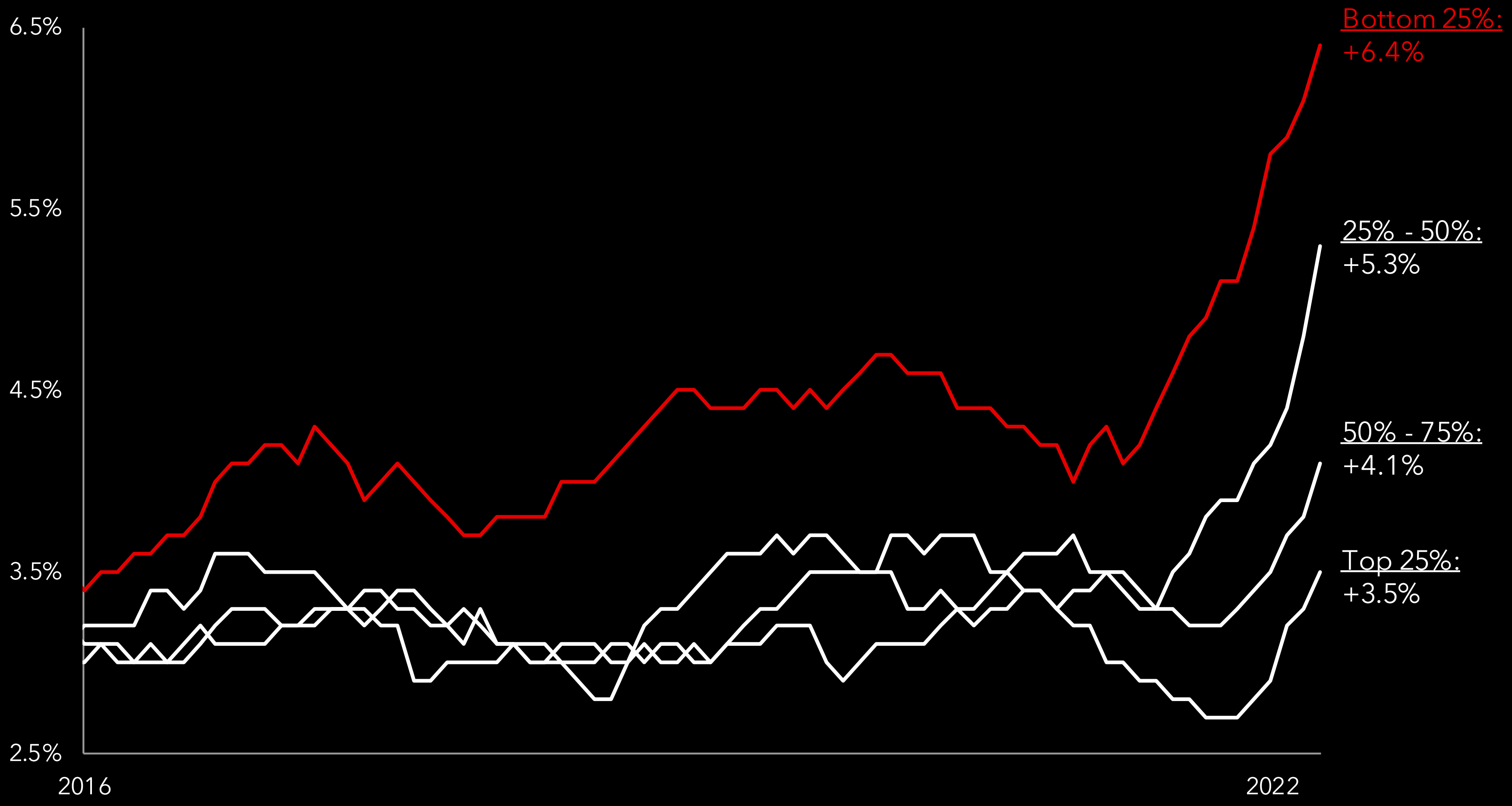
In April, wages rose 5.5% y/y, the fastest pace in two decades. Tight labor markets have pushed wages higher in the post-crisis period, particularly for those in the lower quartile of earners.



Source: (1-10) Bloomberg. Data as of May 16, 2022.

Wage Inflation Varies by Income Level

Hourly wage growth by quartile

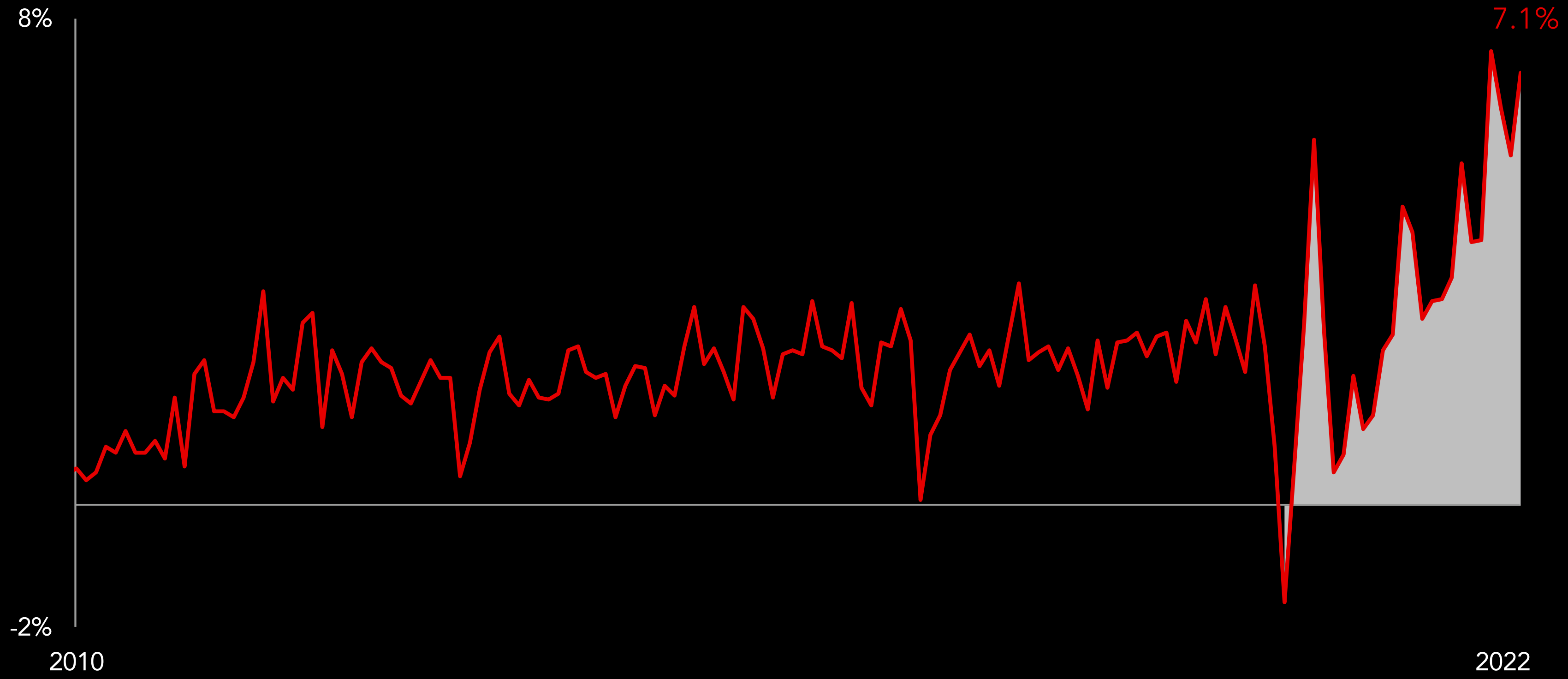


Source: (1) Atlanta Fed Wage Growth Tracker. 12-month moving average of median wage growth, hourly data. Data as of May 16, 2022.

The Fed's Dilemma

According to the Atlanta Fed, "sticky prices" (prices which are difficult to change quickly) are rising at the fastest rate in three decades. To this end, we believe it will be much easier for the Fed to reduce inflation from 8-9% down to the 4-5% area, than from 4-5% to 2-3%, without precipitating a hard landing. The Fed's demand side tools are well equipped to address inflation in interest rate sensitive sectors (durable goods, auto, housing), though less able to impact supply side sources of inflation which are likely to get worse in the months ahead (i.e., food, energy).

Atlanta Fed 1 month sticky inflation



Source: (1) Bloomberg. Data as of May 13, 2022.

History Suggests "Hard Landing" Risk High

In a study of 12 Fed tightening cycles dating back to the 1950s, an Oxford Economics analysis shows that the Fed only avoided recession on three occasions (mid-1960s, 1983-94, and 1994). The study found that recessions were more likely to follow tightening cycles when the total rate increases were larger and when initial and peak inflation were higher.

US rate cycles and recession periods

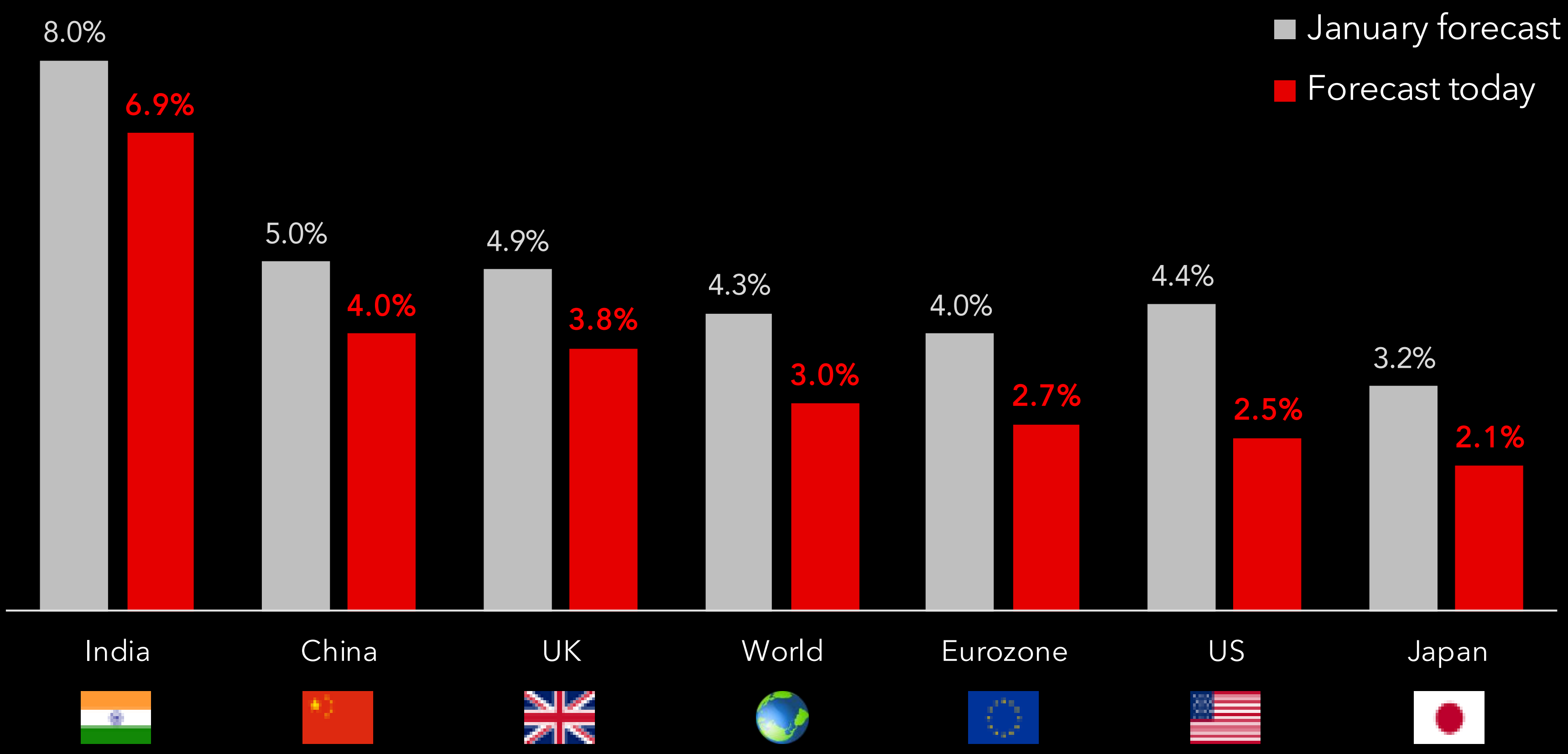
Tightening Cycle	Total bps hiked	Peak inflation rate	Hard or soft landing?
1954 - 1957	227 bps	3.7%	Hard
1958 – 1960	305 bps	3.6%	Hard
1964 – 1966	210 bps	3.8%	Soft
1968 – 1969	500 bps	6.2%	Hard
1972 – 1974	850 bps	12.3%	Hard
1977 – 1980	1,040 bps	14.8%	Hard
1980 – 1981	790 bps	11.0%	Hard
1983 – 1984	250 bp	4.8%	Soft
1988 – 1989	300 bps	5.2%	Hard
1994 – 1995	300 bps	3.0%	Soft
1999 – 2000	175 bps	3.8%	Hard
2004 – 2006	425 bps	4.7%	Hard

Source: (1) Oxford Economics, "What History Tells us About Rate Hikes and Recession Risk" (May 9, 2022). 2017-2018 tightening cycle not included because interrupted by exogenous COVID shock.

Global Growth Revised Downward

Growth will likely decelerate in almost every major global economy in 2022, but still remain "above long term trend" in most advanced economies. Visibility remains low, and variability on current forecasts high, with elevated recession risk for Europe in particular, depending on the forward path of the Ukraine crisis and related rise in energy prices.

2022 GDP growth forecasts, y/y



Source: (1) Oxford. Data as of May 10, 2022.

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Tom Joyce is a Managing Director and Capital Markets Strategist within MUFG's global capital markets and investment banking business. Based in New York, Tom heads a team that creates customized analytical content for multi-national S&P 500 companies. His team provides in depth analysis on the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Tom has over 25 years of Investment Banking experience in New York, London, Hong Kong, and San Francisco. Over the last 15 years, Tom created and built the Capital Markets Strategy role, advising corporate C-Suite executives (Boards, CEOs, CFOs, and Treasurers) on the pervasive macro forces driving markets. Tom also presents at dozens of corporate events each year including Board meetings, CEO ExCo sessions, CFO and Treasury off-sites, corporate leadership events and conferences.

Tom's educational background includes a year of study at Oxford University from 1991 - 1992, a Bachelor of Arts in Political Science from Holy Cross College in 1993, and a MBA from Kellogg Business School, Northwestern University in 2000.

Tom resides in New Canaan, CT with his wife and four sons, where he coaches youth basketball and serves on the Board of Trustees of the New Canaan Library, the Board of the New Canaan Football (Soccer) Club and the Holy Cross College President's Council.

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Hailey has a decade of Wall Street experience, including three years as a Consumer Sector Specialist in Equity Sales and seven years as a Capital Markets Strategist. Hailey is also a member of MUFG's Inclusion & Diversity Council and has devoted years to participating in and developing Wall Street recruiting programs.

Hailey graduated with honors from the University of Michigan's Ross School of Business with a BBA and a minor in International Studies.

In March 2020, Crain's New York Business Magazine named Hailey one of the "Rising Stars in Banking and Finance".

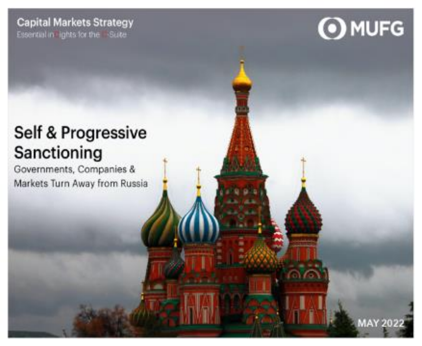
Stephanie Kendal is an associate in MUFG's Capital Markets Strategy group within the global capital markets and investment banking business. The team provides market based content for corporate clients to assist in strategic decision making. Focus areas include the impact of economic, political, public policy and regulatory dynamics on the US credit, foreign exchange, rates and commodities markets.

Stephanie has spent over three years as a Capital Markets Strategist. At her prior firm, Stephanie was a part of the Americas Women's Network Junior Council and was an active member of the University of Michigan recruiting team.

Stephanie graduated with honors from the University of Michigan's Ross School of Business with a BBA.

MUFG's Capital Markets Strategy Team

The MUFG Capital Markets Strategy team provides monthly publications and weekly policy notes, presenting to Boards and C-Suite executives, on a broad range of transformative themes driving the FX, rates and credit markets including: the COVID-19 recovery, ESG's acceleration, tax code policy changes, US-China decoupling, corporate strategy, geopolitical risk and central bank monetary policy.



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