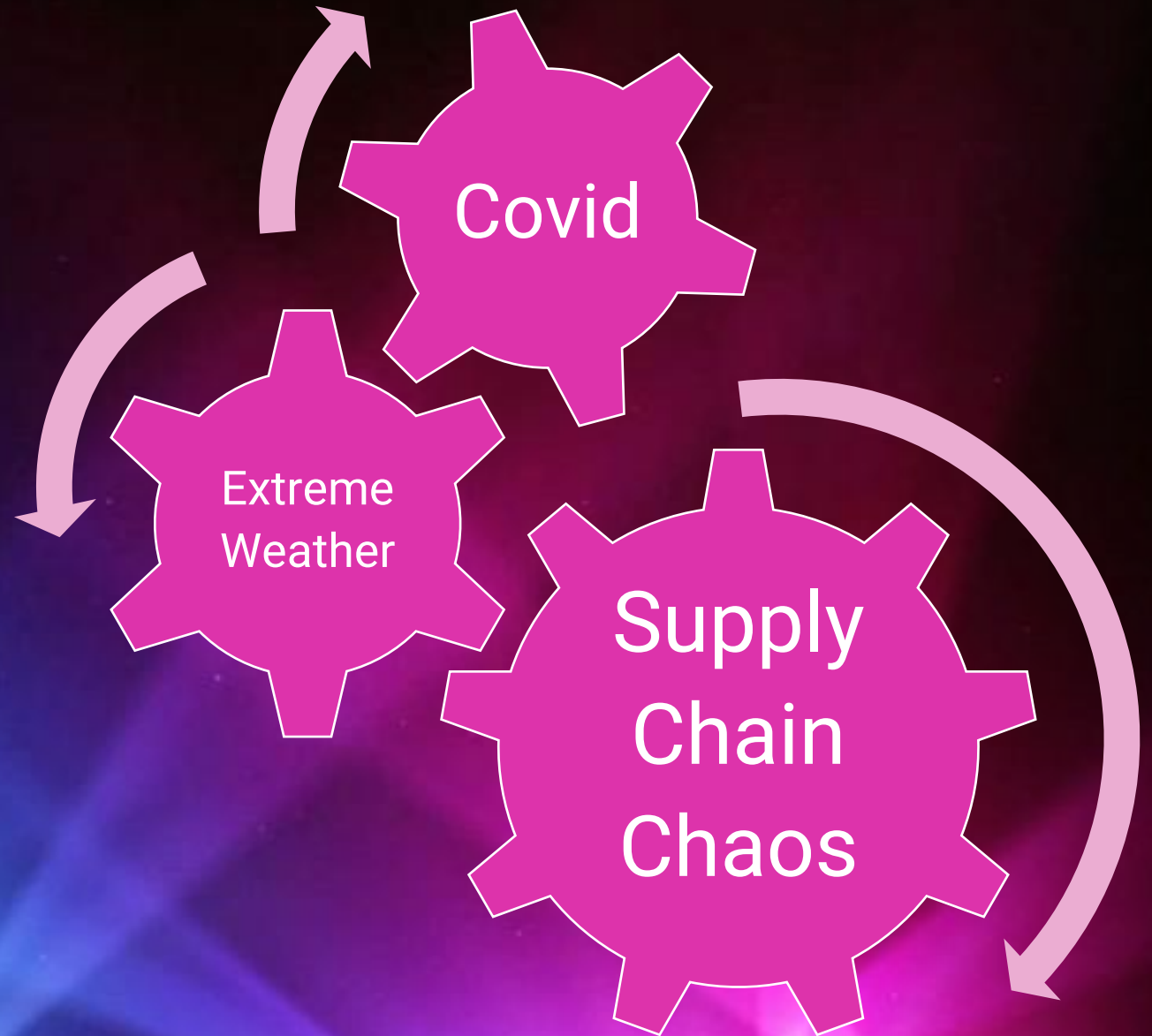


Post-Pandemic Recovery

WesternEnergy
INSTITUTE

DR. SHERRY COOPER
SEPTEMBER 27, 2021



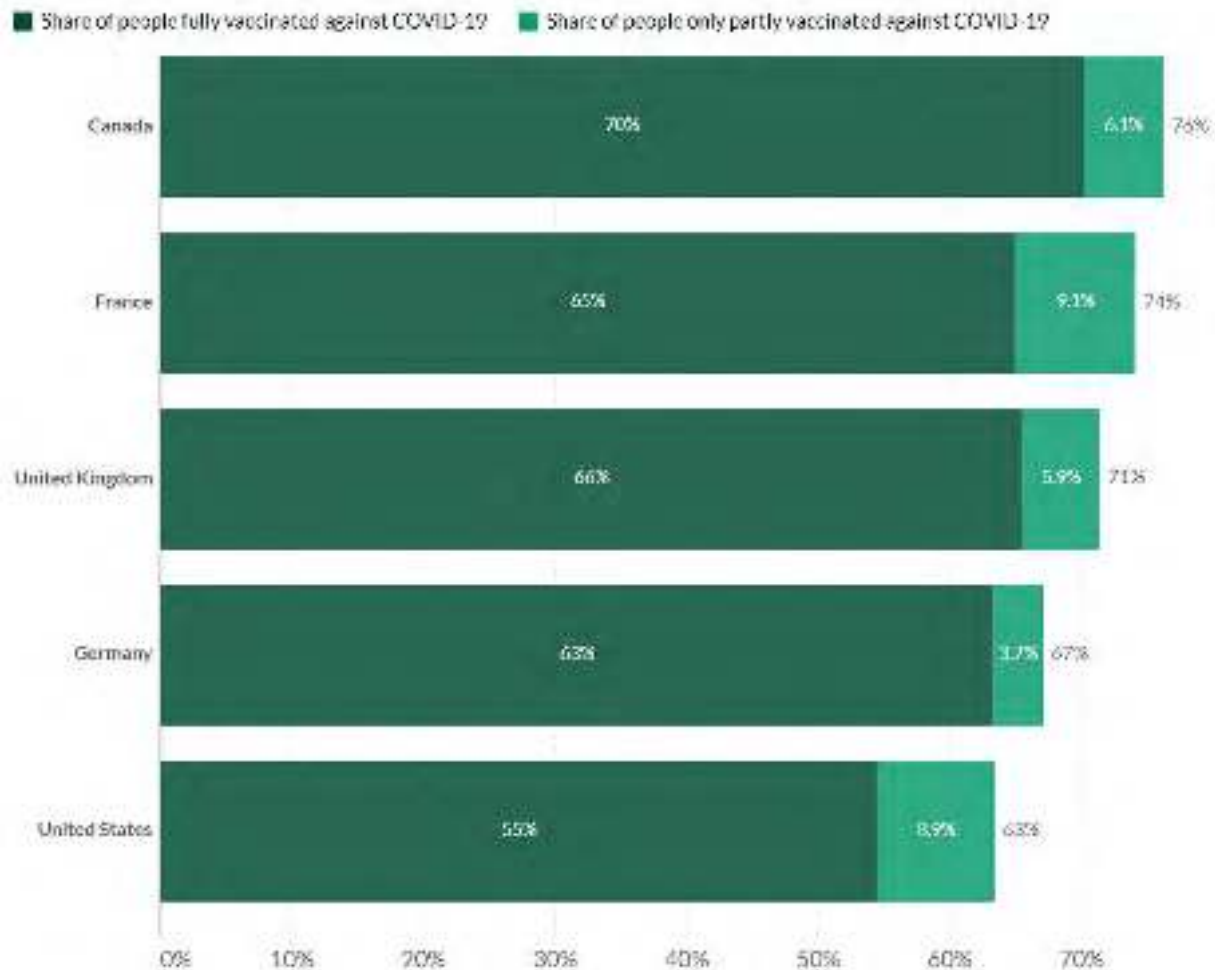


Vaccine Hesitancy Is A Critical Issue

Share of people vaccinated against COVID-19, Sep 25, 2021

Alternative definitions of a full vaccination, e.g. having been infected with SARS-CoV-2 and having 1 dose of a 2-dose protocol, are ignored to maximize comparability between countries.

Our World
In Data



Source: Official data collected by Our World in Data. This data is only available for countries which report the breakdown of doses administered by first and second doses in absolute numbers.
CC BY

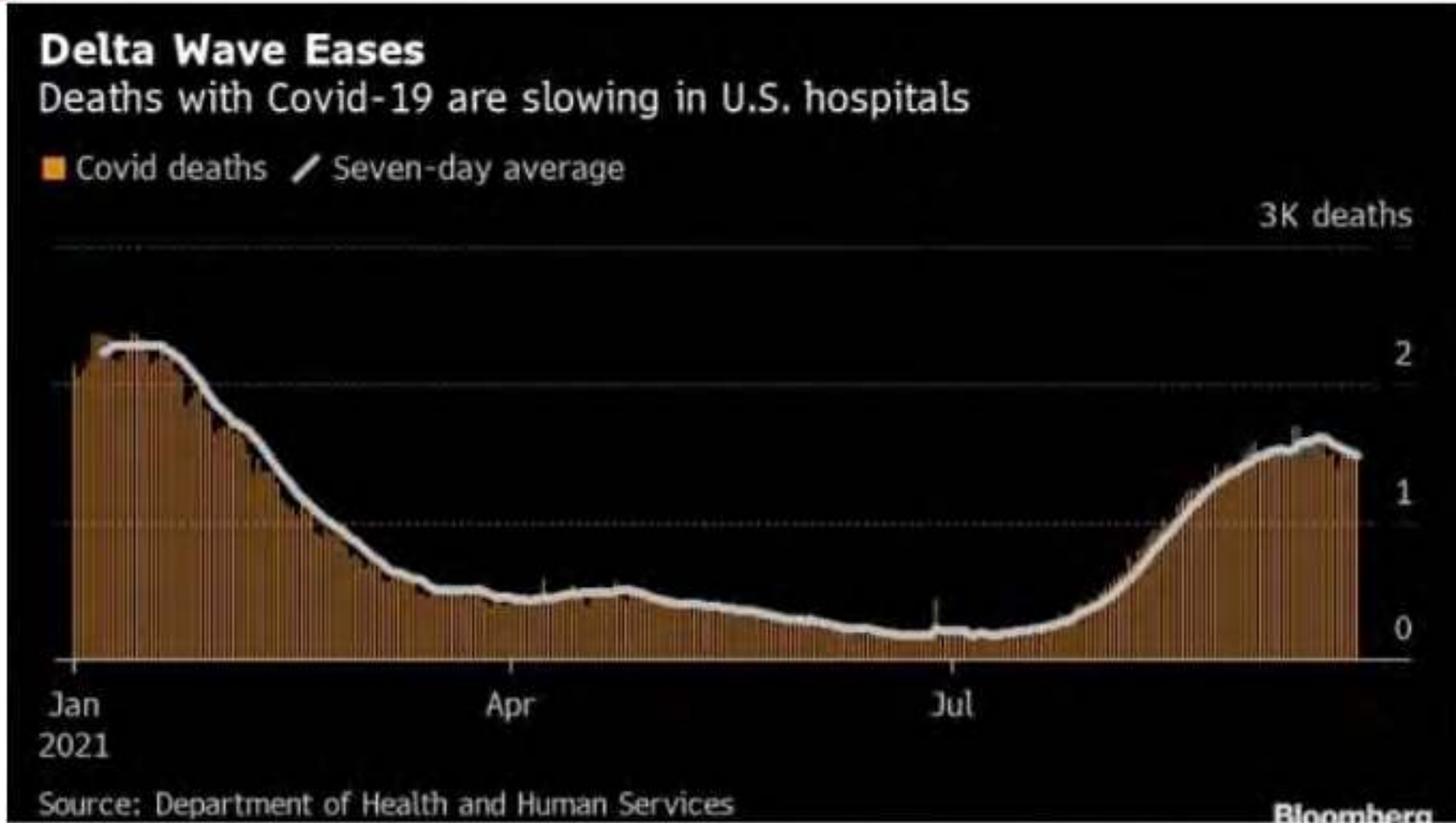
PANDEMIC UNCERTAINTY



Delta variant has moved
overall herd immunity out
of reach for most countries

Very important that
children are immunized

Some Good News On Covid



The background is a blurred image of a warehouse or distribution center. It shows tall metal shelving units filled with cardboard boxes. In the foreground, a conveyor belt with green rollers is visible, with a single cardboard box resting on it. A large, semi-transparent purple brushstroke shape is overlaid on the center of the image, containing the text.

*Supply Chain Disruptions,
Worker Shortages and
Soaring Prices are Slowing
The Recovery*

Supply constraints mean that policy stimulus is now partly fueling price gains rather than real spending and production.



The background is a deep blue gradient. Scattered across the upper half are numerous out-of-focus, glowing yellow and orange oval shapes, resembling bokeh from distant lights. In the lower right, a portion of a globe is visible, showing the Americas in white against a blue background. The globe is tilted and partially obscured by the bokeh lights.

North American Economy

US Leads the Recovery

Roaring Back

The U.S. recovery has been faster than other developed economies

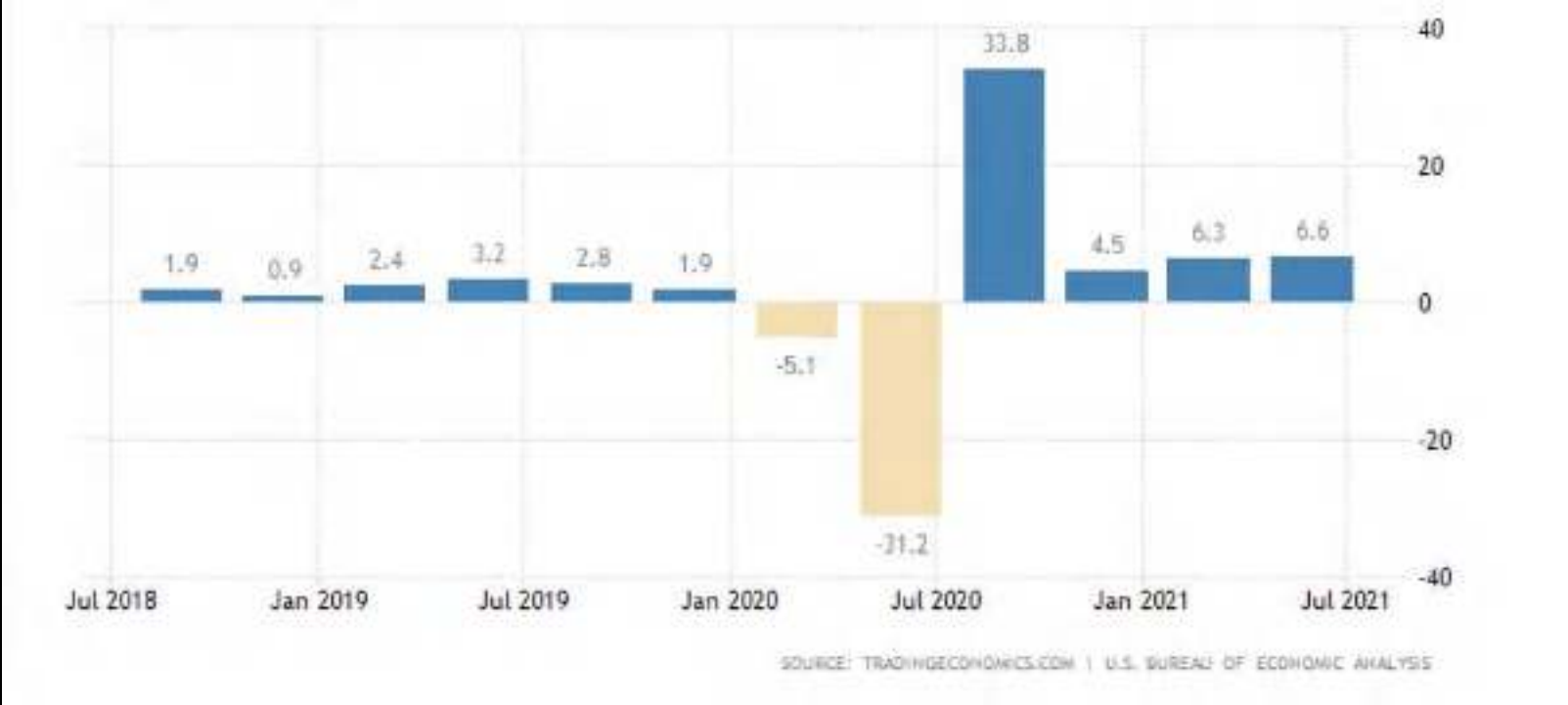
■ Forecast change in GDP over 3 years through 2022



Source: International Monetary Fund

Bloomberg

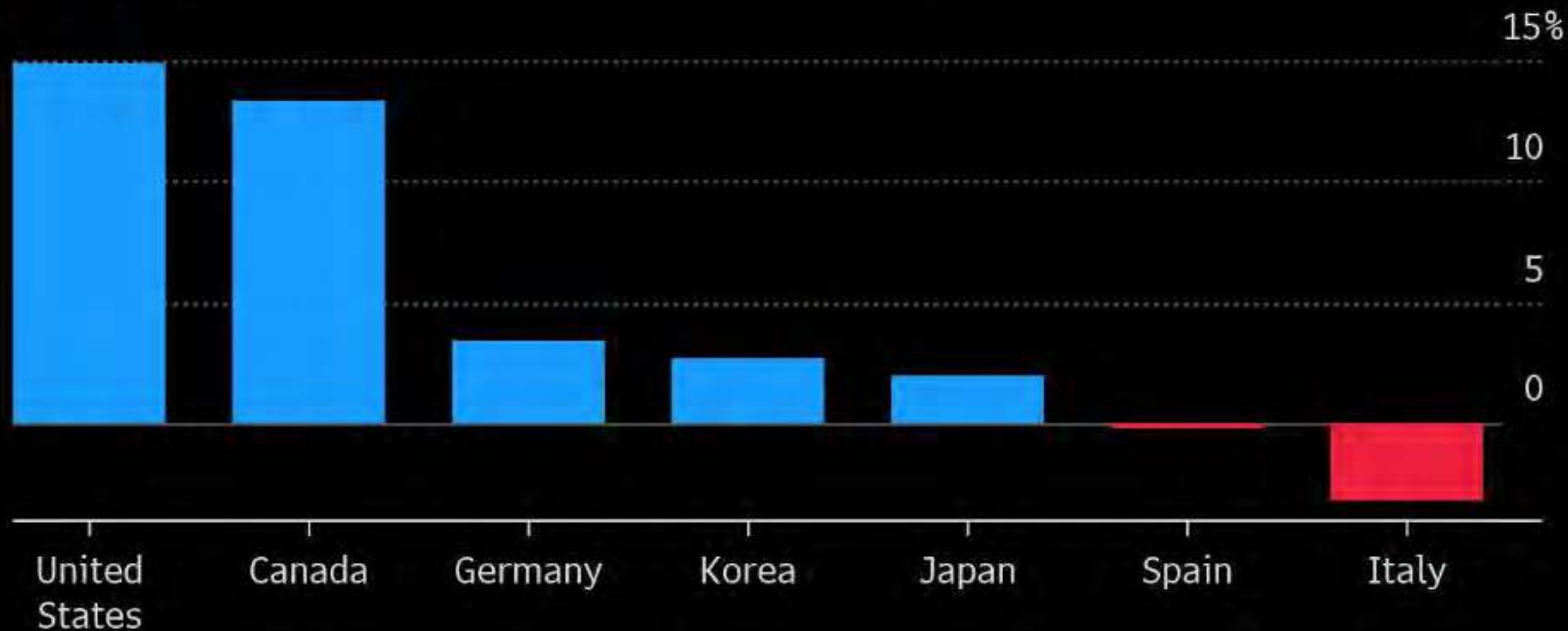
US Growth 6.6% in Q2—Likely 5.0% Growth in Q3



GDP Growth	2021 %	2022 %
US	5.8	3.5
Canada	5.0	4.5

Spending Power

Change in net disposable household income, 2020-21 vs 2018-19



Source: OECD Economic Outlook, May 2021

Bloomberg

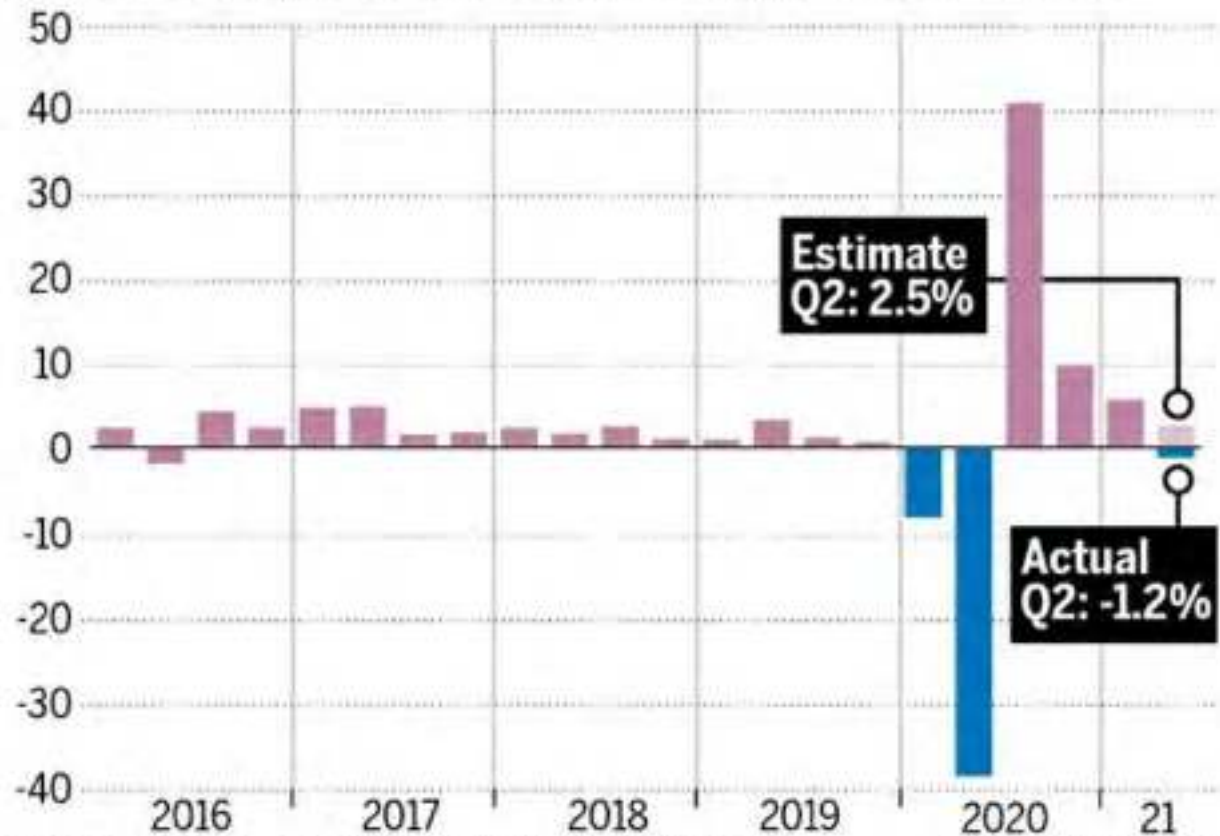
Canadian
Economy
Dipped -1.1%
in Q2 On
Weaker Home
Sales and
Exports



Canadian Growth Likely Rebounds in Second Half

Q2 GDP DROPS INTO NEGATIVE TERRITORY

Quarter over quarter percentage change, annualized rate



SOURCES: BLOOMBERG NEWS, STATISTICS CANADA

FINANCIAL POST

Global GDP Growth	2021 (%)	2022 (%)
US	5.8	3.5
Canada	5.0	4.5
UK	6.5	5.0
Euro Area	5.0	4.5
China	8.5	6.0
Global	5.9	5.0

Consumers Spending

(y/y % chng)

Real Personal Consumption Expenditures



Automobile Sector Hit Hard by Shortage of Chips

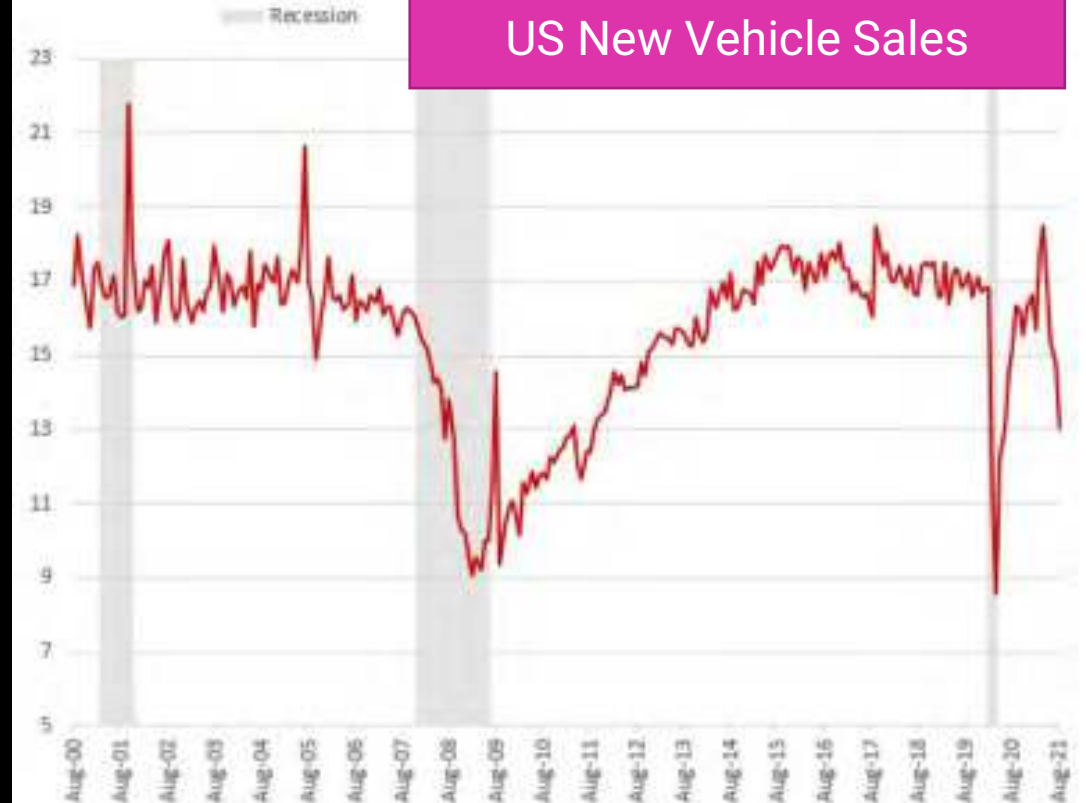
- New and Used Car Prices Rising
- Car Sales Are Down

Auto Inventories




Sources: BEA, christophe-barraud.com

US New Vehicle Sales



Sources: Bloomberg, christophe-barraud.com

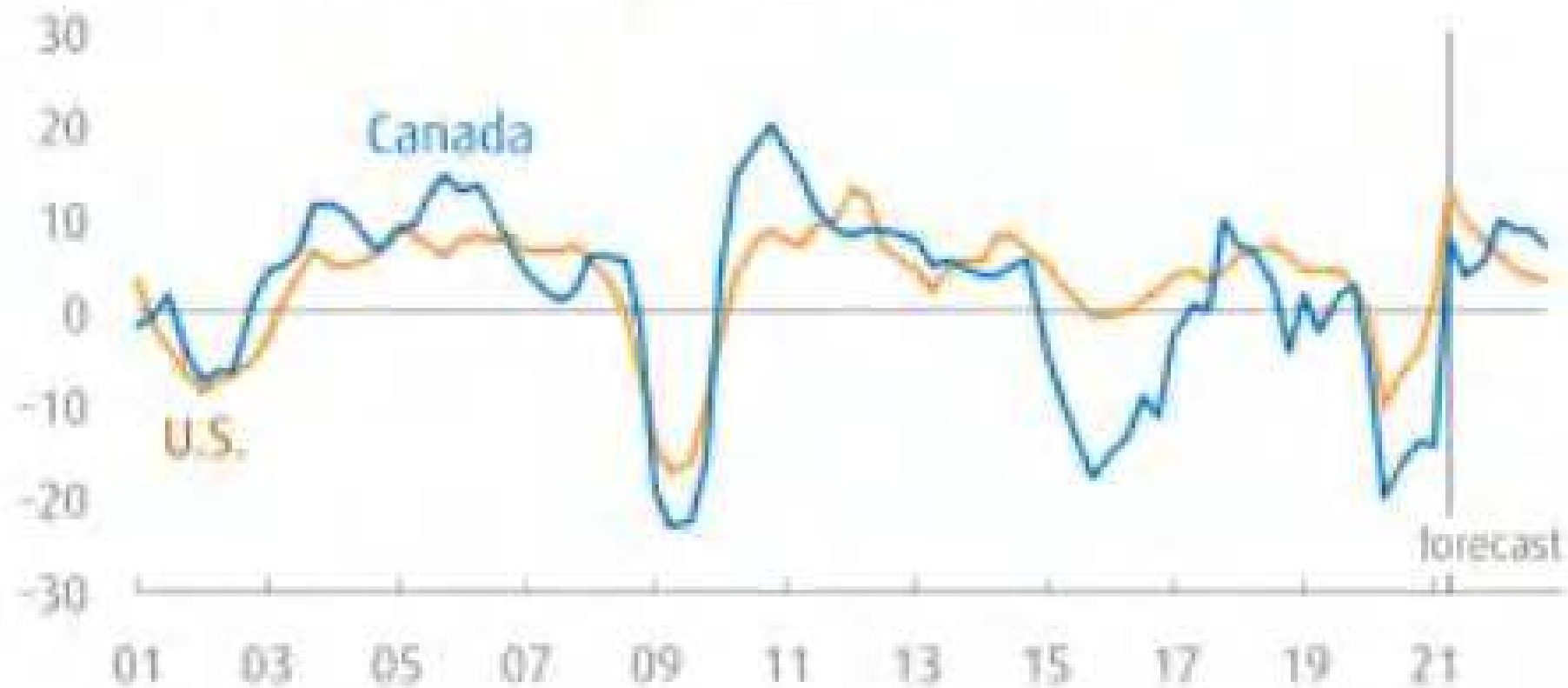
An aerial photograph of a large parking lot filled with various cars. The cars are arranged in a loose, circular pattern, with some facing towards the center and others facing outwards. The cars are of different colors, including red, silver, blue, gold, and black. The parking lot is paved with asphalt and has some white lines. In the background, there is a grassy area and some trees.

The car industry initially ran into trouble by backing out of chip orders during last year's first pandemic lockdowns, ceding its spot in line to sectors that saw demand surge when consumers were forced into quarantine

Business Investment On Upswing

(y/y % chng)

Real Non-Residential Business Investment



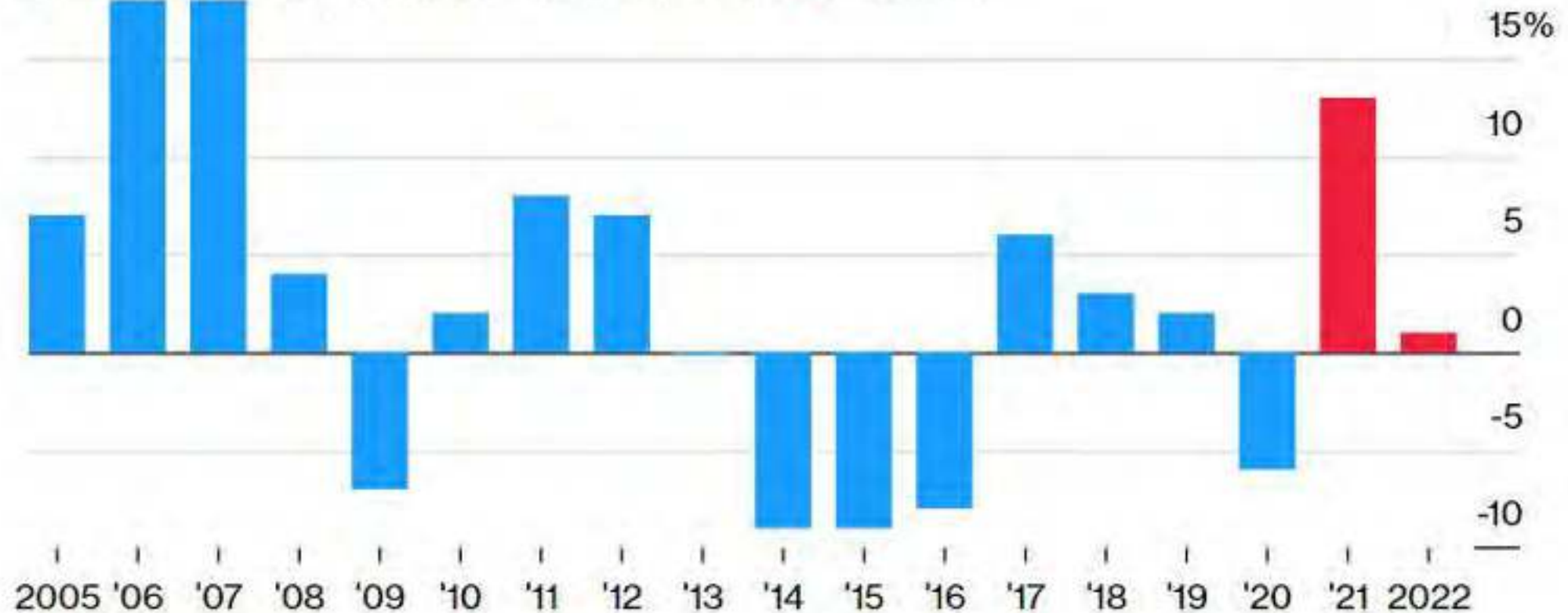
Global Capex Will Surge 13% This Year and Next

Capex in sectors that benefited from lockdown and remote work have been supercharged by the pandemic

Spend, Spend, Spend

S&P's latest estimate suggests that capex will surge 13% this year

■ Non-financial Capex change (YoY, real, USD) ■ Forecasts



Source: S&P Global Market Intelligence, S&P Global Ratings

Note: Universe is Global Capex 2000

The diagram consists of two main horizontal sections, one for the Supply Side and one for the Demand Side. Each section features a large blue arrow pointing right, followed by a series of four rounded rectangular boxes containing specific factors. The Supply Side section is positioned above the Demand Side section. The entire diagram is set against a solid black background.

Supply Side

Disruptions force business to invest in new plant & equipment

Calls for cleaner energy-- electric vehicles, batteries and alternative energy

Chip shortage triggered a wave of investment.

Demand Side

Pent up consumer demand strong

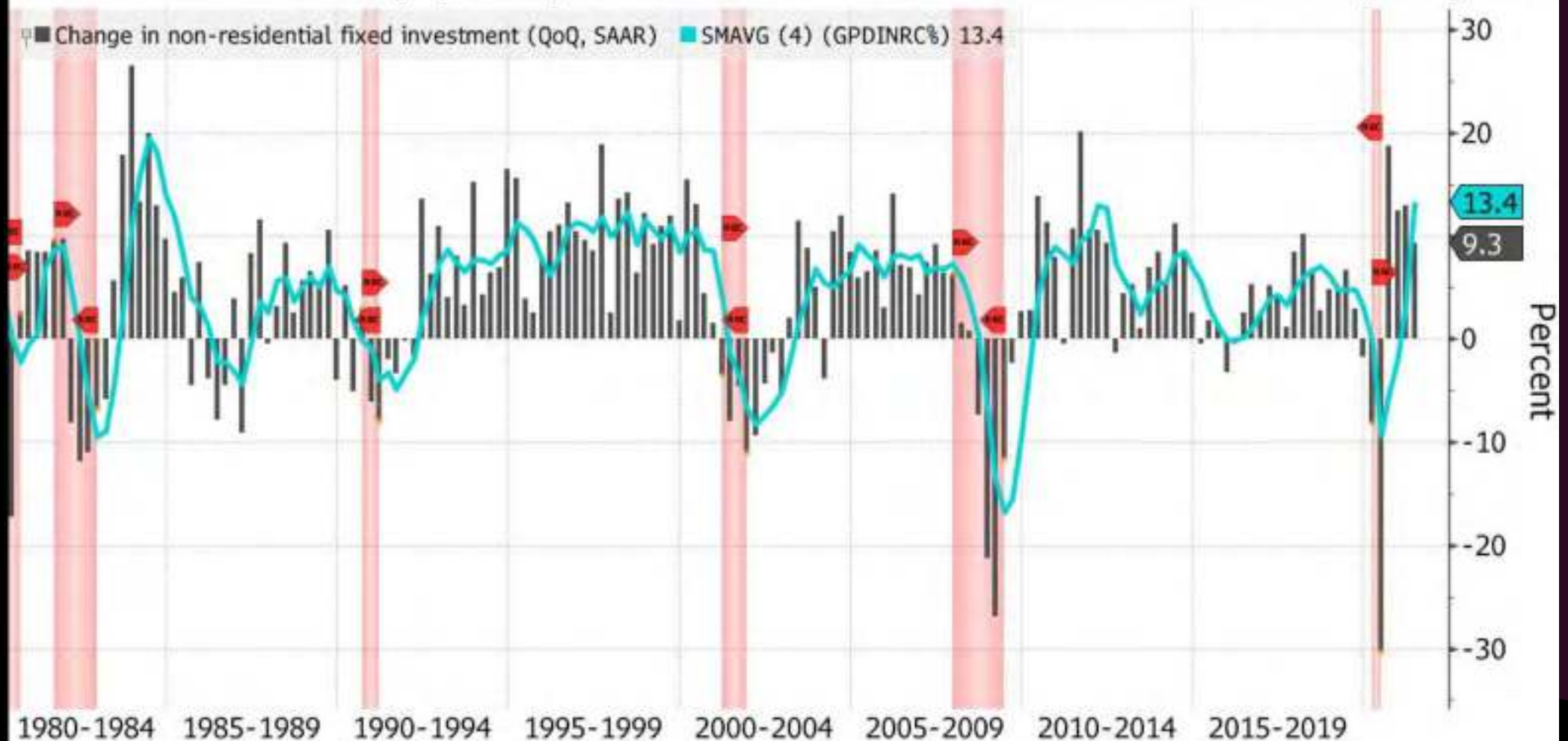
Interest rates remain low

Climate change forces companies to retool

Governments spends on clean technologies

Economic Upgrade

U.S. investment in equipment, structures and software has been solid for past year



Source: Bureau of Economic Analysis

Capex Boost

	Global	APAC (excluding Japan)	Japan	Latin America	North America	Europe
Total	13.3%	8.9%	8.8%	27%	14.6%	16.6%
Consumer	11.6	-4.8	5.2	44.6	24.8	9.2
Energy	5.5	-1.3	17.8	13.9	-2.3	17.8
Health care	13.6	12.9	27.5	.	18.7	3.1
Industrials	13.6	9.3	16.2	41	12.4	17.9
IT	22.3	19.1	23.7	.	27.5	18.6
Materials	17.8	15.9	14	36.7	12.3	23.6
Communications	12.9	8.3	11.3	8.8	16.9	10.4
Utilities	16.2	20.1	-3	28.1	9.9	25.1

Source: S&P Global Market Intelligence, S&P Global Ratings
 Note: Universe is Global Capex 2000

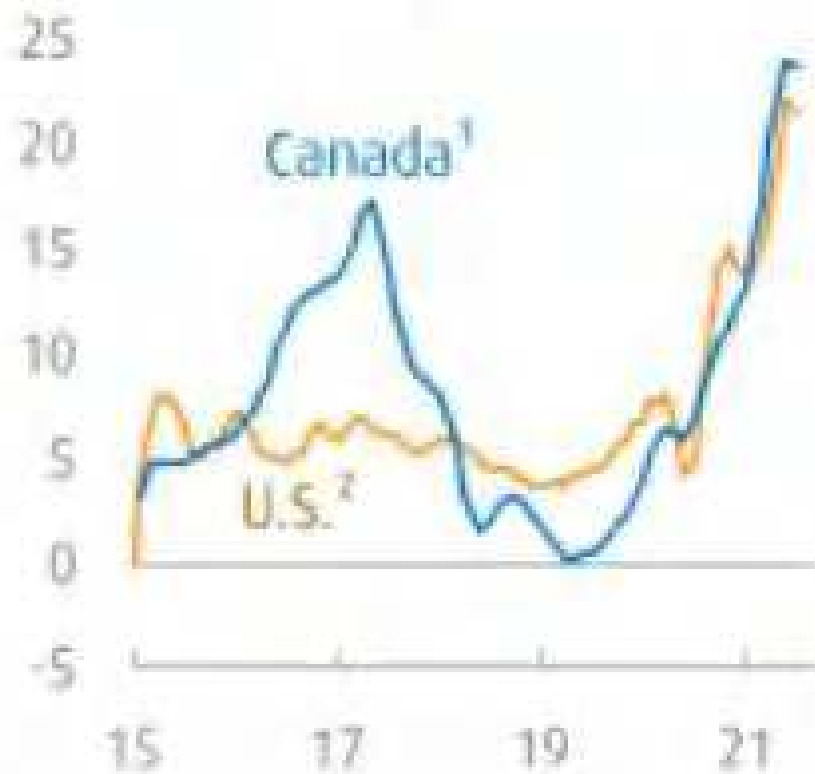
Little Slowing in House Prices

Existing Homes (y/y % chng : 3-mnth m.a.)

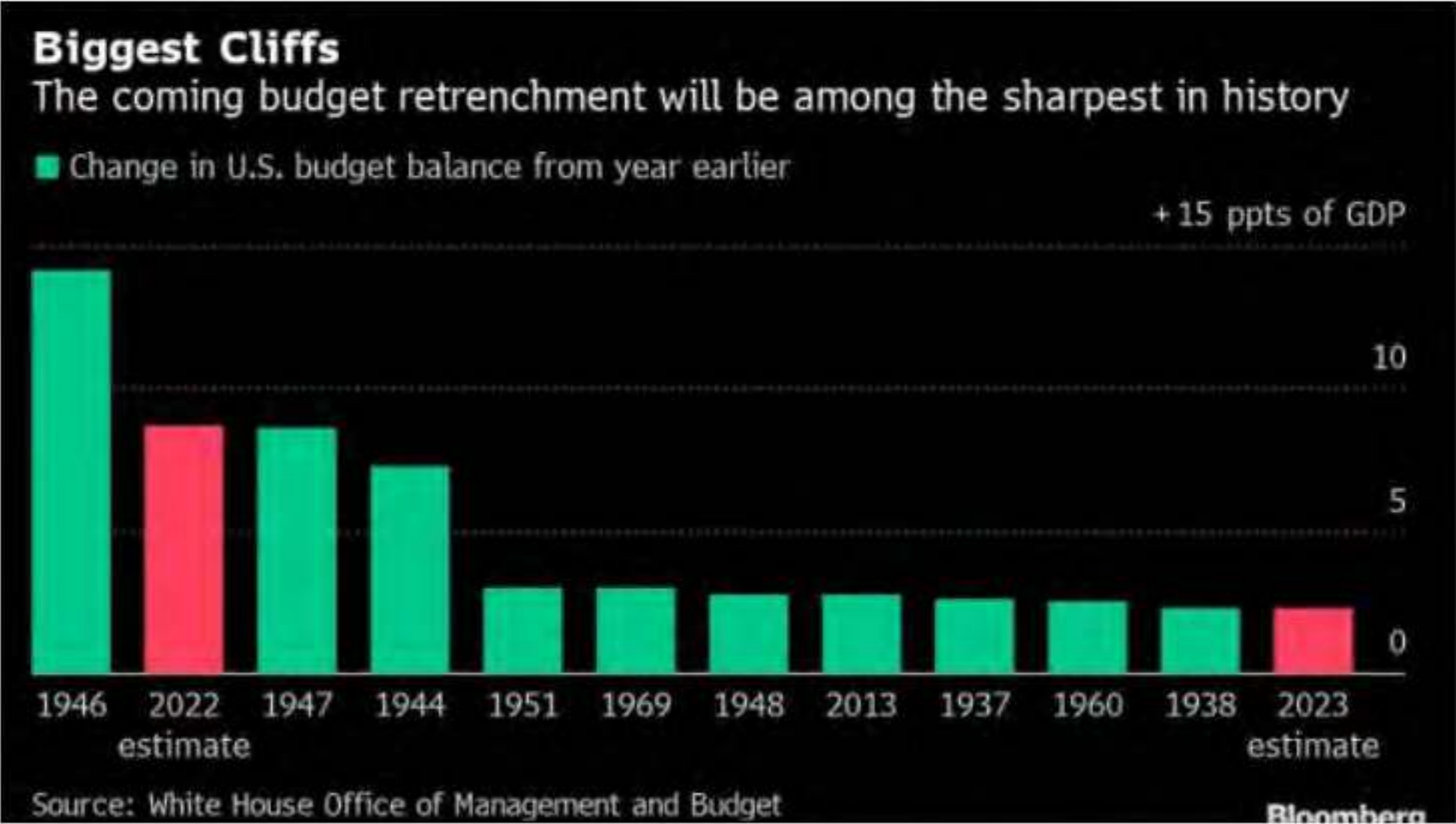
Sales



Prices



Fiscal Policy Retrenchment Will Be A Drag On Growth in 2022 And 2023



percent meter



COVID INFLATION IS EVERYWHERE—BUT US HAS THE HIGHEST INFLATION RATE IN THE G7

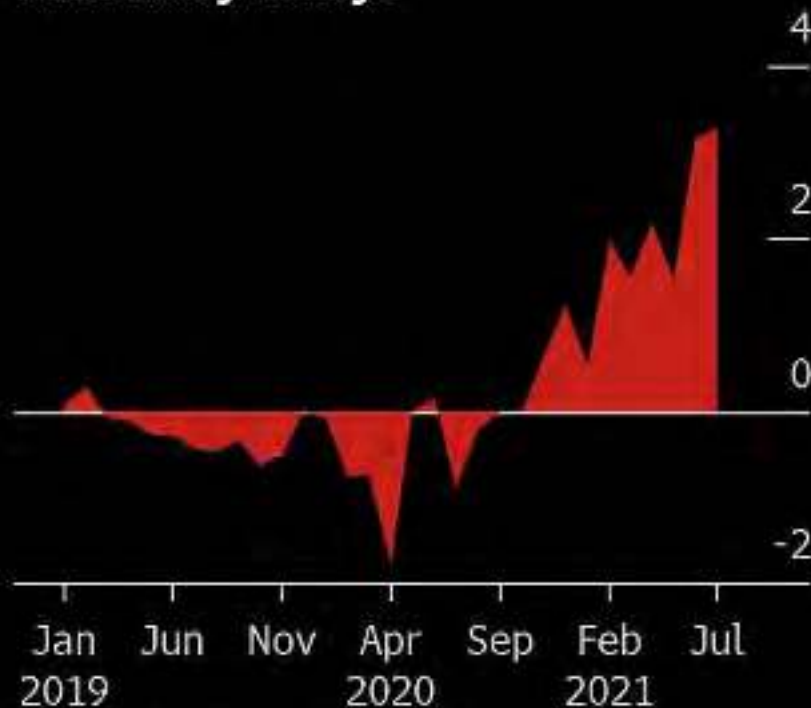


Longer Delays and Bigger Mark-Ups In The US As Consumer Demand Strengthened

American Premium

Gap between U.S. and rest of world in...

...delivery delays



...markups



Source: Institute of International Finance

Note: Y-axis measures gap in 'Z-scores' (distance from average) between US and global medians. Positive score = longer delays/bigger markups in U.S.

Bloomberg

Double-Figure Producer Price Inflation

Industry's input costs are rising at the fastest rate since 1981



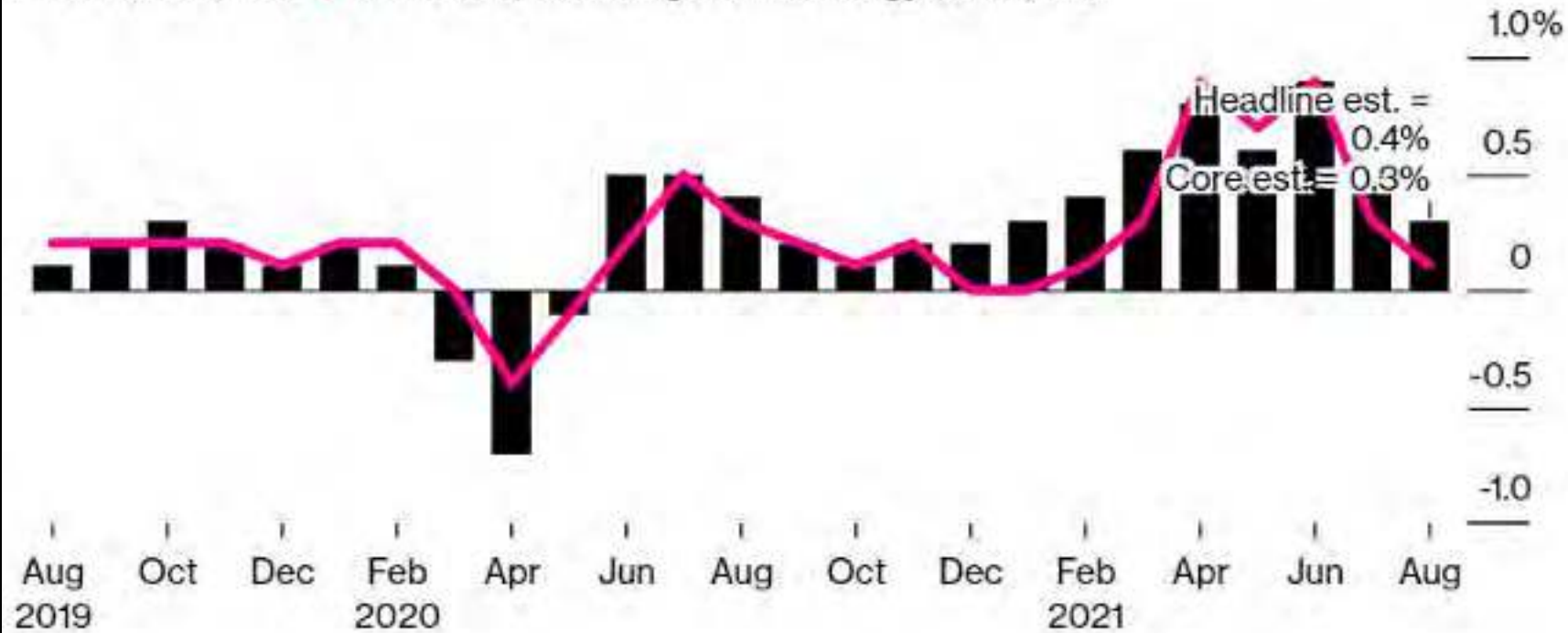
Source: Bloomberg

US August CPI Growth Cooled, Smallest Gain in Seven Months

Downtick in Price Pressures

U.S. headline and core CPI both rose by less than forecast in August

■ CPI (MoM, SA) / Core CPI, excluding food & energy (MoM, SA)



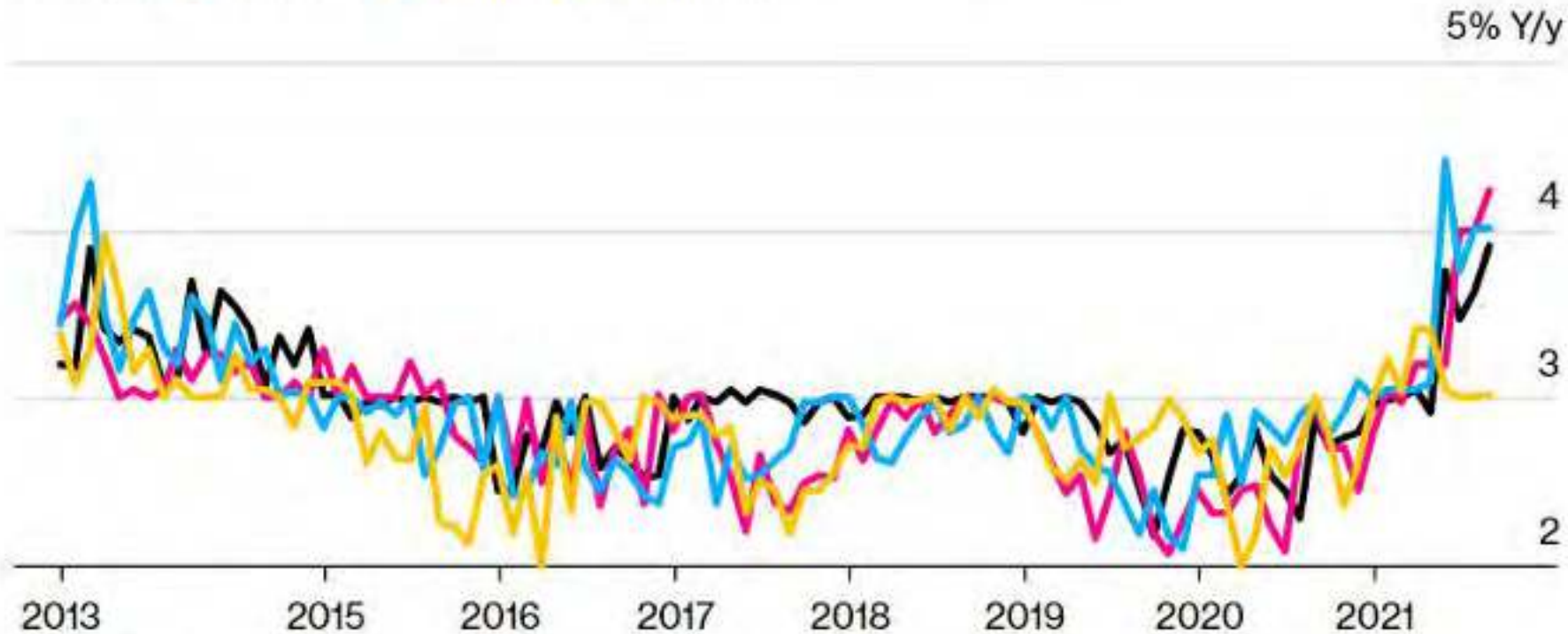
Source: Bureau of Labor Statistics, Bloomberg survey

Embedded Inflation Triggered By Rising Expectations Flowing Into Higher Wages

Geographical Expectations

Northeast 3-year price expectations flat as other regions see a rise

West Midwest South Northeast

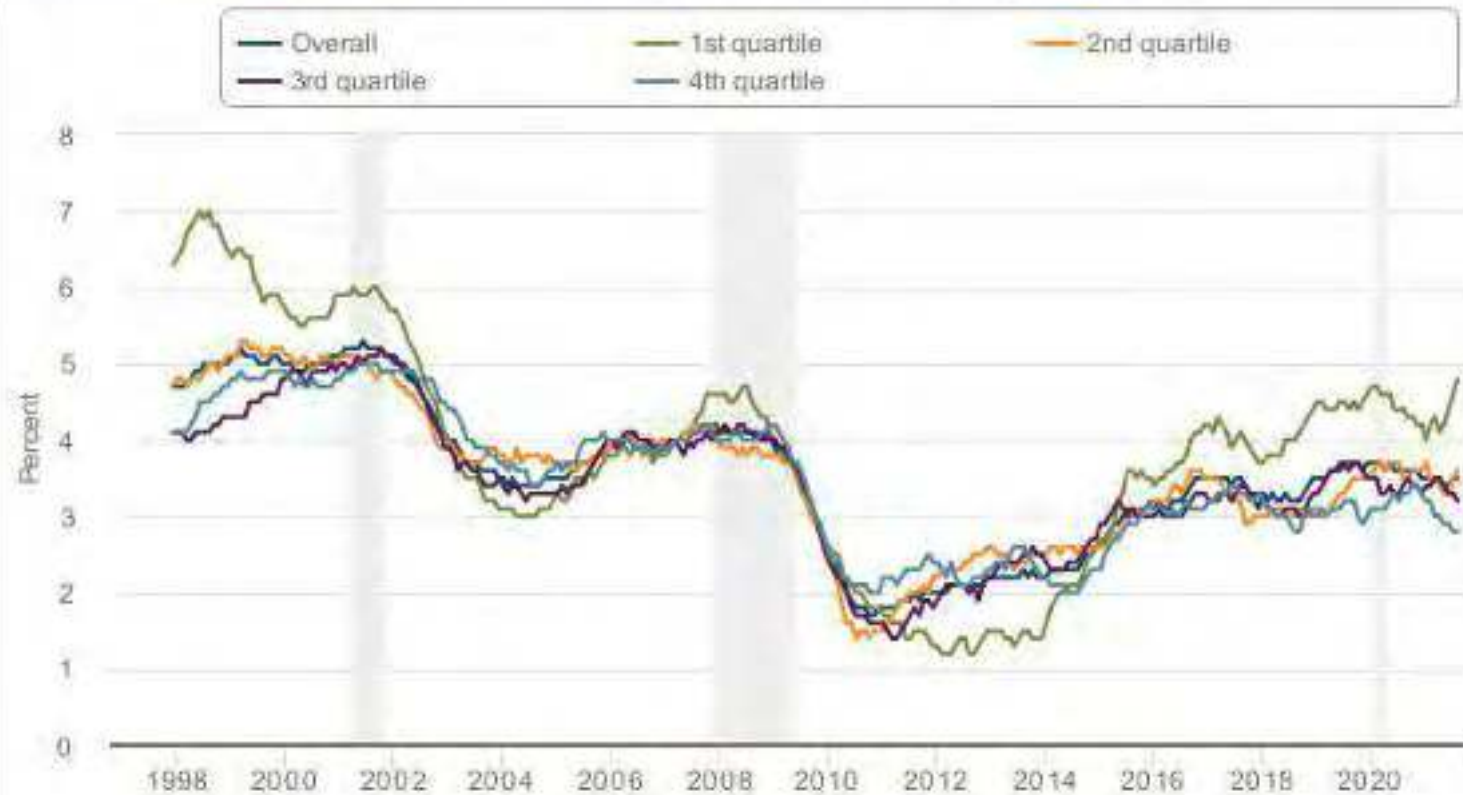


Source: Federal Reserve Bank of New York

Low-Wage Earners Hit Hardest Are Now Seeing Strongest Wage Gains

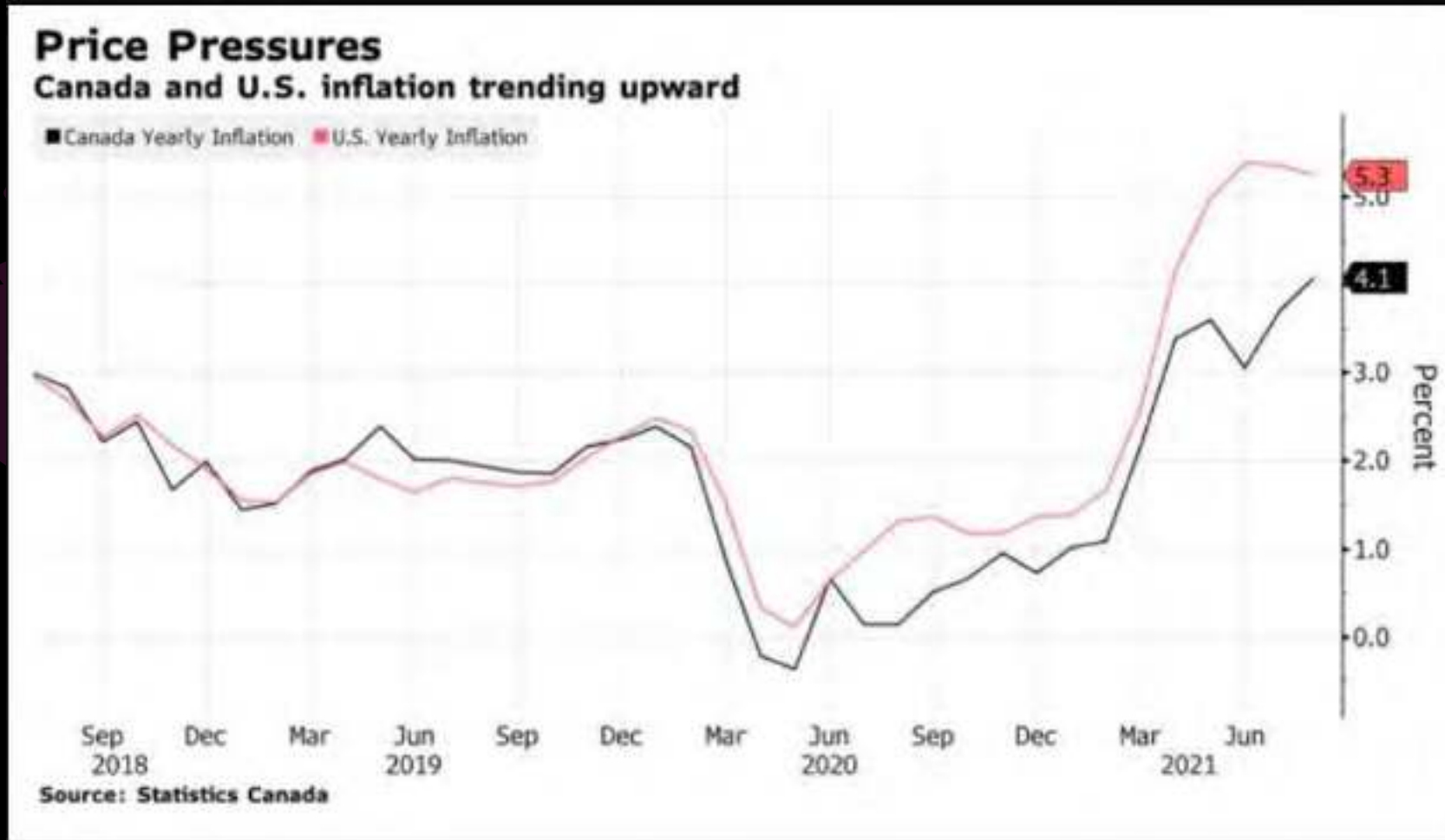
Wage Growth Tracker by Wage Level

12-month moving average of median wage growth for each category, hourly data



Sources: Current Population Survey, Bureau of Labor Statistics and author's calculations

Canadian CPI Inflation Slowed A Bit in August, But Y/Y Pace Rose to 4.1%

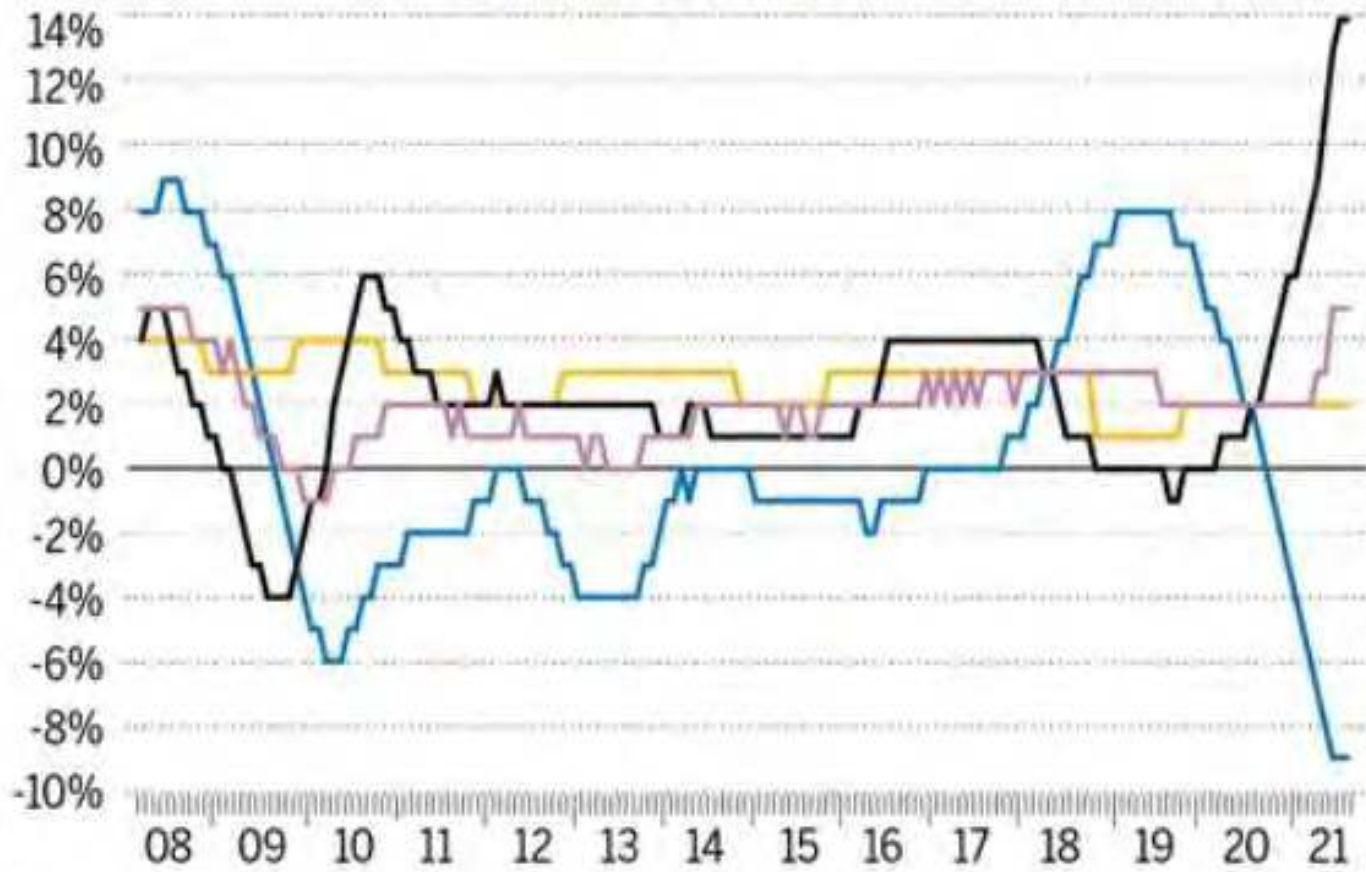




COST OF LIVING

Month over month per cent change in selected housing categories

— Homeowners' replacement cost — Mortgage interest cost
— Owned accomodation — Property taxes, other special charges



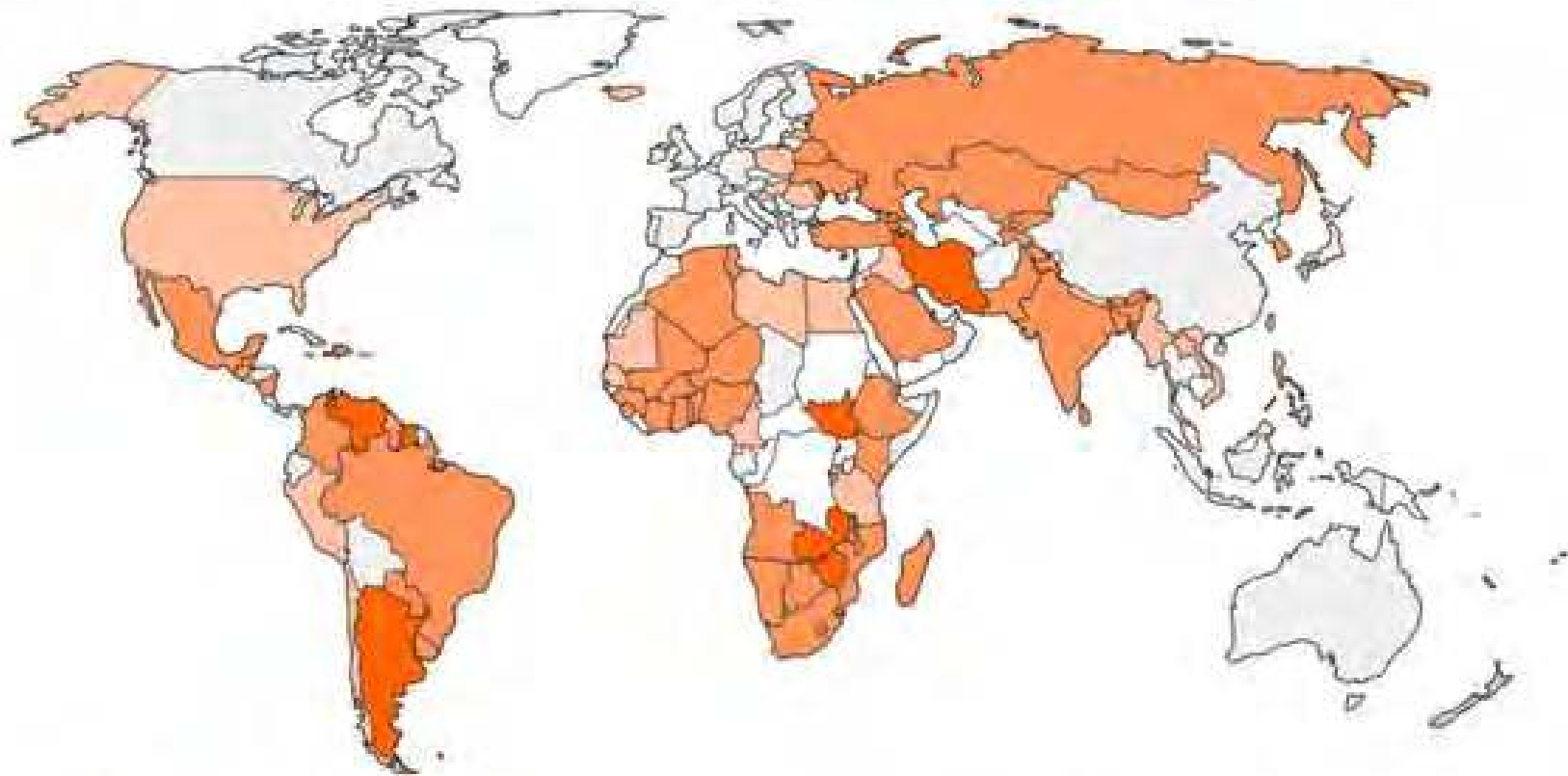
SOURCE: STATISTICS CANADA, FINANCIAL POST CALCULATIONS

GIGI SUHANIC / FINANCIAL POST

Inflation Hotspots

Surging food prices are especially affecting emerging markets

Price increase less than 2% 2-5% 5-30% >30%

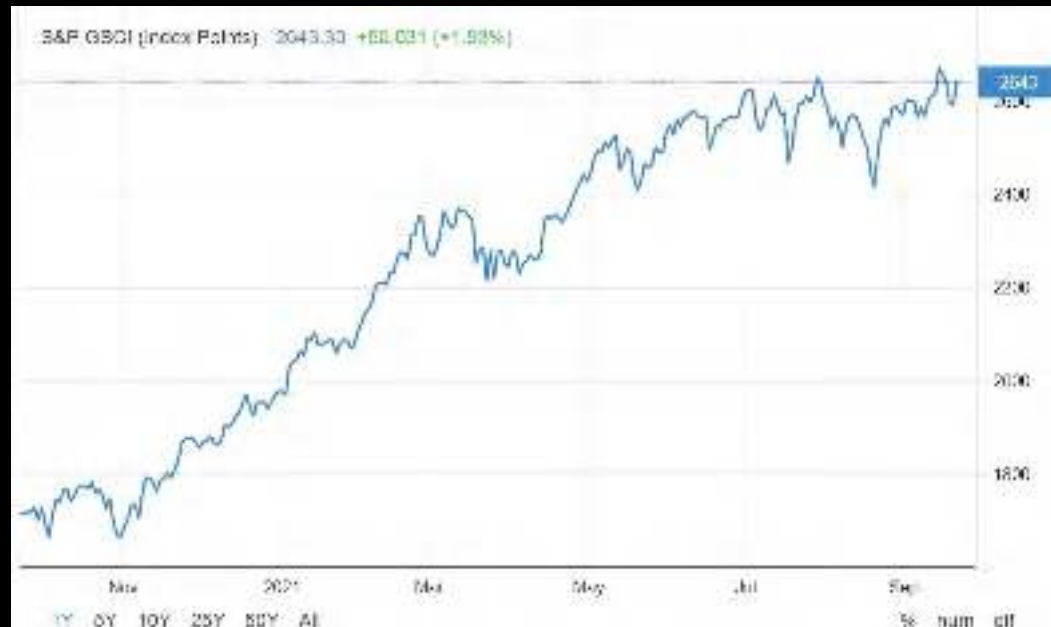


Source: World Bank

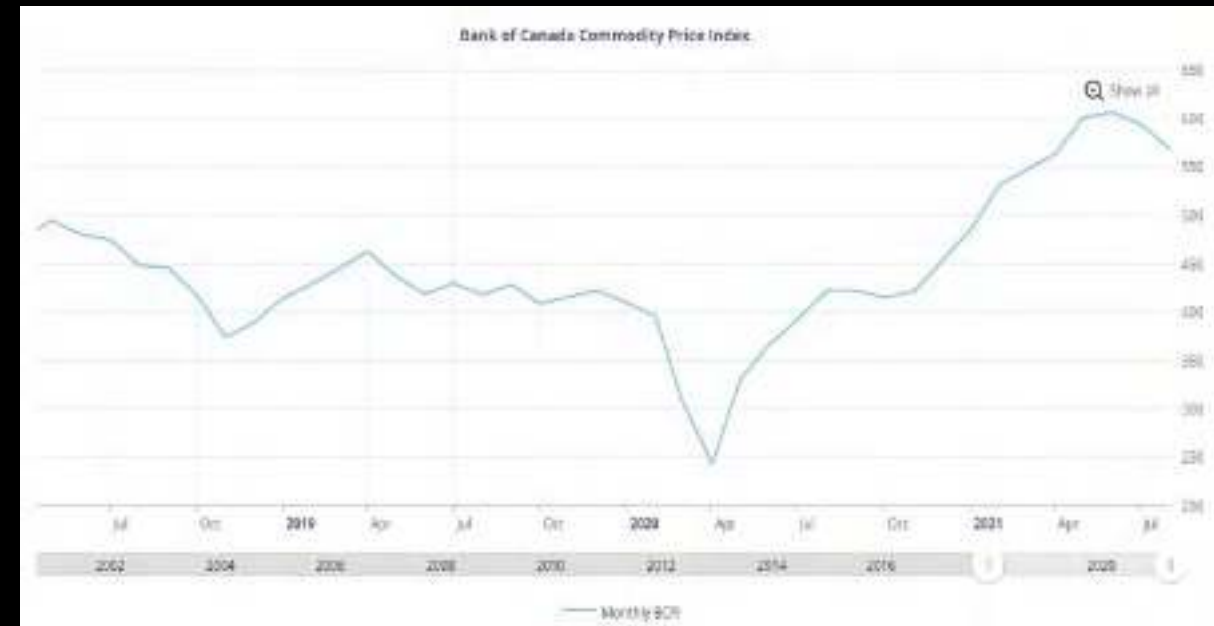
Note: Data is for the most recent month available in each distinct economy, as of July 29.

Commodity Prices Add To Inflation Pressure

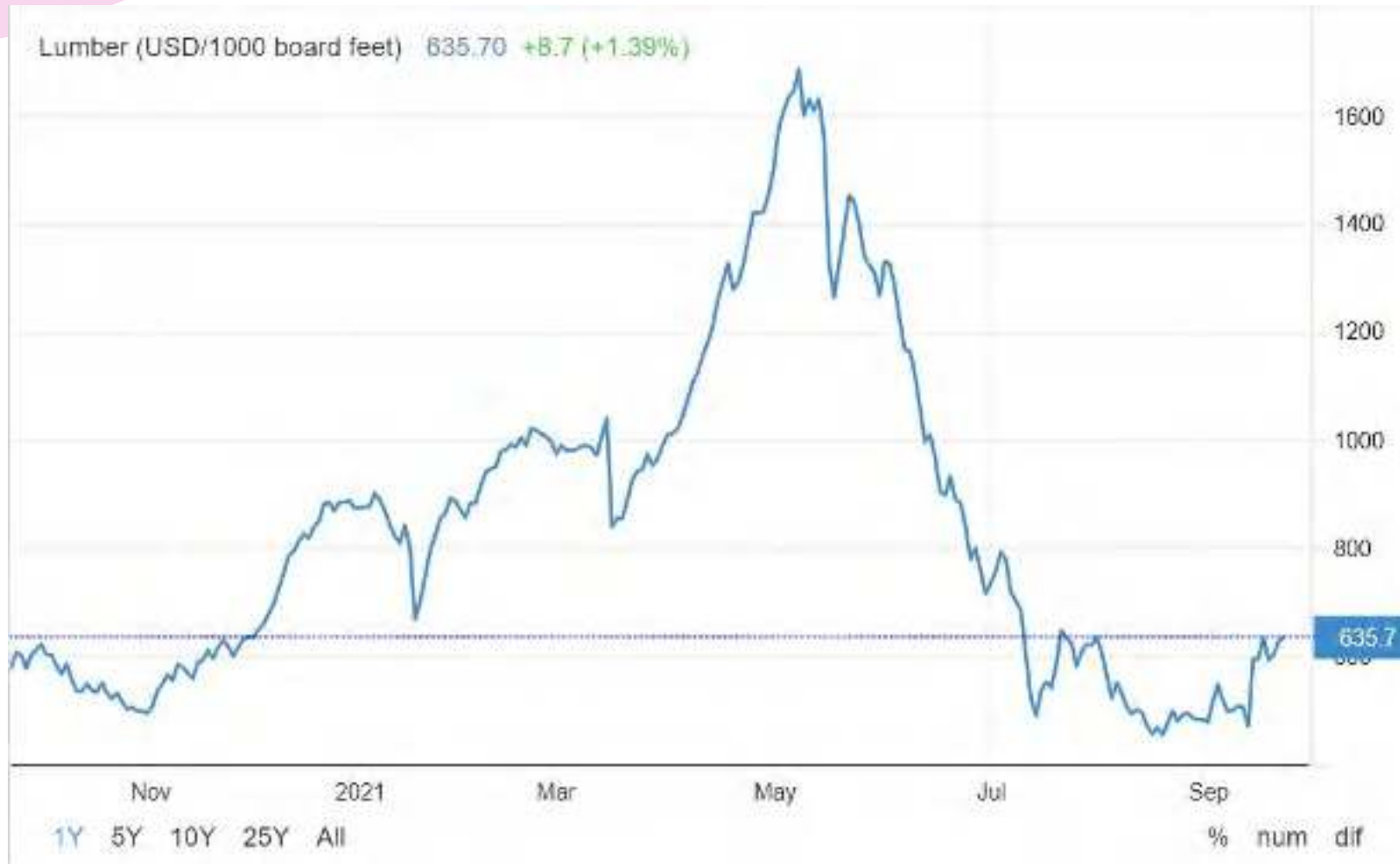
S&P GSCI



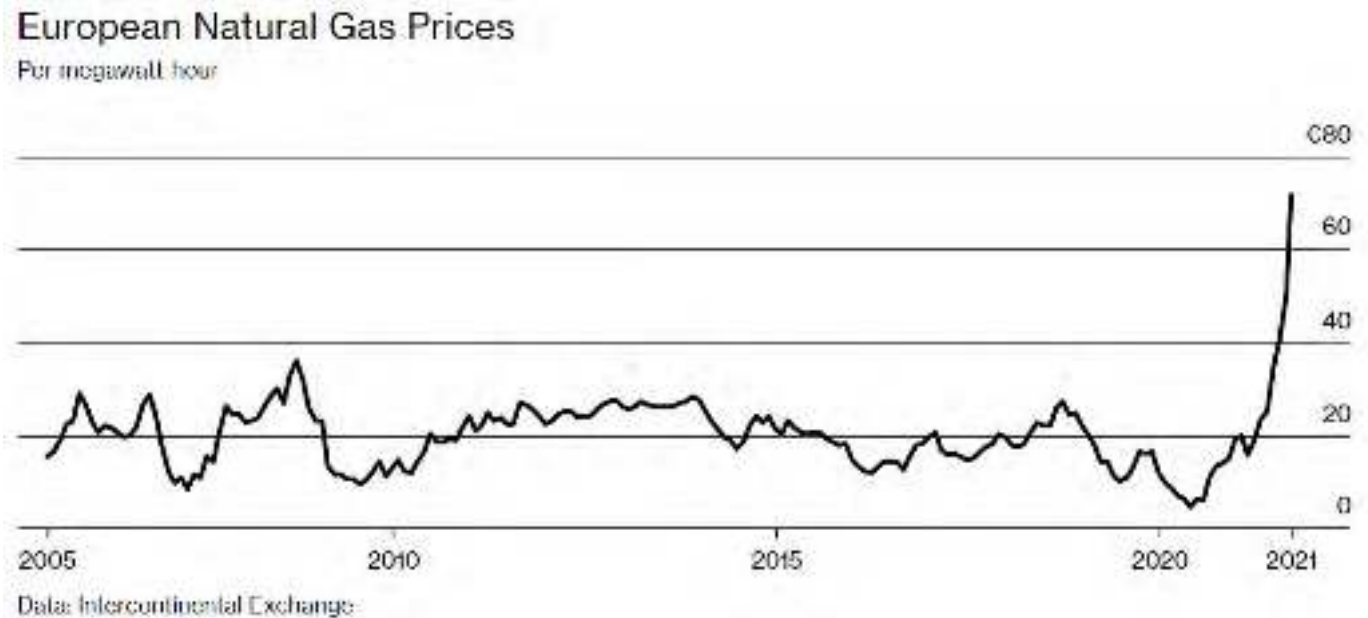
Bank of Canada Commodity Price Index



Lumber Prices Have Retraced Gains



European Natural Gas Prices Surge More Than 500%



Europe's Energy Crisis Is Coming for the Rest of the World, Too

- Reliance on natural gas to heat homes and power industry
- Inventories low
- Suppliers like Russia & Norway keep more gas at home
- Reduced output from wind and nuclear

Gasoline Stations Running Dry In UK, Motorists Panic, Government Has Issued 5,000 Short-Term Visas To Truck Drivers, Bringing In The Army

Super Rally

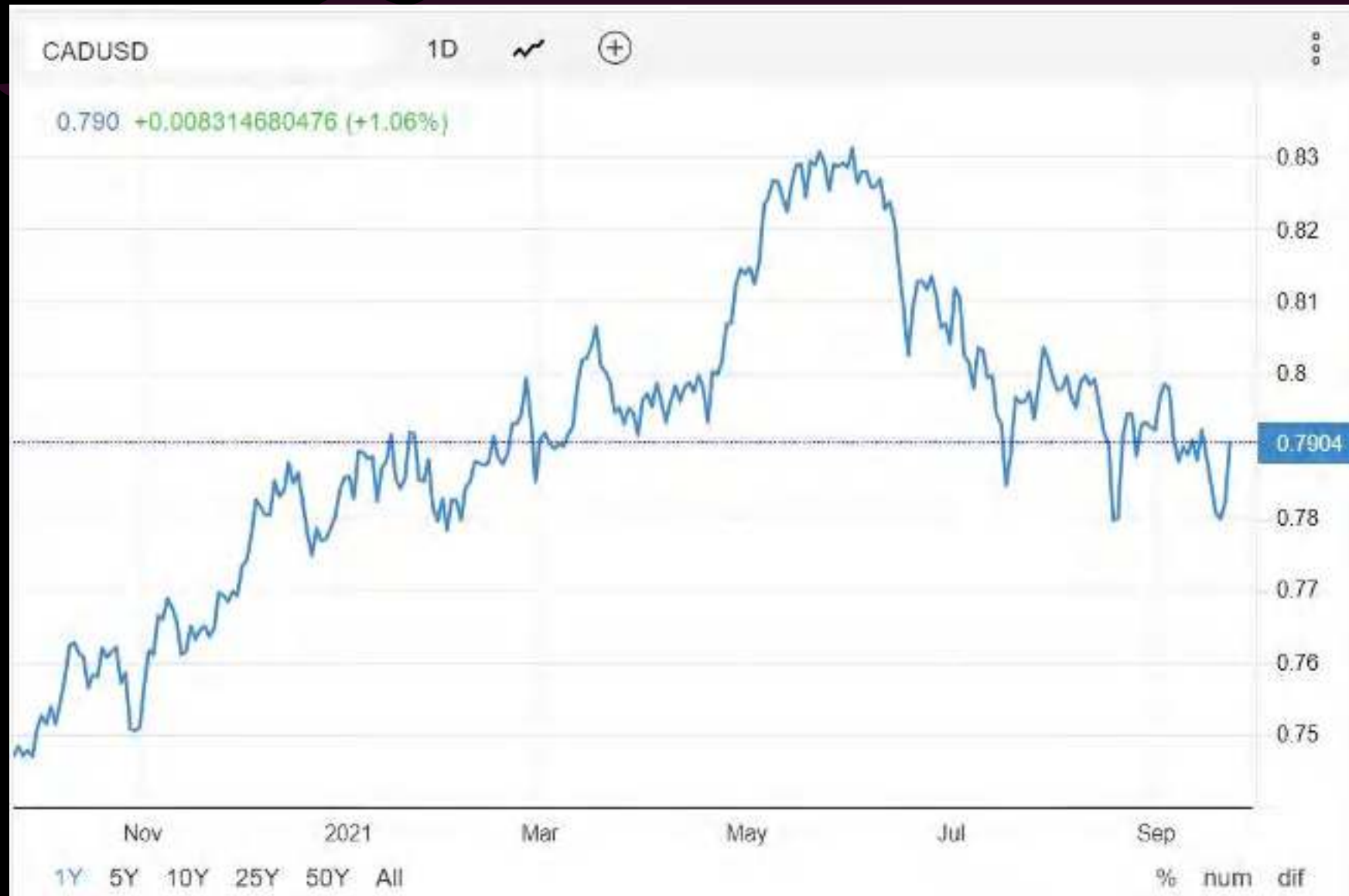
Aluminum heads towards \$3,000 as supply snarls fuel shortage

■ LME Aluminum



Source: London Metal Exchange

Loonies' Wings Clipped As US Dollar Strengthens



JOB MARKET

EMPLOYMENT

Accounting.....	107	Inventory.....
Administrative/Clerical.....	110	Legal Administrative
Automotive.....	129	Legal Employment/Maintenance/R
Banking.....	106	Installation.....
Biotech.....	150	Management.....
Business Development.....	111	Manufacturing.....
Business/Mktg Apply.....	199	Marketing.....
Computer/IT.....	115	Media/Journalism/N
Construction.....	158	Non-Profit & Social
Consultant.....	118	Other.....
Customer Service.....	132	Part-Time.....
Design.....	156	Pharmaceut
Distribution/Shipping.....	164	Professio
Education.....	120	Purch
Food/Other Case/Corporate.....	197	
Government Services/Resumes.....	191	

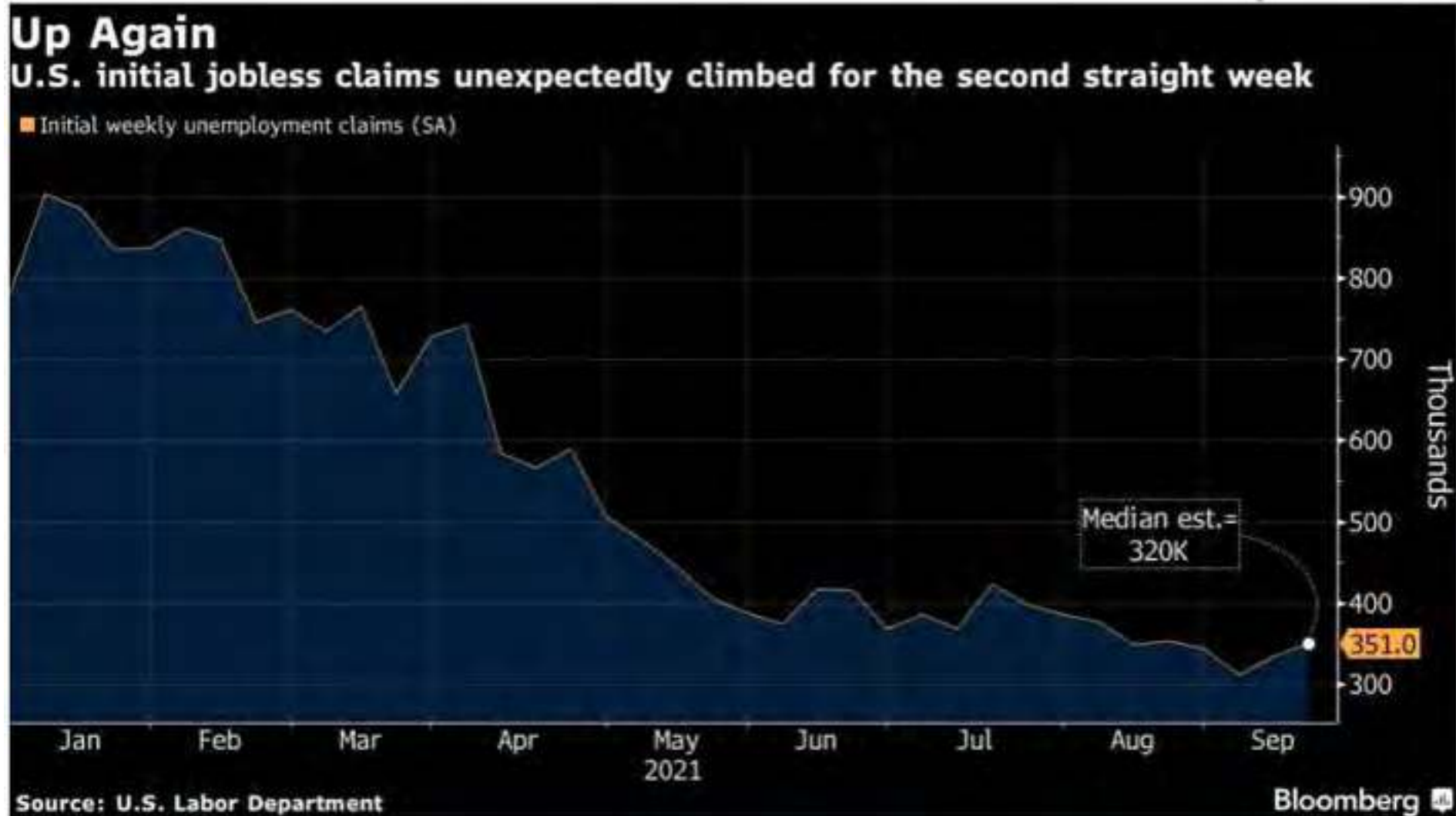
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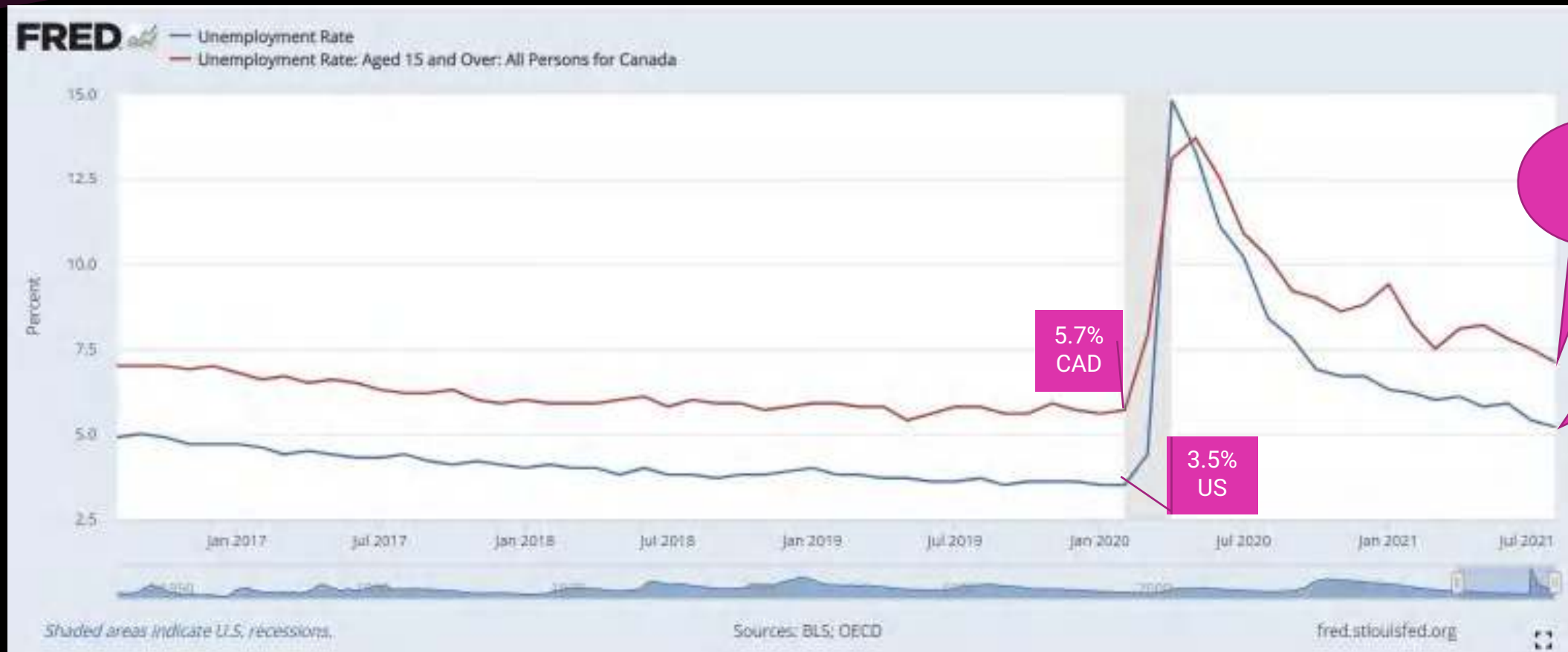
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NC

Initial Jobless Claims Trend Downward, But Q3 US Growth Will Slow Amid Pullback In Stimulus Spending



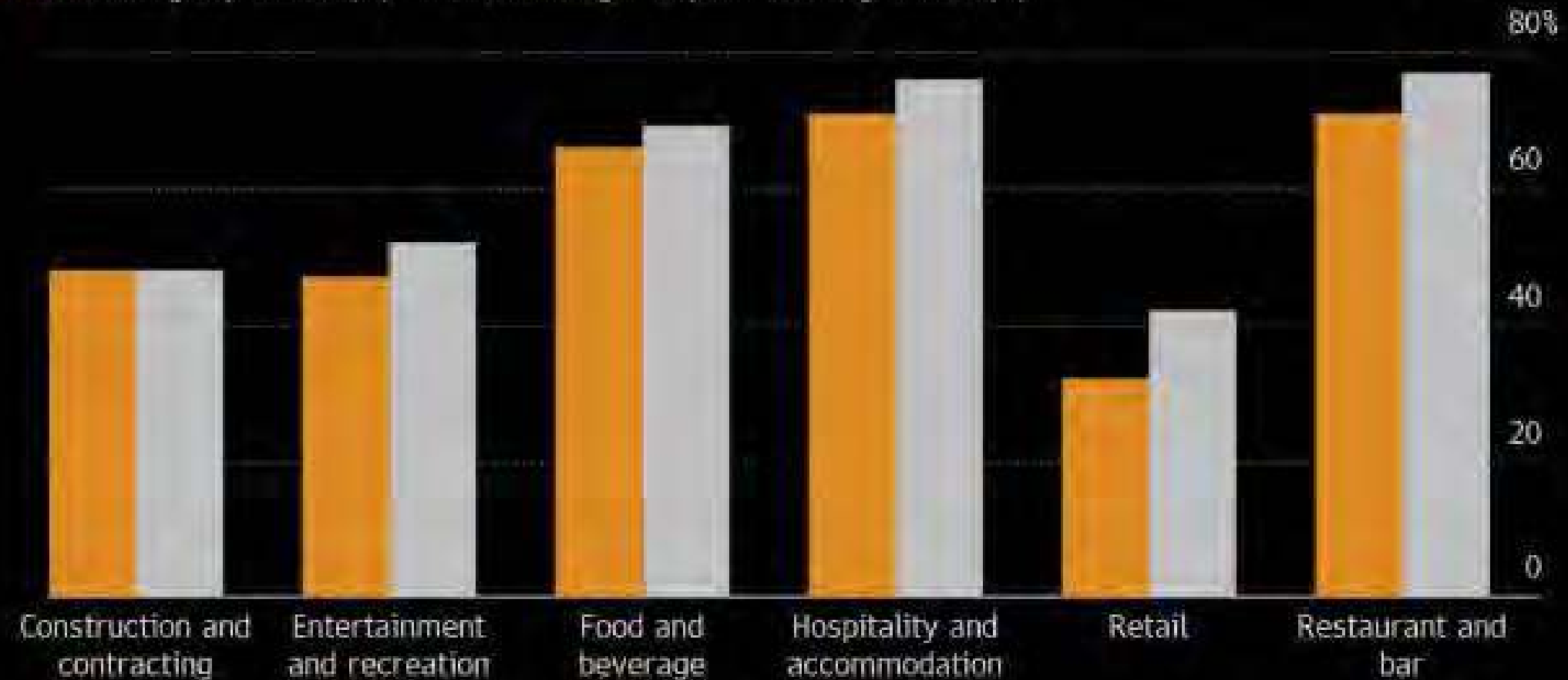
Unemployment Rates Coming Down



Turnover Worries

Looking ahead, businesses are very or somewhat concerned about retaining workers

■ Retaining top talent (%) ■ Maintaining adequate staffing levels (%)



Source: Morning Consult on behalf of Verizon; poll conducted Aug. 5-16

“US Hiring Intentions in Q3 Are Strongest In The World,”

ManpowerGroup Employment Outlook Survey,

U.S. employers report their strongest hiring intentions in 21 years—net new hires up 25% in Q3



Canada's net new hires rank 24th in the world, up 8% in Q3, tied with Hungary, Switzerland and the UK

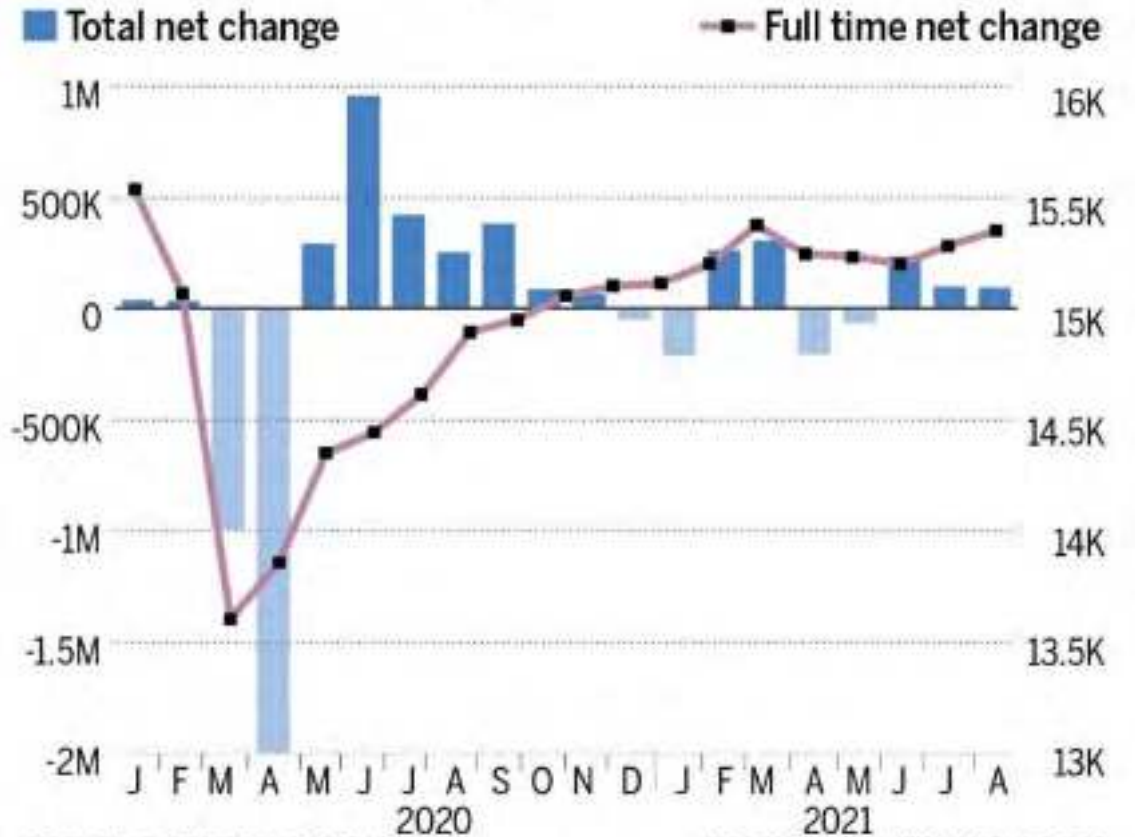




Canadian Jobs Climb Back

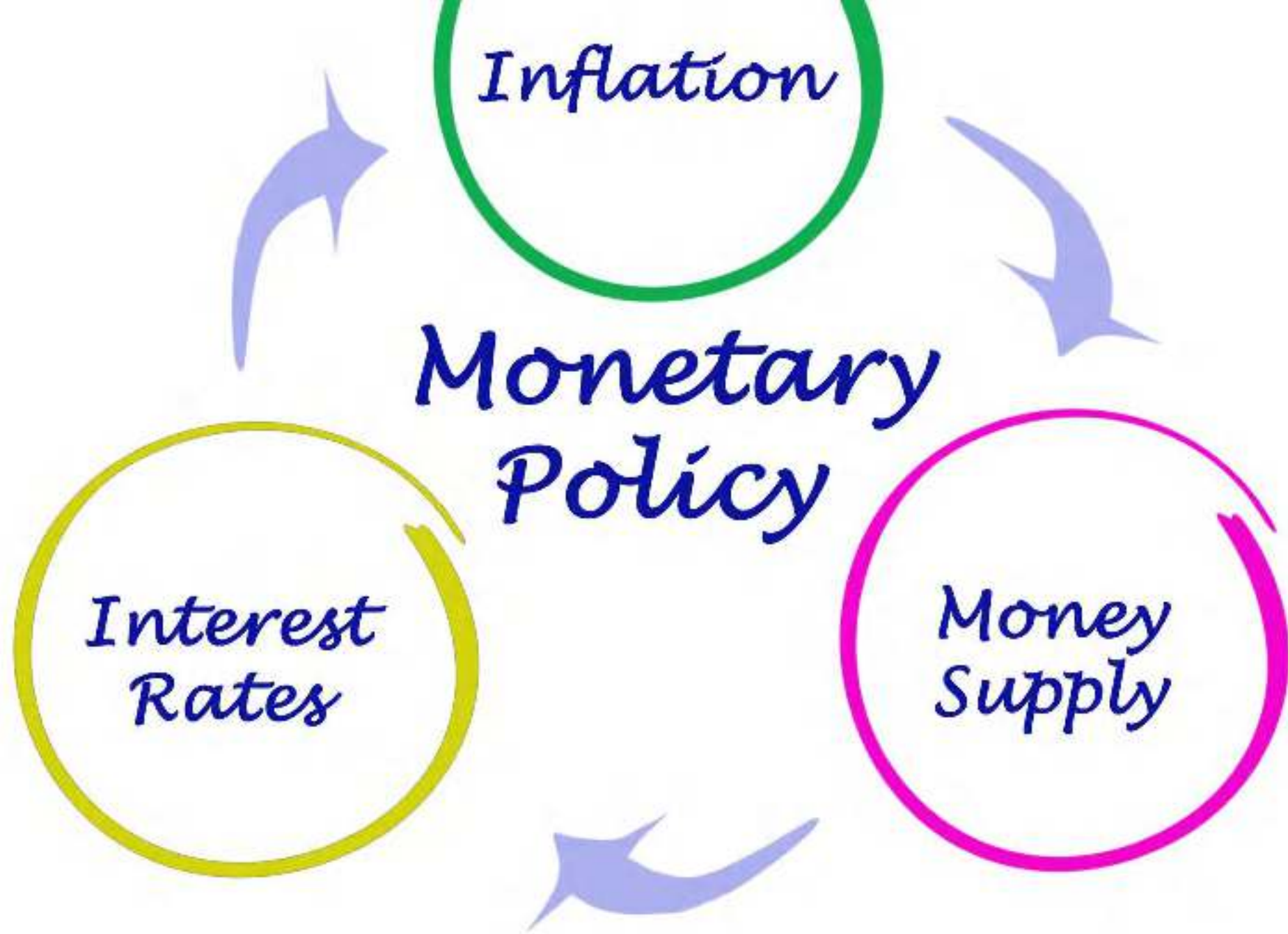
THIRD WAVE OF HIRING

Net change, seasonally adjusted

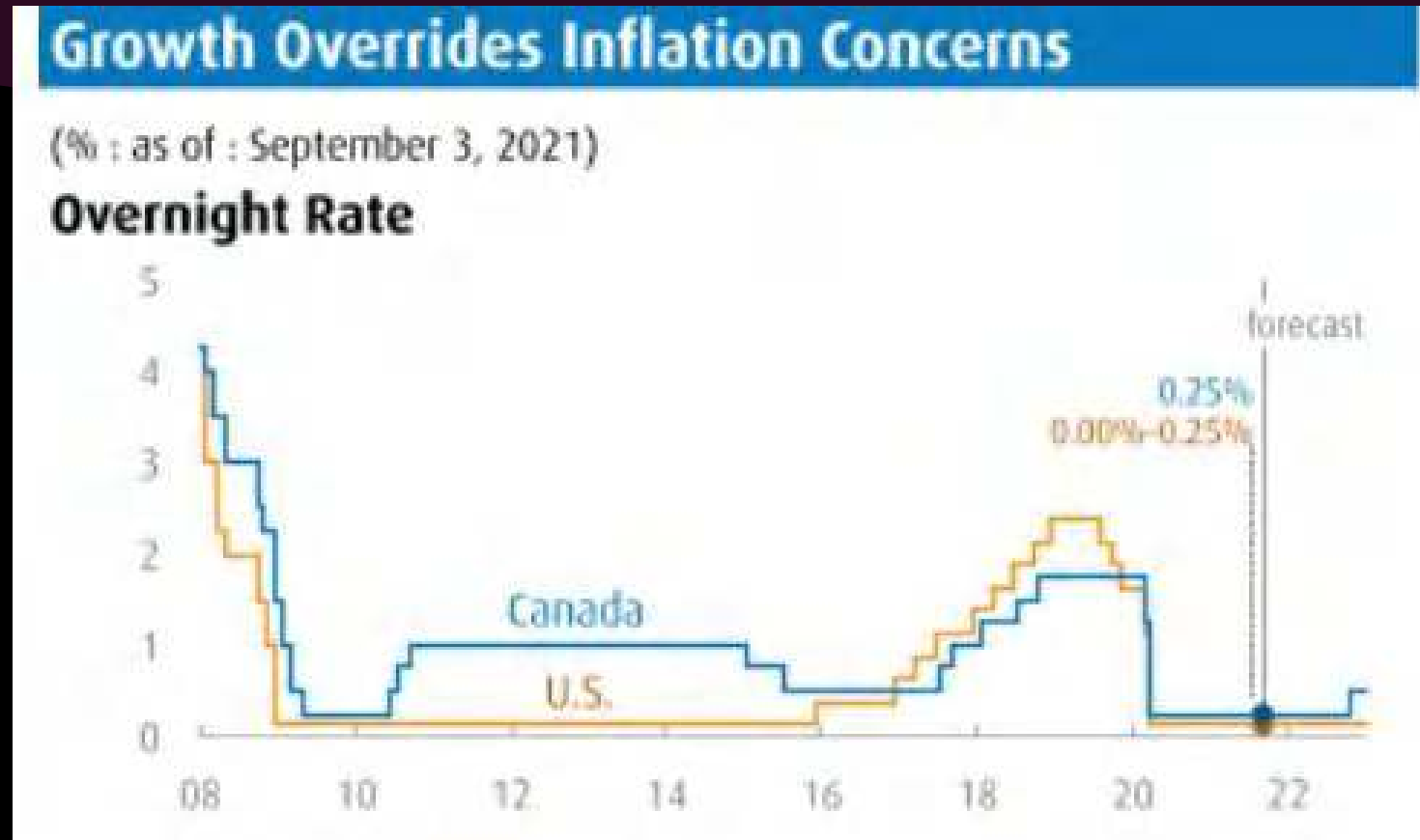


SOURCE: STATISTICS CANADA

GIGI SUHANIC / FINANCIAL POST



Overnight Rates in Both US and Canada At Their Effective Lower Bound





Sept 22

- Overnight Rates Steady Since March 2020

- Hints of Rate Hike in 2022 or 2023

- Tapering Bond-Buying As Soon As November

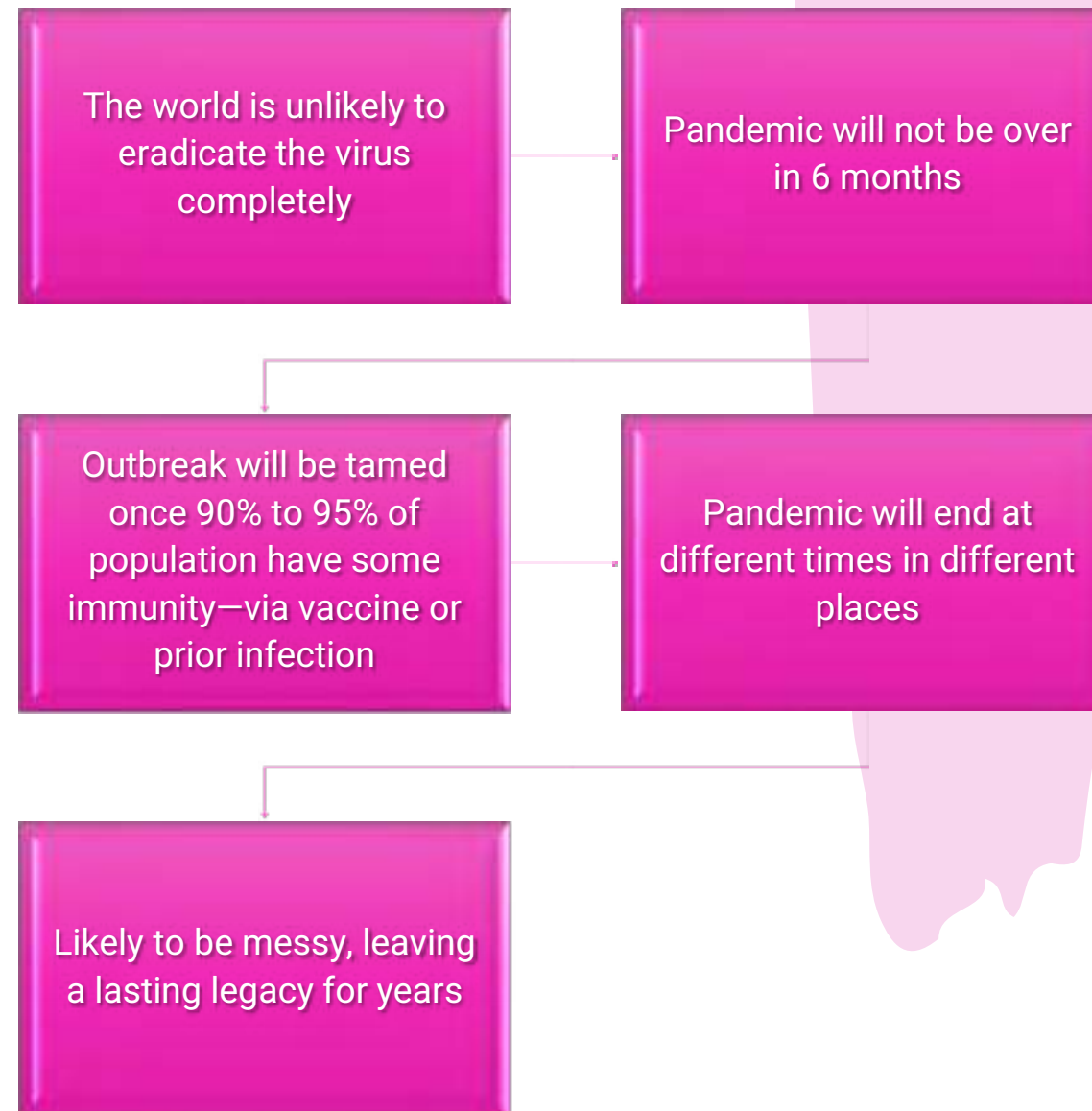
Sept 8

- Overnight Rates Steady Since March 2020

- Rate Hike in 2022-H2

- BoC Already Tapered Three Times, More to Come

How Will Covid End?



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