

Economics Group

MONTHLY OUTLOOK

U.S. Overview

A Faster, but Still Far From Complete, Recovery

Although the recovery from the COVID recession is still far from over, the U.S. economy is bouncing back faster than many expected. The third quarter's rebound now looks to be even stronger than estimated last month, with GDP increasing at a roughly 25% annualized pace.

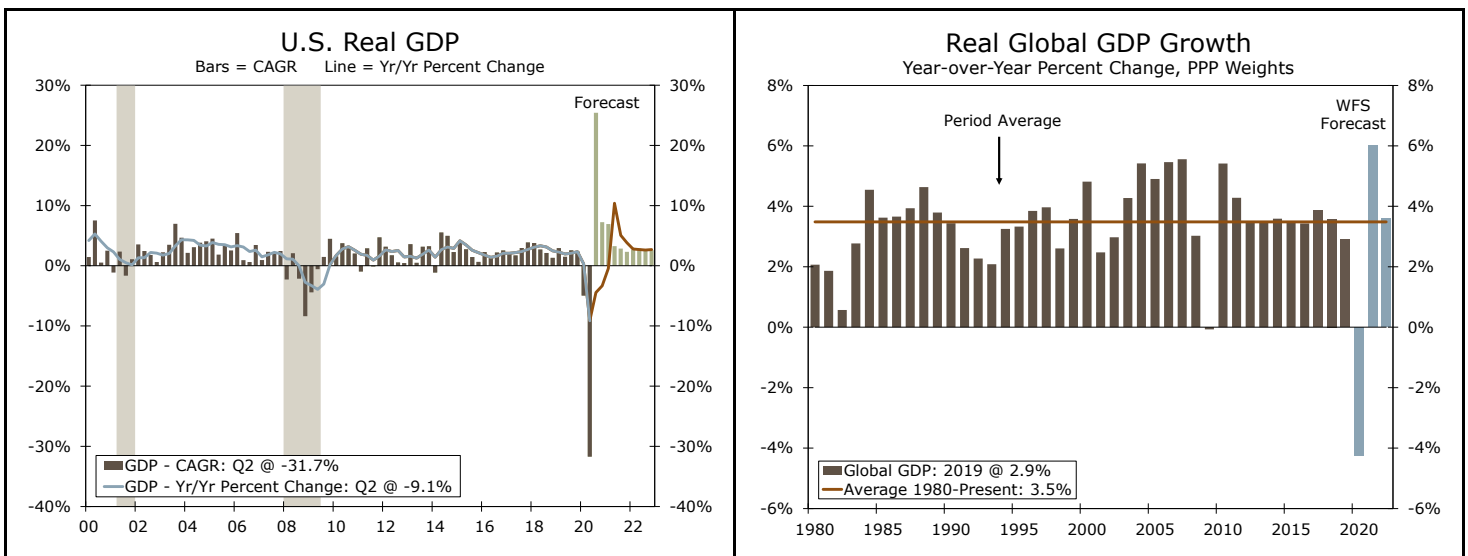
Growth remains set to slow beyond the current quarter, but momentum is holding up fairly well and suggests that businesses and consumers are adapting to the COVID environment. Personal consumption remains on course for further gains over the remaining months of the year. Households entered into August with saving still high, and the job market continues to heal. While still less than half of the jobs lost since February have been recovered, the ongoing improvement seems to have reduced the urgency among lawmakers to provide more stimulus at this time.

Meanwhile, low interest rates and the shift to remote work are supporting a rebound in both business and residential investment. We now expect GDP to increase 4.6% in 2021, with the level of output entirely recovering from the COVID recession late next year. Growth is expected to slow in 2022 but remain above trend, with the economy expanding 2.7%. However, with a lingering output gap, inflation will likely still struggle to reach to 2%, let alone register an overshoot. As a result, we expect the FOMC will remain on hold throughout our forecast horizon and for the historically low interest rate environment to persist.

International Overview

Global Economy Should Gain Momentum in Q3

After a severe economic downturn in most countries during the first half of the year, the global economic recovery appears to be underway. Over the last few weeks, economic activity and employment data have picked up somewhat, although they remain below pre-pandemic levels. Given these developments, our outlook has improved. We look for a strong rebound in global GDP over the second half of this year, with the recovery persisting through 2022. The robust policy support unleashed by central banks and governments is another factor underpinning our outlook, particularly on the fiscal front as support for household disposable incomes should bolster consumer spending going forward. Still, for most countries, it could take as long as the end of 2021 or even to the end of 2022 for the level of real GDP to return to its pre-virus levels. In Canada, the pace of the recovery appears to have quickened, and with supportive fiscal and monetary stimulus measures, the economy should see a stronger-than-expected recovery in 2020 and 2021. As for the Eurozone, we now look for the economy to grow 5.3% in 2021. The outlook for emerging economies is more mixed, as we revised our growth outlook for China higher, and made significant downward revisions to India's growth trajectory for 2020. Also included in this month's publication are additional G10 (Australia, New Zealand, Norway and Sweden) and emerging (Brazil) economy growth and inflation forecasts. Going forward, we will continue to include forecasts for these countries each month.



Source: U.S. Department of Commerce, International Monetary Fund and Wells Fargo Securities



A Faster, but Still Far From Complete, Recovery

Although the recovery from the COVID recession is still far from over, the U.S. economy is bouncing back faster than many expected. Second quarter GDP was revised up slightly and shows the depth of the downturn, while still unprecedented, to be a bit less severe. Moreover, the rebound for the third quarter looks stronger than we anticipated only a month ago. We now expect Q3 GDP to rise at a 25.4% annualized rate compared to a 21.8% pace in our August outlook.

While growth remains set to slow beyond the current quarter, momentum is holding up fairly well and suggests that businesses and consumers are adapting to the COVID environment. We have upgraded our outlook for Q4 and 2021 as a result. We now estimate that the U.S. economy’s recovery will be complete by the end of 2021 and for 2022 to mark the first year of the expansion. Although the recovery from the COVID recession may be relatively quick, we expect that an output gap will persist as the economy remains smaller than it would have been in the absence of the pandemic, leading us to expect growth will remain above trend in 2022 at 2.7%.

Strength in consumer spending should drive the recovery in the near term and beyond. Spending on consumer goods has already experienced a clear “V-shaped” recovery. Through July, real spending on goods was 6.8% above its February level, as the pandemic led consumers to shift spending toward things that can be enjoyed while social distancing, such as recreational goods and items to spruce up the home. Services spending, on the other hand, will likely take years to come back, as attitudes change toward activities like business travel, and businesses in the hospitality and personal care industries bear the brunt of bankruptcies and permanent closings. As such, we do not foresee services spending recovering through our 2022 forecast horizon even as total consumer spending likely eclipses its prerecession level in the second half of 2021.

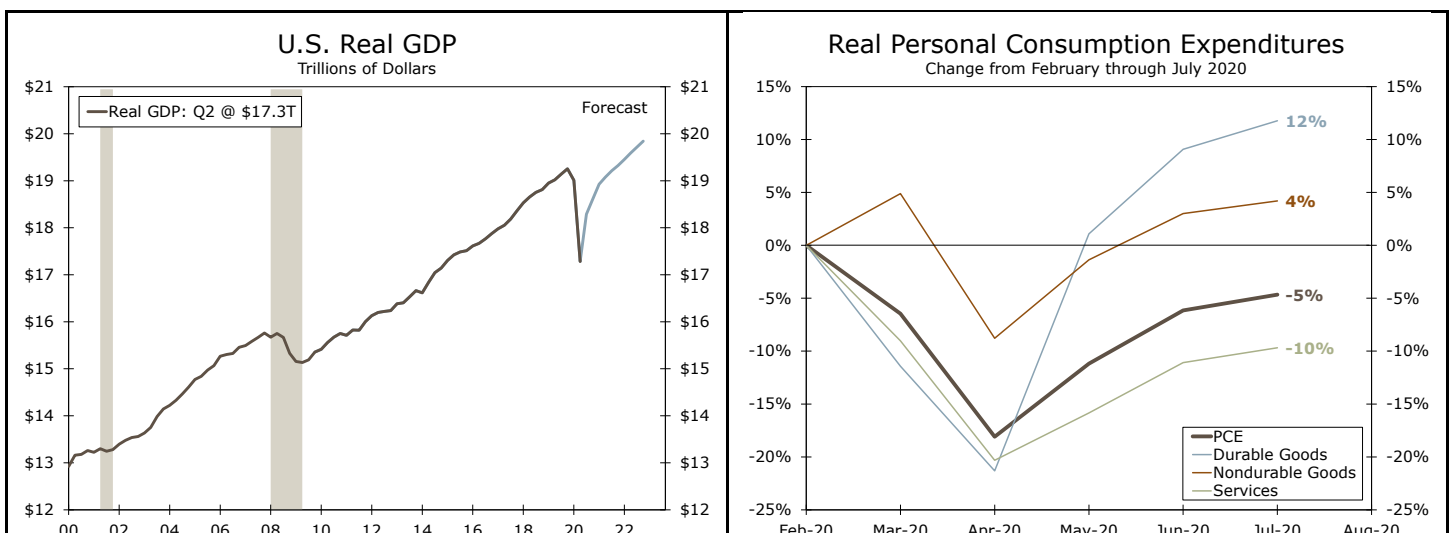
Sizeable fiscal support has been clutch to consumer spending, making pared down unemployment benefits and a delay in their payment one potential stumbling block in the near-term outlook. But households entered August with the saving rate still historically high at 17.8%, which should help propel spending higher. At the same time, the labor market continues to heal. The unemployment rate tumbled to 8.4% in August and employers added back another 1.37 million jobs.

While still under half of the jobs lost since February have been recovered, the upward trend since April seems to have reduced the urgency among lawmakers to provide additional stimulus at this time. The prospect of another stimulus deal is now less than 50%, in our view. Without some federal support, state & local governments remain in a precarious fiscal position, and we expect a contraction in government investment over the next year or so as a result.

Private investment activity has held up well considering a great deal of uncertainty remains around the path of the virus and therefore the economy. Core capital goods orders through July were only 1% off their high at the start of the year, as demand for equipment to facilitate remote work has largely countered weakness in industrial and transportation equipment. Whittled-down inventories for both capital and consumer goods should underpin a continued rebound in manufacturing production.

Meanwhile, residential investment looks set for a blockbuster Q3. Home sales have completely recovered and should continue to benefit from relatively mild job losses among higher-earning households, maturing Millennials and record-low mortgage rates.

We expect interest rates to remain exceptionally low for some time. Inflation has likely bottomed, but, amid a lingering output gap, we expect it will remain below 2% through 2022. With the Fed now explicitly looking for inflation to run above 2% for a period under its new framework, the tame rate of inflation should keep the FOMC from raising rates until at least 2023.



Source: U.S. Department of Commerce and Wells Fargo Securities

Wells Fargo Securities U.S. Economic Forecast

	Actual								Forecast								Actual		Forecast	
	2019				2020				2021				2022				2019	2020	2021	2022
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q				
Real Gross Domestic Product (a)	2.9	1.5	2.6	2.4	-5.0	-31.7	25.4	7.2	6.9	3.3	2.9	2.3	2.7	2.9	2.6	2.6	2.2	-4.2	4.6	2.7
Personal Consumption	1.8	3.7	2.7	1.6	-6.9	-34.1	39.4	5.9	5.1	3.6	3.2	2.3	2.3	2.6	2.6	2.5	2.4	-4.1	5.1	2.6
Business Fixed Investment	4.2	0.0	1.9	-0.3	-6.7	-26.0	5.3	4.6	4.8	4.0	4.8	4.8	5.3	5.2	5.2	4.9	2.9	-6.0	2.4	5.0
Equipment	2.0	-3.8	-1.7	-1.7	-15.2	-35.9	24.4	8.0	6.5	5.5	5.9	6.9	7.1	6.4	6.1	5.8	2.1	-9.5	5.2	6.4
Intellectual Property Products	4.5	4.1	5.3	4.6	2.4	-7.7	-0.8	0.7	4.2	4.8	6.8	6.3	6.2	5.5	5.6	5.1	6.4	0.8	2.7	5.9
Structures	8.2	1.6	3.6	-5.3	-3.7	-33.4	-19.0	4.5	1.5	-1.5	-2.2	-3.4	-1.4	1.3	1.9	2.1	-0.6	-10.6	-4.8	-0.8
Residential Investment	-1.7	-2.1	4.6	5.8	19.0	-37.9	44.0	12.0	7.0	7.0	7.0	6.5	6.5	7.0	6.8	6.5	-1.7	2.3	8.1	6.7
Government Purchases	2.5	5.0	2.1	2.4	1.3	2.8	-3.0	-1.7	-1.2	-0.8	-0.4	0.2	0.2	0.5	0.5	0.8	2.3	1.4	-1.0	0.2
Net Exports	-907.4	-951.4	-950.2	-861.5	-788.0	-760.9	-913.7	-961.4	-981.8	-967.5	-965.9	-965.4	-965.9	-969.9	-981.7	-993.7	-917.6	-856.0	-970.1	-977.8
Pct. Point Contribution to GDP	0.6	-0.8	0.0	1.5	1.1	0.9	-3.5	-1.0	-0.4	0.3	0.0	0.0	0.0	-0.1	-0.2	-0.2	-0.2	0.3	-0.6	0.0
Inventory Change	101.7	49.4	44.0	-1.1	-80.9	-286.4	-200.0	-50.0	90.0	80.0	70.0	60.0	65.0	70.0	70.0	70.0	48.5	-154.3	75.0	68.8
Pct. Point Contribution to GDP	0.2	-1.0	-0.1	-0.8	-1.3	-3.5	2.0	3.3	3.0	-0.2	-0.2	-0.2	0.1	0.1	0.0	0.0	0.0	-1.1	1.3	0.0
Nominal GDP (a)	4.0	4.1	4.0	3.9	-3.4	-33.3	29.8	8.2	8.6	4.9	4.6	4.1	4.5	4.7	4.5	4.4	4.0	-3.1	6.1	4.5
Real Final Sales	2.7	2.5	2.7	3.2	-3.6	-28.5	24.1	3.8	3.8	3.5	3.1	2.5	2.6	2.8	2.6	2.6	2.2	-3.1	3.4	2.7
Retail Sales (b)	2.7	3.4	3.9	4.0	1.2	-7.7	3.7	3.8	6.4	15.2	1.8	1.6	1.9	2.2	2.3	2.7	3.5	0.3	5.9	2.3
Inflation Indicators (b)																				
PCE Deflator	1.4	1.5	1.5	1.5	1.7	0.6	1.1	0.9	1.0	1.8	1.4	1.6	1.7	1.7	1.8	1.8	1.5	1.1	1.5	1.7
"Core" PCE Deflator	1.7	1.7	1.8	1.6	1.8	1.0	1.3	1.2	1.2	1.8	1.5	1.6	1.6	1.6	1.7	1.7	1.7	1.3	1.5	1.7
Consumer Price Index	1.6	1.8	1.8	2.0	2.1	0.4	1.1	0.9	1.0	2.3	1.6	1.9	2.0	2.0	2.1	2.1	1.8	1.1	1.7	2.0
"Core" Consumer Price Index	2.1	2.1	2.3	2.3	2.2	1.3	1.5	1.4	1.4	2.2	1.7	1.8	1.9	1.9	1.9	2.0	2.2	1.6	1.8	1.9
Producer Price Index (Final Demand)	1.9	2.0	1.6	1.1	1.1	-0.8	-0.2	0.1	0.8	2.5	2.2	2.1	2.1	2.1	2.2	2.2	1.7	0.1	1.9	2.1
Employment Cost Index	2.8	2.7	2.8	2.7	2.8	2.7	2.0	1.8	1.5	1.8	2.0	2.1	1.5	1.8	2.0	2.1	2.7	2.3	1.8	1.8
Real Disposable Income (b)	3.2	2.1	1.8	1.6	1.4	11.9	5.5	2.7	2.8	-6.3	-0.8	1.9	1.8	2.0	2.4	2.6	2.2	5.4	-0.7	2.2
Nominal Personal Income (b)	4.7	4.1	3.5	3.5	3.2	10.4	5.5	2.7	2.8	-3.8	0.7	3.6	3.5	3.8	4.2	4.4	3.9	5.4	0.8	4.0
Industrial Production (a)	-1.9	-2.3	1.1	0.4	-6.7	-43.2	36.5	8.0	5.0	5.0	5.7	3.6	3.5	4.2	4.4	2.5	0.9	-7.5	4.8	4.1
Capacity Utilization	78.6	77.8	77.6	77.2	75.8	65.8	71.2	72.5	73.4	74.3	75.3	75.9	76.6	77.3	78.2	78.6	77.8	71.3	74.7	77.7
Corporate Profits Before Taxes (b)	-1.1	1.7	-0.5	1.3	-6.7	-20.1	-8.0	-4.0	8.0	22.0	10.0	3.0	4.0	5.0	3.0	4.0	0.3	-9.7	10.3	4.0
Corporate Profits After Taxes	-3.3	0.5	-0.3	1.3	-5.7	-19.9	-8.5	-3.4	7.3	22.2	10.0	2.9	3.8	5.0	2.9	4.1	-0.4	-9.4	10.1	3.9
Federal Budget Balance (c)	-372	-56	-237	-357	-387	-2001	-556	-495	-611	-270	-424	-404	-527	-142	-327	-336	-984	-3300	-1800	-1400
Trade Weighted Dollar Index (d)	109.8	109.7	111.0	109.8	112.7	110.3	105.8	104.8	103.8	103.0	102.5	102.0	101.8	101.5	101.3	101.3	110.1	108.4	102.8	101.4
Nonfarm Payroll Change (e)	139	159	203	210	-303	-4427	1268	617	450	328	283	270	257	243	227	213	178	-711	333	235
Unemployment Rate	3.9	3.6	3.6	3.5	3.8	13.0	8.9	7.8	7.3	6.8	6.3	5.9	5.6	5.3	5.0	4.7	3.7	8.4	6.6	5.2
Housing Starts (f)	1.20	1.26	1.29	1.43	1.48	1.06	1.37	1.28	1.32	1.32	1.32	1.32	1.33	1.34	1.34	1.35	1.29	1.30	1.32	1.34
Light Vehicle Sales (g)	16.9	17.0	17.0	16.8	15.0	11.3	15.0	14.3	14.5	14.8	15.3	15.3	15.5	15.7	15.7	15.8	17.0	13.9	15.0	15.7
Crude Oil - Brent - Front Contract (h)	63.8	67.6	61.5	61.7	51.0	34.7	43.0	44.0	46.0	46.0	46.0	50.0	53.0	55.0	57.0	55.0	63.6	43.2	47.0	55.0
Quarter-End Interest Rates (i)																				
Federal Funds Target Rate	2.50	2.50	2.00	1.75	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	2.25	0.25	0.25	0.25
Secured Overnight Financing Rate (h)	2.43	2.43	2.28	1.67	1.23	0.05	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	2.20	0.37	0.10	0.10
3 Month LIBOR	2.60	2.32	2.09	1.91	1.45	0.30	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	2.33	0.56	0.25	0.25
Prime Rate	5.50	5.50	5.00	4.75	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	5.25	3.25	3.25	3.25
Conventional Mortgage Rate	4.28	3.80	3.61	3.72	3.45	3.16	2.85	2.80	2.80	2.85	2.90	3.00	3.05	3.10	3.15	3.20	3.94	3.07	2.89	3.13
3 Month Bill	2.40	2.12	1.88	1.55	0.11	0.16	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	2.11	0.14	0.15	0.15
6 Month Bill	2.44	2.09	1.83	1.60	0.15	0.18	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	2.11	0.16	0.15	0.15
1 Year Bill	2.40	1.92	1.75	1.59	0.17	0.16	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.25	0.25	2.05	0.16	0.18	0.23
2 Year Note	2.27	1.75	1.63	1.58	0.23	0.16	0.15	0.15	0.20	0.20	0.20	0.25	0.25	0.30	0.35	0.45	1.97	0.17	0.21	0.34
5 Year Note	2.23	1.76	1.55	1.69	0.37	0.29	0.25	0.30	0.35	0.40	0.50	0.60	0.65	0.70	0.80	0.90	1.95	0.30	0.46	0.76
10 Year Note	2.41	2.00	1.68	1.92	0.70	0.66	0.70	0.85	1.00	1.10	1.20	1.30	1.35	1.40	1.45	1.50	2.14	0.73	1.15	1.43
30 Year Bond	2.81	2.52	2.12	2.39	1.35	1.41	1.40	1.60	1.75	1.90	2.05	2.15	2.20	2.20	2.25	2.30	2.58	1.44	1.96	2.24

Forecast as of: September 10, 2020

Notes: (a) Compound Annual Growth Rate Quarter-over-Quarter

(b) Year-over-Year Percentage Change

(c) Quarterly Sum - Billions USD; Annual Data Represents Fiscal Yr.

(d) Federal Reserve Advanced Foreign Economies Index, 2006=100 - Quarter End

(e) Average Monthly Change

(f) Millions of Units - Annual Data - Not Seasonally Adjusted

(g) Quarterly Data - Average Monthly SAAR; Annual Data - Actual Total Vehicles Sold

(h) Quarterly Average of Daily Close

(i) Annual Numbers Represent Averages

Source: Federal Reserve Board, IHS Markit, U.S. Department of Commerce, U.S. Department of Labor and Wells Fargo Securities

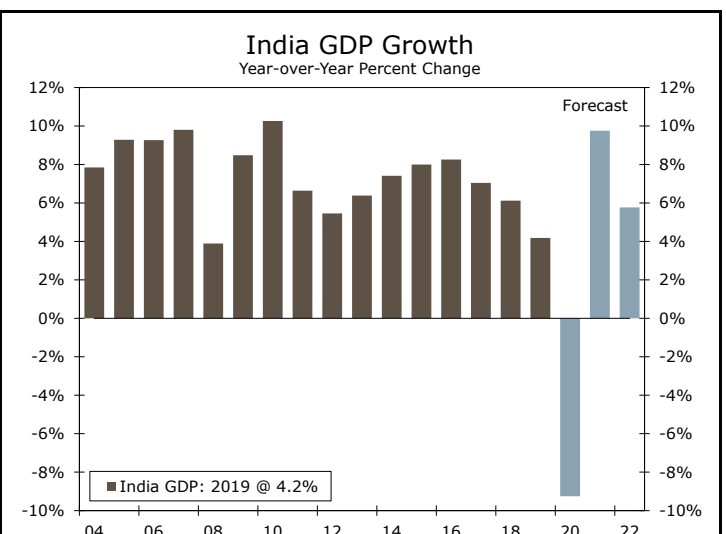
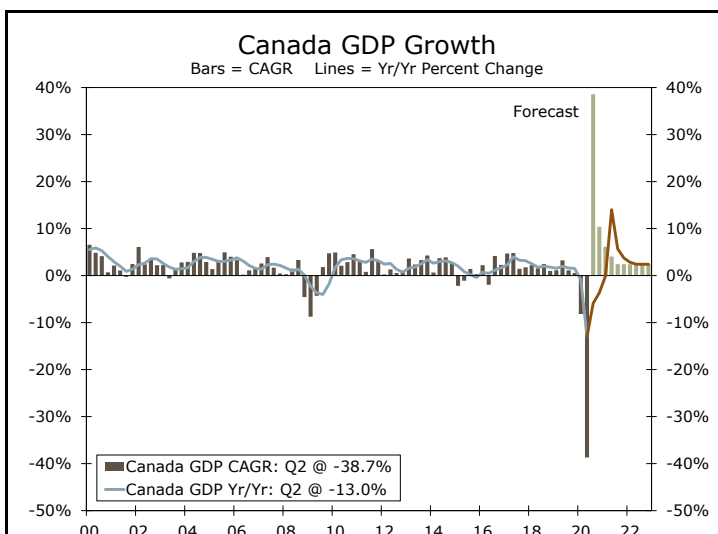
Global Economy Should Gain Momentum in Q3

For the first half of the year, COVID-19 severely disrupted economic activity around the world. Recent GDP data across most G10 and emerging economies confirmed the economic declines in Q2 were sharp, and in many cases the largest declines on record. Among the advanced economies, the United Kingdom declined a little over 20% quarter-over-quarter (not annualized), while in Canada, the economy plunged at an annualized rate of 38.7% in Q2, as lockdown measures and social distancing took a toll on activity. Meanwhile, the Swedish economy contracted a devastating 29.3% (annualized rate), despite the government’s more relaxed approach to lockdown measures. Although the contractions in Q2 were severe, some higher frequency data suggest activity has started to recover in the second half of 2020. In that context, we look for strong rebounds in Q3 economic growth across G10 economies and forecast above trend growth in the fourth quarter. We now look for the global economy to contract 4.3% in 2020, with a strong second half gain offsetting some of the first half decline. Further out, we expect the recovery to persist through 2021 and into 2022 albeit at a slower pace.

In Canada, August sentiment data showed a visible recovery, with the manufacturing PMI accelerating to 55.1, while recent labor market data indicated the country has recovered nearly two-thirds of jobs lost in March and April. The pace of the Canadian recovery appears to have quickened in recent months. With oil prices slowly recovering along with supportive monetary and fiscal policy, the Canadian economy could gather momentum in the coming months. Against that backdrop, we expect the 2020 contraction to be less severe and now forecast a 5.9% contraction versus the 6.6% decline we projected last month. We also expect a more pronounced rebound next year, with our forecast for 2021 economic growth improving to 5.6% from 3.8% in last month’s forecast. These signs of stabilization have also been reflected in the Eurozone.

We now look for a stronger recovery in 2021, and forecast the Eurozone economy to grow 5.3% as recent data continues to improve and regional fiscal stimulus measures provide the economy with additional support. Most recently, France unveiled a €100B, four-year stimulus package to support the recovery and maintain the momentum in the coming years. Together with stimulus from other European policymakers, these fiscal support measures should help boost Eurozone activity. As for the United Kingdom, data have been mildly underwhelming over the past month. The sharp decline in GDP in Q2 was followed by a massive rise in jobless claims, while monetary and fiscal policy trends have been more mixed than in other major nations. Overall, we are less optimistic on the recovery and have revised our 2020 GDP growth forecast lower. We now look for U.K. GDP to decline 10.6% in 2020, and rise 5.5% in 2021. While the recovery appears to already be underway, we remain cautious of any Brexit uncertainties that could put additional strain on the economy.

On the EM front, many emerging economies were fragile prior to the COVID-19 pandemic, and most emerging central banks and governments lacked sufficient policy space to respond to a shock such as COVID-19. In India, the economy shrank by a record 23.9% year-over-year in the second quarter, much worse than our forecasts. On the basis of a sharper decline in Q2, we downgraded our 2020 GDP forecast, and now look for the Indian economy to plunge 9.3% on a calendar year basis. Furthermore, we expect India’s central bank to cut rates 25 bps to 3.75%, further easing monetary policy. Elsewhere, we still see Mexico as an underperformer and expect the economy to only slowly recover from the massive Q2 decline. As for China, we expect the recovery to persist and continue to lead the charge in the EM space. We have revised our GDP forecast higher and expect 2.4% growth in 2020.



Source: Bloomberg LP and Wells Fargo Securities

Wells Fargo International Economic Forecast

(Year-over-Year Percent Change)

	GDP				CPI			
	2019	2020	2021	2022	2019	2020	2021	2022
Global (PPP Weights)	2.9%	-4.3%	6.0%	3.6%	3.6%	3.2%	3.0%	3.3%
Advanced Economies ¹	1.7%	-5.8%	4.8%	2.8%	1.4%	0.8%	1.3%	1.8%
United States	2.3%	-4.2%	4.6%	2.7%	1.8%	1.1%	1.7%	2.0%
Eurozone	1.3%	-8.2%	5.3%	2.4%	1.2%	0.3%	0.9%	1.4%
United Kingdom	1.4%	-10.6%	5.5%	2.9%	1.8%	1.2%	1.5%	1.8%
Japan	0.7%	-6.2%	1.9%	2.0%	0.5%	0.1%	0.2%	0.7%
Canada	1.7%	-5.9%	5.6%	2.5%	1.9%	0.6%	1.7%	2.0%
Switzerland	0.9%	-4.4%	5.0%	1.8%	0.4%	-0.7%	0.0%	0.4%
Australia	1.8%	-3.0%	3.4%	3.0%	1.6%	0.7%	1.6%	2.0%
New Zealand	2.2%	-5.4%	5.7%	3.3%	1.6%	1.3%	1.4%	1.8%
Sweden	1.2%	-4.5%	4.0%	3.0%	1.7%	0.4%	1.5%	1.7%
Norway	1.2%	-4.0%	3.8%	2.5%	2.2%	1.3%	2.1%	1.9%
Developing Economies ¹	3.7%	-3.1%	6.9%	4.2%	5.1%	4.9%	4.2%	4.4%
China	6.1%	2.4%	9.9%	5.8%	2.9%	2.8%	2.1%	2.3%
India	4.2%	-9.3%	9.8%	5.8%	4.5%	5.3%	3.6%	3.9%
Mexico	-0.3%	-13.5%	-1.6%	3.2%	3.6%	3.5%	3.7%	3.5%
Brazil	1.1%	-6.6%	2.4%	2.9%	3.7%	2.6%	3.0%	3.4%

Forecast as of: September 10, 2020

¹Aggregated Using PPP Weights

Wells Fargo International Interest Rate Forecast

(End of Quarter Rates)

	Central Bank Key Policy Rate					
	2020		2021			
	Q3	Q4	Q1	Q2	Q3	Q4
United States	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
Eurozone ¹	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%	-0.50%
United Kingdom	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%
Japan	-0.10%	-0.10%	-0.10%	-0.10%	-0.10%	-0.10%
Canada	0.25%	0.25%	0.25%	0.25%	0.25%	0.25%
	2-Year Note					
	2020		2021			
	Q3	Q4	Q1	Q2	Q3	Q4
United States	0.15%	0.15%	0.20%	0.20%	0.20%	0.25%
Eurozone ²	-0.65%	-0.60%	-0.60%	-0.55%	-0.50%	-0.40%
United Kingdom	-0.10%	-0.05%	0.00%	0.05%	0.10%	0.15%
Japan	-0.10%	-0.10%	-0.05%	0.00%	0.05%	0.05%
Canada	0.30%	0.30%	0.35%	0.35%	0.35%	0.40%
	10-Year Note					
	2020		2021			
	Q3	Q4	Q1	Q2	Q3	Q4
United States	0.70%	0.85%	1.00%	1.10%	1.20%	1.30%
Eurozone ²	-0.40%	-0.25%	-0.15%	-0.05%	0.05%	0.10%
United Kingdom	0.25%	0.40%	0.50%	0.55%	0.60%	0.65%
Japan	0.05%	0.10%	0.10%	0.10%	0.15%	0.15%
Canada	0.60%	0.80%	0.90%	1.00%	1.05%	1.15%

Forecast as of: September 10, 2020

¹ ECB Deposit Rate ² German Government Bond Yield

Source: International Monetary Fund and Wells Fargo Securities

Wells Fargo Securities Economics Group

Jay H. Bryson, Ph.D.	Chief Economist	(704) 410-3274	jay.bryson@wellsfargo.com
Mark Vitner	Senior Economist	(704) 410-3277	mark.vitner@wellsfargo.com
Sam Bullard	Senior Economist	(704) 410-3280	sam.bullard@wellsfargo.com
Nick Bennenbroek	International Economist	(212) 214-5636	nicholas.bennenbroek@wellsfargo.com
Tim Quinlan	Senior Economist	(704) 410-3283	tim.quinlan@wellsfargo.com
Azhar Iqbal	Econometrician	(212) 214-2029	azhar.iqbal@wellsfargo.com
Sarah House	Senior Economist	(704) 410-3282	sarah.house@wellsfargo.com
Charlie Dougherty	Economist	(704) 410-6542	charles.dougherty@wellsfargo.com
Michael Pugliese	Economist	(212) 214-5058	michael.d.pugliese@wellsfargo.com
Brendan McKenna	International Economist	(212) 214-5637	brendan.mckenna@wellsfargo.com
Shannon Seery	Economist	(704) 410-1681	shannon.seery@wellsfargo.com
Jen Licis	Economic Analyst	(704) 410-1309	jennifer.licis@wellsfargo.com
Hop Mathews	Economic Analyst	(704) 383-5312	hop.mathews@wellsfargo.com
Nicole Cervi	Economic Analyst	(704) 410-3059	nicole.cervi@wellsfargo.com
Sara Cotsakis	Economic Analyst	(704) 410-1437	sara.cotsakis@wellsfargo.com
Coren Burton	Administrative Assistant	(704) 410-6010	coren.burton@wellsfargo.com

Wells Fargo Securities Economics Group publications are produced by Wells Fargo Securities, LLC, a U.S. broker-dealer registered with the U.S. Securities and Exchange Commission, the Financial Industry Regulatory Authority, and the Securities Investor Protection Corp. Wells Fargo Securities, LLC, distributes these publications directly and through subsidiaries including, but not limited to, Wells Fargo & Company, Wells Fargo Bank N.A., Wells Fargo Clearing Services, LLC, Wells Fargo Securities International Limited, Wells Fargo Securities Canada, Ltd., Wells Fargo Securities Asia Limited and Wells Fargo Securities (Japan) Co. Limited. Wells Fargo Securities, LLC is registered with the Commodities Futures Trading Commission as a futures commission merchant and is a member in good standing of the National Futures Association. Wells Fargo Bank, N.A. is registered with the Commodities Futures Trading Commission as a swap dealer and is a member in good standing of the National Futures Association. Wells Fargo Securities, LLC and Wells Fargo Bank, N.A. are generally engaged in the trading of futures and derivative products, any of which may be discussed within this publication. Wells Fargo Securities, LLC does not compensate its research analysts based on specific investment banking transactions. Wells Fargo Securities, LLC's research analysts receive compensation that is based upon and impacted by the overall profitability and revenue of the firm which includes, but is not limited to investment banking revenue. The information and opinions herein are for general information use only. Wells Fargo Securities, LLC does not guarantee their accuracy or completeness, nor does Wells Fargo Securities, LLC assume any liability for any loss that may result from the reliance by any person upon any such information or opinions. Such information and opinions are subject to change without notice, are for general information only and are not intended as an offer or solicitation with respect to the purchase or sales of any security or as personalized investment advice. Wells Fargo Securities, LLC is a separate legal entity and distinct from affiliated banks and is a wholly owned subsidiary of Wells Fargo & Company © 2020 Wells Fargo Securities, LLC.

Important Information for Non-U.S. Recipients

For recipients in the EEA, this report is distributed by Wells Fargo Securities International Limited ("WFSIL"). WFSIL is a U.K. incorporated investment firm authorized and regulated by the Financial Conduct Authority. For the purposes of Section 21 of the UK Financial Services and Markets Act 2000 ("the Act"), the content of this report has been approved by WFSIL, an authorized person under the Act. WFSIL does not deal with retail clients as defined in the Directive 2014/65/EU ("MiFID2"). The FCA rules made under the Financial Services and Markets Act 2000 for the protection of retail clients will therefore not apply, nor will the Financial Services Compensation Scheme be available. This report is not intended for, and should not be relied upon by, retail clients.

SECURITIES: NOT FDIC-INSURED/NOT BANK-GUARANTEED/MAY LOSE VALUE