

Weekly — November 24, 2021

Weekly Economic & Financial Commentary

United States: Household Spending Surges Despite Fastest Inflation in 30+ Years

- Inflation is no doubt a headwind, but in October at least, it was not enough to stop consumers from spending, with a real personal spending pickup of 0.7%. With a five-handle on the PCE deflator, inflation is higher now than at any point since 1990. The headline PCE deflator came in at 5.0% year-over-year in October and core PCE was 4.1%.
- Seasonal adjustment factors may have played a role in the drop in jobless claims to their lowest level since 1969.
- Existing home sales rose to a nine-month high and new home sales are moving faster than they have since the height of the spring selling season in April.
- Next week: Construction Spending (Wed), ISM Manufacturing (Wed), Employment (Fri)

International: Unexpected Resilience for Europe's PMI Surveys

- November PMI surveys for the Eurozone and the United Kingdom were stronger than expected, while also indicating ongoing supply disruptions in the form of lengthening supplier delivery times, as well as higher costs and prices. For the U.K., the PMIs are likely another reason for the Bank of England to raise interest rates in December. For the Eurozone, worsening future output expectations and a drop in German IFO business confidence hint at a softer PMI in December.
- Next week: China PMIs (Tues), Eurozone CPI (Tues), Canada GDP (Tues)

Wells Fargo Securities U.S. Economic Forecast

	Actual 2021				Forecast 2022				Actual 2020	Forecast 2021			2023
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q		2021	2022	2023	
Real Gross Domestic Product ¹	6.3	6.7	2.1	5.6	4.4	3.3	3.6	3.5	-3.4	5.5	4.1	3.3	
Personal Consumption	11.4	12.0	1.7	3.8	3.2	2.5	2.6	2.7	-3.8	7.9	3.4	2.6	
Consumer Price Index ²	1.9	4.8	5.3	6.6	7.0	5.7	4.8	3.4	1.2	4.7	5.2	2.0	
"Core" Consumer Price Index ²	1.4	3.7	4.1	5.0	6.0	5.0	4.5	3.8	1.7	3.6	4.8	2.3	
Quarter-End Interest Rates ³													
Federal Funds Target Rate	0.25	0.25	0.25	0.25	0.25	0.25	0.50	0.75	0.50	0.25	0.44	1.00	
Conventional Mortgage Rate	3.08	2.98	2.87	3.15	3.35	3.55	3.65	3.70	3.12	3.02	3.56	3.78	
10 Year Note	1.74	1.45	1.52	1.65	1.85	2.00	2.10	2.15	0.89	1.59	2.03	2.23	

Forecast as of: November 12, 2021

¹ Compound Annual Growth Rate Quarter-over-Quarter² Year-over-Year Percentage Change³ Annual Numbers Represent Average

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

Please find our full U.S. Economic Forecast [here](#).Register for our Annual Economic Outlook on December 9 [here](#). Please submit questions in advance by emailing: economics@wellsfargo.com

All estimates/forecasts are as of 11/24/2021 unless otherwise stated. 11/24/2021 12:58:56 EST. Please see page 10 for rating definitions, important disclosures and required analyst certifications. Wells Fargo Securities, LLC does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of the report and investors should consider this report as only a single factor in making their investment decision.

This report is available on Bloomberg WFRF

U.S. Review

Consumer Swagger, Exports Rebound and a Sharp Drop in Jobless Claims

The major economic themes driving financial markets were all evident in this week's indicators released in a flurry Wednesday morning before U.S. financial markets close tomorrow and open on a limited basis Friday in what is traditionally light volume. The big things to know from the latest batch of data is that consumer spending remains strong despite the highest inflation since 1990, the housing market remains strong if not quite as hot as sky-high expectations and a pop in exports might mean that trade could actually add to GDP growth in Q4 rather than detract from it as it has for the past five consecutive quarters.

To the extent that this week brought surprises, the biggest was the drop in initial jobless claims, which fell to 199K. That is the lowest since the year Neil Armstrong walked on the moon in 1969. While that was a bigger improvement than most expected (Bloomberg consensus was 260K), we make it a rule not to make too much of a single week's numbers. Plus, we suspect that seasonality may have been a factor and could reverse next week. Still the trend decline in claims has been a steady driver of the Leading Economic Index for several months. Employers are struggling to find good help, so it makes sense that they would be reluctant to hand out pink slips in such an environment.

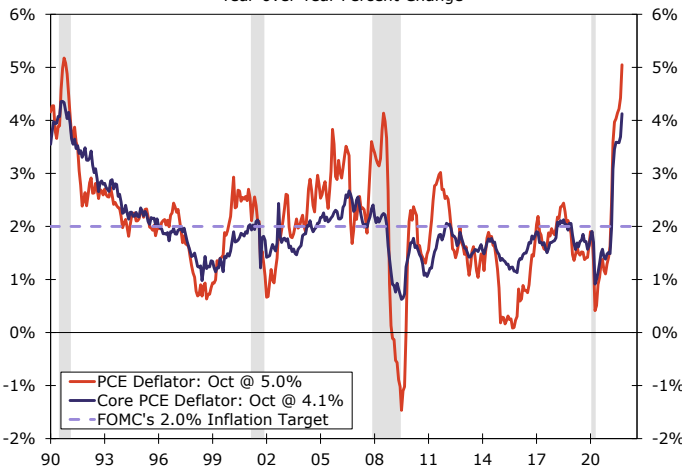
Gobble till You Wobble

The 1.3% surge in personal spending in October was the largest increase since the stimulus-fueled spending binge in March. But higher prices are playing a major factor. The PCE deflator posted its biggest one-month increase since 2008 to lift this yardstick of price gains to its highest year-over-year rate of growth since 1990 ([chart](#)).

But the increased spending is not only a reflection of higher inflation. Real spending was up 0.7%, and after taking a breather in recent months, real durables spending is back posting a 2.0% monthly gain in October with every major category of durables seeing a considerable pickup. We suspect this may be holiday spending having been pulled forward amid many ([including us](#)) warning shoppers to get out early this year to get ahead of expected shortages.

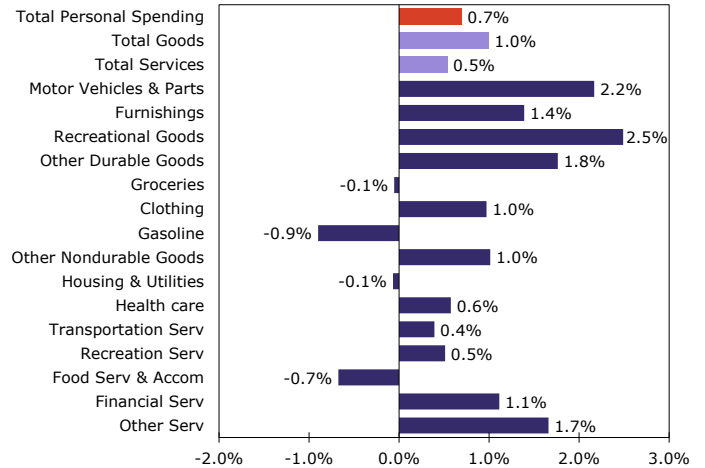
In real terms, the only categories where spending declined last month ([chart](#)) were all places where prices are surging. This builds on the theme we first identified in our write-up of retail sales last week in which we observed how the fact that motor fuel prices rose faster than nominal sales at gas stations suggests that consumers may be starting to combine trips or otherwise limit their driving. The softness in restaurants spending is consistent with the flat reading in the retail sales report. Consumers are still going out to eat, but this adds to evidence that some diners are moving down the price curve from upscale full-service dining experiences toward more humble fast-casual options.

PCE Deflator vs. Core PCE Deflator
Year-over-Year Percent Change



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

Monthly Change in Real Personal Spending
Month-over-Month Percent Change, October 2021



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

Dwindling stimulus has held back the month-to-month growth rates in income in recent months. Even with less going out in the form of unemployment benefits last month, personal income still managed

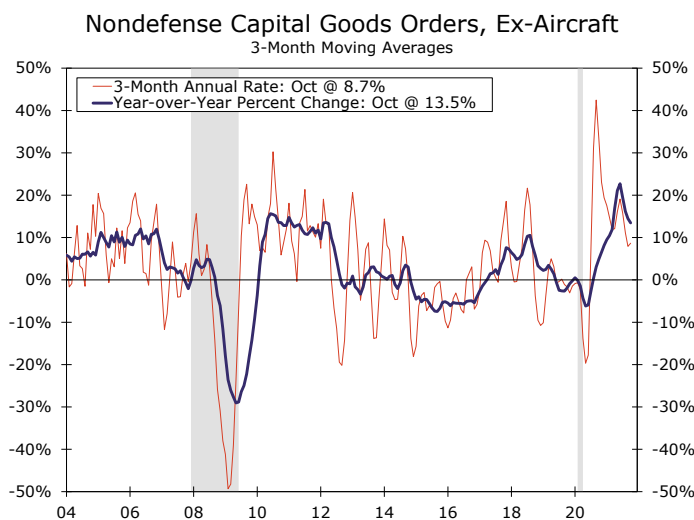
to rise 0.5% during the month. While stimulus is fading, consumers are getting a more durable boost to income from wages & salaries, which rose another 0.8% in October. Just since the start of the year, wages & salaries have jumped 7.6%, which is the largest year-to-date gain in 42 years.

Michigan consumer sentiment nudged up slightly from its preliminary print, but at 67.4, it is still at a decade low. The revised data showed broad-based gains in both the current conditions and expectations components. While it may not show up in the spending numbers, households remain concerned about inflation's impact and are also anticipating interest rates to rise. The largest major category change, a three-point drop, came from the "household finances vs. 5-years ahead" index falling to 131 from 134 in the preliminary data, signaling that consumers believe the longer-term economic conditions have deteriorated a bit.

Core Capital Goods Orders Signal Equipment Spending Has Room to Grow in 2022

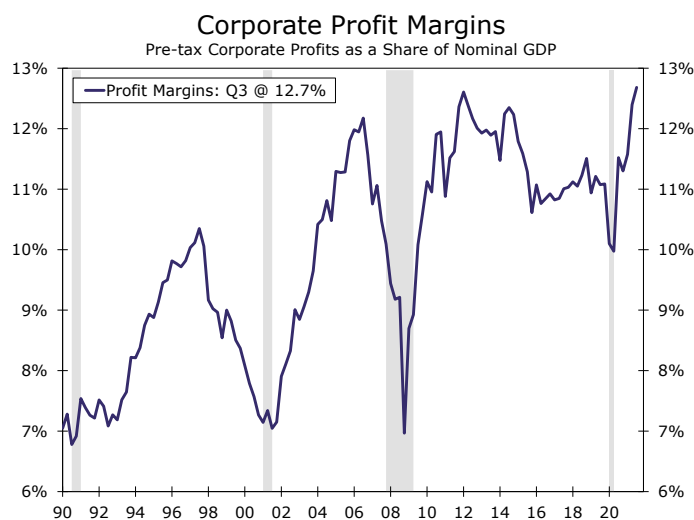
Orders for durable goods fell 0.5% in October, but that was mainly due to a more than 20% decline in defense spending and another month of declines in orders for both civilian and defense aircraft—both aircraft series have fallen in three out of the past four months. While the auto sector is a long way from returning to normal, orders for motor vehicles and parts snapped a two-month losing streak to rise 4.8% in October.

Outside of the volatile transportation sector, orders actually rose 0.5% in October. Core capital goods orders, closely watched as a gauge for equipment investment, rose 0.6% in October. That came on the heels of an upwardly revised 1.3% increase in September. Gains were broadly based with increased orders in both primary and fabricated metals, as well as an increase in bookings for computers and electrical equipment. The only major category outside transportation where orders slipped in October was machinery, but that follows considerable strength over the past year with orders 15.5% higher than they were in October 2020. In general, what we see in today's durable goods report is more of what we have been seeing for months, where demand is out stripping supply. Every major category of core capital goods orders is up in double digits on a percentage basis with the exception of computers where the base of comparison was 2020 when spending on new laptops and monitors for the transition to WFH lifted spending. Even with that surge, computer & electronics products orders are up 3.5% from last year.



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

Shipments of non-defense capital goods slipped 0.1% in October after rising modestly for four consecutive months, which may weigh on expectations for a rebound in fourth quarter equipment spending. The numbers look better when you exclude aircraft. Non-defense capital goods shipment, ex aircraft, rose 0.3% in October, following a 1.3% pop in September. That puts the three-month annualized rate for core capital goods shipments at 10% (chart). That is about on par with the forward-looking orders for core capital goods, which is growing at an 8.7% annualized clip. In short, the challenge is not one of demand but rather the sustained difficulty finding supplies and skilled labor.



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

Third Quarter GDP Growth Revised Higher in Second Release and Profits Surge

Real GDP growth was revised modestly higher to a 2.1% annualized rate with the second release of third quarter GDP amid stronger consumer spending. With the second release, we also got the first look at corporate profits for the third quarter. Corporate profitability has soared throughout the pandemic. With demand exceptionally strong, businesses have been equipped with pricing power they haven't experienced in decades, which has allowed them to pass higher costs onto consumers rather than let them meaningfully hit the bottom line. Pre-tax corporate profits rose 4.3% (not-annualized) in the third quarter, which translates to a 20.7% gain compared to a year earlier. This gain lifted profits to an all-time high of \$2.9 trillion and boosted economy-wide profit margins to 12.7%, the highest in around 70 years ([chart](#)). With inflation not expected to meaningfully abate anytime soon, the question now becomes how long can firms' pricing power last?

The latest housing data this week reflect sustained strength. Existing home sales rose 0.8% in October to a 6.34 million-unit annual pace, while new home sales rose 0.4% to a 745K-unit pace. Ongoing supply logjams and labor shortages are the largest constraint on sales. But with supply lengthening project timelines, the growing backlog of projects should keep builders busy for the next couple of years.

After floundering for the better part of the year as global growth has been slower to gain momentum, goods exports leaped 10.7% in October, according to the advance trade data, more than reversing the 4.7% decline a month earlier. The month-to-month movements in trade have been exceptionally volatile recently, and although the advanced data for October positions net exports to boost growth in the third quarter for the first time in five quarters, it ultimately depends on how trade flows evolve in the remaining months of the year. ([Return to Summary](#))

U.S. Outlook

Weekly Domestic Indicator Forecasts

Date	Indicator	Period	Consensus	Wells Fargo	Prior
30-Nov	Consumer Confidence	Nov	110.0	110.7	113.8
1-Dec	ISM Manufacturing Index	Nov	61.0	61.2	60.8
1-Dec	Construction Spending (MoM)	Oct	0.4%	0.6%	-0.5%
3-Dec	Nonfarm Payrolls	Nov	500K	600K	531K
3-Dec	Unemployment Rate	Nov	4.5%	4.5%	4.6%
3-Dec	Average Hourly Earnings (MoM)	Nov	0.4%	0.4%	0.4%
3-Dec	ISM Services Index	Nov	65.0	65.4	66.7

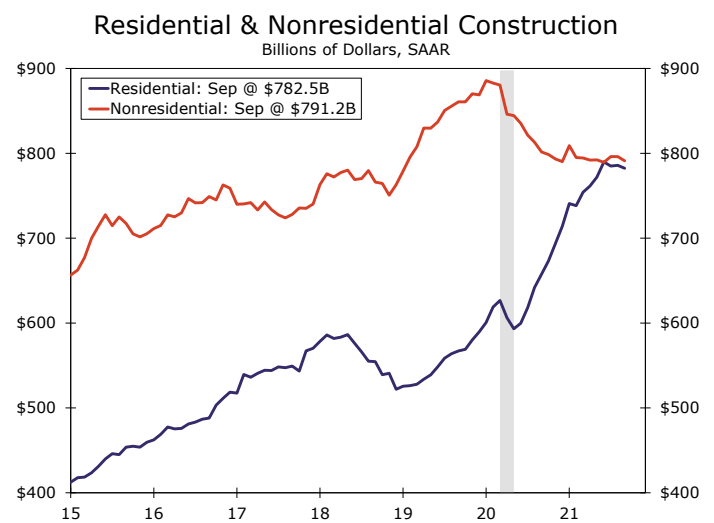
Forecast as of November 24, 2021

Source: Bloomberg LP and Wells Fargo Securities

Construction Spending • Wednesday

Construction spending declined 0.5% during September, as building material pricing, availability and skilled labor shortages continue to weigh on the entire construction industry. The weakness during the month was mostly broad-based, with residential and nonresidential categories both falling over the month. Residential construction, which has slowed recently amid intensifying labor and material shortages, is still up 19.0% over the year. On the other hand, the knock-on effects of the pandemic continue to hold back the nonresidential sector, which is down 1.3% on a year-to-year basis.

Looking ahead, overall construction spending appears set to rebound. Despite recent supply-side headwinds, total building permits increased solidly during October, with both single-family and multifamily permits advancing during the month. Nonresidential activity looks poised for improvement as well. Total nonresidential building starts shot up 29% in October, according to Dodge Data & Analytics. What's more, the forward-looking Architecture Billings Index has now been solidly in expansion



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

territory for nine straight months. We estimate that construction spending rose 0.6% in October.

ISM Manufacturing • Wednesday

The ISM manufacturing index dropped to 60.8 last month from 61.1 in September, consistent with a blistering pace of expansion in the factory sector. The details of the report continue to reveal how pervasive supply chain challenges are weighing on manufacturing activity. Unsurprisingly, the largest gains last month came from two components at the center of supply issues: prices paid and supplier deliveries. Both have marched considerably higher over the past year and continue to exemplify the severity of bottlenecks. That said, purchasing managers across industries continue to cite strong demand.

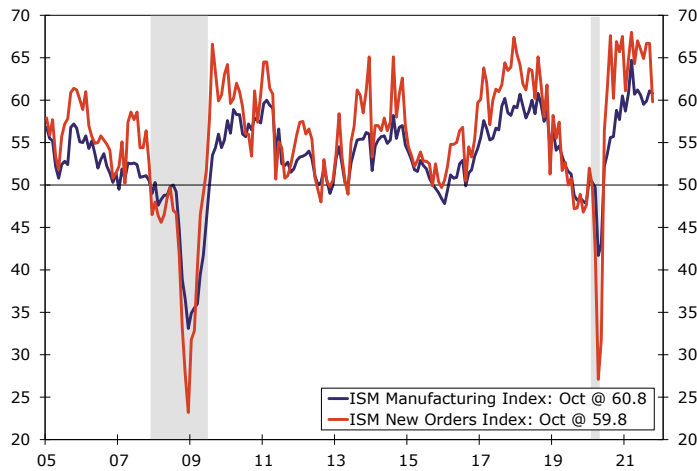
At present, there does not appear to be too many signs on the horizon for a swift end to the rampant supply-side issues affecting producers. The number of ships waiting off the West Coast to dock remains highly elevated, while shipping costs across the Pacific Ocean continue to sit more than six times above pre-pandemic norms. The demand picture remains solid, however. During November, the Philadelphia Fed and Empire Manufacturing surveys both rose markedly, easily besting consensus estimates. Taking these factors into consideration, we look for the ISM manufacturing index to rebound to 61.2 during November.

Employment • Friday

Total nonfarm payrolls increased by 531K during October, a gain that was well ahead of expectations. The net revisions to the previous two months were also positive and added another 235K to job growth in August and September. Stronger job growth recently is evidence that some of the headwinds holding back employment growth, namely the Delta variant of COVID and labor shortages, are beginning to die down. Higher wages may be helping in this regard. Average hourly earnings rose 0.4% during the month, and earnings are now up 4.9% over the past year. The unemployment rate fell to 4.6% from 4.8% the month prior. The overall labor force participation rate was unchanged; however, the total size of the labor force inched up, with a notable increase in prime age workers and those under the age of 25.

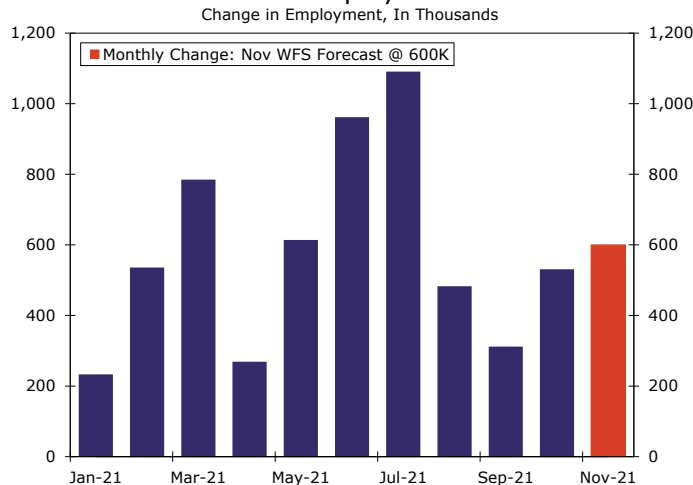
We expect labor availability to continue to be a constraint on hiring in the coming months. That noted, workers do appear to be slowly reentering the labor force. More discernable improvement should come next spring when COVID risks are lower and childcare issues are better resolved. The growing distance between fiscal support as well as inflation chipping away at individuals' spending power should provide the financial imperative to return to work. These factors should help hiring continue at a robust pace and keep the level of employment on track to recover around the end next year. In terms of the November employment report, we look for a 600K gain, which as of this writing, is above consensus expectations. ([Return to Summary](#))

ISM Manufacturing vs. New Orders



Source: Institute for Supply Management and Wells Fargo Securities

U.S. Nonfarm Employment Forecast



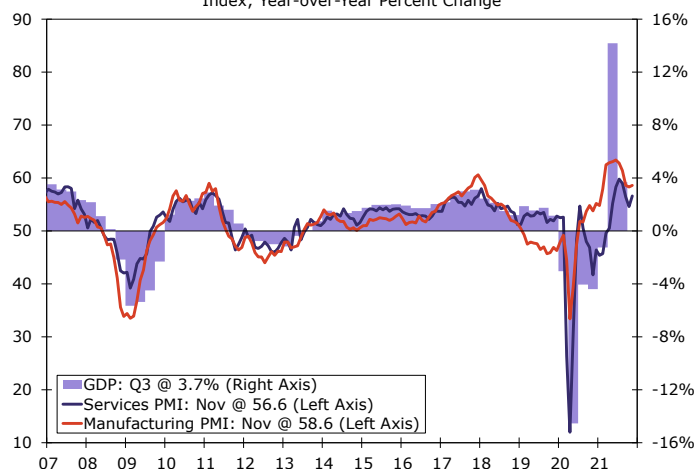
Source: U.S. Department of Labor and Wells Fargo Securities

International Review

Unexpected Resilience for Europe's PMI Surveys

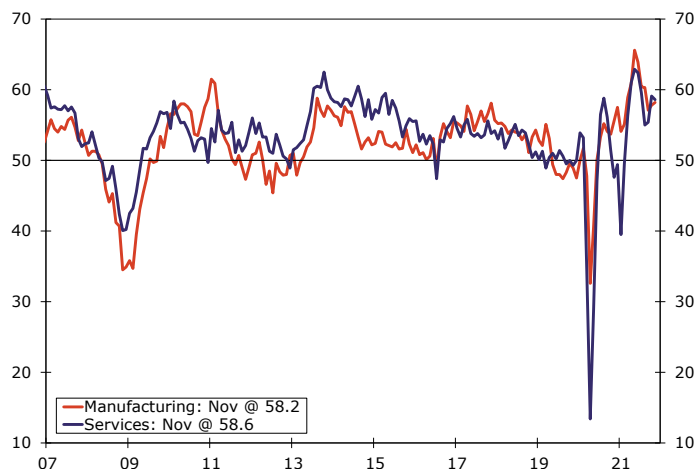
November PMI surveys for the Eurozone and the United Kingdom showed some unexpected, and perhaps welcome, resilience. The Eurozone PMIs were a particular surprise, as the services PMI rose to 56.6 and the manufacturing PMI rose to 58.6, with overall improvements evident in both Germany and France. The gain in the Eurozone services PMI, the first since July, was an especially notable surprise given that a recent rebound in COVID cases across some Eurozone countries could have weighed on mobility and economic activity. That is not to say it was all good news from the Eurozone PMI surveys. The input price and output price components both rose to record highs, and supplier delivery times remained lengthy, indicating that supply disruptions and inflationary pressures are likely to persist for at least a little while. Finally, the details showed some deterioration in future output expectations, suggesting COVID concerns along with the implementation of some restrictions by some Eurozone governments could still lead to a softening in the PMI surveys in December. Indeed, in that context we note that Germany's November IFO business confidence index actually softened in November, falling slightly more than forecast to 96.5.

Eurozone PMI Indices vs. GDP Growth
Index; Year-over-Year Percent Change



Source: Datastream, Bloomberg LP and Wells Fargo Securities

United Kingdom PMIs



Source: Datastream and Wells Fargo Securities

The U.K. November PMIs were sturdy in tone as the manufacturing PMI rose to 58.2 and the services PMI fell to a still-strong 58.6. Despite the moderate drop in the services PMI, the surveys revealed that new orders firmed, while the employment component remains generally elevated as well. As with the Eurozone, the U.K. PMI surveys also indicated cost and price pressures, especially for manufacturers, and to a slightly lesser extent for firms in the service sector. Still, with the PMI survey suggesting reasonably solid demand and persistent price pressures, we believe it will be enough—along with other recent U.K. data—for the Bank of England to raise its policy interest rate at its December monetary policy meeting.

Down under, the Reserve Bank of New Zealand (RBNZ) delivered its second rate hike of the current cycle, raising its policy rate by 25 bps to 0.75%. The RBNZ also signaled further tightening to come, saying capacity pressures have continued to tighten and that employment is now above its maximum sustainable level. The central bank also raised its inflation forecast, and sees CPI inflation quickening further to 5.7% year-over-year for Q4-2021 and Q1-2022, before gradually slowing back toward 2% over its forecast horizon. Against this backdrop, the RBNZ indicated it would likely raise interest rates faster than previously expected, projecting its policy interest rate to peak (and plateau) at 2.6% in late 2023, compared to its previous forecast, where it saw the policy rate peaking at 2.1% in early 2024.

[\(Return to Summary\)](#)

International Outlook

Weekly International Indicator Forecasts

Date	Indicator	Period	Consensus	Wells Fargo	Prior
30-Nov	China Manufacturing PMI	Nov	49.6	--	49.2
30-Nov	China Services PMI	Nov	51.3	--	52.4
30-Nov	Eurozone CPI (YoY)	Nov	--	--	4.1%
30-Nov	Canada Quarterly GDP Annualized	Q3	2.5%	2.0%	-1.1%

Forecast as of November 24, 2021

China PMIs • Tuesday

China's economy has attracted even more attention than usual in recent months, given a renewed spread in COVID cases and associated restrictions, regulatory changes that appear to have weighed on activity and strains in the real estate sector. While some October activity was encouraging, the near-term outlook remains uncertain and the risk remains that the rebound in China's economy will be more gradual than expected following very sluggish GDP growth during in Q3.

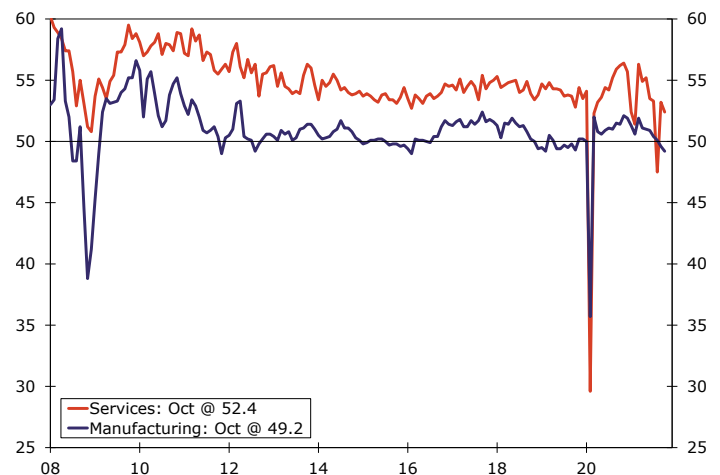
It is against this backdrop that China's November manufacturing and services PMIs will be carefully scrutinized for timely insights into the state of China's economy. Those PMI surveys both softened in October, as the services PMI fell to 52.4 and the manufacturing PMI fell to 49.2. For November, the consensus forecast is for a further fall in the services PMI to 51.3, while the manufacturing PMI is expected to rise to 49.6. Taken together, those outcomes would hint at the potential for gradual Q4 GDP growth, which would also be consistent with our recent downward revision in our forecast for China's full-year 2021 economic growth to 7.8%.

Eurozone CPI • Tuesday

Eurozone inflation has moved noticeably higher in recent months, and the November print of the Consumer Price Index could be a key release ahead of the European Central Bank's (ECB) December monetary policy announcement. Price pressures are clearly evident, as reflected in Eurozone PMI surveys, which show both the input and output price components. However, prices at the consumer price level have so far been less marked. The headline CPI did jump 4.1% year-over-year in October, although much of that was driven by energy prices, which have gained 23.7% year-over-year. Although other prices have moved higher, they have to date remained more contained, including a 2.0% increase in the core CPI and a 2.1% increase in the services CPI.

For November, we expect some further acceleration in the headline CPI; however, it will be trends in core and services inflation that will be of particular interest. As long as those core and services inflation measures do not quicken excessively, that should pave the way for a relatively dovish monetary policy announcement from the ECB in December. Among other things, we expect that December announcement to signal only a gradual tapering in the ECB's overall bond purchases through 2022 and into 2023, and do not expect any indication the ECB is likely to raise its policy interest rates for the foreseeable future.

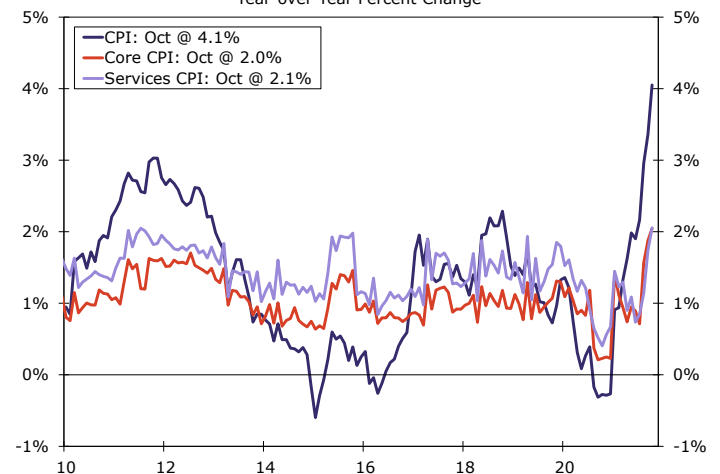
Chinese PMI Surveys



Source: Datastream and Wells Fargo Securities

Eurozone Inflation

Year-over-Year Percent Change

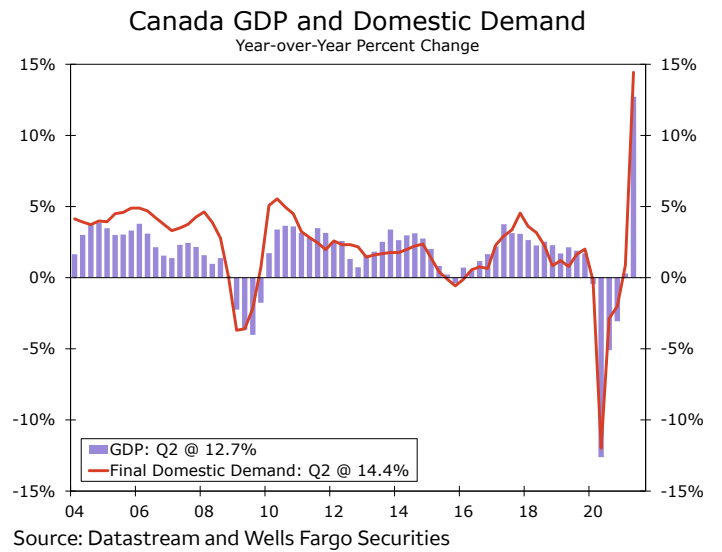


Source: Datastream and Wells Fargo Securities

Canada GDP • Tuesday

After an up-and-down start to the year, the Canadian economy returned to a steadier growth path in the third quarter, and next week sees the release of the broadest measure of Canadian economic activity in the form of Q3 GDP. Among the encouraging signals for Q3, Canadian employment has risen each month for five months through October and, hours worked rose 1.6% from Q2 to Q3. Meanwhile, although real retail sales have been up and down in recent months, they still showed a decent-sized gain in sales for Q3 overall.

As a result, and following a contraction in Q2, we forecast a return to positive growth for Canada's economy in Q3. We expect GDP rose by 2.0% quarter-over-quarter annualized, though we see the balance of risks as tilted to the upside. Indeed, the consensus forecast is for a slightly faster pace of growth of 2.5% quarter-over-quarter annualized. We also see stronger growth in the quarters ahead, and believe that a Q3 GDP outcome in line or stronger than our forecast would keep the Bank of Canada on course to begin raising its policy interest rate in Q2-2022. ([Return to Summary](#))



Market Data • Mid-Day Wednesday

U.S. Interest Rates			
	Wednesday 11/24/2021	1 Week Ago	1 Year Ago
1-Month LIBOR	0.09	0.09	0.15
3-Month LIBOR	0.17	0.16	0.20
3-Month T-Bill	0.05	0.04	0.07
1-Year Treasury	0.15	0.14	0.06
2-Year Treasury	0.65	0.50	0.16
5-Year Treasury	1.36	1.23	0.40
10-Year Treasury	1.66	1.59	0.88
30-Year Treasury	2.00	1.98	1.61
Bond Buyer Index	2.13	2.10	2.28

Foreign Exchange Rates			
	Wednesday 11/24/2021	1 Week Ago	1 Year Ago
Euro (\$/€)	1.120	1.132	1.189
British Pound (\$/£)	1.333	1.349	1.336
British Pound (£/€)	0.840	0.839	0.890
Japanese Yen (¥/\$)	115.420	114.080	104.440
Canadian Dollar (C\$/\\$)	1.267	1.261	1.300
Swiss Franc (CHF/\\$)	0.936	0.929	0.911
Australian Dollar (US\$/A\\$)	0.719	0.727	0.736
Mexican Peso (MXN/\\$)	21.417	20.652	20.027
Chinese Yuan (CNY/\\$)	6.392	6.378	6.592
Indian Rupee (INR/\\$)	74.394	74.271	74.001
Brazilian Real (BRL/\\$)	5.600	5.524	5.375
U.S. Dollar Index	96.862	95.828	92.226

Foreign Interest Rates			
	Wednesday 11/24/2021	1 Week Ago	1 Year Ago
3-Month Euro LIBOR	-0.58	-0.57	-0.54
3-Month Sterling LIBOR	0.11	0.10	0.05
3-Month Canada Banker's Acceptance	0.49	0.49	0.49
3-Month Yen LIBOR	-0.10	-0.09	-0.10
2-Year German	-0.74	-0.73	-0.74
2-Year U.K.	0.60	0.57	-0.02
2-Year Canadian	1.06	0.99	0.27
2-Year Japanese	-0.12	-0.12	-0.13
10-Year German	-0.22	-0.25	-0.56
10-Year U.K.	1.01	0.96	0.33
10-Year Canadian	1.79	1.69	0.72
10-Year Japanese	0.08	0.08	0.03

Commodity Prices			
	Wednesday 11/24/2021	1 Week Ago	1 Year Ago
WTI Crude (\\$/Barrel)	78.48	78.36	44.91
Brent Crude (\\$/Barrel)	82.35	80.28	47.86
Gold (\\$/Ounce)	1782.79	1867.48	1807.59
Hot-Rolled Steel (\\$/S.Ton)	1664.00	1635.00	795.00
Copper (¢/Pound)	445.80	426.60	329.95
Soybeans (\\$/Bushel)	12.71	12.63	11.89
Natural Gas (\\$/MMBTU)	5.03	4.82	2.78
Nickel (\\$/Metric Ton)	20,485	19,486	15,894
CRB Spot Inds.	651.57	647.76	481.77

Source: Bloomberg LP and Wells Fargo Securities

Subscription Information

To subscribe please visit: www.wellsfargo.com/economicsemail

The 2021 Annual Economic Outlook: *Aftershocks and Divergence in the Post-Pandemic Economy* is available at wellsfargo.com/economicoutlook

Via The Bloomberg Professional Services at WFRE

And for those with permission at research.wellsfargosecurities.com

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	212-214-8984	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	332-204-0693	Shannon.Seery@wellsfargo.com
Nicole Cervi	Economic Analyst	704-410-3059	Nicole.Cervi@wellsfargo.com
Sara Cotsakis	Economic Analyst	704-410-1437	Sara.Cotsakis@wellsfargo.com
Jessica Guo	Economic Analyst	704-410-4405	Jessica.Guo@wellsfargo.com
Karl Vesely	Economic Analyst	704-410-2911	Karl.Vesely@wellsfargo.com
Coren Burton	Administrative Assistant	704-410-6010	Coren.Burton@wellsfargo.com

Required Disclosures

This report is produced by the Economics Group of 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 this report directly and through affiliates 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 Europe S.A., 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 Commodity 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 Commodity 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 report.

The information in this report has been obtained or derived from sources believed by Wells Fargo Securities, LLC to be reliable, but Wells Fargo Securities, LLC does not guarantee its 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 upon any opinions set forth herein. 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 sale of any security or other financial product 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. © 2021 Wells Fargo Securities, LLC

Important Information for Non-U.S. Recipients

For recipients in the United Kingdom, 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. For recipients in the EEA, this report is distributed by WFSIL or Wells Fargo Securities Europe S.A. ("WFSE"). WFSE is a French incorporated investment firm authorized and regulated by the Autorité de contrôle prudentiel et de résolution and the Autorité des marchés financiers. WFSE does not deal with retail clients as defined in the Directive 2014/65/EU ("MiFID2"). This report is not intended for, and should not be relied upon by, retail clients.

SECURITIES: NOT FDIC-INSURED - MAY LOSE VALUE - NO BANK GUARANTEE