

Equity Research Economics

20 November 2020

Richard de Chazal, CFA rdechazal@williamblair.com +44 20 7868 4489

Economics Weekly The Case for a MiniConsumption Boom



Please refer to important disclosures on pages 13 and 14. Analyst certification is on page 13.

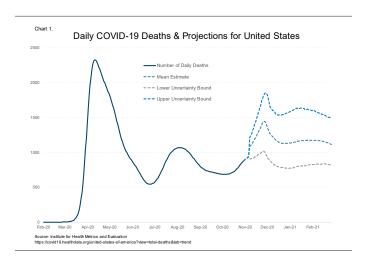
There is an enormous quantity of pent-up savings, fiscal policy was so successful that this is the only downturn in my professional career in which disposable income actually went up in a deep recession, and a lot of that has been saved, and a lot of that has been forcibly saved as people haven't been able to go out and necessarily spend all that. So if we combine the good news on the vaccine with north of a trillion dollars of accumulated saving, then there is a very very attractive right tail of this distribution [of economic outcomes]. And obviously the odds of that have gone up relative to where we were before the vaccine news.

— Fed Vice Chairman Richard Clarida, November 16, 2020

This week's retail sales data was interpreted by the market and many analysts as being somewhat disappointing, in that sales only increased by 0.3%, where expectations had been for a 0.5% increase. Given what has also been a huge surge to the upside in economic surprises over the last six months, it is possible that many have simply been getting too comfortable with the macro data coming in above expectations. Nevertheless, while there is still plenty of work to be done, we continue to see a steady positive recovery in households' situations, and as Vice Chairman Clarida points out in the above quote, the combination of higher savings and a vaccine encouragingly means that the probability of a more positive economic outcome has increased. In this week's Economics Weekly, we examine the consumers' situation, and conclude that while we still have a steep hill to climb in the coming months with regard to the pandemic and the scarring that it leaves, there is a growing case to be made that households in aggregate will emerge in the spring with stronger balance sheets and considerable pentup demand.

Major Near-Term Challenges Still Ahead...

There is little doubt that the global economy still faces a major uphill struggle in the months to come as we move into the peak transmission period for the virus (chart 1). Much will depend on the measures taken to limit the pandemic—decisions that are deeply mired in conflicting views, data, politics, and uncertainty. Projections from the Institute for Health Metrics and Evaluation, for example, show that the daily death rate could spike to as high as 4,689 deaths per day in February in the United States, in the absence of any measures taken to social distance, wear masks, etc. That would be more than double the April peak of 2,325 per day. Whereas, it projects a peak of just 1,444 per day at the start of December if there are universal mask wearing measures taken.



The second challenge is that not all the jobs will return, not all businesses will survive, and there will be some residual scarring left by the crisis. Given the nature of the crisis, this will also not be evenly spread across demographic cohorts, geographic regions, and sectors of the economy, meaning that there is still an urgent need for more fiscal support.

However, the speed at which this crisis has taken place, coupled with the initial V-shape of the recovery—in large part the result of the very quick actions taken by both monetary and fiscal policymakers—not only helped prevent a much bigger financial crisis, but has also meant there is much less hysteresis this time around than was the case following the last crisis.

For example, in the 2008-2009 crisis, the economy lost 8.7 million jobs, a decline that took place over a 12-month period. It then took 4.25 years for those lost jobs to be recovered. Today, the economy shed 22 million jobs in just two months, and it has recovered more than half of those jobs in the last seven months. This is crucial in preventing hysteresis, whereby the longer people are unemployed, the longer they are likely to remain unemployed, as a result of losing skills, contacts, and confidence. Hence, the situation today, with 29% of those who have been laid off classified as being temporarily laid-off, relative to the historical average of 13%, is very encouraging for the continued pace of the employment recovery.

St. Louis Fed President James Bullard noted last week that:

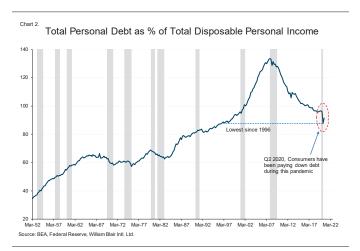
A back-of-the-envelope calculation suggests that there is room for a substantial decline in the official unemployment rate in the months ahead. If all those unemployed identifying as "on temporary layoff" are simply recalled and nothing else changes, the official unemployment rate would decline to 4.9%. If the "on temporary layoff" category returns to a normal value (e.g., 1 million workers) and nothing else changes, the official unemployment rate would still decline to 5.5%.

This is definitely not to suggest that more fiscal support is not needed; it is desperately needed for many households and businesses. We already know, for example, that the initial 26 weeks of unemployment insurance, coupled with the extra 13-week extension, starts to expire for many unemployed at the end of December. In the last global financial crisis, these benefits were extended for a total of 99 weeks, and passing legislation to extend the current 39 weeks of benefits further would be a sensible move. We also know that the crisis has disproportionately impacted women and racial minorities.

However, Aggregate Household Balance Sheets Are Emerging Even Stronger

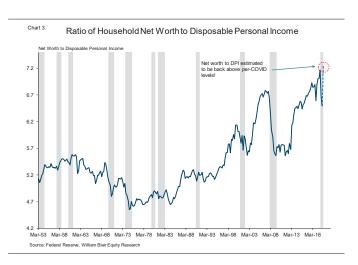
One of the stranger things to have happened during this crisis is that U.S. households in aggregate will be emerging from this crisis in better shape than they entered it.

We can see this across a number of different gauges of the consumer balance sheet. For example, chart 2 shows that households' debt as a percentage of disposable personal income fell to its lowest level in a quarter of a century in the second quarter. Meanwhile, newly released data from the New York Fed shows only a small uptick in debt accumulation in the third quarter.

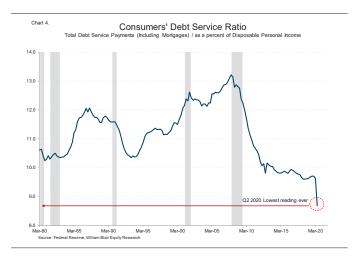


A study by the New York Fed, which looked at what consumers did with their CARES Act stimulus checks, showed that 36% of the funds was used to pay down debt, 36% was saved, 18% was used to purchase essential goods, and less than 8% was used to purchase nonessential goods. The Fed study also showed that of the expanded unemployment insurance funds received 50% was used to pay down debt, 23% was saved, 24% was spent on essential items, and only 4% was used on nonessential items.

Chart 3 shows that households' net worth relative to disposable personal income has also rebounded during the third quarter, as a result of the strong performance of financial markets and the strength in the housing market—to the point where net worth is now back above where it was at the start of the crisis.

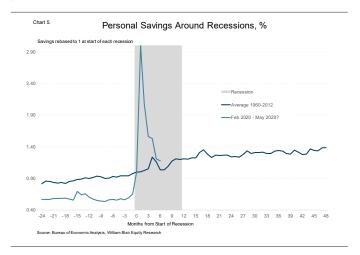


Lastly, chart 4 shows that consumers' debt servicing costs are now the lowest that they have ever been since the Fed started publishing this data in 1980. This has been the result of the record-low mortgage rates and paying down of debt, and of the CARES Act, which has helped suspend student loan payments.



High Savings Point to Pent-Up Demand

What has also been unusual during this crisis is that the surge in household savings has risen over this period (chart 5). From the end of February to April, household savings increased by an astounding \$5.0 trillion. And,while these have been coming back down since, by the end of September they were still \$1.1 trillion higher than at the end of February.



Many households found that not only did they still have their jobs even though they were working from home, they also received income from the CARES Act and had a lot fewer things to spend those funds on. Meanwhile, those individuals who were adversely impacted by the lack of spending—e.g., restaurants, spas, and cinemas—received funds through the CARES Act that in many cases were more than what they were being paid while still working. Essentially, nobody dined at the restaurant, but the government still picked up the bill!

This resulted in a large accumulation of savings and pentup demand that will be released once the threat of the virus has passed. Unlike the last recession, when households were never really certain whether the recession had passed or not, or whether there would be a double-dip, the current crisis has a definitive end—which is when the vaccine and/or a therapeutic is rolled out to enough of the population. This will likely be in the second quarter of next year, at which point much of this pent-up demand will start to be released on visits to unseen family and friends, vacations, etc.

Conclusion

The COVID crisis has been an unusual recession in just about every which way. It has been very short and very sharp, and many households will be exiting the crisis with balance sheets that are in even better shape than when they entered the crisis. They have also accumulated a huge pot of savings that will likely be drawn down upon in the coming year, as it becomes clear the threat from the pandemic is over. The caveat, however, is that we are not there yet, and there is still a considerable threat in the next few months from both the virus and the ending support for those adversely impacted by the pandemic. There is also likely to be some serious scarring, which is disproportionately impacting several demographic cohorts. Making sure that support is in place should still be the top priority of policymakers today, otherwise the growth resurgence we look forward to tomorrow won't be as positive as it potentially looks today.

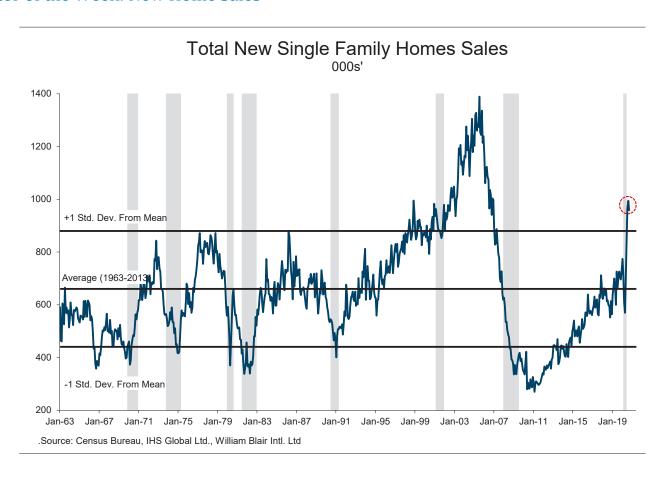
20 November 2020

Highlights in the Week Ahead

Date	Time (EDT)	Indicator	Last	Consensus	WB Estimate	Actual
24 Nov	10:00 a.m.	Consumer Confidence (Nov)	100.9	98.0	97.8	
25 Nov	8:30 a.m.	GDP (Q3 2nd revision)	33.1%	33.1%	33.1%	
25 Nov	8:30 a.m.	Durable Goods Orders (Oct)	1.9%	1.3%	2.0%	
		Orders Less-transportation	0.9%	0.3%	0.9%	
25 Nov	8:30 a.m.	Personal Income (Oct)	0.9%	0.1%	0.2%	
		Personal Spending	1.4%	0.6%	0.5%	
25 Nov	10:00 a.m.	New Home Sales (Oct)	-3.5%	0.9%	1.0%	

Sources: Bloomberg, William Blair Equity Research

Indicator of the Week: New Home Sales

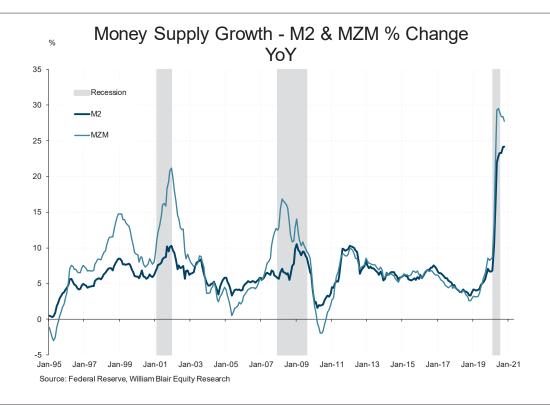


Economic Scorecard

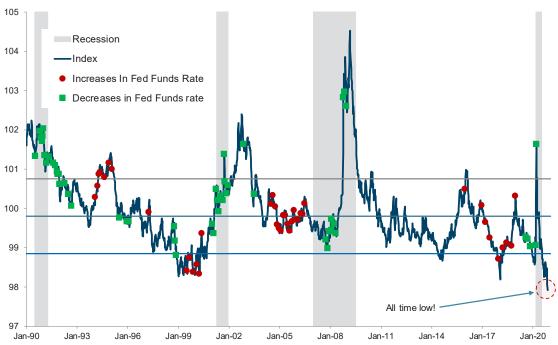
Rolling monthly heat map, % Change on Year Ag	May-19			Aua-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20
Growth				, g . v	- СОР 10							74. 20				- mg = v		00120
US Leading Indicators	2.4	1.7	1.5	1.0	0.3	0.2	0.3	0.3	0.8	0.4	-7.2	-13.2	-10.6	-7.8	-6.3	-4.7	-3.9	
US Coincident Indicators	1.8	1.7	1.5	1.5	1.6	1.4	1.5	1.2	1.2	1.5	-0.8 3.5	-12.3 7.4	-10.3 4.9	-6.9 0.9	-5.4 -0.7	-5.0 -0.4	-4.9	
US Lagging Indicators	2.4	2.8	3.5	2.9	2.8	2.6	2.5	2.2	1.6	1.7	3.5	7.4	4.9	0.9	-0.7	-0.4	-0.6	
Consumer	2.0	2.4	2.0	4.0	0.7	2.4	2.0	5.0	4.0	4.5	F.C	40.0	F.C	0.0	0.7	2.0	50	r 7
Total Retail Sales Personal Income	2.9 4.1	3.4	3.6	4.3 3.5	3.7	3.1 3.6	3.3	5.6 2.9	4.9 3.7	4.5 4.1	-5.6 1.8	-19.9 14.1	-5.6 9.3	2.2 7.8	2.7 8.6	3.6 5.5	5.9 6.2	5.7
Real Disposable Personal Income	2	1.9	1.6	1.8	2	1.8	2.1	0.8	1.5	2	0.6	16.5	10.7	8.4	8.9	4.9	5.5	
Real Personal Consumption	2.3	2.6	2.4	2.3	2.6	2.3	2.1	3	2.7	2.6	-4.7	-16.5	-9.6	-4.6	-3.6	-3.1	-2	
Personal Saving Rate (%)	7.3	7.1	7	7.3	7.3	7.2	7.5	7.2	7.6	8.3	12.9	33.6	24.5	18.7	18.1	14.8	14.3	
Consumer Confidence (Conference Board)**	131.3	124.3	135.8	134.2	126.3	126.1	126.8	128.2	130.4	132.6	118.8	85.7	85.9	98.3	91.7	86.3	101.3	100.9
Employment																		
Employment Growth	1.3	1.3	1.3	1.3	1.4	1.3	1.4	1.4	1.4	1.6	0.5	-13.4	-11.7	-8.6	-7.5	-6.7	-6.4	-6.1
ASA Temporary Staffing Index	-2.4	-1.7	-4.6	-4.7	-5.1	-6.5	1.4	-6.9	-6.2	-6.8	-24.4	-36.6	-33.9	-27.4	-23.8	-19.1	-16.5	-11.4
ISM Employment Index Manufacturing*	53.1	54.3	51.3	47.6	46.5	47.9	46.8	45.2	46.6	46.9	43.8	27.5	32.1	42.1	44.3	46.4	49.6	53.2
ISM Employment Index Services*	57.1	55.2	55.7	53.7	51.7	53.9	54.9	54.8	53.1	55.6	47	30	31.8	43.1	42.1	47.9	51.8	50.1
Unemployment Rate, %	3.6	3.7	3.7	3.7	3.5	3.6	3.5	3.5	3.6	3.5	4.4	14.7	13.3	11.1	10.2	8.4	7.9	6.9
Average Hourly Earnings	3.3	3.4	3.5	3.5	3.1	3.2	3.3	3	3.1	3	3.4	8	6.6	4.9	4.6	4.6	4.6	4.5
Initial Jobless Claims (avg. wkly. chg. '000s)	217	221	214	217	213	215	216	226	210	214	2667	5040	2288	1499	1339	993	870	789
Jop Openings Layoff Announcements	3.9 85.9	-1.3 12.8	-1.2 43.2	-1.1 39	-3.2 -24.8	1.0 -33.5	-9.5 -16	-10.3 -25.2	-6.8 27.8	-0.6 -26.3	-18.4 266.9	-31.4 1576.9	-26.4 577.8	-16.5 305.5	-7.4 576.1	-11.4 116.5	-8.7 185.9	-11.9 60.4
•	60.9	12.8	43.2	39	-24.8	-33.5	- 10	-23.2	27.8	-20.3	200.9	13/0.9	311.8	303.5	3/0.1	1 10.5	100.9	00.4
ousing Market	4.0	20	4.4	7.0	2.0	.11	12.0	42.1	27.4	37.8	E E	26.2	10.4	2.4	22.7	0.3	14.5	14.2
Housing Starts New Home Sales	-4.9 -8.7	3.8 18.4	1.4 7.1	7.6 18.1	2.2	11 27.9	13.9 13.4	29.6	27.1 21.5	7.7	5.5 -12.6	-26.3 -14.2	-18.1 16.3	2.4 15.7	46	-0.3 40.8	14.5 32.1	32.1
Existing Home Sales	-0. <i>1</i>	-2.0	0.8	2.5	3.2	4.2	3.1	10.4	8.8	7.1	0.8	-17.2	-26.6	-11.7	8.7	10.1	20.9	20.9
Median House Price (Existing Homes)	-1.3	0.4	-5.9	1.7	-3.8	-1.8	6.3	-0.1	7.7	3.4	5.7	-8.5	1.4	9.4	7	-1.4	3.5	3.5
Existing Homes Inventory (Mths' supply)	4	4	3.9	3.8	3.9	3.9	3.9	3.6	3.5	3.2	3.6	3.9	4.5	3.7	2.8	2.8	2.6	2.6
New Homes Inventory (Mths' supply)	6.7	5.5	6	5.5	5.3	5.5	5.6	5.3	5	5.5	6.5	6.8	5.3	4.3	3.6	3.4	3.6	3.6
NAHB Homebuilder Sentiment*	66	64	65	67	68	71	71	76	75	74	72	30	37	58	72	78	83	85
nflation																		
Consumer Price Index	1.8	1.6	1.8	1.7	1.7	1.8	2.1	2.3	2.5	2.3	1.5	0.3	0.1	0.6	1	1.3	1.4	1.2
CPI Less-food & energy	2	2.1	2.2	2.4	2.4	2.3	2.3	2.3	2.3	2.4	2.1	1.4	1.2	1.2	1.6	1.7	1.7	1.6
Producer Price Index	2.1	1.6	1.6	1.9	1.5	1	1	1.4	2	1.1	0.3	-1.5	-1.1	-0.7	-0.4	-0.2	0.4	0.5
PPI Less-food & energy	2.4	2.2	2.2	2.3	2	1.6	1.2	1.3	1.6	1.2	1.1	0.3	0.3	0.3	0.3	0.6	1.2	1.1
PCE Price Index	1.5	1.5	1.5	1.5	1.4	1.4	1.4	1.6	1.9	1.8	1.3	0.5	0.5	0.9	1	1.3	1.4	1.4
PCE Prices Less-food & energy	1.6	1.7	1.7	1.9	1.7	1.7	1.6	1.6	1.8	1.9	1.7	0.9	1.0	1.1	1.3	1.4	1.5	1.5
susiness Activity - US																		
Industrial Production	1.7	1.0	0.4	0.3	-0.2	-0.8	-0.4	-0.8	-0.9	-0.2	-4.7	-16.3	-15.7	-10.7	-6.7	-6.7	-6.7	-5.3
New Cap Gds Orders less-aircraft & parts	1.1	-1	-1.9	-1.3	1.2	-0.3	2.2	2.5	0.9	2.3	-1.1	-8.2	-7.3	-0.2	0.5	2.4	6.1	6.1
Business Inventories	5.3	5.1	4.8	4	3.4	2.9	2.7	1.9	0.8	-0.2	-0.5	-2.3	-4.8	-5.7	-5.9	-5.5	0	0
ISM Manufacturing PMI*	52.3	51.6	51.3	48.8	48.2	48.5	48.1	47.8	50.9	50.1	49.1	41.5	43.1	52.6	54.2	56	55.4	59.3
Markit US Manufacturing PMI* ISM Non-Manufacturing Index*	50.5 56.3	50.6	50.4	50.3 56	51.1	51.3	52.6 53.9	52.4	51.9 55.5	50.7	48.5	36.1 41.8	39.8 45.4	49.8 57.1	50.9	53.1	53.2	53.4
Markit US Services PMI*	50.9	55.4 51.5	54.8 53	50.7	53.5 50.9	54.4 50.6	51.6	54.9 52.8	53.4	57.3 49.4	52.5 39.8	26.7	37.5	47.9	58.1 50	56.9 55	57.8 54.6	56.6 56.9
	00.0	01.0	00	00.1	00.0	00.0	01.0	02.0	00.4	70.7	00.0	20.1	01.0	47.0	00	00	04.0	00.0
Business Activity - International Germany Manufacturing PMI Markit/BME*	44.3	45	43.2	43.5	41.7	42.1	44.1	43.7	45.3	48	45.4	34.5	36.6	45.2	51	52.2	56.4	58.2
Japan Manufacturing PMI Jibun Bank*	49.8	49.3	49.4	49.3	48.9	48.4	48.9	48.4	48.8	47.8	44.8	41.9	38.4	40.1	45.2	47.2	47.7	48.7
Caixin China Manufacturing PMI*	50.2	49.4	49.9	50.4	51.4	51.7	51.8	51.5	51.1	40.3	50.1	49.4	50.7	51.2	52.8	53.1	53	53.6
China Manufacturing PMI*	49.4	49.4	49.7	49.5	49.8	49.3	50.2	50.2	50	35.7	52	50.8	50.6	50.9	51.1	51	51.5	51.4
UK Manufacturing PMI Markit/CIPS*	49.4	48	48	47.4	48.3	49.6	48.9	47.5	50	51.7	47.8	32.6	40.7	50.1	53.3	55.2	54.1	53.7
France Manufacturing PMI Markit*	50.6	51.9	49.7	51.1	50.1	50.7	51.7	50.4	51.1	49.8	43.2	31.5	40.6	52.3	52.4	49.8	51.2	51.3
urrencies***																		
Euro (EUR/USD)	-4.5	-2.7	-5.3	-5.3	-6.1	-1.4	-2.6	-2.2	-3.1	-3.0	-1.7	-2.3	-0.6	-1.2	6.3	8.7	7.5	4.4
Renmimbi (USD/CNY)	7.7	3.7	0.9	4.8	4.1	0.9	1.0	1.2	3.2	4.5	5.5	4.9	3.4	2.9	1.4	-4.3	-5.0	-4.9
Yen (USD/Yen)	-0.5	-2.6	-2.8	-4.3	-4.9	-4.3	-3.6	-1.0	-0.5	-3.1	-3.0	-3.8	-0.4	0.1	-2.7	-0.3	-2.4	-3.1
Sterling (GBP/USD)	-5.0	-3.9	-7.4	-6.2	-5.7	1.4	1.4	3.9	0.7	-3.3	-4.7	-3.4	-2.3	-2.3	7.6	10.0	5.1	0.0
Canadian \$ (USD/CAD)	4.3	-0.3	1.4	2.1	2.6	0.1	-0.1	-4.7	0.9	1.8	5.3	4.2	2.0	3.7	1.7	-2.0	0.6	1.2
Mexican Peso (USD/MXN)	-1.5	-3.4	2.7	5.1	5.4	-5.4	-4.1	-3.7	-1.4	1.9	21.8	27.6	13.0	19.6	16.3	9.1	12.1	10.1
S Equities																		
S&P 500	1.7	8.2	5.8	0.9	2.2	12.0	13.8	28.9	19.3	6.1	-8.8	-1.1	10.6	5.4	9.8	19.6	13.0	7.7
S&P 400 Midcap	-7.0	-0.3	-0.9	-8.0	-4.2	7.1	7.0	24.1	9.4	-5.0	-23.9	-16.5	-2.6	-8.3	-5.2	2.4	-3.8	-2.8
S&P 600 Smallcap	-11.8	-6.3	-8.1	-16.4	-10.8	1.6	3.2	20.9	4.9	-9.1	-27.1	-20.9	-9.6	-12.7	-10.2	-2.2	-9.8	-9.2
Russell 2000	-10.3	-4.7	-5.8	-14.1	-10.2	3.4	6.0	23.7	7.6	-6.3	-25.1	-17.6	-4.9	-8.0	-6.0	4.5	-1.0	-1.5

Source: ISM, Federal Reserve, Census Bureau, Bureau of Labor Statistics, Conference Board, Bloomberg, William Blair

Other Economic Indicators

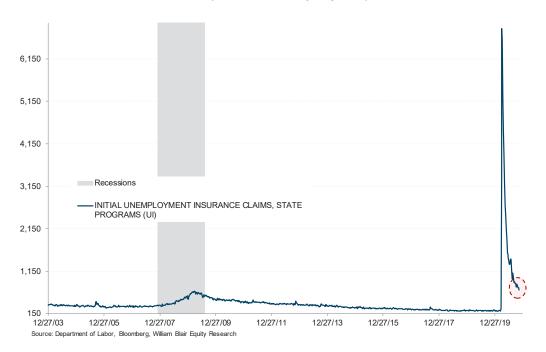


Financial Conditions Index*

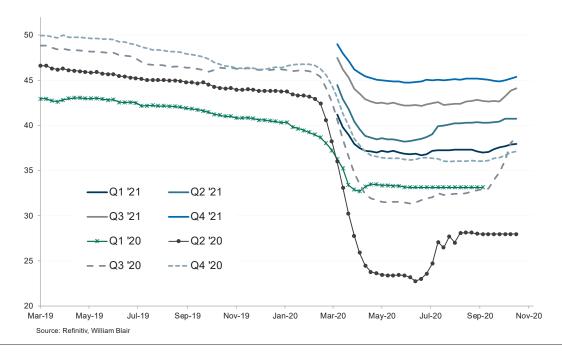


*The Goldman Sachs FCI is a weighted sum of a short-term bond yield, a long-term corporate yield, the exchange rate, and a stock market variable. Since 2005, the long-term corporate yield has been measured as a sum of the 10-year swap rate and the 10-year credit default swap spread. Source: Bloomberg, William Blair

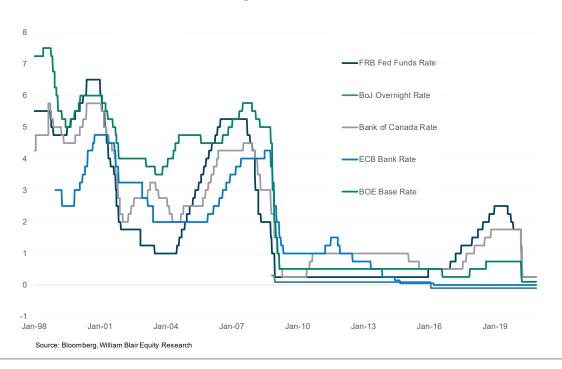
Initial Jobless Claims ('000s, Seasonally Adjusted)



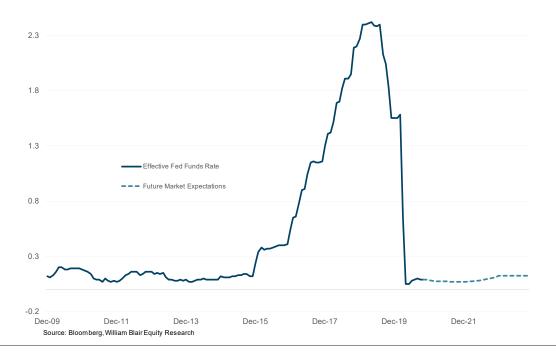
Progression of S&P 500 Bottom-Up EPS Estimates (2020 Q1 - 2021 Q4, \$/Shr)



Central Bank Target Short-term Interest Rates, %



Fed Funds Rate & Futures Market Expectations, %



S&P 500 Sector Performance

Global Industry Classification System	Current Weight* 19-Nov-20	Week Ago 12-Nov-20	Month Ago 19-Oct-20	Qtr-to-Date 30-Sep-20	Year-to-Date 31-Dec-19
S&P 500 Index S&P400 MidCap Index S&P600 SmallCap Index Dow Jones Industrials Nasdaq Composite	100.00	1.27 3.81 5.51 1.39 1.67	4.52 8.88 11.91 4.57 3.71	6.51 15.47 19.47 6.12 6.60	10.87 4.17 0.06 3.31 32.68
Communication Services	11.15	0.92	8.03	8.64	16.93
Advertising	0.07	5.54	18.71	23.60	-19.86
Alternate Carriers	0.03	2.07	2.19	-2.67	-25.66
Broadcasting	0.15	12.21	17.14	11.02	-23.03
Cable & Satellite	1.18	3.01	10.04	6.36	15.95
Integrated Telecommunication Services Interactive Home Entertainment	1.45 0.36	-0.78 0.22	5.14 -5.08	0.30 -5.71	-15.47 23.44
Interactive Media & Services	5.80	0.22	10.29	13.03	32.20
Movies & Entertainment	1.56	2.34	2.82	5.96	15.68
Publishing & Printing	0.03	6.88	27.79	25.40	23.48
Wireless Telecommunication Svcs	0.52	1.88	14.59	12.97	64.75
Consumer Discretionary	11.81	1.72	0.94	3.48	26.70
Apparel Retail	0.43	5.51	15.57	14.81	3.91
Apparel & Accessories & Luxury Goods	0.20	12.58	16.74	26.04	-17.50
Auto Parts & Equipment Automobile Manufacturers	0.13 0.31	5.54 8.33	11.23 23.36	17.94 39.66	11.62 7.24
Automobile Retail	0.27	-1.45	-2.29	-2.10	-0.27
Casinos & Gaming	0.22	9.93	33.04	28.11	-19.71
Computer & Electronics Retail	0.10	4.24	-1.66	6.77	35.34
Consumer Electronics	0.07	0.48	16.96	20.48	17.15
Distributors	0.12	1.06	0.28	9.83	-6.96
Footwear	0.53	4.16	3.52	5.07	30.20
General Merchandise Stores	0.52	3.78	1.16	5.33	28.38
Home Furnishings	0.05	7.93	11.73	18.01	-10.50
Home Improvement Retail Homebuilding	1.30 0.24	-2.89 3.73	-7.55 -3.75	-4.62 -2.57	24.30 28.11
Hotels, Resorts & Cruise Lines	0.33	6.14	24.29	23.21	-32.51
Household Appliances	0.04	4.69	-3.18	4.72	30.52
Housewares & Specialties	0.03	7.49	15.92	18.83	6.09
Internet Retail	5.52	0.59	-1.61	0.22	60.29
Leisure Products	0.04	8.94	6.01	10.92	-13.12
Restaurants	1.20	2.65	1.87	4.57	11.14
Specialty Stores	0.15	3.65	2.13	7.54	13.69
Consumer Staples	7.58	0.55	2.27	4.26	6.22
Agricultural Products	0.09	-0.83	-2.76	5.23	5.54
Brewers	0.03	4.36	26.84	31.23	-18.29
Distillers & Vintners	0.19	4.23	11.43	7.35	10.67
Drug Retail	0.11	-7.16	2.38	5.37	-35.80
Food Distributors	0.12	5.85	11.89	15.70	-15.84
Food Retail	0.08	2.28	-3.30	-3.39	13.01
Household Products	1.66	-1.09	-1.25	0.69	13.67
Hypermarkets & Supercentres Packaged Foods & Meats	1.93 1.06	2.38 0.44	4.46 0.16	8.42 1.38	29.10 1.02
Personal Products	0.18	-3.03	8.81	10.85	11.32
Soft Drinks	1.52	0.01	4.82	5.43	1.96
Tobacco	0.63	3.02	0.58	3.48	-13.37
Energy	2.21	9.56	19.95	18.09	-41.14
Integrated Oil & Gas	1.08	6.58	16.60	14.44	-40.67
Oil & Gas Equipment & Services	0.21	15.20	35.28	33.43	-44.35
Oil & Gas Exploration & Production	0.44	14.36	21.59	21.00	-42.20 42.60
Oil & Gas Refining & Marketing & Transportation Oil & Gas Storage & Transportation	0.25	11.12	30.46	22.82	-42.69 -34.53
on a das storage a Transportation	0.23	8.74	10.82	13.30	-34.53

Financials	9.88	3.04	11.28	13.62	-11.07
Asset Management & Custody Banks	0.81	2.82	4.85	16.62	3.96
•					
Consumer Finance	0.55	2.80	11.49	17.66	-11.92
Diversified Banks	2.79	3.37	15.66	16.93	-27.91
Financial Exchanges & Data	1.07	1.01	1.13	-0.53	10.58
Insurance Brokers	0.49	1.74	-0.04	0.36	3.08
Investment Banking & Brokerage	0.90	5.29	14.66	20.35	5.20
Life & Health Insurance	0.44	6.87	17.93	21.93	-16.05
Multi-line Insurance	0.19	5.33	24.32	30.93	-21.65
Multi-Sector Holdings	1.01	2.14	9.84	7.79	1.34
Property & Casualty Insurance	0.72	0.90	12.36	12.99	-1.10
Reinsurance	0.03	1.53	18.53	18.37	-15.53
Regional Banks	0.87	4.75	17.89	25.82	-14.87
Health Care	13.42	-1.54	2.57	3.06	6.78
Biotechnology	1.85	-1.61	1.65	-4.28	1.47
Health Care Distributors	0.23	-3.80	8.53	11.07	13.54
Health Care Equipment	3.55	-0.53	1.05	3.62	12.07
* *					
Health Care Facilities	0.20	4.54	14.07	21.83	0.13
Health Care Services	0.67	-4.66	12.71	14.98	-1.37
Health Care Supplies	0.27	-2.11	11.19	13.63	18.80
Health Care Technology	0.07	-1.34	0.70	0.80	-0.71
Life Sciences Tools & Services	1.16	-3.97	0.29	4.65	24.75
Managed Health Care	1.57	-5.30	2.61	8.18	11.23
8					
Pharmaceuticals	3.85	0.50	2.25	0.39	-0.14
Industrials	8.74	4.16	8.32	13.37	7.28
					-17.88
Aerospace & Defense	1.74	7.50	11.82	14.10	
Agricultural & Farm Machinery	0.26	3.06	7.31	15.32	47.52
Air Freight & Logistics	0.71	3.05	-2.61	2.67	49.11
Airlines	0.25	10.46	16.19	21.20	-35.42
Building Products	0.47	3.24	10.12	14.56	25.32
Construction & Engineering	0.07	4.17	8.65	19.26	33.44
Construction Machinery & Heavy Trucks	0.56	1.89	3.71	12.87	16.57
Diversified Support Svcs	0.21	1.58	3.77	9.55	31.55
Electrical Components & Equipment	0.48	4.25	8.36	16.46	15.12
Environmental & Facilities Services	0.33	-0.51	5.86	6.88	12.31
Human Resource & Employment Services	0.02	1.35	12.43	17.72	-1.31
Industrial Conglomerates	1.19	4.63	12.92	21.36	2.19
Industrial Machinery	0.88	2.30	8.19	13.66	12.89
Railroads	0.92	2.64	6.29	9.03	19.24
Research & Consulting Svcs	0.31	4.06	11.48	13.44	23.51
e e					
Trading Companies & Distributors	0.21	5.32	11.34	14.12	28.34
Trucking	0.12	4.60	5.64	10.68	40.94
Information Technology	27.00	0.99	1.98	3.77	32.33
Application Software	2.46	2.94	-0.14	3.06	47.03
Communications Equipment	0.77	5.18	5.48	7.15	-9.01
Data Processing & Outsourced Services	4.17	1.47	3.78	2.78	15.55
Electronic Components	0.21	5.07	9.19	15.15	20.51
Electronic Equipment & Instruments	0.16	4.67	13.77	25.20	15.63
Electronic Manufacturing Services			5.95		
	0.15	3.69		14.60	19.27
Internet Software & Services	0.13	1.05	-4.87	-5.74	8.69
IT Consulting & Services	1.07	2.08	3.24	4.92	2.97
Semiconductor Equipment	0.61	6.88			36.63
			21.58	30.11	
Semiconductors	4.30	2.12	1.57	5.72	33.28
Systems Software	6.14	-1.18	-1.29	0.75	34.01
3					
Technology Distributors	0.06	-2.05	3.04	11.08	-7.04
Technology Hardware, Storage & Peripherals	6.77	-0.15	2.49	2.83	55.31
Materials	2.65	2.86	6.55	9.60	13.62
Commodity Chemicals	0.22	9.16	10.98	17.29	-4.15
Construction Materials	0.11	2.02	0.20	8.39	-3.14
Copper	0.10	8.14	23.16	34.98	60.90
Diversified Chemicals	0.04	6.35	12.51	23.54	21.76
Fertilizers & Agricultural Chemicals	0.18	7.08	8.52	16.78	6.54
Gold	0.16	-5.55	-0.48	-3.21	41.34
Industrial Gases	0.62	0.03	3.73	0.93	17.64
Metal & Glass Containers	0.10	3.94	7.38	17.79	51.40
Paper Packaging	0.26	3.91	6.93	16.33	9.17
1 0 0					
Specialty Chemicals	0.79	3.18	7.44	9.94	10.48
Steel	0.05	6.49	7.88	17.76	-6.13

2.54	1.32	4.46	5.06	-4.29
0.20	3.50	19.74	16.07	-16.94
0.03	18.34	35.42	33.93	-22.11
0.28	-2.82	-2.35	0.23	12.13
0.16	6.79	15.04	12.04	-21.73
0.06	5.77	22.89	24.48	-4.60
0.30	1.64	17.71	16.35	-18.36
0.22	8.00	19.07	16.50	-33.56
1.29	-0.33	-2.86	-1.26	11.38
2.96	-3.08	-0.30	6.52	-2.08
2.05	-2.87	-0.27	7.76	-0.96
0.04	-3.67	0.91	-0.51	-14.99
0.04	1.65	4.93	15.29	4.64
0.09	-2.95	1.38	8.13	27.51
0.87	-3.75	-0.86	3.82	-5.75
	0.20 0.03 0.28 0.16 0.06 0.30 0.22 1.29 2.96 2.05 0.04 0.04 0.09	0.20 3.50 0.03 18.34 0.28 -2.82 0.16 6.79 0.06 5.77 0.30 1.64 0.22 8.00 1.29 -0.33 2.96 -3.08 2.05 -2.87 0.04 -3.67 0.04 1.65 0.09 -2.95	0.20 3.50 19.74 0.03 18.34 35.42 0.28 -2.82 -2.35 0.16 6.79 15.04 0.06 5.77 22.89 0.30 1.64 17.71 0.22 8.00 19.07 1.29 -0.33 -2.86 2.96 -3.08 -0.30 2.05 -2.87 -0.27 0.04 -3.67 0.91 0.04 1.65 4.93 0.09 -2.95 1.38	0.20 3.50 19.74 16.07 0.03 18.34 35.42 33.93 0.28 -2.82 -2.35 0.23 0.16 6.79 15.04 12.04 0.06 5.77 22.89 24.48 0.30 1.64 17.71 16.35 0.22 8.00 19.07 16.50 1.29 -0.33 -2.86 -1.26 2.96 -3.08 -0.30 6.52 2.05 -2.87 -0.27 7.76 0.04 -3.67 0.91 -0.51 0.04 1.65 4.93 15.29 0.09 -2.95 1.38 8.13

^{*}Current Weight is market cap based, based on calculations by William Blair Intl. Ltd.

IMPORTANT DISCLOSURES

This report is available in electronic form to registered users via R*Docs™ at https://williamblairlibrary.bluematrix.com or www.williamblair.com.

Please contact us at +18006210687 or consult williamblair.com/Research-and-Insights/Equity-Research/Coverage.aspx for all disclosures.

Richard de Chazal attests that 1) all of the views expressed in this research report accurately reflect his/her personal views about any and all of the securities and companies covered by this report, and 2) no part of his/her compensation was, is, or will be related, directly or indirectly, to the specific recommendations or views expressed by him/her in this report. We seek to update our research as appropriate. Other than certain periodical industry reports, the majority of reports are published at irregular intervals as deemed appropriate by the research analyst.

DOW JONES: 29483.20 S&P 500: 3581.87 NASDAQ: 11904.70

Additional information is available upon request.

Current Rating Distribution (as of November 19, 2020):

Coverage Universe	Percent	Inv. Banking Relationships *	Percent	
Outperform (Buy)	73	Outperform (Buy)	22	
Market Perform (Hold)	27	Market Perform (Hold)	8	
Underperform (Sell)	1	Underperform (Sell)	0	

^{*}Percentage of companies in each rating category that are investment banking clients, defined as companies for which William Blair has received compensation for investment banking services within the past 12 months.

The compensation of the research analyst is based on a variety of factors, including performance of his or her stock recommendations; contributions to all of the firm's departments, including asset management, corporate finance, institutional sales, and retail brokerage; firm profitability; and competitive factors.

OTHER IMPORTANT DISCLOSURES

Stock ratings and valuation methodologies: William Blair & Company, L.L.C. uses a three-point system to rate stocks. Individual ratings reflect the expected performance of the stock relative to the broader market (generally the S&P 500, unless otherwise indicated) over the next 12 months. The assessment of expected performance is a function of near-, intermediate-, and long-term company fundamentals, industry outlook, confidence in earnings estimates, valuation (and our valuation methodology), and other factors. Outperform (0) - stock expected to outperform the broader market over the next 12 months; Market Perform (M) - stock expected to perform approximately in line with the broader market over the next 12 months; Underperform (U) - stock expected to underperform the broader market over the next 12 months; not rated (NR) - the stock is not currently rated. The valuation methodologies include (but are not limited to) price-to-earnings multiple (P/E), relative P/E (compared with the relevant market), P/E-to-growth-rate (PEG) ratio, market capitalization/revenue multiple, enterprise value/EBITDA ratio, discounted cash flow, and others. Stock ratings and valuation methodologies should not be used or relied upon as investment advice. Past performance is not necessarily a guide to future performance.

The ratings and valuation methodologies reflect the opinion of the individual analyst and are subject to change at any time.

Our salespeople, traders, and other professionals may provide oral or written market commentary, short-term trade ideas, or trading strategies-to our clients, prospective clients, and our trading desks-that are contrary to opinions expressed in this research report. Certain outstanding research reports may contain discussions or investment opinions relating to securities, financial instruments and/or issuers that are no longer current. Always refer to the most recent report on a company or issuer. Our asset management and trading desks may make investment decisions that are inconsistent with recommendations or views expressed in this report. We will from time to time have long or short positions in, act as principal in, and buy or sell the securities referred to in this report. Our research is disseminated primarily electronically, and in some instances in printed form. Research is simultaneously available to all clients. This research report is for our clients only. No part of this material may be copied or duplicated in any form by any means or redistributed without the prior written consent of William Blair & Company, L.L.C.

This is not in any sense an offer or solicitation for the purchase or sale of a security or financial instrument. The factual statements herein have been take from sources we believe to be reliable, but such statements are made without any representation as to accuracy or completeness or otherwise, except with respect to any disclosures relative to William Blair or its research analysts. Opinions expressed are our own unless otherwise stated and are subject to change without notice. Prices shown are approximate.

This material is distributed in the United Kingdom and the European Economic Area (EEA) by William Blair International, Ltd., authorised and regulated by the Financial Conduct Authority (FCA). William Blair International, Limited is a limited liability company registered in England and Wales with company number 03619027. This material is only directed and issued to persons regarded as Professional investors or equivalent in their home jurisdiction, or persons falling within articles 19 (5), 38, 47, and 49 of the Financial Services and Markets Act of 2000 (Financial Promotion) Order 2005 (all such persons being referred to as "relevant persons"). This document must not be acted on or relied on by persons who are not "relevant persons."

"William Blair" and "R*Docs" are registered trademarks of William Blair & Company, L.L.C. Copyright 2020, William Blair & Company, L.L.C. All rights reserved.

William Blair & Company, L.L.C. licenses and applies the SASB Materiality Map® and SICSTM in our work.