

**MUFG UNION BANK, N.A.**  
**ECONOMIC RESEARCH (NEW YORK)**  
**CHRISTOPHER S. RUPKEY, CFA**  
**MANAGING DIRECTOR**  
**CHIEF FINANCIAL ECONOMIST**  
**(212) 782-5702**  
**crupkey@us.mufg.jp**

18 DECEMBER 2020

**MUFG Bank, Ltd.**  
 A member of MUFG, a global financial group

## BOND MARKET VALUATION

Bond market valuation assuming they hold value to anyone with yields down close to zero and under 1%. Owing bonds might produce losses where they used to provide an offset for risk in the equity markets, the old model portfolio holding 60% stocks and 40% bonds for the long run.

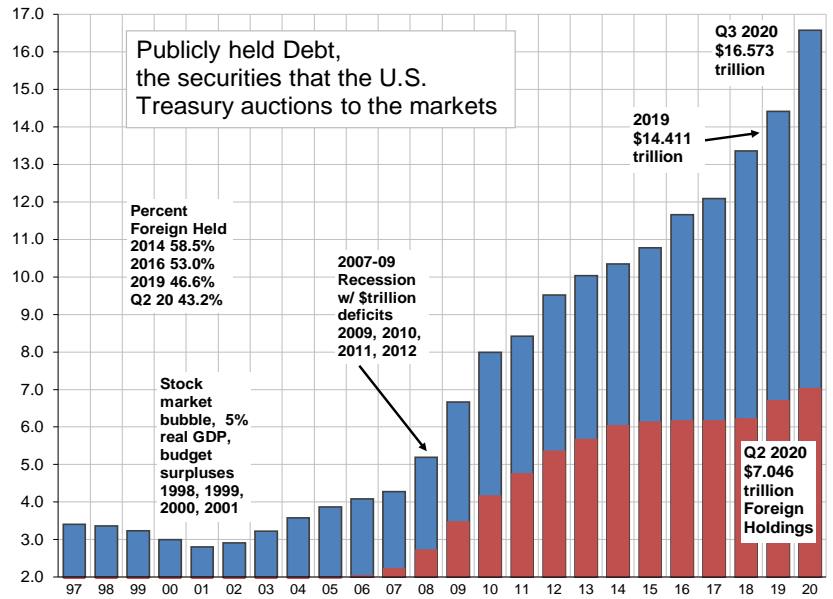


	10-yr Treasury Yield	PCE Inflation	Real Yield bps
2002	4.61	1.3	331
2003	4.01	1.9	211
2004	4.27	2.5	177
2005	4.29	2.8	149
2006	4.80	2.7	210
2007	4.63	2.5	213
2008	3.66	3.0	66
2009	3.26	-0.1	336
2010	3.22	1.7	152
2011	2.78	2.5	28
2012	1.80	1.9	-10
2013	2.35	1.3	105
2014	2.54	1.5	104
2015	2.14	0.2	194
2016	1.84	1.0	84
2017	2.33	1.8	53
2018	2.91	2.1	81
2019	2.14	1.5	64
2020	0.89	1.2	-31
2020-to October			

There is not a lot stopping 10-yr Treasury yields from trading at 1.25% or 100 bps over the Fed funds rate. The current 10-year note, the 0.875s of 2030, assuming we all live that long, gives you an annual income of 0.875%, but closing at 99-10 for a yield of 0.95% on Friday, December 18, a yield of 1.25% next year would mean a price of 96-16 where you just lost two and three quarter percent of your principal.

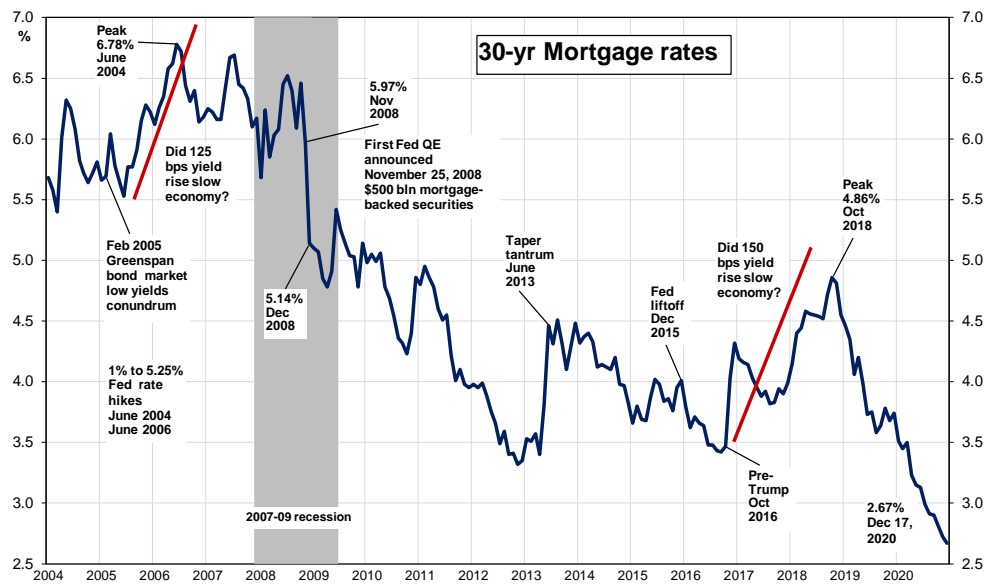
It's been a great ride for bonds under Fed Chair Powell up and down. He came aboard in February 2018 (time's up February 2022) and raised interest rates that elected officials down in Washington so appreciated: the first time from 1.5% to 1.75% on March 21, 2018. Just raising interest rates 25 bps per quarter was seen as too fast and the final hike to 2.5% on December 19, 2018 too high. We guess the twitter criticism was too much and Fed Chair Powell on his own walked back the FOMC forecasts

for more rate hikes in 2019 in the first days of January 2019, a decision helped along by the stock market's 20.2% loss from record highs in December. Bonds closed January 2020 at 1.51% before the market's pandemic fears really got going and the Fed crushed rates 150 bps in March. Technically, the October 2018 high was 3.26% and the low was 0.31% in March 2020, and bond yields are having trouble retracing more than a third of the move down and cannot get through 1.00% at the moment. That probably won't be the case for too long next year, and we put out a new interest rate forecast on page 3 of this report that looks for 10-year Treasury yields to end 2021 at 1.3 percent which is within a tenth or so of every other Wall Street economist's forecast next year.



Where will bond yields go in 2021? Well, we just told you within a tenth or two, but we kind of forgot ourselves to be honest, not much of an attention span anymore, as the bond market has been less interesting to write about lately with sub-1% yields [guess we could go back to the old benchmark long bond, 30-year Treasury at 1.69% Friday, the benchmark before the U.S. Treasury eliminated it on Halloween not long after 9/11 in 2001 for some reason... and it never came back as the benchmark of the Treasury market for some reason]. Fair value for 10-yr yields is certainly as high as 1.25% in 2021 if the vaccines help stop the spread of the virus. One risk for even higher yields is whether

foreigners stop holding onto as much of our National Debt. At the moment, foreign investors see U.S. debt as a political safe haven even if they are not buying much lately. The current percentage that foreigners hold of privately-held U.S. Treasury securities outstanding is 43.2% (Q2 2020) and it has moved down from 53.0% over the full year in 2016 before Trump took office. The

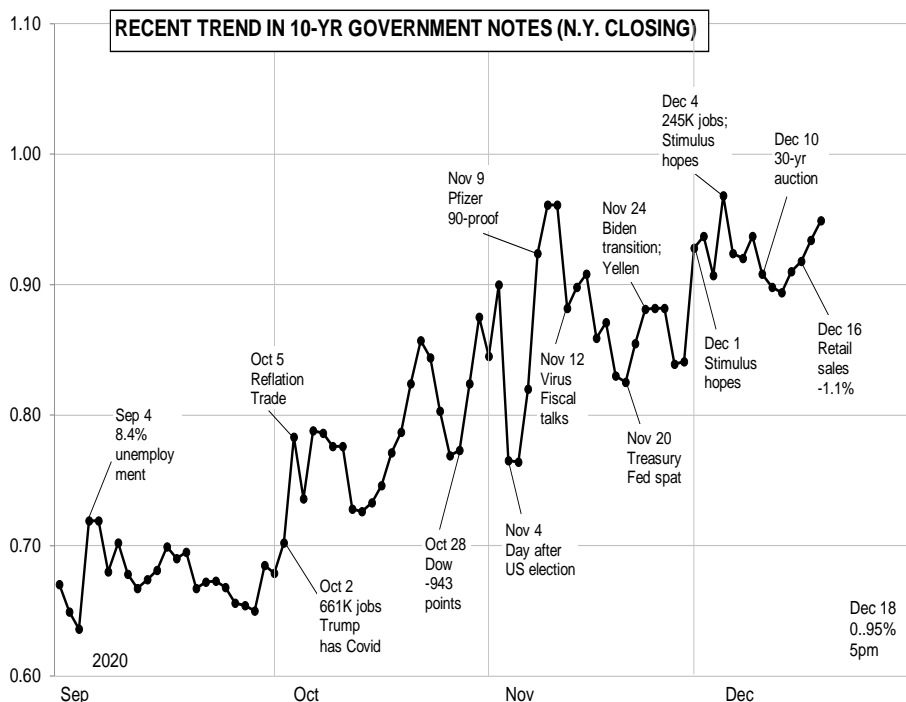


Federal Reserve stands in the way of the risk of higher yields next year certainly: keeping rates at zero and buying \$80 billion monthly. As much as we would like to see yields normalize, and realizing Powell wants to see "maximum employment" with record low 3.5% unemployment again first, one risk for the economy is that the low yields policy has brought down mortgage yields. If mortgage yields rise 150 bps or so that could be a problem for the housing sector even if it might help temper the rise in home prices that have made housing even more unaffordable in a market where there are housing shortages. Powell said Wednesday that a bunch of home builders told him there was no bubble.

## MARKETS OUTLOOK

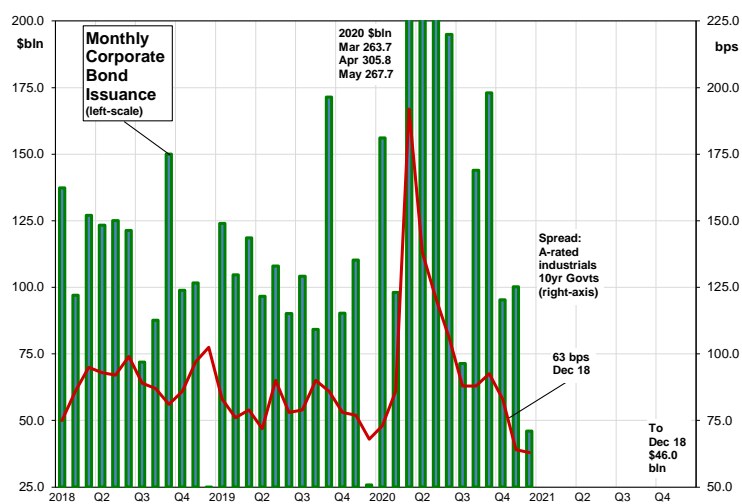
	31-Dec 2019	31-Mar 2020	30-Jun 2020	30-Sep 2020	18-Dec 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022
30-Yr Treasury	2.39	1.32	1.41	1.46	1.69	1.80	1.90	2.00	2.10	2.10
10-Yr Note	1.92	0.67	0.66	0.69	0.95	1.00	1.10	1.20	1.30	1.30
5-Yr Note	1.69	0.38	0.29	0.28	0.38	0.50	0.60	0.60	0.70	0.70
2-Yr Note	1.57	0.25	0.15	0.13	0.12	0.20	0.30	0.30	0.40	0.40
3-month Libor	1.90	1.45	0.30	0.23	0.24	0.20	0.20	0.20	0.20	0.20
Fed Funds Rate	1.75	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
2s/10s spread	35	42	51	56	83	80	80	90	90	90

Bond yields closed 0.95% this week after 0.90% last week. Yields drifted higher on fiscal stimulus news even if the relief being contemplated will not do much for leisure and hospitality which remains the economy's weak spot until the virus is gone. Some excitement this week with the Fed announcement not buying more bonds and yields rose from 0.91% to 0.95%. Yields came back down after an hour, some stretching to make the case the Fed will buy \$80 billion monthly for longer perhaps. Unemployment claims jumped to 885K Thursday and yields fell from 0.93% to 0.89%, but yields were higher at 0.94% shortly after noon as fiscal talks are on the "one-yard line" perhaps. Consensus is 10-year yields at 1.2% this time next year. We'll see.



## CORPORATE BONDS: YEAR IS OVER \$1.913 TRILLION, \$1.218 TRILLION 2019

Corporate bond offerings were \$3.2 billion in the December 18 week versus \$24.8 billion in the December 11 week. On Monday, Microchip Technology priced a \$1.4 billion 0.972% 3-yr (m-w +15bp) at 80 bps, rated Baa3/BBB- (Moody's/Fitch). The company, which provides microcontroller, analog, mixed signal, and specialized semiconductor solutions, will use the proceeds to repay substantially all the amounts outstanding under its term loan due in 2025. Corporate bond yields (10-yr Industrials rated A2) were 63 bps above 10-yr Treasuries Friday versus 65 bps last week.



## FEDERAL RESERVE POLICY

The Fed met December 15-16, 2020 to consider its monetary policy. The Federal Reserve's press statement had little to add to our understanding of the Fed's current stance of monetary policy. Free money even though interest-rate sensitive sectors of the economy are doing well. Fed Chair Powell said in Q&A he didn't see any asset bubbles, so it looks like interest rates will be zero for 7 years again just like they were after the Great Recession. Bond traders were clamoring for clarification of its goals for bond purchases, and as with many things in life, getting the clarification adds virtually nothing to what we already suspected. But it's in writing now for all to see and ponder. They will continue with their purchases until "substantial further progress has been made toward the Committee's maximum employment and price stability goals." That's going to be a while as Fed Chair Powell has said he liked the 3.5% record low for unemployment in February, and with unemployment at 6.7% in November, it could be some time before they make additional progress at putting America's jobless back to work.

Interest rates will continue to stay low as far as Fed officials can see with their forecasts out to the end of 2023. Five out of seventeen see higher interest rates by the end of 2023 and just one sees liftoff by 2022. At the September meeting, four out of seventeen saw higher interest rates by the end of 2023. The consensus is building slowly so buy all the stocks and Bitcoin you can.

The Federal Reserve's extraordinary monetary policy stimulus will continue for a long time and the wind down is even further away as Covid-19 continues to spread through the nation and it could be years before the Federal Reserve makes substantial further progress at pushing down unemployment to pre-pandemic levels earlier this year and pushing up the rate of inflation to 2%. We hope this is correct. They have not forecast an interest rate hike at the end of 2023 even with the unemployment rate at 3.7%, perhaps because PCE inflation won't be above 2.0%. Stay tuned. The next Fed forecasts are out March 17, 2021 at 2pm ET. We'll talk then.

Fed Policy-key variables					Long
	2020	2021	2022	2023	Term
Fed funds	0.1	0.1	0.1	0.1	2.5
PCE inflation	1.2	1.8	1.9	2.0	2.0
Unemployed	6.7	5.0	4.2	3.7	4.1
GDP	-2.4	4.2	3.2	2.4	1.8
December 2020 median Fed forecasts					

Selected Fed assets and liabilities					March 11
billions, Wednesday data					2020**
Factors adding reserves					pre-Covid
Fed H.4.1 statistical release					
U.S. Treasury securities	4662.841	4630.538	4614.410	4606.580	2523.031
Federal agency debt securities	2.347	2.347	2.347	2.347	2.347
Mortgage-backed securities (MBS)	2079.093	2003.656	2003.621	2003.592	1371.846
Repurchase agreements	1.000	1.000	1.000	1.000	242.375
Primary credit (Discount Window)	1.871	1.952	1.992	2.428	0.011
MMLF	4.449	4.449	4.492	5.192	
PDCF	0.350	0.250	0.250	0.240	
Commercial Paper Funding Facility	8.557	8.557	8.563	8.557	
Paycheck Protection Facility	52.139	52.776	54.879	56.003	
Corporate Credit Facility (CCF)	46.286	46.138	46.078	45.982	
Municipal Liquidity Facility	21.267	16.359	16.556	16.555	
Main Street Lending Program	47.515	44.821	43.783	43.371	
Term Asset-Backed Facility (TALF II)	12.464	12.463	12.118	12.294	
Central bank liquidity swaps	10.048	9.565	8.449	7.845	0.058
Federal Reserve Assets	7411.4	7291.5	7270.7	7265.1	4360.0
3-month Libor %	0.24	0.22	0.23	0.23	0.77
Factors draining reserves					
Currency in circulation	2068.090	2066.759	2067.772	2066.001	1818.957
Term Deposit Facility	0.000	0.000	0.000	0.000	0.000
U.S. Treasury Account at Fed	1615.873	1502.361	1557.239	1484.036	372.337
Treasury credit facilities contribution	114.000	114.000	114.000	114.000	
Reverse repurchases w/others	0.026	0.003	0.001	0.000	1.325
<b>Reserve Balances (Net Liquidity)</b>	<b>3168.826</b>	<b>3147.656</b>	<b>3101.235</b>	<b>3143.863</b>	<b>1779.990</b>
Treasuries within 15 days	83.472	41.310	56.723	78.785	21.427
Treasuries 16 to 90 days	306.309	345.014	335.898	290.750	221.961
Treasuries 91 days to 1 year	647.778	637.152	630.853	668.914	378.403
Treasuries over 1-yr to 5 years	1742.438	1737.549	1726.236	1711.895	915.101
Treasuries over 5-yrs to 10 years	832.286	830.650	829.664	826.697	327.906
Treasuries over 10-years	1050.559	1038.864	1035.037	1029.539	658.232
**March 11, 2020 start of coronavirus lockdown of country					
MMLF: Money Market Mutual Fund Liquidity Facility; loans secured by assets bought by banks from money market funds					
PDCF: Primary Dealer Credit Facility; o/n and term funding with maturities to 90 days					
CCF: Corporate credit facility; Primary market (PMCCF) and Secondary Market (SMCCF)					

### November 5

In addition, over coming months the Federal Reserve will increase its holdings of Treasury securities and agency mortgage-backed securities at least at the current pace to sustain smooth market functioning and help foster accommodative financial conditions, thereby supporting the flow of credit to households and businesses.

### December 16

In addition, the Federal Reserve will continue to increase its holdings of Treasury securities by at least \$80 billion per month and of agency mortgage-backed securities by at least \$40 billion per month until substantial further progress has been made toward the Committee's maximum employment and price stability goals. These asset purchases help foster smooth market functioning and accommodative financial conditions, thereby supporting the flow of credit to households and businesses.

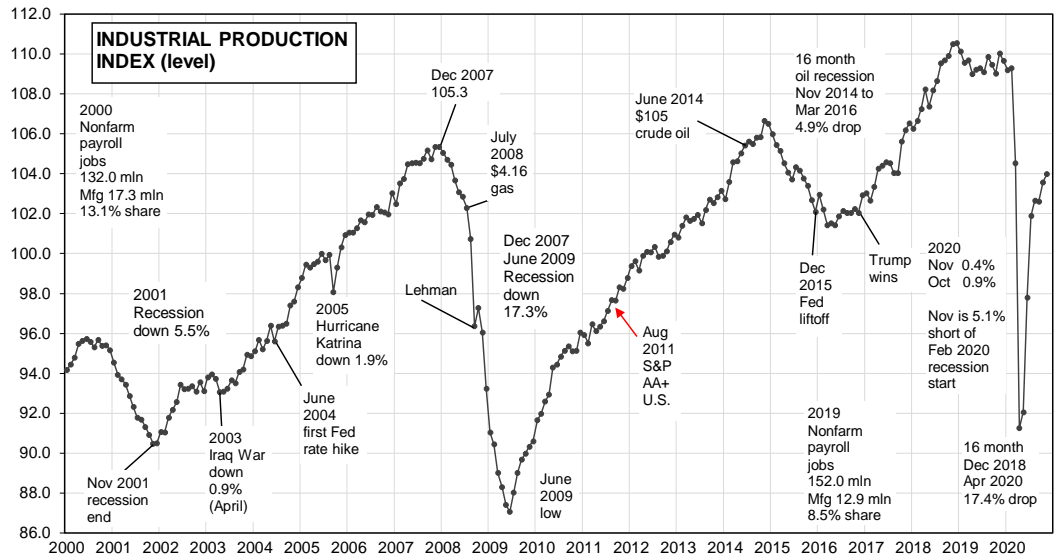
Guidance on the path of asset purchases "until substantial further progress" on max employment and 2% inflation goals  
 Max employment: 6.7%  
 Unemployment November 2020  
 Inflation PCE inflation: 1.2% Oct 2020

## OTHER ECONOMIC NEWS THIS WEEK

### Industrial production has recovered two-thirds of pandemic loss (Tuesday)

Breaking economy news. We too would like to congratulate Biden on his victory. In other news, industrial production rose 0.4% in November and time will tell if output continues its recovery with the lockdowns becoming much more strict around the country in the final month of the year. Industrial production increased 0.4% this month but with favorable revisions, the level of output is 0.8% higher than last month's report.

Manufacturing production was up 0.8% in November thanks to a 5.3% jump in motor vehicles and parts production, and was 1.2% higher than the preliminary reading a month ago. The peak was 106.4 in December 2018 and it is 101.1 in November 2020 so there is still room for improvement.



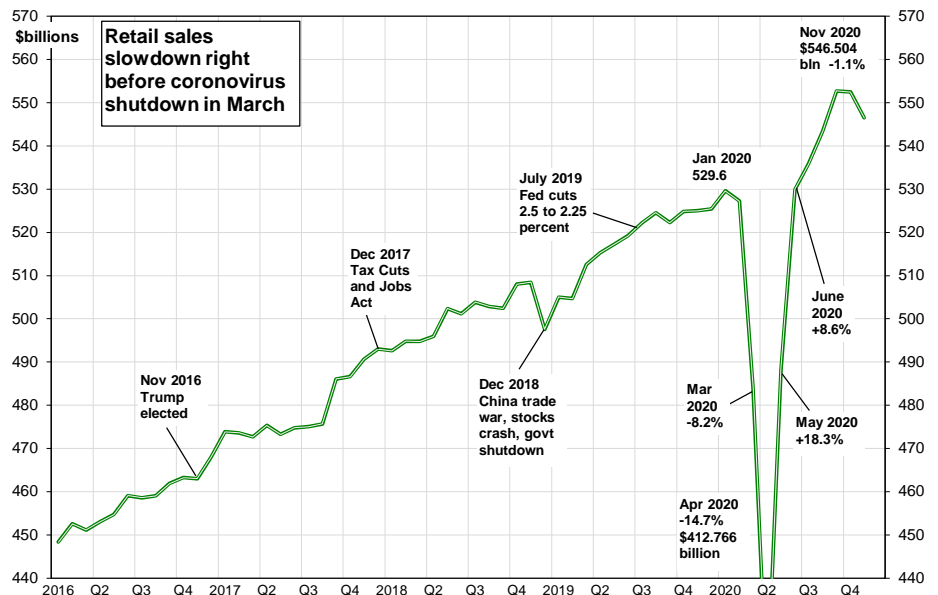
Net, net, the wheels of factory production are spinning at a moderate pace with manufacturing getting closer to the pre-pandemic highs in February. How long factory output can continue to improve is the question as the new lockdowns in most states are making it harder for workers to remain healthy enough to be able to hit the shop floors and produce the goods that companies need to deliver their own products and services to their clients and customers. Auto output is behind a lot of the gains, but we need to be mindful that car and light truck sales fell 4.3% from 16.3 million at an annual rate in October to 15.6 million in November. The auto industry will not produce as much if consumers are locked back down and decide to halt their purchases of new cars and SUVs. Stay tuned. Story developing.

Percent changes			Industrial Production November 2020	
Sep	Oct	Nov	YOY	Weight
-0.1	0.9	0.4	<u>-5.5 Total Index</u>	<u>100.0</u>
0.1	1.1	0.8	-3.7 Manufacturing	75.3
1.0	-0.7	2.3	-12.5 Mining	14.2
-2.2	1.8	-4.3	-8.9 Utilities	10.4
			Manufacturing payroll jobs 12.2 million -615 YOY 10.1% of Private Payroll Jobs	

## Retail sales plummet as the coronavirus spreads, keeping shoppers at home (Wednesday)

Breaking economy news. Retail sales collapsed 1.1% in November and October's 0.3% gain is now a decline of 0.1%. The old rule of thumb for forecasters is that three consecutive months of declining retail sales means the economy is in recession and it will take a miracle to keep retail sales positive in December when the biggest state in the nation issued its strictest stay-at-home orders yet. Coming in today retail sales looked like it would jump 7.2% in the fourth quarter this year, but now that growth has been cut in half with a gain of just 3.3% seen assuming no change in retail sales in December.

The new Covid-19 outbreak is everywhere in this report with food and beverage store sales up 1.6%, and building material and garden stores up 1.1% reflecting the stay at home and build a new home reality for the economy. Internet sales were up 0.2% in November and are 29.2% higher than a year ago with the \$87.471 billion of sales this month making up 16.0% of total retail sales. A year ago, Internet sales were 12.9% of total retail sales. There are still bricks and mortar store sales, but the direction is clear. Every other category of retail spending was down in November with clothing down 6.8% and bars and restaurants down 4.0%. Department stores, when were you last in one, department store sales fell 7.7%. Retail sales plummeted this month as the coronavirus spread, keeping shoppers at home, and it looks like mall and retail store traffic is even weaker in December.



Every other category of retail spending was down in November with clothing down 6.8% and bars and restaurants down 4.0%. Department stores, when were you last in one, department store sales fell 7.7%. Retail sales plummeted this month as the coronavirus spread, keeping shoppers at home, and it looks like mall and retail store traffic is even weaker in December.

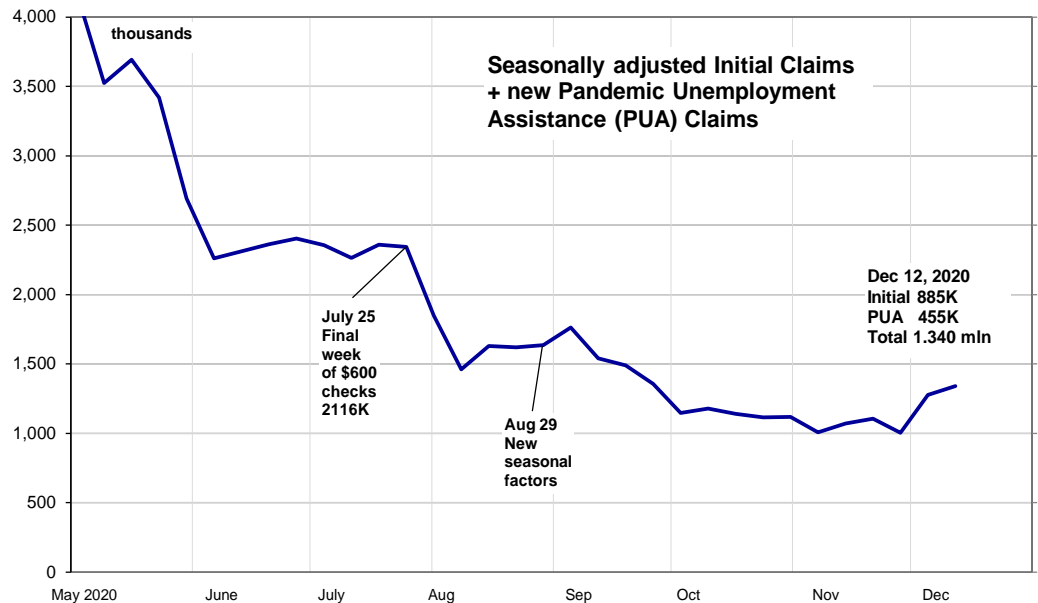
Net, net, this month the consumer stayed at home and spent much less money at the shops and malls as the rapid spread of the coronavirus pandemic across the nation threatens to throw the economy back into recession. Consumers are two-thirds of the economy, and if they aren't spending, there won't be enough growth to create the new employment opportunities that will put the millions and millions of unemployed back to work. The only ray of hope is that the sharp drop in retail sales today will light a fire under Washington's elected officials to work harder to get a fiscal support package done. The only caveat is that they are trying to get a modest relief package done to help those in need rather than a trillion-dollar mega-package like the Cares Act in March that turned the recession around quickly with a recovery that was V-shaped for a time. But that time has passed, the outlook now for the economy is grim despite the miracle vaccines that are on the way and the economy is likely to weaken further in the next couple of months as the lockdowns will sharply curtail retail spending and bring the economy to the edge of a new recession.

	Retail spending, actual dollars, each month				
	\$million	% to Total	Percent Changes %		
	Nov 2020	Total	Nov	Oct	Year/year
Total Retail Sales	546,504	100.0	-1.1	-0.1	4.1
Motor vehicles/parts	112,832	20.6	-1.7	0.0	6.0
Furniture/furnishings	10,309	1.9	-1.1	0.2	3.6
Electronics/appliances	7,415	1.4	-3.5	1.1	-8.3
Building materials/garden	38,269	7.0	1.1	0.1	18.7
Food & beverage	71,372	13.1	1.6	-0.7	10.9
Health/personal care	30,942	5.7	-0.7	-0.7	3.5
Gasoline stations	35,106	6.4	-2.4	-0.2	-17.1
Clothing/accessories	18,483	3.4	-6.8	-3.4	-16.1
Sporting goods, books	7,785	1.4	-0.6	-0.8	19.6
General merchandise	61,575	11.3	-1.0	-1.1	3.4
Department stores	8,990	1.6	-7.7	-4.9	-19.0
Miscellaneous retailers	11,741	2.1	-0.5	0.0	0.9
Nonstore retailers (internet)	87,471	16.0	0.2	2.4	29.2
Eating & drinking places	53,204	9.7	-4.0	-0.5	-17.2

## Job layoffs are rising unless you work in residential housing construction (Thursday)

Breaking economy news. Jobless claims are rising, but the stock market is focused on the year ahead and is betting the robust housing construction numbers point the way for a stronger economic outlook in 2021 as the miracle vaccines come on line. The coronavirus pandemic has split the economy in two where the winners are interest-rate sensitive sectors of the economy like housing and the stock market, while the losers employed in the leisure and hospitality industries are falling further and further behind. It is a sure bet that few of the rising numbers of Americans applying for unemployment benefits are working from home for major U.S. corporations and this is making this recession one of the worst on record for income-inequality.

Initial unemployment claims rose 23 thousand to 885 thousand in the December 12 week and the situation is likely to worsen for the labor markets as more states shut down heading into year-end. Layoffs of gig workers and the self-employed in the Pandemic Unemployment Assistance program filed 455 thousand claims in the December 12 week up from 415 thousand the week before.



Meanwhile, housing permits soared 6.2% in November to 1.639 million so if you think the bubble in housing prices is partly caused by a shortage of homes, help is on the way. Builders have taken out more permits than any time since 2006 before the housing bust over a decade ago. Most of the increase was in multi-family dwellings of 5 units or more, probably because no one can afford a new single-family home as prices are sky-high with the Fed's easy money policies and the public's Covid-19 exodus from the cities.

Net, net, joblessness has taken a turn for the worse as the case count from the pandemic soars to new highs, but the housing sector is one of the few winners in the Covid lockdown economy as new stay-at-home housing construction continues to thrive. Stay tuned. It will be a good New Year for some if you are on the right side of the worst downturn since the Great Depression.

### Housing Permits Total, Single-Family, Multi-Family

	United States		Northeast		Midwest		South		West		
	Total	1 unit	Multi	Total	1 unit	Total	1 unit	Total	1 unit	Total	1 unit
Nov 20	1639	1143	441	149	67	219	145	868	657	403	274
Oct 20	1544	1128	359	132	60	211	145	829	652	372	271
Nov 19	1510	935	534	172	57	208	113	759	528	371	237
% Chgs											
Nov/Oct	6.2	1.3	...	12.9	11.7	3.8	0.0	4.7	0.8	8.3	1.1
Nov/Nov	8.5	22.2	...	-13.4	17.5	5.3	28.3	14.4	24.4	8.6	15.6

---

## Analyst Certification

The views expressed in this report accurately reflect the personal views of **Christopher S. Rupkey**, the primary analyst responsible for this report, about the subject securities or issuers referred to herein, and no part of such analyst's compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed herein.

The information herein is provided for information purposes only, and is not to be used or considered as an offer or the solicitation of an offer to sell or to buy or subscribe for securities or other financial instruments. Neither this nor any other communication prepared by MUFG Bank, Ltd. (collectively with its various offices and affiliates, "MUFG Bank") or should be construed as investment advice, a recommendation to enter into a particular transaction or pursue a particular strategy, or any statement as to the likelihood that a particular transaction or strategy will be effective in light of your business objectives or operations. Before entering into any particular transaction, you are advised to obtain such independent financial, legal, accounting and other advice as may be appropriate under the circumstances. In any event, any decision to enter into a transaction will be yours alone, not based on information prepared or provided by MUFG Bank. MUFG Bank hereby disclaims any responsibility to you concerning the characterization or identification of terms, conditions, and legal or accounting or other issues or risks that may arise in connection with any particular transaction or business strategy. While MUFG Bank believes that any relevant factual statements herein and any assumptions on which information herein are based, are in each case accurate, MUFG Bank makes no representation or warranty regarding such accuracy and shall not be responsible for any inaccuracy in such statements or assumptions. Note that MUFG Bank may have issued, and may in the future issue, other reports that are inconsistent with or that reach conclusions different from the information set forth herein. Such other reports, if any, reflect the different assumptions, views and/or analytical methods of the analysts who prepared them, and MUFG Bank is under no obligation to ensure that such other reports are brought to your attention.

Copyright 2020 MUFG All Rights Reserved

The articles and opinions in this publication are for general information only, are subject to change, and are not intended to provide specific investment, legal, tax or other advice or recommendations. The information contained herein reflects the thoughts and opinions of the noted authors only, and such information does not necessarily reflect the thoughts and opinions of MUFG or its management team. We are not offering or soliciting any transaction based on this information. We suggest that you consult your attorney, accountant or tax or financial advisor with regard to your situation. Although information has been obtained from sources we believe to be reliable, neither the authors nor MUFG vouch for its accuracy, and such information may be incomplete or condensed. Neither the authors nor MUFG shall be liable for any typographical errors or incorrect data obtained from reliable sources or factual information.

About Mitsubishi UFJ Financial Group, Inc.'s U.S. Operations including MUFG Americas Holdings Corporation

The U.S. operations of Mitsubishi UFJ Financial Group, Inc. (MUFG), one of the world's leading financial groups, has total assets of \$341.4 billion at December 31, 2019. As part of that total, MUFG Americas Holdings Corporation (MUAH), a bank holding company and intermediate holding company, has total assets of \$170.8 billion at December 31, 2019. MUAH's main subsidiaries are MUFG Union Bank, N.A. and MUFG Securities Americas Inc. MUFG Union Bank, N.A. provides a wide range of financial services to consumers, small businesses, middle-market companies, and major corporations. As of December 31, 2019, MUFG Union Bank, N.A. operated 349 branches, consisting primarily of retail banking branches in the West Coast states, along with commercial branches in Texas, Illinois, New York and Georgia. MUFG Securities Americas Inc. is a registered securities broker-dealer which engages in capital markets origination transactions, private placements, collateralized financings, securities borrowing and lending transactions, and domestic and foreign debt and equities securities transactions. MUAH is owned by MUFG Bank, Ltd. and Mitsubishi UFJ Financial Group, Inc. MUFG Bank, Ltd., a wholly owned subsidiary of Mitsubishi UFJ Financial Group, Inc., has offices in Argentina, Brazil, Chile, Colombia, Peru and Canada as well as branches, agencies and representative offices in the U.S. Visit <https://www.unionbank.com/> or <https://www.mufgamericas.com/> for more information.

About MUFG

Mitsubishi UFJ Financial Group, Inc. (MUFG) is one of the world's leading financial groups. Headquartered in Tokyo and with over 360 years of history, MUFG has a global network with over 3,000 locations in more than 50 countries. The Group has over 180,000 employees and offers services including commercial banking, trust banking, securities, credit cards, consumer finance, asset management, and leasing. The Group aims to "be the world's most trusted financial group" through close collaboration among our operating companies and flexibly respond to all of the financial needs of our customers, serving society, and fostering shared and sustainable growth for a better world. MUFG's shares trade on the Tokyo, Nagoya, and New York stock exchanges. For more information, visit <https://www.mufg.jp/english>.