

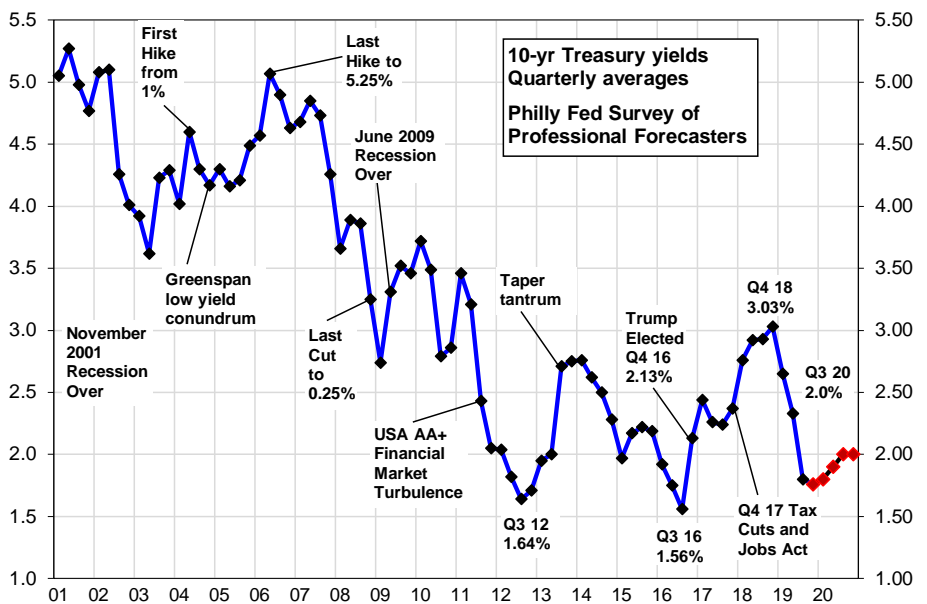
MUFG UNION BANK, N.A.
 ECONOMIC RESEARCH (NEW YORK)
 CHRISTOPHER S. RUPKEY, CFA
 MANAGING DIRECTOR
 CHIEF FINANCIAL ECONOMIST
 (212) 782-5702
 crupkey@us.mufg.jp

20 DECEMBER 2019

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

BOND VALUATION: IS THERE VALUE IN CURRENT YIELDS

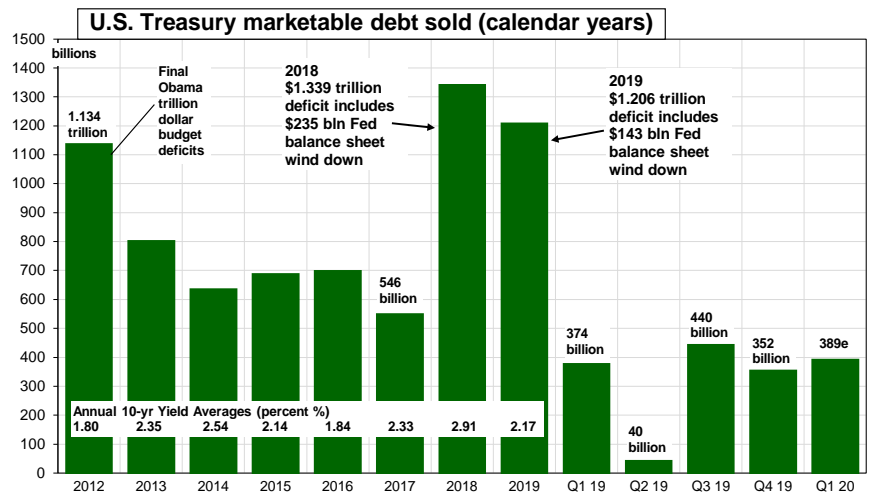
Bond yields are easier to forecast than the stock market. The stock market goes up in value as companies make more money, even if the price-earnings ratio can vary widely in good times and in bad economic times. The S&P 500 PE ratio based on 12-month trailing earnings closed Friday at 21.51 with the index up 28.6% this year. Stocks, Dow industrials, are up 55% since Trump was elected with maybe half of that increase due to the Tax Cuts and Jobs Act (51-49 Senate vote) or the “biggest corporate tax cut in history.” One can only wonder what would happen if the corporate tax cut went away. Not that we are wondering, speculating. We remain neutral in politics.



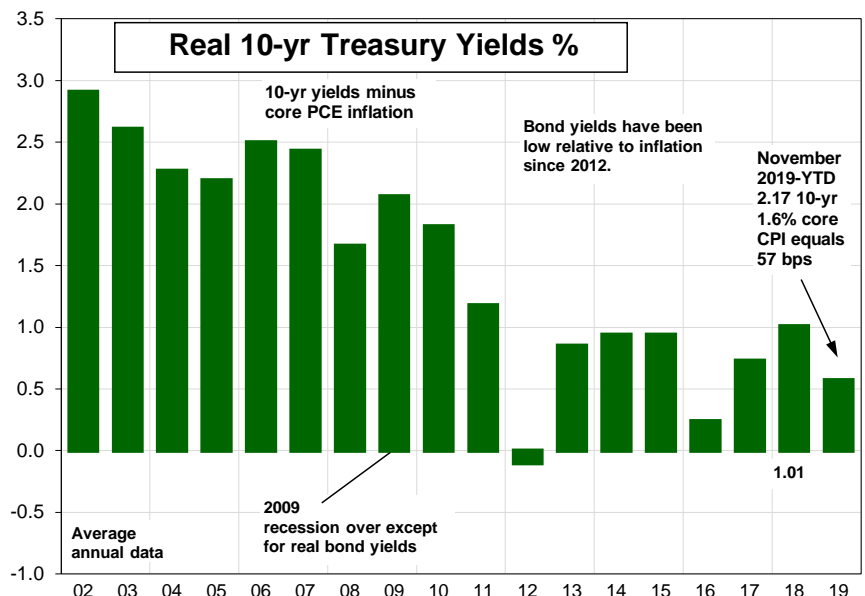
Unlike equity markets, the bond market sticks a little closer to its traditional value markers like Fed policy, where the Fed funds rate is, and inflation, and supply (Treasury auctions) and demand (investors). Although bond yields fell sharply this year as the stock market discounted a recession late in 2018, even before the trade war with China escalated in early May 2019, (S&P 500 down 20.2%), there were days where the bond market sold off, starting with January 4 this year with a big jobs report and Powell saying the Fed could be “patient” with those two rate hikes to 3.0% they forecast at the December 2018 meeting.

Yield	BPS	Date	Reason
2.67	12.0	Jan 4	+312K jobs; Powell "patient"
1.90	12.0	Sep 13	Retail sales (ECB rate cut Sep 12)
1.89	10.0	Dec 12	Trump: China deal very close
2.50	9.0	Apr 1	China PMIs, ISM mfg 55.3
1.56	9.0	Sep 5	China talks back ON
1.74	9.0	Sep 25	New home sales; Trump-Ukraine
1.92	9.0	Nov 7	China US tariff rollback

The Fed funds rate is 1.75% and bond yields will tend to stick close to that. 10-year yields closed 1.82% on Friday. Yields could move higher if inflation started moving higher, or the Treasury auction amounts increased to fund a bigger Federal budget deficit. Bond yields were 2.5% back at the start of May before Trump made his famous Sunday tweets increasing tariffs on China. The first \$50 billion of China imports were already 25%, he announced he would push the 10% tariffs on the other \$200 billion to 25%, and threatened to put a 25% “tax” on the rest of our \$325 billion of China imports “shortly.” Should bond yields return to 2.5% now that a phase one U.S.-China agreement has been made and Brexit risks to global growth have diminished with Boris Johnson’s big victory on December 12? Well, it could happen, except since then, the Fed has cut interest rates three times lowering the Fed funds rate from 2.5 to 1.75 percent, so current Fed policy is quite a heavy anchor around the market’s neck and will make for quite a difficult, uphill climb for bond yields in 2020. The Philadelphia Fed’s Survey of Professional Forecasters, the oldest survey in the country, has 10-yr Treasury yields climbing slowly over 2020 to the 2.0% level. Despite the presidential election next November, expectations are for a slow year in the bond market with reduced volatility.



So back to those traditional value markers that make bond yields easier to forecast than the stock market. (Though how hard can stock market forecasts be if stocks have fallen in just two out of the last eleven years; prices seem to always go up.) Inflation, and supply/demand. The Fed we think we know. Inflation is complicated by the Fed’s stubborn insistence that it is PCE inflation that is king of the hill, and not CPI inflation which is on target and is busy indexing millions of Americans social security retirement benefits.

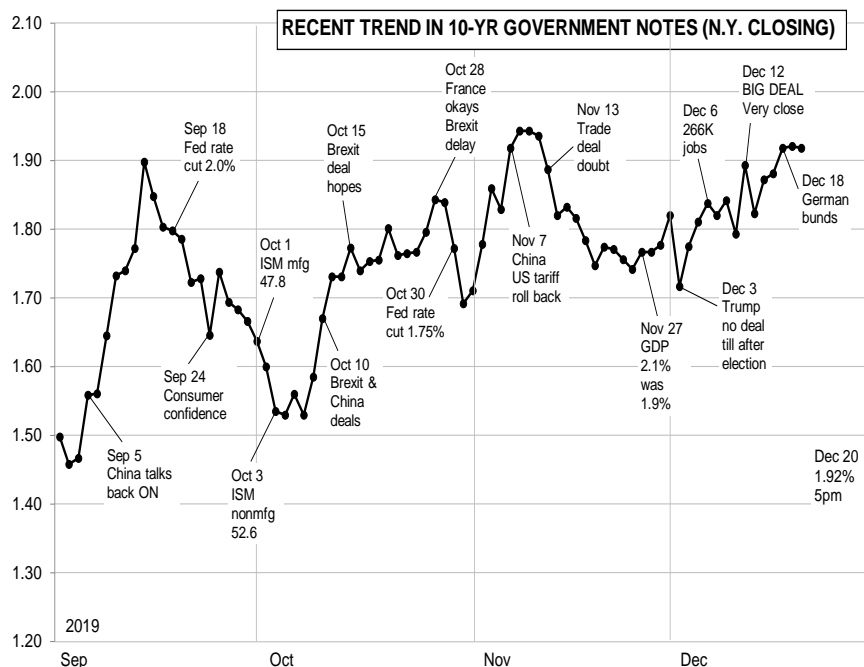


But what’s up with supply/demand, mainly supply? Is it important to analyze Treasury auction results anymore? Who is buying all these Treasury bonds anyway? Most be more than robot traders on Wall Street. Supply seems to mean little for the trend of Treasury bond yields. In 2018, the Tax Cuts and Jobs Act and Fed wind down of its balance sheet (QT for those in the know and mentioned in Trump tweets no less) boosted the Treasury securities sold to \$1.339 trillion from \$546 billion in 2017; 10-year yields averaged 2.33% in 2017 and “jumped” to 2.91% in 2018. That’s it? 2.33 to 2.91. And then bond yields fell back to 2.17% in 2019 (average through November) even with Treasury selling \$1.206 trillion, including \$143 billion of QT that stopped in September thank goodness. Anyway, we are still waiting for these trillion-dollar bond auction years to push Treasury yields higher. Stay tuned.

MARKETS OUTLOOK

	29-Mar 2019	28-Jun 2019	30-Sep 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021
30-Yr Treasury	2.81	2.53	2.11	2.20	2.25	2.30	2.40	2.50	2.70
10-Yr Note	2.41	2.01	1.67	1.75	1.80	1.90	2.10	2.20	2.40
5-Yr Note	2.23	1.77	1.55	1.55	1.65	1.75	1.85	2.05	2.25
2-Yr Note	2.26	1.76	1.62	1.60	1.60	1.70	1.80	2.00	2.20
3-month Libor	2.60	2.32	2.09	1.90	1.90	1.90	1.90	1.90	1.90
Fed Funds Rate	2.50	2.50	2.00	1.75	1.75	1.75	1.75	1.75	1.75
2s/10s spread	15	25	5	15	20	20	30	20	20

There was a rebound in yields Monday from the Friday bond rally of mystery. Wednesday yields rose even higher, also mysterious, although it seemed to follow the "rise" in yields on German bunds. 10-yr bunds rose from -0.295% at Tuesday's close to -0.25% at Wednesday's close. If the Fed is on the sidelines, 10-year yields can trade as much as 50 bps above the 1.75% Fed target in the months to come, waiting to see where the economy goes next. Payroll jobs were 266K in November, and won't continue at that pace of course, so a bond rally is never that far away it would seem. Yellen said the economy only needs to provide 100K new jobs per month for new entrants. Market would have to get used to jobs numbers like that.



FEDERAL RESERVE POLICY

The Fed meets January 28-29, 2020 to consider its monetary policy. Welcome to another decade. Here's the new Fed, same as the old Fed. The December 2019 meeting forecast looks for no change in interest rates in 2020. Of course, no forecast is perfect. This time last year, the December 2018 Fed meeting forecast looked for two rate hikes to 3.0% in 2019. Now we're talking. Didn't happen though. Savers are only getting 1.75% if they are lucky. It's a good thing they don't vote. For now, hawks and doves say there's nothing more to do in 2020. St. Louis Fed President Bullard, who dissented, wanting to cut rates in June, said the bar was high to a change in rates in 2020. Boston Fed President Rosengren who voted against rate cuts in July and September, said no change in rates without a material change in the outlook. Like an echo chamber down there. Echo, Echo Echo.

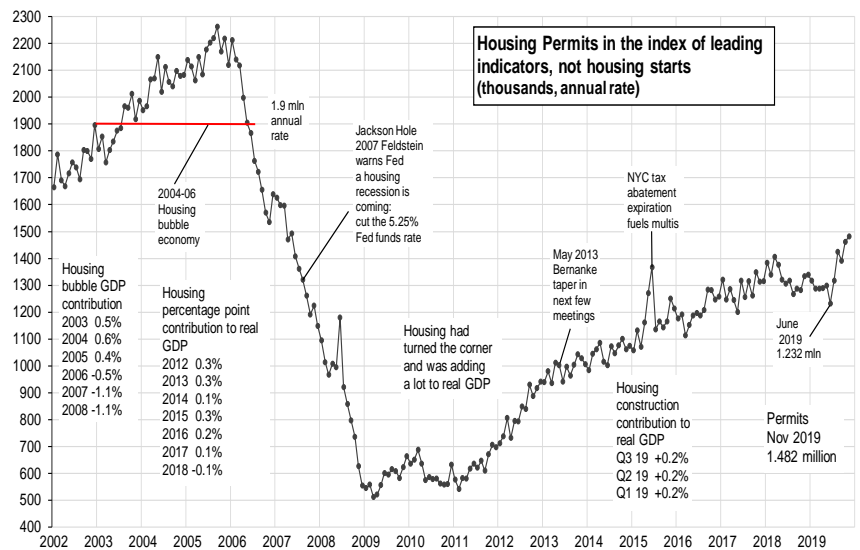
Selected Fed assets and liabilities					Sep 10 2008**
Fed H.4.1 statistical release					2008**
billions, Wednesday data	18-Dec	11-Dec	4-Dec	27-Nov	pre-LEH
Factors adding reserves					
U.S. Treasury securities	2300.678	2282.196	2259.853	2248.498	479.782
Federal agency debt securities	2.347	2.347	2.347	2.347	0.000
Mortgage-backed securities (MBS)	1422.436	1423.725	1423.725	1423.724	0.000
Repurchase agreements	236.662	212.957	208.007	207.243	126.750
Primary credit (Discount Window)	0.039	0.010	0.001	0.020	23.455
Term auction credit (TAF auctions)	0.000	0.000	0.000	0.000	150.000
Asset-backed TALF	0.000	0.000	0.000	0.000	
Maiden Lane (Bear)	0.000	0.000	0.000	0.000	29.287
Maiden Lane II (AIG)	0.000	0.000	0.000	0.000	0.000
Maiden Lane III (AIG)	0.000	0.000	0.000	0.000	0.000
Central bank liquidity swaps	0.079	0.069	0.047	0.047	62.000
Federal Reserve Assets	4185.3	4143.7	4113.7	4100.5	961.7
3-month Libor %	1.91	1.89	1.89	1.91	2.82
Factors draining reserves					
Currency in circulation	1796.004	1792.925	1793.762	1792.322	834.477
Term Deposit Facility	0.000	0.000	0.000	0.000	0.000
Reverse repurchases w/others	13.362	6.605	0.000	0.506	0.000
Reserve Balances (Net Liquidity)	1631.448	1671.196	1593.719	1559.719	24.964
Treasuries within 15 days	22.179	13.623	8.372	10.203	14.955
Treasuries 16 to 90 days	104.466	110.472	110.535	97.984	31.549
Treasuries 91 days to 1 year	328.716	313.901	301.082	303.961	69.272
Treasuries over 1-yr to 5 years	882.652	881.601	881.241	882.505	170.807
Treasuries over 5-yrs to 10 years	322.172	322.136	322.057	317.323	91.863
Treasuries over 10-years	640.493	640.463	636.566	636.521	101.337

**September 10, 2008 is pre-Lehman bankruptcy of 9-15-08

OTHER ECONOMIC NEWS THIS WEEK

Home builders have big plans for the future (Tuesday)

Breaking economy news. November housing permits are at a new high since the housing bubble burst way back in 2006 at 1.482 million. Headwinds to global growth, the China US trade talks and Brexit, aren't blowing as hard, so if Fed officials are waiting on the economic data to improve, today's housing starts figures are it. Monetary policy is in a good place and increasingly the economy is in a good place. Home builders are growing more bullish that the American consumer will keep buying whatever they put up.



Net, net, housing construction permits continue to soar the last several months to new highs for the economic recovery from the housing bubble bust over a decade ago. Business may be holding back on making new investment that helps make the economy grow, but home builders don't see any downside risks in their markets regardless of trade wars or slowing economies overseas. Home builders have big plans for the future, and their optimism and new residential construction will serve to extend the longest economic expansion in history. There wasn't a recession in 2019, and there won't be one in 2020 either if home builders keep investing in the economy's future. Bet on it.

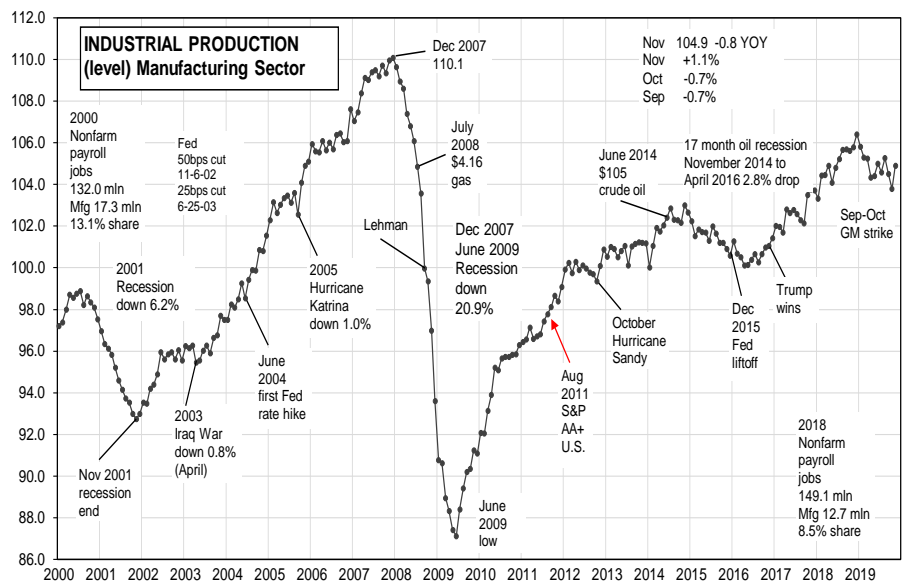
Housing Starts Total, Single-Family, Multi-Family											
000s	United States			Northeast		Midwest		South		West	
	Total	1 unit	Multi	Total	1 unit	Total	1 unit	Total	1 unit	Total	1 unit
Nov 19	1365	938	404	104	62	158	118	752	512	351	246
Oct 19	1323	916	395	108	37	187	119	682	534	346	226
Nov 18	1202	804	387	109	63	144	112	663	444	286	185
% Chgs											
Nov/Oct	3.2	2.4	...	-3.7	67.6	-15.5	-0.8	10.3	-4.1	1.4	8.8
Nov/Nov	13.6	16.7	...	-4.6	-1.6	9.7	5.4	13.4	15.3	22.7	33.0

Wow. Industrial production rebound and more from the GM strike (Tuesday)

Breaking economy news. The Fed's own economic statistic, industrial production, rebounded smartly in November by 1.1% after a GM strike related drop of 0.8% in October. Excluding the strike effect however, industrial production still rose 0.5% partly with utility production rallying back in November with temperatures colder than seasonal perhaps.

The manufacturing recession looks decidedly less so today with industrial production down just 0.8% from record highs last December, with the worst point of the downturn occurring during the GM strike in October where the decline was 1.9% from the peak of activity. In contrast, the 2014 oil price crash downturn in industrial production was 2.9%, so the so-called manufacturing recession looks quite modest right now. There are some rumblings about what will happen to factory output in the months ahead as Boeing shelves 737 Max production for now. The economy never seems to be fully out of the woods.

Net, net, factory production is looking less like a recession now that the GM strike is over. Exports are flat to lower this year due largely to America's trade war with China, but with the GM strike over and the economic clouds of uncertainty starting to lift, factory output could recover further in the months to come which keeps the market's recession fears at bay. Stay tuned. Story developing. Let's hope the politicians don't screw it up next year as they tell voters that their lives and the economy could be better.



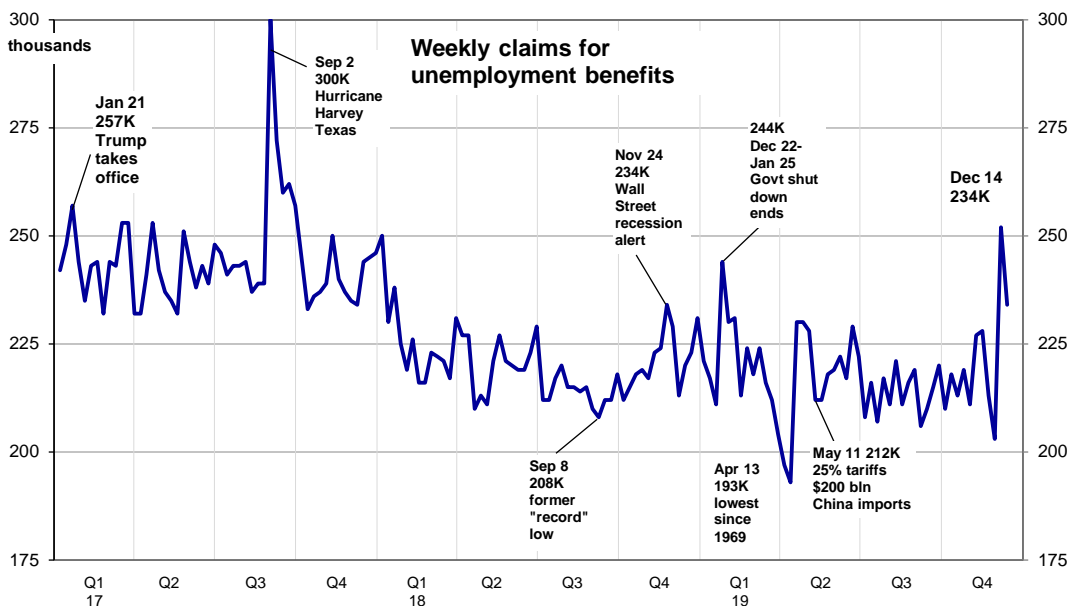
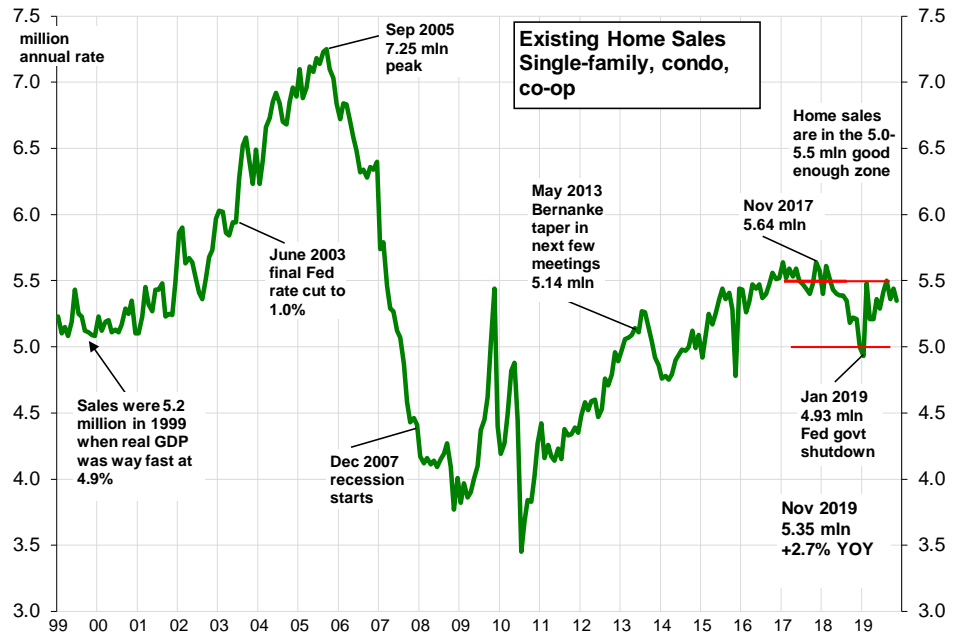
Percent changes			Industrial Production	
Sep	Oct	Nov	November 2019	
-0.4	-0.9	1.1	YOY	Weight
-0.7	-0.7	1.1	<u>-0.8 Total Index</u>	<u>100.0</u>
-0.3	-0.8	-0.2	-0.8 Manufacturing	75.1
1.4	-2.4	2.9	2.0 Mining	14.6
			-4.1 Utilities	10.4
			Manufacturing payroll jobs	
			12.9 million +54K YOY	
			9.9% of Private Payroll Jobs	

Homes exist to be purchased, jobless claims high (Thursday)

Net, net, the economy has slowed since the start of the year with the turnover of existing homes down slightly in November and the number of new people applying for unemployment benefits somewhat elevated. The economy isn't going off the rails here and there's no reason for stock market investors to take risk off the table. But at the same time, the economy isn't setting any land speed records here and with wage costs rising, investors should be cautious and not overpay for current corporate earnings either.

With the reduction in risks from the uncertainty that the American trade war produced in 2019, we're keeping our fingers crossed that the economy will get some more wind in its sails in 2020 to extend its longest winning run in history.

We hope this will turn out to be the case. Unemployment claims remain slightly elevated falling 18K to 234K in the December 14 week. Stay tuned. Story developing.



Spending back, inflation tame, GDP same (Friday)

Breaking economy news. Third look (yawn) at GDP 2.1 percent again. First look at fourth quarter is Thursday, January 30. Wait for it. Consumer spending was stronger at 3.2% now in Q3 2019 versus the 2.9% increase reported a month ago. Investment was weaker however, if you call inventories investment. Investment in business structures, equipment and software were unchanged.

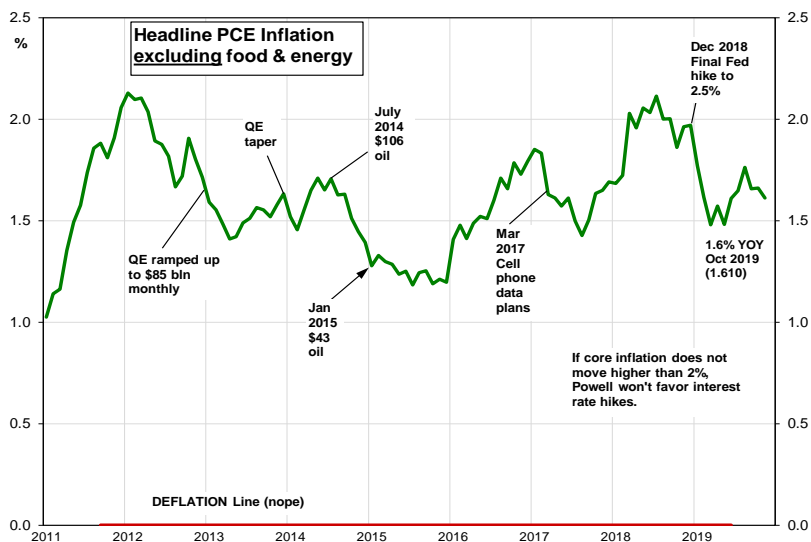
In the personal income report released at 10am EST, consumers finally bought a few more things at the mall in November, real purchases up 0.3 percent, and they had more than enough income to do it with the savings rate still moving up from 7.8 percent in October to 7.9 percent in November. The Fed's preferred measures of inflation in the report, PCE inflation, core PCE inflation is rising just 1.6% year-to-year, where the goal, the target, the aspiration is 2 percent. Maybe they can ask Santa to give it to them for Christmas.

Consumer spending in the fourth quarter then is running faster at 1.7 percent now with the November data where in last month's October report spending was lower at 1.2 percent. The consumer will do their part to make the fourth quarter 2 percent Federal Reserve GDP Wow forecasts a reality. Manufacturing is in a recession but the rest of the country is riding high. (9.9 percent of 129.6 million private nonfarm payroll jobs are in manufacturing.)

	Q2 18	Q3 18	Q4 18	Q1 19	Q2 19	Q3 19p	Q3 19r	Q3 19f
REAL GDP	3.5	2.9	1.1	3.1	2.0	1.9	2.1	2.1
REAL CONSUMPTION	4.0	3.5	1.4	1.1	4.6	2.9	2.9	3.2
CONSUMPTION	2.7	2.3	1.0	0.8	3.0	1.9	2.0	2.1
Durables	0.6	0.3	0.1	0.0	0.9	0.5	0.6	0.6
Nondurables	0.6	0.5	0.2	0.3	0.9	0.6	0.6	0.5
Services	1.6	1.6	0.7	0.5	1.3	0.8	0.8	1.0
INVESTMENT	-0.3	2.3	0.5	1.1	-1.2	-0.3	0.0	-0.2
Business Plant & Equipment and Intellectual Property	0.3	-0.1	-0.3	0.1	-0.4	-0.5	-0.4	-0.3
Homes	0.2	0.2	0.4	0.0	0.1	-0.2	-0.2	-0.2
Inventories	0.5	0.2	0.5	0.5	0.2	0.3	0.2	0.2
Homes	-0.2	-0.2	-0.2	0.0	-0.1	0.2	0.2	0.2
Inventories	-1.2	2.1	0.1	0.5	-0.9	-0.1	0.2	0.0
EXPORTS	0.7	-0.8	0.2	0.5	-0.7	0.1	0.1	0.1
IMPORTS	0.0	-1.3	-0.5	0.2	0.0	-0.2	-0.2	-0.3
GOVERNMENT	0.4	0.4	-0.1	0.5	0.8	0.4	0.3	0.3
Federal defense	0.3	0.1	0.2	0.3	0.1	0.1	0.1	0.1
Fed nondefense	0.0	0.1	-0.1	-0.2	0.4	0.1	0.1	0.1
State and local	0.2	0.2	-0.1	0.4	0.3	0.1	0.1	0.1

Below line: Percentage point contributions to Q3 2019 2.1% real GDP
First estimate for Q4 is Thursday, January 30

If the economy is not rolling over and going into a recession ditch, and tame core consumer inflation is low at 1.6 percent, you can bet your bottom dollar, the Federal Reserve is going to keep enough punch in the punch bowl to make sure that 2020 is going to be a super year for stocks. The S&P 500 is paying more in dividends than the Federal Reserve is paying on cash. Surveys say 45 percent of Americans don't own stocks. Well what are you waiting for? Jump in the pool the water's fine. Things are looking better than you think. Bet on it.



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 2019 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 \$326.5 billion at September 30, 2018. As part of that total, MUFG Americas Holdings Corporation (MUAH), a bank holding company and intermediate holding company, has total assets of \$161.0 billion at September 30, 2018. 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 September 30, 2018, MUFG Union Bank, N.A. operated 354 branches, consisting primarily of retail banking branches in the West Coast states, along with commercial branches in Texas, Illinois, New York and Georgia, as well as 22 PurePoint® Financial Centers. 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 1,800 locations in more than 50 countries. The Group has over 150,000 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>.