

MARKET THOUGHTS | Q3-2017

As mentioned last quarter, with the benefit of some time and thoughtful perspective, we are able to reflect on Hurricane Harvey and its impact on the Houston area. The storm certainly left its mark, although initial fears regarding the magnitude of damage were overstated, as is often the case in our hyper charged media environment. First the hard facts, then a few sentiments. Data about the impact on housing, commercial properties, vehicles, etc. are estimates that evolve and become more accurate over time. For example, the nearby table ranking Harvey with prior major storms shows Moody Analytics' revised estimates made in October. Total damage was estimated to be \$97 billion, putting Harvey second behind only Katrina. The initial estimates by Moody had total damage at \$108 billion. The revised number includes \$87 billion in property damage and \$10 billion in lost economic output. The Greater Houston Partnership, the Houston region's chamber of commerce, has done a good job distilling the various data sources and zeroing in on the most accurate facts, which were published in late October and reproduced in summary form here:

HURRICANE IMPACTS				
Storm	Economic Losses - \$ Billions			U.S. Deaths
	Total	Property	Output	
Katrina	174.5	143.6	30.9	1,836
Harvey	97.0	87.0	10.0	82
Sandy	73.0	46.8	26.2	71
Irma	70.5	56.5	14.0	30

Source: Moody Analytics

- FEMA reports that 538 business in the metro area suffered major damage.
- 586,862 individuals or households in metro Houston had registered for FEMA's Individual and Households Program (IHP) and \$584.7 million in assistance has been approved.
- 97,212 single-family homes in the Houston MSA were damaged or destroyed.
- 66,605 housing units were "affected," meaning the home sustained some damage, but is habitable without repairs.
- 15,662 apartment units in 215 properties, about 2.4% of the inventory, were damaged due to high water.
- The Houston region may lose approximately 300,000 vehicles with a total value of \$2.4 billion.
- Fifty-seven of the region's 1,200 office buildings sustained damage, representing 15.5 million square feet, or less than 7.0% of inventory. Most damage was isolated and ranged from roof leaks to flooded lobbies, basements and garages. Based on our internal list at Griffin Partners, approximately 24 office buildings remain under significant repair, and are either closed or have limited tenant access.
- The death toll from Harvey was 82, more than Sandy and Irma, but considerably less than Katrina.

Our family at Griffin Partners was no exception to the disruptive effects of Harvey. We had five families impacted, including the family of one of our engineers, who, after securing his own home and family, returned to his job as the storm was building to ride it out at the property. Had he not been on site during the peak of the storm, a pump failure would have gone unaddressed and the resulting mechanical room flooding would have surely caused the building's entire electrical system to fail, adding this building we manage to the grim count of 24 above that still require significant repair. The proportion of our employees affected is consistent with the proportion of impacted employees reported by other Houston companies. As a company, our entire team came together to raise funds for our impacted colleagues. Many in our company contributed in other ways including volunteering at shelters

and then later in the neighborhoods helping clear furniture, carpet, drywall and debris out of flooded homes.

It is difficult to use facts and figures like those above to illustrate the exceptional spirit exhibited by the greater Houston community in response to Harvey. We have been proud to observe how Houstonians almost universally give thanks for the blessings they have, don't complain and move on, even though in many cases their lives have been completely changed and their financial losses may be significant. It is that grateful, can do spirit that makes Houston such a great place live and work. It is that same spirit that is bringing Houston back from the declines in the energy industry.

Fund Updates

As we have been reporting for the past two quarters, Fund II has been in the process of harvesting several of its investments. The sale of Bank of America Plaza in San Antonio (BOAP) was completed in August and the proceeds of the sale were distributed to Fund II partners with last quarter's report. Two properties remain under contract. The contract for Plano Corporate Center is still contingent, and we should know within a few days if the contract will become firm. If the contract becomes firm, we expect it to close no later than mid-January.

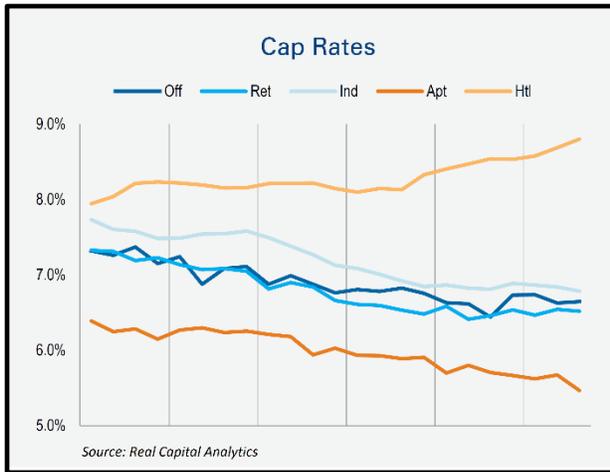
Up to and including the enclosed distribution, Fund II has returned \$19.4 million in distributions, equating to 85% of investors' contributed capital, taking into account all distributions. Net asset value at the end of Q3 was estimated to be \$14.1 million, net of the enclosed distribution, which equates to a multiple of approximately 1.5 to date. After realizing anticipated value accretion in the remaining Fund II investments, we continue to estimate the multiple will exceed 1.7 when Fund II is concluded. Assuming Pin Oak closes on December 19th, we estimate cumulative distributions by year-end will equal approximately 115% of contributed capital. That means Fund II investors will have gotten all of their money back plus a 15% profit within two years of making the final capital contribution, AND still own interests in six assets.

Fund III continues to have a property under contract to acquire in Houston that we hope to close in Q1 of 2018. The seller is still trying to clear up a title issue that must be concluded before we can proceed with the transaction. We are very close to executing a contract to acquire a mixed-use property in Denver with both office and retail tenants. This would be what we call a "core-plus" investment given that the property is fairly well leased, but there is also a potential development component that could provide some significant future profit opportunities. Core-plus simply means the rent roll is a little more stabilized. We typically underwrite 15% compound returns on core-plus, slightly below our average target, but more stabilized rent rolls generally result in less risk.

Fund III had its fifth and final closing in October, raising an additional \$5.9 million in commitments. The offering period has now ended, and the total capital committed to Fund III is \$51.1 million. We are pleased with this outcome and grateful to our partners who have helped make Fund III over twice the size of Fund II.

REAL ESTATE MARKET CONDITIONS

In spite of an avalanche of fake news, often frightening real news, and bombastic tweets, the commercial real estate (CRE) capital markets have been extremely calm over the past several quarters.

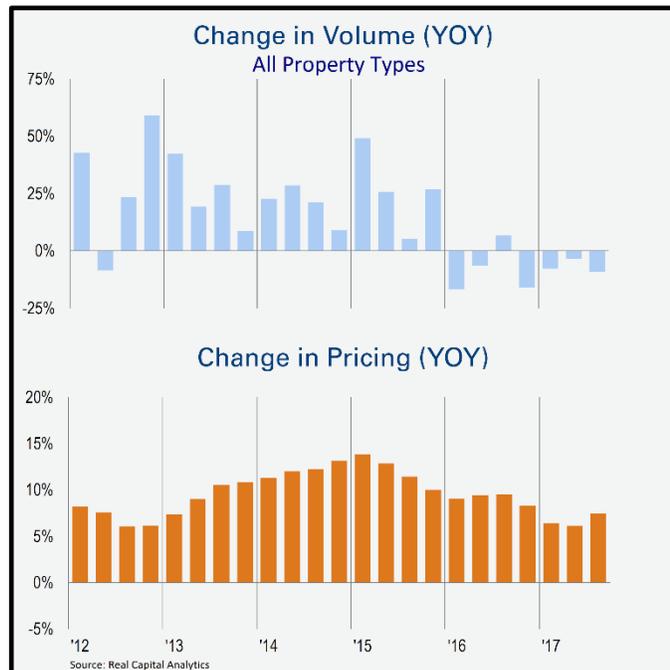


CAP rates have barely budged notwithstanding rising short term interest rates. Perhaps this is because rates at the long end of the US treasury curve, 10+ years, are almost exactly where they were one year ago. Although, as we have argued in the past, CAP rates and interest rates are less correlated than CAP rates and US unemployment.

Total CRE property sales dropped slightly in the third quarter, representing the fourth consecutive quarter of declining year-over-year activity. While property prices continue to rise, they are doing so at a decelerating pace. Despite overall transaction

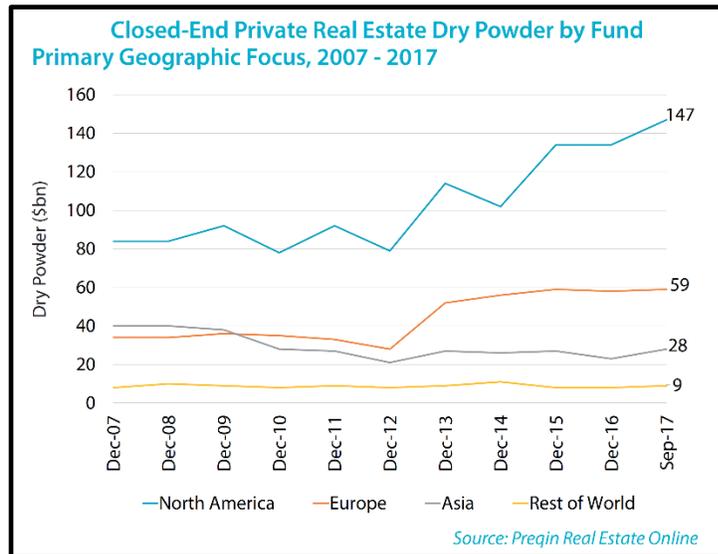
volume trends weakening, the market remains healthy. With prices for some geographies and property types at record high levels, underwriting acquisitions is simply more difficult. Given the relative stability in the macro economic environment and long term interest rates, we expect the trend of flat to moderately declining transaction volume and moderating price increases to continue.

Debt remains readily available from numerous sources, with the exception being bank originated construction loans, as we have been reporting for several quarters now. The biggest change in the CRE capital markets is the acceleration of securitized loan origination, which is offsetting a declining rate of commercial mortgage loan growth at banks. Trepp, the most prominent analytics firm tracking securitized commercial mortgages (CMBS) recently reported that issuance of CMBS has gained significant momentum after a slow start to 2017. In fact, our Q1 report conveyed expectations of about \$70 billion in CMBS originations. Total issuance for the year is now expected to reach upwards of \$85 billion— “and should



easily surpass last year’s total which came during a time of global uncertainty and macro volatility”, according to Trepp. Approximately \$26.8 billion in CMBS issuance was completed in Q3, making it the most active quarter for the CMBS industry in three years.

The availability of equity for CRE investments remains robust with private equity sources continuing to accumulate “dry powder.” Private equity real estate funds have \$147 billion of committed capital

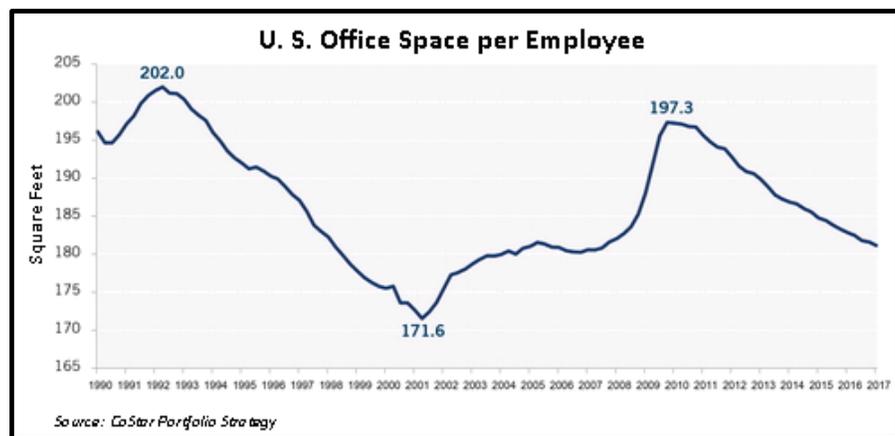


focused on North America with myriad strategies ranging from relatively low risk debt funds to high octane opportunistic funds. Publically traded REITS are a bit quiet at the moment given that their shares are mostly trading at discounts to net asset value.

One of the frequent questions we are hearing surrounding office investment currently is the continuing trend towards higher employee density. Focus is being elevated on this issue by the success of WeWork, a rapidly growing privately funded real estate company that sports a

tech valuation. WeWork commits to lease space from landlords, mostly traditional office space, configures it into collaborative “co-working” space, and then sub-leases it under flexible, predominately short term leases to individuals and companies. Generally, co-working space is comprised principally of open areas with unassigned workspaces, or as it is sometimes called “open office, shared-space seating.” The graph nearby labeled U.S. Office Space per Employee plots the amount of occupied office space per office worker in the U.S. over time. Think of this as elbow room within the typical office at any given time. The lower the number, the less elbow room.

Despite jumps that occur during recessions, when many companies cut staffing levels but retain their existing office leases, the long-term trend in square footage per worker is clearly down. Smaller computers, digitized legal



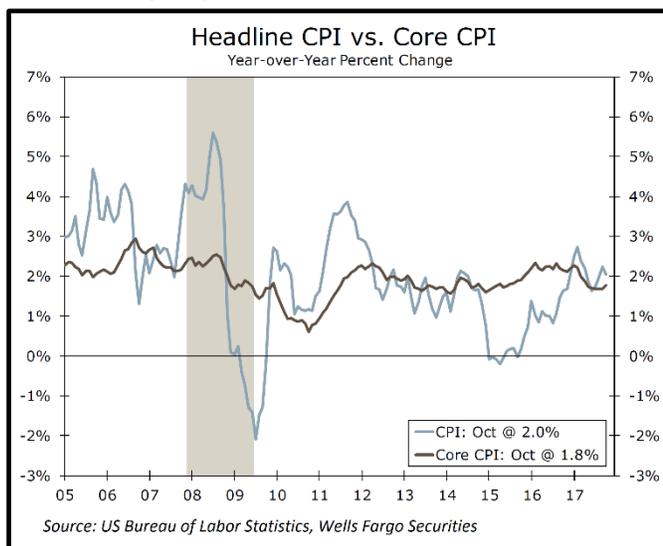
libraries, less paper file retention and the entrance of the so-called “sharing generation” into the workforce have all made it easier for companies to fit more workers into less space.

But there is beginning to be some pushback against the trend of higher density. Companies that can effectively measure worker productivity and who have adopted open office, shared-space seating at scale have begun to rethink the amount of private space that employees need, even if that private space is still unassigned. Though anecdotal, architects are reporting design requirements that are increasing the proportion of private space where workers can avoid distraction. This is not a return to cubicles, as the co-working concept is here to stay. It is unclear where or when the equilibrium for density will be reached, but more than likely space per employee will test its previous lows.

MACRO-ECONOMIC CONDITIONS

Another effect of Hurricane Harvey was the disruption and total displacement of our economic and interest rate commentary last quarter. No doubt some cheered that outcome. We did at the time however promise to examine the nebulous corner of economic theory know as the Phillips Curve. So herein we keep that promise. Readers may think after slogging through the following few pages that we are oblivious to all of the recent positive economic news. We are not. However, a deep rooted belief in the foundational philosophy of the Phillips Curve leads a majority of economic thinkers to conclude that all of the good news means inflation is just around the corner. What ensues below is an attempt for the time being to think more about the intermediate and longer term trajectory of inflation and interest rates and at least question that conclusion. After all, as we said above, rising short term interest rates don't appear to be having much effect on CRE values, but changes in long term rates might!

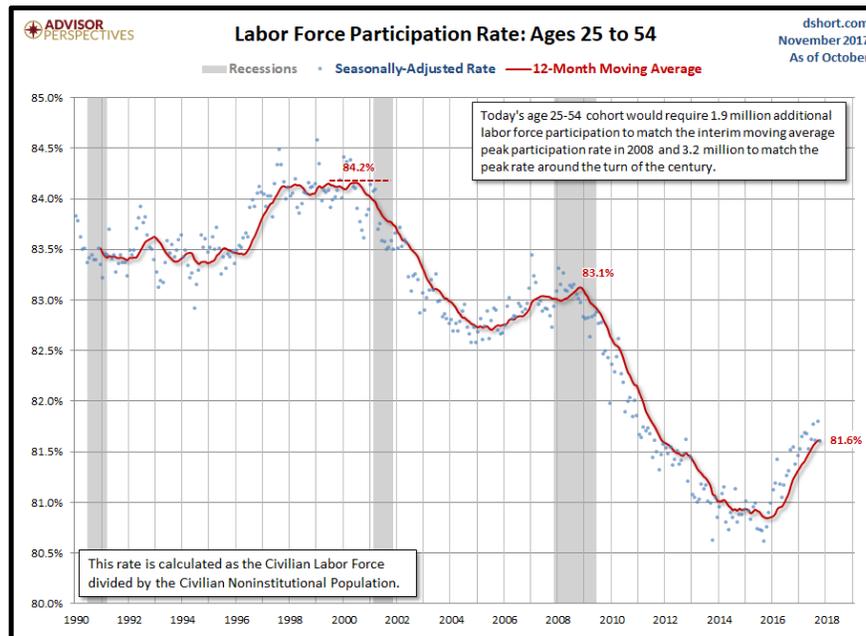
For a definition of the Phillips Curve we turn to Wikipedia: "The Phillips curve is a single-equation empirical model, named after William Phillips, describing an historical inverse relationship between rates of unemployment and corresponding rates of inflation that result within an economy. Stated simply, decreased unemployment, (i.e., increased levels of employment) in an economy will correlate with higher rates of inflation." Not surprisingly, discussion about the Phillips Curve is raging at present because US unemployment is reaching historic lows and the Federal Reserve is raising interest rates with one of its goals being a desire to tamp down inflation before it gets a head of steam. The reason for the heated debate is the expected inflation is M.I.A. In fact, core CPI (see chart) has declined recently, and the Fed's favorite inflation measure, the rate of change in personal consumption expenditures, is well below the Fed's stated target of 2%, coming in at 1.6% headline and 1.4% core (excl. food & energy) year-over-year in October.



The New Zealand economist William Phillips published his original work on the matter in 1958. The idea gained some credence in the 1960's but began to be disputed in the 1970's, in part due to the period of "stagflation" in the US where both inflation and unemployment were high. Not coincidentally, the infamous and in some circles controversial "dual mandate" of the Federal Reserve to "promote effectively the goals of maximum employment, stable prices, and moderate long term interest rates" came about by congressional statute in 1977.

Among others, Milton Friedman and F.A. Hayek in particular were critical of the simple Phillips Curve theory arguing successfully that the tradeoff relationship between inflation and unemployment did not exist in the long run. Their work lead to a theory know as "inflationary expectations" which held that workers expectations of future inflation would effectively "absorb" any monetary stimulus and unemployment would therefore always return to its "natural" rate over the long term. The impact of this theory on policy was important and probably a contributing factor to Paul Volker's campaign to crush US inflation through high interest rates in the 1980's. Given policy makers penchant for wanting

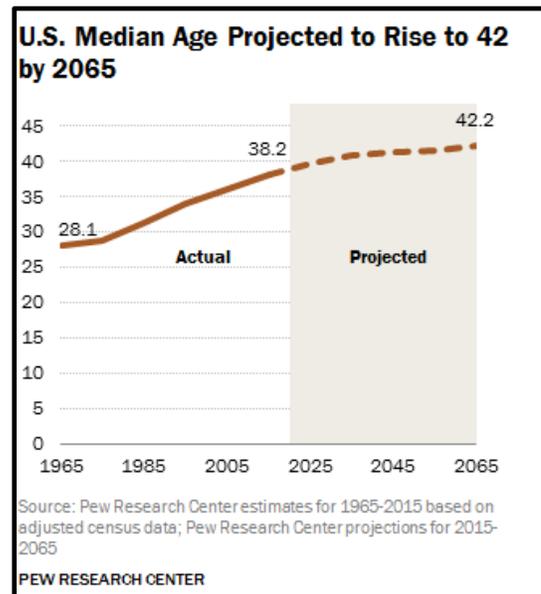
to tinker with the levers of macroeconomic policy, cheered on by a large segment of Keynesian economists, the Phillips Curve did not die off but evolved and today the generally accepted theory is that monetary policy can drive down unemployment in the short run at the cost of a permanently higher inflation. The important general conclusion from the current theory is that central banks cannot push unemployment down below its natural rate in the long run, so therefore the only result of excessive monetary stimulus over the long run would be higher inflation.



We would encourage readers to reread the previous sentence. In a nutshell, that belief is the core reason why many are currently predicting higher inflation and therefore higher long term interest rates in our near future, given the Federal Reserve's almost decade long run now of extremely low interest rates and aggressive monetary base expansion.

Well.....in the immortal words of Lee Corso, "not so

fast!" (Yes, somebody's been watching way too much College Football Game Day) A couple of points about the current general conclusion from modern Phillips Curve theory. First, nobody is really completely sure about what the natural rate of unemployment is. Unemployment in its various forms of measurement is the ratio of people without jobs divided by the total amount of people in the labor force. The nearby chart shows the denominator in that equation, the labor force participation rate, in this case for prime working age adults. It peaked in March of 2000, after rising steadily for many decades. The labor force participation rate for all ages was 59% in 1950 and peaked at 67% in 2000, primarily due to more women entering the workforce, then declined steadily from there until appearing to stabilize in 2015 around 62.5%. While it is encouraging to see the prime age work force growing again, the overall rate remains well below its peak and the multi-cycle trend is clearly downward. Moreover, the broader participation rate for all workers is mostly unchanged since leveling off in 2015. The statistical background during the period in which the Phillips Curve theory was developed and evolved was one of either steady or rising labor force participation, quite different than current conditions.



Second, the US was a more closed economy during that time. Global trade has expanded considerably

since the later part of the last century, bringing tens of millions of units of labor outside the US labor market into the US inflation picture. Lastly, the age of the US population is rising. The median age in 1965 was 28.1 years, has risen to 38.2 years, and according to Pew Research is forecast to rise to 42.2 years by 2065. During the first part of the last century, the median age rose slightly, declined from 1950 through 1970 as a result of the baby boom, then began rising again at a faster pace as birth rates declined and life expectancies extended. This matters because consumption and spending patterns are different for different age groups.

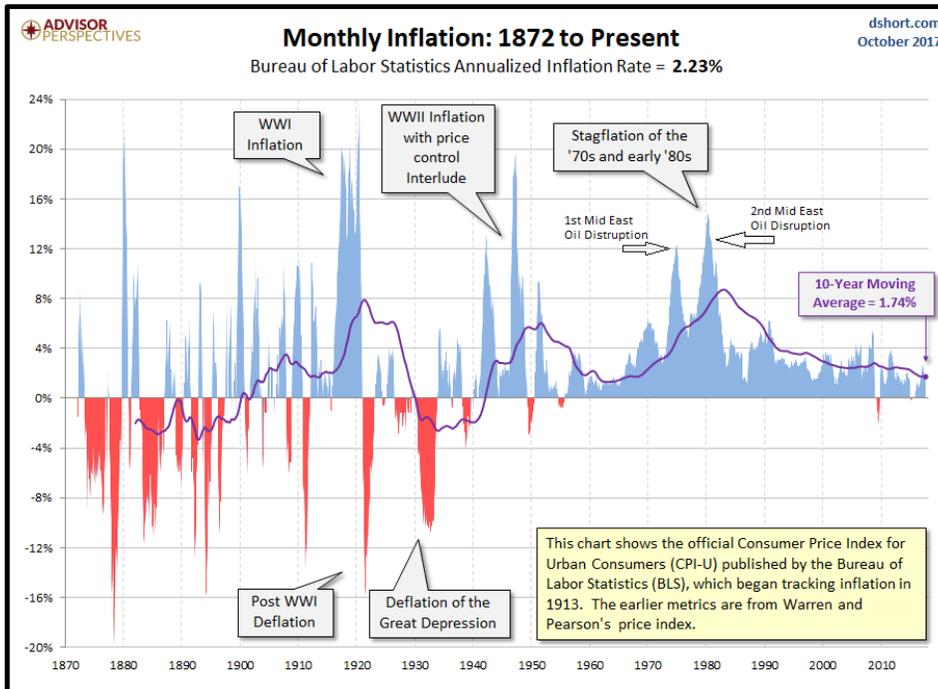
Surely, taken together, these three factors, declining labor participation, a more globally open economy and rapidly changing demographics, widen the band of uncertainty that we can have about the natural rate of unemployment.

Occupational Category	2016 Average Wage	Change in Real Wages	Change in Employment Share	2016 Employment Share	
Management	\$118,020	43%	-2%	5%	Highest Income Jobs: Increasing employment and above-average wage growth
Legal	\$105,980	24%	0.2%	1%	
Computer and Mathematical	\$87,880	73%	1%	3%	
Architecture and Engineering	\$84,300	18%	-1%	2%	
Healthcare Practitioners and Technical	\$79,160	24%	1%	6%	
Business and Financial Operations	\$75,070	23%	2%	5%	
Life, Physical, and Social Science	\$72,930	15%	0.3%	1%	
Arts, Design, Entertainment, Sports, and Media	\$58,390	19%	0.4%	1%	
Education, Training, and Library	\$54,520	4%	0.5%	6%	\$40-60K Jobs: By and large, flat employment and below-average wage growth
Construction and Extraction	\$48,900	4%	1%	4%	
Community and Social Service	\$47,200	9%	0.2%	1%	
Installation, Maintenance, and Repair	\$46,690	7%	0.0%	4%	
Protective Service	\$45,810	17%	0.3%	2%	
Sales and Related	\$40,560	14%	-2%	10%	\$30-40K Jobs: Declining employment and significantly below-average wage growth. These are some of the higher wage jobs that one can get without a college degree.
Office and Administrative Support	\$37,260	7%	-2%	16%	
Production	\$37,190	7%	-5%	6%	
Transportation and Material Moving	\$36,070	10%	-1%	7%	
Healthcare Support	\$30,470	10%	1%	3%	
Building and Grounds Cleaning and Maintenance	\$28,010	11%	1%	3%	
Farming, Fishing, and Forestry	\$27,810	0%	-1%	0.3%	\$20-30K Jobs: Increasing employment and below-average wage growth
Personal Care and Service	\$26,510	16%	2%	3%	
Food Preparation and Serving Related	\$23,850	14%	2%	9%	

Source: Ray Dalio, Bridgewater Associates

One last factor regarding employment which is changing, and about which we are only beginning to understand the ramifications, is the quality of employment. A near-record low aggregate savings rate around 3% and widening income inequality in the US are indications that while employment is rising, the quality of those jobs and the wages derived therefrom may be declining. The chart above is a fascinating assessment of how the number of jobs at the high and low end of the income range are growing as a share of total jobs (green color in the 3rd column) while those in the middle income ranges are shrinking as a share (red color 3rd column). This is one potent illustration of the much discussed hollowing out of the American middle class. Look also at the change in real wages in the 2nd column, where with a few exceptions, only the upper income jobs are seeing impressive wage gains. Clearly this is contributing to widening income inequality. Could these factors also be having an effect on any relationship between unemployment and inflation?

The problem with declaring the Phillips Curve dead is that it neuters one of the stated missions if not the reason for existence for central banks. Accordingly, central bankers are loathe to admit the existence of a corpse and call the morgue. Another problem with giving up on the Phillips Curve as a foundational structure is that there are points in time where the data do show a measurable relationship, so



economists presume the existence and look for other causes when the relationship breaks down. Most importantly, If the Phillips Curve foundation is dead, then one conclusion is that central banks have very little influence on inflation. That would be disruptive indeed. A look at the nearby chart of inflation since 1872 shows that since

1900, all periods of significant inflation are associated with either war or major disruptions in the price of oil. Hmm...?

A number of economists believe record levels of public and private debt are responsible for the inability to observe the Phillips Curve relationship and the absence of inflation. We have reported on the rising debt issue in the past and won't repeat the details here, but suffice it to say we are sympathetic to the argument. In short, a central bank in a fractional banking economy can only increase the money supply if banks lend out the excess reserves supplied by the central bank's expanding balance sheet. The

degree of bank loan growth during the current US expansion has been considerably less than the degree by which the Fed expanded bank reserves. In a fully leveraged, or over leveraged economy, loan demand is weak and the velocity of money is low, so central banks are

Credit Market Data					
Mortgage Rates		Current	Week Ago	4 Weeks Ago	Year Ago
	30-Yr Fixed	3.95%	3.90%	3.94%	3.94%
	15-Yr Fixed	3.31%	3.24%	3.25%	3.14%
	5/1 ARM	3.21%	3.22%	3.21%	3.07%
Bank Lending		Current Assets (Billions)	1-Week Change (SAAR)	4-Week Change (SAAR)	Year-Ago Change
	Commercial & Industrial	\$2,123.0	4.27%	-2.27%	0.96%
	Revolving Home Equity	\$380.1	-6.82%	-9.17%	-7.27%
	Residential Mortgages	\$1,808.8	-4.78%	0.51%	3.80%
	Commerical Real Estate	\$2,069.1	7.26%	5.16%	6.04%
	Consumer	\$1,419.2	17.78%	24.39%	5.37%

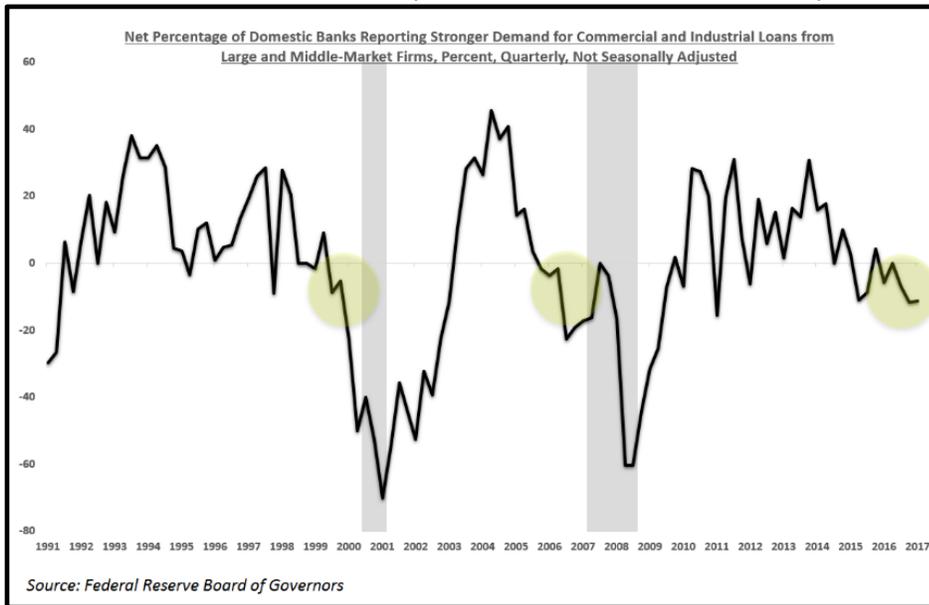
Source: Freddie Mac, Federal Reserve Board and Wells Fargo Securities

unable to increase the money supply. The growth in bank lending in the US has slowed considerably in the past several quarters. Nearby is a chart we have displayed before which shows bank loan growth in all categories at 6% or below year-over-year, with C&I loans growing only 0.96%. At the end of 2015, C&I and CRE loans were both growing at 11% year-over-year. As if to drive home the point, look how

little the mortgage rates have changed in the last year.

We know that for the most part, the declining bank loans result from lack of loan demand as opposed to reluctant loan officers because the most recent Federal Reserve Senior Loan Officer Survey indicates that standards on loans have loosened and demand has weakened across most major lending categories. The survey measures the relative percentage of loan officers reporting stronger demand versus those reporting weaker demand. The most recent survey is below zero (see nearby chart), meaning more officers reported weaker demand than reported stronger demand.

Both of the most recent recessions were preceded by a report of declining demand from the Federal Reserve Senior Loan Officer Survey. The results of the recent survey are at the same level as they were



at the start of the past two recessions making a case for a possible decline in economic activity in the intermediate term.

What is interesting, however, is that typically economic expansions end with banks tightening loan standards and that in part, contributes to the declines in demand for new loans. As the

standards are less attractive, borrowers demand less credit. Currently, banks are loosening their standards on loans, and they still see weakening demand. Perhaps we need the fiscal stimulus from tax cuts (reform?) more than many want to admit.

Next quarter we will examine the flattening yield curve and take a peek at oil prices.