# The World's Banking Turned Upside Down


## By Carole E. Scott

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## Abstract


The recent appearance of negative, nominal interest rates came as a shock because they conflict with the financial axiom that lenders should be compensated. This article examines recent, extraordinary changes in banking such as negative, nominal interest rates. It is a story of a last ditch central bank attempt to rejuvenate anemic economies that is likely to fail To facilitate readers further exploring the recent changes in banking and the issues associated with them, a large number of references representing many points of view are provided. The great majority include URLs. The article is written in a manner which should cause it to be of interest even to those with little background in economics and/or finance.

# Negative, Nominal Interest Rates Abroad

By 2015 central banks all over the world had lowered their interest rates more than 500 times since the collapse of Lehman Brothers in 2008. Probably nobody expected they would lower them below zero, but some have. Negative (below zero), real interest rates are not new, but negative, nominal interest rates are. They conflict with the belief that, because lenders face the possibility of default and give up the use of their money, interest rates will be above zero. Due to the uncertain and possibly huge impact of negative, nominal interest rates on the world and economic theory, their causes and actual and potential effects need to be examined.

"It's hard to overstate the enormity of the 2008 collapse of Lehman Brothers. It was the largest bankruptcy in history." Twenty-six thousand employees lost their jobs, and millions of investors lost all or almost all of their money. Its failure " triggered a chain reaction that produced the worst financial crisis and economic downturn in 70 years." (Kroft)

Because central banks' previous cures for anemic economic growth and a too low rate of inflation had failed, negative, nominal interest rates have been resorted to. Greatly feared was the possibility of deflation. Today, the central banks of the Eurozone, other European nations, and Japan have negative interest rates. They were adopted after years of near zero interest rates did not produce the desired level of production and inflation. Central banks charging to hold commercial banks' reserves is expected to incentivize them to lend money more freely and businesses and individuals to invest, lend, and spend more money. "Negative interest rates are an act of desperation, a signal that traditional policy options have proven ineffective and new limits need to be explored." (Randow and Kennedy)

"Negative interest rates may be symptomatic of central banks reaching the limits of what monetary policy can do. Markets appear to be increasingly concerned that central banks are out of ammo, and are fretting about how policy makers would tackle another downturn." (Diggle) The United States' central bank, the Federal Reserve System (Fed), has adopted a near zero, rather than a below zero interest rate policy.

If your bank pays depositors 4% interest, and the inflation rate is 6%, depositors' real rate of interest is a negative 2%. If a bank has a negative interest rate on its deposits, you have to pay the bank to hold your money. If you pay your bank 2% to hold your money, and the inflation rate is 6%, your real rate of interest is a negative 8%. A negative interest rate on a bank's loans means the bank pays you to borrow money from it!

Central banks conduct their nations' monetary policy. Because they are bankers' banks; not the public's, the public is directly affected by central bank negative interest rates only if commercial banks also adopt negative interest rates. If commercial banks pass on the cost imposed on them by their central bank charging them for holding their reserves, businesses and individuals will be faced with negative, nominal interest rates.

While negative interest rates provide a great incentive to borrow, it's hard to understand why anyone would be willing to pay someone to borrow money from them. Realkredit Danmark, one of Denmark's largest mortgage lenders, says it provided 758 borrowers with negative interest rates in 2015. According to the head of interest rate strategy at Japan's BMP Paribas Securities: "Every day is like being Alice in Wonderland." (Warnock) Switzerland, Germany, Finland, Sweden, and Austria have all issued bonds with negative yields. "Most mortgages in Spain, Portugal, and Italy have adjustable rates pegged to Euribor, and some of these have slipped into negative territory. At least one large Spanish mortgage lender, Bankinter, has been paying negative interest to borrowers by deducting the amount from the principal of their loans." (Stewart)

By the end of March, 2015, one quarter of Eurozone government-issued securities had negative yields. In 2015, the Alternative Bank Schweiz became Switzerland's first bank to comprehensively pass along negative rates to all its customers. Very early in 2016 for the first time the yield on Japanese 10-year government bonds fell below zero "…as investors clamored for safe-haven assets in the wake of a global market rout." (Shaffer)

Central banks hope their negative rates will cause commercial banks to offer very low interest rates and, as a result, their customers will borrow more, spend more, and save less. They don't talk about it much, but they hope to drive down the value of their country's currency in order to increase its exports. Fear of setting off a currency war by lowering the value of their currency likely accounts for this reason not being mentioned much. However, the exchange rates of the Eurozone, Switzerland, Japan, and Sweden were stronger after than before their central banks adopted negative interest rate monetary policies. Speculated is that this is due to their current account surpluses. (Scott)

A fear was that if commercial banks adopted negative interest rates, they would be subject to runs. There was concern, too, that the central bank charging commercial banks for holding their reserves would reduce their profitability. Paying people to take out mortgage loans could, by increasing the demand for residential real estate, cause a housing bubble. It was the bursting of a residential real estate bubble in the United States that led to the 2008 financial crisis and the Great Recession of 2007-2009.

Inflation may cause businesses' revenues to rise faster than their costs; thereby making it easier for them to earn a profit or at least avoid bankruptcy. The reverse is true of deflation. So, central banks want inflation. However, experience shows that either a rapid rise or decline in prices will destroy the economy. So, they want enough, but not too much, inflation and no deflation. The fact that so much of the spending by government, business, and individuals is financed by borrowing, which burdens them with a fixed interest expense, causes deflation to be tremendously feared. The financial leverage borrowing creates makes booms lustier makes busts more disastrous.

In a March 2016 publication, economists from the Bank for International Settlements, a group of 60 central banks, wrote that: "There is great uncertainty about

the behavior of individuals and institutions if rates were to decline further into negative territory or remain negative for a prolonged period." They expressed concern, too, about the effect on the profitability of the banking sector and the serious challenges that would be imposed on insurance companies and pension funds if negative rates persisted for a prolonged period of time. (Mullen) The publication is available at https://www.bis.org/publ/qtrpdf/r_qt1603e.htm

To put downward pressure on interest rates and increase the money supply, central banks have purchased government or other debt securities in the market. This is called quantitative easing. A Paris-based think tank, the Organization for Economic Cooperation and Development (OECD), believes low interest rates fueled by quantitative easing are a serious threat to the solvency of pension funds and life insurers. "Pension funds and life insurers are feeling the pressure to chase yield themselves, and to pursue higher-risk investment strategies that could ultimately undermine their solvency. This not only poses financial sector risks, but potentially jeopardizes the secure retirement of our citizens," said OECD Secretary-General Ángel Gurria in a speech." (Watts)

Modern Keynesian economist Paul Krugman says: "We now know that interest rates can, in fact, go negative; those of us who dismissed the possibility by saying that people could simply hold currency were clearly too casual about it. But how low?" Krugman reports that some "say that the real lower bound comes from the fact that bank deposits are more useful than currency in a safe, because you can write checks and all that. Basically, in the modern world deposits are actually more liquid than cash, at least for most transactions that don't involve controlled substances or concrete overshoes."

He says that, "We think of money demand as determined by people increasing their holdings up to the point where the opportunity cost of holding money, the interest rate on other safe assets, equals its utility from increased liquidity…[but] once interest rates on safe assets are zero or lower, however, liquidity has no opportunity cost; people will saturate themselves with it. That's why we call it a liquidity trap! And what this means is that the marginal dollar of money holdings is being held solely as a store of value — the medium of exchange utility is irrelevant." (Krugman)

The founder of the Keynesian school of economics, John Maynard Keynes, thought a liquidity trap existed during the world-wide Great Depression of the 1930s. If a liquidity trap existed, Keynes believed, monetary policy was impotent. However, in his theory, the nominal interest rate in a liquidity trap would be above zero.

"Negative interest rates may have some stimulating effect," believes Notre Dame economics professor Eric Sims, "but also come with potentially significant downside risks. Negative interest rates, and monetary policy more generally, are not a panacea. Most of the headwinds facing the global economy are outside the purview of monetary policy. Fiscal imbalances, demographic trends, slowing productivity growth, and the inevitable disruptions from structural change and globalization are all more pressing needs on which policy should focus."

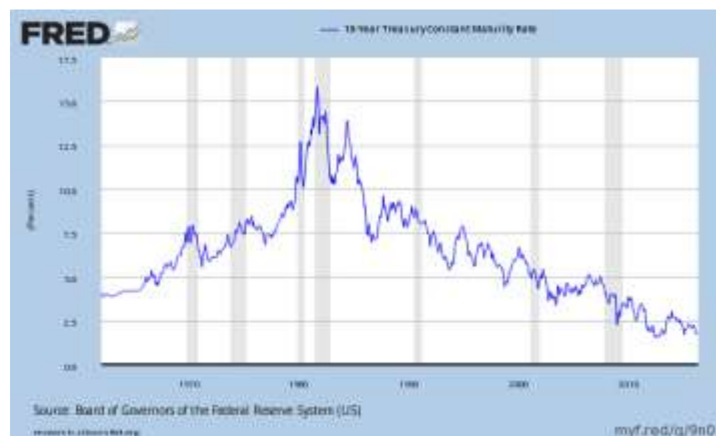
# Conditions In The United States

JP Morgan Chase, has announced it may charge institutional clients as much as 5.5% on certain deposits in an effort to push as much as $100 billion of its deposits out the door. Other U.S. banks were already charging institutions negative interest. The reason for this is that, "Once a U.S. bank accepts a deposit, it must pay insurance premiums to the Federal Deposit Insurance Corp." The Dodd-Frank bill passed by Congress and signed by the president "…changed the way the premiums are calculated, and the upshot is that insurance costs rise on nearly every new dollar deposited, even though only $250,000 of each customer account is insured. Insurance premiums on average are about 20 basis points on each dollar deposit, although they can be as high as 45 basis points for a large bank." (Kupiec) Dodd-Frank is what the "Wall Street Reform and Consumer Protection Act" of 2010 is usually called. Its objective is to prevent the recurrence of the events that caused the financial crisis in 2008 that some feared would sink the nation into a depression.

Interest rates on individuals' bank deposits in the U.S. have been so low for years that even before taxes depositors experienced a negative real interest rate. Low interest rates help borrowers at the expense of savers, which people should be prior to their retirement. For people already retired, believing they could generate an ample income on their savings, interest rates falling to a level far below what they were in their working years is a disaster. A return to the level of interest rates in the 1980s and 1990s would, undoubtedly, cause many borrowers to default, and bond owners would experience a huge capital loss due to the decline in what their bonds could be sold for.

Chart 1 below shows how much more the U.S. Treasury used to pay to borrow money for 10 years than it has in recent years. The gray, vertical lines identify a period of recession. Lower interest rates have been advantageous to the federal government as its outstanding debt has increased.

CHART 1



In April 2016, the United States' latest core consumer price index (CPI) was 2.3%. Reported in the April 9-10, 2016 issue of *The Wall Street Journal* was: "The 10-year U.S. Treasury yield settled at 1.722% Friday, which is below zero for the first time since 2012." (Zeng)

Today's chief banking problem in the United States according to Anat Admati and Martin Hellwig in their book *The Bankers' New Clothes* is capital. "In order to make $100 of loans, a typical bank borrows $97 from depositors, from money-market funds, from other banks, or from bondholders, and it sells $3 of stock, its 'capital.'. So if only 4% of the bank's loans fail, the shareholders are wiped out, and the bank cannot pay its debts. Worse, if there is a rumor that some loans are in trouble, creditors may 'run,' each trying to get his money out first, and force a needless bankruptcy. Think of Jimmy Stewart in 'It's a Wonderful Life'." (Cochrane) The fractional reserve banking this quote describes has periodically created financial panics. It was one of these which led to the creation of the Federal Reserve System in 1913.

In the 1930s crowds of depositors lined up outside banks to get their money. In today's electronic world a great deal of banks' deposits can be removed vastly faster. One solvent bank avoided being driven out of business by a run in the 1930s by its tellers, who knew many of its depositors, being told to chat with them, thereby slowing down the line. Meanwhile, cash was periodically picked up behind the bank that was then carried into the bank through its front door. This led many people to decide to go home, rather than withdraw their money. In this way the bank was saved from being driven out of business by a run.

The deep U.S. recession of 2007-2009 caused lasting damage to many areas of the U.S. economy. Worker productivity growth, however, is not one of them, according to researchers at the Federal Reserve Bank of San Francisco. They claim persistently slow productivity growth since 2003, following a burst of fast growth during the preceding eight years, is, instead, likely due to the waning benefits of technological innovation. According to them: "Productivity growth since the beginning of the Great Recession is similar to the average rate over the four years leading up to the recession….The recent slowdown in the growth of productivity, or output per hour of work, has mystified the experts." They note that from the early 1970s through 1995 productivity rose about 1.5% per year. Then the pace more than doubled between 1995 and 2003, likely reflecting the technology boom. That surge proved to be temporary. Since 2003, productivity growth has reverted to roughly its pre-1995 pace, suggesting it "was little affected by the recession and its aftermath." They say the recent slowdown in productivity "appears to mark a pause in—if not the end of—exceptional productivity growth associated with information technology." They believe the recent productivity slowdown reflects diminishing returns from technological advances such as computers, the internet, and cellular phones. They claim that "the important factor after 2003 is slower growth in innovation." (Fermald)

CHART 2

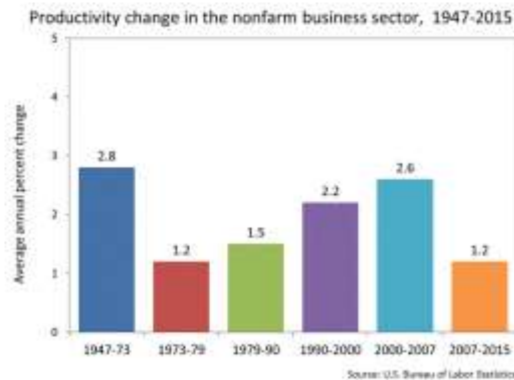



Chart 2 records productivity growth in the nonfarm business sector since 1947.

Although a decline in the share of GDP accounted for by investment and saving long predated the 2008 financial crisis, it intensified once the crisis took place. Subsequently both saving and investment rose. Saving and investment since 1969 is shown in Chart 3 below.

CHART 3

The key findings of a 2014 Tax Foundation study were:

- Saving and investment are necessary for a society to adequately provide for its future.
- Saving and investment have declined substantially as a percentage of GDP over the last 40 years.

- American private saving barely keeps pace with total government deficits. On the whole, the country saves very little.
- American investment barely keeps pace with depreciation; U.S. private and public capital stock and infrastructure deteriorates almost as quickly as it can be repaired or replaced with new investment.
- The U.S., overall, does not save enough money to fund all of the worthwhile domestic investments and relies substantially on foreign investors to make up the difference.
- Tax reform could help the U.S. become a forward-looking economy that invests and saves at more prudent rates.

The author of the Tax Foundation study observed that: “Over the last ten years—both before and after the Great Recession—the private sector has accumulated more assets than liabilities. It has saved. Meanwhile, the government has accumulated more liabilities than assets—the opposite of saving, or ‘dissaving.’ This is primarily represented by government deficits…. Government dissaving is frequently about as large as—or, in the case of the years 2008 to 2011, larger than—private sector saving. National savings is the sum of both public and private saving. On net, America is saving only a small percentage of its income; less than 4 percent for every year between 2004 and 2013, and less than 0 percent for several of them.

This is not to contrast a virtuous public with a spendthrift government. Rather, it is to show that, on the whole, large changes in government deficits were matched by an equal and opposite reaction in the private sector.

Incidentally, this reveals some of the limits of fiscal stimulus. Some government spending—particularly ‘automatic stabilizers’ like means-tested benefits—can stabilize the consumption of people hit hardest by recessions. However, much of that stimulus ends up in banks, which may invest in the very same treasury bonds issued to create the fiscal stimulus in the first place. In the end, the banks owe the depositors, the government owes the banks, and the citizens are taxed by the government, resulting in no change in American wealth of any kind.” (Cole)

A Deutsche Bank team contends that the commonly accepted link between traditional stimulus and household spending doesn't have the net effect monetary policymakers think it does. The team found: "The savings rate has been very strongly *negatively* correlated (-86 percent) with the value of gross assets scaled by the size of the economy, i.e., the ratio of household assets to nominal GDP which we use as our proxy for wealth, over the last 65 years…. [and] historically the part of the savings rate that is not explained by the level of wealth is strongly negatively correlated (-46 percent) with real interest rates.

Deutsche Bank posits that lower real interest rates reduce households' expected return, thereby prompting them to save *more* in order to meet their long-term financial goals and forgo spending today. The team estimates that Fed policy has driven real rates in the U.S. to 2.5 percentage points below their neutral levels, which has resulted in a 0.9 percentage-point rise in the savings rate. Any increase in the savings rate entails an offsetting decrease in the consumption rate, as households refrain from spending that portion of their income, which weighs on current economic activity." This led the Deutsche Bamk team to conclude: "While a number of arguments can be made for why countercyclical monetary policy in the U.S. through lower rates is supportive of economic growth, the encouragement of a lower savings rate (higher consumption rate) is not one of them. (Kawa)

CHART 4

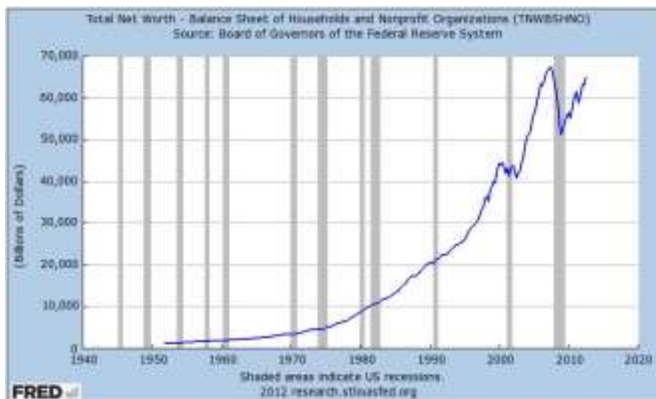



Chart 4 shows that American's net worth took a big hit as a result of the bursting of the real estate bubble that led to the 2007 - 2009 Great Recession, and that it subsequently began bouncing back.

CHART 5

Chart 5 reveals that Americans' real income began to plunge shortly before the Great Recession. Notice the gain experienced in the late 1990s and the decline prior to the 9/11 tragedy in 2001 and the subsequent recession.

# The 2008 Financial Crisis and the Federal Reserve System (Fed).

The Great Recession, which officially lasted from December 2007 to June 2009, began with the bursting of the $8 trillion housing bubble. The resulting reduction in consumer spending and the financial market chaos triggered by the bursting led to business investment collapsing. Between 2008 and 2009, 6.1 % of all payroll employment was lost—the most dramatic loss of jobs since the Great Depression of the 1930s. The job loss in the recession that began in 1981 was only 3.1 %. Recovery was extraordinarily slow. The Fed''s first reaction was to reduce the federal funds rate from 5.25 % in September 2007 to a range of 2-2.25 % in December 2008.

In September, 2008, several major financial institutions, including Fannie Mae, Freddie Mac, and American International Group, an insurance company, experienced severe financial problems .Lehman Brothers went bankrupt, and Goldman Sachs and Morgan Stanley changed their charters to become commercial banks. Large commercial banks were saved by the Troubled Asset Relief Program, Federal Reserve lending, and other government support. The Troubled Asset Relief Program gave the Treasury funds to buy illiquid mortgage-backed securities and other assets from key institutions in an attempt to restore liquidity to the money markets. (The more quickly an asset can be converted to cash, the more liquid it is.)

Fannie Mae and Freddie Mac purchase and guarantee mortgage loans. They were created to increase the size of the secondary mortgage market. This is a market where the originators of mortgage loans can sell them. Their creation increased the availability of mortgage loans and lengthened their term. They are owned by the government and private investors. The *Financial Times* reported on February 19, 2016 that Fannie Mae's capital cushion is on course to vanish in 2018, when it would have to ask the U.S. Treasury for emergency funds. "Since 2008 Fannie Mae has been in the post-crisis limbo of state-sponsored 'conservatorship,' neither fully nationalized nor private, following several unsuccessful attempts by Congress to overhaul it." (Jopson) Fannie Mae guarantees nearly $3 trillion of securities. (Assets = Liabilities + Capital; so if a shrinkage in the value of assets exceeds the amount of capital, owners of liabilities lose money.)

The Treasury became the majority stockholder of these institutions after it injected $187.5 billion into them. By early 2016 the Treasury had received $246 billion in dividends from them. In 2016 some of the private stockholders of Fannie Mae and Freddie Mac were appealing a judge's 2013 decision that the federal government did not illegally seize much of these institutions' profits. A lawyer for one of the claimants said this arrangement "systematically drained these entities of all value, leaving in its wake two unsound and insolvent zombies—a golden goose for the Treasury and utterly worthless for the individuals and institutions who in good faith invested in them." (Light)

"Lehman Brothers, an unregulated financial institution that didn't have a base of deposits and funded itself with overnight borrowings, had about $30 of debt for every dollar of cash it had on hand. So did Bear Stearns. Giant banks like Citigroup had balance sheets that weren't much more solid. Such species don't exist anymore. They all got taken out in 2008. Lehman failed. Bear got eaten by JPMorgan Chase. Morgan Stanley and Goldman Sachs morphed into commercial banks and swiftly dialed down their debt levels. Merrill Lynch merged with Bank of America. And Citigroup, after taking a huge bailout, raised cash and shed assets in one of the great garage sales in Wall Street's history." (Gross)

"When the housing bubble of 2001-2007 burst, it caused a mortgage security meltdown. This contributed to a general credit crisis, which evolved into a worldwide financial crisis. Many critics have held the United States Congress - and its unwillingness to rein in Fannie Mae and Freddie Mac - responsible for the credit crisis." (Nielsen in "Fannie Mae")

> Families who struggled to save enough to buy a home lost it when house prices plunged or they lost their jobs. Many older workers lose their job with little hope of ever finding another one, even though they are ill-prepared for retirement; young people getting out of school are facing the worst job market since the Great Depression, while buried in student loan debt.
>
> The horror story could have easily been prevented had there been intelligent life at the Federal Reserve Board in the years when the housing bubble was growing to ever more dangerous proportions (2002-2006). But the Fed did nothing to curb the bubble. Arguably, it even acted to foster its growth with [Alan] Greenspan [chairman of the Fed's Board] cheering the development of exotic mortgages and completely ignoring its regulatory responsibilities....
>
> The fact that banks were issuing fraudulent mortgages by the millions, and that the Wall Street crew was securitizing them as fast as they could get them, was not top secret information available only to those with special security clearance. This *was* the economy in the years 2002-2006.
>
> It was impossible to look at the economy in these years and not see the role of the housing bubble and the tsunami of bad mortgages that fueled it. The run-up in house prices led to a near record pace of construction. (Baker)

Staff members at the Federal Reserve Bank of Dallas "…conservatively estimate that 40 to 90 percent of one yearly output ($6 trillion to $14 trillion, the equivalent of $50,000 to $120,000 for every U.S. household) was foregone due to the 2007-08 recession." (Atlinson)

According to an article in the September 7, 2013 issue of *The Economist* magazine shown on the web at http://www.economist.com/news/schoolsbrief/21584534-effects-financial-crisis-are-still-being-felt-five-years-article:

"The years before the crisis saw a flood of irresponsible mortgage lending in America. Loans were doled out to 'subprime' borrowers with poor credit histories who struggled to repay them. These risky mortgages were passed on to financial engineers at the big banks, who turned them into supposedly low-risk securities by putting large numbers of them together in pools…..Pooled mortgages were used to back securities known as collateralized debt obligations (CDOs), which were sliced into tranches by degree of exposure to default. Investors bought the safer tranches because they trusted the triple-A credit ratings assigned by agencies such as Moody's and Standard & Poor's. This was another mistake. The agencies were paid by, and so beholden to, the banks that created the CDOs. They were far too generous in their assessments of them."

> During the Greenspan years (1987-2006), the Fed clearly failed to recognize the significance of the many structural changes in the financial markets—such as the rapid growth of securitization and derivatives—on economic and financial behavior and thus for its monetary policy. The Fed also failed to foresee how the 1999 repeal of the Glass-Steagall Act, which had separated commercial from investment banking since 1933, would sharply accelerate financial concentration through mergers and acquisitions and thus contribute to the "too-big-to-fail" phenomenon.(Kaufman)

The justification in 1984 for government agencies preventing the bankruptcy of the Continental Illinois National Bank and Trust Company was that it could not be allowed to fail because of all the other banks it would bring down with it. It was too big to be allowed to fail. A high-speed electronic bank run resulting from large, corporate depositors, whose deposits were uninsured, knowing that Continental's loan portfolio contained a lot of bad loans, caused the Federal Deposit Insurance Corporation (FDIC) and the Fed to rush to rescue Continental. The three federal bank regulatory agencies provided a $2 billion assistance package, and the Fed promised to meet the bank's liquidity needs. The Federal Deposit Insurance Corporation (FDIC) promised to cover Continental's uninsured deposits. But all this did not stop the bank's deposits from shrinking. Because no suitable and willing merger partner could be found, the bank was nationalized. Preserving Continental was the largest bank resolution in U.S. history

Average home prices more than doubled between 1998 and 2006—the sharpest increase in the nation's history. Mortgage debt rose from 61% of GDP to 97%. By the early to the mid-2000s, high-risk, or "subprime" mortgages were offered by some lenders who repackaged these loans into securities as a way to provide mortgage loans to people with poor credit histories or who could not come up with a down payment. A decline in home prices sparked the financial crisis of 2007-2008. The meltdown of the housing bubble led to the collapse of the market for mortgage-backed securities. (Payments by people on their mortgage loans provided the money to pay the owners of the securities.) Mark-to-market accounting required owners of the securities to write down their value. In many cases these losses turned out to just be a temporary loss on paper, rather than a loss on the sale of the securities.

On September 30, 2008, *The New York* Times reported that "Barely a week after Europeans rebuffed American pleas to join in their bailout of the banking system, Europe now faces a financial crisis almost as grave as that in the United States — demonstrating how swiftly this contagion is spreading around the world. In the last two days, governments from London to Berlin have seized or bailed out five faltering banks. In Ireland, where rumors of panicked withdrawals from banks spooked the stock market, the government has offered a two-year blanket guarantee on all deposits and bank debt. Asia has been less buffeted by the turmoil…" (Landler)

> "When the real estate asset bubble in the United States burst in 2008, it unleashed a financial tsunami that threatened the stability of the world economy. Few individuals, companies or governments escaped unaffected. This 'Perfect Storm' was the result of the unanticipated convergence of numerous disparate factors: an extended and favorable interest rate and economic environment created by an accommodative Federal Reserve monetary policy, loose mortgage loan requirements prompted by government desires to promote home ownership by low-to-moderate income groups, unregulated mortgage originators, and a securitization process bolstered by a variety of credit enhancement devices that turned marginal investments into AAA rated securities. To these factors, add greed by mortgage originators, real estate agents, and investors along with lax appraisal requirements. Add an absence of regulation of OTC [over the counter] derivatives instruments such as credit default swaps along with ratings agencies that received compensation from the same institutions they rated and the resulting mixture is a recipe for financial disaster of monumental proportions." (Hays, DeLurgio, and Gilbert)

In a 2014 article in *The Atlantic* it was claimed that the Roaring Twenties, the Japanese boom of the 80s, and the United States in the early 2000s were all debt-fueled binges that brought these economies to the brink of ruin. "We found," its author claimed, "that almost all instances of rapid debt growth coupled with high

overall levels of private debt have led to crises. To put a finer point on it: For major economies, if the ratio of private debt to GDP is at least 150 percent, and if that ratio grows by at least 18 percent over the course of five years, then a big crisis is likely in the offing. …What's alarming is that, of the two ingredients for an economic crisis—high private debt and rapid private-debt growth—one is still with us even after the 2008 collapse. Private debt in the U.S., relative to GDP, stands at 156 percent. That's lower than the 173 percent it reached in 2008, but it's still nearly triple the level—55 percent—it was at in 1950. " (Vague)

Some parts of the economy quickly recovered from the crisis. Chart 6 below reveals that, after initially collapsing after the 2008 financial crisis, corporate profits as a share of GDP exceeded the peak they had reached shortly before the crisis.

CHART 6

The Federal Reserve's actions during the 2008 financial crisis have rekindled interest in the Fed's role as a lender of last resort. A lender of last resort (LLR) is supposed to provide credit when funds are not available from any other source…. Overall, the Fed has rarely acted as the LLR it was designed to be. Throughout history, the Fed's LLR policies have jeopardized its operational independence and put taxpayers at risk. These problems are easily avoidable because there is no clear economic rationale for the Fed to provide direct loans to private firms. The Fed can implement monetary policy without lending directly to individual firms, and it can fulfill its LLR function through temporary expansions of open-market operations….

A…major break with traditional LLR lending occurred in 1974 when the Fed provided discount window loans to Franklin National Bank until the Federal Deposit Insurance Corporation (FDIC) could find a buyer for the failed bank. For five months, the New York Fed lent continuously to Franklin for a total of $1.75 billion, approximately 50 percent of Franklin's

assets. Schwartz argues that this event marked a shift from short-term assistance to the long-term support of an insolvent institution pending final resolution. A similar approach was taken with regard to Continental Illinois when the Fed lent as much as $8 billion over the course of one year until the FDIC resolved the failed bank in 1985. These actions clearly went well beyond providing temporary liquidity to solvent banks….

During the recent [2008] financial crisis the Fed allocated credit directly to several firms and also provided loans through several broader lending programs. For instance, the Fed provided a $13 billion loan to Bear Sterns, one of the Fed's largest primary dealers, on March 14, 2008. The loan was repaid in days, but then the Fed provided a $30 billion loan to facilitate JPMorgan Chase's acquisition of Bear Sterns (via a special purpose vehicle named Maiden Lane, LLC). Shortly after this deal was completed, former Fed chairman Paul Volcker remarked that this loan was "at the very edge" of the Fed's legal authority.

Separately, the U.S. Government Accountability Office (GAO) estimates that from December 1, 2007, through July 21, 2010, the Federal Reserve lent financial firms more than $16 trillion through its Broad-Based Emergency Programs. To put this figure in perspective: Annual gross domestic product (GDP) reached $16.8 trillion in 2013, an all-time high for non-inflation-adjusted GDP in the U.S. During the crisis, the Fed created more than a dozen special lending programs by invoking its emergency authority under Section 13(3) of the Federal Reserve Act. (Michel, 8/20/2014)

John Cochrane of the University of Chicago's economics department and the Hoover institution in an interview said:  I think Dodd-Frank repeats the same things we've been trying over and over again that have failed, in bigger and bigger ways. The core idea is to stop runs by guaranteeing debts. But when we guarantee debts, we give banks and other institutions an incentive to take risks. In response, we unleash an army of regulators to stop them from taking risks. Banks get around the regulators, there is a new run, we guarantee more debts, and so on." (Federal Reserve Bank of Richmond)

Employment in banking did not recover after the crisis. Notice in Chart 7 below how employment, formerly trending downward, exploded during the real estate bubble years.

CHART 7

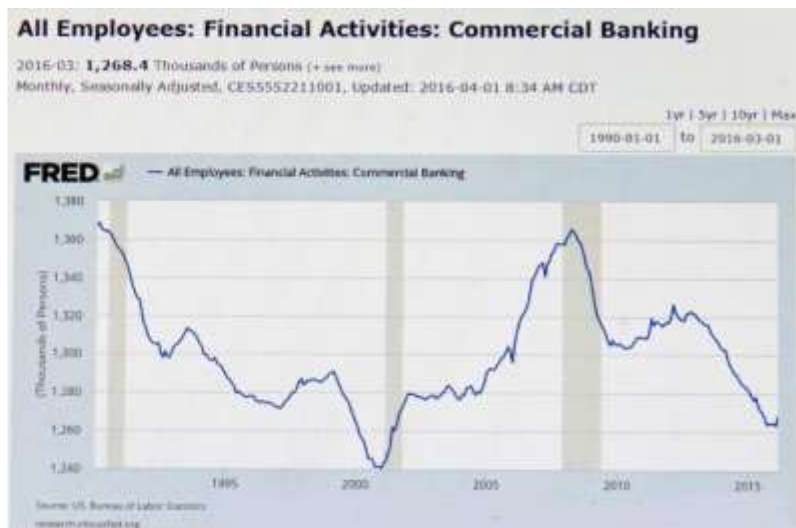



Chart 8 below reveals that bank lending in 2008 constant dollars, which before the crisis was steeply rising, changed course after the Great Recession of 2007-2009. Notice how different was the effect of the previous, minor recession.

CHART 8

Chat 9 below shows how the labor force participation rate plummeted after the 2008 financial crisis.

CHART 9

The Fed is composed of seven regional banks controlled by a Board of Governors in Washington. It is one of three federal bank regulatory agencies. The other two are the Office of the Comptroller of the Currency and the Federal Deposit Insurance Corporation. In the 1913 Federal Reserve Act Congress established the statutory objectives for monetary policy: maximum employment, stable prices, and moderate long-term interest rates. The Fed's controls the three tools of monetary policy: open market operations, the discount rate, and reserve requirements.

Chart 10 below reveals the very substantial impact the financial crisis had on the Federal Reserve System after it galloped into action to save the nation's financial system. The amount of its total assets almost overnight rose phenomenally and continued rapidly rising until 2014.

CHART 10

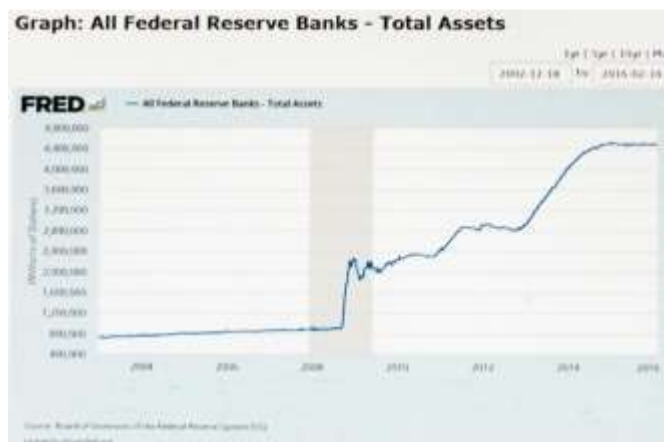


Chart 11

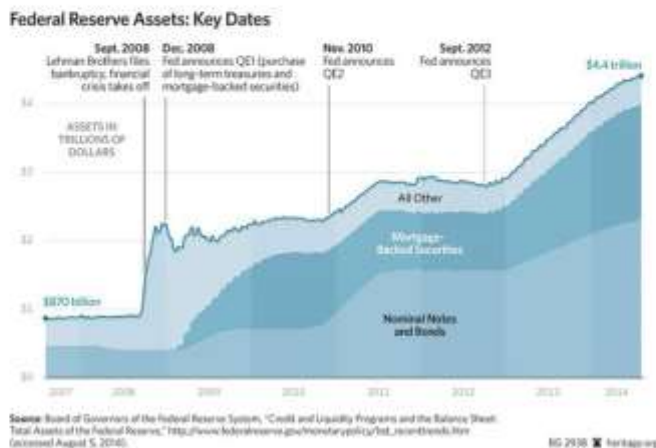



Chart 11 from the Heritage Foundation reveals the unprecedented change in the components of the Fed's assets since the 2008 financial crisis. From holding no mortgage-backed securities then, by 2016 these accounted for 39 percent of the Fed's assets. Another startling change is that in 2016 it held no Treasury bills—the Treasury's shortest term debt securities.

Exploding in size among the Fed's liabilities has been banks' excess reserves. Milton Friedman recommended that central banks like the Federal Reserve pay interest to depository institutions on the reserves they are required to hold against their deposit liabilities. This proposal was intended to improve monetary policy by making it easier to hit short-term interest rate targets. However, the Fed didn't have the authority to pay interest on banks reserves until 2008 when it did so because the action it took to deal with the financial crisis caused excess reserves to balloon.

QE in Chart 11 refers to Quantitative easing. This is an unconventional policy in which the Fed purchased government and other securities in order to lower interest rates; increase banks' liquidity; encourage them to lend more; thereby increasing the money supply. (Fed purchases increase banks' reserves.) In 2014 the Fed bought up half of the gross issuance of mortgage-backed securities issued by agencies. The $420 billion it bought was composed of $200 billion in additional purchases from the program known as QE3, and another $220 billion from reinvestments of principal payments. The Fed was buying about 20% of the gross issuance when QE3 was complete.

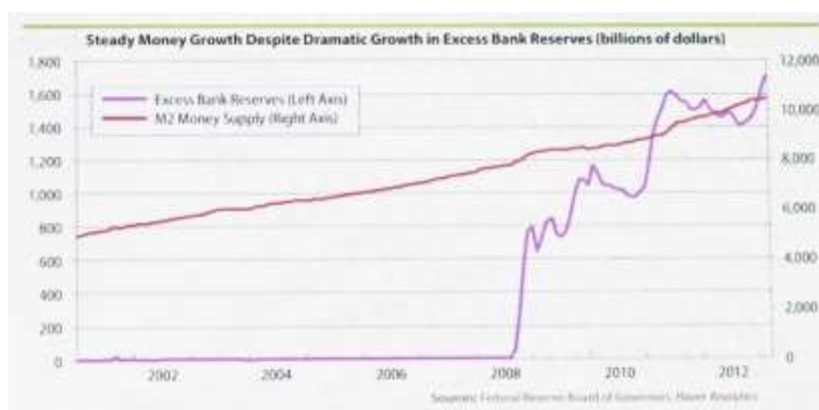
The Fed's chief liabilities are Federal Reserve Notes (paper money) and the deposits of depository institutions, the U.S. Treasury, and others. Just as commercial banks can create deposits with the stroke of a pen when they make a loan (a bank asset), the Fed creates deposits when it purchases assets. Both by borrowing money from a bank and by depositing cash in one, the public acquires bank deposits. The Fed requires that at a minimum commercial banks hold a specified amount of deposits at the Fed whose amount varies with the amount of the amount of their customers' deposits. Only if a bank's reserves exceed what is required can it expand its lending. Reserves above the minimum are called excess reserves.

For decades after World War II, the Fed conducted monetary policy by buying and selling short-term Treasury securities in the secondary market to lower and raise short-term interest rates. Purchases—an easy monetary policy—increased the size of the monetary base—currency in circulation and bank reserves—and lowered the dollar's exchange rate. When interest rates are near zero, purchases cannot have much effect on the economy. In a pure QE regime the focus of policy is the quantity of bank reserves—a Fed liability--and the composition of loans and securities on the Fed's assets is incidental. In theory, it could purchase any asset from anybody.

The ratio of GDP to the money supply fell to an all time low after the 2008 crisis. It was very high in the late 1990s, when it was much higher than in the inflationary 1970s. A year's GDP is composed of the output of final goods and services during that year at the prices they sold for. An automobile produced in this year is a final good. None of its components, such as its tires, are a final good. The purchase of tires produced during the year to replace the tires on an old car is included. The money supply is used over and over again during the year to purchase both things included in GDP and the many other things that are not included, such as a used car produced in an earlier year.

Before the 2008 financial crisis, reserve requirements set by the Fed forced banks to hold deposits at the regional Federal Reserve banks which earned no interest. In 2008, the Fed began paying interest on banks' excess reserves held at the Fed. Chart 12 below shows that this was followed by a significant increase in their amount. Yet, as is also shown, the money supply continued to grow at about the same rate it had previously.

CHART 12




The Fed reasons that the huge increase in the monetary base will not result in inflation in the future because:

> The opportunity cost of holding reserves is now the difference between the federal funds rate and the interest rate on reserves. The Fed will likely raise the interest rate on reserves as it raises the target federal funds rate. Therefore, for banks, reserves at the Fed are close substitutes for Treasury bills in terms of return and safety. A Fed exchange of bank reserves that pay interest for a T-bill that carries a very similar interest rate has virtually no effect on the economy. Instead, what matters for the economy is the level of interest rates, which are affected by monetary policy.
>
> This means that the historical relationships between the amount of reserves, the money supply, and the economy are unlikely to hold in the future. If banks are happy to hold excess reserves as an interest-bearing asset, then the marginal money multiplier on those reserves can be close to zero. As a result, in a world where the Fed pays interest on bank reserves, traditional theories that tell of a mechanical link between reserves, money supply, and, ultimately, inflation are no longer valid. In particular, the world changes if the Fed is willing to pay a high enough interest rate on reserves. In that case, the quantity of reserves held by U.S. banks could be extremely large and have only small effects on, say, the money stock, bank lending, or inflation….
>
> In thinking of exit strategy, the nature of the monetary policy problem the Fed will face is no different than in past recoveries when the Fed needed to "take away the punch bowl." Of course, getting the timing just right to engineer a soft landing with low inflation is always difficult. This time, it will be especially challenging, given the extraordinary depth and duration of the recession and recovery. The Federal Reserve is prepared to meet this challenge when that time comes. (Williams)

Harvard economics professor Greg Mankiw (2009) accepts this argument, but he thinks there is a possible fly in the ointment:

> The bottom line is that when reserves pay interest, the monetary base is a pretty uninteresting economic statistic.
>
> Does this mean that investors should stop worrying about inflation? No. Yet the worry should stem not from the monetary base but from the political economy and difficult tradeoffs facing monetary policymakers. As the economy recovers, interest rates will likely need to rise. Will the Bernanke Fed, feeling the political heat, get behind the curve and allow inflation to take off? Will it decide that a little bit of inflation is not so bad compared with the alternative of risking an anemic recovery, a double dip recession, or (gasp!) congressional action to reduce Fed independence? Maybe. This is, I think, the right way to argue that higher future inflation is a plausible outcome. [Bernanke is no longer chairman of the Fed's Board. Of Governors.]

Art Laffer of Laffer Curve fame, doesn't agree that inflation hasn't exploded due to a change in conditions: paying interest on bank reserves. "Usually," he says, "when you find the model this far off, you've probably got something wrong with the model, not that the world has changed. Inflation does not appear to be monetary base driven." However, he is not totally comfortable with what the Fed is doing, "Ask me whether inflation represents longer-term problem, I think there's a potential there for excess reserves to create problems." (Wile)

Chart 13 below shows that after taking a dip during the recession set off by the 2008 financial crisis another Fed asset account that rose sharply and significantly was the amount of federal debt held by the Fed.

CHART 13

The Fed's profits surged phenomenally after the 2008 financial crisis. From 2008 to 2009 they grew 50%. From 2009 to 2010 they grew 67%.

The Fed's 2011 estimated net income of $78.9 billion was derived primarily from $83.6 billion in interest income on securities acquired through open market operations (U.S. Treasury securities, federal agency and government-sponsored enterprise (GSE) mortgage-backed securities, and GSE debt securities). Additional earnings were derived primarily from realized gains on the sale of U.S. Treasury securities of $2.3 billion, foreign currency gains of $152 million, and income from services of $479 million. The Reserve Banks had interest expense of $3.8 billion on depository institutions' reserve balances and term deposits.

See Fed's profits from 2002 to 2011 at http://www.federalreserve.gov/newsevents/press/other/other20120110a1.pdf

In January, 2016 the Fed sent as dividends to the Treasury $97.7 billion. Much of this profit was provided by the Fed's holdings of mortgage-backed securities. It sent an additional $19.3 billion from its capital surplus account to help fund federal infrastructure. In 2010, Congress directed that Fed earnings fund the new Consumer Financial Protection Bureau, which in 2016 received $490 million. If interest rates rise,

like other owners of debt securities, the Fed will experience a capital loss because this will reduce the market value of its portfolio of securities.

In a 2014 backgrounder, the Heritage Foundation expressed concern about the Fed's recent behavior: "More than five years after the 2008 financial crisis, the Federal Reserve's role is still the subject of much debate. One source of controversy has been the extent to which the Fed allocated credit directly to possibly insolvent institutions. Critics argue that the Fed should have allowed insolvent firms to restructure through bankruptcy and should have provided credit only to sound banks on a short-term basis. Instead, the Fed facilitated bailouts to financially troubled institutions by invoking its so-called emergency lending authority. The government even forced some banks to take the money against their objections…Banks now have an additional $2.6 trillion in excess reserves, which means that they can create up to approximately $26 trillion in new money. In other words, banks now have the power to create more than twice the amount of money currently in the U.S. economy, thus heightening the risk of future inflation. As the economy improves, the Fed may have to pay higher interest rates on these reserves to keep banks from dramatically increasing their lending." (Michel and Moore)

A high rate of inflation destabilizes an economy. However, the Fed does not seek a zero rate of inflation. Like the world's other major central banks, the Fed seeks to achieve a 2% inflation rate. One advantage of this low rate of inflation is that makes it easy to obtain negative real interest rates. (Very low interest rates on savings and certificates of deposits means that high income individuals' after tax yield will be negative in real terms.) An advantage of inflation is that it "greases the wheels of the economy" by reducing real wages; thereby discouraging employers from laying off workers. Anticipating the Fed will achieve its target 2% rate, in labor negotiations pay increases to deal with future inflation are anticipated to be 2%.

The Taylor Rule the Fed followed from 1985 to 2007 set the Fed's nominal interest rate target based on changes in inflation, output, and other economic conditions. It was abandoned by the Fed after the 2008 crisis for a policy of massive Keynesian economic stimulus

Any inflation reduces the purchasing power of the dollar, and inflation year after year is like compound interest in reverse.

Austrian economists scorn central bankers' determination to avoid deflation at all cost. Says one of them:

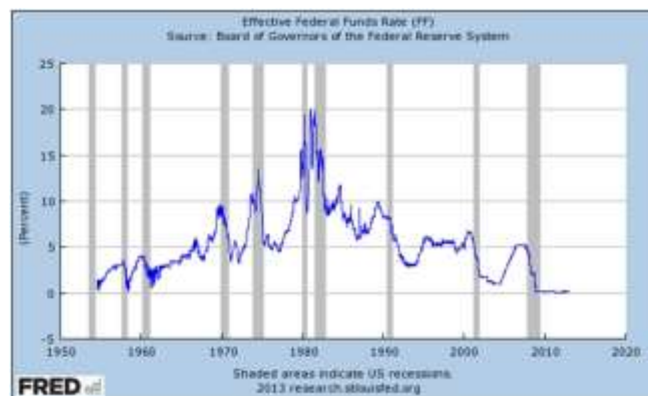
> The real pity is that the busts and crackups could all have been avoided if central bankers recognized that falling prices eventually create the conditions for a normal economic revival. Deflation is not a death spiral as the Keynesians believe. In a functioning market, the public's demand to hold money will be satisfied when their reserves of money balances are

sufficient in relation to the price level, when they are once again confident of the future, and when they are willing to invest for the long term.

Thus, the suppression of interest rates has been unnecessary and harmful. Nevertheless, expect more central banks to follow the early leaders — Switzerland, Sweden, Denmark, and even the European Central Bank itself — into negative interest rate territory. The crying shame is that it will not work and will cause great harm to hundreds of millions of people. (Barron)

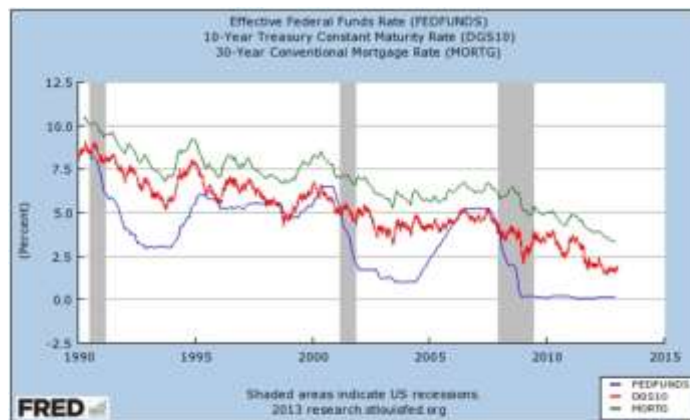
The federal funds rate shown in the first of the two charts below is the interest rate at which banks and credit unions lend reserve balances to each other overnight on an uncollateralized basis. Chart 14 below shows that its level has been lowered to an extremely easy money policy level. The interest rate on federal funds is negotiated by the lending and borrowing institutions. The effective federal funds rate is the weighted average of these rates. The Fed’s Federal Open Market Committee sets a target federal funds rate. Open market operations are used to influence the supply of money to make the federal funds effective rate follow the Fed’s target rate. Open market operations consist of the Fed’s purchase and sale of federal government securities. Chart 15 below shows over a much shorter time period how closely 10-year and 30-year interest rates move together and compares their levels with each other and with the federal funds rate, whose movements are quite different from theirs, which are very similar. In 2016 the real rate of return on the Treasury’s 10-year bonds was negative.

CHART 14



The Federal Reserve Systems Federal Open Market Committee (FOMC) adopted a zero target for the federal funds rate on December 16, 2008.

CHART 15




The reason why the interest rates on the 30-year exceed the 10-year's is explained to students in economics and finance classes as being due to lenders considering the risk of default, term of the loan, time value of money, and anticipated inflation over the term of the loan. Everything else being the same, the longer is the term, the greater the risk. Collateral reduces the risk associated with making a loan. Because their term is so long, mortgage loans are collateralized. Making them safer to hold is that there is a secondary market for them, much of which is provided by Fannie Mae and Freddie Mac.

CHART 16

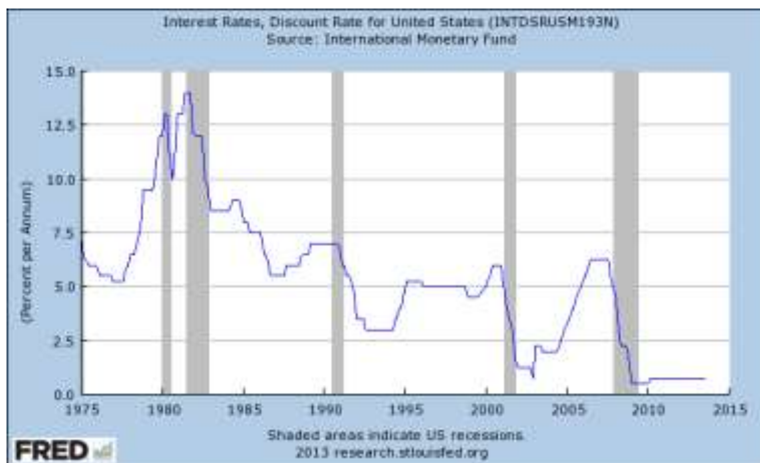
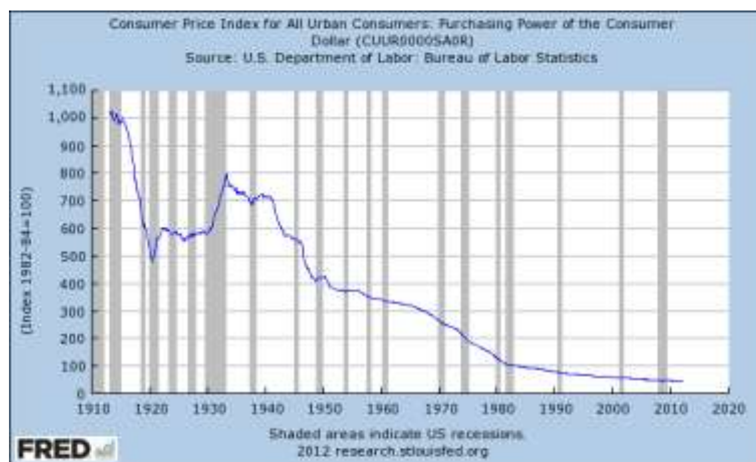



Chart 16 reveals that the discount rate, which is what the Fed charges banks for overnight loans of reserves, has had a downward trend since the 1970s.. Notice the prominent, stair-step pattern and the large increase just prior to the Great Recession.

Chart 17 below reveals that the purchasing power of the dollar has dropped like a rock since the Fed began operating in 1914. In this chart the reduction in the purchasing power of the dollar is measured on the basis of the Consumer Price Index (CPI) for urban consumers. Shown is that the purchasing power of the dollar has steadily declined since the end of the Great Depression of the 1930s. Observe the lesser frequency and generally shorter downturns in the economy since the Great Depression of the 1930s.

CHART 17




There is widespread agreement that the Great Depression began after the stock market crash in October, 1929 and that after showing some improvement, the economy cashed in 1937. Some say the depression ended in 1939; others say it did not end until 1941. The broad gray band in the St. Louis Fed's chart above identifies what are agreed upon as the worst years.

"Originally, the CPI was determined by comparing the price of a fixed basket of goods and services in two different periods. Determined as such, the CPI was a cost of goods index (COGI). However, over time, the U.S. Congress embraced the view that the CPI should reflect changes in the cost to maintain a constant standard of living. Consequently, the CPI has been moving toward becoming a cost of living index (COLI).

Over the years, the methodology used to calculate the CPI has also undergone numerous revisions. According to the BLS [Bureau of Labor Statistics], the changes removed biases that caused the CPI to overstate the inflation rate. The new methodology takes into account changes in the quality of goods and substitution. Substitution, the change in purchases by consumers in response to price changes, changes the relative weighting of the goods in the basket. The overall result tends to be

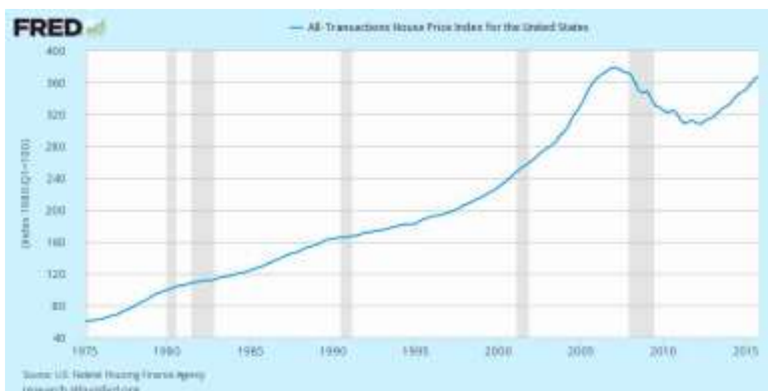
a lower CPI…. However, critics view the methodological changes and the switch from a COGI to a COLI focus as a purposeful manipulation that allows the U.S. government to report a lower CPI.” (Kaifosh)

Money is spent by consumers, business, and government. It is spent on goods and services. It is spent on goods produced this year and goods produced in previous years. The T in the equation, MV=PT, includes the purchase of everything from new homes, used cars, stocks and bonds, bulldozers, restaurant meals, lap tops, tractor trailers, frozen lima beans, airline tickets, tooth picks, structural steel “H” beams, ear buds, asphalt, potato chips, lumber, drones, prescription drugs, haircuts, etc.. (M = money supply; V= velocity (turnover) of the dollar; P = average price per transaction; and T= the number of transactions.) There is no reason why, say, changes in the price of bread or automobiles should closely match those of houses, and they don’t.

In criticizing the Federal Reserve System measuring and targeting inflation based on the Consumer Price Index (CPI), in 2014 Austrian economist Frank Hollenbeck observed that, “Unnoticed by many mainstream economists is the fact that we are actually having the inflation everyone was so worried about back in 2009. It is simply showing up in asset prices instead of consumer prices. For some reason we consider higher food prices as bad and something to be avoided, while higher home prices are viewed as a good thing and something to be cheered. But they are both a reduction of your purchasing power. Today, home prices outpace wage growth significantly in many markets, and remain at high bubble-like levels, pricing homes out of reach of many young couples. Their incomes have less purchasing power: the money can buy less of a house, just like it can buy less of a hamburger.” (Hollenbeck) His school of economic thought gets its name from the country where it originated.

How significant the rise in the price of homes has been is illustrated in Chart 18 below.

CHART 18



The United States isn’t the only nation where cheap money has fueled a steep rise in the price of homes. In Sweden the cheap money its central bank has failed to get the consumer price inflation rate up to the targeted level, but it has fueled a house-price inflation by 25% a year. (Matthews)

Hollenbeck believes “It is now just a matter of time before the U.S. central bank follows the central banks of Japan, the EU, Denmark, Sweden, and Switzerland in setting negative rates on reserve deposits.” The goal, he says, of negative rates is to force banks to lend their excess reserves. The assumption is that this lending will boost aggregate demand and help struggling economies recover. [Recall that the Fed is currently paying interest on banks’ excess reserves.]

“In fact, interest rates reflect the ratio of the value assigned to current consumption relative to the value assigned to future consumption. That is, money isn’t just some commodity that can solve our problems if we just create more of it. Money serves a key function of coordinating output with demand across time.

So, the more you interfere with interest rates, the more you create a misalignment between demand and supply across time, and the greater will be the adjustment to realign output with demand to return the economy to sustainable economic growth with rising standards of living. Negative rates will only ensure an ever greater misalignment between output and demand.

As with Japan, Western economies that pursue a long-term policy of low or negative interest rates can expect decades of low growth unless these ‘unorthodox’ monetary policies are rapidly abandoned. Recessions are not a problem of insufficient demand. They are a problem of supply being misaligned with demand… [Over estimates of future demand causes manufacturers to produce more than can be sold at the current price.]

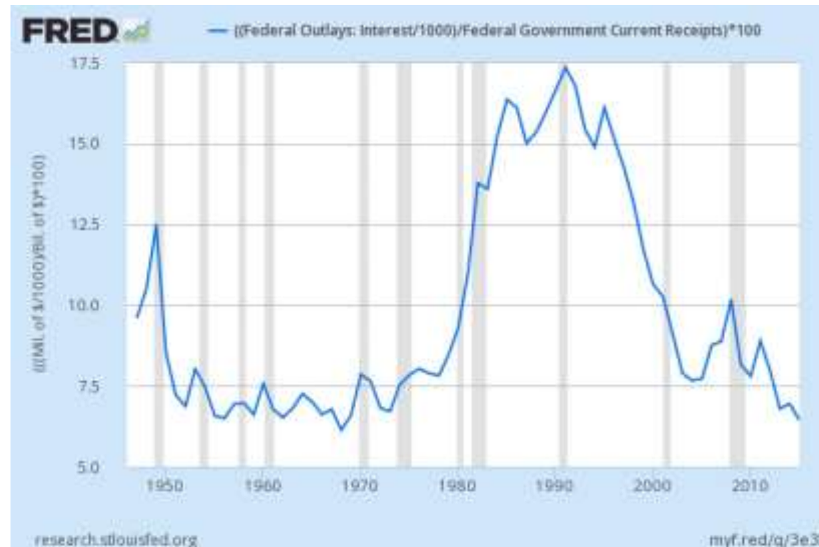
Meanwhile, a goal of some…[is] to push the world toward a cashless society since an increase in cash holdings would limit the effectiveness of negative rates. They know that if they eliminate cash, central banks will have greater control over the money supply and the ability to guide the economy toward their macroeconomic goals.

As long as there is physical cash, people will hold cash in times of uncertainty…and keeping cash in a bank at a time of negative rates is, all things being equal, irrational. Central banks, not surprisingly, would therefore like to take away the ability to hold cash outside the banking system [by doing away with cash]. Worst of all, people who hold cash outside the system might be saving it instead of spending it. Naturally, from the Keynesian perspective, this must be stopped.

This is just the latest frontier in the radical monetary policy we’ve been increasingly witnessing since the 2008 financial crisis. The best monetary policy, however, is no monetary policy at all, and central bankers should take an extended holiday so that the world economy can finally heal itself.” (Hollenback in “CPI Targeting”)

Chart 19 below, which shows the federal government's interest payments as a percent of its total revenue, reveals how beneficial lower interest rates have been for it (Tarr)

CHART 19




# Monetary And Fiscal Policy

Fiscal and monetary policies are sister government policies aimed at promoting sustainable growth of real GDP. Fiscal policy is concerned with the federal government's spending and taxing. If the government's budget is out of balance, there is either a surplus, revenue exceeds spending, or a deficit, spending exceeds revenue.. Monetary policy is concerned with the supply and cost of money.

While fiscal policy cannot be separated from politics, hopefully, monetary policy can because it is both formulated and carried out by the Fed, a self-financed federal agency whose stock is owned by commercial banks, but whose governing board's members are nominated by the President of the United States and confirmed by its Senate. Although it is not an owner, a substantial share of the Fed's profits are paid to the U.S. Treasury.

Monetary policy is conducted by the Fed targeting the quantity and cost of money. The former target is sought by altering the level of banks' reserves, thereby making it possible for banks to either lend more or less, which will increase or reduce the money supply. If the money supply is targeted, the federal funds rate is determined in the market. If the cost of money is the target, the Fed provides the amount of bank reserves required to achieve its targeted federal funds rate. Banks' reserves at the Fed are what they lend to each other at the federal funds rate. The Fed choses whether to

closely control the level of banks' reserves or the federal funds rate. Purchases and sales of securities in the secondary market by the Fed add to or reduce bank reserves. Sales put downward pressure and purchases put upward pressure on securities' prices, increasing or lowering their yield. The reserve requirements the Fed set determine the amount of reserves banks must hold in relation to the amount of their deposits. If more than this amount is held, they are excess reserves. Banks can increase the amount of their lending only if they have excess reserves.

As Monetarist economist Milton Friedman of the University of Chicago pointed out many decades ago, a good bit of time passes between when a bill is introduced in Congress, debated, passed, signed by the president, and spending it authorizes begins to take place. By then a problem with the economy it was designed to deal with may no longer exist or its nature has changed. Monetary policy can be designed by the Fed and put into action far faster.

The Fed also has a lag problem. Monetary policy is carried out daily, but the needed data is neither adequately timely nor accurate. This problem was illustrated in April, 2016 when the Federal Reserve Bank of New York introduced a new GDP data service like one the Federal Reserve Bank of Atlanta had been providing since July, 2014. "The New York Fed's FRBNY Staff Nowcast is estimating tepid first-quarter growth of at 1.1% and the Atlanta Fed measure is showing a near stall at 0.1%, according to the banks' websites. Final official GDP figures won't be released until late June." (Burns)

"Monetary policies in many industrial countries are probably led less by what it hopes to achieve but rather what it hopes to avoid, navigating between the Scylla of deflation on the one side and the Charybdis of run-away-inflation on the other." (Uhlig) Central bankers fear a repeat of economic disasters illustrated by the deflationary 1930s and the run away inflation in Germany after World War I. English academic and government economist John Maynard Keynes lived through and studied both of these episodes.

If we could bring John Maynard Keynes and Milton Friedmen back to life, what would they say about current monetary and fiscal policy? According to a Richmond Fed economist, Thomas M. Humphrey, a lot of people, including some economists, would be surprised about what Keynes' might say.

Keynes, Humphrey claims, is today associated with "excessive government spending, mounting budget deficits, inflationary money growth and…with the idea that inflation can be contained with incomes policies and wage-price controls. In textbooks his views are portrayed in the stylized 'Keynes versus the Monetarists' manner as the opposite of the anti-inflationary views of the Monetarists." Far from advocating that full employment be maintained at any cost, he said that even at high unemployment rates expansionary aggregate demand policy must be curbed to prevent inflation. (Humphrey)

Keynes' current followers in the United States, whose theories are rooted in Alvin H. Hansen's 1953 study guide to Keynes's general theory, *A Guide to Keynes*, and

textbook author Paul A, Samuelson should bear the blame for excessive government spending, mounting budget deficits, etc.

When asked about Keynes, Friedman, who was much younger than Keynes, who died in 1946, said that, "…When I went back and looked at some memos that I had written while I was working at the Treasury…I discovered how much more Keynesian I was than I thought…So what was his influence on me? It was, as on everybody else, to emphasize fiscal policy as opposed to monetary policy, and in particular to pay relative little attention to the quantity of money as opposed to the interest rate." (See (http://www.pbs.org/wgbh/commandingheights/shared/minitext/int_miltonfriedman.html#4 )

Prior to the 1970s, Keynesians claimed the inflation rate was inversely related to the unemployment rate. The combination in the 1970s of a high inflation rate and a high unemployment rate Keynesians claimed was impossible increased respect for Friedman, who denied it was feasible to maintain full employment by the Fed providing inflation. Disproved was a part of Keynesian economics that had ruled the academic roost since the 1950s.

If wages rose less than did the prices of goods and services, real wages will decline. A lower real cost of wages would provide employers an incentive to keep existing workers and hire more. Friedman said that employees would realize that inflation reduced the purchasing power of their wages and would negotiate wage increases that included an inflation premium, and unions clearly did consider future inflation in negotiating wage agreements with employers.

Workers anticipating more inflation than actually takes place will negotiate wages so high that their real wage rises, causing the unemployment rate to increase. Oh, oh, more inflation is needed to get the unemployment rate down. Just as continuous inflation leads workers to expect inflation in the future and include it in their wage demands, rising inflation leads them to expect higher inflation in the future. Anticipated and actual inflation will differ time after time in both directions. Inflation increases, and the unemployment rate is often below the full employment level.

Friedman believed that inflation is a monetary phenomenon. Everything else remaining the same, the price level could not increase without an increase in the money supply. To get the economically devastating effects of inflation under control in the 1970s, Monetarists believed the Federal Reserve needed to put a lid on the growth rate of the money supply. Keynesian theory sanctioned the expansionary monetary policy of the 1970s and 1980s that was accompanied by a rapid rise of inflation into the double-digit level. In 1979 the Fed switched to a monetary policy more in line with Monetarist economists' theory by giving priority to their money supply target. Interest rates rose significantly, and the economy experienced a recession, but the inflation declined significantly, and people came to believe the Fed could and would control inflation.

In a 2003 speech, the chairman of the Federal Reserve Board, Ben Bernanke, said, "Friedman's monetary framework has been so influential that in its broad outlines at least, it has nearly become identical with modern monetary theory … His thinking has so permeated modern macroeconomics that the worst pitfall in reading him today is to

fail to appreciate the originality and even revolutionary character of his ideas in relation to the dominant views at the time that he formulated them." (Nielsen in "Stagflation")

Before the Great Depression of the 1930s, Keynes agreed that high rates of inflation weakens the social fabric and undermines the foundation of the capitalistic free market system. However, while Friedman blamed the length and depth of the Great Depression on poor monetary policy, Keynes attributed the Great Depression to the public saving—not spending—too much money. Because he believed a liquidity trap existed, monetary policy could not lower interest rates enough to propel the economy out of depression. But fiscal policy could save the day by the nation's central government borrowing money so its spending would exceed its income.

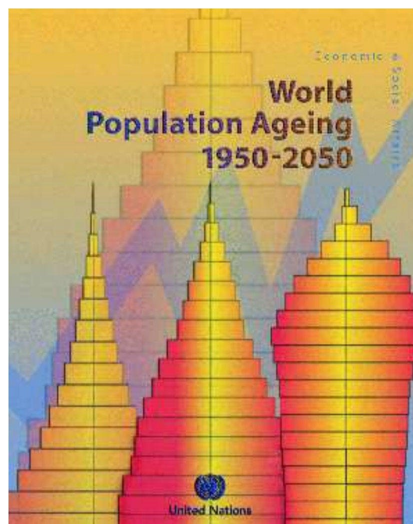
"Though John Maynard Keynes is portrayed as a deficit-loving interventionist, in reality he was not. What is left out of the description of his theory in regards to counter-cyclical fiscal policy, is that Keynes also believed that in times of relative prosperity sovereigns should create budget surpluses. His belief was that booms and busts were an integral characteristic of modern capitalism, and that the accumulation of reserves during times of plenty would enable governments to engage in temporary deficit spending to combat a severe recession, without creating the long-term danger of exploding national debt to GDP ratios. This is an aspect of Keynes's (sic) views on fiscal policy that has been conveniently forgotten by the modern interpreters of Keynesian economics." (Filger)

Some think the nation's current problem is one monetary policy cannot solve: secular stagnation. "Secular stagnation" is not a new idea. It was first popularised (sic) by Alvin Hansen, an economist and disciple of John Maynard Keynes, who thought that…"a slowing of both population growth and technological progress would reduce opportunities for investment. Savings would then pile up unused, he reasoned, and growth would slump unless governments borrowed and spent to prop up demand….The theory is now popular again, thanks in large part to a 2013 speech by Larry Summers, an economist at Harvard University, in which he suggested that the rich world might be suffering from 'secular stagnation'.

Even as asset bubbles inflated before the financial crisis, growth in the rich world's economies was hardly breakneck, suggesting a lack of productive investment opportunities….Adherents of the theory of secular stagnation emphasise (sic) different factors. Demography is one. An economy's potential output depends on the number of workers and their productivity. In both Germany and Japan, the working-age population (those aged 15-64) has been shrinking for more than a decade, and the rate of decline will accelerate in coming decades. In Britain, the population will stop growing in coming decades while in America, it will grow at barely a third of the 1% rate that prevailed from 2000 to 2013." (Data Team, *The Economist*)

Chart 20 below, which on the left shows the age structure before modern medicine and effective birth control and in the middle how it had changed by 1950. On the right is how is expected to look in 2050. Each block in the pyramids represents the size of an age group, with the youngest at the bottom and the oldest at the top.

CHART 20




Source: http://www.un.org/esa/population/publications/worldageing19502050/

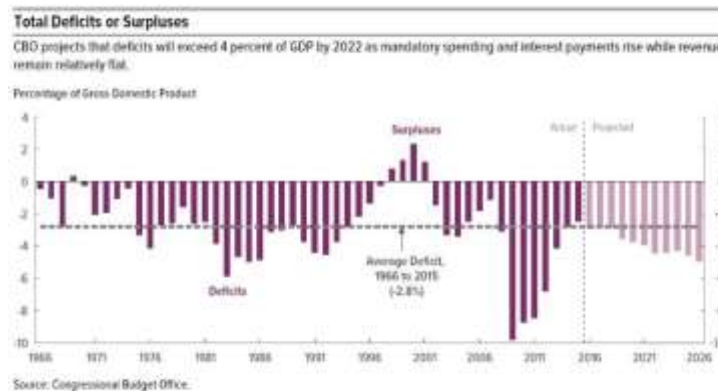
"For about 50 years after the second world war the combination of Japan's fast-growing labour (sic) force and the rising productivity of its famously industrious workers created a growth miracle. Within two generations the number of people of working age increased by 37m and Japan went from ruins to the world's second-largest economy. In the next 40 years that process will go: into reverse. The working-age population will shrink so quickly that by 2050 it will be smaller than it was in 1950, and four out of ten Japanese will be over 65. Unless Japan's productivity rises faster than its workforce declines, which seems unlikely, its economy will shrink." ("Graphic Detail," *The Economist* http://www.economist.com/blogs/dailychart/2010/11/japans_population ) This demographic change has very serious ramifications for Japan's economy.

The countries with negative interest rate policies are those with the highest ratios of the old to the young..

Since World War II, the U.S. has seldom run a balanced budget. "If generally accepted accounting principles were applied to official U.S. federal government budget reports, which require taking into account future liabilities for Social Security and Medicare, then during this period the United States has always run large fiscal deficits, even during times of relative economic prosperity. What this means in reality is that the conditions laid out by John Maynard Keynes for allowing a sovereign to engage in deficit spending during a recession, namely building budget surpluses during periods of economic expansion, have never been adhered to… If John Maynard Keynes were still alive, he would likely take issue with the massive tidal wave of red ink being unleashed by politicians as their antidote to the global economic crisis." (Filger)

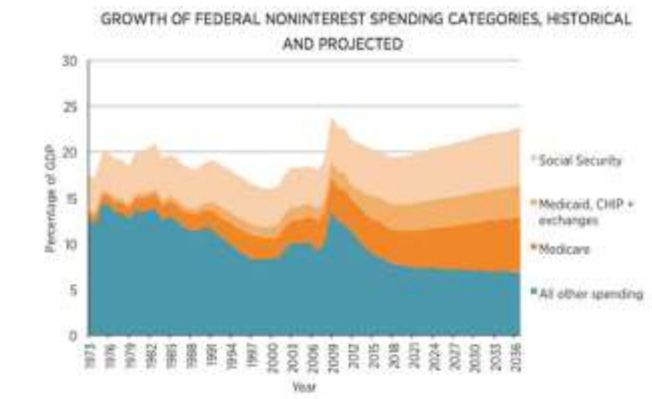
Chart 21 below shows that from 1966 to 2016 federal government surpluses were very rare. (CBO refers to the Congressional Budget Office.).

CHART 21




Note that government deficits and surpluses shown above in Chart 21 is measures them as a percent of GDP. This chart shows how seldom the federal budget was in surplus and that all but one of them took place in the late 1990s. Consistent deficits began during the 1930s. They were the highest during World War II. Note, too, that in the Chart 22 below government non-interest spending is also shown as a percent of GDP. Chart 22 shows how the composition of federal government spending has changed.

CHART 22




Source: Mercatus Center, George Mason University

As can be seen in the above chart, after the 2008 financial crisis government spending increased sharply. Subsequently accentuated was the rising share of government spending accounted for by Social Security and government provided medical care. The share of federal spending accounted for by entitlement spending is growing. The smaller is the share of spending that is discretionary, the less feasible is reducing federal spending.

"The country has…"done nothing to make our entitlement program sustainable for future generations, make our tax code more competitive and pro-growth, of put our debt on a downward path. Instead, we have allowed a 'sequestration' to mindlessly cut spending across-the-board in all areas except those contributing to spending growth." (Bowles and Simpson)

Chart 23 below shows federal government interest payments, which would rise substantially if interest rates return to traditional levels.

CHART 23

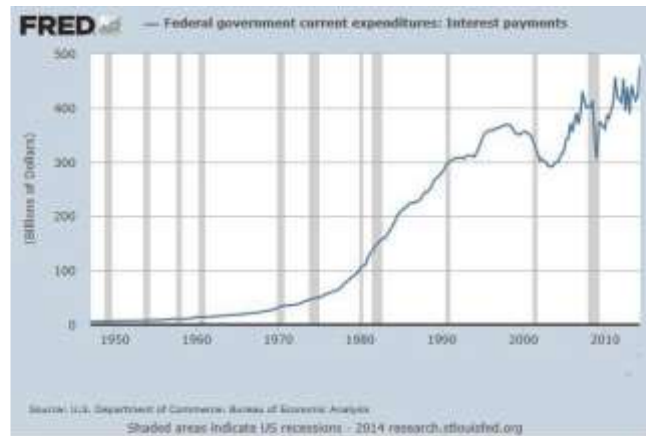
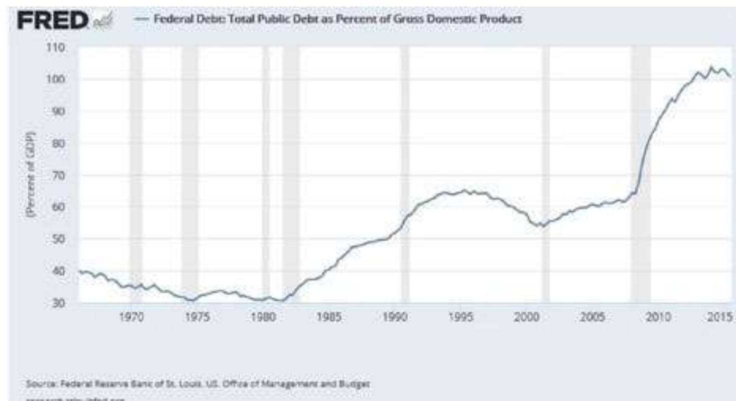



Chart 23 above reveals that despite the unprecedented low recent level of interest rates, the interest cost of the federal debt has increased in most years. Refer back to Chart 21 and notice when for several years the federal government ran a surplus. Note when that happened and when in Chart 23 appears the first dip in interest payments took place.

Chart 24 below shows the size of the debt measured as its share of a growing GDP. It fell during the years when the federal budget was in surplus and rose significantly after the 2008 financial crisis.

CHART 24



## .The Role Of Politics

"... The ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influence, are usually the slaves of some defunct economist. Madmen in authority, who hear voices in the air, are distilling their frenzy from some academic scribbler of a few years back. I am sure that the power of vested interests is vastly exaggerated compared with the gradual encroachment of ideas. Not, indeed, immediately, but after a certain interval; for in the field of economic and political philosophy there are not many who are influenced by new theories after they are twenty-five or thirty years of age, so that the ideas which civil servants and politicians and even agitators apply to current events are not likely to be the newest. But, soon or late, it is ideas, not vested interests, which are dangerous for good or evil." (John Maynard Keynes)

At the Federal Reserve Bank of Atlanta's 2012 Financial Markets Conference, Boston College's Edward J. Kane said: "In the words of the late James Q. Wilson (1980) , the federal bureaucracy operates 'not in an arena of competing interests to which all affected parties have reasonable access, but in a shadowy world of powerful lobbyists, high priced attorneys, and manipulative experts.' Lobbyists for protected firms work hard to convince politicians and regulators that providing contingent support to important financial enterprises is in officials' best interests if not necessarily those of society as a whole."

Politicians are the only people in the world who create problems and then campaign against them.

Have you ever wondered why, if both the Democrats and the Republicans are against deficits, we have deficits? Have you ever wondered why, if all the politicians are against inflation and high taxes, we have inflation and high taxes?

You and I don't propose a federal budget. The president does. You and I don't have the constitutional authority to vote in appropriations. The House of Representatives does. You and I don't write the tax code. The Congress does. You and I don't set fiscal policy. The Congress does. You and I don't control monetary policy. The Federal Reserve Bank does.

One hundred senators, 435 congressmen, one president, and nine Supreme Court justices - 545 human beings out of 238 million- are

directly, legally, morally and individually responsible for the domestic problems that plague this country.

I excluded the members of the Federal Reserve Bank because that problem was created by the Congress. In 1913, Congress delegated its constitutional duty to provide a sound currency to a federally chartered but private central bank.

I exclude all of the special interest and lobbyists for a sound reason. They have no legal authority. They have no ability to coerce a senator, a congressman or a president to do one cotton-picking thing. I don't care if they offer a politician $1 million in cash. The politician has the power to accept or reject it.

No matter what the lobbyist promises, it is the legislator's responsibility to determine how he votes.

Don't you see now the con game that is played on the people by the politicians? Those 545 human beings spend much of their energy convincing you that what they did is not their fault. They cooperate in this common con regardless of party….

If the tax code is unfair, it's because they want it unfair. If the budget is in the red, it's because they want it in the red. (Reese)

The federal government gets more out of every dollar it spends than does, for example, a worker who as a result of its spending gets a job pouring concrete on a highway. The government spends money at the existing price level. Subsequently this money it spends flows through various people's hands, raising the price level as it flows eventually into the hands of the highway worker.

Richard Reeves, the author of a presidential trilogy, wrote with obvious sarcasm:: "Any discussion about American presidents and economics has to begin with this discouraging word: American politicians don't know anything about economics. They are guessing -- as I think most economists and pundits are -- and they seize on almost any idea that sounds good at the time. So a mainstream American conservative, Richard Nixon, blurts out that we are all Keynesians now, and a mainstream American liberal, Bill Clinton, declares that the era of big government is over. And a more fundamental conservative, Ronald Reagan, grabs on to the thinking of an unknown economist able to write everything he knows on a napkin." (Reeves)

Richard Nixon was "…the first president to submit a budget based on 'the [Keynesian] high-employment standard,' which meant the country would spend as if it were at full employment to bring about full employment, thus justifying an 'acceptable' amount of deficit spending. Second, he dramatically announced in August, 1971 what he called the New Economic Policy. The N.E.P. attempted to balance U.S. domestic

concerns with wage and price controls and international ones devaluing the dollar." (Hoff)

"New Economic Policy (NEP), the economic policy of the government of the Soviet Union from 1921 to 1928, representing a temporary retreat from its previous policy of extreme centralization and doctrinaire socialism." (*Encyclopedia Britannica*)

According to Milton Friedman: "Nixon was the most socialist of the presidents of the United States in the 20th century. …[H]is ideas were not socialist, quite the opposite, but if you look at what happened during his administration, first of all, the number of pages in the Federal Register, which is full of regulations about business, doubled during his regime." (See http://www.pbs.org/wgbh/commandingheights/shared/minitext/int_miltonfriedman.html#8 )

"President Richard Nixon's actions in 1971 to end dollar convertibility to gold and implement wage/price controls were intended to address the international dilemma of a looming gold run and the domestic problems of inflation. The new economic policy market the beginning of the end of the Bretton Woods international monetary system and temporarily halted inflation. (Ghizoni)

After a joint interview with several television journalists on January 4, 1971, off camera, President Richard Nixon, who expanded the government's power by creating the Environmental Protection Agency, told Howard K. Smith of ABC News that he was "now a Keynesian in economics." This was reported in a brief article in the *New York Times* on January 7, 1971. (Milton Friedman, whose policy recommendations are said to have influenced Nixon, believed Nixon was kidding Smith.) In this interview, Nixon said that. Instead of aiming for budgetary balance in nominal dollar terms, he would aim to balance the budget on a "full employment" basis. This, a "cyclically adjusted deficit," separates the share of the budget deficit resulting from a downturn in the economy, which automatically raises spending and reduces revenue, from its "structural" component. Distressed conservatives viewed this as a license to run budget deficits forever. (Bartlett)

In a 2000 article by the Cato Institute's director of fiscal policy studies it was claimed that:

> In 1995 Bill Clinton famously declared that "the era of big government is over," and for a very brief, glorious time in Washington, he was right. For about 18 months after the Republicans won control of Congress, big government and Bill Clinton were in full scale retreat.
>
> But in [his] his last budget, Bill Clinton has formally announced that big government is back with a vengeance. This $1.8 trillion fiscal blueprint is the largest request for money of any government or enterprise in the history of civilization. If approved, the expenditures of the U.S. government will be $400 billion larger than they were when Bill Clinton first arrived in Washington and converted the White House into a den of iniquity and

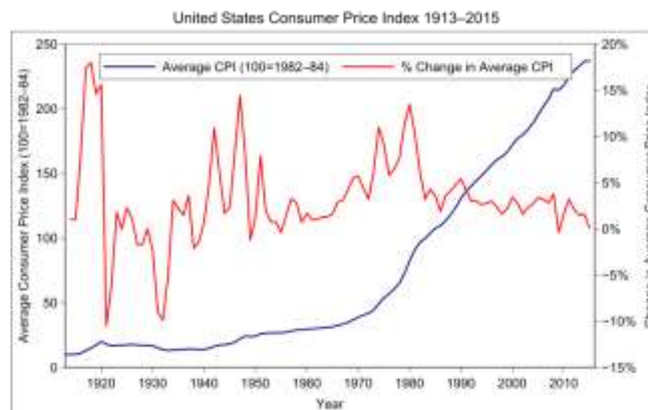
Chinese fundraising. That's just under $4,000 more government for every household in America….

So far Republicans have signaled a maddening receptiveness to all of this spending. The Republican response to the State of the Union by 2 of the Senate's least conservative voices, Susan Collins of Maine and Bill Frist of Tennessee was, to put it charitably, feeble. We were spoon fed "me-too" Republicanism. (Moore)

"Well," said Milton Friedman in a 1999 interview, "there's only one way in which I believe he [Bill Clinton] deserves some credit. Because you have a Democrat in the White House and Republicans control the Congress, it's hard to get any laws passed, and that's been a great advantage. The source of our prosperity in my opinion dates back to Mr. Reagan's reductions in tax rates…. and deregulation during the Reagan Administration, also go down to the 1986 Tax Act which eliminated a lot of interventions, unfortunately which have been creeping back in. And that unleashed a private enterprise boom which we're still benefitting from." (Robinson)

Chart 25 below shows that the CPI took off after Nixon took the U.S. off the gold standard, but fluctuations in it declined in amplitude. (Keep in mind that how the CPI is defined and measured changed substantially over the years.)

CHART 25




Source: Wikimedia Commons

During the Franklin D. Roosevelt administration in a failed attempt to get the nation out of the Great Depression, the nation was taken off the classic gold standard. This meant its citizens could not, as formerly had been the case, redeem paper money in gold coins, which were removed from circulation and the public forbidden to own gold. However foreign central banks and governments could redeem dollars in gold. This is what Nixon ended. (One thing which hasn't changed in size on the Fed's balance sheet is its holdings of gold certificates.)

In campaigning against their Democrat opponent Republicans often support free markets and shrinking government. Republican President George W. Bush, whose father's promise of "no new taxes" was not kept:

- "increased federal spending on education by 60.8 percent;

- increased federal spending on labor by 56 percent;

- increased federal spending on the interior by 23.4 percent;

- increased federal spending on defense by 27.6 percent.

- created a massive department of homeland security;

- got more people working for the federal government since the end of the Cold War;

- not vetoed a single spending or any other bill;." (Goldberg)

Politicians' views about banking have flip flopped over the decades. During the Great Depression President Franklin D. Roosevelt signed the Glass-Steagall Act which separated commercial and investment banking, the combination of which was thought to have helped cause the depression. In the 1990s commercial bankers were complaining about being unable to compete with European commercial banks because they were allowed to offer investment banking services. In 1999 President Bill Clinton signed the Gramm-Leach-Bliley Act which overturned Glass-Steagall. This led to the rise of several very large banks that engaged in both commercial and investment banking. In 2010 President Barack Obama signed the Dodd-Frank Act which was designed to prevent some of the same things Glass-Steagall was designed to prevent.

In June, 2015 New Jersey Governor Chris Christie, a Republican, suggested that the Fed's "easy money" policies could destabilize the global economy. Although he believed the Fed slashing interest rates to near zero was justified for a while by the financial crisis, he said this policy will cause "real problems as we move forward." He linked low interest rates to an increase in income inequality, saying cheap money had lifted stock prices, thereby increasing the wealth of people who were already rich. (Newsmax) The libertarian wing of the Republican Party and the basically quite different socialist wing of the Democrat Party are both very critical of the Fed. Income inequality is a very big issue with the latter.

In a review of *Fragile by Design: The Political Origins of Banking Crises and Scarce Credit* by Charles W. Calomiris and Stephen H. Haber, the reviewer says :"Over the past 180 years, the United States has seen 14 banking crises, compared with two in Canada. More recently, since 1970 the U.S. has seen two banking crises, which puts it on a par with countries such as the Central African Republic, Chad, and Uruguay. The fundamental problem is not just that governments are needed to charter banking

systems, but that governments also fall prey to parochial interests that end up weakening that banking system. These interests vary by country. The authors call this 'the Game of Bank Bargains'. The U.S. had to compromise with more interested parties than did Canada, and the compromises resulted in the stream of U.S. banking crises. Satisfying local interests also weakened banks in Mexico and Brazil." (Furchtgott-Roth)

The high interest rates the nation experienced in the late 1970s led to one of the nation's banking crises. It caused commercial banks and savings and loan associations (thrifts) to lose deposits to money market mutual funds because they paid market interest rates that banks and thrifts could not because a law dating back to the early 1930s put a ceiling on what they could pay depositors. This law existed because it was thought that competition between banks for deposits had caused their interest expense to be too high, and this caused a lot of banks to fail.

Due to savings and loan associations (S&Ls) only being allowed to provide borrowers with long-term, fixed-rate, residential mortgages, they suffered more than did commercial banks, which could make long and short loans of all types, and, unlike savings and loan associations, offer checkable deposits. For the typical S&L, the average interest rate on their mortgage loans was way below the rate of inflation. If sold, due to the high discount buyers would demand, they could only be sold at a huge capital loss.

Chart 26 below from Ben Bernanke's 2015 article, "Why Are Interest Rates So Low?' shows how high inflation and interest rates were in the 70s and 80s. Revealed, too, is the to be expected relationship between inflation and interest rates—two variables the Fed can influence. (Bernanke is a former chairman of the Federal Reserve's Board of Governors.)

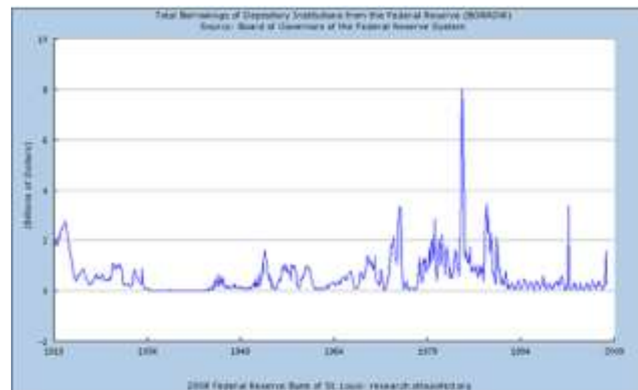
CHART 26

The problem for savings and loan associations was not solved by allowing them to pay higher interest rates on their deposits because the average interest rate on their mortgage loans—many made many years earlier when interest rates were much lower--was far below what they needed to offer depositors. So, they were allowed to get into

other kinds of lending and offer checkable deposits. (The interest rate risk of a business financing long-term lending with highly liquid liabilities as S&Ls did is enormous.)

Poor and sometimes corrupt management led to 1,043 out of 3,234 S&Ls—at a great cost to U.S. taxpayers—failing between 1986 and 1995. The federal agency that insured their depositors, the Federal Savings and Loan Insurance Association, was abolished, and responsibility for insuring their deposits was assigned to the Federal Deposit Insurance Corporation which insured commercial banks' deposits. The impact on the Fed of this crisis is indicated by Chart 27 below which total borrowings of depository institutions from the Fed.

CHART 27



In the 1960s, "Famed political columnist James Reston explicitly endorsed Tweedledee-Tweedledum parties that disputed only the details of the emerging welfare state. He counseled Republicans that their best route to success was "not by moving to the right and exaggerating the differences" with the Democrats, but by showing that they "can administer [liberal policies] more efficiently." (Fischer)

In a 1981 article in the *Journal of Finance* Edward J. Kane observed that banks taking advantage of loop holes in regulations would be followed by re-regulation, which would be followed by banks taking advantage of loop holes followed by re-regulation, etc.

In 2015, Barry Eichengreen, a University of California professor of economics and political science, lamented:

> Many have bemoaned the U.S. government's failure to do more to strengthen the financial system following the 2008-2009 crisis. In particular, Congress has not considered anything resembling a revival of the Glass-Steagall Act, which separated the humdrum deposit-taking function of commercial banks from the kind of dubious investment and trading activities that set up financial institutions for a fall.

In fact, Congress recently weakened The Volcker Rule, which aimed to prohibit some forms of risky trading by banks. And now the Republican-controlled House and Senate vow to further roll back the Volcker Rule and other provisions of the Dodd-Frank financial reform.

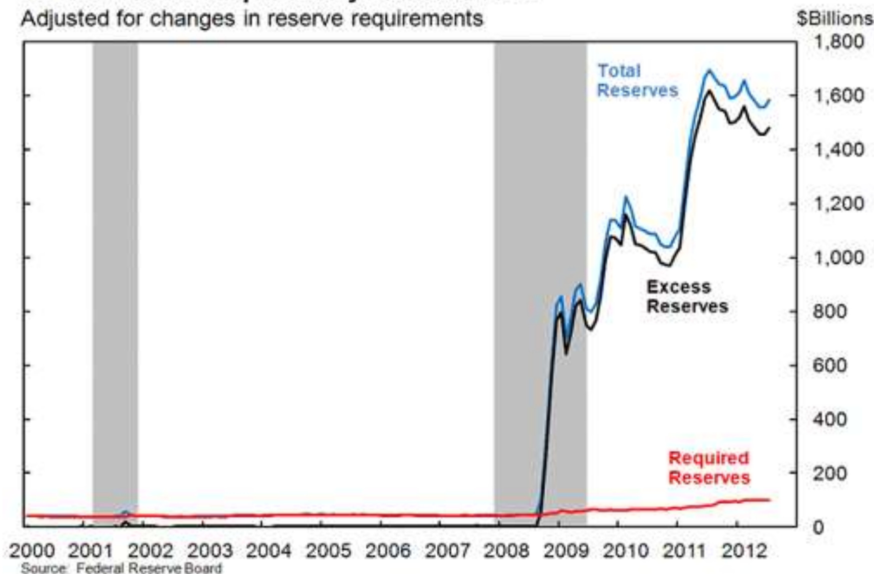
According to *Investor's Business Daily*, "The fiscal 2016 budget deal that emerged at 3:15 a.m. Friday was little more than a blank check for President Obama's final two years. Now he'll sail into retirement knowing he can spend what he wants with little opposition from a GOP Congress. The bill passed 64-35, with only 18 Republicans in favor. But that was more than enough. Which raises a question: Why have a Republican majority if its leadership is going to let the Democrats run Washington? With the budget ceiling removed, Congress won't have to worry about budget showdowns or government shutdowns. It can just focus on spending more." (See: http://www.investors.com/politics/editorials/budget-spends-more-adds-debt-and-doesnt-cut-taxes/ )

Charts 23 and 24 above reveal how disastrous in would be for the Federal government if the Fed allowed interest rates to rise from their extraordinarily low level in recent years to anywhere near a "normal" level. A continuation of the vastly higher profits of the Fed' would provide the Federal government with a financial bonanza. In December, 2015 Congress directly funded infrastructure projects by grabbing $19 billion from a Fed capital surplus account. Because the Fed can create money, it could operate even if its capital was negative. Printing money is profitable because at a very low cost the Fed can provide itself with the money it uses to purchase interest-bearing securities.

The profits of other central banks, particularly Japan's, have also risen enormously. Even the central bank in Greece, an economic basket case, has racked up more profits. Even though it experienced a huge loss in 2015, Switzerland's central bank, it still distributed one billion francs to the federal government and cantons, and paid a dividend. (Fairless).

In an October 6, 2008 Fed Board of Governors Press Release the Fed's new policy was described as follows: The payment of interest on excess reserves will permit the Federal Reserve to expand its balance sheet as necessary to provide the liquidity necessary to support financial stability while implementing the monetary policy that is appropriate in light of the System's macroeconomic objectives of maximum employment and price stability. Previously Congress did not allow the Fed to pay interest on reserves. The dramatic result of this new policy is shown in Chart 12 above and below in Chart 28 from the Fed's Board of Governors.

CHART 28




> Essentially, paying interest on reserves allows the Fed to place a floor on the federal funds rate, since depository institutions have little incentive to lend in the overnight interbank federal funds market at rates below the interest rate on excess reserves. This allows the [FOMC] Desk to keep the federal funds rate closer to the FOMC's target rate than it would have been able to otherwise…
>
> The Fed can change the rate for interest on reserves to adjust the incentives for depository institutions to hold reserves to a level that is appropriate for monetary policy. This also provides an important "exit strategy" tool, which will allow the Fed to better control the level of excess reserves when it begins to remove monetary policy stimulus. (Federal Reserve Bank of San Francisco)

Spending money is a way for members of Congress to obtain votes. Raising taxes is a way to lose votes. Constant deficit spending means an ever larger federal debt to pay interest on—spending which doesn't buy votes. Congress can take away the Fed's power to defy Congress because helping it out with an easy money policy will, through resulting inflation, harm the economy in the long run. But the recent easy money policy during which banks were paid interest on their reserves has been accompanied by an inflation rate below the level the low level the Fed thinks is necessary in order to have a healthy economy.

# Conclusion

How the Fed dealt with the 2008 financial crisis and the subsequent recession led to a change in the scope of Fed financing of federal government spending that Congress is likely to want to continue. Threatening the economy in the future are asset bubbles; pension fund collapses; and negative real interest rates on the public's bank deposits. Anemic economic growth is likely to continue. Significant inflation is a possibility.

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***Note: Due to their mobile nature, some of the FRED charts from the Federal Reserve Bank of St. Louis had to be photographed from a computer screen in order to be used in a pdf doc, so they look different from the other FRED charts. The author appreciates very much the charts obtained from the St. Louis Fed's site on the web and those from other organizations' web pages. As one who did research for many years before the web existed, writing this article really brought home to me what a wonderful research tool it is. Many more valuable references could have been cited. Young scholars are very fortunate.***

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