



Bernanke's Motives Behind Quantitative Easing

By Paul Franchi

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We are at a turning point: away from one global monetary standard, to a yet-to-be-determined new form.

The Great Depression marked the start of the transition of the reserve currency from the gold standard to the dollar. The unconventional emergency measures taken by the Federal Reserve in 2008 and the continued use of quantitative easing (QE) by central banks mark the departure from the dollar standard in the current era. This insight is found in Bernanke's academic work and the frequent current parallels he has drawn to the Depression, but gets largely overlooked since he assumes knowledge of key facts of the earlier era's global economy.

Comparisons to the Depression help us to understand our historic transition point and the current actions of the Fed. By implication the ensuing period of change from one financial standard to the next will continue to produce sudden and unpredictable results, both inflationary and deflationary, depending on each country's currency, economy and trade balances.

In the [first](#) of this three-part series, I discussed the important and growing force that demographics will come to play in the mutual fund industry. In the remaining two essays, I place the current Fed's extraordinary monetary policy into historic context. In part 3, I will shed light on the forces that took the Fed to this point while propelling the fund industry in the 1980s and 1990s and how it will continue to pressure the industry in new ways.

Historical parallels between today's crisis and the Depression

Bernanke's scholarly work and his public comments show the consistency of his views on the Depression and today's crisis. In both cases he advocated for the government to part with convention and create new standards, because rigid adherence to prevailing standards threaten to place the entire system at risk.

The U.S. in the 1920s, like China today, was rapidly emerging as a world power due to a favorable trade surplus with the rest of the world. After having pursued highly



expansionary economic policies, also like China it was faced with calls to further stimulate its economy to support global demand.

The departure from the gold standard, initiated by European countries, was a response to the US inability and refusal to comply with requests to stimulate its economy in a manner that was helpful to Europe and it was obliged to do under the rules of the gold standard. QE, like the departure from gold, is an experimental response by the US (and other countries), which like Europe in the Depression suffers from current account deficits and high debt levels and seems to have few remaining policy options. Maintaining steady growth and removing the threat of systemic collapse are the priorities that call for changing long accepted rules governing both the role of the central bank and its accepted forms of private market involvement.

Unlike Europe, the US entered the Great Depression with overall finances and trade in remarkably good shape – its flaw was policymakers lacking in understanding of the propensity for “financial accelerators” at times to do damage to the real economy and for that damage to persist for prolonged periods of time.

An explanation of Bernanke’s financial accelerator

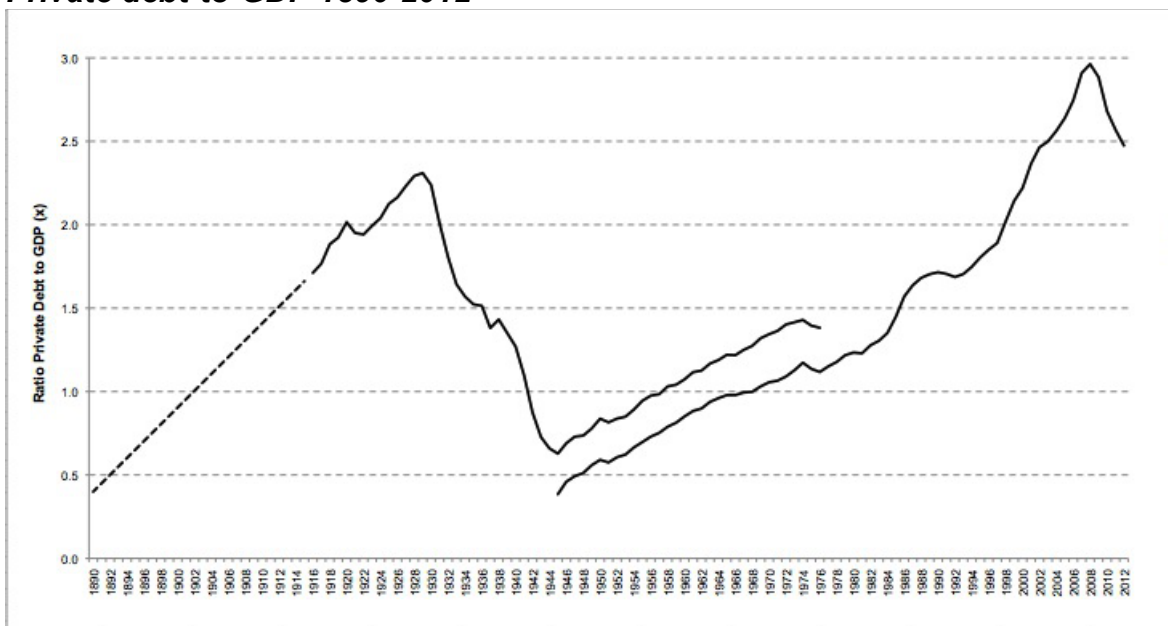
Both the Depression and the 2008 crisis were preceded by historic long-term expansion of private debt to GDP. Neoclassical and Keynesian economic models have been criticized for not factoring in the role of credit intermediaries and debt expansion when considering the causes of both crises. Both models view financial intermediaries as mere agents in an economy that passively redirect credit. Classical economists of the 1930s saw the purge in speculative credit that led to the Depression as a healthy redistribution of wealth from debtors to creditors. In 1983, Bernanke [addressed](#) this shortcoming in his “financial accelerator” model that drew from several schools of thinking and originated with Irving Fisher 1933, whose view it was that collapsing credit and unanticipated asset-price markdowns led to self-reinforcing “debt deflation”.

In Bernanke’s model, financial intermediaries contribute to aggregate demand by amplifying business cycle swings. The decision to lend and the premium charged for financing is directly related to the net worth of the borrower. Borrowers with higher net worth have lower default risk, which in turn entitles them to a lower premium for external financing. The lower financing premium in turn increases the capacity of the borrower to expand its income earning potential, thereby further increasing net worth which again permits him to borrow more. He [notes](#), “There is a kind of multiplier effect. An unanticipated rise in asset prices raises net worth more than proportionately, which stimulates investment and, in turn raises asset prices even further. And so on.” Bernanke’s model working in equilibrium checks asset price rises eventually as entrepreneurs leave the industry and net worth stabilizes.

The greater concern arose in the case of both the Depression and the 2008 crisis when the economy was in disequilibrium, having been powered over extended periods of time by the continuous expansion of private debt to total GDP.

The figure below presents two private-debt-to-total-GDP data series for the U.S. Several adjustments to the original data that assist in making the comparison are highlighted in Appendix 1.

Figure 1
Private debt-to-GDP 1890-2012



In the two decades preceding the 1929 peak, total private debt increased by 200%. This is significantly tamer than the 400% increase in the comparable timeframe prior to 2008.

The magnitude of risk that debt deflation posed to the economy exceeded the level reached during the Depression since the late 1990s. The experience since that time has been one of policymakers pursuing all means possible to continue the expansion of private debt. Any collateral imbalances or asset bubbles were seen as less damaging than a full-out debt deflation. The solution to too much debt was more private debt, until the breaking point in 2008 was reached. The government stepped in, as it did in the 1930s, to replace collapsing aggregate demand from stagnant private debt growth with spending fueled by expansion of debt.



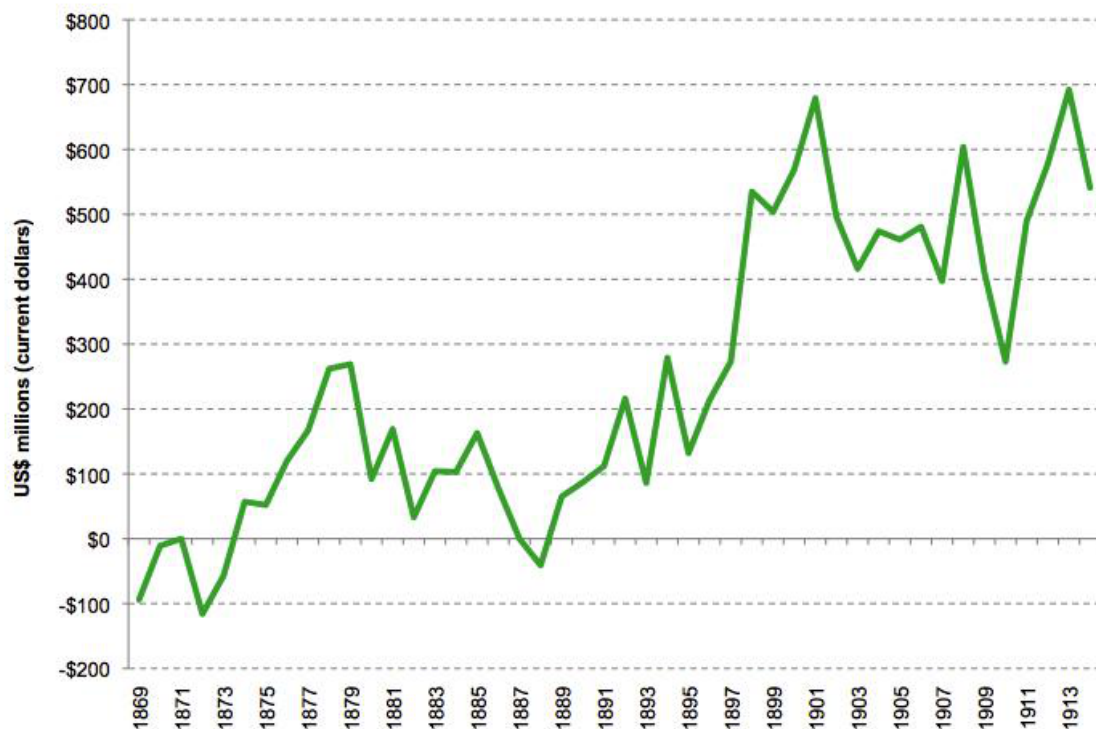
The creation of private debt has a direct relationship to the long-term negative US current account deficit, which I will explore in part 3. Similarly, debt creation prior to the Depression was also trade related. Contrary to popular belief, debt creation worked in an unconstrained manner unhinged from the gold standard, but in terms of trade, the US was in the much better position of having long enjoyed a trade surplus.

The gold standard before WWI and US trade surpluses

The trade surplus position of the US in the Depression played a central role in creating a dysfunctional financial system. The system was unable to correct unsustainable imbalances that built over time requiring some countries to abandon the gold standard. Bernanke referenced these imbalances from the earlier times and compared them to imbalances which have formed in the US over time in our modern period.

The U.S. was the breeding ground of agricultural and industrial innovation in the second half of the 19th century. Before the start of World War 1, the U.S. had run a trade surplus with the rest of the world in all but one of the preceding 40 years (Figure 2). By 1910 the U.S. even became a net exporter of manufactured goods.

Figure 2
U.S. trade surplus (exports less imports)
\$millions current dollars 1869 - 1913



Source: *Historical Statistics of the United States - Table Ee416-417*

The period from 1877 to 1882 provides an instructive example to explain how the gold standard functioned. U.S. food exports in 1880 and 1881 reached twice the levels of the preceding or following five years because of unusually bad crop seasons in Europe and unusually good seasons in the U.S. The demand for dollars outside the U.S. placed upward price pressure on the dollar because currencies were fixed to the price of gold. A foreign firm could have paid U.S. farmers in their foreign currency. The farmer could rely on the strength of the gold standard to know this foreign currency was backed by gold at a fixed rate. After the farmer exchanged foreign currency for U.S. dollars the U.S. bank could call on the foreign bank for gold. The gold would flow through the “gold-specie flow mechanism” into the U.S. banking system. The U.S. bank would then be able to expand credit at a multiple above the gold reserves it held, which would stimulate aggregate demand and cause prices to increase. The foreign bank, having lost gold would be required to call in loans to ensure it met its own reserve requirement. Eventually, U.S. consumers would switch to lower-cost foreign products to such a degree that the flow of gold would change directions, causing contraction in the U.S. and expansion abroad.



Policymakers closely eyed their gold flow and contracted their economies whenever necessary to maintain balanced trade and avoid excessive and destabilizing credit creation.

Bernanke's criticism of the gold standard is confined to its operation between the two world wars. He has not opposed the gold standard in general or voiced strong concerns about deflation. He [wrote](#), "The [downward] adjustment of nominal wages in response to declines in aggregate demand during the 1930s was surprisingly slow and incomplete." On numerous occasions he spoke positively of the functioning of the international financial system under the leadership of Great Britain, as he did in a [speech](#) at Washington and Lee University in 2004:

The gold standard appeared to be highly successful from about 1870 to the beginning of World War I in 1914. During the so-called classical gold standard period, international trade and capital flows expanded markedly, and central banks experienced relatively few problems ensuring that their currencies retained their legal value.

What factors led Bernanke to conclude that the financial system, beginning in 1914, was no longer functioning successfully under the gold standard? What is the application to today?

The flaws of the gold standard after WWI

The answer to that question lies in asymmetric policy responses to the trade flows that occurred following World War I. Those responses were a byproduct of the gold standard.

Wartime inflation in the U.S. and globally became a significant event. Much of the inflation in the U.S. was (as one would expect under the gold standard) due to its rapidly increasing trade surplus. There was no need for the U.S. to depart from the gold standard. European nations, however, left the gold standard temporarily (as was the custom for countries at war) and expanded their money supplies well beyond reserve requirements while running trade deficits.

Once the war ended, not all countries shared Britain's desire to deflate their economies and re-link their currencies to gold at the pre-war fixed exchange rate. Certain countries, including Germany and Czechoslovakia, made little effort to contain inflationary expectations. These countries resorted to printing massive amounts of currency to satisfy internal debt. This led to hyperinflation and destruction of their currencies.

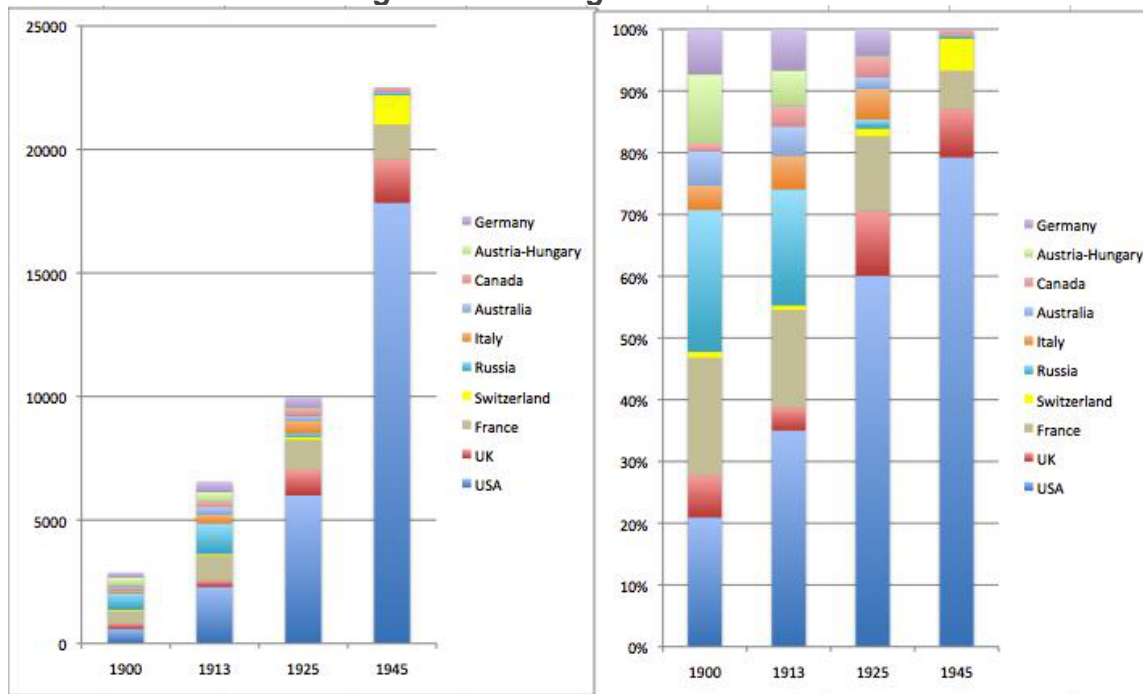
The experience of the U.S. was unique and enviable. With continued net trade surpluses came the perceived need to sterilize excessive gold inflows. Gold was removed from the

Fed by the Treasury so it could not increase the upper limit of credit in the U.S. economy. Otherwise, too much gold would stimulate the economy beyond levels that were already concerning Congress and the Fed.

Bernanke has contended that the interwar gold standard caused an asymmetric policy response. Deficit countries reduced their money supplies and deflated, but surplus countries, like the U.S., could sterilize their gold inflows and accumulate reserves indefinitely, creating a deflationary bias in the gold standard's operation.

Liaquat Ahamed described the position of the U.S. in relation to its trading partners as “a poker table at which one player has accumulated all the chips, and the game simply cannot get back into play.” An important goal of European financial policymakers for many years was to free up trapped reserves in the U.S.

Figure 4
Select country national and central bank gold reserves
Left - Metric Tonnes - Right - Percentage of Total



Source: World Gold Council "Central Bank Gold Reserves, An historical Perspective Since 1845" Timothy Green, Research Study No. 23 Citing Bank of England Weekly Returns: 1844-1914. Dr Adolph Soetbeer, *Materialen*, Hamburg, 1886. Reports of the Director of the U.S. Mint, 1886-88, 1896, 1906. Royal Commission on Indian Finance and Currency, cd 7238, 1813, Appendix XXX. Royal Commission on Indian Finance and Currency, London 1926, Appendix 82, Evidence of Joseph Kitchin. Annual Reports, Bank for International Settlements 1930 et. seq. Annual Report of the Director of the Mint,



Washington DC, 1940. Banking and Monetary Statistics, Board of Governors of the Federal Reserve System, Washington DC, 1943.

As early as 1925, there were serious discussions about moving to a dollar-reserve standard backed by gold. The young John Maynard Keynes, an increasingly respected voice, argued for currencies to become non-convertible (to gold) and for central bankers to manage money supply with a goal of price stability. In his view, gold would serve a more limited but important role “as a war-chest against emergencies and as a means of rapidly correcting the influence of a temporarily adverse balance of international payments and thus maintaining a day-to-day stability of the [then] sterling-dollar exchange”.

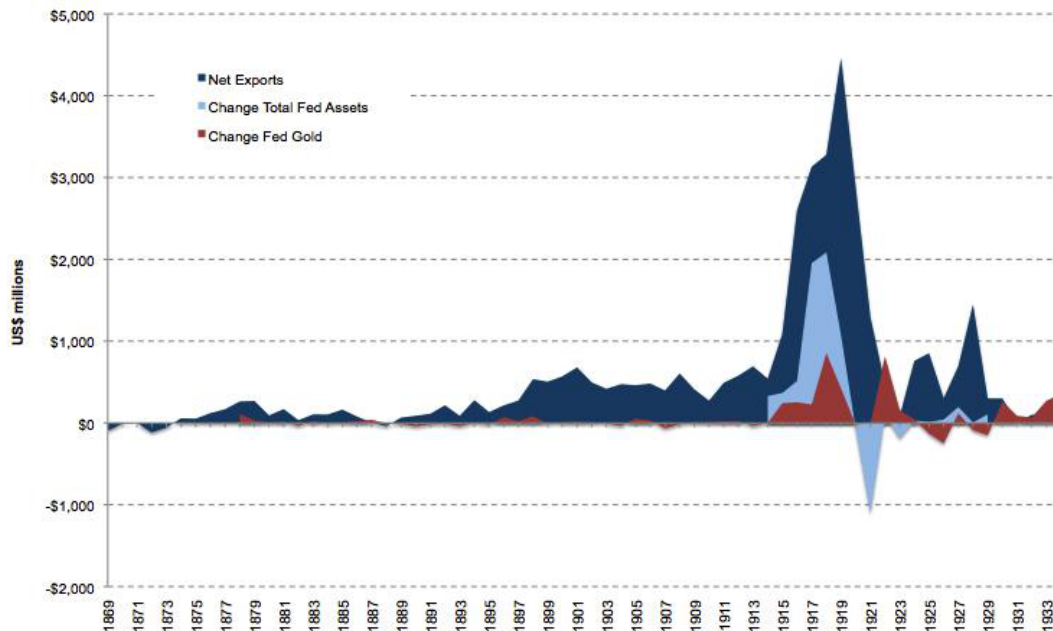
Other causes of inflation after WWI

Flawed policies and financial infrastructure resulted in an expansion of credit in the U.S. beyond what was attributable to the spike of wartime gold inflows (see Figure 5). The newly formed Federal Reserve was in existence a mere three weeks before war broke out in 1914. The initial reserve requirements legislated for the Fed and its member banks were set intentionally low in an effort to improve its chances of success. In light of the unexpected flow of gold from Europe, however, those reserve requirements proved to be unnecessarily stimulative to member banks.

The Treasury was another major contributor to the inflationary environment. It applied relentless pressure on Fed officials to maintain very loose monetary policy to support the price and issuance of war bonds during and after the war. Fed officials were pressured to maintain discount rates to make these securities attractive to purchasers. War bonds were also unexpectedly used both as collateral to borrow more money at the Fed discount window and to satisfy reserve requirements. Both uses expanded money supply in a manner unanticipated by Congress.

Before the Fed’s existence, the Treasury would have gone directly to the public for funds rather than fueling the expansionary power of the new Reserve Bank system, which was rich with gold. Not surprisingly, Figure 5 shows the direct relationship between the trade surplus in the U.S., the build-up of gold reserves and the assets on the Fed’s balance sheet.

Figure 5
U.S. net exports and changes in Federal Reserve assets
1871-1934 US\$ millions



Source: *Changes in Assets of Federal Reserve, Exports and Imports - Historical Statistics of The United States Ee416-417, Ed 418-423, Cj273-282, Gold in Fed Reserve and Treasury: St. Louis Federal Reserve citing: National Bureau of Economic Research data files tagged 14137a 14137b*

The net effect of all stimulative factors was that credit expanded excessively and well past the point where gold would normally have placed it in check. In the absence of the gold standard working correctly, policymakers were left to decide how and when to reign in lending.

How other countries reacted after WWI

The gold-specie flow mechanism should have restored balance by permitting Europe to enjoy a substantial trade surplus with the U.S., but it was not permitted to function because inflation in the U.S. did not benefit Europe. The sterilization of gold inflows, tight monetary policy and protectionism all worked against the needs of Europe and were in contrast to the obligations of the U.S. under the gold standard.



As a result of inflationary pressure, asset bubbles formed as early as 1917 in a number of sectors within the U.S. economy: farm credit, vacation homes, residential real estate and consumer spending. Those are documented in Appendix 2.

The final U.S. asset bubble

At the end of the war, Germany, France and Britain were overwhelmingly encumbered by debt. Britain and France owed the U.S. \$5 billion and \$4 billion, respectively, out of a total of \$12 billion in credit that the U.S. had extended to its allies. Britain in turn was owed \$11 billion from 17 countries.

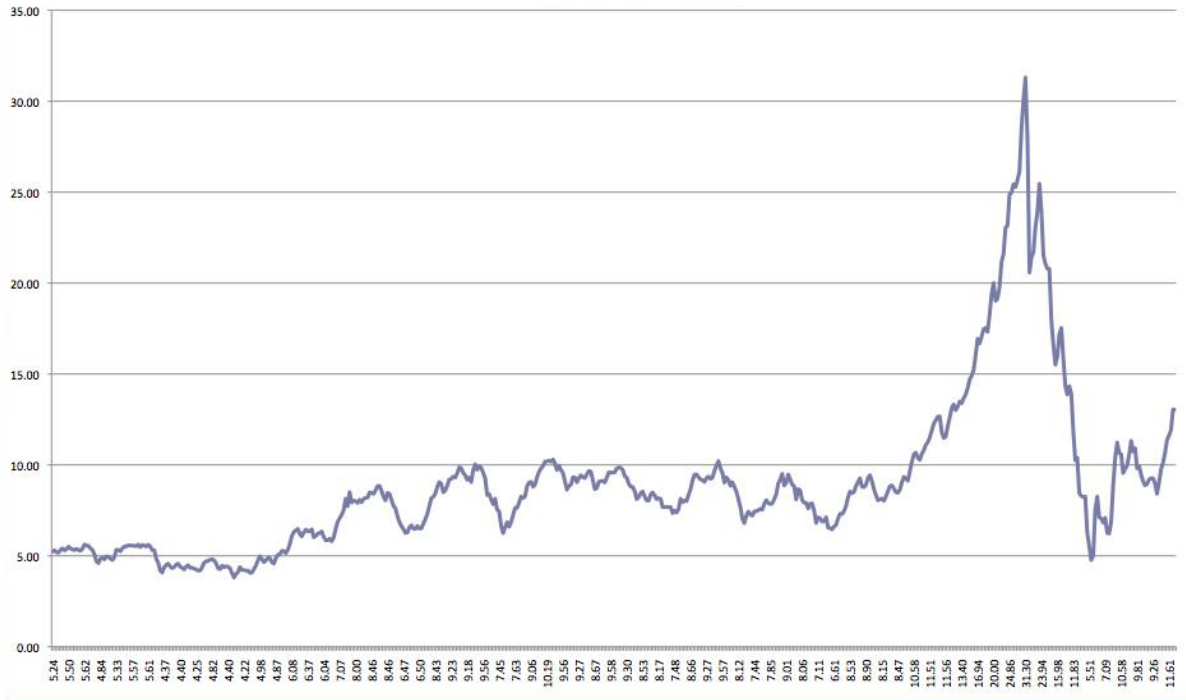
Britain was determined to have London remain a major financial center, so it was committed to deflating its economy to rejoin the pound sterling to the gold standard at the prewar parity. By 1925, Britain had suffered almost 10 years of deflation, high unemployment and high interest rates. Britain had the worst of both worlds – deflation and no gold to show for it.

Germany's choice was to inflate its way out of its internal debt (in the now well-known Weimar hyperinflation). By 1927, its new currency was stabilized and output grew. High German interest rates made it attractive for Germans to borrow in foreign currency, and money flowed back into Germany. But the German government was unable to build gold reserves under the weight of war reparations and reconstruction costs.

France chose a halfway ground of high but manageable inflation throughout the 1920s. By 1927, France re-entered the gold standard at a much lower exchange rate than the prewar parity, which continued to benefit French exporters. A cheap franc and capital investment caused gold to flow from Britain to France.

By 1927, it began to look as if the financial system in Europe was going to collapse and the U.S. was experiencing a mild recession. European central bankers convinced the New York Fed that lowering U.S. rates was the solution. Although the Fed had raised rates one year earlier to slow the rise in stock prices, it responded by cutting rates 50 basis points, which resulted in a 20% rise in stocks for the year.

Figure 6
S&P composite index
1889-1935



Source: Professor Robert Shiller, www.irrationalexuberance.com data set.

By today's measures, the U.S. stock market would not have appeared wildly overvalued, with price-to-earnings ratios in the high teens and a dividend yield just above 3%. But the Fed was shell shocked by the appearance of bubbles at every turn. Every amount of credit expansion seemed to go directly into price levels that stoked speculation. From January to July 1928, the Fed increased rates from 3.5% to 5% and sold more than three-quarters of its stock of government securities, choking both the bull market in stocks and the economy, which had already been weakening.

In November 1929, just after the U.S. stock market crashed, the Fed cut rates from 6.0% to 2.5% and injected \$500 million into the U.S. banking system. This further prevented the flow of gold from meaningfully returning to Europe. U.S. bankers became risk averse and lending to Europe froze. It was under this set of frustrating circumstances that Keynes' call for the bancor, unhinged from the strict requirements of the gold standard, met increasing enthusiasm.

Comparisons between the Depression and today with references to Bernanke's research and actions



Let's now discuss what Bernanke's research says about the likely course of the global economy. For Bernanke "deflation is in almost all cases a side effect of a collapse of aggregate demand – a drop in spending so severe that producers must cut prices on an ongoing basis in order to find buyers."

Of the three factors responsible for the deflation during the Depression – the financial accelerator, policy missteps, and international factors – Bernanke spends much more time on the latter two. Both are rooted in historically unusual trade imbalances, which allow for excessive credit creation and set the stage for policy missteps. This very rare set of circumstances appears to be present once again today.

There is less attention in his research to the credit build up in the U.S. prior to the Depression because, in the 1920s, in Bernanke's words "the U.S. was not up against any external constraints; it forced the issue upon itself." Given the favorable trade surpluses prior to the Depression, it would have taken years for the gold mechanism to reign in credit creation. The Fed sought to short-circuit the system and introduced its own severe tonic (alongside trade protection) at a time when the entire financial system was fragile. Other countries were sucked in by the U.S. decision to reign in speculation.

This is most unlike today's crisis, which reached its own market-driven breaking point once demand for U.S.-produced subprime credit dried up. The role of the U.S. this time around, however, was more comparable to the over-indebted European countries in the 1920s, which borrowed and spent on credit for several years well beyond their means.

I believe these were important factors Bernanke considered when as a newly-minted Fed governor in 2002 he [made his views clear](#) that this time, a deflationary endgame for the U.S. was not an option. He prefers to engineer a landing for the heavily indebted U.S. akin to France's from its debt perch in the 1920s, and as opposed to Germany's hyperinflation or Britain's long and painful deflation.

In the 1930s, the gold flow mechanism was not intended to be a cash hoard for the U.S.; it was intended to regulate trade and credit creation. Today's comparable stability mechanism, which has fallen into misuse, is foreign reserves. Countries (primarily those with trade surpluses) hoard foreign reserves to devalue their currencies against the dollar.

The U.S. and other developed nations are today debasing their currencies, through quantitative easing to stimulate their economies, which are struggling under mountains of debt. This action is comparable to when European nations, one at a time, devalued their currencies and later abandoned the gold standard. The U.S.'s trading partners never expected QE when they lent the dollars that gave rise to the debt in the first place. The value of their hoard of foreign reserves and of continuing the currency policy is problematic, since the presence of QE makes it increasingly costly to administer.



It is increasingly evident that the Fed is comfortable with the world weaning itself off the dollar standard. The stated goals of QE are to lower long-term interest rates and to incentivize investors to reinvest cash proceeds into other assets, lowering the cost of capital. When the Fed purchases assets in the private economy, absent any further follow on actions by private individuals, it has merely replaced a mortgage backed security with cash which has not in itself expanded credit or the money supply. This of course squarely addresses the issue of monetary policy in the zero bound. Additional cash and thereby lower interest rates at some points cannot incentivize banks to lend and borrowers to borrow.

But, with \$85 billion of debt securities being purchased every month, it is fairly evident that the Fed is monetizing a portion of the government's expanding deficit. While half of this amount is being used to purchase mortgage backed securities, the Fed has stated that the proceeds from these will be used to purchase Treasury bonds. As such the net effect of QE is that all cash created by the Fed is either directly purchasing, or is earmarked to purchase Treasury securities.

Money printing is an accurate term to describe this practice since money is created and spent by the Treasury in the private economy and there is no "real" corresponding debt owed by the Treasury. The Treasury pays coupon payments on the debt to the Fed. The Fed in turn owes this money back to the Treasury. The only other time money printing takes place is when a member bank requires currency. The Treasury in this case does in fact print and coin the currency which is an asset of the Fed. The Fed delivers the currency to the member bank which owes the Fed on account. Since the currency "leaves" the reserve system and enters the street, this causes a contraction in reserves. The Fed will increase its balance sheet in the Fed Funds market by the same amount of the newly printed money. So a chart of the Fed's balance sheet shows a slow steady rise over time that is a function of this money printing which is an accepted international protocol.

Then there is the now-famous \$2 trillion spike beginning in 2008 and continued expansion of \$85 billion per month. This represents a fundamental change in the accepted means of money supply expansion, the likes of which are comparable to the abandonment of gold in the 1930s and the closing the gold window in 1971.

Bernanke, in his November 2002 speech as well as [his May 2003 speech to the Japanese minister of finance](#), has made clear that "cooperation between the monetary and fiscal authorities could help solve the problems that each policymaker faces on its own". The Treasury provides a means of fighting deflation in the zero bound, which is not dependant on the private economy responding to low interest rates. His statement that a central bank's deteriorating balance sheet resulting from purchases of extensive amounts of



securities (at high prices) should not be a concern like it would be for a regular commercial bank is an historic change in thinking. He urged the Japanese to “put aside psychological and symbolic reasons” that would suggest otherwise and consider that “the balance sheet of the central bank should be of marginal relevance at best to the determination of monetary policy.” In a fiat monetary system there is endless means by which credit may continue to be expanded.

As long as foreign nations continue to manipulate their currencies, they will continue to provide a market for the debt that the Fed will monetize.

In a 2011 [speech](#), Bernanke acknowledged that capital accumulation in surplus countries in the 1920s led to deflation in deficit countries, which ultimately caused a systemic failure. Bernanke said that capital inflows of 6% of GDP prior to the recent financial crisis were part of a “global saving glut.” The surplus countries in the current era (China, Japan and the oil-producing countries) exported capital to the U.S., exacerbating our deficit and forcing interest rates lower.

In that 2011 speech, Bernanke said that “countries with excessive and unsustainable trade surpluses will need to allow their exchange rates to better reflect market fundamentals and increase their efforts to substitute domestic demand for exports. At the same time, countries with large, persistent trade deficits must find ways to increase national saving, including putting fiscal policies on a more sustainable trajectory.”

I hope that this exercise has been helpful in demonstrating that in an earlier time, it was the U.S. that exported to the world, and that under those similar circumstances, the US was in Bernanke’s words “the currency manipulators”. In my third and final part of this series, I will explain how post-Breton Woods, the U.S. allowed the same set of circumstances to reoccur in 2008 as in the lead-up to the Depression.

My goal is to illustrate how the context evolved for the mutual fund industry from the 1980s to 2008. This understanding provides the insight that QE is not a temporary and extraordinary measure. It is a long-term policy instrument that will continue to be used by developed countries until a more sustainable financial system arrives with something other than the U.S. dollar as the major international reserve.

Paul Franchi, is the founder of Strive-Equity, a consulting firm that assists mutual funds in executing their distribution strategies. His experience in the mutual fund industry spans a variety of roles including industry analysis, product development, marketing, sales and sales management.

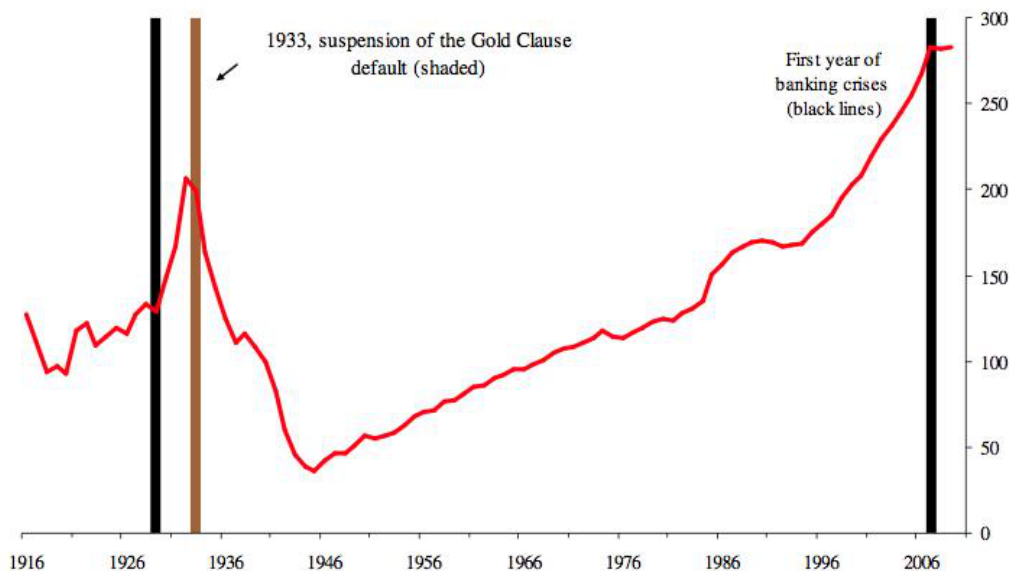
Appendix 1 – Adjustments to the historical private debt-to-GDP analyses

Many discount the relevance of today's environment to the Great Depression. One reason some mistakenly question this comparison is that the 1930s had everything to do with the Roaring Twenties, a short time period that witnessed an extreme run-up in the stock market and margin loans. By contrast, the run-up to today's economic environment is mistakenly perceived as being structural and longer term in nature, involving sophisticated monetary and fiscal policy not present in the earlier era.

To debunk these views and demonstrate that policy today, like then, is equally experimental in nature we begin with a very popular chart of total private debt-to-GDP (Figure 9).

Figure 9 Private Debt To GDP - Conventional Chart

Figure 66c. United States: Private Debt Outstanding, 1916-2009
(end-of-period stock of debt as a percent of GDP)



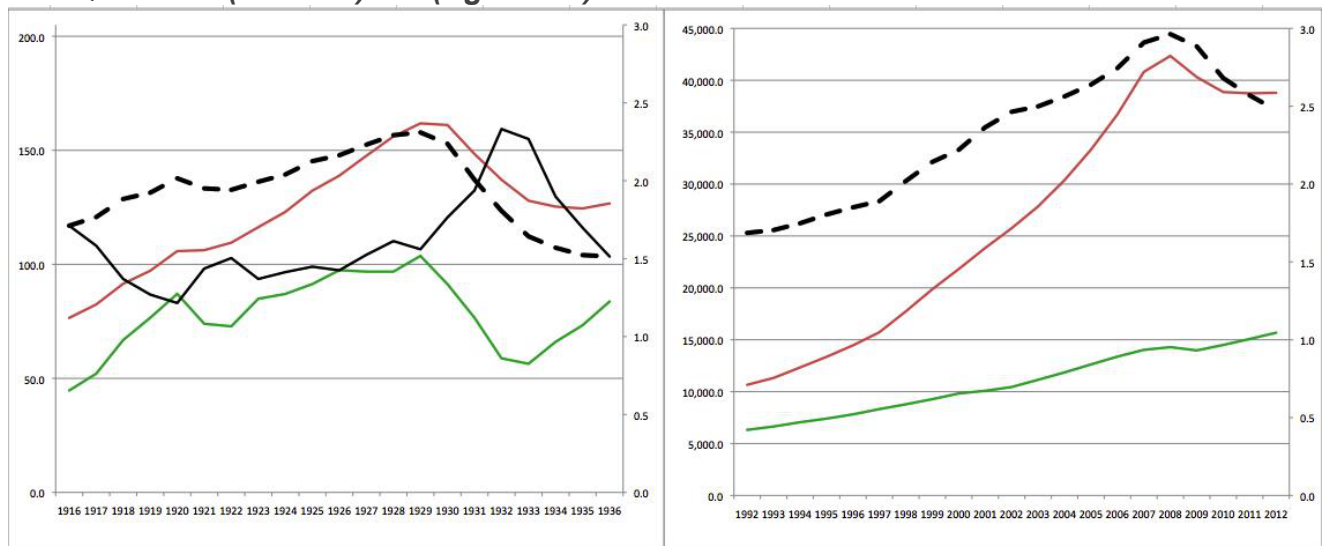
Notes: Data for 2009 is end-of-June. The Flow of Funds is reported for 1945-2009; prior to that the Historical Statistics of the United States series is scaled (down) to match the Flow of Funds data.
Sources: Historical Statistics of the United States, Flow of Funds, Board of Governors of the Federal Reserve, International Monetary Fund, *World Economic Outlook*, OECD, World Bank, *Global Development Finance*, and Reinhart and Rogoff (2009b) and sources cited therein.

Source: - *This Time is Different Chartbook: Country Histories on Deb, Default, and Financial Crises*, Carmen M. Reinhart, University of Maryland, NBER and CEPR March 3, 2010

First, the chart mixes two separate data series (Office of Economic Analysis – now BEA) from 1916–1976 with flow-of-funds from the Federal Reserve Bank from 1945–2012. In order to make the two series meet at the same data point in 1945, it is necessary to scale down the data in the first series, which makes it slope more steeply upwards and downwards. I discussed this issue with senior research staff in the two government departments that keep the data and I understand it would be more appropriate to show the two series separately in one graph.

The second limitation concerns the wide fluctuation in GDP, the denominator in the ratio, from 1916–1929. Figure 10 below illustrates this issue. For both time periods (left axis) the red lines represent nominal private debt and the green lines represent nominal GDP. Since the GDP for the earlier period fluctuates (unlike the smooth later period), it makes the ratio of private debt to GDP (solid black line – right axis) very jagged and difficult to compare, especially when one is more interested in the trend of the numerator and not the denominator. I accounted for this by straight lining GDP from 1916 to 1936. The smoother dashed black lines illustrate the result. The rise in private debt in the two decades preceding the 1929 peak took place comparatively slower and with a steadier pace than the rise to the 2008 initial peak over the same time frame. The first saw a 200% increase relative to the 400% increase in the current period.

Figure 10
Private debt-to-GDP ratio 1916-1936 vs. 1992-2012
USD \$Billions (left axis) / % (right axis)



Legend:
Dashed Line - Private Debt To GDP (smoothed for chart 1)
Black Line - Private Debt To GDP (not smoothed)
Red Line - Total Private Debt Outstanding \$Billions

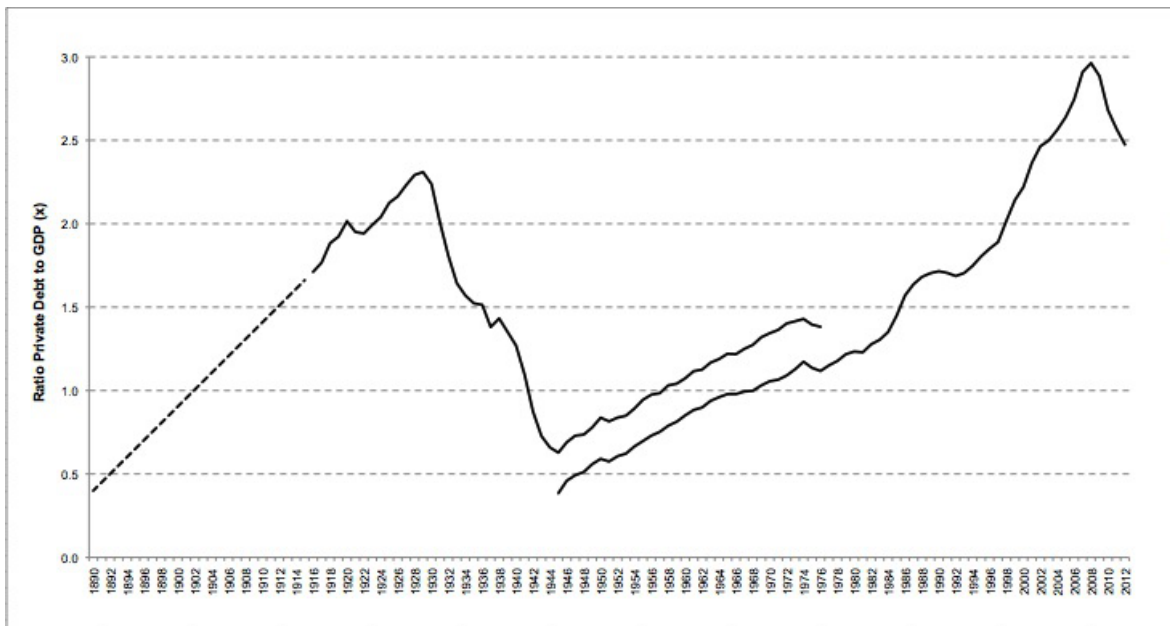


Green Line - Nominal GDP

Source: Strive-Equity, Private Debt 1916-1939 Office of Economic Analysis now BEA: Survey of Current Business 1969 Private Debt 1992-2012 Federal Reserve Board Flow of Funds - Non-Public Categories as of February 2013, Nominal GDP Historical Statistics of the United States Table Ca9-19

Figure 11 (presented as Figure 1 in the main part of this essay) illustrates the ratio of private debt-to-GDP for the entire time period 1890-2012. As you can see, the rise to the 2008 peak of 300% private debt-to-GDP began at the low point of 40% in 1945, 63 years ago. I use an estimate to show the trend prior to 1916.

Figure 11
Private debt-to-GDP 1890-2012
(1890-1916 estimated and 1916-1929 smoothed)



Source: Strive-Equity, 1916-1976 series One Office of Economic Analysis now BEA: Survey of Current Business 1969 Private Debt Series Two 1945-2012 Federal Reserve Board Flow of Funds - Non-Public Categories as of February 2013, Nominal GDP Historical Statistics of the United States Table Ca9-19 Private Debt 1890-1916 Estimate only using linear equation with 0.4 start point, Calculations - straight line linear equation - data point 1 $X=1.7$ $X=1916$, Point two $Y=2.3$ $X=1928$ slope/ $m=0.05$ $Y=0$ at $-94.1=B$ solve $Y=mX+B$ solving where $Y=0.4$ $x=1890$



Appendix 2 – Asset bubbles in the 1920s

Historic surge in European exports creates farm-credit bubble

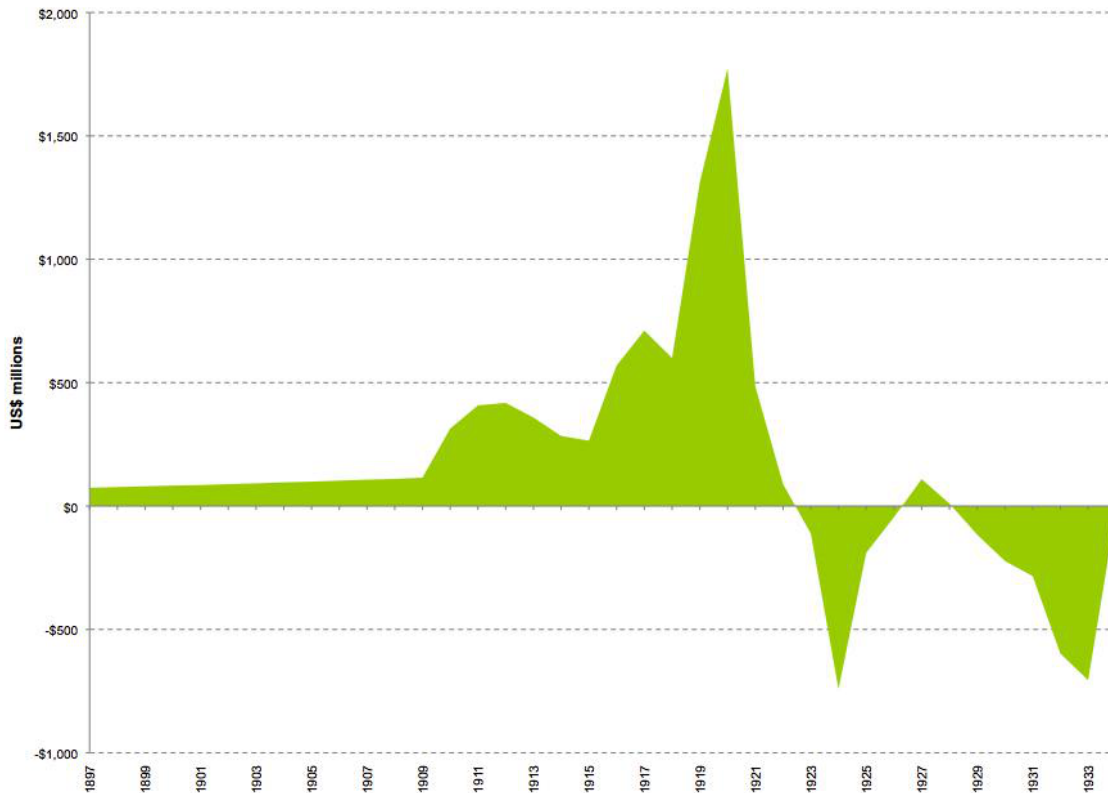
Food was among the exports surging in 1914 as a result of Russian and Eastern European farms shutting down due to the war. This jump in exports added to already increased trade surpluses brought on by new means of dry-land farming beginning in 1910. This surge in exports brought much welcomed inflation in the U.S. to agriculture prices including farmland, which doubled in price over three years. Farmers increased mortgage and consumer debt to reposition their operations for the increased demand (see Figure 12).

Unfortunately, once European supply returned in 1918, U.S. crop prices fell by as nearly 50% while input prices remained at higher levels.

After years of wrangling with the Treasury, Benjamin Strong, the most powerful voice at the New York Fed, was able to raise the discount rate. It was subsequently raised several times beginning in 1919 to stem inflation. When a severe slowdown in the real economy resulted, the rates were again lowered in the spring of 1921. Strong, who was on leave at the time, thought reversing the hikes was the wrong move. He [wanted](#) higher rates to remain until the "curve of wages, deposits and prices, wholesale and retail, were more nearly together-on a much lower basis."

The pricking of the farm credit bubble was irreversible. For rural America, one-third of the nation's population, 1920 marked the start of the Great Depression. Farmers continued to remain a powerful political force and they continuously lobbied for lower interest rates. Their lack of success on this front led them to lobby with even greater force for trade protection against imports.

Figure 12
Farm mortgage debt - Net change
1871 – 1934, US\$ Millions



Source: *Historical Statistics of the United States Tables Ce13-41*

1920s: More asset bubbles

In his second prophetic warning shortly after the recession, in 1922 Harold L. Reed [noted](#) the dangers that remained even after the first series of tightening:

“Building...is rapidly developing into the dimensions of a boom, and in this lies the germ of speedy resumption of industrial activity...At the present time the surplus reserves of the reserve banks are enormous. ... Here lie opportunities for inflation never before possessed in like measure by any banking system. If any large part of this new credit supply is utilized suddenly, the price level must react correspondingly.

Given the overcapacity in production and competitively priced European goods on the market, credit did in fact expand rapidly, fueling multiple asset bubbles. This period



brought with it “innovations” in banking. It was claimed then that modern-day data analysis created a superior risk management capability in monitoring portfolios of business loans that enabled the rise of a more aggressive sales culture.

In the assessment of one banker ([quoted](#) in the *New York Times*):

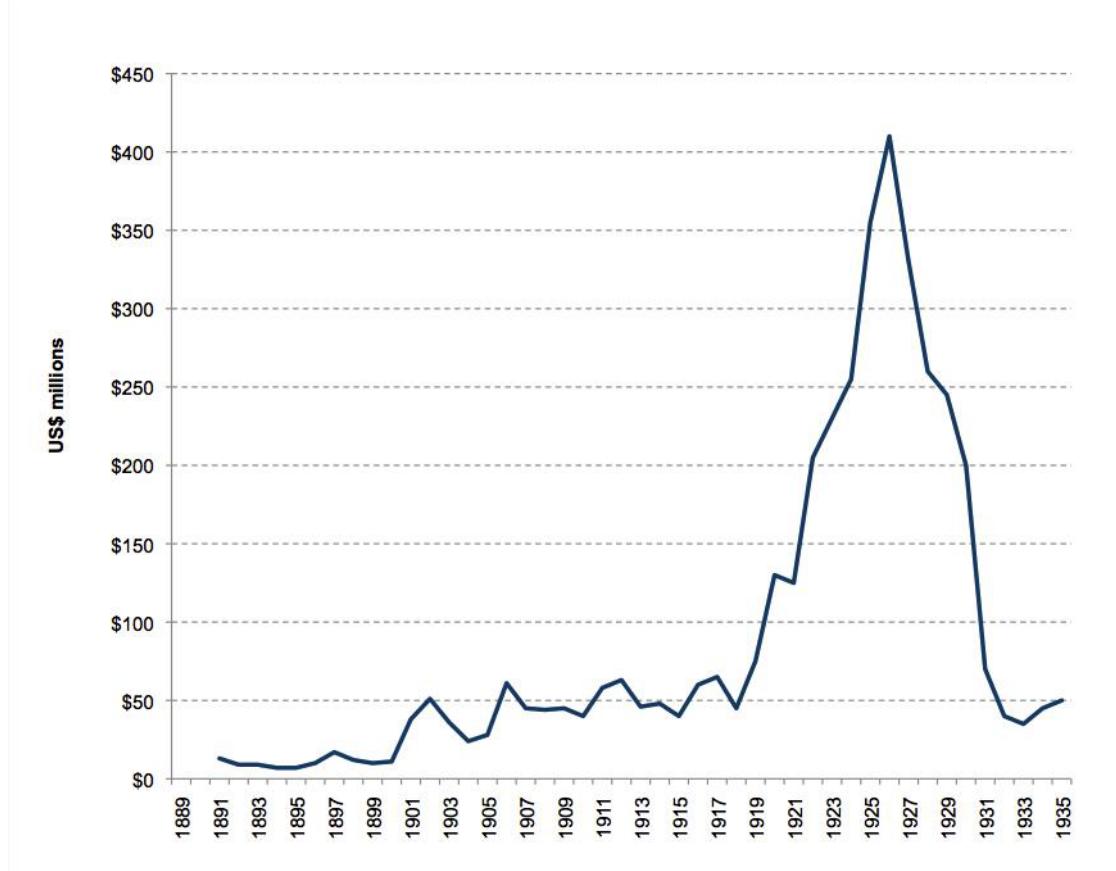
“Competition as we know it today in the field of banking was almost unknown 20 years ago. Gradually, however, as banks grew and times changed, new ideas were advanced and commercial sales and advertising methods were introduced until today we find existing between banks as much aggressiveness and keen competition as there is in any other line of business. Once the banks threw off their cloak of reserve and their ‘you-come-to-us’ attitude, they took a complete about-face and in some localities now have gone to the other extreme in their attitude toward new business and their method of getting it.”

Reed’s call for control over credit to ensure its efficient application was at odds with the trend toward looser standards and more aggressive lending. The politicization of the competition for credit between farmers, new lending institutions, real estate and financial security lenders, and European leaders who were keenly seeking debt reduction and loan assistance from the U.S. led to the worst possible result where nobody’s needs were met and the system collapsed.

Vacation homes bubble

A vacation home bubble was next to appear. Florida was ground zero and in 1925 the sheer number of real estate ads placed in the *Miami Herald* led it to become known as the “heaviest newspaper in the world”. Credit to purchase Florida property was very easy to obtain. But, rapid price increases created a sales frenzy that collapsed under its own weight in 1925. The height in construction spending (Figure 13) was not reached again in nominal dollars until 1956.

Figure 13
Construction spending - Residential buildings ex. primary homes
US\$ Millions

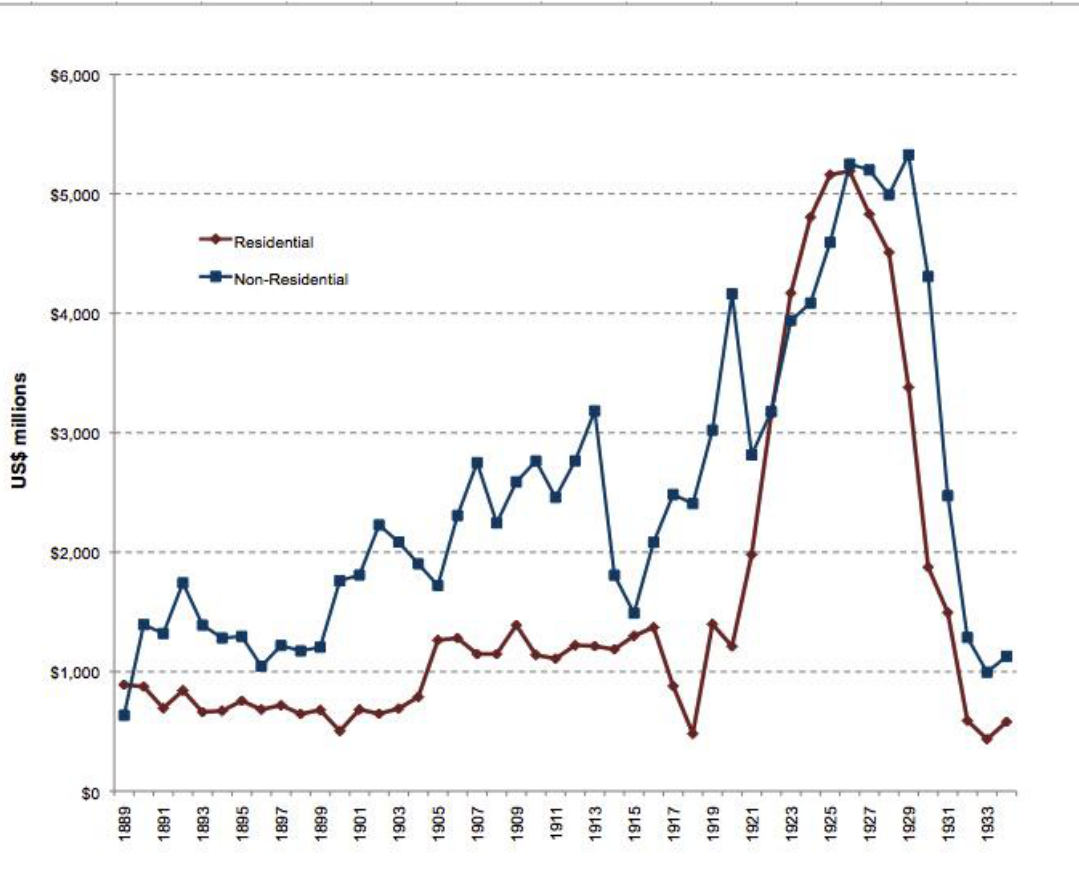


Source: *Historical Statistics of the United States Tables Dc256-271. NonHousekeeping Residential Buildings include second homes, bed and breakfasts and small owner run overnight housing.*

Residential and commercial real estate bubble

Construction spending on private real estate in general took off from already strong levels in the 1920s. Figure 10 captures year-over-year spending increases.

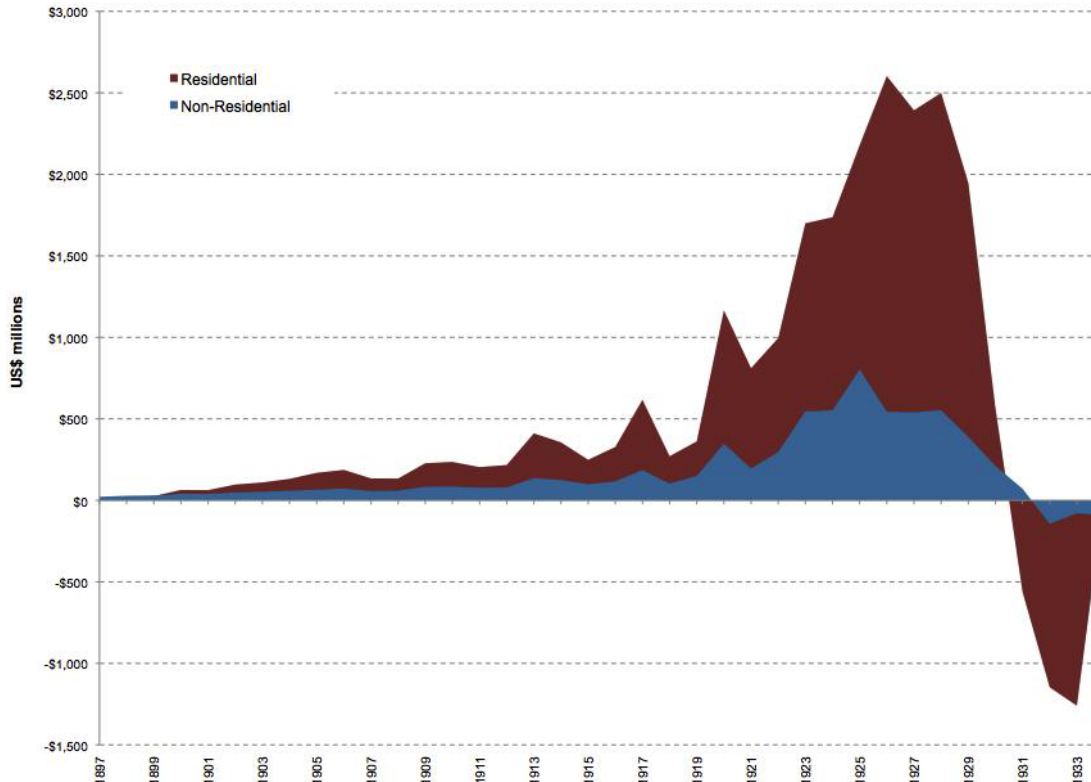
Figure 14
Real estate construction expenditures
US\$ millions



Source: *Historical Statistics of The United States Tables Dc78-91*

Figure 11 shows year-over-year increases in mortgage debt used to finance the real estate boom.

Figure 15
Increase in real estate mortgage debt
US\$ millions

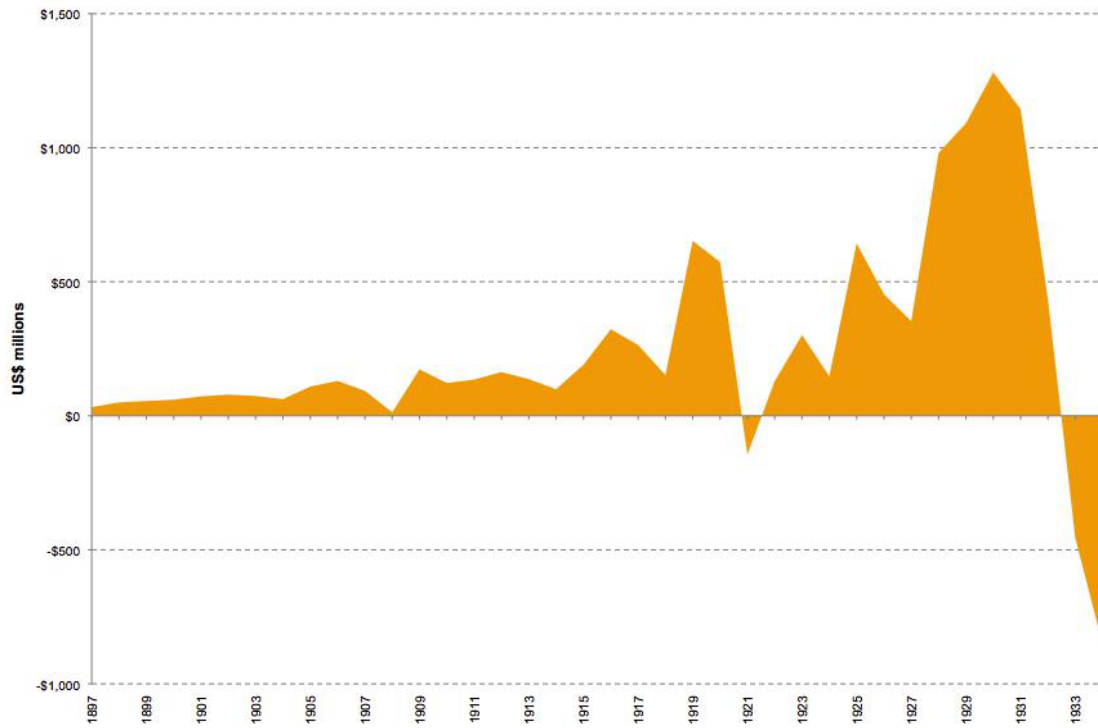


Source: *Historical Statistics of The United States Tables Ce13-41*

Consumer durables and installment debt bubble

The March 5, 1927, *Literary Digest* reported on the growing phenomenon of increased credit used to purchase consumer items. The following are percentage estimates of sales that were made with credit: 75% of all automobiles, 90% of all furniture, 80% of phonographs, 75% of washing machines, 65% of vacuum cleaners, 25% of jewelry, and the greater part of all pianos, sewing machines, radios, electric refrigerators, as well as a significant portion of clothing sales.

Figure 16
Consumer debt
US\$ millions



Source: Historical Statistics of the United States Tables Ce13-41

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