GLOBAL COMMODITY BUBBLES & FINANCIAL COLLAPSE WHAT CAUSES RECESSIONS

Riyad Riffai,

Abstract

The current economic crisis came into world attention with the freezing up of US 'sub prime' mortgage securities market, defaults in housing loans and a collapse of the US housing bubble.

The banking sector, which initially profited from securitized assets were forced to write off billions of dollars creating the biggest financial collapse since the great depression of 1929.

Along with the housing bubble, there were also commodity bubble (the so called food crisis), bubble in base metals, precious metals and energy, which too collapsed, and showed that the 'sub prime' housing crisis was simply a symptom of a wider problem.

This paper demonstrates a clear correlation between monetary policy and commodity bubbles and attempts to stimulate a debate on the relationship between loose monetary policy and subsequent negative consequences.

In popular media, and even some commentators have attributed most of the negative effects of non of monetary causes, including, speculation, greed and de regulation.

But this study shows that monetary policy of the US Federal Reserve is the single largest causal factor. On the other hand, the effects have even infiltrated to certain dimensions of U.S. foreign policy.

The paper argues that the build up of economic imbalances or bubble like behaviour was primarily caused by the Federal Reserve, whose paper fiat dollar is the reserve currency that is used as an anchor by many other pegged central banks of the world.

It is envisaged that this paper will give better understanding to policy makers, especially from developing countries such as Sri Lanka and assist them to take more sustainable monetary policy decisions for the betterment of society.

Key words: Money, Monetary Policy, Gold, Credit, Monetary Theory, Inflation, Deflation, Reserve Money, Excess Reserves.

The U.S. Financial Crisis of 2008

To fully understand the driving forces behind an economic bubble, and its subsequent collapse, it is important to understand the different types of monetary and exchange rate systems and how they behave.

The US Federal Reserve operates a free floating exchange rate based on a fully fiat paper money, which is backed simply by the purchase of government securities. The system came into effect in 1971 amidst the first 'oil shock' when the US dollar severed it's last links with gold.

Monetary Systems

Gold - Modern 'States' developed around the use of specie (commodity) based money. Silver and gold were market selected by many societies as being a useful form of money to serve as a medium of exchange, a unit of account, a store of value and sometimes standard deferred payment.

Monetary history shows that when gold was, money there were no sustained increases in prices or 'inflation' unless gold coins were diluted with copper or other base metals or large gold discoveries were made.

Free Banking In a free banking regime, gold is used as money but banks that take deposits in gold could issue notes and also give credit.

Well managed banks (and their notes) gained public trust. A bank that gave too much credit, could face a run on it's gold, and was forced to contain credit and recall loans. Though gold served as a check, a run could destroy a bank and could also create 'panic', causing runs on other banks.

This could cause a downturn and a recession.

The United States had a free banking regime during most of it's independent history, until the creation of the Federal Reserves in 1913.

Gold Central Banking/domestic anchor

The gold standard was first officially established in March 14, 1900, by the Gold Standard

Act during the tenure of President, William McKinley[2]. Gold standard fixes the exchange rate to certain rate. During this period the gold was valued at 20.67 dollars per ounce.

The gold standard[1] was a domestic standard regulating the quantity and growth rate of a country's money supply. As new production of gold would add only a small fraction to the accumulated stock, and the authorities guaranteed free convertibility of gold into non gold money, the gold standard ensured that the money supply, and hence the price level, would not vary much. However, periodic surges in the world's gold stock, such as the gold discoveries in Australia and California around 1850, caused non stability of price levels in the short run.

The gold standard was also an international standard determining the value of a country's currency in terms of other countries' currencies. As adherents to the standard maintained a fixed price for gold, rates of exchange between currencies tied to gold were necessarily fixed. For example, the United States fixed the price of gold at $20.67 per ounce, and Britain fixed the price at £3 17s. 10½ per ounce. Therefore, the exchange rate between dollars and pounds—the "par exchange rate"—necessarily equalled $4.867 per pound.

Under gold standard central banking, the note issue monopoly was given to one (usually privately owned) bank which came to be known as the 'Central Bank'. The Bank of England was a privately owned bank.

The central bank was also expected to issue notes backed by gold and usually gave credit to the government by printing money. Excess printing would create a bubble (in gold and other commodities) but falling value of notes results in demand for gold redemption.

This has to be countered with a reduction in money given to the government (tight monetary policy) if gold redemption is to be stopped.

Under a gold anchored central bank (known as a domestic anchor) exchange rates across countries would also be relatively stable as all gold was tradable.

A country that printed excessively found that gold flowed out, similar to a modern balance of a pegged exchange rate country.

Free Floating/domestic anchor

Under a free floating regime, all money is created by buying domestic assets, usually treasury bills. There is no check on the amount of money printed, other than an inflation index, which is

[1]Michael D. Bordo professor of economics at Rutgers University. From 1981 to 1982, he directed the research staff of the executive director of the U.S. Congressional Gold Commission. http://www.econlib.org/library/Enc/GoldStandard.html

[2]25th U.S. President from 1897-1901

called a domestic anchor. A weak index that is targeted will weaken the exchange rate and cause asset price and commodity bubbles.

The US dollar became a free floating paper fiat money in 1971, after suspending gold convertibility, when it printed too much money to finance the Vietnam war and President Nixon's populist spending.

USA defaulted on the [2]Bretton Woods agreement which required it to keep a gold peg.

Pegged Exchange rates/external anchor

An exchange rate can be fixed or pegged to another currency permanently, by only creating money out of net foreign inflows. Such a 'hard peg' is also known as a currency board. The entire Sterling Area of the British Empire had such pegs or external anchors. A hard peg area would have almost the same inflation as the anchor currency. No domestic money creation (therefore changing interest rates) is possible.

A 'soft pegged' central bank (such as that of Sri Lanka) tries to keep a peg and print money at the same time. To help such peg breakers, the International Monetary Fund was created.

The foreign currency to which a domestic currency is pegged would be the inflation anchor. In the case of the Sri Lankan rupee, it is the US dollar. The pegged country would suffer almost the same effects as the anchor currency country, unless extra money was printed.

Epicentre The Federal Reserve

The Fed is the largest central bank in the world and is responsible for maintaining low inflation (undefined) and employment in the U.S. economy which is currently 15 trillion dollars.

The Fed is the lender of last resort to the US clearing banks (now the entire financial system) and is empowered to print and give money to banks facing a run.

In a free banking regime, there is no lender of last resort. In 1907, JP Morgan was forced to bailout a bank to prevent a run and prevent yet another 'banking panic'.

The US Fed was sponsored by the powerful banking families of the US amidst opposition from some members of the congress who understood the dangers of fiat money and central banking.

[1]Madurapperuma Ajantha, CFA, Sri Lankan Professional Bankers Journal 2007

[2] A fully negotiated monetary agreement of 44 allied to regulate exchange rates by pegging them to the dollar and the dollar was pegged to gold. The agreement ended in 1971.

The Fed's bailout guarantee gives rise to moral hazard where banks are given incentives to take more risky bets when a central bank manipulates rates down, securing in the comfort that the central bank or Federal Reserve will bail them out, when the assets that they bet on collapse (housing, mortgage securities).

This year the Fed has even bailed out Bear Stearns which was not even a clearing bank coming under it's regulation, through JP Morgan.

The link with gold was broken during the World Wars and re established under the Bretton Woods Agreement where the US dollar was tied to gold and other currencies were linked to the dollar through soft pegs.

Ultimately the US government defaulted on its obligations under the Bretton Woods Agreement in 1971 - 73 when heavy money printing and the Vietnam War made it impossible to preserve the link with gold.

Federal Reserve Bubbles

The US finally went to a fully fiat (paper) currency in 1973, after firing a global commodity bubble and oil shock, when the free market gold price topped 60 US dollars. This created a series of floating rates in certain central banks such as Bank of England, Deutsche Bundesbank, whilst others remained pegged to the US dollar.

Prior to same or more than one and a half centuries gold was priced at 35 US dollars an ounce and there was no long term 'inflation'.

However since 1973, the US currency has been debauched to 1,000 dollars an ounce of gold and the world is now in the grip of another massive 1971- 3 style and in 2008 the world witnessed another bubble which brought real misery to millions of poor people around the world in the form of higher food prices.

Meanwhile, the US is now printing more money to save its banking system (rate cuts) and chase an elusive concept called 'growth'.

[1]Under the Bretton Woods agreement the US created a system of 'soft pegs' and persuaded many developing countries to break 'hard pegs' with Sterling and go for dollar pegs. Such countries, including Sri Lanka, were told that it was possible to maintain the dollar peg and print money at the same time. If the peg broke (due to excess domestic money creation) the International Monetary Fund was at hand to help.

The soft peg system spread the effects of US monetary policy around the World. A country that had a floating exchange rate, with a stronger domestic anchor – a stricter inflation index – like Australia or New Zealand, was able to counter the US policy to some extent.

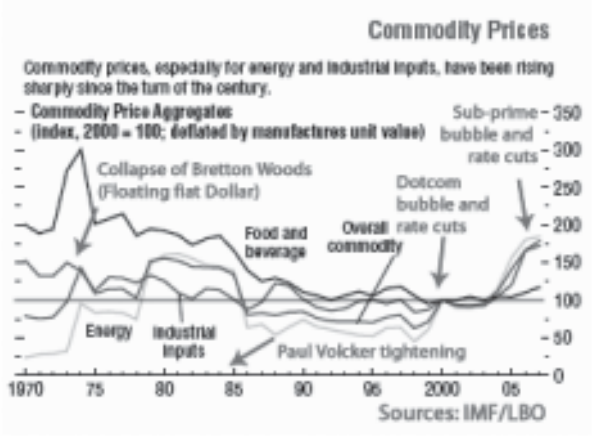
Cyclical Booms Busts and Bubbles

The U.S. economy and it's immense appetite that the whole world depend on to sustain growth and employment, was officially declared to be in a recession on the fourth quarter even though the world's largest economy has been slowing down as far back from a year ago.

The U.S. economy peaked in December, 2007 where unemployment levels were between 4.6 – 4.9 percent (U.S. Fed data). From there onwards, unemployment has been steadily but surely climbing, subsequent to the U.S. housing market hitting a brick wall and began to collapse at the comencement of the third quarter 2007.

The housing bubble was financed by the U.S. Federal Reserve (Fed) by cutting key policy rates to keep growth up. However Fed's monetary expansion financed a short term property boom and economic growth, which finally ended as the subprime crisis of 2007/2008.

The property bubble finally burst as the overheating economy had to be stabilized by raising interest rates from 1.35 percent (U.S. Fed data) in 2004 to 5.02 percent (U.S. Fed data) in 2008 to mop up the accumulated excess liquidity that was driving inflation.



A similar pattern was seen in the early 1980's. Former Chairman of the U.S. Federal Reserve, Paul Volcker tightened monetary policy to curb double digit inflationary environment experienced from March, 1979 (9.59 percent inflation,- U.S. Dept. of Labor) to November 1981 (10.09 percent, -U.S. Dept. of Labor)

Law makers who were familiar with Fed actions including Ron Paul, who has been in congress from the mid 1970s (he reportedly decided to enter the congress after the US government

[1]Fuss Budget, Lanka Business Online (LBO), 19 April, 2008.

lifted gold convertibility, giving rise to modern paper fiat money) has been putting pressure on the Fed and educating the people on the ill-effects of paper money Central Banking.

Chairman of the Fed, Ben Bernanke admitted to Congressman Ron Paul in a Congress hearing in April 2008 that central bank rate decisions were mostly computed on mere guesswork by the monetary board.

Savings and Central Banks

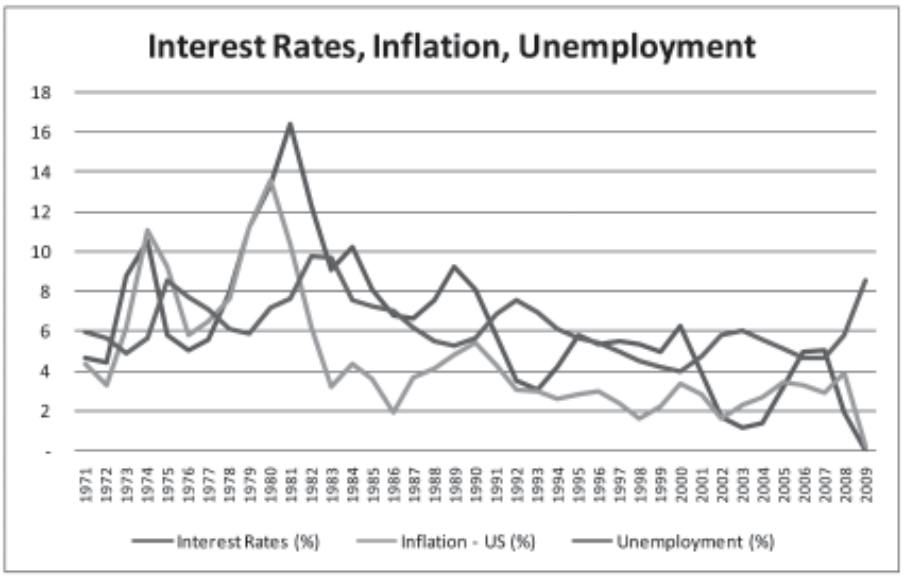
A central agency which injects liquidity continuously creates 'savings' to give credit out of thin air. This excess liquidity finds a home in mal invests (housing and commodities as opposed to real investments in which goods are produced, say factories) causing asset price bubbles.

The primary role of modern central banks is to ensure low inflation, by printing less moneyas much as possible. However Fed also has a dual mandate of ensuring employment and no explicit inflation target.

Loose monetary policy adopted by central banks such as the Fed has created economic booms and busts as well as hyper inflation. The Fed prevents hyper inflation by tightening policy, but that causes a recession or collapse.

As shown by the graph below, the 1983 crash was fuelled by the US Federal Reserve breaking the gold standards of 1971.

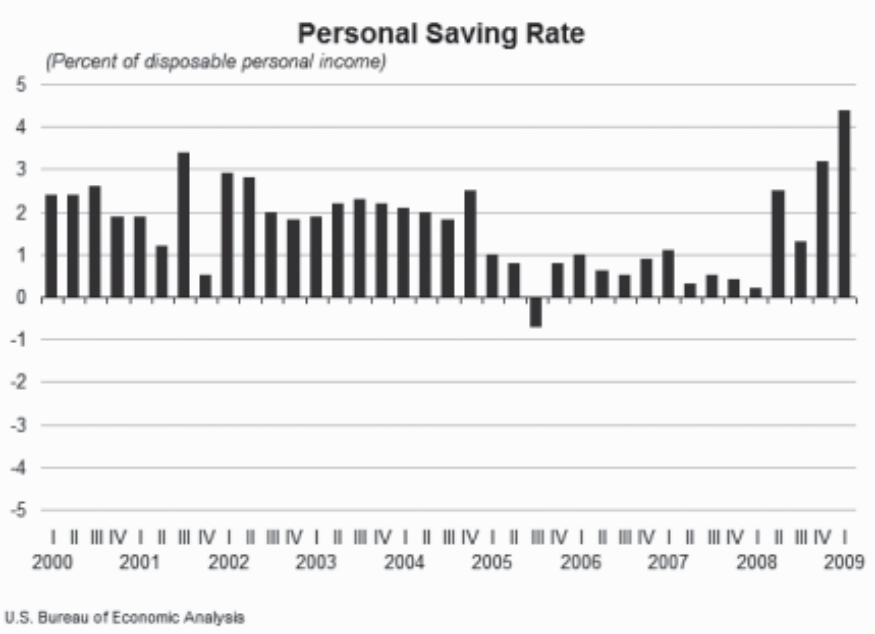
Inflation & Interest Rates Graph



During this period U.S. personal savings rate as a percentage of disposable personal income had declined from first quarter 2005 and had slipped to negative territory (0.7 percent, Bureau of Economic Analysis) in third quarter 2005, due to poor returns from low interest rates.

U.S. inflation, similar to the rest of the world went up to 3.81 percent (U.S. Fed data) in 2008 which prompted the Fed to increase interest rates.

Currently personal savings are at 4.4 percent (2009, 1st quarter, U.S. Bureau of Economic Analysis) despite low interest rates, as the value of money has increased with the deflationary collapse, which increases consumer purchasing power (more goods and services for the same quantum of money) and also as a precautionary measure to be used in case of an emergency.



A similar phenomenon occurred during the mid 90's, when Japan cut interest rates to emerge out of deflation.

The U.S. new family houses sold, after recording to 13,336 numbers of (in thousands, U.S. Fed data) units in October 2005 have dipped to 352 (in thousands, U.S. Fed data) numbers of units by April 2009.

[1] Chairman of the Federal Reserve from 200 present, ranked by Newsweek as the 4th power fullest man in the world

[2] Taken from Lanka Business Online (LBO) http://www.lbo.lk/fullstory.php?nid=623130346

The value of U.S. outstanding mortgage debt after recording to 13.89 trillion dollars (U.S. Fed data) in July 2008, had reduced to 13.82 trillion (U.S. Fed data) dollars in October 2008 (data beyond September 2009 was not available at the time this report was compiled).

This is ample evidence data that the U.S. housing market which carried most of the consumer debts has slowed down significantly and had been the leading cause for the current collapse in U.S. and global financial markets as well.

Bank Failure of 2008

Throughout the 19th Century the has had several banking panics and failures. However none of them were as big as the Great Depression of 2007/2008. Both, of above mentioned happened under the Fed's watch. The pre depression exposure of banks was mostly to margin trading accounts for stocks. (Greenspan,1966)

Most U.S. and international banks that had significant exposure to the U.S. housing market reported record profits in financial year 2006.

Almost all U.S. banks reported record financial performance in 2006 as banking giants Citigroup reported a mammoth bottom lines of U.S. 24.5 $billion, HSBC 15.8 $billion, UBS $11.2 billion, Bank of America Corporation $16.4 billion, JP Morgan U.S. $8.4 billion, Lehman Brothers U.S. $3.2 billion, Goldman Sachs $5.6 billion, Wells Fargo $7.6 billion, UBS $11.2 billion, RBS $9.9 billion, Barclays $6.2 billion and Wachovia U.S. $6.6 billion etc.

Within an year, all of these billion dollar profit generating banks reported losses amounting to billions of dollars owing to the bursting of the housing bubble, which forced banks to writeoff assets, which were previously classified as investment grade, from their balance sheets.

The blame was directed to the subprime housing bubble that burst in august 2007 where Citi Group, the world's largest financial entity at that time wrote off 9.8 billion dollars as bad housing assets.

In November 2008, the bank had waived off 13.3 billion dollars under sub prime losses. The banks market value which once topped 180 billion dollars fell to 17.2 billion dollars.

Loose US fiscal policy

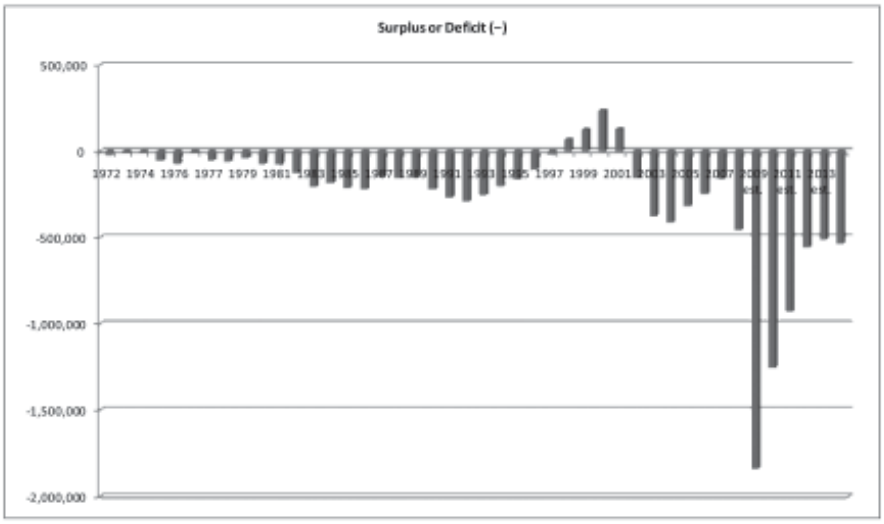
The monetary loosening was compounded by loose fiscal policy. The loosening also helped sustain the fiscal deficit as the Fed bought Treasury securities to create new money.

By July 2007, U.S. President 1George W. Bush's (2001 2009) administration had reduced the 236 billion budget surplus generated in budget 2001, to a gigantic deficit of 458.5 billion

Year	Total		
	Receipts	Outlays	Surplus or Deficit (−)
1927	4,013	2,857	1,155
1928	3,900	2,961	939
1929	3,862	3,127	734
1930	4,058	3,320	738
1931	3,116	3,577	-462
1932	1,924	4,659	-2,735
1933	1,997	4,598	-2,602
1934	2,955	6,541	-3,586
1935	3,609	6,412	-2,803
1936	3,923	8,228	-4,304
1937	5,387	7,580	-2,193
1938	6,751	6,840	-89
1939	6,295	9,141	-2,846
1940	6,548	9,468	-2,920
1941	8,712	13,653	-4,941
1942	14,634	35,137	-20,503
1943	24,001	78,555	-54,554
1944	43,747	91,304	-47,557
1945	45,159	92,712	-47,553
1946	39,296	55,232	-15,936
1947	38,514	34,496	4,018
1948	41,560	29,764	11,796
1949	39,415	38,835	580
1950	39,443	42,562	-3,119
1951	51,616	45,514	6,102
1952	66,167	67,686	-1,519
1953	69,608	76,101	-6,493
1954	69,701	70,855	-1,154
1955	65,451	68,444	-2,993
1956	74,587	70,640	3,947
1957	79,990	76,578	3,412
1958	79,636	82,405	-2,769
1959	79,249	92,098	-12,849
1960	92,492	92,191	301
1961	94,388	97,723	-3,335
1962	99,676	106,821	-7,146
1963	106,560	111,316	-4,756
1964	112,613	118,528	-5,915
1965	116,817	118,228	-1,411
1966	130,835	134,532	-3,698
1967	148,822	157,464	-8,643
1968	152,973	178,134	-25,161
1969	186,882	183,640	3,242
1970	192,807	195,649	-2,842
1971	187,139	210,172	-23,033
1972	207,309	230,681	-23,373
1973	230,799	245,707	-14,908
1974	263,224	269,359	-6,135
1975	279,090	332,332	-53,242
1976	298,060	371,792	-73,732
TQ	81,232	95,975	-14,744
1977	355,559	409,218	-53,659
1978	399,561	458,746	-59,185
1979	463,302	504,028	-40,726
1980	517,112	590,941	-73,830
1981	599,272	678,241	-78,968
1982	617,766	745,743	-127,977
1983	600,562	808,364	-207,802
1984	666,486	851,853	-185,367
1985	734,088	946,396	-212,308
1986	769,215	990,441	-221,227
1987	854,353	1,004,083	-149,730
1988	909,303	1,064,481	-155,178
1989	991,190	1,143,829	-152,639
1990	1,032,094	1,253,130	-221,036
1991	1,055,093	1,324,331	-269,238
1992	1,091,328	1,381,649	-290,321
1993	1,154,471	1,409,522	-255,051
1994	1,258,721	1,461,907	-203,186
1995	1,351,932	1,515,884	-163,952
1996	1,453,177	1,560,608	-107,431
1997	1,579,423	1,601,307	-21,884
1998	1,721,955	1,652,685	69,270
1999	1,827,645	1,702,035	125,610
2000	2,025,457	1,789,216	236,241
2001	1,991,426	1,863,190	128,236
2002	1,853,395	2,011,153	-157,758
2003	1,782,532	2,160,117	-377,585
2004	1,880,279	2,293,006	-412,727
2005	2,153,859	2,472,205	-318,346
2006	2,407,254	2,655,435	-248,181
2007	2,568,239	2,728,940	-160,701
2008	2,524,326	2,982,881	-458,555
2009 est.	**2,156,654**	**3,997,842**	**-1,841,188**
2010 est.	**2,332,645**	**3,591,076**	**-1,258,431**
2011 est.	**2,685,358**	**3,614,774**	**-929,416**
2012 est.	**3,075,328**	**3,632,747**	**-557,419**
2013 est.	**3,305,141**	**3,817,463**	**-512,322**
2014 est.	**3,480,124**	**4,016,020**	**-535,896**

**U.S. Treasury*

dollars in 2008 mainly due to higher defence expenditures arising from the war on terror concentrated in Iraq and Afghanistan after the 911 attacks on Twin Towers.



US Federal Reserve

When the U.S. was running budget surpluses up to 2001 under the Clinton administration crude oil prices were hovering at 8.50 to 14 dollars a barrel. During this period unemployment in the U.S. was 4.74 percent (U.S. Bureau of Economic Analysis) a record low and consumer demand was strong. The price of commodities such as crude oil and gold were at a record lows.

However at the end of the Bush administration, despite a budget deficit of 148.5 billion dollars oil prices peaked to an unprecedented U.S. $145.29 on July 07 2008.

Dollar and Commodities

Major policy shifts by the Federal Reserve can have undue influence on the U.S. dollar, as it is the global reserve currency that acts as a denominator for global business. Most global commodities are exclusively valued in U.S. dollars, financial transactions or payments such as letters of credit are executed in dollars and most national reserves are stored in U.S. dollars.

A fall of the US dollar against commodities, such as gold or oil, or other exchange rates, indicates high levels of monetary inflation and a debauching of the US currency.

[1]43rd President of United States, was in office from 2001 2009

Inflation increased through economies from the beginning of 2006 and was felt severely in developing countries where basic commodities that sustained life, became unreachable.

Given below are correlation of selected commodities and the monetary base of the U.S.

	Oil Spot Average (USD per Barrel)	M3 (USD Billiions)	Reserve Money (USD Billion)	Gold (USD per Unit)
1983	30.65	2,708.50	180.05	380.00
1984	29.44	3,004.60	190.89	309.00
1985	27.89	3,221.60	211.07	327.00
1986	15.05	3,513.30	244.71	390.90
1987	19.17	3,698.70	255.66	486.50
1988	15.92	3,941.10	270.03	410.15
1989	19.61	4,089.50	281.46	401.00
1990	24.52	4,166.10	307.68	386.20
1991	21.50	4,222.80	318.60	353.15
1992	20.58	4,237.60	348.96	333.00
1993	18.48	4,304.50	379.43	391.75
1994	17.19	4,389.00	411.80	383.25
1995	18.40	4,658.80	430.90	387.00
1996	22.03	5,008.00	455.40	369.00
1997	20.61	5,489.20	489.24	287.05
1998	14.40	6,087.90	520.76	288.70
1999	19.30	6,597.10	625.40	290.25
2000	30.26	7,173.80	583.38	279.11
2001	25.97	8,105.80	630.06	271.04
2002	26.15	8,633.50	677.97	309.73
2003	30.99	8,927.80	713.53	363.38
2004	41.47	9,482.20	744.76	409.72
2005	56.70	10,201.40	779.55	444.74
2006	66.25		802.68	603.46
2007	72.36		803.53	695.39
2008	102.97		1,009.76	871.96

Reuters Financial Data & U.S. Federal Reserve

Correlation data

Variables	Period	Correl	Period	Correl
Oil vs M3	1983 - 2005	0.62	1998 - 2005	0.88
M3 vs Reserve	1983 - 2005	0.97	1998 - 2005	0.95
M3 vs Gold	1983 - 2005	(0.14)	1998 - 2005	0.84
Oil vs Reserve	1983 - 2008	0.74	1998 - 2008	0.95
Oil vs Gold	1983 - 2008	0.86	1998 - 2008	0.97
Reserve vs Gold	1983 - 2008	0.51	1998 - 2008	0.92

[1]The woes of the current crisis have their roots in excessive liquidity that financed a number of bubbles in the last 10 years. This liquidity is the outcome of "bad" financial engineering that spilled over to other banks and to the personal sector through securitization, and an overly accommodating monetary policy.

The correlation data above shows a close relationship between the growths of U.S. reserve money has with commodities, especially crude oil and gold (correlations above 60 percent is deemed to be strong).

The U.S. reserve money has grown at 909 percent in the last 10 years (1998 – 2008) excluding 2008, an average of 90.9 percent annually, which depicts faster pace. In the last 25 years, from 1983 to 2008, reserve money has grown 36.8 percent annually.

The correlation between oil and reserve money at 95 percent is stronger in the last 10 years than 74 percent in the last 25 years, proving that monetary policy has been the loser, during the last decade.

This is significant evidence showing the and close relationship U.S. monetary policy; especially the relationship growth between of reserve money and the price of crude oil.

Excess reserves

The U.S. monetary base has nearly in June 2009, has doubled to 1.66 trillion dollars (U.S. Fed data) from 936 billion dollars (U.S. Fed data) in September 2008.

In this period even though the monetary base had doubled, which technically with money supply doubling in the world's largest economy, consegment to which reserve currency should have prompted unprecedented inflation technically but did almost the opposite.

U.S. inflation from 3.85 percent (U.S. Fed data) fell down to 0.04 (U.S. Fed data) percent during 2008 to January 2009. Keynesian economist who favoured monetary expansion to achieve high economic growth and reduce unemployment which is the easy way out for governments that run inefficient economies, quickly began to argue that the increase of the monetary base or money supply has a spurious relationship to inflation.

The basis of Keynesian economic model was published in the book, The General Theory of Employment, Interest & Money (1936) by John Maynard Keynes (1883 1946).

Keynesian economics advocates that markets are not perfect and need a dose of state intervention through active monetary actions by the central bank (money printing), rate cuts to finance fiscal action (deficit budget spending) that develops aggregate demand to ensure the continuation of the business cycle.

[1] Arestis and Karakitsos, Levy Economics Institute www.levy.org/pubs/pn_09_02.pdf

Keynes argued that government through deficit spending and cutting down on interest rates or a potent cocktail of both would create aggregate demand and stimulate supply to match the demand, which will eventually pull the economy out of a recession or a depression.

Dr. Goh the former Finance Minister of singapore, said the fundamental flaw in Keynes theory which misled the world was it's title. He said the book should have been titled A Special Theory of Employment, Interest & Money" as same would have been a more appropriate title as Keynesian stimulus plans only work during deflationary collapse and excessive printing of money or monetary expansion, which would destabilize economies.

Keynesian stimulus packages encourage the growth of money supply which eventually spills over and stimulates the credit multiplier of the economy through fractional reserve banking system. The Keynesian multiplier was developed by Richard F. Kahn (1931).

Monetary expansion works well during a deflationary scenario as it reflates the economy and opens up credit (hasn't happened yet in the current crisis as bank's have cut lending amidst Fed asking them to open up credit) but will bring dire consequences during normal economic conditions as the excess money created tend to finance real estate investments that lead to booms in the real estate sector which eventually create housing bubbles such as the one the world is facing at the moment.

The flip side to this saga is the eventual contraction created by housing bubbles and has to be weeded off by expansionary monetary policy which initiated the economic imbalance.

However despite the U.S. reserve money (through the stimulus packages and the excessive money printing by the Federal Reserve) has doubled, on a net basis same has remained almost stagnant as the excess reserves in the monetary system have also grown at similar pace.

Excess reserves are money released into the system that has found its way back to the Central Bank or Federal Reserve. High street banks that have funds over the Statutory Reserve Ratio (SRR) return excess funds back to be deposited at the Federal Reserve through the banking systems Repurchase Agreement (repo), which is knwn as the discount window to lend money and earn interest from the Fed at no risk.

In other words money that was released to lubricate the financial system has found it's way out of the economy, effectively neutralizing the effects, the expansionary monetary policy has on the economy.

Using the Repo Window is a win win situation for banks as the interest free funds received by the government is returned back to the Fed with interest income without lending out to the public which is risky under the present economic climate. Banks take this option even though interest rates are very low.

Excess reserves have grown from meagre 1.99 Billion dollars (U.S. Fed data) in September 2008 to a gigantic 824.63 billion dollars in April 2009, as shown below. In the same period the U.S. reserve money levels have expanded by 1,781.87 billion dollars (U.S. Fed data).

However U.S. money supply had only grown by 12.4 percent (121.1 billion dollars) and that is the actual quantum of increase of reserve money of the U.S. economy by April 2009.

The impact of the growth in U.S. excess reserves can be clearly studied in the deflation of commodity prices. The price of crude oil has taken a sharp dip since September 2008, and simultaneously U.S. excess reserve started to grow.

Monthly data

Month	Gold	Oil	Excess Reserve	Reserve Base	Net Reserve
Jan-08	888.33	92.93	1.64	855.08	853.44
Feb-08	925.50	95.35	1.73	853.02	851.30
Mar-08	960.27	105.39	2.97	857.01	854.04
Apr-08	910.30	112.54	1.85	852.42	850.58
May-08	890.79	125.35	2.01	858.94	856.93
Jun-08	890.58	133.84	2.27	861.91	859.64
Jul-08	940.04	133.33	1.97	871.56	869.59
Aug-08	836.62	116.65	1.99	870.98	868.98
Sep-08	828.86	104.03	60.06	936.14	876.08
Oct-08	805.42	76.58	267.91	1,135.81	867.91
Nov-08	760.87	57.28	559.04	1,481.97	922.93
Dec-08	825.74	41.02	767.40	1,692.57	925.17
Jan-09	862.75	41.63	798.25	1,737.85	939.61
Feb-09	942.21	39.05	643.51	1,582.96	939.45
Mar-09	926.66	47.90	724.63	1,661.59	936.95
Apr-09	890.69	49.58	824.38	1,781.87	957.49

Source: Federal Reserve Bank of St. Louis

The growth in U.S. excess reserves can be explained by the recent collapse in global commodity prices. 2008's inflation turned to mass deflation in 2009, where crude oil after peaking at 133.84 dollars a barrel in June, crashed to just over 50 dollars a barrel in May 2009.

Indirectly the US financial system headed by the clearing banks is purging the excess liquidity injected to the economy by the Federal Reserve, and sterilizing the financial system.

Déjà vu

A similar phenomenon occurred during the great depression of 1929, where the money was purged out of the economy not by banks but by depositors which resulted in bank runs and the foreclosure of hundreds of banks across the United States of America.

[1]"In Chicago in mid 1932, for example, large losses resulted in many failures and also in widespread withdrawals from banks that did not ultimately fail. Despite the confusion about the incidence of the shock, and the consequent widespread temporary disruptions to the financial system, the banks that failed were exogenously insolvent; solvent Chicago banks experiencing withdrawals did not fail. In other episodes, however, bank failures may have reflected illiquidity resulting from runs, rather than exogenous insolvency."

Unlike in the present situation, during the great depression clearing banks were not protected by Federal Depositor Insurance.

The money horded from the banking sector was buried in cookie jars by the public as a precautionary measure, as the old saying 'cash is king' when chips are down.

The incumbent chairman of the Fed, Ben Bernanke, who is a recession scholar said "people are afraid of bank failures and the lack of depositor insurance hoarded their savings and buried it in coffee jars which removed money from circulation and created a deflationary collapse".

As shown in the graph below the U.S. economy experienced a deflation of 2.66 percent in 1930, 8.94 percent in 1931, 10.30 percent in 1932 and 5.09 percent in 1933. Burying money in coffee jars is not an unwise option during a deflationary period as money gathers value during a deflation and comes out stronger.

[1]"During the major contraction phase of the Depression, between 1929 and 1933, real output in the United States fell nearly 30 percent. During the same period, according to retrospective studies, the unemployment rate rose from about 3 percent to nearly 25 percent, and many of those lucky enough to have a job were able to work only part time. For comparison, between 1973 and 1975, in which period was perhaps the most severe U.S. recession after the World War II era, real output fell by 3.4 percent and the unemployment rate rose from about 4 percent to about 9 percent. Other features of the 1929 33 decline included a sharp deflation and prices fell at a rate of nearly 10 percent per year during the early 1930s as well as a plummeting stock market, widespread bank failures, and a rash of defaults and bankruptcies by businesses and households."

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[1] Charles W. Calomiris, National Bureau of Economic Research
http://www.nber.org/reporter/2008number4/calomiris.html
He is the Paul M. Montrone Professor of Finance and Economics at Columbia Business School and the co-director of the Project on Financial Deregulation at the American Enterprise Institute.

"The banking sector faced enormous pressure during the early 1930s. As depositor fears about the health of banks grew, runs on banks became increasingly common. A series of banking panics spread across the country, often affecting all the banks in a major city or even an entire region of the country.

Between December 1930 and March 1933, when President Roosevelt declared a "banking holiday" that shut down the entire U.S. banking system, and around half of U.S. banks either closed or merged with other banks. Surviving banks, rather than expanding their deposits and loans to replace those of the banks lost to panics, retrenched sharply".

"The banking crisis had highly detrimental effects on the broader economy. Friedman and Schwartz emphasized the effects of bank failures on the money supply. As bank deposits are a form of money, the closing of many banks greatly exacerbated the decline in the money supply. Moreover being afraid to leave their funds in banks, people hoarded cash, for example by burying their savings in coffee cans in the back yard. Hoarding effectively removed money from circulation, adding further to the deflationary pressures. Moreover, the virtual shutting down of the U.S. banking system also deprived the economy of an important source of credit and other services normally provided by banks."

The collapse of the banking system not only erodes money supply but also destroys credit that lubricates the private sector. As earlier mentioned in this paper, credit acts as a prerequisite for money as credit can in most instances precede the creation of money and attains the same services as money.

The fractional reserve banking system thrives on it's ability to create credit. When the overall money supply falls, it's ability to create credit also suffers. The current situation is worse off as banks are not willing to lend money out cutting much needed credit for businesses and creating deflationary collapse that have driven prices down and made the U.S. dollar a stronger currency.

Much of the 1929 great depression sterilization was carried out by the depositors as said earlier by Fed Chair, Bernanke. However the culprit of the current 'prolonged recession' which the whole world is experiencing, is the banking system itself, which despite receiving government sponsored bail out packages, is sterilizing the financial system (the monetary base) in more or less the the same way, the great depression did with bank runs and coffee jars.

Sterilization of the economy cuts money supply and the money multiplier, which affects the amount of credit that can be created by the fractional reserve banking system. This drastically affects the credit multiplier as money being squeezed out of the banking system adversely affects the bank's ability to create credit and reduces the credit multiplier, further arousing the deflationary atmosphere.

[1] *Fed Chair, Ben Bernanke speaking on money, gold and the great depression at the H. Parker* Willis Lecture in Economic Policy, Washington and Lee University, Lexington ,Virginia on March 2, 2004 – http://www.federalreserve.gov/boarddocs/speeches/2004/200403022/default.htm

There's a strong inverse relationship between deflationary and inflationary environments as these environments directly reflect the value of the currency.

In an inflationary scenario, which occurs with the practice of loose monetary policy, investors horde into safe options such as precious metals, commodities and last not least property sector which experiences a boom. However when policy rates are increased the money supply in the system shrinks and the bubble bursts.

Simply the burial of money effectively takes cash out of economy. For an example if fiat currency is removed from circulation it's value goes up and more goods and services can be purchased by the same face value of the currency than before due to deflation.

In other words the banks runs sterilized the financial system driving up the value of the dollar.

The relation of commodity prices at times of a deflationary economy is explained by former Central Bank Governor of Sri Lanka, John Exter in his inverse pyramid. At a time of economic meltdowns, investors always look for the safest option to invest in, not the option that gives the best return.

As shown in Exter's inverse pyramid below, the safest option to invest in is gold, followed by cash, government assets and other investments in private equity, sovereign debt and cross currencies. Most professional investors have a standard quantum of gold as having U.S. government bonds in their portfolio as a measure of risk mitigation.

EXTER'S INVERSE PYRAMID

Source www.longwaveanalyst.com

[1] First Governor of the Central Bank of Sri Lanka (then Ceylon) from 1950 – 1959

The current economic environment pertaining to investments is best elaborated by John Exeter's Inverse Pyramid shown above. At time of economic uncertainties investors revert back to the safest modes to secure their investments from eroding.

According to Exeter's Inverse Pyramid the most secure investment, at a time of economic and or political instability is gold which had increased in value. Investments in U.S. government securities (Repo Window) during the beginning of the financial meltdown (September 2008 – April 2009) have also shot up by 1,272.6 percent, so has commodities such as crude oil.

Authors Thoughts

The world's economic troubles are not over yet, it's just the beginning as loose monetary policy adopted by world central banks has created the current crisis. The U.S. Federal Reserve should be blamed the most as most key commodities are priced in U.S. dollars which have spiked prices in many folds and prompted food riots in some street corners of developing economies.

In addition to this the U.S. lose monetary policy has contributed immensely to the insurgency in Iraq, as nations such as Iran that have been supporting the insurgency were able to do so because oil prices hit record levels, which gave the Iranian government excess funds to carry out its rogue operations in Iraq.

The insurgency in Iraq has come down in recent times. Most defence experts attribute it to surge carried out by the U.S. military mechanism. However despite the surge having some effect on the insurgency it would be naive to think that was the only reason.

As the oil prices collapsed the number of insurgencies and number of U.S. military casualties too severely dipped and the Iranian government which depends on oil as its main revenue stream would be severely cash strapped to finance a proxy war in Iraq.

The same has happened in Venezuela at the time when oil hit record levels President Hugo Chavez showed his defiance to the west with the public's backing as he could afford to dishout subsidies to as a sweetener to win the public's support in recent months, has now become silent with the price of oil over 65 percent down from its 2008 peak.

Iran and Venezuela, despite being a top oil producer and exporter, domestically sells cheap gasoline but maintains high domestic inflation. The only plausible reason for this could be lose monetary policy within those two economies.

In addition to the above, issues pertaining to personal credit such as personal loans, credit cards and auto loans/leases/hire purchases have not received sufficient attention from economist and policy makers as consumer credit make up over 33 percent of total household debt in the U.S. economy.

As of end of fourth quarter 2008, the total outstanding U.S. consumer credit outstanding was 2.596 trillion dollars and had grown by 17.0 percent from end 2008. Due to the current economic crisis and credit squeeze, outstanding consumer credit has come down by 2.5 percent to 2.532 trillion dollars.

I would like to conclude this article by stressing that the slight reversal of the global recession experienced in the months of April and May 2009 would be short lived, despite the Fed Chair Ben Bernanke giving assurances to members of congress that the economy is on a recovery path and would stabilize by mid 2010.

The fact of the matter is that the U.S.'s over expanded personal credit market which was in trouble was not properly addresse in the last two decades, as no legitimate attempt by policy makers and law makers was made to addressed the core problem and was simply rolled - over or re - structured with more credit as a temporary fix.

However one could argue that since credit is simply a book entry operation and could be countered with re structuring the loan book by lengthening the loan payback period, I believe that this would create a tenure mismatch on deposits taken and loans given.

Under the current economic environment where credit has become a necessity and not a luxury, securing enough credit to re - structure the existing personal debt would be a daunting task due to the credit freeze (sterilization of the economy) by the high street banks.

The truth of the matter is, on the medium term, there will not be simply enough credit available to the real economy to re - structure the existing mortgage and personal debt stock of the American public.

This will eventually spill over to other economies that face similar economic symptoms. In addition to the above, the current job losses in the economy will not be a mere Inconvenience, but might be the toughest challenge for policy makers to face in the upcoming quarters.

Finally even if banks start lending money out and reduce the excess reserve, the ultimate result would be a ballooning effect of high inflation. The rise in global commodity markets, especially gold and crude oil would give a very good indication of this.

The inflationary effects would have to be stopped by raising inflation rates as done in 2007 to mop up the excess liquidity which is more rampant in the system than the beginning of the crisis. Due to this the world might experience shorter boom, bust cycles in the future, which could be corrected if Central Banks finally decide purge toxic assets and not merely offer to restructure them through stimulus packages.

> After being crushed in the last quarter of 2008, the most likely scenario for 2009 points to a significant commodity price snapback. An economic turnaround at midyear— with growth, but growth below trend—will push commodity prices, including gold, higher.
>
> *In addition, after dramatic drops in the price of most commodities relative to the price of gold, we should anticipate that such commodity prices (relative to gold) will tend to revert back to their historical norms. They always do after a dramatic departure from the "golden constant."*

With a snapback in commodity prices, inflation expectations and general measures of inflation will become more elevated. The Federal Reserve will begin to put on the brakes. Quantitative easing will end, the Fed will begin to dump assets to slim down it's balance sheet, and interest rates will rise. This will, of course, jeopardize the recovery. With that scenario, the prospective path for the economy might best be described as W shape. – [1]Professor Steve Hanke

Authors Conclusions

The loose monetary which opened the doors for the Federal Reserve to create dollars and bolster credit, which in turn boosted consumer spending and economic growth in the U.S. are sighted, by myself as the primary evils that initiated the current economic crisis.

The study shows, that there is a strong relationship between U.S. reserve money and commodity prices that fuelled bubbles around the world creating economic and political instability, which if not controlled by disciplined monetary policy, would create more instability and political turmoil in the coming months.

It would be interesting to do further research on the relation between U.S. monetary policy, credit expansion and the price of commodities such as crude oil which is related to U.S. foreign policy.

[1] *Professor Steve H. Hanke Professor of Applied Economics at The Johns Hopkins University in Baltimore and a* Senior Fellow at the Cato Institute in Washington, D.C.