

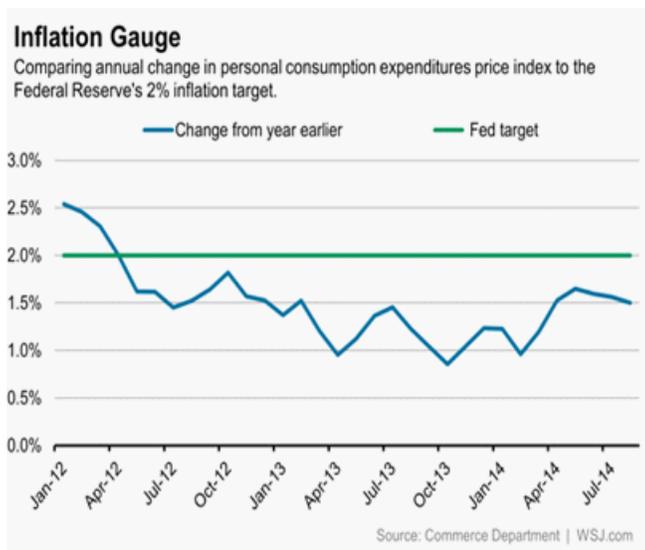
UNDERSTANDING THE LONGWAVE ECONOMIC AND FINANCIAL CYCLE  
**THAT WAS THE WEEK THAT WAS**



Monday, September 29th

The Commerce Department reports the U.S. personal consumption expenditures index – the Federal Reserve’s preferred inflation gauge – fell slightly to 1.5% in August on a year-over-year basis, following a 1.6% rate in July.

MONDAY, SEPTEMBER 29TH



- The National Association of Realtors (NAR) reports its U.S. index of pending home sales declined by 1% in August to a seasonally adjusted reading of 104.7, following a level of 105.8 in July; citing higher home prices and rising mortgage rates as the primary influences.
- The European Commission (EC) reports its economic confidence index for the 18 countries within the European Monetary Union (EMU) declined to a reading of 99.9 in September, following a level of 100.6 in August. While slightly improved sentiment was recorded in the services and construction components,

these were overshadowed by renewed pessimism in the consumer, retailer and manufacturing sectors. Separately, the EC gauge measuring EMU consumer inflation expectations over the next 12 months, fell to a reading of 4.0 in September from a level of 6.6 in August.

- Front Page Headline, Daily Telegraph U.K. – “Lloyds Bank Fires Eight Staff over Libor Rigging.”



Photo source: Reuters

- Lloyds Banking Group has fired eight staff for ‘totally unacceptable behavior’ unearthed by a major investigation into Libor rigging which resulted in a 225 million pound fine for the bank by U.S. and U.K. regulatory authorities. Lloyds, which is 25% owned by the taxpayer was fined in July for its role in the attempted manipulation of the London Interbank Offered Rate (Libor). The penalty also included a charge for manipulating the rate payable to the Bank of England for the Special Liquidity Scheme (SLS), making Lloyds the first bank to be penalized

over this issue. Lloyds acknowledged that, not only did the dismissals relate to both Libor and SLS rigging, but also, to the forfeiture of about three million pounds in unpaid bonuses. In a press release, Lloyds' CEO Antonio Horta-Osorio stated: 'Having taken disciplinary action against those individuals responsible for the totally unacceptable behavior identified by the regulators' investigations, the Board and the group's management team are committed to preventing this type of behavior from ever happening again.'

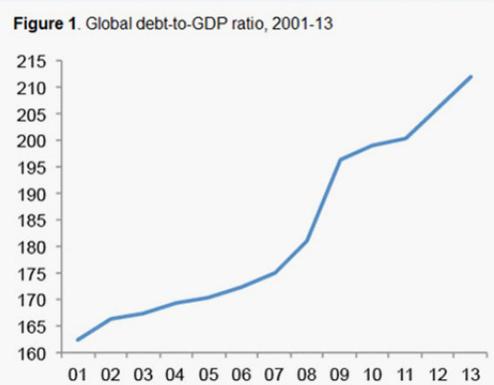
- Front Page Headline, Daily Telegraph U.K. – “Mass Default Looms as World Sinks Under an Ocean of Debt.



Countries face being swept under by a tidal wave of debt.  
 Photo source: AP

On a global level, gross domestic product (GDP) growth is being steadily drowned under a rising tide of debt, threatening renewed financial crises, a continued squeeze on living standards and eventually mass defaults ... Contrary to widely held assumptions, the world has not yet begun to delever. In fact, global debt-to-GDP ratios – public and private non-financial debt – are still growing, breaking new highs by the month. There was a brief pause at the height of the financial crisis, however, then the increase in the global debt-to-GDP ratio resumed, reaching nearly 220% over the past year. Much of the recent growth in this headline figure has been driven by China, which in response to the financial crisis, unleashed a massive expansion of credit. However, even developed market economies have struggled to make progress, with rising public debt cancelling out any headway being made in reducing household and corporate indebtedness.

Reduced mortgage financings during the financial crisis temporarily succeeded in capping and partially reversing the growth in U.K. household debt. Yet, with a reviving housing market, these reductions may have come to an end, since the Office for Budget Responsibility is expecting household debt-to-income ratios to begin climbing again soon. In the meantime, the government has been piling on new gilt issues like crazy; attempts by Chancellor George Osborne to bring the deficit under control, notwithstanding. Accordingly, total national non-financial indebtedness has barely budged since 2008. The U.K. remains the fourth most highly indebted major economy in the world after Japan, Sweden and Canada, with a total non-financial debt-to-GDP ratio of 276%. The U.S. is not far behind with a debt-to-GDP ratio of 264%. However, the stand-out is China, which since the financial crisis began has seen its debt-to-GDP ratio spiral from a very manageable 140% to 220% and rising. Obviously, this is still lower than many developed economies; however, the acceleration of the increase, combined with the fact that it is largely private sector debt, makes a hard landing virtually inevitable. See our chart below.



It would appear the only way the world can keep GDP growing is by piling on more debt. Not good, not good at all. There are those who say it doesn't matter, or that rising debt levels are merely a manifestation of economic growth. In the sense that all debt is notionally backed by assets, this may be partially true. However, when rising asset prices are merely the flip side of debt, it becomes highly problematic. Ultimately, it dawns on the creditors that the debtors cannot maintain their interest payments. It is at this point when a financial crisis is likely to emerge. Crisis or no crisis, the most recent annual Geneva Report argues that rising indebtedness in developed economies has been crimping potential GDP growth ever since the 1980s.

2013	Total ex-financials a = b + c	Government b	Private c	External	Net external position
<b>World</b>	<b>212</b>	<b>78</b>	<b>133</b>	<b>83</b>	<b>—</b>
<b>Developed markets</b>	<b>272</b>	<b>108</b>	<b>164</b>	<b>141</b>	<b>-1</b>
Japan	411	243	168	57	57
Sweden	293	41	252	200	-16
Canada	284	89	195	73	-17
UK	276	90	186	371	-11
US	264	105	160	98	-26
Eurozone	257	93	164	126	-19
Korea	232	37	196	34	-9
Australia	209	29	180	89	-56
<b>Emerging markets</b>	<b>151</b>	<b>48</b>	<b>102</b>	<b>23</b>	<b>-9</b>
Hungary	223	79	144	148	-103
China	217	49	168	9	18
Czech Republic	131	48	83	56	-51
Poland	137	57	79	73	-71
Thailand	150	45	105	36	-26
Argentina	129	47	82	28	2
South Africa	127	45	82	39	-11
India	120	67	54	23	-25
Brazil	121	66	55	22	-36
Turkey	105	36	69	47	-56
Mexico	77	46	31	32	-40
Indonesia	65	26	39	30	-37
Russia	43	13	29	34	4

Source: Authors' calculation based on OECD, IMF and national accounts data. See Data Appendix at the end of the report. Net external position data are 2012 values.

The financial crisis has already made a bad situation worse, by causing a further permanent decline in both the level and growth rate of output. In turn, this makes it much more difficult to reduce debt; when economies are not growing; debt-to-GDP ratios tend to rise automatically. We now witness much the same thing happening in emerging markets with output growth slowing markedly since 2008, particularly in China. Buying GDP growth with debt is reaching the limits of its viability. Possibly, it is the case that Anglo-Saxon economies – the U.S. and the U.K. – have done better in managing the tradeoff between deleveraging and output than others. However, this may be largely a conjuring trick. To the extent that meaningful reductions in private and financial sector debt have been achieved without greater damage to output, it is only because there has been a parallel and very substantial increase in public indebtedness.

Despite the deficit reduction rhetoric, U.K. Chancellor of the Exchequer George Osborne has, in point of fact, been doing the bare minimum to keep market pressures at bay. He has also had plenty of assistance from the Bank of England, which itself has become leveraged to the gunwales with government debt in order to ease the path back to fiscal sustainability. Nonetheless, Britain is plainly a much better place to be than in the euro zone, which has imposed entirely counterproductive debt controls on governments and thus far at least, has denied them the luxury of debt monetization by the European Central Bank (ECB). The result is a crushing depression for much of the single currency EMU. Historically, big debt overhangs have tended to be dealt with via inflation and currency adjustment, the natural, market-based way of haircutting creditors. Both of these options are denied to the euro zone economies and when everyone is in the

same high debt boat, may in any case no longer work as they once did. There is still no sign of the inflation one might expect following such an unprecedented phase of central bank money printing and judging by still historically low government bond yields, very little prospect of it. Indeed, the global economy may have entered a vicious circle where excessive debt constrains demand to such a degree that interest rates, inflation and GDP growth remain permanently low. While this way of thinking may be unduly pessimistic, it is also worryingly plausible.

Under conditions where excessive debt cannot be reduced via economic growth, spending restraint or inflation, necessary adjustment tends to occur much more divisibly through default. While it's a toss-up which EMU member is going to breach the dam first, unless the ECB rides to the rescue with debt monetization soon, the betting must be on Italy. The fact that this has not yet been reflected in bond yields is only due to the assumption that the ECB will eventually oblige. However, even if it does, it will only buy some time." See also: Economic Winter, It's Still the Debt, Stupid – March 21, 2014 and Economic Winter, Desperate Acts to Retain the Paper Monetary System – September 19, 2014.

## TUESDAY, SEPTEMBER 30TH

- The New York-based Conference Board reports its U.S. index of consumer confidence declined to a reading of 86 in September, following a revised level of 93.4 in August. Lynn Franco, a director of economic indicators at the Conference Board, commented: "Consumers are not only, less confident about the short-term outlook for the economy and the labor market, but also, somewhat mixed regarding their future earnings potential. All told, consumers expect GDP growth to ease during the months ahead."
- The S&P/Case-Shiller group reports their index of property values in 20 U.S. cities rose by 6.7% in July on a year-over-year basis – the smallest 12-month pace since November 2012 – citing continuing tight mortgage conditions and limited wage gains as reducing demand.
- Eurostat reports the euro zone's consumer price index (CPI) was 0.3% in September on an annual basis, down slightly from 0.4% in August. The inflation rate has now been below 1% for 12 consecutive months.

- Front Page Headline, Bloomberg News – "Canada Close to Eliminating Budget Deficit: Finance Minister Oliver. At the Bloomberg Canadian Fixed Income Conference in New York, Canada's Finance Minister Joe Oliver stated: 'In about one month's time, the forthcoming budget update will send the message that Canada's finances are in good shape. Since we would prefer to have our economy grow more quickly, we are going to be focusing on creating more jobs. While the global economic environment remains fragile, we must remain fiscally responsible.'



Canadian Finance Minister Joe Oliver.  
Photo source: Bloomberg News

## WEDNESDAY, OCTOBER 1ST

- The Tempe, Arizona-based Institute for Supply Management (ISM) reports its U.S. purchasing managers' index (PMI) for manufacturing declined to a reading of 56.6 in September, following a level of 59 in August.



An employee works on the base of a wind turbine blade at a Siemens plant in Iowa. Photo source: Bloomberg

- The Roseland, New Jersey-based ADP Research Institute reports the U.S. private sector added 213,000 payrolls in September, following a revised 202,000 hires in August. The ADP report is based upon data from businesses with more than 21 million employees on their combined payrolls. Mark Zandi, an economist at Moody's Analytics, noted: "Very encouraging in the numbers is the increasingly broadly-based nature of those hires."

- Markit Economics reports its euro zone purchasing managers' index for the manufacturing sector fell to a reading of 50.3 in September, its slowest pace in 14 months. Chris Williamson, chief economist at Markit in London, commented: "The weakening manufacturing sector will intensify pressure on the ECB to do more to revive the European economy and no doubt strengthen calls for a full-scale quantitative easing monetary policy."
- RBC reports its Canadian Manufacturing Purchasing Managers' Index (PMI) declined to a seasonally adjusted reading of 53.5 in September from the nine-month high level of 54.8 in August. Craig Wright, chief economist at RBC observed: "As we progress into the final months of 2014, we expect a further strengthening in the U.S. economy will augment Canadian exports and set the stage for solid manufacturing business conditions overall."

celerate GDP growth, increase employment and achieve a new momentum. Our main job now is to assist the global economy in shifting gears and to overcome what has been to date a disappointing economic recovery; one that is brittle, uneven and beset by risks." Wake-up call for Ms. Lagarde: At Long Wave Analytics, we remain of the view that at this stage in the economic cycle, embracing any additional, albeit sizeable stimulus measures for the global economy by advanced nations would only increase their 'high debt burdens' referenced in your speech. Indeed, an upward growth trend will only occur when the current sizeable sovereign debt levels of advanced economies are dramatically reduced, particularly within Europe, in Japan and in the United States.

#### THURSDAY, OCTOBER 2ND

- The Labor Department reports U.S. initial claims for state unemployment benefits declined by 8,000 to 287,000 in the week ended September 27th. while continuing claims fell by 45,000 to 2.4 million in the week ended September 20th. Separately, the Commerce Department reported U.S. factory orders declined by 10.1% in August, citing lower orders for aircraft.
- Front Page Headline, Globe and Mail – "IMF Beats the Stimulus Drum.

- Front Page Headline, Economic Collapse Blog. – "What Will Result After U.S. Treasuries Have Moved Higher in Yield? The U.S. government is borrowing about eight trillion dollars a year; i.e. \$8,000,000,000,000 (U.S.) and in the most recent fiscal year ended on Tuesday, the U.S. national debt increased by more than one trillion dollars. However, that does not include the huge amount of U.S. Treasuries that the federal government must redeem each year at designated maturity dates. When these bonds, notes or treasury bills reach their respective maturity dates, the U.S. government must redeem them at parity (100 cents on the dollar) and this is done by marketing new issues of government securities to investors. In fiscal 2013, redemptions of U.S. Treasury securities totaled \$7,546,726,000,000 and new debt totaling \$8,323,949,000,000 was issued. The final numbers for fiscal 2014 are likely to be somewhat higher.

So, why does so much U.S. government debt come due each year? In recent years, government officials decided they could save a lot of money on interest payments by borrowing over shorter time frames. Given the positive shape of the bond yield curve – from a 30-day term to a 30-year term – it costs the government far more to borrow for a 30-year term than it does for a 1-year term. So, a strategy was adopted to borrow money for shorter terms and then keep rolling-it-over again and again. Indeed, while this strategy has saved the federal government hundreds of billions of dollars in interest payments, it has also created a situation where the federal government must borrow about \$8 trillion (U.S.) a year just to keep pace with the game plan. So, what happens when the rest of the world decides that it does not want to lend America \$8 trillion (U.S.) a year at ultra-low yield levels? Then, the game will be over and America will be in a massive amount of trouble. In fiscal 2006, whereas, \$4,297,869,000,000 of U.S. Treasury securities were redeemed, \$4,459,341,000,000 (U.S.) were newly issued. However, by fiscal 2013, the amount redeemed was \$7,646,726,000,000 (U.S.) while the newly issued totaled \$8,323,949,000,000 (U.S.).



Pictured above in a recent Reuter's photo, International Monetary Fund Managing Director Christine Lagarde told a Georgetown University audience today in Washington: 'We are witnessing continued weakness in the global economy. Countries are still coping with the legacies of the financial crisis, experiencing high debt burdens and nagging unemployment levels. Some serious clouds hang on the horizon, including low inflation and high unemployment in the euro zone, financial excesses building in advanced economies, plus market and liquidity risks which are migrating to less-regulated areas of the global financial system. The global economy is at an inflection point: it can muddle along with sub-par GDP growth, or it can aim for a better path by embracing bold (fiscal and monetary) policies which would ac-

The only way this strategy can persist is if the U.S. government can continue to borrow gigantic piles of money at ridiculously low bond yield levels. Americans' current standard of living greatly depends upon the continuation of this process. If something comes along and rattles this refinancing scheme, life in America could change radically almost overnight. Today, in the United States there exists a heavily socialized system which distributes cheques to almost half the population. In point of fact, according to the U.S. Census Bureau, 49% of all Americans live in a household that receives direct monetary benefits from the federal government each and every month. While it is difficult to comprehend, Americans received in excess of two trillion dollars in benefits from the federal government in 2013 alone. At this point, the primary function of the federal government appears to be the redistribution of the nation's income stream. More than 70% of all federal spending goes to 'dependence-creating programs,' since the government operates approximately 80 different 'means-tested welfare programs' right now. However, the big problem is that the federal government is operating these programs on a deficit basis, so it must borrow the difference it spends.

As long as the federal government can continue to borrow at historically low rates of interest, the status quo can be maintained. However, a refinancing scheme like this cannot last indefinitely ... Most assuredly, there is no way that America can 'grow' its way out of this problem. As Baby Boomers continue to retire, the amount of money that the federal government is dispensing each year is projected to absolutely skyrocket. Consider the following projections:

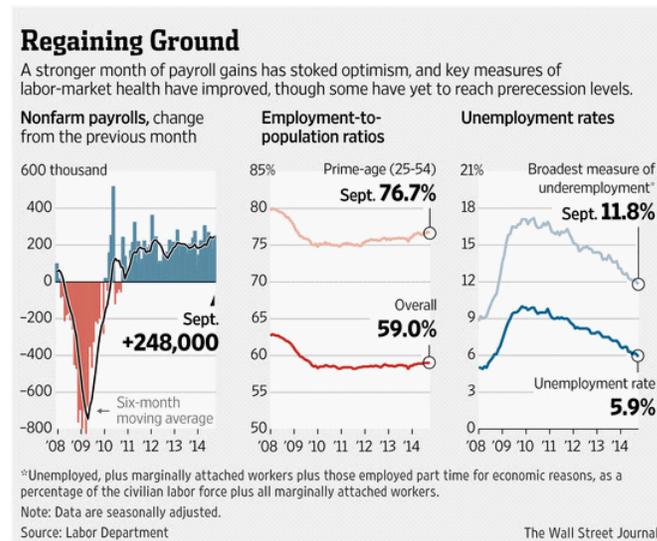
1. In 1965, only one in 50 Americans was on Medicaid. Today, more than 70 million Americans are on Medicaid and projections indicate that Obamacare will add 16 million additional Americans to the Medicaid rolls.
2. When Medicare was first established, the government declared that it would cost about \$12 billion (U.S.) a year by 1990. Instead, the federal government spent \$110 billion (U.S.) on the program in 1990 and about \$600 billion (U.S.) in 2013.
3. Currently, projections are that the number of Americans on Medicare will grow from 50.7 million in 2012 to 73.2 million in 2025.
4. At this point, Medicare is facing unfunded liabilities in excess of \$38 trillion (U.S.) over the next 75 years.

5. In 1945, there were 42 workers for every American retiree receiving Social Security benefits. Today, that number has declined to 2.5 workers.
6. At present, there are approximately 63 million Americans collecting Social Security benefits. By 2035, that number is projected to soar to an astounding 91 million.
7. Overall, the Social Security system is facing a \$134 trillion (U.S.) shortfall over the next 75 years.

At Longwave Analytics, we agree that there is no way America can grow its way out of this refinancing dilemma. Rather, the only way to remedy the situation is to reduce the benefits in the entitlement programs, raise taxes or, introduce a combination of both. Either way, good luck to the politicians in Washington in their potential attempt to obtain support for those ideas from the American electorate.

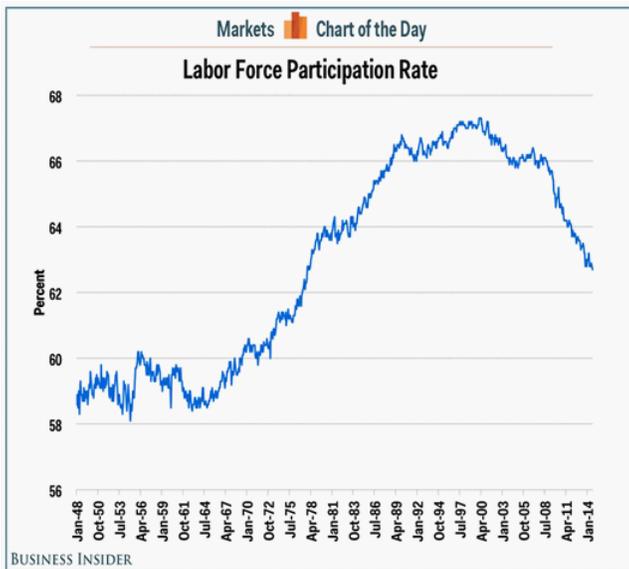
## FRIDAY, OCTOBER 3RD

- The Labor Department reports U.S. non-farm payrolls increased by 248,000 in September, following an upwardly revised gain of 180,000 in August; while the official unemployment rate declined to 5.9% from 6.1%, the lowest level in six years.



- Front Page Headline, Business Insider – “U.S. Labor Force Participation Rate Declines to Its Lowest Level since 1978. As depicted in our chart below, the U.S. labor force participation rate has been gradually declining for about the last 15 years and now sits at a level of 62.7%. Why the U.S. labor force participation rate has fallen so much is one of the most hotly debated questions in American economics. On the one hand, the U.S. is

aging and the baby boomers are beginning to retire. That leads to a natural demographic decline in the participation rate. On the other hand, America is struggling to emerge from the worst recession it has experienced in decades. The fact that the participation rate has dropped more sharply since 2008 could mean the cyclical effects from the recession may also be a big factor in the declining participation rate.”

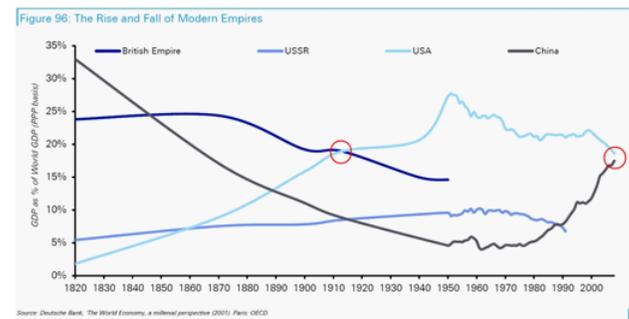


Source: U.S. Bureau of Labor Statistics

- Statistics Canada reports the nation recorded a \$610 million (CAD) trade deficit in August as exports declined by 2.5%, following three consecutive months of solid surpluses totaling \$4.1 billion (CAD). Stuart Bergman, assistant chief economist at Export Development Canada, commented: “This is just a one-month blip in the annual story. For most sectors of the economy, the year-over-year and year-to-date numbers are still showing a positive trade surplus trend.”
- Front Page Headline, Sovereign Man – “Chinese Renminbi Becomes Directly Tradeable with the Euro. In a press release, the Peoples’ Bank of China – the Chinese central bank – has announced the authorization of direct trading between the renminbi and the euro on the inter-bank foreign exchange market. This is huge. The euro is the second most frequently traded currency in the world, after the U.S. dollar. The European Union (EU) is already China’s largest trading partner, so this is a major step in further increasing trade and investment ties with the EU, since there is now a direct exchange rate between the two currencies, bypassing the U.S. dollar as the conduit. The renminbi is quickly marching down the path of internationalization, since the Chinese currency is now directly exchangeable with the U.S. dollar,

Australian dollar, euro, New Zealand dollar, Japanese yen, British pound, Russian ruble and the Malaysian ringgit.

According to the Society for Worldwide International Financial Telecommunications (SWIFT), the usage of the Renminbi in international trade settlements nearly tripled in value globally over the past two years. Moreover, at least one-third of financial institutions around the world already use the renminbi for payments to China and Hong Kong. This is yet another sign of how the international financial system is changing and it’s a major one. As the chart below from Deutsche Bank clearly shows, the last two centuries of western domination in the global economy are nothing but an anomaly in the long timeline of history.



In addition to being global economic power houses, China and India have always been the two major population centers in the world. The spectacular Chinese decline over the course of the 19th. century was a result of the archaic state of China’s society, as well as the country’s unwillingness to open its borders and adjust to the world, which had clearly changed with the advent of the industrial revolution and the first major wave of globalization. This resulted in the British Empire being propelled to an economic leadership role as the world’s superpower. When two world wars changed that, the United States became the undisputed global economic leader in the 20th. century. Now, this historical anomaly is being rectified and China is again reclaiming its status in the world with the Chinese currency following suit. This is a very exciting time to be alive, for anyone closely following this global trend. Major economic changes like this rarely occur; perhaps every one hundred years or so. Also, these changes can afford incredible opportunities for those attuned to them, but a tremendous amount of turmoil for those who ignore the trend.”

- Front Page Headline, GoldMoney – “The Myth of Monetary Velocity. The amount of Money x Velocity of Circulation = Total Spending (GDP). Researcher Alasdair Macleod writes: ‘Assuming that we can quantify both money and total spending, we end up with velocity. However, this does not tell us why velocity might vary: all we know is that it must vary in order to balance

the equation. One could equally state that two completely unrelated quantities can be put into a mathematical equation, so long as a variable is included whose only function is to always make the equation balance. In other words, the equation of exchange actually tells us nothing per se. This gives analysts a problem, not resolved by the modern reliance on statistics and computer models. The dubious gift to us from statisticians is their so-called progress made in quantifying the economy, so much so that the London School of Economics has a machine called MONIAC (monetary national income analogue computer) using fluid mechanics to model the U.K.'s economy. This and other more recent computer models give unwarranted credence to the idea that the economy can be modelled, derivations such as velocity explained and valid conclusions drawn. Gross domestic product (GDP) is only an accounting identity, no more than that. It ranks pin with golf balls by reducing them both to a monetary value.

Statisticians select what's included in GDP so it is biased in favour of consumer goods and against capital investment. Crucially, it does not tell us about an ever-changing economy comprised of successes, failures and difficult to predict human needs and desires, which taken all together is economic progress. Also, because it is biased in its composition and reveals nothing about progress, the value of this statistic is grossly exaggerated. The only apparent certainty in the equation of exchange is the quantity of money, assuming that it is all recorded. No one seems to allow for unrecorded money such as shadow banking, however, we shall let that pass. If the money is sound, as it was when the quantity theory of money was devised, one could assume that an increase in its quantity would tend to raise prices. This was experienced following Spain's importation of gold and silver from the new world in the 16th. century, plus following the gold mining booms in California and South Africa. However, relating an increase in the quantity of gold to prices in general is at best a summary of a number of various factors which drive the price relationship between money and goods.

Today, we no longer have sound money, whose purchasing power was regulated by human preferences across national boundaries. Instead, we have fiat currencies whose purchasing power is formalized in foreign exchanges. On October 8, 2008, when the Icelandic krona halved in value, it had nothing to do with changes in the quantity of money, or Iceland's GDP. Yet, if we attempt to interpret velocity in this case, we will find ourselves pleading a special case to explain its substantial increase as domestic prices absorbed the shock imparted through the foreign exchanges. Iceland's currency collapse was not an isolated event. The purchasing power of a fiat currency varies constantly, even to the point of losing it altogether. The truth of the matter is the utility of a fiat currency is entirely dependent upon the subjective opinions of individuals expressed through markets and has nothing to do with a mechanical quantity relationship. In this respect, merely the potential for unlimited currency issuance, or a change in perceptions of the issuer's financial stability, as Iceland discovered, can be enough to destabilize it. According to the equation of exchange, this is not how things should work.

Firstly, the order of events is there is an increase in the quantity of money and then prices rise, because monetarist logic states that prices increase as a result of the extra money being spent, not as a result of money yet to be spent. With a mechanical theory, there can be no room for subjectivity. Therefore, it nonsense to conclude that velocity is a vital signal of some sort. Monetarism is, at the very least, still a work-in-progress until monetarists finally discover that velocity is no more than a factor to make their equation balance. It is indicative of the false mechanization of human behavior by modern macro-economists. However, it should also be noted that it is impossible to square the concept of velocity of circulation with one simple fact of everyday life: we earn our salaries once and we dispose of them. That's a constant velocity of roughly one."

CLOSING LEVELS FOR FRIDAY, OCTOBER 3RD.		WEEKLY CHANGE
Dow Jones Industrial Average	17,009.69	– 13.46 points
Spot Gold Bullion	\$1,192.90 (U.S.)	– \$22.50 per troy oz.
Spot Silver	\$16.84 (U.S.)	– \$0.78 per troy oz.
S&P / TSX Composite	14,789.78	– 236.99 points
10 – Year U.S. Treasury Yield	2.43%	– 10 basis points
Canadian Dollar	88.82 (U.S.)	– 0.83 cent
U.S. Dollar Index Future	86.636	+ 0.96 cent
WTI Crude Oil Futures	\$89.74 (U.S.)	– \$3.80 per barrel
DJIA / Gold Ratio	14.26	+ 0.18 point
Gold / Silver Ratio	70.84	+ 1.86 points

Ian A. Gordon, The Long Wave Analyst [www.longwavegroup.com](http://www.longwavegroup.com)

Disclaimer : This information is made available by Long Wave Analytics Inc. for information purposes only. This information is not intended to be and should not to be construed as investment advice, and any recommendations that may be contained herein have not been based upon a consideration of the investment objectives, financial situation or particular needs of any specific reader. All readers must obtain expert investment advice before making an investment. Readers must understand that statements regarding future prospects may not be achieved. This information should not be construed as an offer to sell, or solicitation for, or an offer to buy, any securities. The opinions and conclusions contained herein are those of Long Wave Analytics Inc. as of the date hereof and are subject to change without notice. Long Wave Analytics Inc. has made every effort to ensure that the contents have been compiled or derived from sources believed reliable and contain information and opinions, which are accurate and complete. However, Long Wave Analytics Inc. makes no representation or warranty, express or implied, in respect thereof, takes no responsibility for any errors and omissions which may be contained herein, and accepts no liability whatsoever for any loss arising from any use of or reliance on this information. Long Wave Analytics Inc. is under no obligation to update or keep current the information contained herein. The information presented may not be discussed or reproduced without prior written consent. Long Wave Analytics Inc., its affiliates and/or their respective officers, directors or employees may from time to time acquire, hold or sell securities mentioned herein. In addition, the companies referred to herein may pay a fee to Long Wave Analytics Inc. to be listed on [www.longwavegroup.com](http://www.longwavegroup.com). Copyright © Longwave Group 2014. All Rights Reserved.

"Those who cannot remember the past are condemned to repeat it." Santayana