GETAnalysis.ca
RESEARCH

August 7, 2016

WRITTEN BY: ASHOK DHILLON

Ashok Dhillon has 40 years of front-line business experience in Canada and International markets.

Mr. Dhillon's experience includes start-ups, venture capital, seed funding, and heading companies in construction and international power development. His extensive experience gives him in-depth knowledge and intuitive insights into macro and micro, national and international, geo-political and economic realities and trends. He has been invited to speak on international business at various forums, including as an expert witness for the Standing Senate Committee, Government of Canada, on "The Rise of Russia, China and India".

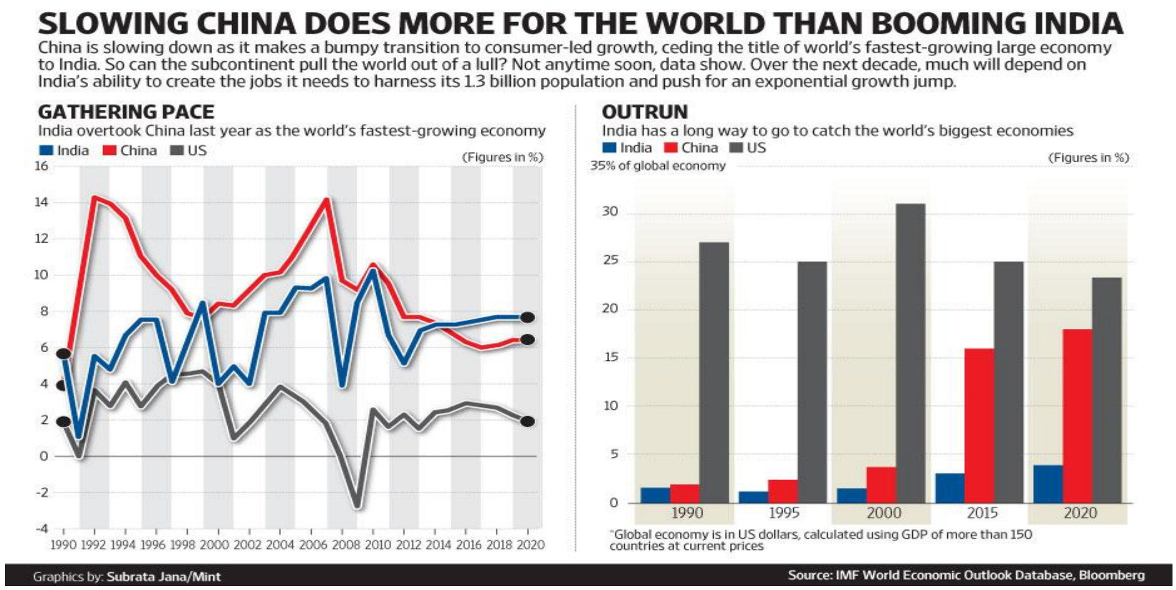
As Bad News Mounts – Outlook Grows Dimmer

The latest economic and Gross Domestic Product (*GDP*) numbers for the major economies were not reassuring. Even the United States which was touted by the Federal Reserve (*the Fed*) and prominent analysts, as being upon a solid path to recovery (*we scratched our heads*) surprised substantially to the lower than expected this past quarter, *expected growth rate 2.5% - actual 1.2%, on an annualized basis*. That drop is a significant loss of momentum. UK, post Brexit, has slumped enough to have the Bank of England (*BOE*) restart Quantitative Easing (*QE*) through Bond buying program, and has cut its key lending rate to 0.25%. Europe didn't need Brexit to weaken it further, though that is going to happen soon enough, but it was already struggling to stay on track at 1.6% for 2016, which is now revised down to 1.4%, even with the ongoing and considerable monthly help from the European Central Bank's (*ECB*) stimulus program (*€80 Billion per month*) and *'negative' interest rates*. Japan famously blew its already out-of-the-park GDP/debt-ratios all to heck with Abenomics, and still skated on the edge of recession, leaving PM Shinzo Abe and Bank of Japan (*BOJ*) Governor Haruhiko Kuroda looking and sounding out of sorts and desperate at international meetings, and fresh out of ideas. They have already been QE-ing the Japanese economy to death (*and just announced more QE*) and have implemented *negative rates* (-0.1%) since January of this year. World Bank and other analysts have revised their economic forecast for Japan in 2016, from 0.8% to 0.5%, and that is a serious indictment against Abenomics. That leaves China, which, while it desperately tries to find some workable solution to its overwhelming problems on way too many fronts, insane over-capacity in some areas being the main one, it still blithely sticks to its fantasy numbers of strictly controlled economic decent, at fractionally lower than the past annual GDP numbers, as its economic reality. The 2nd

As Bad News Mounts – Outlook Grows Dimmer

WRITTEN BY: **ASHOK DHILLON**

quarter of this year, it revised its annualized GDP number up by 0.1% from 6.5 % to 6.6%, but as China watchers know, it's real annual growth rate is much lower, perhaps half the officially stated numbers. Nevertheless, China is today the World's 2nd largest economy and along with its position as the World's largest manufacturer, it has an enormous impact on everything from global raw materials (*commodities*), finished goods, to global economic growth, or the lack of it. For a time there was speculation that a robustly growing India may compensate for a slowing China in global economic impact, but as the Chart below illustrates, it cannot, not quite yet.



The rest of the relatively large to medium sized economies: Russia, Brazil, South Korea, South Africa, and Venezuela, etc. are either in moderate, or severe decline, and some are still in negative territory, like Brazil, Russia, and Venezuela. And while India is supposedly growing at 7.5%, making it the fastest growing economy in the World at this time (*that number is probably upwardly stretched too*), the Indian economy is still far too small at approximately $2.2 Trillion per annum, which is smaller than France's at $2.4 Trillion, and UK's at $2.7 Trillion and slightly bigger than Italy's at $1.8 Trillion (*Source: IMF World Economic Outlook 2016*) to materially impact the global economy.

Considering that almost all of the major Central Banks after spending some fantastical $60-odd Trillion since the 2008 crisis, and driving the total global debt to a ridiculous $200 Trillion or so (*Source: McKinsey Global Institute*) are still in 'easing-mode', is an unmitigated policy disaster. They have been holding interest rates at historically 'lowest' levels now for almost 8 years, and negative interest rates, in some of the developed countries. Yet, looking at the recent GDP numbers, and global trade numbers by volume and value (*Next Chart*), the dismal picture being painted, makes one wonder: "Where is this all heading?" And why in spite of the unprecedented efforts of the Central Banks for this long, the global economic conditions continue to weaken?

As Bad News Mounts – Outlook Grows Dimmer

WRITTEN BY: ASHOK DHILLON

We, since 2012, have been consistent in our analysis and stated positions, that the global economies will not be able to engender any type of sustainable recovery under the QE and zero interest rate policies of the major Central Banks, and that their singular chosen path of endless QEs and ludicrous 'trickle down' - 'wealth effect' policies will lead to greater imbalances, not growth, which will take the collective global economic system over another, and this time a higher economic cliff.

Economist.com

The above Chart shows the obvious, that Global trade fell dramatically for most of 2012 (September of 2012 QE-3 was initiated by the Federal Reserve) and for the past two years '*the value'* of trade has literally tanked, as at the end of 2008. We wrote our first economic commentary in Sept. 2012, categorically stating that QE-3 will not work, and the economies will not recover sustainably. Our prognosis has been borne out every year since then. Now as major Central Banks roll out additional QE programs and push down interest rates further from the already historic lows, even into negative territory, one can safely assume the much ballyhooed 'recovery' did not materialize, and the economies are regressing alarmingly.

In fact, generally, global economic conditions have been getting so bad, that just about all major Central Banks, even Canada's on December 8th, 2015, mentioned the possibility of implementing negative rates in the future, to spur economic growth. Some of the countries in Europe and Japan have already pushed interest rates into negative territory with no material difference in the trajectory of the economies. That result has brought on an air of desperation.

Lately, Central Banks and government officials have been heard to be mulling the possibilities of using 'helicopter money' in a desperate last ditch effort to try and stave off another economic collapse. It seems conditions are getting there, and yet, the Central Banks, faced with their failed QE policies in their individual economies (*however in their opinion they do not see it as failure, just more of the same is required*), are unwilling to trigger this last resort policy yet, as the name sends the wrong message of total desperation.

As Bad News Mounts – Outlook Grows Dimmer

WRITTEN BY: ASHOK DHILLON

Unfortunately, in manipulating economies by untested and unconventional means for this long, and destroying market based capitalism, already there is no possibility of a safe return, and their recent behavior signals desperation.

The Federal Reserve which sets the pace and direction of most of the other major Central Banks, has been stoically postponing their oft announced and eagerly anticipated interest rate hikes for this year, 2016, to confirm to the World at large, and the financial market in particular, that the US economy has achieved escape velocity. But embarrassingly, they have been forced to forestall rate hikes again and again. According to the announcements by the Fed towards the end of last year, there were supposed to be at least 4 hikes in 2016, but so far there have been none. The Fed running out of excuses, introduced a hereto unknown indicator in their normal assessment of the US economy, 'weakness in global conditions'.

The last time they raised interest rates since 2008, was in December of last year (*2015*), and that was a mistake.

Global financial markets, not having strong economic fundamentals or healthy corporate earnings to attach their elevated levels to, and being by then firmly expectant of constant easing by Central Banks, reacted very badly to the possibilities of interest rate 'normalization', in the beginning of this year, endangering the carefully, expensively created and maintained, and ultimately unsustainable 'wealth effect', by shaving off a few Trillion (*estimated $13 Trillion*) from the inflated wealth effect the very next month.

That dramatic negative reaction made the Fed scramble and back-track on the narrative that regular rate hikes were built into this year. Janet Yellen, the Fed Chair, resumed reassurances that there was no certainty to interest rate hikes, and any future hikes would be most doveishly 'data dependent', which now for the first time in the Fed's history included out-of-America geo-political-economic indicators. That hasty retreat, and the unprecedented widening of the landscape to global indicators for potential threats to the US economy, was Fed-speak for 'Sorry - it won't happen again'.

The financial markets thus reassured of the endless supply of easy sustenance from the Fed's and other major Central Bank's teats, and the backstop to speculative risk in the financial markets 'the Fed Put', quickly recaptured their elevated positions and continued their steady climb to the recent current record busting heights. Their faith in the Fed has paid off so far.

Yet as everybody in the know, or those with even a modicum of common sense, are aware, there is a serious global economic problem and it is growing. Artificially inflated bubbles always pop and this time the artificial inflating has been taken to new heights and lengths, and is still going.

As mentioned in the opening paragraph, the latest GDP numbers for the United States, European Union, United Kingdom, Japan, China, and others, such as Russia, Brazil, South Africa, Venezuela etc., are dismal and getting worse. The lift of the smaller economies, albeit growing relatively robustly,

As Bad News Mounts – Outlook Grows Dimmer

WRITTEN BY: ASHOK DHILLON

such as India, Southeast Asia, some economies of Africa, are collectively not enough to counter the downward drag of the overwhelming economic mass of the largest economies, and stave off the potentially lethal bubble bursts and economic crumbles that are inevitable, without meaningful change of direction.

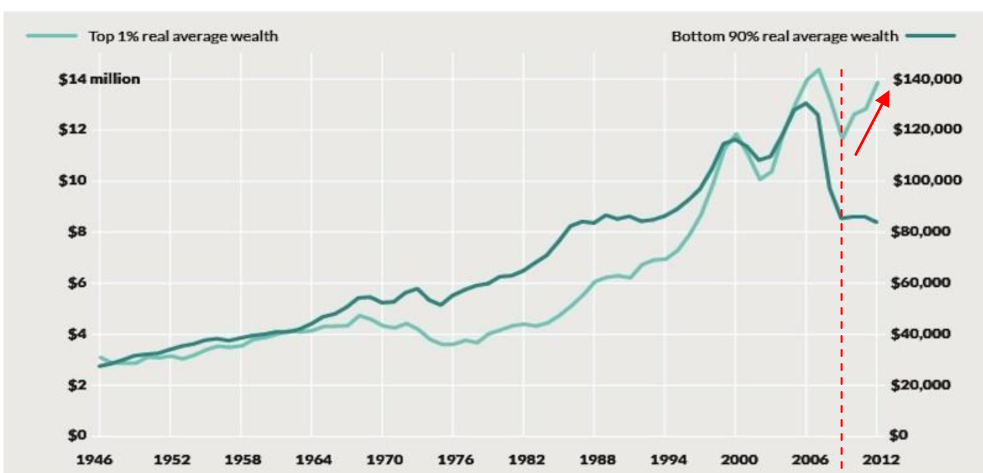
Currently the Fed, including the other major Central Banks, are locked into the most prolonged, unprecedented, economic easing positions, which include taking interest rates to zero, and sub-zero - to negative rates (*in some developed countries*). Such excessive monetary stimuli to try and jumpstart the global economies are so far, untried and untested, and therefore uncertain at best and dangerous at worst. To-date none of the schemes have really worked, except to keep the system limping along. Now, and after all that, the economies are again staring down the maws of another global recession, or worse, and the Central Banks are once again scrambling.

As the Central Banks contemplate additional easing, they risk further inflating the global asset and financial markets to their inevitable and possibly devastating implosions, crushing the existing anemic laboring economic activity under the resulting debris, and additional debt, and widening the already unconscionable level of wealth disparity between the top 1% and the bottom 90% that was significantly given a rocket boost by their programs of 'trickle down' economic policies since 2008 (*See Chart below*). Economic and financial market crashes, and their aftermath, hurt the average working class the most.

In the US, home of the post 2008 crash bailouts, QE programs, Fed policies of 'trickle down' economics, and creating 'wealth effect' through boosting real estate and financial markets - these decisions have significantly benefitted the top 1% and hurt the bottom 90%. In other countries that followed suit, there is no reason to believe that similar policies have not had similar results.

The New Wealth Divide in the United States

The average wealth of families in the bottom 90 percent and the top 1 percent of the wealth distribution, in constant 2010 U.S. dollars, 1946-2012



Notes: The figure depicts the average real wealth of bottom 90 percent of families (right y-axis) and top 1 percent families (left y-axis) from 1946 to 2012. The scales differ by a factor 100 to reflect the fact that top 1 percent of families are 100 times richer than the bottom 90 percent of families. Wealth is expressed in constant 2010 U.S. dollars, using the GDP deflator.

Source: Saez, Emmanuel and Gabriel Zucman "Wealth Inequality in the United States since 1913: Evidence from Capitalized Income Tax Data", NBER Working Paper, October 2014, online at http://gabriel-zucman.eu/uswealth/

Washington Center for Equitable Growth

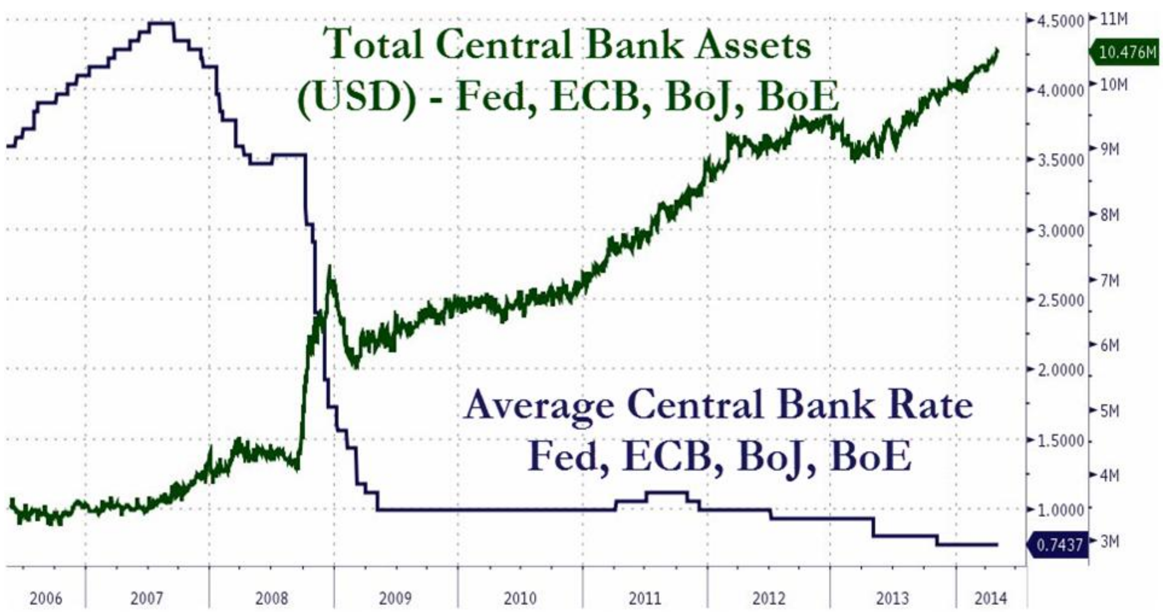
As Bad News Mounts – Outlook Grows Dimmer

WRITTEN BY: ASHOK DHILLON

A number of the smartest and most powerful international fund managers, with funds under management in the hundreds of Billions, have already been sounding the alarm over what they perceive to be unsustainably overinflated financial markets, with some of the greatest bubbles in the stock, bonds, and real estate markets that pose an imminent threat to the global financial system. In sounding the alarm they have already gone to cash, in the allocations of their portfolios. The average person neither has the means (*liquid assets, excess cash*) nor the knowledge, to position themselves advantageously for an impending crash, and therefore take the full brunt of the devastation that follows.

The Central Banks are aware of the rising chorus of alarm, but are in a real quandary. They have no other answers, and therefore have no choice but to keep pushing on their policies of further easing (more monetary stimulus and lower interest rates) and hope like heck something works. Otherwise, they risk bringing on the dreaded collapse sooner rather than later. The World's largest and most powerful Central Banks have truly maneuvered themselves, over the past 7½ years, into an unenviable - damned if they do / damned if they don't - situation.

The enormity of divergence from pre-2008 norms, between the average amounts of assets carried on Central Bank balance sheets, and the general level of interest rates then, and now, is stunning and graphically illustrated in the Chart below (*we now live in a topsy-turvy World*). The excessively low interest rates didn't spur economic growth, but have been vital to reduce costs for Governments carrying unprecedented and historic levels of debt.



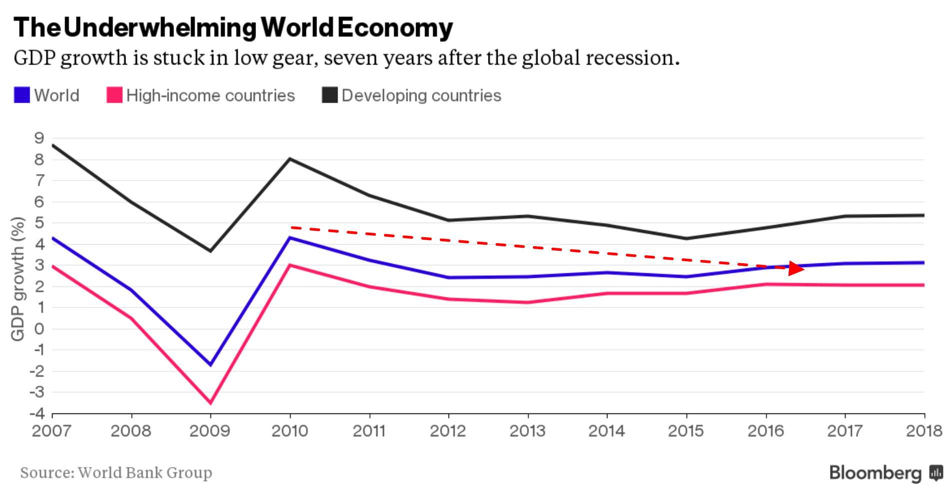
Source: resilience.org

In spite of this unprecedented level and duration of stimulus, the global economies today are still in a steady decline, are increasingly fragile and inherently unstable, much to the chagrin of Central Banks and Governments.

As Bad News Mounts – Outlook Grows Dimmer

WRITTEN BY: ASHOK DHILLON

Note: the figures indicated in the Chart below are higher than in reality, as actual numbers have been consistently revised downward. According to the World Economic Output, World GDP growth is revised modestly after Brexit to 3.1% from 3.2% for this year (*2016*), advanced economies GDP to 1.8% from 1.9%, and developing economies were left unchanged at 4.1%. Most of these numbers will probably come in substantially lower for the year as they normally tend to do. After all, shaving 0.1% for the effects of Brexit on the developed economies, and the World economy, is being a tad optimistic in our view.



Generally speaking, what's gone wrong is this. Over the past 30 years or so, the fundamental structure of the global economies changed. In the early 1980s, Ronald Regan and Alan Greenspan increased liquidity systemically that started sloshing around the World, while loosening regulations which encouraged increasing speculation. But most importantly, at about the same time, the emergence of developing economies, freer trade and 'globalization' brought with them massive new capacity in emerging countries, to produce goods and services, cheaply, which increasingly flooded the developed countries, substantially reducing manufacturing and jobs in these economies.

As the emerging economies became an increasingly integral part of global trade, investment and jobs started shifting faster from the developed countries to emerging countries, due to the availability of cheaper labour and larger profits. And as the corporations and companies from developed countries relocated their factories and service centers to the emerging countries, they laid-off (*rationalized*) workers back home, and investments in existing and new businesses started to fall in the West. That was the beginning of the gutting of the developed economies (*and the related jobs*) that is haunting them now.

The diminished financial positions of increasing numbers of people in the developed economies that were being rationalized, and the decreasing investment in old and new factories and businesses started to have a long-

As Bad News Mounts – Outlook Grows Dimmer

WRITTEN BY: **ASHOK DHILLON**

term negative impact on the developed economies. Trade imbalances started to build in favour of emerging economies, and millions of hereto poor people in the developing countries started to rise in their standard of living, while the average worker in the developed countries started to struggle with increasing unemployment, stagnant wages, higher debt, and dimmer prospects. The rise of income levels in the developing countries could not compensate for the drop in the developed countries due to the far lower wages. Some of the hardship inflicted on ordinary people in the developed countries was eased and masked by the prices of everyday items getting cheaper, as goods and services flowed from emerging markets, allowing for shopping and spending binges for years on end, on ever increased borrowings. That added another dimension to the growing problems starting to pile up in the developed countries - the rapidly rising debt levels for the wildly spending governments, and their equally reckless public (*consumers*), both encouraged by increasing liquidity with cheaper borrowing cost.

As the developed economies struggled to maintain momentum, the governments in these countries dramatically eased regulations and monetary policies. The increased liquidity allowed consumers, businesses, and countries to load up on debt, and looser regulations started to fuel excess speculation. For a while there were times in the 1980s (*the roaring '80s*), the excesses were compared to the roaring 1920s. The excesses started to bring-on the inevitable crashes, which in turn were met with injections of ever greater liquidity, which led to greater crashes, which brought on greater liquidity (Bush II era) till it all crashed in 2008. This 'mother of all crashes' was once again dutifully met with the greatest bouts of liquidity, now known as Bailouts, TARPS, Operation Twists and Quantitative Easing and variations of the same maneuvers in other countries. But this time the economies never quite recovered. The damage done to the economies was deep over the years, and fundamental, with large percentages of manufacturing and service industries having located to countries like Taiwan, China, India, Mexico, Thailand, Philippines, Malaysia, and all the other emerging significantly cheaper countries.

But there was another critical component that almost single handedly and fundamentally changed the global economic landscape, and is the reason that this time things were really different (*not recovering*); the economic emergence of China.

Starting out at about the same time as Reagan and Greenspan (*and Margaret Thatcher of UK*) were loosening things on all fronts in the West, the Chinese leaders under Deng Xiaoping dumped communist economic models and embraced capitalist economic reforms (*under the rallying cry "to get rich is glorious!",* commonly attributed to Deng but never proven he said it) and launched a bid to modernize and industrialize an ever faltering and poverty stricken China. And boy did they make good on that rallying cry. Ranked 9th in economic size in 1980, China rapidly rose to become the 2nd largest economy in the World by 2010 (Table below).

The ten largest economies by average values of GDP (nominal) by every half decade from the available data in IMF, World Bank, and United Nations lists (in USD billions)

Year	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
1980	United States 2,862.492	Soviet Union	Japan 1,086.988	West Germany 897.496	France 699.450	United Kingdom 550.490	Italy 468.569	Canada 273.722	China 268.327	Mexico 229.512
2015 (IMF Forecast)	United States 18,124.195	China 11,384.763	Japan 4,116.242	Germany 3,371.003	United Kingdom 2,864.903	France 2,422.649	India 2,182.577	Italy 1,819.047	Brazil 1,799.612	Canada 1,572.781

As Bad News Mounts – Outlook Grows Dimmer

WRITTEN BY: ASHOK DHILLON

This was the start of the second modern revolution in China. Not only did China industrialize, over time, it industrialized to an extent that it became THE manufacturer to the World, and in doing so lifted itself from a closed, inconsequential, poor, backward, last remaining major communist country, to the 2nd largest economy in the World projected to surpass the United States in economic size by 2050 (*if everything goes according to plan, which it seldom does*). This rise of China in the past 3 decades, particularly, and to a lesser extent, other emerging countries, was at the cost of jobs, wealth creation, economic stability of the working class people in the developed economies, and at the cost of enormous and growing trade imbalances at the country level (*the cause of all the angst in the current US Presidential election campaign, and the improbable rise of the* 'you got to be kidding us*'* ~ *Donald Trump*).

China's confiscation of export cash flow from developed countries and hereto former export giants, forced their governments to borrow in ever increasing amounts to fund and maintain the standard of living their citizens, and the governments, had gotten used to. In doing that, the developed countries like the US, UK and others, increased their debt loads enormously while happily shifting investments, jobs, vital technologies, and knowhow, to emerging countries, in particular to China.

Now with their consumers happily consuming, in ever larger quantity, everyday items, at ever cheaper prices, from China and other poor countries that had become manufacturing/services suppliers to the West, the Western governments themselves, particularly the US, became net borrowers (*from being net lenders*), from the countries that were raking in increasing torrents of surplus trade dollars into their reserve currency accounts, in particular China and Japan.

Receiving this increasing flood of unprecedented and hereunto unimaginable export dollar earnings, China not only lent to the US Government Trillions of dollars but also went on an investment fueled building binge that was unmatched at anytime in human history. China went from an extremely poor

As Bad News Mounts – Outlook Grows Dimmer

WRITTEN BY: ASHOK DHILLON

agriculture-based dysfunctional economy to a phenomenal builder, manufacture, and World economic power in a couple of decades, to the point, everyone in the business world felt they had to be in China to do extraordinary business, or miss out. For the past decades, the lure of China's 1.3 Billion people developing consumer market, and legends of outrageous returns and lightening quick investment paybacks, made China, by far, the hottest investment destination in the World. That has now obviously cooled down considerably, but to an extent is still there. Western corporate giants still consider it mandatory to be in China, while next wave giants like Apple, Google, Facebook, Uber etc. fight to establish themselves there in spite of the abuse they suffer at the hands of the Chinese Government as it fosters and favours its own homegrown emerging giants such as Baidu, Alibaba, Didi, etc. and dictates harsh terms and one sided conditions on foreigners, now that it has the money, technology, expertise and size, so voluntarily and eagerly given up by the West (*the oh-so-naïve, greedy, and short term thinking barbarians*).

With the incoming massive and consistent outside investment, coupled with its overflowing coffers, China quickly built manufacturing capacity that far exceeded anyone else's in the World and flooded a consumption mad Western World with its affordable goods. At the same time it went on an infrastructure building binge that has become legend. There are no comparisons to such a concerted building binge in history of the World that drove its economic growth to approximately 10% per annum, for about 3 decades. Then came the crash of 2008, and everything seemingly changed overnight.

Liquidity disappeared; the global financial and banking system froze, and almost collapsed. The governments of the major economies had no choice but to order their Central Banks to flood the system with unprecedented amounts of electronically printed money, bailout the failing financial institutions and encourage people and businesses to borrow and spend more. Even there China out-did everyone. But the massive amounts of almost free money, doled out by the truck load, in the Trillions, to banks, near banks, Investment banks and massive corporations and financial players, did not 'trickle down' to the average people and small businesses, who are the main drivers of economic growth, but was held at the top for speculation in asset markets, driving up prices of real estate, stocks and bonds to record levels the World over, stock buybacks and gargantuan salaries and bonuses to the top executives of the largest corporations.

The top percentile has made unconscionable amounts of money from this almost free gift from Central Banks over the past 7½ years (*interest rates at near zero, at zero or less than zero (negative)*), and the rest of humanity meanwhile, since the crash, is still struggling with little to no recovery, dramatically diminished job security, or no jobs, and steadily dimming outlook.

In a large measure Western Governments were to blame, because printing money and boosting real estate and financial markets, and pretending that

As Bad News Mounts – Outlook Grows Dimmer

WRITTEN BY: ASHOK DHILLON

everything is rebounding was easier than carrying out difficult and unpopular reforms that would cause severe short-term pain for long-term gain. No government wanted to undertake the required reforms and suffer the stressed public's wrath at the ballot box. So the printing presses kept humming and interest rates kept getting pushed down to ridiculous levels, and nothing much changed, as the shift in unbalanced trade never got seriously tackled and higher paying jobs for the average worker in the West never returned.

Since the crash of 2008 the leaders of the 20 largest economies have met repeatedly to discuss the World's growing economic woes. The last time was July of this year in China.

They have discussed the global economic problems and their ramifications endlessly but have found no solutions to move the economies forward. They all recognize and acknowledge the problems, but no one is willing to give up market share and jobs to help others, who for all intents and purposes are their competitors.

Instead, when they get back home, they go back to work to boost their slumping economies at the cost of others through lower currency values (*currency depreciation*) and cheaper capital, through ever lower interest rates. That has been the zero sum game everyone has been playing to-date with no progress globally, economically. As structural changes have not been initiated, and vital reforms not undertaken (*Japan and China are prime examples*) economies keep losing ground. At present we find Central Banks initiating new rounds of QE and further interest rate cuts to prop-up, once again, the long-slumping economies (*a testament to their failures*).

The fundament shift in the global economies that took place was the emergence of the developing economies, and the move of a significant percentage of manufacturing and services from the developed economies to developing ones. Once the decades of increasing liquidity allowed the debt fueled consumption binge to grow to the point of implosion in 2008, demand for goods and services never quite recovered, and the World became awash in over capacity.

That overcapacity is not going away anytime soon, and therefore the global economies are going to suffer lackluster growth, at best, from the lack of demand and capacity underutilization, and almost inevitably suffer another major correction to rationalize (write-off) that overcapacity.

Until that happens, and yes, *until a vast portion of the accumulated debt World-wide is also written-off,* it is difficult - to practically impossible - to see robust growth returning at anytime in the near future, in spite of multiple rounds of new QEs, and more years of near zero to negative rates. Even with the write offs, we are looking at years of slow recovery and painful readjustments as developed countries try to claw back jobs and investments from the developing economies, and the developing countries doing all they can to resist.

The empty cities, airports, highways and factories in China are a fact, and are now a massive liability to China's overleveraged financial sector, which is another threat to the global economy, along with Europe's banking sector, and the US inflated financial markets.

China's overcapacity to over-manufacture everything from steel, cement, solar panels, mechanical and electronic household, industrial to retail goods, is still unmatched, and that is where the battle is being pitched. Developed countries are now fighting back to stem the flow of cheap goods from China, and China is fighting to get rid of excess inventories so its factories can keep going to prevent massive layoffs. Both sides are locked in a losing battle.

China and the rest of the emerging countries desperately need the developed countries as their export markets to maintain their economic rise and hence their jobs. The developed countries, equally desperately, need to recapture their manufacturing and export capacities to take back lost jobs and wealth creation. Each side needs to win to a large degree, to maintain their current hard won standard of living and move forward. But, in the short term each side must lose and therefore suffer rationalization of physical capacity, and *jobs,* and debt, as the only thing that could have prevented such losses was robust global economic growth, but that obviously is not taking place. Therefore, without those write-offs in the near future, in our view, there is no way forward in this ongoing battle, certainly not with more QE and lower interest rates. And since that is all the Central Banks and Governments can think up at this time, the outlook for the global economies looks increasingly dim.