



The Longbrake Letter*

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It would seem that everything is coming up roses, at least in the U.S. The unemployment rate has plunged from 6.6 percent to 5.7 percent and jobs have grown 3.2 million over the last 12 months. Total hours worked have grown at a feverish pace of 3.5 percent.

Greedy oil producing countries are getting clobbered, but consumers have much more money to spend on other goods and services. Interest rates are low and barely discernible. The U.S. output gap is closing rapidly and should close further in 2015 as growth remains above the long-term potential level.

Is this a goldilocks world?

Europe finally launched quantitative easing which is expected to slay the deflation dragon. Greece capitulated and agreed to a four-month extension of its bailout plan. The crisis in Ukraine has ebbed. European stock markets are among the best performing globally since early January.

Shinzo Abe's government was overwhelmingly re-elected. Optimism abounds that Abenomics will solve Japan's 20 years of deflation and rebuild Japan's economic vitality.

And, although growth in China is slowing, its economy is transitioning toward more stable consumer driven growth.

Is this a goldilocks world?

I. Global Mega Trends

People tend to focus myopically on the here and now. They rarely look beyond recent developments and policy actions. Typically, there is little understanding of how recent developments are the consequence of deeply entrenched mega trends that are reshaping the global economic and political systems. As a consequence, policies frequently are forged based on historical paradigms that may no longer be valid, with the consequence that the policy is ineffective, or worse, counterproductive.

*The information contained in this newsletter does not constitute legal advice. This newsletter is intended for educational and informational purposes only.

Major mega trends are described briefly below.

1. Victory of the Market-Driven Economic Model

In 1985 35 percent of the world's population lived in countries with market-driven economies. Today that percentage has risen to close to 100 percent.

Market-driven economies unleash “animal spirits” and result in an explosion in production and feverish competition that propels economic efficiency — in other words, abundance at lower prices.

Prior to 1985, global economic GDP growth did not exceed that of the U.S. But, that has changed dramatically over the last 30 years. This is a double whammy — more people and more rapid growth.

Thus, it is not at all surprising that global aggregate supply is growing more rapidly than aggregate demand. This is intrinsically deflationary.

2. Emerging Markets Economic Model

As emerging-markets countries have embraced the market-driven economic model, initially their abundant and relatively low cost of labor favors a mercantilist economic growth strategy based upon export of cheap goods to more developed economies. This in turn drives infrastructure investment in productive capacity and demand for raw materials — commodities. Prices of commodities inflate globally, but prices of finished goods deflate.

Emerging economies grow rapidly and experience huge catch-up productivity gains. Their populations benefit from substantial and rapid improvements in the standard of living. Think of China over the last 25 years or Japan before that. The emerging markets economic model results in substantial trade surpluses and propels a global glut of saving.

There are two consequences. First, prices of goods fall — deflationary pressures dominate. Second, the global glut of saving depresses global real interest rates because intended saving exceeds intended investment. Thus, both nominal and real interest rates fall.

Eventually emerging economies begin to catch up and mature. As living standards rise, wages do as well and the price-advantage of exports decreases. Super rapid growth ebbs and emerging economies evolve in response to rising domestic consumer demand. This is what is occurring in China currently.

3. Slowing Global Population Growth

As economies mature, fertility rates decline. This is a systematic consequence of urbanization that accompanies rapid economic growth and the increasing cost of child-raising. In agricultural economies, the labor of children contributes to economic wealth, but in urban consumption-based economies, children cost more to raise than what little revenue they might contribute to household income. The sensible economic decision is to have fewer children and that is exactly what has happened in country after country as economic growth has accelerated.

Indeed, it appears that in many highly developed countries the birth rate falls below the level nec-

essary to sustain the population. Japan, German, Russia, and several other European countries are all experiencing declining population. China's population will peak in 2030 and then begin declining.

Slowing population growth slows economic growth. Moreover, shifts in the demographic age distribution create a host of economic challenges as a shrinking number of younger workers is forced to support a growing number of elderly people.

Countries with slowing population growth can only experience real growth if productivity rises faster than the rate of population decline or, they structure their economies to run a perennial trade surplus by exporting more goods and services than they import. It is not by accident that Germany and Japan, both countries with declining populations, have adopted an export-based economic model.

4. Integration of Global Markets

In recent years enormous efficiencies have evolved in global supply chains. This has benefited from adoption of free trade policies and the work of the World Trade Organization.

Similarly, the rapid development of cheap and efficient telecommunications has contributed enormously to rapid integration of global markets.

This latter phenomenon has been particularly important in propelling integration of global financial markets with two consequences. First, by removing financing frictions, access to capital is cheaper and it is more abundant. This accelerates the financing of economic activity and supports more rapid growth. However, greater financial efficiency comes with a cost. Monetary policies of individual countries increasingly are having direct and relatively immediate impacts on other countries, yet monetary policies generally are structured to impact domestic economic activity without consideration given to their global consequences. For example, the Federal Reserve aggressively pursued quantitative easing in an attempt to lift U.S. economic activity. However, because global financial markets are highly integrated, this U.S. cheap money policy reverberated throughout the entire world. The result has been a high degree of synchronization of global financial markets. This is not absolutely by definition a bad outcome necessarily, but if the monetary policy of a dominant country, such as the U.S., is misguided, it will end up having significant global consequences because of linkages that now exist.

5. Financial Liquidity and Sophisticated Financial Instruments

Increasingly, the integration of global financial markets and advances in computing power have made possible a plethora of sophisticated financial instruments and derivatives. The upshot is that it is easier than ever before to create debt leverage to finance economic activity.

Convergence of global accounting rules and legal systems has improved the reliability of financial information and the dependability of contract law. With the aid of data processing efficiencies and cheap access to abundant information this developments have facilitated financial analysis and reduced the risks of investing in far flung places.

Again, there are two consequences, one benign, one unfavorable. The benign consequence is that financing is more abundant, easier to access and cheaper because information inefficiencies and trading frictions have been reduced. But, a consequence is that it is now much easier to use debt leverage and to speculate in financial instruments and real assets, such as commodities and real estate. Debt leverage can

benefit growth, but as explained by Hyman Minsky, excessive use of leverage not supported by intrinsic cash flows can lead to financial bubbles and eventual traumatic market collapses.

6. Rise of Nationalism

The political history of the world since agriculture replaced a hunter-gather economic model is dominated by empires and superpowers. This political governance model continued during the transformation from an agricultural to an industrial economic model. But, as global economies shift from an industrial to an information economic model, nation states, empires and superpowers increasingly are being replaced by smaller governance units based on geography, ethnicity, and culture.

Consider the surge in Scottish nationalism in the U.K. after three centuries of union or the threatened secession of Catalonia from Spain. Add to this the fragmentation of nation-states in the Middle East. Syria and Iraq no longer really exist. Yemen and Somaliland have fragmented. Even the European Union is threatened with fragmentation in coming years.

This devolution to smaller governmental units heightens political fragmentation and increases the frequency of international political crises. Rising nationalism is propelling increased anti-immigration sentiment in country after country. And, it is contributing to the hollowing out of center-right and center-left governments. As the strength of the political center wanes, extreme fringe movements on both the left and the right gain voice and social stability and economic progress suffers. The U.S. is in better shape than many countries around the world but is not immune from this phenomenon.

II. Components of Economic Growth

Real economic growth is simply the product of population growth and productivity improvement.

1. Population Growth

In the long run the overall rate of population growth matters most in determining how fast the economy can grow. However, other factors can influence the growth rate and cause fluctuations in the growth rate.

For example, labor force participation rates can fluctuate over time depending upon kinks in the demographic age distribution or upon policies affecting the attractiveness of education or retirement. Education, regulations, work force rules, overtime pay requirements, minimum wage rates, tax credits, disability insurance and the like can also impact labor force participation, but can also impact labor force productivity.

2. Productivity

While the influence of population growth on real economic growth is relatively stable over time, the influence of productivity can result in substantial variation in real economic growth.

Productivity depends upon investment in capital both human (education) and plant and equipment. It also depends upon accounting and legal systems, rules and regulations, and system frictions.

For example, nations with weak legal systems and a high degree of corruption destroy trust and impede economic activity. Nations with extensive work rules, regulations and licensing requirements impede economic activity. A recent example in the U.S. is the explosion of consumer finance regulation courtesy of the Consumer Financial Protection Bureau. Now, just to be clear — a society must intentionally make choices about the acceptable social consequences relative to economic efficiency. If maximizing productivity results in unfair and deceptive practices for a large segment of the population or in benefiting only a small segment of the population (inequality), then pure economic efficiency does not result in an overall acceptable level of social welfare. In other words, there is a legitimate role for government to manage and control the inherent excesses embedded in a market-driven economy. The question, however, is one of striking a balance between too much and too little regulation.

Private Investment. Investment in the private sector depends upon the expected rate of return on an investment relative to the cost of financing it. Theory argues that private investments will occur as long the expected return exceeds the expected cost.

Although we tend to think in terms of nominal rates, theory is ground in real rates. Over long time periods, the real rate of return to investors/savers on a relatively riskless investment has averaged just under 2 percent. In recent years, the real rate of return has almost always been below 2 percent or even negative as it is currently. This has been a phenomenon of the glut of global saving but has been accentuated by aggressive monetary policy designed to drive down interest rates. This discourages investment.

There is a clear linkage between the amount of private investment spending and productivity. A 1 percent rate of growth in private investment results in an increase in productivity of 41 basis points with a 4.7 quarter lag. In other words, private investment spending is a powerful driver of productivity and a change in investment spending impact productivity in a little over a year's time. Thus, when actual investment declines because of low or negative real rates of return, productivity declines and real economic growth also declines. When this relationship is understood it should come as no surprise why U.S. real growth has languished in recent years. The bad news is that even though the U.S. is currently experiencing a cyclical upswing in economic growth, its long-term potential real rate of growth remains very depressed relative to historical experience.

Government Investment. What many do not realize is that the government is a very large source of investment and that government investment also impacts productivity and economic growth. Real government investment of \$2.9 trillion actually slightly exceeds real private investment of \$2.8 trillion. A 1 percent rate of growth in government investment results in an increase in productivity of 39 basis points with an 8.6 quarter lag. Thus, there is no practical difference in the impact of private and government investment spending. However, because government investment spending tends to focus on infrastructure and education, the benefits take about twice as long to unfold.

Unlike the private sector, government investment decisions are driven by political considerations and not by real rates of interest. But, unfortunately, at this time the impact of government investment on productivity, just like that of private investment, is negative. Political considerations have resulted in anti-tax policies that not only limit government spending on social transfer payment programs but also limit investment spending. In spite of calls of many economists, both conservative and liberal, to increase government investment spending, there appears to be little prospect that spending policy will change. Thus, lack of growth in government investment spending will continue to depress productivity and potential economic growth.

III. Secular Stagnation

Secular stagnation tends to be a condition of mature economies although it is not an automatic outcome.

Secular stagnation is characterized by a low and declining real rate of interest which reflects an excess of desired saving over desired investment. This condition results in a persistent output gap and/or slow economic growth.

- Low real interest rates crowd out low return, riskier investments.
- Productivity slows because of diminished investment activity.
- Real economic activity grows more slowly.
- Incomes rise less rapidly along with slower economic growth and this depresses growth in consumption.
- A persistent output gap is highly deflationary.
- The excess between desired saving and desired investment goes into speculation and drives price bubbles in financial and real assets.

Price bubbles can drive economies to full employment, temporarily. But this outcome is not sustainable, because bubbles are inherently unstable and eventually burst. A pattern of price bubbles and boom and bust will persist for as long as intended saving exceeds intended investment.

Chart 1 shows the ratio of consumer net worth to disposable income. Historically, the ratio fluctuated between 4.5 and 5.5. However, it rose to 6.25 during the dot.com investment bubble and then to 6.5 during the housing bubble. The ratio has surged once again to 6.25 in the third quarter of 2014, a level consistent with the two previously acknowledged bubbles. Are we heading into yet another bubble?

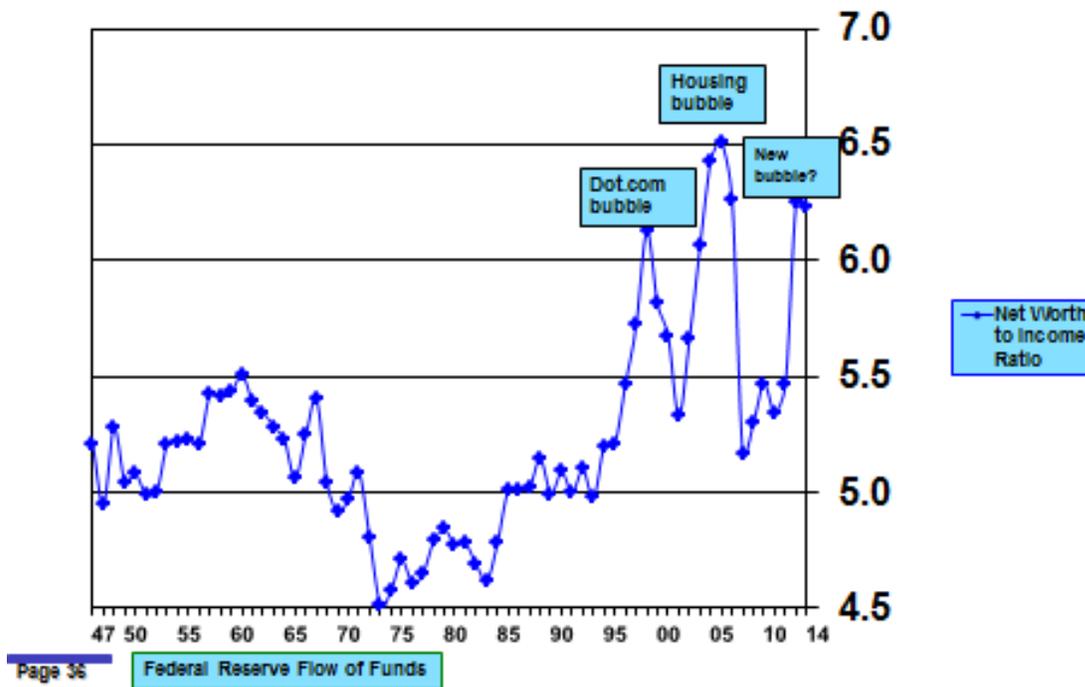
As emerging economies mature and their growth rates slow as their economies shift toward internal consumption, the problem of a global saving glut will gradually diminish. But, this will be a gradual change over many years. In the meantime deflationary forces will remain very powerful and will continue to overwhelm the inflationary attributes of aggressive quantitative easing, money-printing global monetary policies.

1. Natural Rate of Interest

It is conventional wisdom that when the economy is at full employment and booming the Federal Reserve should raise the federal funds rate. When unemployment is high and the output gap is large the Federal Reserve should lower the federal funds rate. The rationale is that by changing the cost of money, the Federal Reserve can either stimulate or discourage investment and spending and in so doing boost or dampen economic activity. The objective of monetary policy is to promote full employment at low and stable rates of inflation and dampen cyclical fluctuations.

While the federal funds rate is one of many **market rates of interest**, it is the one traditionally that the Federal Reserve manipulates in its attempt to modulate economic activity over the business cycle. Because the level of long-term interest rates depends upon the current short-term interest rate, the federal funds rate, and future expected values of the federal funds rate, the Federal Reserve can influence interest

CHART 1 – Consumer Net Worth to Disposable Income
1947 - 2014



rates across the maturity spectrum by setting the current value of the federal funds rate and signaling its future intentions.

Policy risk arises if the Federal Reserve's implementation of monetary policy results in setting the **market rate of interest** at a level that is above or below the **natural rate of interest**. But because the natural rate is unobservable it is difficult to know when the market rate of interest differs from the natural rate. To understand why divergence between the two rates leads to policy risk, it is important to know what the natural rate of interest is and why, when it differs from the market rate of interest, policy risk is triggered and can build to troublesome levels if the divergence between the market rate and the natural rate is large and persists for a long period of time.

Investment, Saving and the Natural Rate of Interest. The natural rate of interest is that rate of interest at which **intended investment** and **intended saving** balance. This is the same concept as the intersection of a demand and supply curve for a product, such as sugar, which determines its market price.

After the fact, or **ex post** in economic jargon, investment and saving are always equal. But realized investment and saving may not be what investors and savers intended, which is an **ex ante** concept in economic jargon. Because intended investment and intended saving are not directly observable it follows that the natural rate of interest cannot be known with certainty.

According to theory, if the expected return on an investment in a productive asset is greater than the natural rate of interest, that investment should be undertaken. A saver has a choice between current and future consumption. A low interest rate encourages current consumption; a high interest rate encourages

saving and a deferral of consumption. The **equilibrium natural rate of interest** occurs at the rate that induces enough savings — **supply of funds** — to fund investments — **demand for funds** — whose expected returns exceed the equilibrium rate of interest.

Since the natural rate of interest is not observable, actual decisions are based upon the market rate of interest. But, if the market rate of interest is different from the natural rate, some decisions will be “incorrect”. This initiates policy risk and its magnitude will depend on the size, direction, and persistence of the divergence between the natural and market rates of interest. *Because the Federal Reserve controls the market rate of interest, it can become the source of policy risk by setting a market rate of interest that is inconsistent with the natural rate of interest.*

What Happens When the Market Rate and Natural Rate of Interest Diverge? When the market rate of interest is set below the natural rate of interest, money is said to be cheap and investments will be funded whose expected rates of return are below the natural rate of interest but above the market rate of interest. While this is intuitively obvious, the macroeconomic implications are less obvious.

Economic growth depends upon investment in new productive assets. When money is too cheap investment will occur not only in productive assets but also in less productive assets such as building roads and bridges to nowhere. But when money is cheap it will also flow into existing investments with the result that the prices of existing assets are bid up. This can happen directly into real assets, such as real estate, or indirectly into financial assets, such as stocks and bonds. Prices of existing assets, then, inflate above “fair” value.

This is the phenomenon that **Hyman Minsky** described in his **financial instability hypothesis**. A market rate set below the natural rate leads to speculation and in the extreme to Ponzi finance and unsustainable bubbles. As a reminder, Minsky’s financial instability hypothesis posits three levels. The first level is “**normal finance**” where investments are made based on expected cash flows from the investment sufficient to cover payment of principal and interest on the debt that finances the investment. This is the level that is consistent with a market rate of interest that equals the natural rate of interest. The second stage is “**speculative finance**” where investment cash flows are sufficient to cover principal repayment but insufficient to cover interest payments, thus requiring perpetual refinancing. The third stage — the bubble stage — is “**Ponzi finance**” where cash flows from investments are insufficient to cover both principal and interest. Asset prices are bid up to unsustainable levels which eventually lead to a bust.

Cheap money and debt leverage are a deadly combination as we have seen from experience. They combine to facilitate speculative and Ponzi finance. Profits accrue to speculators rather than to investors in new productive assets with the result that funds are diverted into existing assets and away from new productive assets. A quick buck can be made through speculation while returns on productive investments are uncertain and are only realized over a long period of time. This misallocation of profits is contributing to a worsening of income inequality. Moreover, it should not come as a surprise that private investment growth, as measured in the national income accounts, began to decline in 2006 well before Lehman collapsed in September 2008. The 2006 to 2008 period was clearly one in which Minsky’s “Ponzi finance” held full sway.

Thus, a market rate of interest that is below the natural rate of interest will lead over a period of time to the misallocation of funds into speculative activity involving existing assets. Investments in new productive assets will be neglected with the consequence that growth in the stock of capital will slow or even decline. Growth in the stock of capital is necessary to raise productivity. So, it follows, that slower growth in the capital stock or even shrinkage in the capital stock will depress productivity. And, as discussed above, lower productivity results in decreasing the structural potential real rate of GDP growth.

When bubbles burst, asset values fall back to levels consistent with the natural rate of interest. But the nominal value of debt remains unchanged. This forces bankruptcies. The provision of copious amounts of liquidity by the Federal Reserve at cheap market rates can forestall contagion and a downward and lethal debt-deflation spiral. But, this kind of market stabilization intervention can also slow the process of right-sizing the stock of nominal debt relative to the stock of assets fairly valued at the natural rate of interest. The overhang of too much debt serves as a barrier to new investment. This phenomenon is probably an explanation, at least in part, for the on-going depressed level of new business formation. In any event, debt overhang is correlated with depressed or negative growth in the stock of capital. And, slower growth in the capital stock or shrinkage depresses productivity and the structural rate of real GDP growth.

Monetary Policy Can Contribute to Reducing the Structural Potential Real Rate of GDP Growth. Monetary policy's role is to drive the market rate of interest down when the economy is underperforming. The objective is to stimulate investment and consumer spending. But, if the market rate is set too low and is maintained at too low a level for too long, it will prompt misallocation of investment into price speculation involving existing assets. This policy risk is not trivial and is inherent in the Federal Reserve's recent monetary policy. *The question worth pondering is whether monetary policy has migrated from serving as a cyclical stabilizing influence to contributing to a permanently lower level of potential real GDP growth.*

Recovery in real economic activity and employment following the Great Recession has been disappointingly lethargic given the Federal Reserve's exceptionally easy monetary policy. And, recovery has been accompanied by some troublesome trends. For example, income equality is worsening according to an updated study by Emmanuel Saez and Thomas Piketty.¹ At the same time corporate profit margins have escalated to all-time highs. New job creation is anemic and appears to be related to a low level of new business formation and barriers to investment.

2. Observations of Charles Gave

Charles Gave of GavekalDragonomics observes that manipulation of interest rates and currency exchange rates by policy makers creates false signals. Since these prices influence all other prices manipulation of these prices causes market participants to make economically flawed decisions. If manipulation is significant and extends for a long time, economic imbalances develop and bubbles build. Eventually, imbalances and bubbles are unsustainable and reverse, usually quickly with severe consequences.

Gave's Central Banker Postulates.

- The future is unknowable.
- The amount of risk in the system is constant over time, which means that policies that attempt to reduce risk simply result in fueling behaviors that lead to greater risk later.
- The greater the difference between the natural rate of interest and the market rate of interest is, the bigger will be the subsequent booms and busts.
- A false price for the cost of money increases the risk in the system exponentially.

¹Annie Lowrey. "The Rich Get Richer Through the Recovery," *New York Times*, September 10, 2013. The share of income of the top 1% was 22.5% in 2012 compared to 19.7% in 2011 and matched the highs that preceded the Great Depression and Great Recession. The top 1% has "captured" about 95% of the aggregate increase in income since the end of the Great Recession.

- A false price for interest rates leads to a false price for the exchange rate (think about the recent strength in the trade-weighted value of the U.S. dollar).
- False prices lead to sharp rises in asset prices which are amplified by leverage.
- Do not protect bankers — put them in jail. Protecting bankers encourages moral hazard (risk taking) and prevents loss taking which slows the healing process and depresses growth.

Gave — What Central Bankers Should Never Do.

- Never give forward guidance — extracting uncertainty, encourages risk taking, leverage and speculation, which amplifies booms and busts.
- Prices of all assets rise.
- Assets are held by rich people, which means that rich people get richer relative to poor people.
- Rich people buy (speculate in) existing assets rather than new assets (capital investments), which have more uncertain cash flows and returns.
- As a result, the stock of productive capital rises less rapidly.
- Productivity falls.
- The structural potential real growth rate of the economy falls.
- The poor get poorer relative to the rich.
- Inequality worsens.
- Society becomes increasingly unstable.

Why Are Central Bankers Manipulating Prices and Giving Forward Guidance?

There are several possibilities. Perhaps central bankers believe they can forecast and control the future. History indicates that this is a fatal conceit. Or, perhaps central bankers have been captured by Wall Street and the financial elite, who love copious amounts of liquidity and inflating asset prices. Or, perhaps they are mesmerized by a deeply flawed political project, e.g., the European Union and the euro. Or, perhaps they are just plain stupid.

IV. U.S. Economic Outlook

But, these dark prognostications are at odds with the goldilocks scenario that appears to be unfolding in the U.S.

But, imbalances can take a very long time to reveal themselves. Faith that all is well can sustain the status quo for a very long time, usually much longer than one thinks. And, there is great faith that today's monetary policy is sound.

This implies that 2015 will be a good year economically in the U.S. That could also turn out to be the case in 2016.

Inflation and interest rates will stay low. Yes, the Federal Reserve probably will begin raising the federal funds rate sometime later this year, but inflation is unlikely to move back toward the Federal Reserve's 2 percent long-term target as quickly as it expects. Such an outcome would be consistent with persistent secular stagnation.

In the meantime the mega trends will continue to reshape the global economic and political systems.

Where all of this leads is hard to say. But, it probably won't be what most expect.

V. APPENDIX: Outlook — 2015 and Beyond — Forecast Summary for the U.S. and the Rest of the World, Highlights of Key Issues, and Identification of Risks

Observations about the 2015 U.S. and global economic outlook and risks to the outlook were contained in the *December 2014 Longbrake Letter* and are included below without any changes. As events unfold during 2015, this will enable the reader to track my analytical prowess. Current assessments follow each item with the following identifiers: “+” tracking forecast; “-” not tracking forecast; “?” too soon to know. Forecast assessment will begin with the March 2015 Longbrake Letter.

1. U.S.

- **2015 real GDP Y/Y** growth projections range from 2.7% to 3.5%. The FOMC’s central tendency Q4/Q4 projections range from 2.6% to 3.0%. (Q4/Q4 projections are highly dependent upon potential anomalies in Q4 data; therefore, Y/Y estimates, which average all four quarters, are more stable estimates.) Because the substantial decline in oil prices is likely to boost consumption growth more than it depresses investment growth, actual 2015 real GDP growth is likely to be at the high end of the forecast range.
- **Real GDP output gap** will remain high, but will close rapidly during 2015 from about 3.4% to 2.0%. (The exact size of the output gap will be revised by CBO, probably in February 2015).
- **Potential structural rate of real GDP growth** has declined significantly in recent years. I expect potential growth to be about 2.0% in 2014. Long-term potential real GDP growth will edge up in coming years to between 2.0% and 2.3%.
- **Productivity** should rise during 2015 as growth improves and investment increases, but should still fall well short of the historical 2.1% average.
- **Employment** growth should slow during 2015 as full employment approaches and grow about 185,000 per month.
- **Employment participation** will rise slightly during 2015 as the unemployment rate falls, labor market conditions tighten and discouraged workers find jobs. These cyclical factors will more than offset the downward pressure on the participation rate stemming from an aging population.
- **Unemployment rate** should edge down to about 5.25%. A higher rate could occur if substantial numbers of discouraged workers re-enter the labor force.
- **Nominal consumer disposable income**, measured on a Y/Y basis will rise about 3.2% (roughly 1.2% increase in hours worked; 1.8% increase in CPI inflation and .2% increase in the hourly wage rate).
- **Nominal consumer spending growth** on the Y/Y basis will grow slightly faster at approximately 3.5%, but could grow slightly faster if low oil prices persist.
- **Household personal saving rate** will decline slightly as growth in spending exceeds growth in disposable income.
- **Stock prices**, as measured by the S&P 500 average, should rise between 0% and 5%.
- **Manufacturing** growth will continue to be relatively strong and the PMI index will exceed 50.
- **Business investment** spending growth should remain relatively strong in a range of 4% to 6% as employment and consumer spending growth gathering momentum; however, low oil prices will depress energy investment.

- **Residential housing investment** should improve over 2014's disappointing level by 8% to 10%; residential housing starts should rise 15% to 20%.
- **Residential housing prices** should rise about 2% to 4% in 2015, more slowly than 2014's projected 4.5% increase.
- **Trade deficit** should be slightly higher in 2015 as economic growth improves growth in imports and the rising value of the dollar depresses growth in exports. The **dollar's value** on a trade-weighted basis should continue to rise.
- **Monetary policy** — the Federal Reserve will raise the federal funds rate at its June, or possibly, September 2015 meeting. Because inflation is likely to continue to fall short of the Federal Reserve's expectations, the pace of increases in the federal funds rate is likely to be slow.
- **Total inflation** measures (CPI and CPE) will fall sharply during the first half of 2015, reflecting the significant decline in oil prices. **Core PCE inflation** will be stable to slightly lower in a range of 1.3% to 1.5%, reflecting global disinflationary trends. Core PCE inflation will remain well below the FOMC's 2% objective at least through 2017.
- **Federal funds rate** is not likely to increase before mid-2015 and might not increase at all in 2015 if growth is less than expected and core inflation declines more than expected. The pace of increases is likely to be slow.
- The **10-year Treasury rate** is likely to fluctuate in a range between 2.0% and 3.0% in 2015. Faster than expected real GDP employment growth will push the rate toward the top end of the range; greater than expected declines in inflation and/or heightened financial instability will push the rate toward the bottom end of the range.
- **Fiscal policy** will have limited impact on real GDP growth during both fiscal year and calendar year 2015. The deficit as a percentage of nominal GDP will probably decline from fiscal year 2014's level of 2.75% to 2.50%. The decline could be greater if economic growth and tax revenues exceed expectations or less if Congress increases spending without offsets as it did in approving the tax extenders bill for 2014.
- **State and Local investment** spending growth rises slightly from 0.5% in 2014 to 1.0% in 2015, which is still well below the long-term average of approximately 1.4%.

2. Rest of the World

- **Global growth** is likely to improve to 3.7% in 2015 from 3.2% in 2014. Risks are tilted to the upside because of the substantial decline in oil prices.
- **European growth** will be positive but will be likely to fall short of the consensus 1.2%.
- **European inflation** will continue to decline and may even turn into outright deflation. Quantitative easing, assuming it occurs, may be too late and have too limited an impact to deflect emerging deflationary expectations. Europe may well be headed to the kind of deflationary trap Japan has been in for the last 20 years.
- **European financial markets** may face renewed turmoil. Markets expect the ECB to begin purchasing large amounts of securities, including sovereign debt, by March. This presumes that legal hurdles and German opposition will be overcome. Assuming that quantitative easing actually occurs, its impact is likely to disappoint.
- **European political dysfunction, populism and nationalism** will continue to worsen gradually. Countries to watch include the U.K., Greece, Spain, Italy and Portugal. **U.K. growth** is expected to slow from 3.0% in 2014 to 2.6% in 2015; however, political turmoil should the May parliamentary elections be inconclusive could drive growth lower.

- *China's GDP growth* will slow below 7% and gradually moved toward 6% as economic reforms are implemented and the shift to a consumer-focused economy gathers momentum.
 - *China's leadership* will focus on implementing *economic reforms* and will overcome resistance and maintain stability.
 - *Japan's* economic policies may be successful in defeating deflation, but GDP growth will be hard pressed to achieve the expected 1.6% rate in 2015 if Abenomics' third arrow of economic reforms fails to raise the level of potential growth sufficiently to overcome the effect of negative population growth on labor force growth.
 - *India* should experience an improvement in real GDP growth to 6.3% in 2015.
 - *Emerging market countries* that are energy consumers will experience greater growth, as long as the U.S. does better in 2015; energy producing. countries and those heavily dependent upon commodities exports for growth will do less well.
3. **Risks** — stated in the negative, but each risk could go in a positive direction.
- *U.S. potential real GDP growth* falls short of expectations
 - *U.S. employment growth* is slower than expected; the *participation rate* is stable or declines rather than rising modestly
 - *U.S. hourly wage rate growth* does not rise materially over its 2014 level of 2.1%
 - *US. Unemployment rate* falls less than expected
 - *U.S. productivity* remains low in the vicinity of 1%
 - *Real U.S. consumer income and spending* increase less than expected
 - *U.S. financial asset prices* rise more than expected posing increased bubble risks
 - *Growth in U.S. residential housing investment and housing starts* is less than expected
 - *U.S. residential housing price increases* slow more than expected
 - *U.S. private business investment* does not improve as much as expected
 - *Oil price declines* in the U.S. trigger bankruptcies and cause tight financial conditions with negative implications for economic activity and growth
 - *U.S. manufacturing growth* slows as the value of the dollar rises and global growth slows
 - *U.S. trade deficit* widens and the *value of the dollar* rises more than expected
 - *U.S. monetary policy* spawns financial market uncertainty and contributes to financial instability
 - *U.S. inflation falls, rather than rising, and threatens deflation*
 - *U.S. interest rates* fall or rise more than expected
 - *U.S. fiscal policy* is more restrictive than expected and the *budget deficit* falls more than expected
 - *U.S. state and local spending* does not rise as fast as expected
 - *Global GDP growth* does not rise as fast as expected
 - *Europe* slips back into recession
 - *ECB* does not engage in quantitative easing or the quantitative easing program it decides to pursue lacks market credibility
 - *Europe* — financial market turmoil reemerges
 - *Europe* — political instability and social unrest rises more than expected threatening survival of the Eurozone and the European Union

- *Acute political turmoil* engulfs the **U.K.**
- *Chinese* leaders have difficulty implementing *economic reforms*
- *China's growth* slows more than expected
- *Japan* — markets lose faith in Abenomics
- Severe and, of course, unexpected *natural disasters* occur, which negatively impact global growth

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