

“I always make sure that the world will prove me right. It gives me the freedom to contradict myself” - [Criss Jami](#)

Review & Preview

December seems to have rolled upon us ferociously this year. Or maybe the relativity of time is beginning to have a greater affect on me as my youth wisps away like the gunpowder residue of a Smith & Wesson fired into the cold night air. As the year gallops to a close, it's time again to look back at last year's preview and find what little predictive value we humble humans actually do possess, then on to repeating the silly (but fun) exercise of looking forward once again!

Review

3-D Printing - This was one of the slam-dunks of last year. The technology, the press and the general awareness of this disruptive advance, all were in keen focus over 2013. This technology is in its “maker” infancy still, however. Though 3-D printing has been around for quite some time in industry, the breakout for hobbyists and for general consumption is just now gaining more steam. Expect even more important developments over the next few years. Last year's preview also included Regenerative Science. Much of the research in this area is centered around stem cells. These are the building blocks



that may eventually allow the science to produce transplantable organs from our own or others' tissue. Last December we mentioned a company called Harvard Bioscience, Inc. and in 2013 this company was behind the first of its kind [transplant of a trachea](#) grown in the lab from the patient's own stem cells. The interesting and somewhat surprising development over the course of the year was the seemingly unlikely marriage of both 3-D printing *and* Regenerative Science. It appears as

though some very significant collaborations are happening that may allow for a future far more interesting than one might have expected. Researchers are working on the foundation that may allow organs to be "[printed](#)" from a patient's own stem cells. Wow!

Our prediction of very dangerous Cyber Attacks proved, thankfully, to be inaccurate. We continue to hope this remains the case in 2014. Nagging computer viruses and NSA spying aside, our concern was for a much more invasive and devastating event that never occurred. We continue to believe preparedness is a sound strategy for both natural disasters and cyber warfare.

The Federal Reserve Bank continued their asset purchases unabated, and, as we predicted, purchased just over \$1 trillion in 2013. The fear of simply slowing their asset purchases sent long term interest rates soaring in early summer. That reaction caused the Federal Reserve to abandon their pledge to slow their purchases in September. The observed relationship we saw in gold and precious metals did not hold, however. Gold prices continued their decent from a 2012 year-end value of \$1700 down to \$1200 or so now.

Finally, our last prediction for 2013 was to highlight a developing Doctor Shortage. With recent revelations about the Affordable Care Act (Obamacare), this problem has come into sharp focus. Unfortunately, the new law may have the effect of accelerating the problem as the situation has become more untenable for doctors to remain in the field without significantly adding to costs. See our last year's [Review and Preview](#) for references and more color on this topic.

Preview

The Affordable Care Act: Economic Implications - There has been quite a bit of analysis lately on the rollout of the insurance exchange, coverage changes, doctors' responses to the ACA, etc., but we've seen little penned on the economic implications of the new healthcare law's implementation. This law is set to affect an industry that is roughly 1/7th of our economy and is far reaching. Arguments for a needed change aside, the law itself will impose a new tax burden on consumers and businesses that is just now beginning to be appreciated. Most new costs will be borne by the consumer in the end as businesses will likely find ways to pass along these higher expenses. The *uncertainty* alone that the law introduces into the finances of most Americans may be enough to curtail consumer activity in our anemic recovery. To quantify it in terms of GDP, however, may be even more enlightening. For example, if just half of currently insured people experience a 10% increase in premiums this creates a fiscal drag of 0.7% in GDP [$1/2 \times 1/7(\text{of our economy}) \times 10\%$]. There are other issues afoot that may also be a drag on GDP growth in 2014 including higher interest rates, sequester cuts and foreign market demand weakening, but we look upon the ACA as being a significant contributing factor.

Aging & Science - [Ray Kurtzweil](#) is a scientist and futurist who has a long resume, including Director of Engineering at Google, and has over the last decade proposed the idea of the ability of

humans to significantly prolong life, maybe even forever. The idea is that if we can prolong life expectancy by one year, every year, we can outrun our own demise (not as far fetched when considering we add about one year of life expectancy every seven years currently). Well, this crazy idea got one step closer to reality recently with the [discovery](#) by researchers collaborating at Harvard Medical



School, the National Institute on Aging and the University of New South Wales. Their discovery unlocks a key element of aging which has to do with how cell mitochondria and the cell nucleus communicate or, more correctly, fail to communicate. We continue to monitor the huge strides being made in medical science and believe this breakthrough, and many more like it, will surface over the coming year.

Material Sciences - In our 2011 preview we took a look at advances in nanotechnology. As those developments continue to germinate along with others like our blog post [here](#), new research by

Artem R. Oganov from the Department of Geosciences turns what we understand about basic chemistry on its head. Based on his and others' work, whole new compounds may be developed that contain desired and unique properties. This discovery may eventually lead to incredible innovations for brand new materials in building, computing, clothing and the list goes on! The breadth of discovery in material sciences has become so pervasive in the past 5 years that we expect a break-out in 2014 from one of 'weird science' to media grabbing headlines.

Europe: In With a Whimper ... Out With a Bang? - Two years ago just about every headline in the financial press led with a story on the dire predicament of Greece and Spain. They included the poor condition of the European banks and the demise of the Euro as a currency. Then, almost as suddenly as the headlines emerged, they disappeared. A few simple words from the new head of the European Central Bank, Mario Draghi, "we'll do whatever it takes", put most of the fears to rest ... for a while. The implication was that the ECB would print money and buy bonds (similar to what the Federal Reserve has done in the U.S.) to preserve the currency and save the banks. In addition, Germany was facing an election in 2013 and the political elite found it expeditious to make the electoral environment accommodative for a smooth reelection of Angela Merkel, the Chancellor of Germany, who so far had held the keys to the Euro's survival; for it was under her stewardship that the German populous went along with the ECB's financing scheme. However, over the last two years most of Europe has faltered back into or near a recession. In doing so, the financial condition of Spain, Italy and France has worsened by a meaningful degree. With elections behind them and

faced with many of the same problems they had in 2011, we find that Europe may once again find its way to the front pages of the financial press in 2014. We often look for *canaries in the coal mine*. An example of this was the departure of some very important managers from Fannie Mae about eight months preceding the bursting of the housing bubble. In this case, it's the departure of a well respected and highly intellectual member of the ECB, Jörg Asmussen, which eaves the ECB at a slight disadvantage with Germany and is a peculiar move because Asmussen is taking a post decidedly beneath him. The complications on the Continent are not few and our suspicion is that the new year will lead to fresh concerns about the long term viability of the European Union. If the prediction here comes true, expect the U.S. dollar to strengthen against the Euro, U.S. stocks to weaken and Treasury bonds to rally.

Southern California Residential Real Estate - Since mid-year 2012 Los Angeles area residential real estate has shot up by 25-30%. This is one of the largest and fastest moves in area real estate prices on record. It is matched only by the market action seen at the tail end of the real estate bubble in 2006-2007. What may explain part of the move is an aggressive move on the part of institutional investors to sop up bank-owned properties in what has been termed the 'rent-to-own' model. That is when institutions buy up distressed or bank-owned properties to rent them out to leasees who may eventually want to buy. The appetite for these properties has caused a bit of a feeding frenzy in the L.A. market, putting price support into most surrounding sub-markets. You will begin to see 'rental bonds' derived from these properties appear in capital markets in 2014. Also, some form of real estate investment trust (REIT) will become more vogue as well.



The economics have become a bit strained in these transactions, however. When interest rates on 15 and 30-year mortgages zoomed up in early summer, the brakes were applied to price increases. Pricing has become a bit more stagnant since then. The 1 and 2-year futures on LA area real estate suggest price improvement will slow to 4-5% per year in 2014 and 2015.

Best Wishes for a Happy and Prosperous New Year!

Ray Lombardo Kevin Arnold Alan Flores Ken Hobbs Rhondi Sandblom