

Newsletter – 2016 Predictions

My name is Max Rudolph. I consult with institutional investors, companies, and individuals about enterprise risk management, asset-liability management and strategic planning topics. I also do research projects and read quite a bit about current and historical financial topics. I am a private investor focusing on individual stock selection and value investing techniques. I believe you can reduce risk and increase return simultaneously. In addition to client work, I develop and present continuing education programs and am an adjunct professor at Creighton University working with students completing a Masters in Investment Management and Financial Analysis. I live in Omaha, Nebraska, USA, am credentialed as an actuary and hold a CFA charter. I write a monthly newsletter and each January post my predictions for the year. Late in the year I review and analyze what actually happened. Some topics are written at a high level, dealing with the general economy. Some are more detailed, covering specific topics like incentives or modeling financial assets. Most cover issues that I am stewing over and need to do a brain dump. In March I update my intrinsic value calculation for Berkshire Hathaway and in the fall I update the scenarios I think should be tested. I am a lifelong learner, and that impacts how my current thinking evolves. My newsletters are educational in nature and do not constitute investment advice. They are released publicly at www.rudolph-financial.com with a delay after they are released to subscribers.

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You can also follow me on twitter @maxrudolph.

Predictions for 2016

Please remember that these predictions are for fun and to encourage deeper thinking across topics and a longer time horizon. If I really knew what was going to happen, I would not share that information with you! You must make your own personal investment and risk decisions, consider your unique financial circumstances, and not hold others (especially me) responsible for your own financial planning or lack thereof. If you don't accept these conditions you should stop reading now. For those still with me, Enjoy!

General happenings

2015 was a transition year, with currency wars driving trends that played out in oil prices, geopolitical risk and economic growth. I would argue that the underlying world economy never recovered from the imbalances that built up prior to 2008 and that Chinese growth

and fracking in the United States masked that reality. Central banks, by keeping rates low and following quantitative easing programs, encouraged projects that were short term in nature as well as various financial engineering attempts to grow profit metrics. With the Federal Reserve starting to tighten there are many similarities to 1937, when the Great Depression was reenergized by the Fed. I'll be very surprised if the Fed raises rates beyond 50 bp before it has to take action to ease (they have several options, several of which are very odd – e.g., getting rid of paper money).

Debt levels remain high but growing more slowly in the US, and much of Europe continues to see negative interest rates on government debt (note that I no longer refer to it as risk free). Velocity of money continues to hit new lows, reflecting some trust remaining in the financial system but still a lot of concern. So far the oil and junk bond bubbles have burst. In 2016 additional bubbles will blow up, but the response will inflate new ones. Interestingly, many are only available to sophisticated investors, and most are illiquid. When they burst the fall will be substantial. It is not a time to be buying on margin. Investors have been forced to take additional risk by the Fed, and many accepted risks they don't understand. I expect them to be better understood by this time next year, and it will be interesting to see who gets hit hardest. I will be surprised if hedge funds and private equity have a good year. The US continues to be in a good position relative to other countries, which isn't saying much, but will this be helpful or give politicians an excuse to maintain gridlock and ignore needed reforms.

The Presidential election will be impacted by the economy, and I don't see it helping the Democrats as the incumbent party (Congress somehow avoids their portion of the blame). Geopolitical tensions are now high throughout South America and Eurasia. In South America assets are leaving, helping to create a real estate bubble in south Florida. Assets in China and Russia will increase market prices in large cities like Seattle, New York and Washington much as Japanese investors did in the late 1980s. Venezuela is in worsening shape, Brazil is having one of its periodic periods of economic malaise, but Argentina might have turned the corner with the new regime.

The Zika virus may build unintended consequences and interact with economic forces (and the Olympics) if not contained. Russia has little room for error, Iran is desperate to free up trade, China is slowing at the same time as there are political stresses, and Saudi Arabia wasted the last century and has limited industry beyond oil and few citizens who know what hard work is. Africa is leaving what may be known in the future as its democracy phase. Climate change and other sustainability issues are making water and other resources the driving force behind regional conflicts.

The cyclical El Nino has made this the warmest period in history, but the next several years will trend to lower temperatures than 2015-6. We should not be comparing against a single year but a solar cycle. Especially in places like Brazil and California, water needs to be priced appropriately to allow market forces to adjust. Financially the signs continue to point toward both deflation and inflation. The FOMC is now tightening while everyone else is loosening monetary policy. We wait until the last minute to deal with problems, and some day our luck will run out.

At this point President Obama is in his last year, using executive orders to move the agenda. I hope he is successful with gun control, women's rights and Obamacare. Republicans have become part of the problem, and the front runners in the Presidential race are embarrassing the country with their backward views regarding topics like climate change and gun control. As I write this in mid-January, an issue with Iran was recently defused because there is already a relationship between administrations. This is a good thing. Moderates are nowhere in sight, and I don't see an obvious candidate for me to support. Clinton knows the issues but scares me because of her poor relationships with "little people". She comes across as knowing what is best for all of us, and may be right, but has no empathy. Maybe that is what Bill will bring to the White House.

Companies dependent on fracking that are leveraged are on their last legs. I wonder if it was they who championed selling US oil overseas. Otherwise it makes little sense. Hillary Clinton is still the Democratic frontrunner, but needs to get past mistrust of her and several scandals. The Republican side is more jumbled. Jeb Bush and Marco Rubio remain the favorites in my mind, but Trump and Cruz are the current leaders. There are still rumblings of a late Joe Biden run if Clinton stumbles.

Europe remains a mess, with immigration now a major issue. They may not be able to maintain the European Union, with the UK's limited role on the ballot this year. If they exit it will encourage others to try. The Middle East is very hard to read over the next 10 years. The uncertainty that groups like ISIS bring and lack of moderates don't lead to happy outcomes. Iran may emerge as the consolidator. China has its work cut out for it. Slowing growth, historical tensions between haves and have-nots, climate change and political stresses will be interesting to watch. North Korea will provide a surprise or two, or China may decide to try out some of its new toys and merge it into the Middle Kingdom. Australia will struggle as commodity prices falter and the climate evolves.

Some scenarios are completely discounted by the public but have probabilities over the next decade or so that are material. Extreme events happen every year. They are rarely identified in advance. Weather and seismic events continued to be present in 2015, with a combination of El Nino and jet stream adjustments leading to heavy flooding in the UK, drought in California and typhoons in Asia. Extreme events, especially those covered by insurance, overall were limited in the US last year. The economy is a complex adaptive system, so short-term forecasts are unlikely to be accurate. Stocks have now risen for seven consecutive years, a record. January 2016 results are confirming that it is unlikely we will make it to eight. It would not surprise me to see stock prices down 20% or more this year, with a small chance for 50% drops over the next couple of years. The dollar remains the reserve currency, mainly due to a lack of acceptable substitute.

Scenarios

Here are some outlier scenarios I think are more likely to happen than consensus in the next several years (some may not happen for a decade or more). Due to the long-term nature of these scenarios, in some years they might not change or only slightly be tweaked.

- Cyber-terrorism impacts the banking system or shuts down power stations
- Space junk knocks out a satellite used for public communications
- Atmospheric river hits California and dumps rain on San Francisco for a month
- A severe earthquake (or volcanic eruption) hits California, St. Louis or Seattle
- Super-volcano becomes active
- Fracking is declared illegal in the US or Canada due to environmental impact
- China erupts in civil war or regional conflict with a neighbor over resources
- Eurozone breaks apart – could be north/south, poor countries/rich countries or just kicking out individual members
- Venezuela erupts in violence, shutting down their oil industry – contagion in neighbors risk making this a regional hot spot
- A virus develops drug resistance and becomes transmissible by air – mosquito borne Zika virus is one to watch out for
- Iran encourages regional conflict and becomes the Middle East’s consolidating superpower
- Water resources trigger a regional conflict (likely Himalayas or Europe, with water issues expanding in the Americas)
- S&P500 down 30% from high point, combined with double recent bond defaults and real estate collapse in the largest US cities. GDP down for 3 consecutive years.

While I tweaked some of these, the major change is to call out the Zika virus, but several are much closer (e.g., virus, Eurozone, Venezuela, cyber risk, China, Iran).

These predictions were made in January 2016.

- Politics and currency wars: Prediction – President Obama’s legacy will be as the fracking President who used drones to assassinate opponents. If he stays within ISIS that will probably be supported by the world establishment. Amazingly he has not had the scandals found in recent two-term Presidencies. Obama won the Presidency during a disastrous scenario, and could go out with the country in the same shape. He will use executive orders and Congress will be useless this year, failing even to pass common sense gun control laws. Who will the Republicans run for president in 2016? Jeb Bush or Marco Rubio are still my expectation, but one of them needs to step up and act as if they want the job. No concerns there with Hillary Clinton. If she runs in November the Republicans will choose a female vice president. If she doesn’t I think it will be John Kasich. Clinton has more health risk and scandal risk than the other democrats. I am not excited about a Joe Biden run but it is possible if she falls out. If Trump runs as an independent it likely means the democrats will win. The taper and minor increases in rates by the Fed, along with devaluations in other countries, will continue to strengthen the dollar and lower the price of oil. There won’t be more than one rate increase in 2016 from the Fed due to the economic turmoil and as Europe/Japan/China all continue loose policy. Venezuela will continue to lead South America into

turmoil. Saudi Arabia has no Plan B, and with Sunni and Shia tensions building, could erupt in the next few years. Low oil prices may be a short-term phenomenon as frackers go bankrupt and geopolitical issues bring volatility to the market. Europe needs to develop an exit strategy, but those in the east will push to maintain a military alliance. Japan has been the most aggressive in its currency war, but eventually will implode as demographics drive rates and economic growth lower. Eventually a Bretton Woods type meeting of the world's powers will be needed to resume stability. Some are even calling for a gold standard, but more likely is a global currency using many countries rather than the US\$ as the reserve currency. This will be a good thing in the long run but will impose controls on US politicians that reduces flexibility but increases controls. The risk of China experiencing an economic hard landing and consolidating around nationalism is quickly increasing. This could have major consequences, everything from an internal revolt to a selloff in US Treasuries to a regional armed conflict about resources. The next major wars will start in cyber-space, as all parties are probing for weakness and hiding in the shadows.

- **Stocks:** The US raised rates once in 2015 and its trend is diametrically opposed to everyone else. Japan, Europe and China are all loosening, leaving oil and emerging markets in a bad spot. I expect the US market to lose about 20% in 2016 and come out of its funk once the US Presidential election loses its uncertainty. This could occur before November if the race is not close. There is still a small probability of a larger crash due to contagion due to the previous stimulus that took it out of sync and created a bubble. Emerging markets will suffer through a major bear market similar to 1997. I continue to avoid bonds, although lower rates (even negative) are possible, using highly rated dividend stocks for this type of exposure. Single year predictions are unlikely to ever be right, but I look at -20% returns in the first three quarters and some rebound in the fourth quarter. I see the economy performing similarly, with a recession early in 2016 lasting through the summer. The disaster scenario for interest rates is down and then spike up. Hyperinflation will appear somewhere in the world over the next couple of years, with South America a leading candidate (Argentina is already there). I expect consolidation in the insurance industry as foreign buyers seek diversification and US domiciled firms take advantage of the strong dollar. The S&P500 closed 2015 at 2,044, nearly unchanged for the year. Dividends made the total return slightly positive.
- **Unemployment:** Structural employment has risen in the last decade as it becomes harder to go between jobs (locked into mortgage or health insurance, last in first out mentality for layoffs). Pension plans are doomed for failure, with funding levels 20% below that needed even after 7 years of gains. I expect the unemployment level to rise from 5% to at least 7% in 2016.
- **Residential home market:** US regions continue to have lower correlation with each other. Fannie and Freddie are the only game in town right now to facilitate mortgages. That is a problem.
- **Volatility:** The VIX closed 2015 at 18.21. I have thought for several years that if VIX was a predictor of the future it would be higher. Known risks include heavy personal and government debt levels, and loose monetary policy. I find it

impossible to predict VIX but I think a reasonable “normal” range when debt is high would be 20-25. A single digit VIX is definitely too low and above 35 is too high, but as usual I see more possibilities for a higher result in 2016, especially if we experience both a recession and 20% drop in the stock market.

- Oil: WTI oil on December 31, 2015 was about \$37. I have lost all comfort in predicting the price of oil, but with Iran coming back online and others (frackers, Russia, Venezuela) desperate for revenue, it won't see \$100 for a while. Saudi Arabia will eventually drive high cost producers from the market, but the unintended consequences may not suit their own long-term needs. A desperate Russia or Iran will not roll over. We could see \$20/barrel oil.
- Credit risk: much of the junk bond issuance recently has been to energy companies that are now in free fall. Watch out for defaults here and in emerging markets where the strong dollar is causing problems for dollar denominated bonds. These issues will cause spillover in other markets and industries as hedge funds sell “safe” assets to cover losses.
- Currency/Inflation: The US will not raise rates more than once in 2016. With other countries loosening and the US entering a recession (watch manufacturing in the future for leading indicator) they will be forced to back off and may even enter into a new round of QE. I expect the dollar to continue to strengthen again China, Europe and Japan.
- Fed policy: The US continues to be susceptible to a large catastrophe, financial disaster, or armed conflict. This will be an issue leading into the Presidential election and throw into question the independence of the Fed especially if a right wing Republican is the nominee.

Emerging Risks - Concerns

- Infectious disease - increased resistance to antibiotics (e.g., tuberculosis, staph infections or pneumonia), coronaviruses, Ebola (and similar), avian flu types that are transmissible by air. Mosquito borne diseases are making a comeback led by Zika and Dengue, quickly becoming endemic in Brazil and moving north.
- Global warming – unexpected side effects like new viral/bacterial attacks, along with coastal flooding, more concentrated coastal storms at unusual times of year, stronger and more frequent convective storms, and shifting weather patterns that impact farming through changes to the jet stream. It is going to be increasingly difficult to be a farmer over the next 50 years as climate warms and modifies. Whether we like them or not, genetically modified foods may be the only thing that adapts quickly enough. We'll continue to see extinctions as conditions change too quickly for most species to adapt. Record high temperatures for the planet will subside as el Nino moves through its cycle. The proper comparison will be against the years right after the last el Nino strongest year. It makes sense to look at a graph rather than compare single year data points. It makes it too easy for politicians to lie with statistics.
- Earthquakes and hurricanes – the US is overdue for a major quake on the west coast and areas not normally thought of for seismic activity due to long dormant periods (e.g., Seattle, Yellowstone super volcano, St. Louis, New York City) are

- well into their cycle. I'm starting to worry more about an atmospheric river event on the west coast. The drought is strong enough that there is no longer a season when wildfires are not common in California and Australia. Due to warmer air, more moisture is held by the atmosphere, with unknown results (so far it looks like this breaks up hurricanes but leads to stronger convective storms and nor'easters).
- Levees in California, earthquakes/volcanos, water poisoning in big cities, cyber hackers, transportation of oil and oil based products via rail through urban centers (e.g., downtown Chicago).
 - Malthus – too many people, not enough resources – will good intentions of the rich to save lives in the 3rd world lead to increased systemic risk for society (mass starvation and unstable regions) in the longer term? Are there unintended consequences associated with the “giving pledge” by the rich? Is it really so bad to have aging demographics and a shrinking population? Should we look at GDP growth by splitting it between population growth and economic growth? In the long run we are more susceptible to war, famine and disease through population growth, and this interacts with climate change issues. Hopefully more billionaires will follow the Zuckerberg model to rebuild infrastructure.
 - Student loans – not only will millennials default due to student loans, there are many instances where their parents co-signed for them. This situation will have much more impact on the economy in the future than we have seen previously (negative).
 - Concentration risk – this will be a hot topic over the next few years. Whether it is power at the top of an organization, short term liquidity, geographic focus or silo risk focus, too much concentration in too few entities or people is a great risk. Eventually it will take you down, especially if leverage is involved. Margin debt is at record levels, not a good sign. Identifying concentrated exposures should be a focus during strategic planning efforts at companies.
 - Terrorism – in the US, political extremists may become active leading into the election cycle. It amazes me that we have not had more attempts to injure politicians, especially with the lack of gun controls.

Top Actuarial Issues

- Defined benefit plan valuation – valuation methods need to be revamped to front end funding levels for both private and public plans.
- ORSA implementation – regulators have moved toward checklists, but can still make it worthwhile if they outsource review of the reports to experts who understand how risks aggregate and diversify.
- Product design – be sure to look at exposures in case hedges are not available.
- Obesity/smoking – how will the various drivers of mortality and morbidity interact (some good, some bad)?

Strategic Scenario Planning

Look at stress scenarios qualitatively and graphically in addition to quantitative focus. Consider a combination of several deterministic scenarios, including one where the Wall Street tool kit (e.g., derivatives) is not available.

Pick some of these to do every year, some can be done qualitatively, some rotate every 3 or 5 years. Total stress scenarios completed should be 10 or fewer.

- Negative interest rates
- Spike interest rates over 10%
- Level
- High credit risk – double default rate for BIG assets
- Equities – down 35% and options market dries up
- Mortality – pandemic .6% excess mortality
- For companies writing indexed products – model/report separately – test product if derivatives market dries up
- Higher interest rates and inflation: grade 3% per year until you get to 12%
- Qualitatively consider 20% inflation environment (if you have annuities you should be testing 1,000 scenarios from the VM scenario generator)
- Low interest rates – Japan scenario
- Flat equity markets combined with higher inflation
- Falling dollar – combine with high interest rate scenario
- Global climate change – how will this impact your business and suppliers (e.g., look out 20 years to consider new agents or a mortgage in southern Florida, where over \$100 billion of property value is at risk from a 3 foot rise in sea levels)
- Liquidity risk – consider your largest markets and what would happen if they dried up or were regulated out of business. Have you accepted risks that you thought were mitigated? A core line of business should not be at risk here. If it is then it should be a satellite line. What would you do if no one offered a derivative position for you to hedge against? Are there protections written into liabilities?
- No diversification is allowed between risks. Do you have enough capital to survive?
- If you are ambitious run a scenario with equity markets down 35% and 10 years' worth of deflation

Predictions from January 2010

I posted my first annual financial predictions in 2007. Each year I will look back and share interesting comments I made that seem accurate in hindsight. I have deleted sections but not changed the wording in what remains.

These (mainly) economic predictions were made in January 2010.

- Political instability throughout the world will be a problem, driven by the liquidity crisis, price of oil, and/or terrorism. Countries most at risk are Iran, Venezuela, Pakistan, Mexico, and the Philippines. China could see a negative surprise here.
- Unemployment: Fiscal stimulus has helped to bottom out unemployment, and I don't expect it to get worse than the current 10%. We have entered an era where saving is more popular, but this will only be complete when some who choose not to save are allowed to fail. There is enough money on the sidelines that this should not cause a slowdown in growth. Budget imbalances will eventually create inflation, but long term treasuries will increase first. Taxes will not be impacted until unemployment returns to a more normal level but will eventually need to rise.
- Securitization/Mortgages: The securitization market will thaw a bit but capital requirements will continue to be high for banks, discouraging loans. Some are saying that the Fed will have major balance sheet issues if interest rates rise. Are these unintended consequences or just a plan that was not thought through? Probably some of both.
- Volatility has fallen all the way back below 20, indicating to me that investors think the government will bail them out no matter what and no matter when. This is clearly wrong in the long term.
- If oil prices fall back below \$50, political instability in Russia and South America will quickly follow in the next couple of years.

Here are some risks I was worried about over a longer time horizon.

- Can an internal CRO be strong enough to stand up and be counted, or will fears for their job keep them "in line". Every firm needs a Chief Skeptical Officer.
- US political environment – can they say no to anyone requesting a bailout?

Hopefully these annual letters look at things from a slightly different perspective than you see from others and make you think. That is my goal.

Happy New Year!

Warning and disclaimer: The information provided in this newsletter is the opinion of Max Rudolph and is provided for general information only. It should not be considered investment advice. Information from a variety of sources should be reviewed and considered before decisions are made by the individual investor. My opinions may have already changed, so you don't want to rely on them. Have fun!