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Eye on the Market, December 11, 2012

“Apocalypse Not”, or at least not yet: the future of equity returns, energy, democracy, marriage and Dodd-Frank

Here's the last Eye on the Market for the year, in which we take a break from the usual economic and investment issues. Our 2013 Outlook will be published on January 1st. A brief update: the US is treading water at 2% trend growth, Chinese data has rebounded as we expected, and while European growth is still poor, EU/ECB policy announcements appear to be “bailing in” private sector flows into its credit markets even before any demonstration of how they will work. This has been one of those years when financial markets do much better than what economic growth alone suggests; 2013 looks like it might be another.

This year, unless something drastic changes over the next week or so, the world will not come to an end as predicted by the Mayan calendar. If so, here are some thoughts about the future.

The future of equity returns and bad times

The Mayans weren't the only ones with a dim 2012 outlook. There's a thriving community of market doomsayers that remind me of the subterranean telepaths in the second Planet of the Apes movie. To be fair, it's not like they haven't had fodder for their views: during the last decade or so, there were two instances of 30%-40% declines in S&P 500 earnings accompanied by 50%+ declines in equity prices. However, over time, the worst things tend to hit when you aren't looking rather than when you're prepared for disaster. Consider the following. I defined 5 macro conditions as “bad fundamentals”. When three or more occur simultaneously, people will typically say that the US is “going to hell”. So, I created a portfolio that only invested in the S&P starting in 1948 when three or more bad conditions prevailed at the same time; another that invested when *none* were true (“Life is Fine”), and a third which invested when only one bad condition prevailed (“Not So Bad”). Guess what: the GTH portfolio generated better average returns one year after investment than the other two (see table). What this might be telling us: by the time fundamentals are indisputably poor, markets have often already priced them in. Today, 3 of the conditions are true.

Bad fundamental conditions:

1. Current account deficit larger than 3% of GDP
2. Fiscal deficit larger than 3.5% of GDP
3. Unemployment higher than 6%
4. US Manufacturing PMI below 45
5. Inflation higher than 4%

1 year S&P 500 returns, 1948-2012

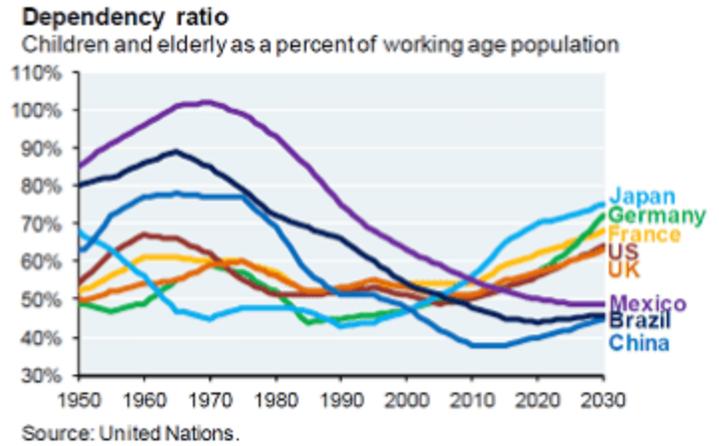
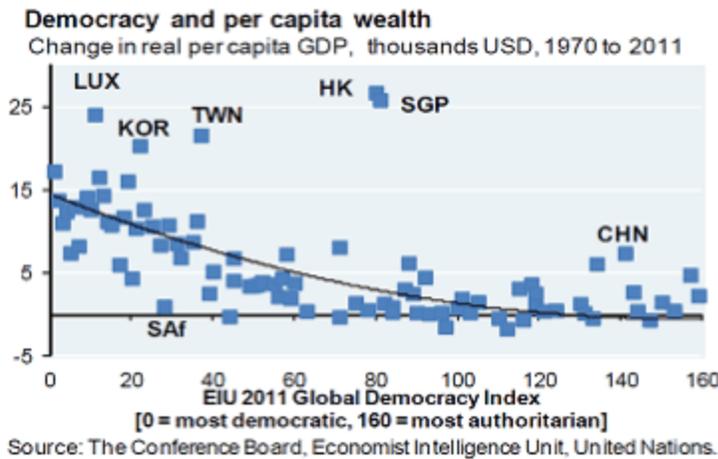
Investment	# of Bad					
Scenario	Conditions	Average	Max	Min	Std	#obs
Going to hell	> = 3	19%	59%	-19%	16%	110
Life is fine	None	15%	48%	-16%	14%	231
Not so bad	Only 1	7%	47%	-40%	18%	258

Source: Bloomberg, J.P. Morgan Asset Management

The future of democracy

Several clients have emailed me internet-viral parables on the perils of democracy. One is the Athenian Democracy parable from a 17th century Scottish historian, and the other from Alexis De Tocqueville. Both follow the same logic: a democracy cannot exist as a permanent form of government, since it will fail when citizens discover that they can vote themselves tons

of money from the public treasury, and/or when Congress bribes citizens with their own money, which in turn leads to insolvency, dependence and dictatorship. Both quotes are apparently **bogus** in terms of attribution, and originate from unknown fiscally conservative voices. More importantly, are they right? Over the last 40 years at least, **democracy has been winning**. The first chart below shows the increase in real per capita GDP from 1970 to 2011, plotted against the Economist Intelligence Unit's 2011 Democracy Index. There's a pattern, with **more democratic countries seeing greater gains in per capita wealth**. There are of course exceptions (Hong Kong and Singapore), you have to accept what real per capita GDP means, it ignores issues around income distribution, and you also have to accept the definition of democracy as defined by a single British magazine. However, on the last point, their methodology makes sense to me, and a country which produced the Magna Carta in 1215 is as good a place to produce it as any. *Note: Kuwait, Qatar and the UAE were excluded for data reasons; see end notes as to why.*



The next 40 years look a lot more complicated. The West faces plenty of tests: rapidly growing public debt, deteriorating demographics (see chart on prior page), unresolved pension and healthcare issues [a], political polarization in the US, a straight-jacket currency union in Europe, and the loss of manufacturing jobs. On the latter issue, the chart below shows how US job losses accelerated around the time that China joined the World Trade Organization and launched a policy of foreign exchange reserve accumulation; I will leave it to others to assess whether or not there is causality here. In any case, **if democracy lives up to its reputation, its citizens and its elected representatives will find the right path so that the connection between freedom and wealth shown above is sustained.** A litmus test: whether the US can find a way to restore fiscal solvency through painful compromises.



The future of credit, and Dodd-Frank regulations

I had a conversation with one of the most well-known US economists this week (name withheld to protect the innocent). We were talking about Dodd Frank, and he suggested that I look at something. Since 1947, non-financial corporate businesses in the US have increased the amount they spend on financial services (1st chart). This reflects a more service-oriented economy; a larger network of suppliers and customers which require lending and insurance to facilitate (economic complexity); and an increase in leverage and leasing. One way to visualize why economic complexity is growing: rising “vertical specialization”, a measure of the number of imports per unit of export (2nd chart). An even simpler way: since

1990, the number of businesses in the US has risen by 50% according to the Bureau of Labor Statistics. The economist's conclusion: US businesses increased the amount they spend on financial services because they need it to function in a complex global and domestic economy.

Increasing reliance on financial services by businesses

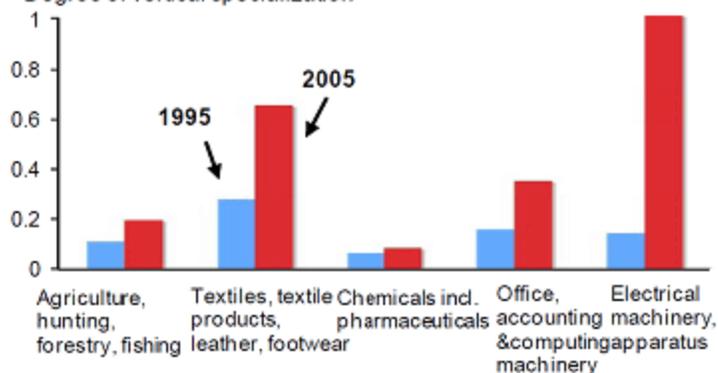
Finance and insurance share of private industry value-added, %



Source: BEA, JPMAM.

Rising vertical specialization in the US

Degree of vertical specialization



Source: Schwartz Center for Economic Policy Analysis, April 2012.

One can support higher capital adequacy for banks, movement of most derivatives to exchanges and clearinghouses, stronger consumer protections and the end of “too big to fail” (all of which our firm supports), and still have reservations about the unknowable impact of regulations which may substantially alter credit markets. According to Davis Polk’s July 2012 Progress Report, **Dodd-Frank is only 30% complete and has already produced 8,800 pages of regulations from 10 regulatory entities.** Swap dealers, for example, face 3,700 new tasks related to technology, operations, legal and trading. How surprising would it be if this changed the way credit is created, allocated and priced? At a time when large businesses get 75% of their credit from capital markets and 25% from traditional bank lines (as per the Federal Reserve Board), these changes may affect the credit markets in unanticipated ways.

The future of energy, and when the carbon-based version runs out

I moderated a discussion two weeks ago with Peter Kelemen from the Lamont-Doherty Earth Observatory. There was a gasp in the room when the first chart below was shown. Using resource estimates compiled in 2010 and an empirically-based projection of future consumption, the world’s extractable carbon resources (conventional and unconventional oil, conventional natural gas, shale gas, gas hydrates and coal) could run out in around 100 years. Thankfully, there are plenty of caveats to this chart:

** Even since 2010, there have been substantial new discoveries of shale gas and shale oil, and there are parts of the planet that have not been thoroughly explored yet. The concept of what is an extractable resource changes over time; a few years ago, it would not have included Canadian tar sands. According to the Province of Alberta, a 10% recovery rate on Canadian tar sands would yield around 175 billion barrels of oil.

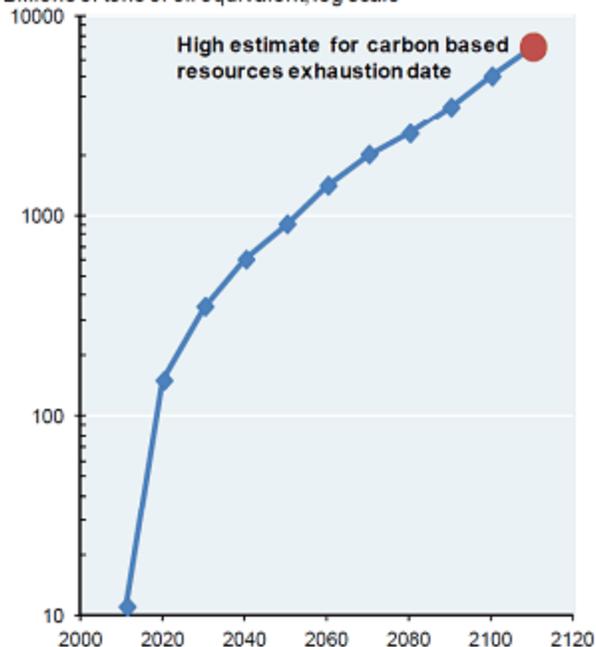
** The chart appears to assume a static reserves to production ratio, which may improve over time

** Future energy consumption is extrapolated based on increases from 1900 to 2000 [b], a rate which could fall based with broader use of renewables, taxes, natural rate of consumption decline in mature economies, etc.

As a result, the “100 years left” estimate may shift out over time by perhaps another 50 years. Even so, the twilight of carbon fuels will arrive one day [c], and when it does, I offer the following prediction. While wind and solar energy hitting the earth each year is multiples higher than annual energy consumption, challenges and limitations of energy conversion will bring the world back to nuclear power (China is of course still moving full steam ahead). While Germany and Japan are shuttering nuclear in favor of offshore wind (EoTM 10-22-2012), I would be surprised if this decision stood the test of time.

Cumulative energy consumption by year, and projected exhaustion date for carbon based energy

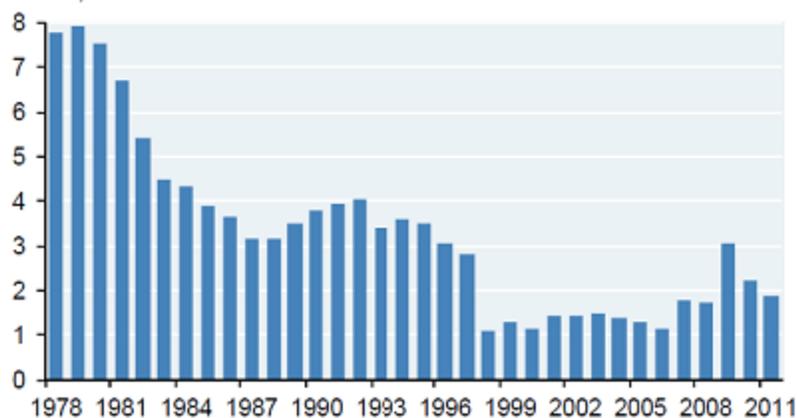
Billions of tons of oil equivalent, log scale



Source: Peter Kelemen, Lamont-Doherty Earth Observatory.

Public energy spending

Billions, 2005 USD



Source: National Science Foundation.

Some US administration energy policy has been ridiculous (e.g., politicizing the Keystone pipeline), but I'm not sure Solyndra should be criticized as much as it is. It will take a lot of trial and error (and failure) to find alternatives to carbon fuels; the numbers in the 2nd chart above on public R&D spending should be rising, not falling. This won't be easy, or cheap: all-in "levelized" costs per MWh for utility-scale solar are 2x-3x higher than those for natural gas [d], and battery storage technology (which could radically improve the utility of renewable energy) is in its infancy other than pumped storage. In other words, renewable energy has a long way to go. Furthermore, even after a lot of government money was spent, little was accomplished on prior ideas that generated so much excitement: fuel cells for automobiles, fast-breeder nuclear reactors and "clean coal" (e.g., carbon capture and storage) [e]. Even so, **relying on the private sector alone to solve the problem seems risky**. I agree with Bill Gates, John Doerr and Jeff Immelt, who wrote this last year: *"the private sector has tended to systematically under-invest in R&D relative to the potential gains to society — even where a market for the desired technology exists — because it is difficult for any individual firm to monetize all the benefits of these types of investments."*

The future of marriage

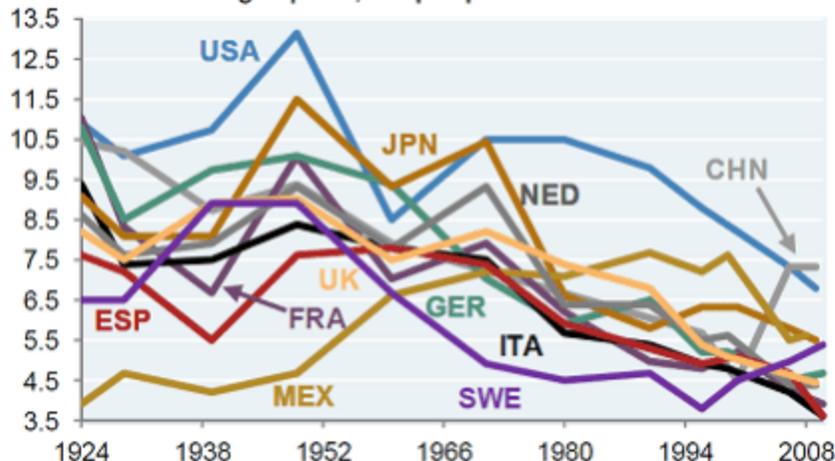
Around 200 years ago, people started marrying for love instead of money, and in the 20th century, a romantic bond became the primary factor behind marriage. However, as shown below, marriage is becoming less popular just about everywhere. Social scientists debate the reasons why; common ones include greater acceptance of non-legally binding cohabitation, and greater economic independence for women. I don't think it's the business cycle, since the numbers have been in secular

decline for 50 years. I have a question about this chart: if there isn't going to be an apocalypse this century, wouldn't it be a lot more fun to spend it with someone else on a permanent basis, without the embedded optionality inherent in non-binding cohabitation?

Have a healthy and happy holiday season.

Marriage rates

Number of marriages per 1,000 people



Source: United Nations, OECD

Michael Cembalest

■ Morgan Asset Management

Notes

[a] Here are some numbers from the City of New York as one example, from its Comprehensive Financial Annual Reports. The city's pension fund contribution in FY 2002 (when Mayor Bloomberg took office) was \$1.4 billion. By 2007, it was \$4.7 billion, and as of FY 2013, it is budgeted at over \$8 billion. Other annual post-retirement payments grew as well, so that in less than a decade, pensions and benefits for active and retired workers rose from 8% to 18% of New York City revenues.

[b] Peter Kelemen, Arthur Storke Memorial Professor of Earth and Environmental Sciences at Lamont; reprinted with permission.

[c] While the twilight of exhaustible resources is a concern, there are sharp disagreements as to how imminent this is. Consider the following link, an article by Vaclav Smil which dismantles a phosphorous scare piece written by Jeremy Grantham. <http://www.american.com/archive/2012/december/jeremy-grantham-starving-for-facts>

[d] An excellent source for "all-in" levelized energy costs (upfront capital, fuel, operating & maintenance, financing and carbon cost) is "Projected Costs of Generating Electricity", published jointly by the International Energy Agency and the OECD Nuclear Energy Agency.

[e] Tidal power seems to be getting people excited. Cost estimates prepared by the Carbon Trust (investors in 2 prototype technologies) range from \$475 to \$555 per MWh (2x-3x more than solar); they are projected to come down by 50% by 2050, but history argues against cost extrapolations that far out.

On the Persian Gulf and per capita wealth

Qatar, UAE and Kuwait show large real per capita GDP declines since 1970 (around -\$20,000) using our methodology. We excluded them from the chart due to concerns about data reliability. While Gulf populations have risen sharply in recent decades, we see too many conflicting estimates that are heavily affected by migrant workers. We also have concerns about GDP calculations for small, single-commodity export nations. That said, a paper from the London School of Economics shows that rising wealth in the Gulf has been based more on accumulation of physical capital than on human capital or multifactor productivity. In effect, the region has done a good job at mobilizing resources, but not in converting them to broader gains in national income. **Our sense is that real per capita GDP has declined in the Gulf since 1970, but by an indeterminate amount.** As for democracy scores for the three countries, they rank between 120 and 150.

Sources

"Catalyzing American Ingenuity: The Role of Government in Energy Innovation", Bipartisan Policy Center, September 2011

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