ADVISOR PERSPECTIVES

Fewer, Richer, Greener: Why Jeremy Grantham is (Partly) Wrong

By Laurence B. Siegel[1]

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Is the human experience getting better or worse? This is a big question investors are rarely asked to confront, yet its answer has profound consequences for market returns.

If the global economy continues its robust growth, then equities are the investment of choice. If demographics, environmental limitations, or something else unforeseen causes a prolonged period of slow or negative growth, then investors should prefer defensive positions, such as a portfolio heavily weighted to fixed income. Clues regarding the long-run future for the global economy may also be helpful in active management, because they indicate which countries and industries to favor.

A recent *Advisor Perspectives* article described how legendary value investor Jeremy Grantham now believes that dire sentiments may for once be correct when it comes to natural resources – this from a man whose general view is that history repeats itself and that "this time it's different" are the four most dangerous words in the English language.

What's different? According to Grantham, the extraordinary global economic growth of the last 200 or 250 years has been a temporary reprieve from an almost infinitely long history of hardship and deprivation. The reprieve, in his telling, was caused by the previously untapped boon of cheap energy from burning wood and then fossil fuels. But compound growth in consumption of a resource that is in fixed supply cannot continue forever; that's a mathematical certainty.

Grantham concluded that two centuries of volatile but – in the long run – steadily falling real prices of energy and other resources ended with the commodity price bottom of 2002. In the decade since, he pointed out, the price of an index of 33 commodities has risen enough to reverse its entire real decline since 1900.

In the future, Grantham predicted, "price pressure and shortages of resources will be a permanent feature of our lives." A decreasing population is the only thing, he argued, that will allow the human race to "gracefully, rather than painfully" achieve "a fully sustainable world economy."

That's Grantham's outlook, and it's fairly grim. Fortunately, there's ample justification to take a much more sanguine view. I would argue that the world our children and grandchildren will inherit will suffer less overpopulation, less poverty, and less

[1] Full disclosure: This is a barroom argument among friends. I have the highest respect for Jeremy Grantham's investment talent and writing, and for the integrity of his firm. The complete version of *Fewer, Richer, Greener* is available here.

environmental disaster than we do. Resources will be far more abundant than Grantham forecasts, as the dominant paradigm becomes "fewer, richer and greener."

Fewer

You may not know it from reading the newspaper, but Grantham will get his wish. It will take a while. The world's population will first creep up from its current seven billion people to about 10 billion two generations hence, but then the population will stabilize, and probably experience an absolute decline.

This stabilization and likely decline will not be caused by famine, war, or disease. It will be caused by parents making rational economic decisions to have fewer children as incomes rise. When incomes are low, having an additional child is a sensible economic choice, because a child isn't very costly and provides both cheap labor and insurance against penury in old age. When incomes are high, however, having a child is expensive, and there are better ways to make money than by putting one's children to work on the farm.

This transition already took place decades ago in Europe, Japan, China, and Russia, where the total fertility rate is already way below the "replacement rate" of just over two children per couple. Some readers will be surprised to find out that Brazil, Iran, Thailand, and Vietnam are also on the below-replacement list. In the United States, the replacement rate has been reached; Indonesia and Mexico are not far off the mark; and giant India, while still growing in population, has experienced a tremendous fertility decrease over the last 40 years. Only in Africa and parts of the Middle East are fertility rates anywhere near the high levels that traditionally prevailed worldwide, and fertility in these regions is falling even faster than it did in the First World a generation or two ago.

In other words, the population explosion is almost over. Peak population of about 10 billion, expected to be reached later in this century, sounds like a big increase over today's seven billion, but consider how frequently the population has doubled in the recent past. Another 3 billion, on the other hand, is not even a 50% increase at this point.

Now, what does this mean for the economy and the environment?

Richer

The economy across developed countries has grown steadily at 1.8% per capita, per year, since about 1800, when self-sustaining economic growth began in earnest. (If one cares about how well individual people are doing, real per capita growth rates are the only ones that count.) Growth at that rate is remarkable in itself, amounting to a doubling of real personal income every 39 years, and a 35-fold increase in two centuries.

If this expansion in income is about to come to an end, it sure isn't apparent in the data. In fact, over the last decade, the period that Grantham identified as undoing all of the commodity price declines of the previous century, global growth (not First World growth)

has accelerated. India, Vietnam, and a number of African countries, the latter driven by high natural-resource prices, have joined the fraternity of fast-growing economies. High commodity prices have caused some wealth transfer from commodity-poor to commodity-rich countries, but isn't that what happens any time the price of a resource changes? Isn't that what markets are for – to create price signals so that resource allocation can take place optimally?

The current situation is, in fact, "different" mostly in that the many, rather than the traditional few, are getting to participate in sustained economic expansion. If you care only about people in the United States, this may be a difficult proposition to swallow, since unskilled workers here are truly having a tough time. It's a globalized world, so if you're as productive as a Chinese laborer, you're going to be paid like a Chinese laborer. That was not always the case.

But if your perspective is global, this is a very special time to be alive. First of all, your life is longer than it once would have been; life expectancies of 30 or 40 years prevailed in preindustrial societies. Second, you get a little money. Figures 1 and 2 show life expectancy and per capita income (in today's dollars) for most of the world's countries in 1800 and 2012, respectively. (Each bubble in each graph is a country, and the size of the bubble shows the country's population.) In 1800, the richest country in the world had a per capita income of about $3,000 and a life expectancy of 40 years. Today, no country in the world has a life expectancy that low, and only the very poorest countries have per capita incomes below $3,000.

Figure 1
The World in 1800: Income, Life Expectancy, and Population

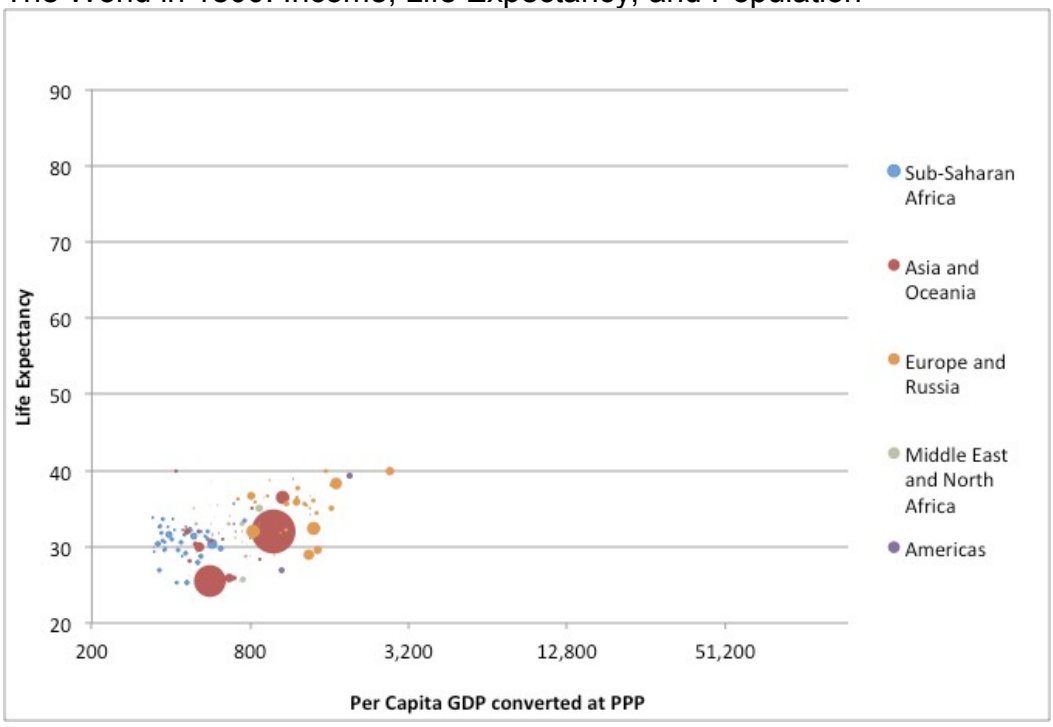
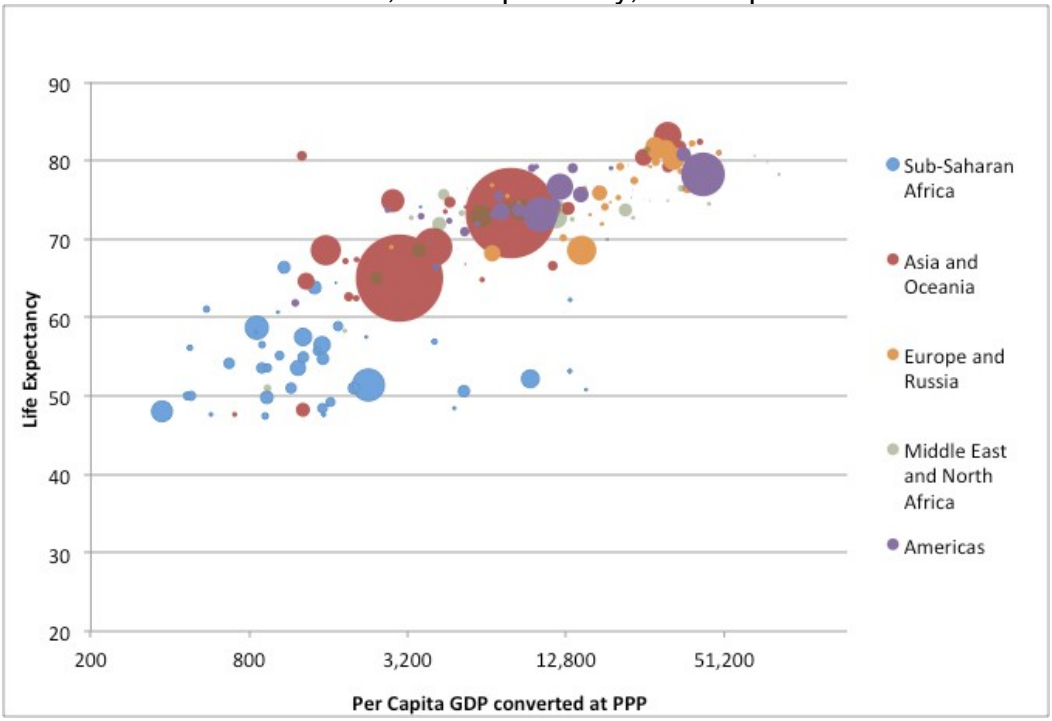


Figure 2
The World in 2012: Income, Life Expectancy, and Population



Greener

It takes a real Scrooge to find darkness in the bright cloud of Figure 2, but today's environmentalists are up to the task. (Grantham seems to want to be counted among them.) Subsistence living is among the most environmentally destructive ways of life imaginable; you have to do what is necessary to eat every day, implying an astronomically high discount rate at which future consumption is being compared to today's. The only thing that makes subsistence societies look clean is low population density.

As a society industrializes, it does become environmentally "dirtier" up to a certain point. Beyond that point (and there is much dispute as to at what income level this takes place), people demand and can afford a cleaner environment. This phenomenon has been well documented in developed countries and is spreading to higher-income developing countries.

Cheap energy makes life easier in every imaginable way, and much of the technological progress of the last 200 years has been in the search for newer, cheaper and better energy sources. The late economist Julian Simon called energy the "master resource" because, with it, one can manufacture all the other resources that one needs or wants. To sustain the tremendous expected growth in standards of living around the world, we will need huge amounts of energy.

But we don't care where we get that energy. Fossil fuels are a convenient source, but they are obviously getting scarcer and more expensive. (But not *that* scarce. Some estimates indicate that the U.S. has enough fossil fuels to last 900 years.)

High fossil-fuel prices are a signal to the market to develop other energy resources. We don't know which of the current candidates – nuclear, geothermal, biofuels, etc. – will prove to be the most practical, any more than we knew what the future held during past transitions – from human and animal power to wood, to natural gas, or to oil. What we do know, however, is that the supply-demand-price system sent the right signals for energy sources to be developed in the past, and almost certainly will continue to do so in the future.

Are most people optimists or pessimists?

I'm not sure who makes up the audiences that Jeremy Grantham describes, but he reports encountering a childlike, naïve optimism in others when he sets forth his doomsday warnings. My experience is mostly the opposite. Even young children tell me that they do not expect the planet to be here for them when they are adults. Otherwise sober-minded adults spread panic – instead of studied concern – about global warming, which, while it appears to be real, has (since 1870) pushed temperatures up as much as one would experience in a drive from New York to Philadelphia. When I explain the thesis of my forthcoming *Financial Analysts Journal* article, "Fewer, Richer, Greener," to colleagues and friends, they sometimes look at me with bafflement.

Although it is common knowledge that per capita incomes have grown tremendously over time, otherwise well-educated people tend to think that life was better in the good old days – when we lived on average to 40 or 50 or 60 years of age – and these people are now terrified of the future. Maybe, as the financial historian Peter Bernstein has said, pessimists just sound smarter; at any rate, pessimism is a deeply ingrained habit-of-mind among the well-read, even when there is little or no evidence to support their position.

Investment advice

While my tone differs greatly from Jeremy Grantham's, my view on the specifics of what will happen differs less. We both agree that increasing global wealth will cause consumption of natural resources to increase. We also both know that resultant higher prices will stimulate both further production of existing resources and the search for alternatives.

Our difference, then, is that I believe technological change will outpace potential catastrophe – by a large margin – while Grantham fears the opposite. But this disagreement, which one could regard as minor, has big implications for how one should invest.

I've generally encouraged investors to index. If you share my more-optimistic outlook, however, an active strategy is necessary to take full advantage. Such a strategy should overweight:

- Food and its "ingredients" – farmland, fertilizer, agri-technology. Even a stable or declining population will want to eat higher-quality food with more protein.
- Water and delivery systems for clean water
- Energy, both traditional and alternative – we're going to need it all
- Minerals and other basic materials
- Forestry
- Infrastructure, desperately needed, with demand expressed through public and private sectors
- Environmental quality, a "luxury" the world can finally afford

The investment vehicles for most of these are straightforward: equities, private securities, and – with a noteworthy exception I'll explain below – commodities. Investing in environmental quality is a little more difficult; it mostly involves selecting companies (public or private equities) that will benefit from spending on the environment.

The expectation of massive future growth favors equities over bonds. If we're going to be much richer, fixed-claim holders will get their claims, but variable-claim holders will get much more. The increased riches will be strongly tilted in favor of emerging and frontier markets, but not all of the companies that will do well in such an environment are in those markets. Stocks of developed-market companies that make a substantial share of their profits in these markets are desirable too.

Alternative investments are probably best for making focused commitments to asset classes that are hard to obtain in the stock market, such as mining, farmland, and forestry. Finally, one should not overlook debt instruments: in any given situation, they may offer a better risk/return tradeoff than equity in the same asset or deal, or the debt instrument may be the only security available.

Many investors, hearing this story, would respond by increasing their allocation to commodities. While this is a reasonable reaction, commodity prices are already very high. In general, buying stock in the companies that own or produce the commodities is a better idea than investing directly in commodity futures. One reason is that commodity futures' returns are strongly influenced by roll yield (positive or negative). Another is that the price of the company's stock includes the option to produce less of the commodity (or none at all) when it is not profitable, but to keep it in reserve, and to ramp up production when it becomes profitable once again. This option reduces risk.

Finally, investors should seek out ways to invest in human capital (the present value of future labor income). The riches of the future will accrue primarily to labor in the form of

rising standards of living, rather than to capital. Portfolio investment in human capital is difficult almost by definition. After all, you can't buy shares of individual people. There may, however, be equities or other securities that correlate highly with human capital. For example, the ability to generate patents is linked to the amount of human capital embedded in a particular company.

Economic growth has been underway for a long time, but it is not the only possible future course of events. It is the consequence of a great deal of hard work by people who have had the freedom to keep most of the fruits of their labor and inventiveness. We will need a great deal more of this effort if the forecasts in this article are to be realized.

Let's get to work.

Laurence B. Siegel is research director of the Research Foundation of CFA Institute and senior advisor at Ounavarra Capital LLC. Before he retired in 2009, he was the director of research for the investment division of the Ford Foundation, which he joined in 1994 from Ibbotson Associates, a consulting firm that he helped to establish in 1979.