Why “Fewer, Richer Greener”

Investment Thinker Larry Siegel Dares To Be Contrarily Optimistic

What does a “retired gentleman of leisure” do if his golf game, well, isn’t up to par? If you’re investment maven and author Laurence B. Siegel, who until July, 2009 was director of research in the investment division of the Ford Foundation and before that did nothing more notable on the investment scene than help found Ibbotson Associates, you take on all sorts of official and unofficial roles so that you can keep having “fun.” You see, fun, to Larry, is stirring the biggest pots of intellectual ferment he can find in the sometimes all-too-arid landscape of investment thought. No surprise, then, that Larry has taken on the responsibilities of acting as the Gary P. Brinson Director of Research at the Research Foundation of CFA Institute in the quasi-public sector, and has also signed on as Senior Advisor at Ounavarra Capital LLC. Or that he keeps up with a wide-ranging torrent of postings, here, there and everywhere in the blogosphere, all the while penning emails and pieces of his own at a pace that would have challenged Voltaire. Lately, Larry has been having lots of his special brand of fun upending stereotypes of retired investment types as economic pessimists and, well, grumpy old men, by coming out in print with lengthy, provocative and thoroughly researched rebuttals to the headline-grabbing, “Woe Is Us” economic forecasts of a couple of the economic and investment world’s most prominent forecasters. Indeed, Larry dares to optimistically characterize the world we’re leaving to our children and grandchildren as “fewer, richer, greener.” I was lucky enough to catch up with Larry the other day and got him to explain. Listen in.

KMW

Let’s talk about “Fewer, Richer, Greener.” Your paper is making waves. Stirring up opposition to the dirge-like “the world is going to hell in a handbasket” commentaries we’ve seen recently from the likes of GMO’s Jeremy Grantham and Northwestern’s Robert Gordon. Is Chicago big enough these days for both you and Prof. Gordon? Absolutely. He’s an engaging guy. He makes a lot of valid points. If you only make the points that support your side, which is what he and I both did, it looks like you want to fight – that you’re only trying to persuade, rather than to understand. But that’s really not me. There are headwinds and tailwinds to growth. There always have been and there always will be. They offset each other in various ways and produce varying degrees of growth and prosperity. Gordon made a very effective argument for what he believes, but I thought it was one-sided, so I had fun trying to take it apart. But I did so from a position of respect for his knowledge and erudition – which is why we can have a reasonable discussion.
WOWS Progress Report

Our conversion from a Weeden in-house publication (funded by that firm), to a 100%-independent research and portfolio strategy journal paid for by annual subscription, is well-received. Of course, any conversion from distribution as a typical sell-side publication “thrown in over the transom” to circulation only to paid-up subscribers as an independent portfolio research and strategy journal never goes as rapidly as one would like (moi, especially). However, it progresses consistently and nicely.

Truth be told, somewhat unexpectedly we have a high-class problem in that it turns out Weeden was sending Welling@Weeden to seemingly half the asset managers in the world, and that’s the good news. The not-so-good news is that it means Pete Arnold has an awful lot of folks to contact and ask if they would like to continue to receive WELLINGonWALLST. as paid-up subscribers/clients.

Don’t feel too sorry for Pete. Our systems make it easy for him to determine who is online reading or even printing out WOWS, so sooner or later those of you who do get my WOWS journals should expect to hear from Pete Arnold. Pete is admirably straightforward; he will ask if you and your team would like to continue to receive WOWS as paid-up clients. The price is right and payment is easy. We send an invoice to your firm or to the CSA of your choice. Piece of cake.

If you would like to give us a hand and move the subscription sign-up process for your shop forward just a little faster, please send Pete a note at: pete@wellingonwallst.com. I’d suggest you write: “Call me, we want to become paid-up subscribers and not take a chance on missing the next issue.” Adding your direct number would be a nice touch, too.

Last and far from least, I know all too well that business sucks and things are tight; I want to say how very very grateful all of us here are to our paid-up subscribers for their kind, generous, encouraging, strong and unwavering support in our transition to an independent research journal of portfolio management and strategy.

Most cordially,
Kate
Does that likewise apply to how you’re getting along with Jeremy Grantham these days?
Jeremy is a friend with whom I often disagree. I also respect his erudition, but I think he’s strongly inclined to overstatement.

Well, his views could scarcely be more diametrically opposite — a future “too crowded, too poor, too polluted.”
Jeremy’s position is self-inconsistent. The problems Jeremy anticipates – soaring food and other resource prices, worsening environmental pollution – are, if they occur, the result of massive income and consumption growth in countries that haven’t had much of a break until recently. As I told the Wall Street Journal’s Jason Zweig, “I’m not as worried about too little growth as I am about too much.” This is a restatement, in my own words, of Jeremy Grantham’s big concern – the demand for high-protein food, industrial materials, and other goods is going to push up the prices of natural resources to the point where they become the limiting factor for growth –

And push the environment into a tailspin, just to ice his argument.
Growth is good for the environment. I’ll get to that later.

I can’t wait. But first, tell me what you’re concerned about if we get too little growth?
If you have too much growth, you can grow less and solve the problem. Growth gets expensive, meaning that there are some natural governors on it. But if there’s too little growth, there isn’t a lot you can do. You can cut taxes, but taxes are already inadequate to pay for the amount of government that people seem to want. You can improve education. There are only so many levers to push at the public policy level. The classical idea is that people will work harder for less money, causing growth to reappear after a recession or depression – but that is not all that attractive. We did get growth that way in 1933, ’34, ’35 – but who wants that?

It’s not an outcome that you’ll find very many people rooting for, that’s for sure. Nope. That was actually one of the best growth periods in our history – but it was from very low levels.

So you are concerned about growth being too slow, yet you’re making something of an industry out of writing optimistic futurist essays?
I’m concerned that growth will be slow in the short run, as aging, developed economies work their way out of government debt and entitlement difficulties. I’m very optimistic in the long run – and I’m optimistic right now for emerging markets. In fact, long-term growth has turned into kind of a hobby for me. When you hit on a theme and people start to identify you with it, you keep working it. I wrote a piece on moral hazard for the Research Foundation of CFA Institute after the crash of 2008. I only got a little positive feedback, and frankly the essay was a little unfocused, so I didn’t write about moral hazard again. But growth is more fun – following the literature and following the arguments.

And finding yourself at the center of some. You’ve been pretty shrewd to position your articles as the reasoned antidotes to the “sky is falling” warnings from Grantham and Gordon that grabbed the headlines.
Well, “man bites dog” sells. “Man doesn’t bite dog” or “dog doesn’t bite man” doesn’t sell because no news, or moderately good news, is what people are used to. So it’s hard to get people to listen to a forecast that says –

The world isn’t really going to hell in a handbasket?
As I said in the FAJ, the world has been going to hell in a handbasket for as long as anyone can remember, but it never quite seems to get there; instead, we’re going in the opposite direction. Measured by just about any objective measure you choose, the health and wealth of the human race have been improving rapidly and almost continuously for at least the last 200 years. And there is every reason to expect this trend to continue, most dramatically in the developing world but also, more slowly, in the developed world.

“The world has been going to hell in a handbasket for as long as anyone can remember, but it never quite seems to get there; instead, we’re going in the opposite direction.”

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Because?
The biggest contributor to this favorable outlook is the astonishing and too-little-appreciated fact that the population explosion is almost over. Sometime in our children’s or grandchildren’s lifetimes, global population will peak somewhere between 10 and 11 billion and then either level off or begin to decline. And this world of fewer and richer people will also be greener –

Hold it, right there. There are only, what, 7 billion people on this planet now, and our economic growth of the last 200 years is being blamed for all sorts of pollution, melting ice caps, and floods engulfing parts of New York City and environs. My analysis is based on the idea that environmental quality is an economic good like any other. Subsistence living is about the most environmentally destructive lifestyle imaginable, but it’s hard to see the destruction because the population is small and the destruction is just beginning; the environment looks pretty. As an economy begins to develop, it gets dirtier. Heavy industry is the way out of abject poverty. But as a society gets richer, it can afford to pay for large helpings of environmental quality. The whole point of getting rich is to buy things one wants. Of course, nearly everyone wants a beautiful, clean and safe natural environment, but people also have other priorities – eating, for example. The human body makes implacable calorie demands.

Tell me about it!
Seriously, when calories are scarce, future benefits are discounted at very high rates – all people care about is the present. When there’s abundance, people can invest in the future, including in environmental quality. This is all well-documented and represents what economists call the “environmental Kuznets curve” – the tendency of societies to become environmentally cleaner as they pass a certain threshold of affluence. But I’m acutely aware that my fewer, richer, greener thesis is at odds with what mostly passes as received wisdom these days – that natural resources restraints will result in a future that’s crowded, poor and dirty.

As you basically said, dystopia sells.
The tradition of pessimism among intellectuals of all sorts runs very deep. Maybe, as Joseph Schumpeter once said, “pessimistic visions about almost anything usually strike the public as more erudite than optimistic ones.” And, essentially, what I’m saying is that the long-term prospects are fine – Not that everybody is doing fine right now, of course. But the kind of economic slowdown that we have had in the last five or six years is a normal fluctuation, in line with other slowdowns throughout history. You might have forecast it –

As not a few did –
That’s right. The financial crisis was entirely predictable – if you saw the fiscal policies in developed countries, where basically the governments were going crazy with debt –

As were quite a few in the private sector, don’t forget the banks, insurers, and derivatives that the governments went deeper into debt to bail out.
That’s right. The financial crisis was a kind of perfect storm of stupidity, fueled by poorly designed incentives. In the U.S., Congress required lenders to give mortgages to people who couldn’t pay them. The private sector responded by saying, “Sure. Let’s give them two or three mortgages!” Similar problems arose in other countries. The problem that I didn’t foresee was the contagion to other institutions caused by massive derivatives bets.

It was plain scary. And we really haven’t accomplished much in terms of fundamental reform or deleveraging –
I concede that the twin mountains of household and government debt that Gordon cites as his sixth and final headwind to growth are probably a legitimate concern over the intermediate run. (Government debt is a greater concern because households can be presumed to keep their self-interest in mind at least a little, while governments are spending other people’s money.) But the concern won’t last forever; the nice thing about debt is that it matures. In the long run, the last of the baby boom generation will die and the problem of a large population of entitlement collectors supported by a smaller population of producers will die with her. The so-called age pyramid will turn into an age pagoda everywhere and hopefully by then society will have created the institutional arrangements needed to have a smaller population of workers supporting a larger population of children and retirees. It’s inevitable that people will work longer and save more for their old age, either through pension systems or private
savings — it’s just going to be bumpy reaching that equilibrium. In other words, “structural” deficits won’t last forever. Eventually they’ll get repudiated or paid back.

“Bumpy may be putting it mildly” – Well, in the meantime, equity markets discount long-term earnings growth, not what’s going to happen in the next year and a half. Fixed-income markets are different, so if you have a one-year Greek bond, maybe you should worry. Somebody told me – I don’t know if it’s true – that Russia, which is one of the investment darlings of the last 10 or 15 years, has never issued a long term bond that was paid off in full.

That certainly has the ring of truth – But I don’t know if it is. To be sure, I’d have to hire an Economic History Ph.D. student to go back and look at the bond prices in Russian newspapers. Otherwise, that comment might circulate as urban legend, so take it with a large grain of salt.

I like the way, by the way, that your essays footnote and document your claims, instead of falling into the internet trap of endlessly repeating urban legends. Your stated skepticism, for instance, about the frequently repeated claim that only about half the people in the world have ever made a phone call. I was careful to say that it was a quote that had been repeated by a number of prominent people in various noteworthy settings: Newt Gingrich, Al Gore and Kofi Annan. That doesn’t make it true, but it has the ring of truth to it.

Just consider the sources! None of them is stupid, but many smart people are gullible. Plus, I do think cell phones have changed that situation because, even in some of the poorest countries of Africa, many people now have a cell phone. Yet, for the first 120 or 130 years after the invention of the telephone, that claim was probably roughly true. Even today, I’m wondering what percentage of the world’s inhabitants have never ridden in a car.

It can only be people in the poorest and most remote places on the globe. I bet there are 10% or 15% of people in the whole world who have never made use of a motor vehicle in any way. If that’s true, there is an 1880’s technology the benefits of which still have not seeped through to everybody.

I don’t know, private cars are one thing, but motor scooters and such can be found in pretty remote places. Anyway, how did you happen to start writing about “Fewer, Richer, Greener?” Generalizations are dangerous, but most “retired gentlemen of leisure,” as you call yourself, tend to be pretty pessimistic about the course of the economy – at least the ones I know. Well, most retired gentlemen of leisure actually just play golf. (So do I, but my score for 9 holes...
is about what a good golfer scores in 18. I used to think that was a good thing until someone told me that it’s not.) The retired gentlemen who do take pen to paper are usually the ones who feel most strongly about something. The first thing that got me thinking about “fewer, richer, greener” it was Ben Wattenberg’s book, called “Fewer,” which is where I got my title. He basically says the world’s going to hell in a hand basket because we’re running out of people. I like him and I liked the book, but I thought, “That can’t be right.”

Why not? The world needs young people. I agree there is a downside to low population growth or zero population growth — a small number of young workers supporting a lot of old people. If you go to certain parts of Italy or Japan, and see almost no children, you realize that a world without children would be kind of depressing. But, in fact, a lot of the problems we’ve been facing come from trying to bring the benefits of technology, including food technology and that sort of thing, to rapidly increasing numbers of people. So when some of that pressure comes off, those problems become much less severe, and it becomes easier to save the environment. It occurred to me that although Wattenberg’s book is great in some ways, the environmentalists were right about population growth not being an unalloyed good. Some problems we’re facing are easier to solve if we have slow instead of fast population growth — which is what we’re seeing, not just in the developed world, but in some of the most unexpected places in the developing world.

The table of fertility rates [above] that you included in your FAJ piece is a real eye-opener — Right. Many people are already aware that a number of European countries plus Japan and Russia have fertility rates below the replacement rate of 2.1, which is the rate at which a couple reproduces itself, with the extra 0.1 representing children who don’t live long enough to reproduce, or who don’t care to. However, many don’t appreciate how low the lowest fertil-
ity rates are — or how profound the resulting social changes they imply are. But what really surprises lots of people is how relatively low population growth rates already are in places like India, Indonesia, Thailand, Mexico, and Brazil. While these places are still pretty poor by developed world standards, they have evidently progressed enough to start offering advanced-country trade-offs to parents deciding how many children to have.

Or simply can now offer them the ability to make an economic choice — instead of being ruled by biology.

That’s an interesting way to express the concept. Matt Ridley really gave me the impetus to write this up when he wrote “The Rational Optimist.” I reviewed it for Advisor Perspectives — and to do that, I had to do a lot more reading. There’s an extensive body of literature on long-term change — and almost all of it says that the change, at least so far, has been much more positive than most people can appreciate.

Really? Why? People usually tend to be optimists.

Well, in an e-mail exchange the other night, among members of this discussion group that I’m in with Rob Arnott and Cliff Asness, the question was, “Would you rather be in the top 1% in 1900 or at the 50th percentile, or median, today?” The question had actually been raised by Thomas Frank, the lefty University of Chicago history Ph.D., who used to write a magazine called The Baffler. I’m not sure what he does anymore —

A column in Harper’s among other things — He’s kind of a left-wing thinker and even he was saying that you’re better off in the 50th percentile today. You have a car, an air conditioner, access to penicillin, all of which, in 1900, didn’t exist. Frank almost nailed it in terms of a breakeven proposition — because in 1900 technology was actually pretty far along. If you were in the top 1% in 1900 or at the 50th percentile, or median, today? The question had actually been raised by Thomas Frank, the lefty University of Chicago history Ph.D., who used to write a magazine called The Baffler. I’m not sure what he does anymore —

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Yes! You lived in sumptuous surroundings. Yet if you got sick and needed a pill, the only pills available were cod liver oil — and did absolutely nothing. So how would you like to be in the top 10% in 1900 or in the top 1% in 1600? There are lots of ways to show that the amount of progress we’ve made is tremendous and that, basically, economic growth means that people of ordinary means can enjoy benefits or services that only the rich could afford in earlier ages.

Or that we can actually enjoy a level of something like health care that was completely unattainable in the past.

Let’s call it “medicine. One of my personal peeves is that “healthcare” has become jargon for “health insurance.” Anyway, medicine is an area where we really are turning over new ground every year — every day. It was possible, before the record player was invented, to hire local musicians to play Mozart over dinner. It was very expensive, but it was possible. But it wasn’t possible, even in 1900, to hire a team of doctors to give you the kind of medical care you can get from a nurse practitioner in the drugstore today. My wife just had a knee replaced. She walked out of the hospital the same day, got into our car, and I drove her home.

Totally replaced, as an outpatient? That is amazing.

Yes, and no one had ever had their knee replaced until 1968. You got in a wheelchair and stayed there.

Still, rehab is no fun, I am sure.

True. But the surgery was a minimally invasive procedure in which they somehow actually break up your busted knee, take it out, and put in a titanium one, through a five-inch incision that looks like a shark bite. The progress we’ve seen is astounding.

I don’t think anyone denies that, even Prof. Gordon or Jeremy Grantham. Their point is that the pace of innovation witnessed since the Declaration of Independence can’t continue — and in fact has slowed dramatically.

Which is where I part company with them. My follow-up article to the FAJ piece, which is essentially a critique of Grantham and Gordon, published by Advisor Perspectives and then reprinted by my friends at AJO Partners, discusses some of the examples that Gordon uses to buttress his argument that the revolutionary innovations of the past that have driven growth over the last couple of centuries aren’t likely to be repeated anytime soon. My article points out how suspect the examples are.

Such as?
The main accomplishment of this 3rd Industrialization, the networking of our brains, other brains and other things, is to add something primarily because most of this work will be done by bots.

Productivity is the main accomplishment, and metric, of the two previous Industrial Revolutions. Productivity won’t go away; over the long term, inventions of the time.

What is important is that this self-increasing cycle makes things that are new. New goods, new services, new dreams, new ambitions, even new needs. When things are new they are often not easy to measure, not easy to detect, not easy to optimize. The 1st Industrial Revolution that introduced steam and railways also introduced new ideas about ownership, identity, privacy and literacy. These ideas were not “productive” at first; but over time as they seeped into law, and culture, and became embedded into other existing technologies, they helped work to become more productive.

Every change, however, when computers married the telephone. This is when ordinary people noticed computers. They could get online. Everything went online. Retail changed, production changed, occupations changed. This communication revolution accelerated change, elsewhere. Processes and trivia got smarter because they were connected. Now the advantages of personal computers made sense because in fact they were just local terminals in something bigger: the network. As the Sun Computer company famously put it: “the network is the computer.”

On the 3rd Industrial Revolution is not really computers and the internet, it is the networking of everything. And in that regime we are at just the beginning of the beginning. We have only begun to connect everything to everything and to make the network minds everywhere. It may take another 80 years for that full effect of this revolution to be revealed.

In the year 2095 when economic grad students are asked to review this paper of Robert Gordon and write about why he was wrong back in 2012, they will say things like “Gordon missed the real impact from the new inventions of this revolution: big data, ubiquitous mobile, quantified self, cheap AI, and personal work robots. All of these were far more consequential than standalone computers, and yet nil of them were embryonic and nascent.”

Finally, Gordon is focused, as most economists, on GDP which measures the amount of “labor saving” that has been accomplished. The more labor you save while making or serving something, the more productive you are. In the calculus of traditional economics productivity equals wealth. Gordon rightly points out that so far the internet has not saved a lot of labor. As I argue in my robot piece in Wired, Better Than Human (not my title), I think the real wealth in the future does not come from saving labor but in creating new kinds of things to do.

In this sense long-term wealth depends on making new labor.

Civilization is not just about saving labor but also about “wasting” labor to make art, to make beautiful things, to “waste” time playing like sports. Nobody ever suggested that Picasso should spend fewer hours painting per picture in order to boost his wealth or improve the economy. The value he added to the economy could not be optimized for productivity. It’s hard to shoehorn some of the most important things we do into the category of “being productive.”

Gordon wants to start the clock on the 3rd Industrial Revolution in 1960 at the start of commercial computers. That’s an arbitrary starting point; I would arbitrarily start it at the dawn of the commercial internet because by my calculation we are into year 20 of this 3rd upheaval.

“Both the first two revolutions required about 100 years for their full effects to percolate through the economy.”

While we’re discussing energy, Jeremy Grantham has said that the very rapid growth that he identified mostly have to do with the U.S., which is only 5% of world population. While there’s no doubt that the U.S. faces wrenching adjustments in education, entitlements and industrial structure, I do expect them to be made, eventually. But in the meantime, the outlook for the developing world has never been better – and Gordon doesn’t give sufficient weight to that. Beyond that, Gordon tries to use things like transportation speed to show that we’re losing the ability to innovate. The speed at which passenger travel occurred, he writes, “increased steadily until the introduction of the Boeing 707 in 1958. Since then, there has been no change in speed at all, and, in fact, airplanes fly slower now than in 1958 because of the need to conserve fuel.”

You can’t deny that the airplanes fly slower these days –

No, but that misses the point. We know perfectly well how to fly at three times the speed of sound, and the military does it every day. But it’s fuel-intensive and very costly. So we’ve chosen not to spend valuable resources on faster passenger travel. There are also environmental constraints. People don’t like sonic booms.

Anyway, the early adopters, people who flew in the Concorde, had to pay most of the costs and there weren’t enough people willing to do that to make it profitable. But it’s fatuous to think we never will do it or never could. It’s just that we choose our fights and we didn’t pick that one.

Eventually, that will change. Right now we have the physical capabilities to be energy independent in the United States. We’re choosing not to do it. Is that a good idea?

Well, first off, the six headwinds to growth that he identified mostly have to do with the U.S., which is only 5% of world population. While there’s no doubt that the U.S. faces wrenching adjustments in education, entitlements and industrial structure, I do expect them to be made, eventually. But in the meantime, the outlook for the developing world has never been better – and Gordon doesn’t give sufficient weight to that. Beyond that, Gordon tries to use things like transportation speed to show that we’re losing the ability to innovate. The speed at which passenger travel occurred, he writes, “increased steadily until the introduction of the Boeing 707 in 1958. Since then, there has been no change in speed at all, and, in fact, airplanes fly slower now than in 1958 because of the need to conserve fuel.”
progress of the last 200 years is due to cheap energy, which, he says, is a thing of the past. Is it?

No. Because fossil fuels have in fact been cheap, we haven’t tried to develop new sources of relatively cheap energy, so of course we don’t have them. How long do you think it would take to develop a safe nuclear reactor? One that doesn’t fall apart in an earthquake? Melt down in a tsunami? That’s impervious to terrorism? And that has multiple back-up systems in case something goes wrong – is that within the power of human imagination?

Sure, it’s only a matter of cost – and mass psychology.

Absolutely. That technology has been around for some time. For a while, we tried to develop it and then we stopped. But we could figure it out.

Isn’t part of the Gordon/Grantham argument, though, that productivity growth has slowed because the supply of further innovations has simply gotten too thin?

Well, what Gordon did was to follow convention by attributing the productivity surge of the last 250 years to three distinct industrial revolutions. The first included the cotton gin, the mechanized loom, the steam engine, the railroad, and the factory system. He dates it from 1750-1830, and I use 1776-1826 (choosing to break up American history into 50-year periods to reduce the temptation to monkey with the periods to get a desired result). The second revolution, from 1876-1926, saw the telephone, electrical transmission, audio and video recording and playback devices, electric appliances, the car, the airplane, radio, and even early TV.

And the third industrial revolution is computers and the internet?

Yes. For the sake of data analysis, I say the third epoch started in 1976, when both Microsoft and Apple were founded, but Gordon argues that much of the benefit of computers came earlier, and there is some validity to that if accurate credit card bills and military draft notices are what you think is important. Still others, like Kevin Kelly, the futurist and Wired Magazine founder, contend at least as passionately that it didn’t start until the beginning of the commercial internet, when computers were married with telecommunications [See sidebar.]

Now, essentially, as I understand the “sky is falling crowd,” the latest technological advances don’t hold a candle to those of the previous industrial revolution, in terms of their potential for improving the lot of mankind?

Well, Gordon’s essay is skillfully argued and offers many illuminating facts showing how profoundly the daily lives of ordinary people changed in the developed world between, say 1870 and 1950. Having made that transition from a relatively primitive lifestyle in which women, for example, spent much of their day carrying water to modern life, we aren’t going to again experience that magnitude of change, he argues. And there’s something to his thesis – another 50-fold increase in the U.S. standard of living over the next 250 years isn’t terribly likely. So he concluded that further improvements in the standard of living will be less profound and have a smaller impact on per capita GDP.

But the U.S. isn’t the world – and there are plenty of places in the world where people have barely begun to experience the second industrial revolution, much less the third. Women still carry water in some places. Did you notice the chart of long-term real per capita GDP growth I included in my critique?

The one showing it growing at a remarkably consistent rate all the way back into the 18th Century?

Exactly. A 1.8% constant growth rate from 1789 to 2012 [See below]. The thing to notice, though, is that despite the way the growth rate looks so steady over time, when I broke it down into the three industrial revolutions and the
periods in between, considerable variations in growth rates showed up – as well as pretty dramatic stagnation recently, which probably explains all of the hand-wringing. But it’s the lack of any visible relationship on the chart between industrial revolutions and growth rates that demands an explanation.

So what’s yours? Surely there is some connection between industrial revolutions and GDP growth —
My conjecture is that it simply takes a long time for cutting-edge, productivity-enhancing technology to be absorbed into the general economy — and that causes the benefits of any given breakthrough to be spread out over generations or even centuries. Imagine someone in a remote African village only now able to make a phone call, thanks to a cell phone, more than 130 years after Alexander Graham Bell. So it’s small wonder that the dates of industrial revolutions don’t line up neatly with periods of rapid GDP growth.

Let’s back up and talk about where economic growth comes from in the first place. Your chart starts in what, 1789? But if it started earlier it would have to show almost no GDP growth for centuries on end —
That’s right. At the aggregate level, there wasn’t much growth before 1800, as the great economic historian Angus Maddison showed. But at favored times in favored places, there was plenty of growth. Do we seriously think that Mozart’s Vienna of 1790 wasn’t better off than Vienna in 790, or 1290? Of course it was. People in Ancient Greece, Ancient Rome, the high Middle Ages in Europe, the Italian Renaissance, and the English and French Age of Enlightenment were all much richer than the people who preceded them. Nobody devotes tremendous energy to philosophy or sculpture when they’re starving. And all this occurred before 1800.

Why couldn’t that growth be sustained, then?
Each time that the growth occurred, it kept getting squashed back down again. Growth, and for that matter technological change, comes from an organic process of people saying, “What can I do to make my life easier? How can I accomplish more?” So economic growth is, arguably, an inherent property of the human species. But wars, natural disasters, artificial barriers to trade, to enterprise, to entrepreneurship, can slow down or stop growth, even make it run in the wrong direction. What wealth was built up during the periods I just named was mostly destroyed through wars and disease.

Then it’s not terribly comforting to see growth tailing off here in the U.S. When you broke up American history into four 50-year periods, plus a fifth period from 1976 to 2012 that is 36 years long, this contemporary period had the slowest growth, around 1%. What’s happening?
The U.S. has become a mature economy, and there’s a little bit of evidence that very rich countries grow more slowly. Something about substituting leisure for work. In the 1950s and 1960s this was seen as a major problem, and futurists wrote about a glut of leisure time. It didn’t materialize, and in the 1980s and 1990s we worked harder than we did a generation earlier; but hours worked and the percentage of people in the work force have both declined recently. So there’s a possible wealth effect on growth.

Maybe, but the majority of Americans haven’t been feeling particularly wealthy for the last five years or so.
Well, that slowing has taken place only in the U.S., which is the only place where we have decent historical data — and in a few other rich countries. The relevant growth rate for investors is the world’s growth rate, since they can hold global portfolios that take direct advantage of GDP growth throughout the world — in places that are only now starting to benefit from even the second industrial revolution, with a few remnants left over from the first one, 200 years ago! Just consider that China, which had a negative rate of growth between 1500 and Chairman Mao’s time, has four times the population of the U.S. and is growing faster than the U.S. ever did, except for a few scattered years in the distant past. But most future growth will not come from China! They’ve already achieved what economists (although not most ordinary people in the developed world) would call middle-income status. A lot of future global growth is going to come from what a Goldman Sachs study calls “The Next 11,” places like Indonesia, Nigeria, Turkey, and Vietnam. It’s a very exciting time to be in those parts of the world because they’ve never had a chance. Now they do.

Okay, but what fundamentally sparks economic growth, especially in places that have been lacking in it, basically forever? Places that have been lacking in growth are the victims of one force or another keeping them from getting ahead. People always have and always will try to make more money, to produce more goods, to leave their children some things that they themselves did not have. But something gets in the way — war or disease or bad monetary policy that causes a hyperinflation. Still, the natural course of things — and we have centuries of evidence to back this up — is for people to compete with each other to do more with less. That’s what growth is, and it’s not a big mystery. The mystery is when it doesn’t happen: Who or what is stopping it?

You don’t buy Jeremy Grantham’s argument that the disappearance of cheap energy is putting a lid on growth?
Oh, there’s little doubt that sharply higher energy costs have contributed to the recent stagnation in the U.S. economy. But he offers no evidence that it’s anything but a temporary — albeit large — reversal of the sort we’ve seen time and again in the commodities markets. And the recent run-up in commodities was unusual in that a lot of seemingly unrelated commodities moved up in price together.

There’s no reason to believe that the prices of unrelated commodities, each of which has its price uniquely set based on the ever-shifting tension between resource discovery, resource exhaustion, new extraction and production technologies, and substitution, will move in lockstep in the future as they did in the recent past.

You mentioned Deirdre McCloskey’s “great fact” in your FAJ piece —
That was what she called her realization that the monumental economic growth the developed world has experienced for the last 200-plus years had very little to do with “improved supply and demand efficiency” or any of the other conventional economic explanations. Nor did it have to do with private property rights, an explanation favored by many illustrious scholars. As she pointed out, “China had secure property for millennia before failing to have an industrial revolution,” and the rule of law and property rights existed in ancient Rome and in Mesopotamia. But, by contrast, in Holland and England between 1600 and 1800, there was an “obvious and historically unique improvement in the dignity and the liberty of the bourgeoisie.” In fact, she wrote, “none of the allocative, capital accumulation explanations of economic growth since Adam Smith have worked scientifically... None of them have the quantitative force and the distinctiveness to the modern world to explain the Great Fact...”

Then what does explain it, according to McCloskey?
The explanation that works, she say, is “Creativity. Innovation. Discovery. And where did the discovery come from? It came from the releasing of the West from ancient constraints on the dignity and liberty of the bourgeoisie, producing an intellectual and engineering explosion of ideas. As...Ridley has recently described it, ideas started breeding, and having baby ideas, who bred further.” The upshot is that the decision to save some of what one produces and invest it for the future is not nearly enough to explain economic growth that has been self-sustaining now for 250-plus years. Only an explosion of creativity and invention is.

Do you agree that ideas having babies — not capital accumulation — is responsible for the greatest increase of wealth and well-being in history?
Yes. I wish I thought of that metaphor myself. How great the Great Fact is can be summed up...
in one data point: The per capita GDP adjusted for purchasing power parity for the world in 2010 – $11,200 – was equal to the per capita GDP (in the same units) for the U.S. in 1929, when this country had the highest living standard in the world and was, by any reasonable standard, very much a developed country. This is mindboggling growth, yet we tend to take it for granted, so I included some ingenious data graphs from the Swedish physician and statistician Hans Rosling in my FAJ article to drive home the point. [See charts above.]

If the Great Fact explains economic growth in the past, is it also a forecast for the future?
Not necessarily. But developed country growth rates, as I said, have been amazingly stable for over two centuries, while developing countries’ have only accelerated. The data give virtually no hint of deceleration and creativity and invention seem to be accelerating further.

Let’s segue here into the environmental Kuznets Curve, which underlies your “greener” optimism.
The economist Simon Kuznets, in the 1950s, found that income inequality tends to increase as a country develops from poor to middle-income, but then decreases as (or if) the country becomes rich. This is the original Kuznets curve. Economists in the 1990s found that the same principle applied to environmental quality, which dips considerably as a country industrializes, then rises as the country becomes rich and people are willing to make sacrifices to clean up the environment. This phenomenon shows up in the data. Sulfur dioxide emissions in the U.S., for example, first rose as the country industrialized, and then fell dramatically in recent decades as environmental legislation was passed and a post-industrial economic mix substituted for heavy industry. Today, China is beginning to achieve better air and water quality standards after decades of degradation. My conclusion is that growth in the stage where middle-income countries become rich is good for the environment, because environmental protection then becomes affordable and almost universally desired.

Yet there has to be a social or governmental decision to create and enforce environmental standards, doesn’t there?
To clean up, say, the air, either the government has to regulate emissions directly, or it has to create property rights in emissions and allow trading to occur. The second solution is much fairer and more efficient.

A role for government, what? There are things that the private sector can’t do?
Mm-hmm.

Really, what role do you have in mind for government...
Government has to do plenty! Just less than it’s doing now.
Some people imagine that capitalists, or libertarians, whatever you want to call people who favor small government, are actually opposed to any role for government. That is not the case (setting aside a few ridiculous extremists). Economics says that there is a role for government in providing public goods, which are goods that everyone benefits from whether or not they pay for them, and in managing externalities. An example of a public good is a fire department; government should put out fires because, if that were done by private enterprise,
people might not pay for fire protection, knowing that other people would keep their house from burning down out of a fear of the fire spreading.

And by externalities, you mean? An example of an externality is air pollution, where a transaction between two private parties (say, the buyer and seller of whatever a factory produces) harms a third one (me, when I try to breathe the air). If air pollution isn’t regulated or controlled in some way by the government, everyone will pollute as much as they feel like, because it’s profitable to pollute – you are consuming a resource but not paying for it.

Okay, if we are headed towards a world that is fewer and richer and greener, yet still not so few that natural resources cease to be attractive investments, aren’t commodities good things for investors to be tucking into the portfolios they manage? Commodity investing is very complex.

Spoken like a man from Chicago. Why? Commodity futures are not a pure capital asset like a stock or a bond but are derivatives that have to equilibrate three markets: (1) the spot market for the physical commodity, (2) the insurance market in which sellers lock in a price so they can be profitable, and (3) the storage market, which arises from the fact that the supply and demand for a commodity are never exactly matched up. So there’s an inventory or storage market that is created by leaving the commodity in the ground until it is needed, or else storing it in a warehouse.

The end result of all these interacting forces is that some commodity futures positions have a higher return than the “spot” or physical commodity, and some have a lower one. It takes careful analysis to decide exactly how to position a commodity portfolio, taking into account your forecast for spot prices as well as for the insurance and inventory services that are implicitly priced through the commodity futures market. I told you it was complicated.

In other words, “Don’t try this at home.” So let’s return to the topic of long-term economic growth. Do you have a specific forecast? I’m not forecasting the much-desired 3% rate of real GDP growth in the United States because our population growth is only 0.75% per year. If you add that to 1.8% real per capita GDP growth, that’s a total of 2.55%. That is my forecast unless the population growth rate changes materially.

Okay…but I thought you were an optimist. A 2.55% real GDP growth rate in the U.S. is enough to bring about massive increases in prosperity over the long run, at the same 1.8% real per capita rate of increase that we’ve experienced in our long history. Isn’t that enough? We Americans are not trying to build an empire. We’re trying to get personally more prosperous, so we care about real per capita growth.

Besides, investors don’t need to worry about U.S. growth being a little slower than it used to be. As I said, investors are exposed to global growth. Even if they only invest in the S&P 500, those companies get about 46% of their sales and 40% of profits from outside the U.S. And investors should not hold only the S&P 500. To be fully exposed to the growth that I’ve been talking about, they should hold global portfolios, which include developed, emerging, and frontier markets.

Do you have other advice for investors? Natural resource-related equities. Energy stocks, both conventional and alternative. Water. Farmland, agriculture stocks and food technology – fertilizer, GMO foods, whatever will enable farmers to grow more food and allow engineers to expand the amount of arable land. Minerals and metals. Real estate will recover and gradually move to new highs. Right now, while the governments of the world work out their debt travails, I’d avoid bonds except for the very shortest durations. Human capital – the returns to labor – will benefit more than financial capital from the growth I’ve been describing, so if you can invest in human capi-
And just how do you suggest doing that – given that, in a free society, workers own their own human capital, in the sense of having the right to sell it to the highest bidder or whomever they want?

It’s easy, but companies that find ways to make a profit educating large numbers of people are a start. Those could include companies that educate their own workers as a sidelines to their main business.

Great, Larry. Thanks for cheering me up. Any final thoughts?

You would add that! But thanks, again.