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The Leading Edge
HARRY DENT [UNFILTERED]

THE DECEMBER ISSUE

Inside This Issue

The Unprecedented Economic Explosion Since the Late 1800s...

And We're Only Half Way Through It!

If you haven't figured it out by now, I'm a cycle guy and history buff (perhaps even more so than a demographic expert and economist). You couldn't possibly ignore cycles if you study history far enough back, especially if you focus on facts rather than ideology.

That's why, in this final *Leading Edge* edition of 2018, I'm going to introduce you to another historical genius who focuses on the facts: Hans Rosling.

Unfortunately, he passed in 2017, but his son and daughter-in-law founded Gapminder (www.gapminder.org) and published his research in 2018 in a book appropriately titled, *Factfulness*.

If you put my historical research together with his, you'll be smarter than almost all world leaders, business titans, scientists, and top economists. So will your kids, especially if you give them Rosling's book and my most recent book, *Zero Hour*.

Factfulness starts out with a simple, 20-question test presented to global leaders. They flat out flunked it.

How would you do? (You can take the test on gapminder.org.)

Two of the questions are:

1. In the last 20 years, the proportion of the world population living in extreme poverty has…

    a) almost doubled
    b) remained more or less the same
    c) almost halved

2. How many of the world's one-year old children today have been vaccinated against some disease?

    a) 20 percent
    b) 50 percent
    c) 80 percent

What would you answer in each case?

If you said "c) almost halved," and "c) 80 percent" then you're in the top 7% and 13% respectively.

The trouble is, most people are far more pessimistic about the world than the facts and cycles prove out.

But why?

Because people have all types of natural biases. And the news focuses on the bad things way more than the good. That's what sells.

Most of all, people just don't know the facts and they don't know history.

We're rarely taught these things in schools.

And people have even less knowledge of the very clear cycles we can see when we look at history than they do of the history itself (in this issue I'll show you why the most important trends and cycles are still very positive into 2150).

All cycles have their upsides, and their downsides, particularly while new ones emerge and old ones mature. So, growth and progress don't happen in straight lines.

We face a great reset and deleveraging in the markets and world economy in the next several years, largely thanks to the 40-year generational cycle of spending and the 90-year technology cycles since the Industrial Revolution.

All growth, in all of history, in every aspect, is ultimately both exponential and cyclical. Yet people tend to think incrementally and in straight lines… that's the ultimate error.

Hence, when we get big, exponential and bubble-like surges, we also get great financial crises to reset and then grow exponentially again.

I may be one of the more bearish economists in the near term, but I have been the most optimistic since I started forecasting in the late 1980s and saw the massive Baby Boom hitting the economy.

As is anyone who studies long-term history, I am well aware of the exponential nature of growth. So, I've always been very optimistic longer term.

The bigger picture is clear: We've seen an unprecedented explosion in human population and wealth since the late 1800s. Actually, "unprecedented" is an understatement. We've seen more economic progress in the last 120 years than all human history combined!

And my most powerful cycles say we're only half way through it!

I'm also an expert on historical bubbles, and the largest one I have seen is not the stock market or even cryptocurrencies. It is…

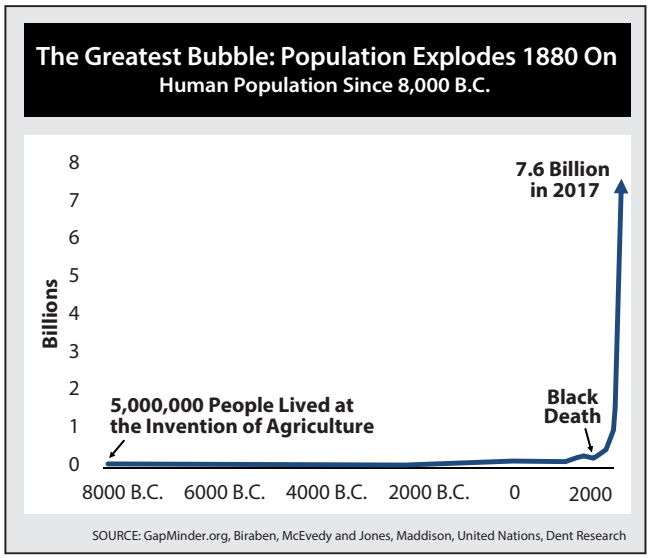
The Greatest Bubble EVER: Human Population… and Prosperity

If you have anything more exponential than this, I want to see it.

And this population bubble isn't projected to peak until at least 2100!

The population of the entire earth was estimated to be 5 million at the dawn of the agricultural revolution in 8,000 B.C. (about 10,000 years ago). That's the current population of Alabama!

The human population originally surged as it migrated out of Africa north and eastward, around the oceans and up riverways starting about 80,000 years ago until we populated the whole world with the Americas last.



Back then, we could increase numbers rapidly because there was always new virgin territory to exploit. And the most adventurous got the best spoils (and likely best ass-kicking), as always.

After the last ice age, which decimated the population, the greatest mass was pushed down into Southern Asia. That's where the greatest mass is still today – between Pakistan and China and Southeast Asia, including India of course.

The last major wave of migrants moved into North and South America after the melting glaciers allowed people to trek across a land bridge between Siberia and Alaska.

By the dawn of the Agricultural Age, there was no new virgin lands for hunters and gatherers. We had to settle down and farm crops and domesticate animals to stay alive and prosper.

And we were in a very warm (and predictable) cycle that was a fertile environment for such a revolution.

Yet, the population grew slowly after that revolution because of "The Malthusian Trap."

On fixed land, with slower technological progress, higher births only created scarcity of food and so lead to more deaths.

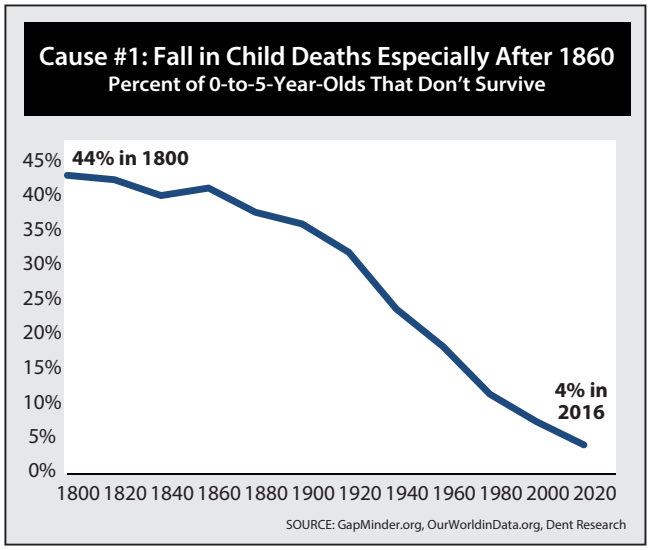
That suddenly changed with energy-powered technologies, especially oil and electricity, that lead to rapid **urbanization** and so access to much broader and better jobs and infrastructures.

Population and wealth exploded around 1880 forward and the world has never been the same – especially for the many species that have disappeared due to our success and domination of natural resources.

The first trend spawning a rising population was falling child mortality. It has dropped from 44% dying before age five in 1800 to a mere 4% today. In 1800, you had to have five kids just to end up with two or three surviving childhood.

And agriculture and lower education made more children inexpensive labor for the family farm, so why not have more.

The average number of children per female has dropped from 5.8 in 1800 to 2.5 today, heading towards 2.0 or lower in the future. In most developed



countries that average is in the 1.2 to 2.1 range, with 2.1 the replacement rate.

That's why we have demographic slowing in the developed world. The emerging world will follow as it urbanizes and becomes wealthier.

It was still five kids per woman as late as 1965 because most people still lived in rural areas in the larger emerging world back then.

Since then, that average has been cut in half, from 5 to 2.5, as emerging countries have dominated urbanization and their birth rates predictably tumbled.

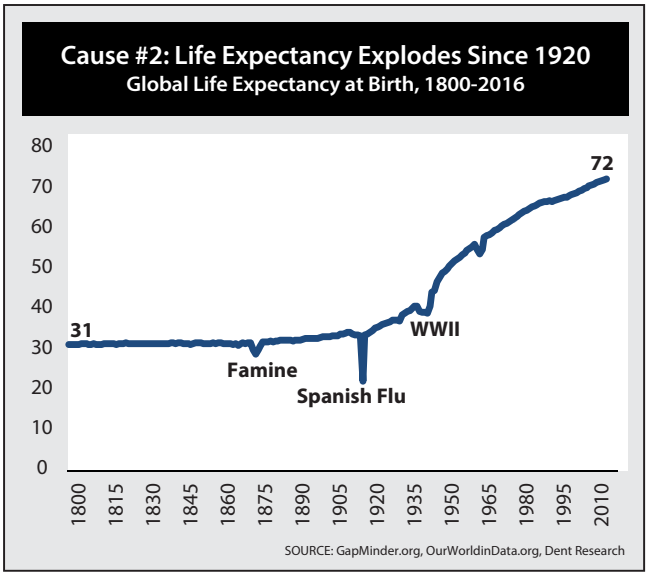
With near zero infant mortality rates today, and the fact that most of us don't live on a farm, we can have about two kids per couple and sustain our population.

The bigger trend in population growth has come from exploding life expectancy, especially since 1920!

People were no longer dying so early, at the same time as babies weren't dying so young.

That's been called the "demographic dividend," and oh was it for the global economy!

This next chart is not only a doozy, it's a miracle in human progress…



What would you rather have: a good bit more money or live twice as long and grow old to have grandchildren?

The truth is that rising urbanization and incomes is precisely what most drives longevity.

Going Back Even Further

I'm going to go back even farther to make a point here...

Life expectancy at birth was estimated to be 19 in Cro-Magnon or cave man times 30,000-plus years ago. That's the age at which most kids are graduating high school today.

In the time of Jesus, 2,000 years ago, people lived to 26 years on average. That's the age at which most of us are getting married today.

So, life expectancy has grown at a snail's pace for thousands of years.

In the chart, you can see it was still only 31 globally (more like 40 in developed countries) in 1800 and still only advanced modestly for that century. After the Spanish Flu and World War I it finally accelerated from 1920 forward.

Today, life expectancy is 72 globally and 81 for developed countries. It's around 79 for the U.S.

We have more than doubled our life expectancies since 1800, with most those added years coming since 1920. In fact, most of our life expectancy gains came between 1915 and 1955 in the U.S. Just four decades!

Again, most of that, at first, was from reducing child mortality. The gains in the U.S. were more like 15 years for surviving adults in the last century – still a big deal.

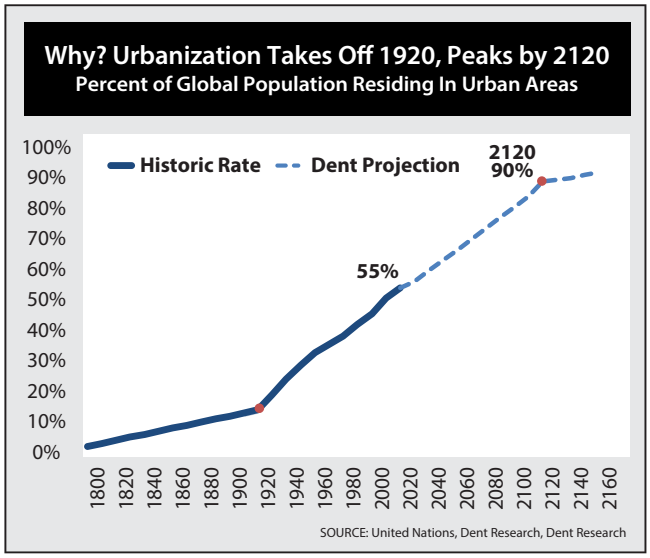
However, that progress in child mortality did have a very big impact on our economy because those were young people that grew up to be adults and contributed to everything from innovation when younger to peak spending and incomes into mid-life (peaking at age 46-47 today).

The future gains will come more from technology, like biotech, and have a bigger impact on lifespans and quality of life, as well as for the economy.

But here's the biggest insight: It wasn't some sudden medical miracle that caused this increase in life expectancy… although there were many such innovations in the past century or two. It was **largely urbanization and greater access to higher paying jobs, sanitation and infrastructures, especially electricity** (example of major impact of new technology) that did it.

It's hard to die working in a factory or office with a healthcare plan. It's much easier to die working more dangerous and back-breaking jobs outside on the farm or in a mine.

So, here's one of the key charts for me…



The first major country to accelerate urbanization was England in the early 1800s. It led the Industrial Revolution, which required workers and materials to be centered in cities for scale and at ocean ports or on major rivers to access materials and energy. Western Europe quickly followed, then North America, Japan, and now most of the emerging world led by China.

The world was a mere 3% urban in 1800.

It accelerated after it hit 15% in 1920. Today it is 55% urban and heading rapidly towards 90%, which it should reach by around 2120.

This is a very projectable trend!

Most developed countries were largely urban by the 1970s. South America is already 80%-plus urban, despite being largely in the emerging world.

China has led the way and has rapidly moved to 59% urban, mostly just since 1980 (although too fast by my estimates, with major overbuilding/growth challenges in the coming decade before it can grow again).

It's about Asia and Africa ahead.

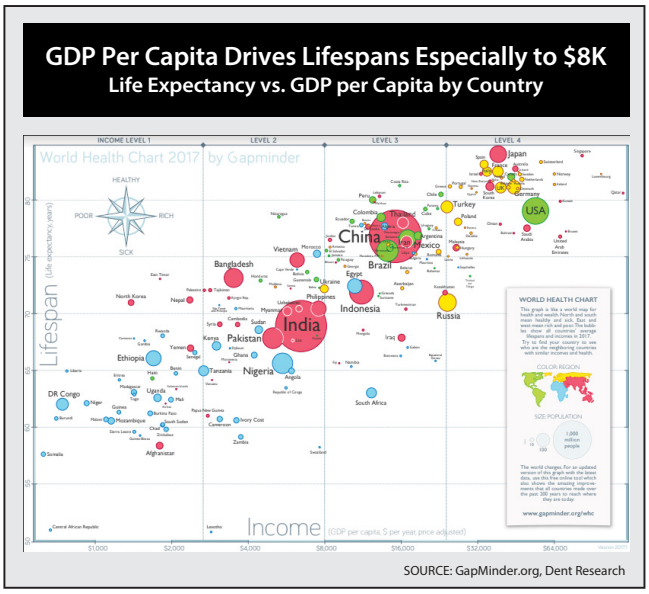
What happens when the most populous country of the future, India, goes from 34% urban (where it is today) towards 90%?

It becomes the next China!

This next chart is my favorite from Hans Rosling and the *Factfulness* book.

He became famous for his TED talk that showed a dynamic, moving version of this progression over time…

Coolest Presentation I Ever Saw!



The acceleration in lifespans and economic progress has been especially strong since 1920 because the larger emerging countries followed the developed ones who started urbanizing rapidly many decades ahead of them.

The lowest lifespans today, of around 58 (still about double the average in 1800), rise to 76 just by moving countries from that old $2 per day or less rural poverty to just $22 per day (that $8,000 GDP per capita).

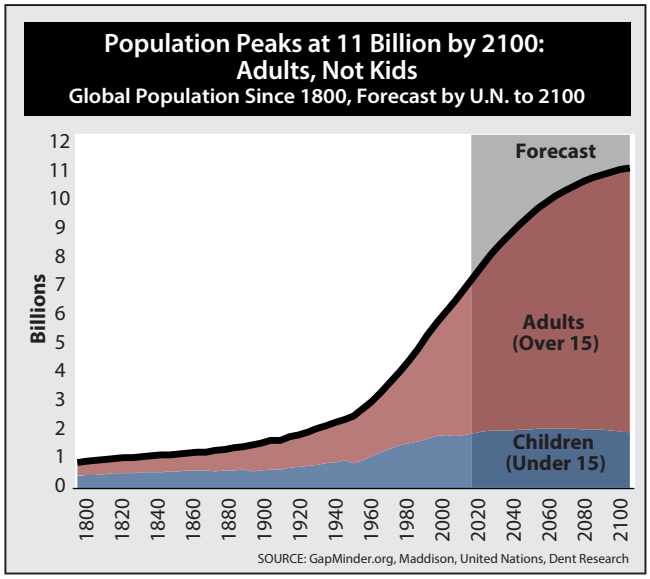
That's typical of more emerging countries today and it adds 18 years to life!

After that mark, life spans grow more slowly with higher incomes. You get just six more years by progressing from $8,000 to $64,000, or $175 a day.

Japan has the highest life expectancy, at 84. I don't know if it's the sushi, the seaweed, or the sake, but they're doing something right.

Countries like India are below the trend line, as is the U.S. China's right on it and most of Europe is above. Russia is the worst… they tend to drink

themselves to death. Ever seen the sun shining in a Russian movie?



When all the factors in demographics and urbanization are factored in, the projection is that global population will peak around 11 billion by around 2100.

The more important insight is that the growth in the future will come from adults, not kids as in the past!

The under 15 population will be stable around two billion into 2100. That's another question people flunk on the *Factfulness* test.

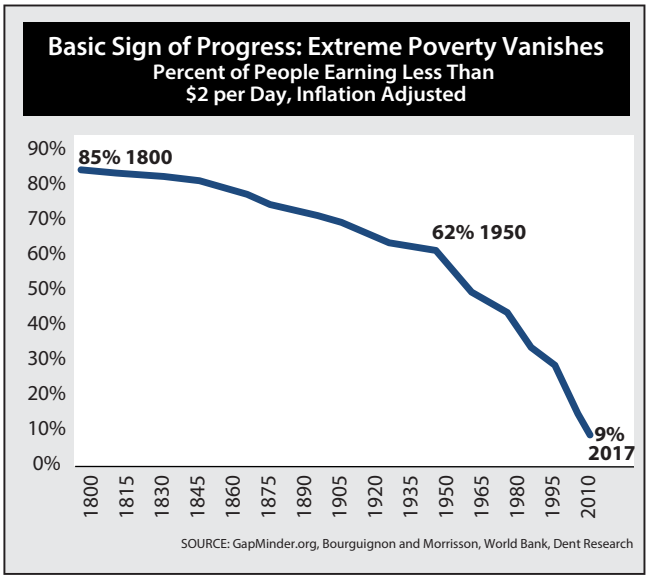
I will show later in this issue why I think lifespans will accelerate again, and more impactfully, not from falling child mortality.

I think the peak in population will be higher and come more like 2120-2150 because there will be less people dying than currently projected. Such older people will stay in the workforce much longer and contribute much more to economic growth.

Little-Noticed Basic Signs of Progress

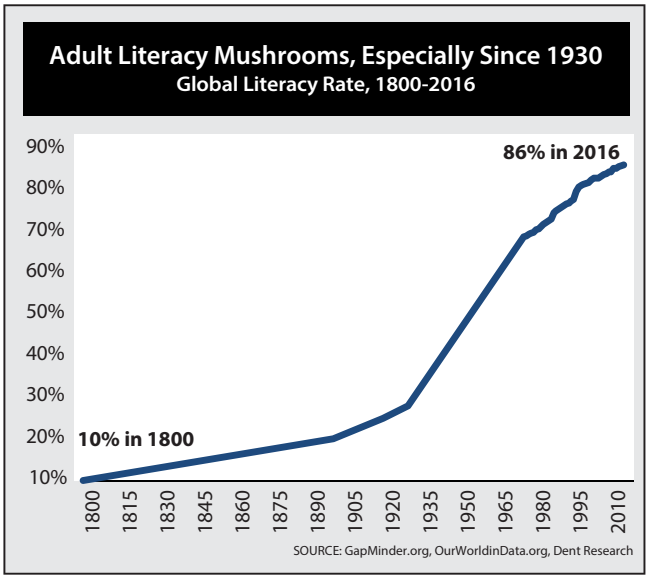
Here's some more of the reasons that many people flunk the test in *Factfulness*: We think the emerging world is poorer and has made less progress than it has. And we take for granted the standard of living we have today in developed countries, which is 10 times what we had just a century or so ago.

The most basic sign to me is the near disappearance of extreme poverty, mostly since just 1950: the classic $2 or less a day in pay. This was the basis of that question that only 7% of people got right.



The global population living on $2 or less a day was a whopping 85% in 1800. It has fallen ever since, accelerating after 1950 when it was still 62% to just 9% today!

Even I would have underestimated that one.



China had a lot to do with that (if they can now just keep their people from dying from the smog).

Here's another very basic one: adult literacy was a mere 10% in 1800 and has steadily risen and accelerated since 1930 to 86% today.

Legal slavery has been annihilated, something that is more obvious to most people.

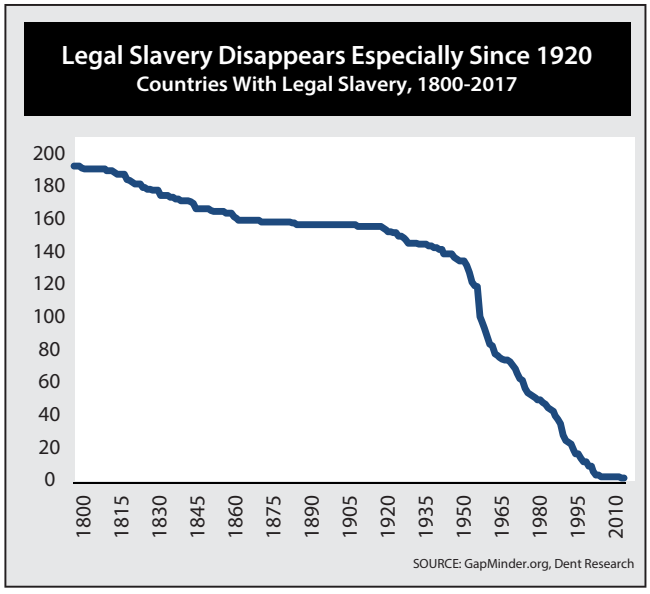
The great majority, or 195 countries, allowed it in 1800 (even in Africa). The number declined more rapidly after 1920, and now it's down to one: Mauritania (although there are still slaves illegally in several countries including India)!

And finally, women's rights, as signified most by the right to vote, have been growing since the turn of the century, accelerating the most since 1945.

U.S. women got their right to vote in 1920.

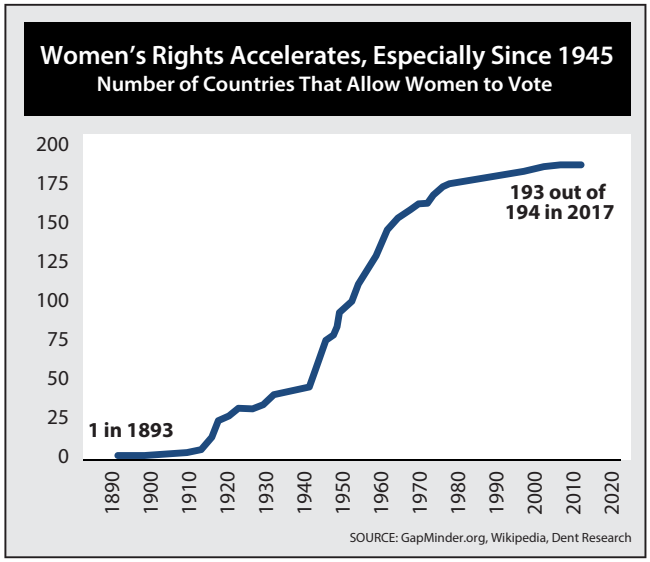
Black men got to vote long before white women.

NOTE: There is a treasure trove of charts on many factors of progress in the *Factfulness* book. I've only touched on some of the most dramatic and basic ones here.



The Most Powerful Cycle: 500-Year Mega Innovation and Inflation

What do I mean by mega innovations? Not mere autos or railroads or TVs. I'm talking about things



that literally changed the way we live and operate, like the printing press, which totally changed communication, literacy, and learning. It made the Bible mass available and launched the Protestant Reformation in Europe. It was invented in 1455.

I'm talking about the computer, which was invented almost exactly 500 years later in 1946!

Gunpowder, which changed warfare, world power, and politics, was first invented in the late 1200s in China and used more for fireworks. But it emerged in Europe for artillery, guns, and major warfare in the mid-1400s. Endless warfare followed in Europe that reshaped the power structures there.

The A-bomb came 500 years later in 1945 and brought a rapid end to World War II with no major world wars since.

Jet airplanes that can circumnavigate the globe in less than two days came 500 years after the first long-distance tall sailing ships that Columbus sailed to first discover America and Magellan sailed to circle the world.

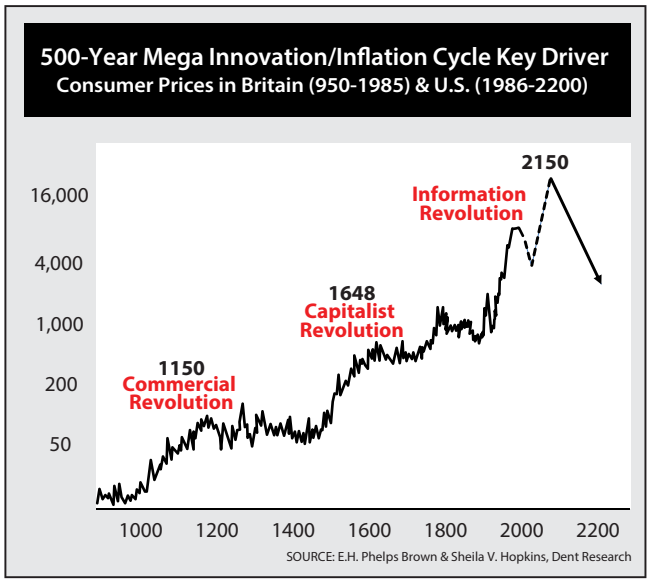
That's what I mean by MEGA innovations.

Major innovations in the plow and crop rotation came around 950 A.D., 500 years before the big ones in the mid-1400s.

But the first people to really notice this 500-year cycle weren't charting innovations. They were charting

inflation in consumer prices in England.

Thanks to E.H. Phelps Brown and Sheila V. Hopkins, who created this chart (which has been extended to the U.S. since 1986).



There was a clear peak in inflation momentum around 1150, after the Roman Empire re-urbanized after disintegrating back into the hinterlands in the Dark Ages.

Then the next peak around 1648 followed on the heels of the Elizabethan Golden Age from 1558-1603.

The next peak should be between 2145 and 2150… a long time from now.

This current growth cycle started around 1896, with the lowest inflation rates in the last 200 years… and that's around when this unprecedented economic explosion began – No accident! I'll explain in a minute what inflation has to do with innovation, but first…

How could we currently continue to have rising inflation with no growth in young people who most drive inflation with their costs to raise and incorporate into the workforce?

How could we have continued rising inflation as clear demographic cycles suggest that economic growth and inflation is projected to continue to slow around the world, even in emerging countries ultimately?

The aging of Japan has already seen mostly zero inflation and growth since 1996, despite the most money printing (100% of GDP) in a time of quantitative easing by central banks.

That was supposed to cause inflation and didn't.

The whole world is following Japan into this "demographic blackhole" of slowing and deflation, one country after the next, with Europe and East Asia the worst in the coming decades.

There's something very important that most economists don't understand about inflation. They see it as bad if it's above 1% to 2%. But the truth is that inflation has been a long-term trend and is the BEST leading indicator of progress.

Those kids that cost so much to raise, and cause inflation at first, also innovate new technologies and trends and then they grow up and become more effective workers, creating growth and moderating inflation trends again from the rising productivity.

Inflation is the best indicator of progress and a rising standard of living. Deflation has seen the worst downturns and depressions.

The entire Dark Ages was a 500-year bear market in the economy after the fall of the Roman Empire and a period largely of deflation!

This is a big reason why I study longer term cycles beyond our lifespans. They give a sense of longer-term direction, but more importantly, bigger cycles kick in and effect more human-scale cycles – like this unprecedented economic explosion since 1880.

We had a 500-year depression between 450 and 950 AD.

Stocks in Europe saw a 69-year bear market between 1720 and 1787.

We could see little progress in stocks in most of the developed world between 2019 and 2080 due to larger cycles.

The most important insight of this mega cycle and the correlation of inflation and innovation/rising living standards is that the root cause of inflation long term (versus wars and natural disasters/

shortages, etc. shorter term) is the most important and little understood principle of economics: **the specialization of labor**.

I once heard a speaker say that 95% of people are a genius at something. The key is finding that talent and focusing on it.

Malcolm Gladwell in *Outliers* had a seminal insight: It takes about 10,000 hours of immersion in an area of expertise to master it (roughly analogous to a college and master's degree).

That's about how long it took me, with my research in the 1980s, to come up with my first breakthrough indicator, The Generational Spending Wave (a 46-year lag on births to forecast booms and busts in the economy decades in advance).

The simple, but powerful point is this: people who specialize more in what they do best, contribute a lot more and make a lot more money. They must delegate more tasks to those who specialize in what *they* do best and that's the root cause of inflation – "outsourcing," as businesses call it and paying more for things you buy from others. That's why it's a sign of progress.

Yes, that causes your cost of living to go up, but your incomes go up much more, so your standard of living rises despite inflation. It's a win-win for the economy overall.

Adam Smith first explained this concept in his breakthrough book in 1776, *The Wealth of Nations*. He explained specialization at the level of nations, but it also applies even more so at the level of individual workers and that's where new technologies and urbanization come most into play.

Technologies like the steam engine, and the factories it spawned, allowed people to specialize more and forced them to urbanize.

Portable computing and the internet are obviously huge for this and almost instantly more global.

It's ultimately urbanization that allows people to move into larger, more concentrated areas where specialization can thrive and there can be an increasing array of jobs. Most people in the small town my parents grew up in have a few jobs or businesses due to a lack of scale of consumers. The "Little House on the Prairie" was the ultimate jack of all trades lifestyle.

Technologies and urbanization are the key drivers of specialization, which is the key driver of our rising standard of living. Both of these have cycles and trends that are very predictable.

It also takes more money and credit to facilitate more transactions, so money supply has to grow beyond normal demographic growth.

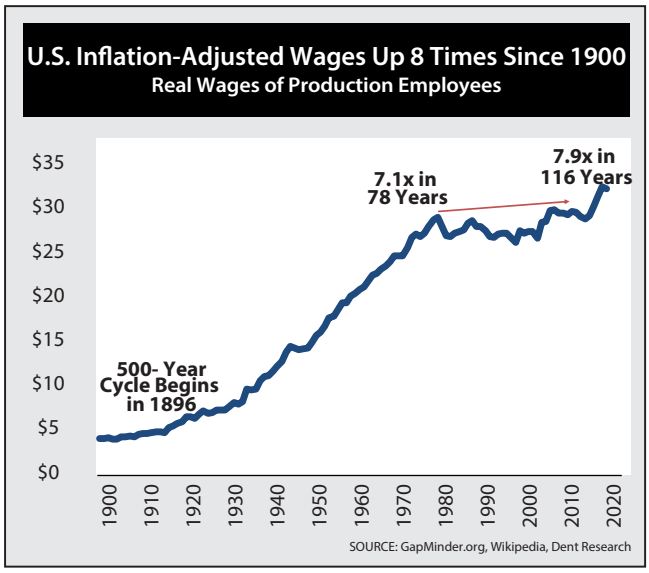
Gold bugs love to show their chart of the falling purchasing power of the dollar. They adjust for the rising number of dollars and say they now purchase less. $1 in 1900 is now 3 cents, or so they say.

What utter B.S.!

The intended point: governments are debasing our currencies and robbing our purchasing power and our standard of living.

Really?!

So how do they explain this next chart…?



In the early rising stages of this 500-year mega innovation and massive inflation cycle we have seen the greatest explosion in our standard of living in history – by far!

This eight-times gain adjusted for inflation was

largely made by 1978. Just eight decades!

The truth is, governments *do* debase our currencies at times, like recently when wage gains have flattened. They print money, not to accommodate more trade and transactions, but to stimulate the economy when it slows or to prop up a failing banking system after it made too many bad loans. They use it like a **financial drug**.

How does taking more and more drugs to stay high or fight pain work out in human life?

Not well!

We've seen the greatest global debt bubble in modern history, and the greatest money-printing for purely stimulus. That has created the greatest bubble in financial assets, from commodities to stocks to real estate – and *that's* why we're on the verge of the greatest financial reset and depression. It's necessary to deleverage debt and deflate bubbles.

Like wars and scarcities in basic goods, financial asset inflation is BAD inflation.

But in normal times, greater money and credit creation to facilitate specialization and trade is a positive thing and it's only possible when technological innovation and urbanization make such specialization in work and in nations greater.

This 500-year mega innovation and inflation cycle tells me two things.

1. **This era of unprecedented progress is NOT over, although it will stall for years and decades in many developed countries due to excessive debt, financial asset bubbles, and demographic aging until technologies allow our lifespans to expand again…**
2. **Our lifespans will expand dramatically again in future decades, likely from by the early 2030s forward.**

Before we get to that, let's look at some concrete and projectable cycles and trends that point towards greater progress, especially into around 2150… when your great grandkids will likely be alive.

Urbanization, Globalization, and the Grand Cycle Convergence

I'm going to start with urbanization because it's the most central trend in this rising half of this powerful 500-year cycle.

The world has never urbanized like this and even at the height of the Roman Empire we were still massively rural.

More than a decade ago, I started analyzing the increase in GDP per capita versus urbanization rates inspired by another (now deceased) stellar, unbiased, fact-based researcher – Angus Maddison.

I was shocked when, while doing research for an interview with a major Brazil magazine, I found stats showing Brazil was already 86% urban.

What!?

I had thought much of the population there was still living in the Amazon jungle, hunting with blow darts.

Then I remembered discovering on a trip to Manaus at the center of the Amazon that even the indigenous people in that broader area had entirely abandoned the jungles. They told me, "Everything is struggling for survival and is pissed and has a stinger!"

Before that, I'd focused more in developed countries that have long been fully or near fully urbanized. There, it's the aging of new generations into peak spending and incomes that is the biggest driver of growth. But in emerging countries it's foremost urbanization that drives growth.

Moving an uneducated person from a rice paddy to a major city where they can become a taxi driver causes GDP per capita to go up as much as three times!

I was able to document this in China, India, and Brazil, the three largest emerging economies.

That secret emerged from Maddison's documentation of the rising rate of real (inflation-adjusted) GDP per capita PPP (adjusted for cost of

living, which is lower in emerging countries) and in a broader definition of international dollars to take out currency fluctuations of the U.S. dollar.

In all but a few cases, this is a straight-line and highly projectable trend.

We can track and project the GDP per capita PPP for any emerging country in the world… and they vary in degrees, speed, and rate of GDP per capita growth (or the slope).

How many economists tell you this (or even know it, for that matter)?

Brazil is now 87% urban and is at $15,400 GDP per capita PPP. That's about as good as it will likely get. Even at 90% in more normal times it would project about the same. Now it will grow more modestly with its demographic trends that peak around 2035.

That brought my second insight: Most emerging countries won't become as rich as the developed ones because they came later to the party and there are generally less rewards for that, as in any innovation curve.

China is 59% urban with $18,369 GDP per capita today, projecting to $27,000 at 85% urban, about half of most developed countries.

India is the other large Asian country that is only 34% urban with $7,435 today. It projects similar to China, and even a bit higher, but is still a bit too early to call… especially given the strong bubble economy currently.

India and China are examples of the higher end of emerging country development potential.

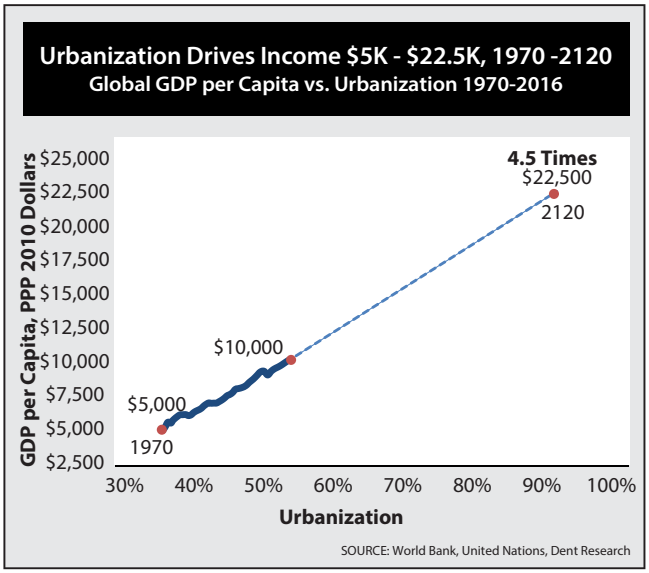
Indonesia is a great middle-of-the-road example, similar to Brazil. It's 55% urban, right at the global average, with $13,040 GDP per capita today. Projections take it to $19,000 at 85% urban.

Kenya, in Sub-Saharan Africa, is an example of one of the lowest in urbanization and income potential, at only 28% urban and $3,746 GDP per capita today, projecting very roughly to $7,200.

And as for the exceptions...

The Tiger countries – Japan, Singapore, South Korea, Taiwan, and Malaysia – have an S-Curve acceleration in GDP per capita, which is what's needed to hit the $30,000 to $60,000 levels that will make them a developed country. Even China and India don't project quite that... but they have massive populations and will become the center of the economic world into the top of this 500-year cycle (another of my longer-term cycle also favors Asia into that time frame, about which I'll discuss more shortly).

The important point here is that global urbanization correlates even better on a straight-line trend with rising GDP per capita and is projected to go up to $22,500. That's 4.5 times from 1970 to when urbanization peaks around 2120.



Here's another stab in the heart of people who think the world is going to hell in a hand basket, or economists who think no one can predict the future past the next major election.

Today the world is 55% urban with a GDP per capita PPP of about $10,000.

Recall, it was 3% urban in 1800 and 15% in 1920, when things started to accelerate.

It was $5,000 in 1970 and is reliably projected to be around $22,500 when urbanization reaches maximum 90%. That's 4.5 times from 1970 to 2120.

That's not as fast as it took developed countries like the U.S. from 1900 to 1978, but the early birds do get the worm. They grow faster and into higher value-added industries, as the Tiger countries did in East Asia.

But all developed countries now are aging in demographics and are mature in urbanization. There are a few exceptions on the demographic side, but they're all smaller countries, like Australia, Israel, Singapore, New Zealand, Sweden, and Norway.

It's the emerging countries, especially in Asia, that will dominate urbanization and demographic growth trends in the many decades to come.

That's **where investors and businesses need to concentrate.**

What is more natural than aging developed countries, with high incomes and even higher wealth, investing in the growth and infrastructures of emerging countries – like parents and grandparents investing in their kids!

A business friend in India told me: "You will be able to build parking lots non-stop in India for the next five decades." The only thing we can build in most developed countries now is nursing homes! That trend will be straight up into 2045 on an 84-year lag to the peak Baby Boomers in the U.S.

Few will see that coming.

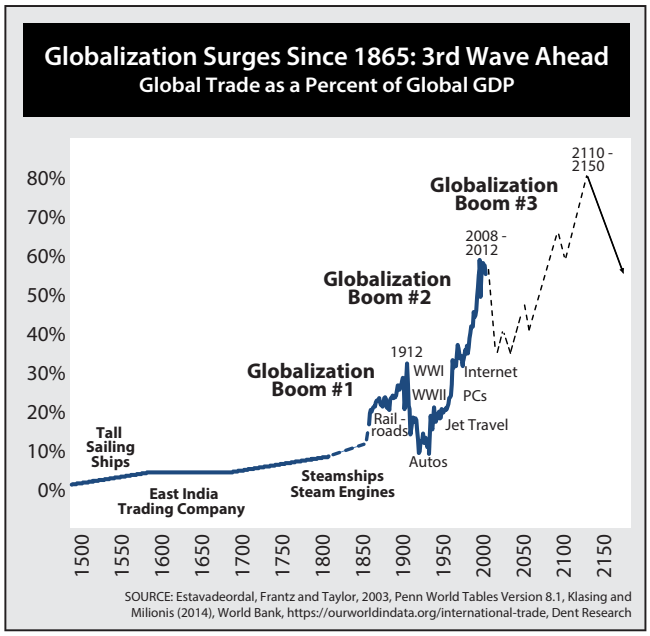
The next trend I want to talk about is globalization – especially since we have such a backlash against it after it has progressed the fastest in history since World War II.

Like urbanization and specialization of labor, technologies drive global trade. It took steam ships just to move the needle around 1865.

This chart not only shows this trend didn't first accelerate until the late 1800s, it shows we've had a major backlash and cyclical setback before.

Remember my mantra: growth is both exponential and cyclical.

The stronger the boom or bubble, the stronger the regression or deleveraging.



It's like our natural cycle of being awake and functional 16 hours a day and sleeping and restoring for 8 hours. If you think you can function without resting, try it. Sleep deprivation is an effective form of torture.

Steamships connected the world across oceans and through riverways. Railroads more massively united countries and land continents. That launched the first great globalization surge from around 1865 into 1912.

The great tall sailing ships in the late 1400s and even the first financed overseas trading ventures in the early 1700s only saw minor progress as they were too small a trend.

The first crash in global trade started for obvious reasons: most of the developed world was fighting in World War I from 1913 to 1918. Then the Great Depression hit in the 1930s, with rising trade tariffs that both helped spark it and made it worse (strong parallels to today and the near future along with curbs on immigration).

Then there was World War II, the greatest in history.

Global trade as a percent of GDP dropped from 30% to around 10%. That's huge!

Note that globalization chart above adds imports and exports to get total trade and that is actually double counting as each export is another's import.

The truth is that global trade rose to around 15% and dropped to around 5%.

After World War II we saw the next great wave of globalization, even steeper, and that has taken us to around 60% (30% in reality).

It could fall back to 30% to 40% as global urbanization and middle-class trends start to peak in the next century (15% to 20% in reality).

Since the 2008 great global recession, it has started to fall again, and I see this as a trend that could take decades to sort out. Nationalistic sentiment is increasing across the globe.

The current trade war between the U.S. and China is not just a short term spat and adjustment. It's the battle for global leadership in the future!

That's one reason China isn't likely to give in for real and why Jack Ma of Alibaba predicted this would become a two-decade-plus trade battle… I agree with him.

But we will come out of this one, and with continued urbanization and demographic growth in the emerging world we'll see only higher globalization towards something like 80% to 90% (40% to 45% in reality) by sometime between 2120, when global urbanization peaks, and 2150, when this powerful 500-year cycle peaks.

The internet, jet planes, and many other technologies have rapidly brought the world together and it naturally creates a clash among many different cultures with different values in different stages of development. We're basically having a global "racist" crisis, rich vs. poor, Christian vs. Muslim, Sunni vs. Shia, black vs. white, and red vs. blue politically.

I see the world realigning politically around more common cultures and religions before we can network back into a stronger-than-ever global economy with ever more powerful technologies ahead.

Brexit is just one of the early signs, as are Trump's trade wars.

We could see the U.S. break into blue and red regions or even countries; the eurozone more into northern and southern alliances; the middle East could restructure to put Sunnis and Shia together in separate countries, otherwise there'll never be any harmony there. And so on.

This will all shake out to be a good thing, but will cause a lot of political and social turmoil – as did WWI, the Great Depression, and WWII in the last great globalization reset.

But again, all the key long-term cycles I track point towards strong growth continuing longer term into around 2150, which I will cover ahead and summarize at the end. It's just that we have major demographic, debt, and political resets, and a big "detox" to go through to prepare for the great third wave of globalization, urbanization, and growth ahead.

The Last Big Bang: The Industrial Revolution – "When Harry Met Sally"

I have a 250-year cycle for major political and social revolutions.

The last one saw the advent of democracy itself, starting in the U.S. in the late 1700s.

Was that an important trend?

You bet ya!

Before that came the Protestant Reformation, which broke the iron-clad power of the Catholic Church, which is still a powerful divide, especially in Europe today.

Well, it wasn't just that…

If I had to put this powerful 250-year cycle down to one critical year, it would be 1776.

The Declaration of Independence was signed.

The steam engine was perfected and patented.

And Adam Smith published the greatest economic treatise/book in history: *The Wealth of Nations*.

The steam engine was the central technology of the Industrial Revolution and first drove the emergence of factories and urbanization that crushed the last big bang, the Agricultural Revolution, in importance and

impact. It's not that the previous revolution wasn't monumental, it's that evolution is EXPONENTIAL! This one is coming much bigger and faster.

The unique thing about this period was that two totally opposite and powerful trends emerged together: Democracy and Free-Market Capitalism.

Adam Smith was the first to portray the "invisible hand" of a freer, more bottoms-up innovation system driven by self-interest, specialization, and capital investment.

The Founding Fathers were the first to grant inalienable rights to everyday people and give everyone a vote… also a bottoms-up revolution.

But here's the real insight: Most people see these two principles as cousins. But they're actually opposites, like male and female! That's why I call it "when Harry met Sally." I'll let you guess which principle is the more male or female.

Capitalism most rewards and incentivizes the innovators. That's why the top 1% of people who create S-Curve trends in "new things" control 35% to 50% of the wealth over time. They're the ones who take the greatest risks early on and add the greatest value.

People like Henry Ford were instrumental in creating the first middle class in history, not just through the automobile, but through the moving assembly line that made low-skilled, everyday workers as much as 10 times more productive and raised their wages above subsistence levels for the first time in history – beating that damned Malthusian Trap!

People like Steve Jobs made personal and mobile computing more user-friendly and helped create a whole new world, which we're still yet to fully see (and now reacting against).

Emerging countries can leapfrog more cheaply into these new smart phone and internet-based technologies; 65% of people in the world now have mobile phones and the rest will get more and smarter ones rapidly ahead.

But democracy is obviously more inclusive and aligns the troops with the generals, so to speak. Everyone gets a vote and a say, regardless of their economic power or status. It forces the powerful free-market capitalist system to make sure it meets the needs of society, not just its own profits and interest, and passes down a fair portion of the gains to the people.

These two forces are both powerful and balance each other. That's the secret.

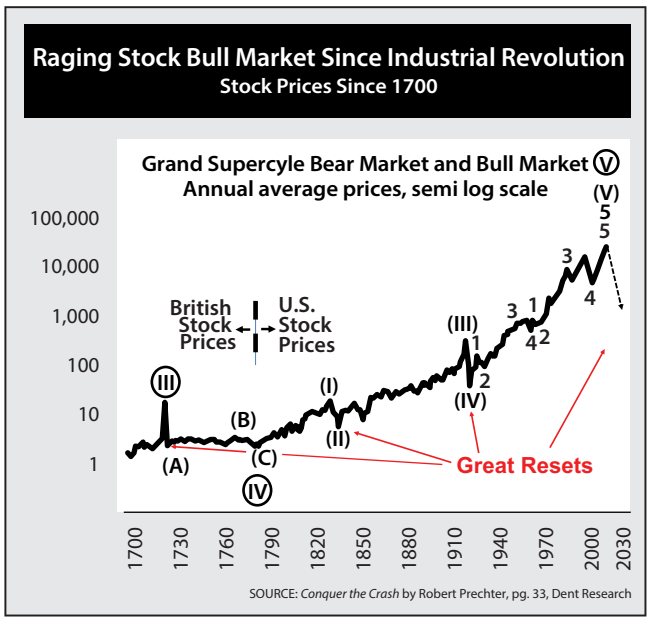
Capitalism is like the brutal, survival of the fittest principle of natural evolution and nature. And left to its own nature, the 800-pound gorilla would get all of the women and most of the food.

Democracy represents the equal amount of force that encourages and rewards cooperation to survive and prosper, like alliances among species and family and kinship clans.

Capitalism is more polarizing, driven, and competitive.

Democracy is more inclusive and cooperative.

How important was that 250-year revolution back in the late 1700s? Just look at the stock market. It has been on an absolute tear since 1787.



By the way, this chart understates the trend. It's on what's called a logarithmic scale; like 1 to 10 to 100 rather than 1 to 2 to 3. It makes an exponential trend into an apparently linear one that we humans more identify with…

Yet this chart is still more exponential!

First note that a last great period of progress ended with the South Seas and Mississippi Land bubbles and crashes that set off a 67-year bear market, as I mentioned earlier.

What if your stock broker had told you in 1720: "Don't worry. We have you diversified, and stocks always come back."

For the developing world, we're very likely entering another such period of more sideways movement after a major crash in the decades ahead.

My longer-term cycles and demographic trends suggest we may not come out of this into a brave new era fully until around 2075-2080.

But recall that emerging countries for sure will continue to roar ahead… and the best developed countries that supply and finance them can still prosper to a degree.

But also note that since the Industrial Revolution, when Democracy and Capitalism converged, there have been two "Great Resets." We are due for a third great reset just ahead.

The first was from 1837 to 1842; the second was from 1929 to 1932. Note those two bottoms are exactly 90 years apart. I will come back to that just ahead.

In fact, if I just look at what I'm more known for, projecting the impact of generational and demographic trends into the future, one country after the next, even emerging will continue to peak and then slow and contract as Japan has already proven in spades and most of the developed world is on the verge of.

But that's why I study longer term trends beyond your and my lifetimes.

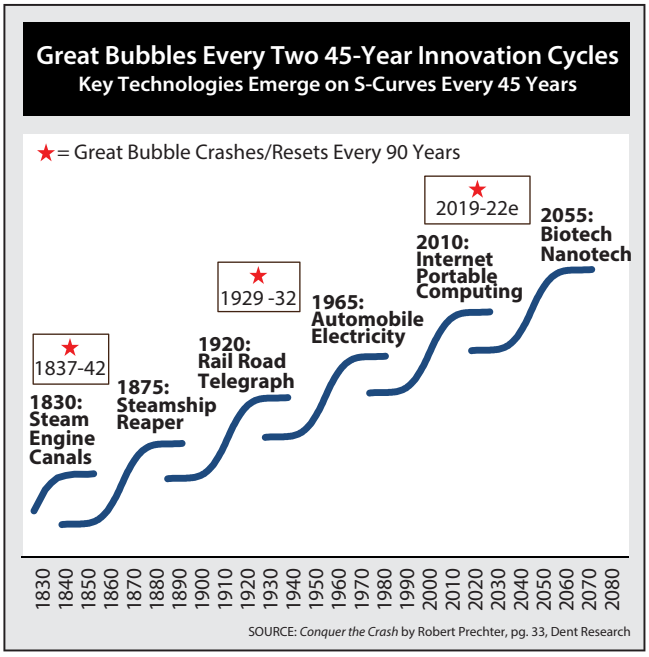
This 250-year cycle and the even more powerful 500-year cycle tells me we have much more progress ahead and that brings me to an important question with a surprisingly obvious answer:

What would transcend or change this never-ending blackhole of falling births and aging in demographic trends around the world?

A leap in the length of our lifespans in the coming decades!

How would demographics change if we lived to be 100, or 120 years old? That's another 20 to 40 years in the developed world!

Before I summarize with the simplest and grandest future forecast in history, let me explain another important cycle in innovation. It comes more in human time frames; every 45 years like clockwork. And it becomes more powerful every other one, or every 90 years.



Clusters of critical new technologies come together every 45 years and progress in an S-Curve fashion… emerging first slowly while the previous ones are maturing, and then accelerating **exponentially**.

People always overestimate the impact of great new technologies early on and under-estimate the impact down the road.

I've oversimplified a bit when it comes to the clusters. It's usually several technologies.

The previous 45-year cycle that peaked in 1965 saw electricity (and the light bulb), the combustion engine (cars, trucks, tractors), the telephone, and the radio. These all first emerged into more affluent, urban markets into the Roaring 20s. Then after a major

shake-out in the Great Depression, they emerged fully mainstream. All conspired along with the assembly line to create the first middle class, suburban-based society in history.

Was that a big deal or what!?

Ninety percent-plus of households had all these things and their derivatives like home appliances and TV, and all used superhighways by 1965.

Before that, railroads, telegraphs, and the Colt 45 transformed the developed world, especially the new up-and-coming leader, the U.S. (a giant new continent of unexploited resources was united).

Railroads peaked in passenger miles and revenues in 1920 and fell like a rock when autos emerged. 1920 and 1965 were exactly 45 years apart!

Before that canals, steamships, and the McCormick reaper were key technologies transforming the world. Steamships peaked in 1875 and fell off a cliff when railroads first emerged mainstream. 1875 was exactly 45 years before 1920. Before that it was the steam engine and so forth, and since then we've seen the glorious internet and information revolution that has already peaked around 2010.

But there are two additional insights from this very powerful cycle that impacts in our lifetimes, like generational spending and productivity cycles.

1. Although the old technologies peak at these 45-year points, the first emergence of the next new cycle causes speculation in the new "next big thing" that is greatly overestimated at first and helps extend the stock and economic booms seven to nine years beyond the 45-year peak in the old technologies. Railroads peaked 1920, the stock market and economy peaked in 1929. The auto/electricity cycle peaked in 1965, the stock market and economy peaked in 1972. The present internet/personal computing cycle peaked in 2010 but the stock market is holding out with great government stimulation and looks to peak by late 2019.
2. These 45-year cycles come in successive pairs that augment each other. Steamships first and then railroads teamed together to transform global and continental transportation. Electrical appliances first transformed the world from the light bulb to the TV, then personal computers and cellphones and the internet took it to whole new global communication and interactive levels. A smart phone is nothing more than the ultimate electrical appliance – wireless and globally connected! This two-cycle dynamic creates a larger 90-year cycle that sees the greatest bubbles and culminations every 90 years.

Remember those 90-year great resets I showed in the long-term stock chart? They come on a seven-to-nine-year lag to every other 45-year cycle peak and create the greatest bubbles and crashes.

Note the red stars on the 45-year innovation cycles chart and the great bubble crashes: 1837 to 1842 and 1929 to 1932.

Again, those two bottoms and resets are exactly 90 years apart!

MAJOR ALERT: We are due for the next great reset from around late 2019 to 2022!

This will create the greatest crash and economic downturn of your lifetime and the "sale of a lifetime" on financial assets to follow a few years from now, likely between 2022 and 2023 or so.

My demographic cycles have long pointed to 2022 – 2023 as a major bottom for stocks. I have 10-, 20- and 40-year cycles that also point to late 2022 or so.

If stocks do peak around late 2019 on a perfect 90-year anniversary to the infamous 1929-1932 crash and depression, the economy will bottom a year or so later. It was 1933 in the last great reset and 1843 in the one before.

I talk in much more depth about this great reset ahead, and how to protect your assets, your business/career, and your family in my latest book, *Zero Hour*, but…

The greatest advice I can give you is to gift these two books, *Factfulness* and *Zero Hour,* to every kid or grandkid you have of high school age or older.

I don't know of any course in any university

that could top this concise knowledge of the facts and cycles of history – and what the future holds that most people will have no clue of, even highly educated and powerful ones.

Remember, even world leaders and experts mostly flunk the simple 20-question test in the *Factfulness* book.

Your kids and grandkids don't have to.

Summary: The Simplest and Grandest Economic Forecast in History

I'm not going to go into this much more than I have already here. I do that in my books and it takes that many pages to do it justice. But in this final chart I look at the three most powerful longer-term cycles and how they come into a rare convergence around 2150.

By the way, the best cycle forecasters always develop a hierarchy of cycles, usually three or four at most, that most capture a trend.

My co-author of *Zero Hour*, Andrew Pancholi, has a hierarchy of three cycles (markettimingreport.com) that capture shorter-term turning points in markets.

The Serbian geophysicist, Mulitin Milankovich, in the 1920s, created three long-term climate cycles that work incredibly well on time frames so long I won't even mention.

For human-time-frame economic cycles, I have a hierarchy of three, in this order of importance:

- That 45-year technology cycle;
- An approximate 40-year generational spending cycle; and
- A 35-year geopolitical cycle.

They all point down together into 2020-2023, with an approximate 10-year refinement cycle nearer term to better spot stock crashes and recessions. That also points down into late 2020 or a bit later.

All but one cycle points up from around 2023 into 2036 and the technology cycle kicks into high gear from 2032 forward – that's when I expect those bigger life expectancy gains to start ticking upward again.

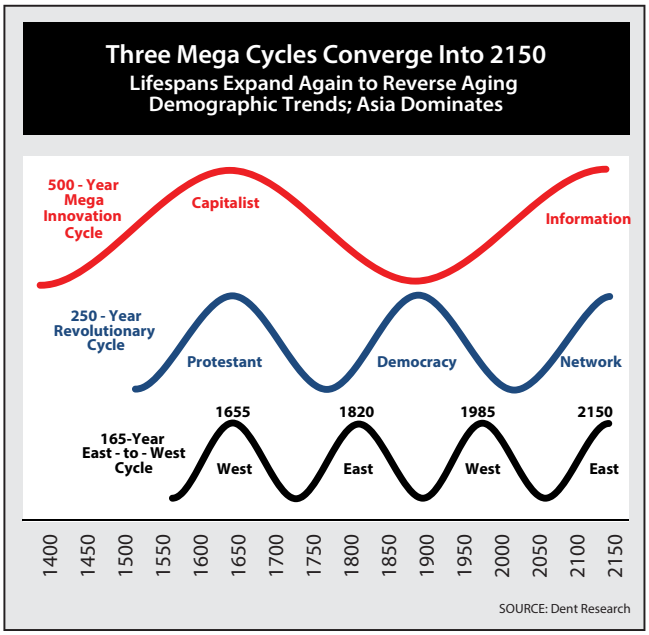
I describe this hierarchy more in *Zero Hour* and how it would have spotted past cycles and future ones ahead… it's kind of mind-blowing.

Andy Pancholi and I also came up with a hierarchy of three cycles for political/social revolutions:

- The 250-year political revolution;
- An 84-year populist revolution; and
- A 28-year financial crisis.

All three converged on the current 2017-2023 time period for a major social/political revolution that has clearly already begun, also covered in *Zero Hour*.

But here is my best hierarchy for longer term economic cycles in economic progress and human evolution…



I've spent a lot of time on that primary 500-year cycle and it is the most dominant and powerful in this hierarchy. It turned up in the very late 1800s, just when this great economic explosion really took off and it doesn't peak until around 2145-2150. We are only half way up that cycle.

The great reset we have ahead will just be "the pause that refreshes" when looking back from history. But it certainly won't feel that way when it happens!

That 250-year cycle has tracked the best with the greatest (and about to turn 232-years old) stock market boom in history, but it needed the convergence with the 500-year cycle to really see the economic explosion show off its stuff: the "big bang" breakthrough of free market capitalism, democracy, and the Industrial Revolution.

That current 250-year revolution will become much clearer than Trump and Brexit, and reveal itself much more in the next several years. It will see its best impacts also right into around 2150 with what I call "the network revolution" – not just in technology but in work and business organization.

Companies, political systems, even religions will increasingly mimic the internet and network principle and organize around, and be driven by, consumers, not top-down management and investors.

Light-speed software becomes the new managers and bureaucrats. That frees people to serve people and become entrepreneurs outside and within larger organizations.

It takes the ego and politics increasingly out of business and serving people.

This will change how we work and where we can live as much or more than the assembly-line revolution and the technologies that empowered it. We've only seen a taste of this in the leading tech companies and our light-speed stock exchanges that are totally driven by customers.

Think about it. Where's the management and bureaucracy on the stock exchanges? Someone just rings the bell in the morning and gets the hell out of the way… and chaos occurs very efficiently at light speed.

Only *such* organizations can deliver real-time, personalized service that is affordable to everyday consumers and constituents.

This will be the biggest change to come from the confluence of this 500-year and 250-year cycle and this great reset ahead will finally force top-down managers to give up their ego trip and control – do or die – forced only by this survival of the fittest crisis as in the 1930s, on that powerful 90-year cycle.

And then finally they'll put the information into the hands of the front-line workers and make them entrepreneurs and reward them for the profits they create, not what the damn company does.

I'm sick of people telling me "that can't be done," or "management and workers are just not ready for that yet!"

Jack Stack has already successfully done this in the Ohio rust belt. He turned around an ailing factory and made a company of blue-collar millionaires simply by teaching them "The Great Game of Business" (the title of his great 1989 book). If he can do it there, in a not-information intensive, old-line business, where can you *not* do it.

It just took real leadership from a real manager to show people what they could have if they only knew it was possible… as Steve Jobs said, and why he didn't do market research.

Henry Ford famously said: "If I had asked people what they wanted, they would have said a faster horse!"

So, don't wait for people or your managers to ask for such change: show them the MONEY!

Wouldn't you want to work in that transparent company where management teaches their expertise and puts the information you need in the software for you to tap on demand to serve your customers… and sets you up to become an entrepreneur within the company… and shares the profits YOU created.

And to take it to the next level: When are we likely to start to see substantial increases in lifespans again when they are also seeming to stall?

The U.S. life expectancy has stalled in the last decade for the first time in a long time as more people are getting on opioids for pain or depression. Our food companies keep getting us addicted to "fake foods" that give us all calories and little nutrition. So, we eat more and get less healthy… feel worse, and take more pain killers, or alcohol or whatever.

Maybe people wouldn't be so depressed if management made them entrepreneurs and gave them a way to grow and prosper again without having to compete with foreign workers and robots.

Real wages for everyday workers have also stalled since 2000, almost 20 years now, despite continued advances in technology and global growth.

The seeds of this 250-year social and political revolution have been sowing for 20 years and they started in 2016-2017 with Trump and Brexit… but that's the beginning and the reactive, regressive populist revolt, not the new vision and progressive, visionary endgame and solution. Jack Stack has that! I've been preaching this new network organization concept since my *Roaring 2000s* book in 1998.

The next 45-year cycle is still in its infancy and will be driven by technologies like biotech, nanotech, robotics, and 3-D printing. All these things not only create new and more customizable and affordable products of all types, they can re-make and better maintain our bodies.

Biotech can better target cancers and heart problems.

Robots can perform more precise surgeries, even remotely.

Nanobots will be able to go through and clean out your arteries – and even take CO2 out of the atmosphere to combat global warming and pollution.

Need a new organ? 3-D printing designed by software and robots to custom-fit with your body and minimize rejection.

The real point is that the internet and portable computing revolution has already peaked. In the developed world everybody already has a supercomputer in the shape of a smart phone hooked up globally to the internet.

More and more sensors will start monitoring your computer and your body, automatically feeding you info or correcting things without you even having to know or intervene.

Blockchain technologies will make the internet more secure, faster, and cheaper… but that will take time (I project maturity there about 2037) and the cryptocurrencies will first have to crash and get real, like the first internet bubble did in 2000.

But that all is just the maturing part of the internet revolution that has already peaked and is spreading to the emerging world rapidly.

This next technology revolution is still in its infancy and will start to move mainstream more rapidly and with much bigger impact around 2032 and it will peak around 2055. That's when I see the next acceleration likely for life spans. Maybe that gets us to age 100!

And then the technology revolution to extend that one will start around then and not move mainstream until around 2078 to into 2110. I see the next real acceleration towards that 2150 mega global peak in progress, innovation, and standard of living really hitting in that cycle.

And maybe that's the one that gets us as high as 120!

These technologies will extend innovation and will be even more exponential.

These next two cycles will drive us towards those longer life spans and God knows what else and bring us into the grand convergence that last chart and hierarchy strongly points to.

Such innovations could easily keep population growing higher and longer, and the economy continuing this unprecedented economic explosion into around 2150. That's why I think a population peak of 11 billion by 2100 is conservative.

These are the cycles your grandkids and great grandkids will experience. Let them know this now and they won't forget your wisdom.

And who will dominate this next grand phase after the next great reset?

That wouldn't have been as obvious 30 years ago, when I tripped on the last cycle in this grand hierarchy and convergence. But it is more NOW, since the rapid emergence of China since 1980.

Every 165 years, world dominance passes from the Western to the Eastern Hemisphere.

China was clearly the wealthiest and most innovative country in the world in 1820, but the Industrial Revolution and that 250-year cycle were clearly seized by Western Europe and then North

America, who were dominant into the 1970s and early 1980s until China reared its massive head again.

This cycle also peaks around 2150, with the world clearly dominated again by Asia, which largely means the old "Silk Road" from the eastern side of the Middle East like Pakistan through India, China, Southeast Asia, and East Asia. Note China's latest "Belt and Road Initiative" to reinvigorate that old Silk Road.

China may take a decade to recover from the most massive over-building and debt cycle in history, but it still has decades to get to 90% urban, despite its slowing demographic trends and urbanization is the stronger factor.

But India has everything: the largest population ahead, demographic trends that grow until 2055-plus, urbanization at only 34% that could grow for many more decades to get to 90%... and finally a more progressive government (hopefully they can hold on to that and don't blow it after recent elections struck the first blow to Modi's power).

And where will these new 45-year cycles likely find the greatest leadership?

I can see Japan and East Asia dominating robotics – they're the ones that need it to replace aging workers and to serve their mushrooming retirees. That will include China as their population is the first emerging country to age rapidly.

I can see China dominating biotech and 3-D printing…

And perhaps India in advanced network software and maybe nanotech.

I'm sure you've seen or heard of the recent hit movie "Crazy Rich Asians." That's the future!

And you might have to add the word "Bitches" to that title. The movie made clear that the women were more in control and are likely to flourish more in a less top-down, more creative and connected network world because they are naturally more relational…

And yes, Singapore (where that movie was set) is THE most progressive and wealthy nation in Asia today.

So…

1. Get ready for an inevitable great reset that could destroy your wealth after a likely final blow-off rally in stocks into 2019 before this most powerful 90-year Bubble Buster Cycle hits. Position yourself to get in safer investments and have the resources to pounce on the "sale of a lifetime" on financial assets and businesses ahead from around late 2022 forward.
2. Get your kids prepared. This isn't the time for them to buy a home. They will get a much better deal and likely lower mortgage rates to boot a few years from now. Tell them to keep their job if they have one and find ways to make money on the side to augment and as insurance. This is the time to kiss your boss's ass even if you don't like him or her. Get them the best expertise on this great reset and future trends, starting with *Factfulness* and *Zero Hour*.
3. If you have a business, hunker down. Focus on where you are the strongest and cut costs to be one of the survivors. Do that and you could come roaring out of this with far less competition… Or sell it now, if your kids don't want to take it over.
4. It you're retiring, sell your business or downsize your home now. Better, sell and rent for a while first. Ask yourself: Is there a way you could help people with your unique expertise to get through this challenging time ahead and prepare for the next boom and growth cycles. You could do that as a business in retirement or more as a gift back to society – or both.

About Harry S. Dent Jr.

Harry Dent studied economics in college in the '70s, but became so disillusioned by the state of his chosen profession that he turned his back on it. He spent the '80s coming up with a radical new approach to forecasting the economy; one that revolved around demographics and innovation cycles.

Since then, he's spoken to executives, financial advisors, and investors around the world. He's appeared on "Good Morning America," PBS, CNBC, and FOX. He's been featured in *Barron's, Investor's Business Daily, Entrepreneur, Fortune, Success, U.S. News and World Report, Business Week, The Wall Street Journal, American Demographics,* and *Omni*.

Harry has written many books over the years. In his book *The Great Boom Ahead*, published in 1992, he stood virtually alone in accurately forecasting the unanticipated boom of the 1990s. In 1998 he authored the best seller: *The Roaring 2000s*. In *The Great Depression Ahead*, he outlined how the next great downturn could unfold in three stages. In *The Demographic Cliff*, he showed why we're facing a "great deflation" after years of unprecedented stimulus. His last bestseller, *The Sale of a Lifetime* showed all the opportunities that will abound once the great reset has begun. His newest book, *Zero Hour*, warns of the greatest political polarization since the Civil War and why we'll see a major revolution.

Harry got his MBA from Harvard Business School, where he was a Baker Scholar and was elected to the Century Club for leadership excellence. He has been a Fortune 100 business consultant at Bain & Company, CEO of several small companies, a new venture investor, and founder of Dent Research.