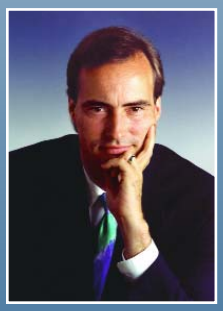
A Brief History of Human Evolution and Economic Progress: And Why the Greatest Bubble - Human Population - Is Beginning to Peak



Harry S. Dent, Jr.

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A Brief History of Human Evolution and Economic Progress: The Greatest Bubble - Human Population - Is Beginning to Peak

In this special report we are going to give you a simple, but very powerful education and overview of human history and evolution. And much of it is also counter to common wisdom much like our new economic logic. But it is also similarly very common sense, logical and clarifying. You might at first think: why should I be concerned with longer-term trends in history when I'm just trying to survive and live the best life I can in the coming decades? From this simple overview you will see that we are in a very auspicious, but yet increasingly ominous time in history that will affect your life in the coming decades, and your kids' lives for even more decades. We are likely at a much more major turning point in history and economics than we were in the 1920s to 1930s, at the same point on our last 80-year New Economy Cycle.

In the Western economies we are approaching a period more like the 70-year correction after the South Seas Bubble in 1720, and even more so, like the latter, less stable peak and plateau period of the Roman Empire from 100 to 450 A.D. We've seen the peak of exponential growth trends in population and it is clearly slowing down for the first time since the Dark Ages began to set in with the only strong growth ahead in Southeast Asia and India (not even China past 2020). The explosion in demographic growth and urbanization that started with the Agricultural Revolution 10,000 years ago is coming to a head and it will have major consequences for decades and centuries to come.

When population growth slows, history has shown that major adjustments and setbacks follow. But the good news is that this information revolution, the first major one since the printing press, is likely to continue to bring rises in our standard of living for decades to come, and likely longer, as we covered in Chapter 8. But the great challenges of integrating many different cultures and economies into a global economy are much greater than most would presume. Hence, the coming decades and even centuries are likely to be more difficult than most economists and technologists are presuming from the very strong trends in past decades and centuries.

You will be able to see where we are on all of the major cycles driving economic growth from a 4 million year ape to human evolution cycle from a 10,000-year Agricultural cycle to a 3,000-year Western Civilization cycle to a 500-year larger information technology cycle, to the most current 230-year bull market cycle since the Industrial Revolution, as well as the 80-year, 40-year boom/bust cycles we have covered thus far. And more important, you will have a better perspective on life and change without having to spend many years getting an advanced degree in history or economics or archaeology or whatever. It will take less than an hour in simple reading to get an overview of what really matters in long-term trends and how all long- and short-term trends play out the same way as well as affect each other.

You will be able to see that all of these cycles follow the same exponential growth, "bubble" and four-stage S-Curve/life cycle patterns, and are still bullish at least for the rest of this decade, and in the larger view, for possibly much longer – but at a slower pace and in different regions of the world. The human race appears close to peaking in numbers for a long time in 60 years or less, and that is significant. But we are too young as a species to likely become extinct for a very long time despite many prophecies otherwise. Yet many of the longer-term cycles we study beyond the baby boom generation spending cycle and the most recent technology cycle could be peaking around the end of this decade or mid-this century at the latest as well and that makes this coming seasonal shift more ominous. The clearest trend is that the broader demographic cycles that have been driving our economy for a very long time are moderating with the first marked slowing of births and demographics in Europe, Japan, and the U.S. to a lesser degree. We are also seeing the clear slowing in births across the board even in major emerging countries from China to India to Africa. Hence, we are nearing the end of the greatest human expansion in the history of population, at least likely for a long time.

An Important Time to Take a Longer Look at Trends

The Agricultural Revolution greatly expanded births per family and population density. The Industrial Revolution started to slow births with the widespread prosperity that followed, and the Information Revolution will have a decentralizing impact on population density as more

people move to exurban areas. This means that once the developing world of almost 5 billion people (out of over 6 billion total) today adopts the industrial and information revolution models of the developed countries — which they are doing rapidly from China to India — we could be in for much slower economic growth around the world.

But this will likely occur only after a potentially tumultuous period of transition that could at the least last many decades, and more likely centuries. That is why we think that a long-term overview of history and cycles is so critical at this juncture in history. The greatest boom in history could indeed turn into one of the greatest downturns and an extended time of economic, political and cultural clashes within countries and among countries – already occurring clearly in the Mid-East, and now spilling over into America/Europe with the terrorist threats, and likely later into Asia.

We have been predicting for years that the peak in the Nikkei index in Japan could be a peak that will not be exceeded in most of our lifetimes. That will almost certainly be true for most of Europe, and likely for the Dow and broader markets in the U.S. after 2010.

Developing countries are following rapidly as they industrialize, having fewer kids, and facing the same environmental constraints we are facing – but even more so. As demographic growth continues to a lesser extent in much larger populations in China, Southeast Asia and India, the expansion of the world economy will continue in cycles, but competitive advantage and profits will shift more to companies and governments in those countries. By 2020 China's economy will exceed the U.S. in relative purchasing power, and by 2050 so will India's. Hence, the economic dominance of the U.S. today will plateau by the end of this decade and recede in a matter of decades to follow. Military and political power will inevitably follow on a lag.

There will be continued bull markets from the echo boom spending cycle in the U.S. from around 2022 to the late 2030s to early 2040s or so, and even stronger bull markets in developing countries that explode into industrialization and information-based economies over the coming decades from Southeast Asia to India. From 2010 to 2020 China and Southeast Asia will be the best place to be invested, but from 2020 to 2050 or 2065, India, Pakistan and perhaps Africa, should see the strongest growth. And it certainly is possible that such world growth in an increasingly global economy could translate into higher stock markets and growth in the U.S. But the potential slow plateau and/or fall of "Modern Day Rome", the U.S. and West Europe, will to some degree slow the growth of the rest of the developing world initially and cause a time of retrenchment in globalization, urbanization and technological progress for a while. This will be due to the very difficult challenge of integrating so many very different nations and cultures into a more global economy where they see priorities in life and the world very differently.

That could then lead to a longer-term period like the Dark Ages after the fall in Rome from the mid-400s to the 900s A.D – a five hundred-year bear market in measurable history! For people who argue that global growth will make up for the demographic downturn we are projecting after 2010, remember, that even in today's increasingly global economy, Japan just experienced a 13-year bear market with economic slowing and an 80% decline in the Nikkei, while the rest of the world was booming. And they have a more export-oriented economy than we do. Even today, we only export 3% of our GDP to all of Asia. Hence, growth there will not make up for our declines unless we start exporting much more.

We have already seen the bare beginnings of a major backlash against globalization and new technologies from the more fundamentalist third world cultures that feel threatened by our new technologies and more liberal lifestyles, with only the tip of the iceberg being the terrorist attacks that erupted on 9/11/01. There is more to come and this trend is very likely to worsen dramatically in the downturn we are predicting from 2010 to 2022 or so. The U.S. and the developed world could be like "Rome" waiting to be brought down quickly or slowly by "the Huns", and then advance eventually again in new and better directions.

The biggest question from our research is simply whether this will happen sooner or later, and how long this "global clash of cultures, economics and politics" will take to play out. But history is clear in demonstrating that flattening demographic

growth tends to result in longer-term periods of corrections and adjustments, like the Dark Ages. The Great Plague in the mid-1300s was an example of a short-term environmental disaster (from rapidly expanding towns and cities that couldn't handle their waste sewage) that caused infectious disease to spread rapidly creating a short-term decline in population and an economic decline. The fastest growing developing countries are seeing more rapid urbanization turn into environmental and congestion nightmares that are greater than what we have experienced over a longer time frame to accomplish such growth.

The Western technology growth curve has stimulated this globalization, industrialization and urbanization trend around the world into larger populations in the East. New technologies are already contributing to lessening environmental impacts in developed countries and new win/win environmental approaches are emerging even today that will help even more. But such impacts may come too late at first in developing countries. It may just be that the backlash of such irrational, and occasionally violent, third world cultures are saying appropriately, "we are growing to fast" and that "the Lexus is threatening our olive tree". Such a clash does seem inevitable in the coming decades and even centuries from the 3000-year, 1000-year, 500-year, 300-year, 80-year and 40-year cycles we will look at more closely in this final chapter.

A longer view of history only reinforces the greater reality and principle of exponential growth and progress over time vs. the straight-line view that our minds prefer.

We have learned from studying cycles in the past, that the greatest surprises or threats can come from larger cycles that we are not aware of, like a ten-foot set of waves that suddenly hits the beach after a long series of 3-foot waves, not to mention a "tidal wave" very infrequently. Most experienced surfers know when such "sets" of larger waves are likely to roll in daily and seasonally, and our economic cycles similarly become more predictable as we study them from a longer-term perspective.

The key insight is that the shorter-term and longer-term cycles of the past are progressing in an exponential fashion such that they don't appear able to sustain themselves too much longer for now at this critical juncture in human history – despite our unprecedented progress in recent decades and centuries. It doesn't mean "the end of human civilization" as many forecast, or economic progress. But it does suggest a major slowing in demographic growth and a "quality of life" revolution, that may paradoxically first bring some significant threats to our quality and security of life at first. This is already becoming evident in the late stages of the greatest boom in history.

The fundamental demographic and innovation/technological principles we study can bring much simpler insights into what appears to be a long, complex evolution of human beings and economic progress that few scholars can even seem to grasp. This is the type of simple overview that should be taught in high school and college, but isn't as of yet. You can see the critical demographic trends and technological innovations that have shaped human history without being a scholar or studying volumes of history books – just this chapter and some credible books that we reference. In fact, you can end up a lot clearer than many scholars with the advantage of such a "Big Picture" view as many experts are often lost in the incredible detail that their research necessarily entails (and we are very thankful for their very detailed research that has helped build this information revolution in knowledge and our research as well).

To get the overview of human evolution we will start with the Agricultural Revolution and the first vestiges of urban civilization that emerged only in the last 5,000 to 10,000 years with towns like Jericho and cities like Sumeria.

The most summary insight is that we are nearing the peak of a very long-term boom much like the boom in Greece and Rome that started around 600 B.C. or so and peaked in the mid-400s A.D. – a 1000-year boom!

The present boom began long before even the Industrial Revolution that we showed in Chapter 2 of The Next Great Bubble Boom. It began coming out of the Dark Ages between 900 and 1000 A.D. (after an approximate 500-year bear market) and it appears to be peaking in this century, and likely in the coming decade for Europe and likely even for the U.S. That would put us in an era much like the latter era of Rome only now it is the U.S. that is the world leader of a global, free trade capitalistic empire.

This explains why our standard of living is the highest in the world, but also why we are the

target of discontent among many fundamentalist countries and cultures that are still living in a much earlier era of evolution, culture and economics. A clash between the third world and the first world, especially the U.S., has already begun and will inevitably grow as economic conditions deteriorate after 2010. So, expect the growth of terrorist, political and military threats, especially between 2010 and 2022 or so as we warned in Chapter 5 of The Next Great Bubble Boom. We will get more to the implications of these cycles later in this report and in the Epilogue of that book, but first let's start briefly by looking at the true dawn of human history.

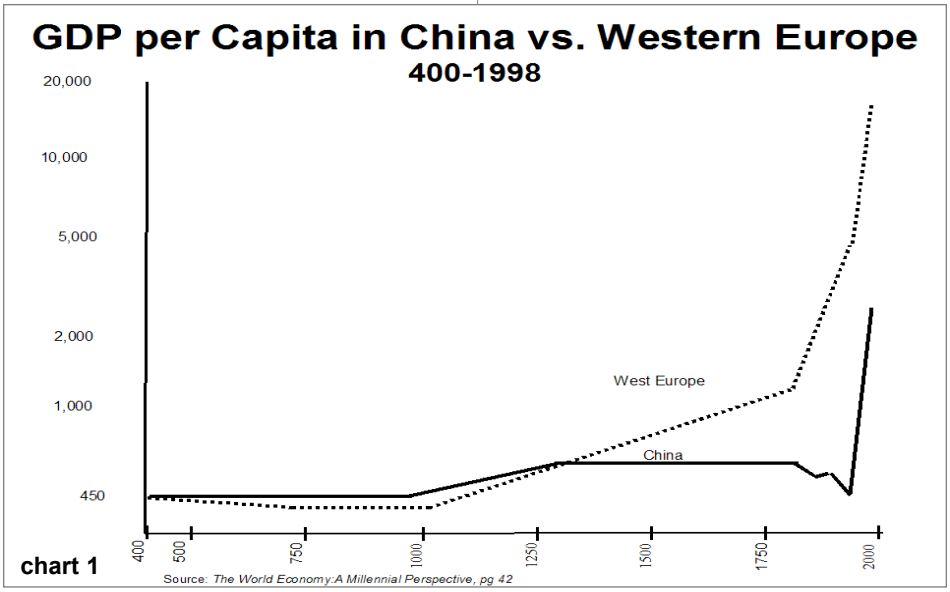
The First Great Leap into Modern Civilization – The Agricultural Age and Writing

The Agricultural Era dawned around 10,000 years ago. In addition, the weather got very wet and warm (more than today) between 9,000 and 6,000 years ago creating a very favorable environment for the early incubation stage of stationary farming. Even the extreme Saharan deserts in North Africa became grasslands briefly as stone drawings of roaming animals there 8,000 years ago show. But the Agricultural Revolution did not occur there at first, it occurred in the Mid-East where there was greater population density and more varied vegetation and game.

We finally started to settle down from hunting and gathering in small numbers at first, and become farmers and then herders. This began first in The Fertile Crescent in areas like modern day Iraq, Southern Turkey, Syria and Israel 10,000 years ago, and emerged a few thousand years later in the inland river valleys of southern China 7,500 years ago, and then 3,500 years ago in pockets of Central America (Aztecs and Mayans) and Northwest South America (Incas).

Why did this occur first in the Mid-East when the weather was actually more favorable in Southeast Asia? The first reason simply seems to be the natural variety of grasses, seeds and animals that were prone to domestication in the Mid-East, vs. "mainly rice" in China. But also more varied seasons and terrain that promoted more innovation and forward thinking to survive from year to year and more hearty vegetation to survive, like the more northerly climates did for hunting where agriculture could not have first emerged due to adverse climate. The great majority of natural grains today already grew in the Mid-East. Cattle, sheep, goats and pigs all existed there, and not largely in Southeast Asia. More challenging and varied environments create the need for innovation and lead to more adaptable and dominant species.

Asia has long been too benign for new or higher development at first due to the lack of challenge in the environment – it's too good most of the time. But Southeast Asia has conversely been the most benign environment for the expansion and maturation of new species once they develop on a larger scale. Southeast Asia was the greatest area that humans migrated to during the severe conditions of the last ice age. It clearly holds the highest populations of humans today and the most potential for economic growth in the future because of its benign environment and its larger populations that are just now adopting modern technologies and western lifestyles. Most recently that growth is accelerating at the highest levels ever seen due to the advent of air conditioning first and then industrial/information technologies since the 1950s as we can see in ***Chart 1*** that shows GDP per capita in Western Europe vs. China since 400 A.D.



China did not see the fall in standard of living that West Europe did during the Dark Ages but also saw no real progress. But after the Crusades, Western Europe accelerated while China lagged behind in growth and then declined from the mid-1800s to the mid-1900s as they shunned new technologies and outside influences. Since then we have seen the fastest catch-up in productivity and standard of living in history. China's standard of living is very likely to equal or surpass Western Europe's and at least rival the U.S. in coming decades. And such growth is rapidly spreading to Southeast Asia especially in countries like Viet Nam, and potentially to India starting in areas like Bangalore. This region will see even larger relative gains vs. the West during the demographic downturn from 2010 to 2022. Southeast Asia and India are clearly the growth areas of this century and Africa may ultimately join the growth party, although it has not yet. But again, the demographic trends even there are beginning to slow and should peak between 2065 and 2100, and earlier by 2030 in China.

The Mid-East as the Birthplace for Agriculture and Urbanization

It seems that the more "cultural" invention and evolutionary necessity of agriculture first emerged in the Mid-East due to the combination of nurturing and challenge. The Middle East has a somewhat benign, but very shifting climate between seasons and between grasslands and deserts. It therefore developed a great variety of surviving grains and animals over time that evolved to adapt. Evidence of the first farming communities have been excavated in Jericho dating back to almost 10,000 years ago with similar findings in nearby areas. Rice farming in China only emerged around 2,500 to 3,000 years later, between 7,500 and 7,000 years ago.

Agriculture and urban culture has its roots in the Fertile Crescent of the Middle East. In fact, Africa has been the least agricultural and urbanized area of the world precisely due to its long, established culture in hunting and gathering — and its isolation externally and internally from the rest of the world's subsequent technological developments and urbanization.

Africa is not only the most isolated major continent along with South America and Australia, but it has a lack of major harbors for shipping and trade (since Columbus and long-range sailing) and many faults/waterfalls, jungles, deserts and geographical blocks to inland travel and trade. Outside of the Nile, there are no rivers that cross largely from north to south or east to west, like the Mississippi in the U.S. And where that was the case somewhat for the Nile, agriculture and urbanization first developed there. Africa was the great incubator for new human species due to these challenges, but it is not the greatest growth environment and settling place for urbanization.

Today it is the poorest continent in the world, and the slowest to adopt modern technologies and living standards. The lack of industrialization has caused continued high population growth. But poverty and disease has caused high death rates and the lowest rates of economic progress – keeping it mostly in a perpetual third world country status. Hence, the future of Africa remains bleak at this time in history, despite being the mother ground of our human civilization. It is unfortunately a maturing and dying culture unless something radically changes there to favor it again – or as may just be emerging – a movement of developed countries to invest and create the infrastructures and technologies for growth there.

It also seems clear in history that the greatest urban and most advanced technological cultures have emerged in the Northern hemisphere in the more temperate, most challenging climates, with the greatest land masses for expansion (and later to a degree in the Southerly or more temperate areas of the Southern Hemisphere). This disfavored Africa, South America and Australia until after the sailing revolution in the late 1400s. But remember that Africa holds the oldest cultures in the world, Australia in East Asia, and South America in the Americas.

That creates the paradox that the more southerly continents below the equator have been the greatest incubators, while the more northerly landmasses have been the greatest expanders of population and urbanization. That seems destined to continue as Latin America is slowing in population growth despite its largely benign climate and broad landmass, as is Australia (even with recent massive western settlement). These areas are already more urbanized and have less expansion vs. areas like China and Southeast Asia

from that perspective. And Africa for now seems on a path of warfare and disease towards potential destruction.

History unfortunately dictates that the oldest and most generative cultures are the least prosperous over time and the first to decline as a general rule. Hence, we see a long period of peaking and decline starting with Africa, moving to the Mid-East and Central Asia to Europe to America and then to Southeast Asia and India.

The Emergence of Towns, Cities, Specialization of Labor and Writing

The Agricultural Revolution that did clearly incubate in the Mid-East led to the first small towns and urbanization trends and the first excess in production of foods. This freed up more people for increasing specialization in new tasks and professions like merchants, pottery, construction trades, record-keeping – and hence — the first major social stratifications beyond cooperative, more egalitarian hunting tribes. Jericho, around 8,000 B.C. (10,000 years ago), was the first recognizable small town. By 3,500 B.C. the first large temple and city was found in Uruk in Iraq. It was a religious and food distribution center. Writing first appeared as simple tabulations/symbols for sales and emerged in Sumeria with temples, marketplaces, god-like rulers, and etc. by 3,000 B.C. (5,000 years ago).

Hieroglyphics, the first more complex written language emerged first in Egypt around 3,000 B.C. just after the first Pharaoh emerged around 3,150 B.C. in Southern Egypt with irrigation practices along the Nile. The first even more sophisticated wedge-shaped symbols of "cuneiform" writing emerged by 2,000 B.C. leading to poetry, hymns to the gods and historical depictions of wars. From 3,500 B.C. thereon with stone tablets and writing we truly entered documented history, as we can since record more accurately the developments that have occurred from a human interpretation — not just from archaeological, anthropological and DNA evidence – and with more accurate dating and records. But more important, we now had a new form of communication for learning and sharing in an increasingly urbanized world that launched the next great revolution in urbanization, technology and knowledge.

The greatest long-term trends from the Agricultural Revolution were: population density and explosion; urbanization into towns, cities and regional empires; specialization of labor and rising productivity; writing and more permanent communication; governments and organized religion; increasing warfare, and ultimately, science and advanced technology.

Urbanization: Towns to Cities to Regional Empires to Globalization

The emergence of agriculture and urban civilization was a huge step in history. With it came more exponential population growth and density; specialization in skills, crafts and trade; record keeping and bureaucracy; land ownership and aristocracy; social hierarchies and classes; technological development and science; organized government and dictators/god-like rulers; warfare and armies; organized religion; ethnic factionalism and tensions; and finally, greater local environmental constraints to growth. This was the first massive leap in "specialization" that freed up more people from hunting and survival tasks. But it also led to an increasing spiral of the clash and convergence of ethnic, tribal and family/clans that first began in the consolidation in equatorial areas during the ice age.

Cities from Sumeria to Rome had to bring many clans and tribes into cooperation for common goals under one city/state and leader. That was not easy and created the increasingly complex "political" art and science of motivating people to a common cause beyond their individual, local and ethnic inclinations. And this created the need for armies and military enforcement of laws and decrees, which along with new technologies and demographic growth, has very much shaped modern history since.

The first small towns emerged around the time of Jericho. After the emergence of the first cities like Sumeria, we saw the natural progression to larger cities and regional empires with trade and commerce built around those centers. This caused greater exploration outward into other cultures and caused many more ethnic groups to be incorporated into larger common systems of trade and rule. First came the Persian empires and larger centers like Babylon. But as the Persians — after the peak of their first great empires finally set out to move eastward and conquer Greece — they came across new technologies in ships and warfare they hadn't

encountered before. They were decimated by small forces a mere fraction of their size at Thermopylae in 480 B.C. which began the rise of Greece, and to follow, Western Culture.

The rise of Greece lead to the next great modern innovations in philosophy and rational thought that would create the next major revolution after writing — abstract thinking, mathematics and science.

The true beginning of science and the mere beginnings of the concept of democracy occurred in Greece between around 600 B.C. and 200 B.C. (from Socrates to Aristotle to Archimedes). In fact, the greatest thinkers of this time also communicated some of the most advanced esoteric spiritual doctrines that have stood until today's times. The Greeks built a short-lived empire back through Persia with Alexander the Great into the 300's B.C. This represented the next major step in human evolution and laid the foundations for growth and productivity trends into modern times. Western or scientific and technology-driven civilization emerged out of Greece (and to a lesser degree out of China). In fact, there were no major revolutions in science and philosophy after Greece until the 1500s into the 1700s in Western Europe (The Enlightenment Period). From 200 B.C. on the Romans took over with their prowess in military power and building infrastructures for expansion. If the Greeks were the "innovators", the Romans were the initial "marketers and expanders" of Western culture and science into the mainstream.
The Romans sacked Greece as their empire was declining from 200 B.C. to 146 B.C. The Greeks hit their peak in scientific evolution by 200 B.C. and the Romans then absorbed and spread Greek technology (adding more basic innovations like aqueducts and improved roads) through military might around its growing Mediterranean and European empire for hundreds of years. They built the greatest regional empire of trade and commerce up until that time, and the first broad and sustained "commercial" vs. "feudal" economy in history. The Roman Empire peaked by 100 A.D. with an unstable plateau into around 450 A.D. that lead into the Dark Ages for around 500 years into around the 900s A.D.

The Dark Ages saw a regression back first into subsistence agriculture in more rural areas and then into new local feudal empires controlled by knights and landlords with superior horse and stirrup-based fighting technologies. The Crusades from 1,000 forward brought us back into the growth of small towns and cities across the Mid-East and Europe. Then the Renaissance into the 1300s and 1400s brought European culture back to the achievements of the Roman Empire. From then on we achieved new heights of culture again. It was the printing press, gunpowder and the "Great Exploration" starting with Columbus and tall sailing ships in the late 1400s that discovered and started to re-ignite communication and trade throughout the world and colonized much of the world in North and South America and the Pacific that had been isolated.

That great exploration incubated the modern and increasingly global era of capitalism, followed by the increasing spread of democracy and Industrialization to follow. In the next long-term boom that ensued we have seen mega-cities and a global economy emerge today with the U.S. increasingly looking like the modern day Rome of this global era with expansion continuing into the highly populated and benign regions of Southeast Asia and India as such maturation trends have occurred in past history.

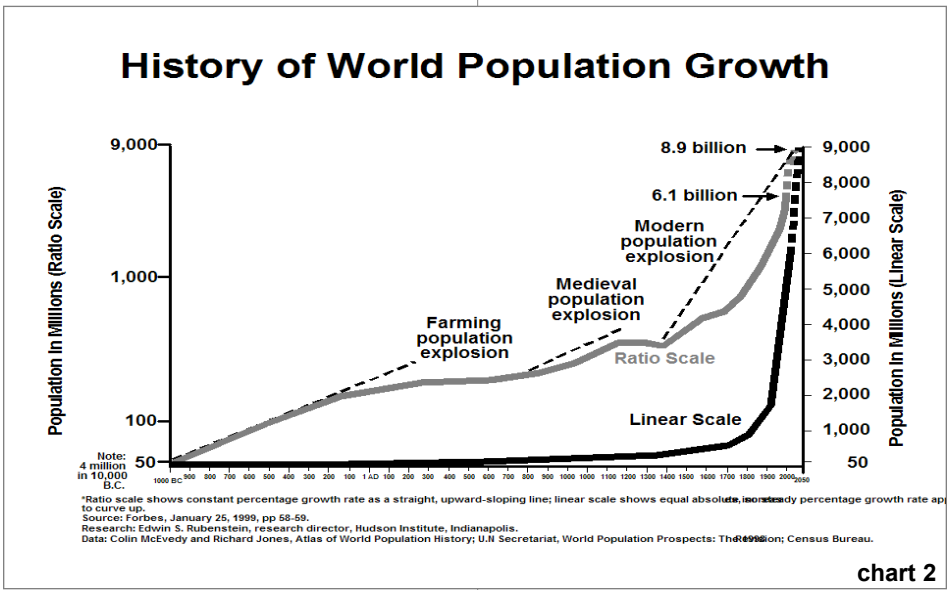
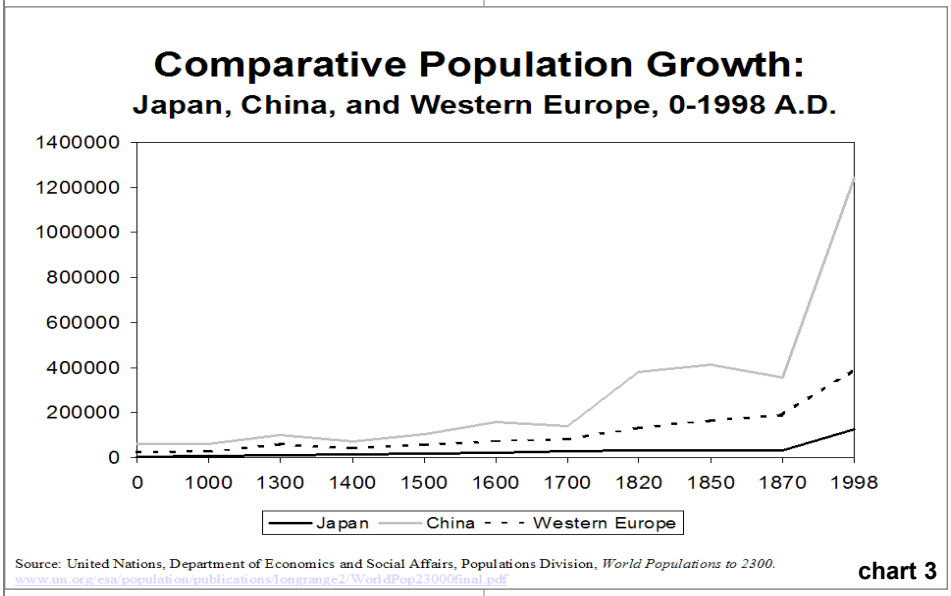


chart 2

The Exponential Trend in Population Growth Since 1000 B.C.

We can't as accurately measure the population growth back to 50,000 years ago, although it has been very roughly estimated back to 10,000 B.C. *Chart 2* shows increasingly accurate estimates of world population since about 1,000 B.C. or 3,000 years of history. In the last 3,000 years the world population has grown from 50 million to 6.2 billion, or 124 times! Rough estimates for 10,000 B.C., 12,000 years ago, were around 4 million. Hence, the population grew 12.5 times in 9,000 years from 10,000 B.C. to 1,000 B.C. This is clearly an exponential trend over time that is growing extreme in recent history.

There are two lines on this graph. The lower one shows a normal plot of linear growth and here we see an incredible bubble forming for thousands of years and especially in the last 200 – 500 years. That line looks just like a chart on compounding interest where you take $1 today and show what it would grow to in 40 years if you reinvest the interest every year — but over a much greater expanse of time. You get phenomenal results the farther you go out, but the growth starts very slowly at first and then compounds exponentially in mass only in the later stages as we see here with population growth. Again, the truth about growth is that it occurs exponentially until it begins to hit limits. And birth rates are slowing around the world and projections are for a peak in population around 9 billion by the end of this century.



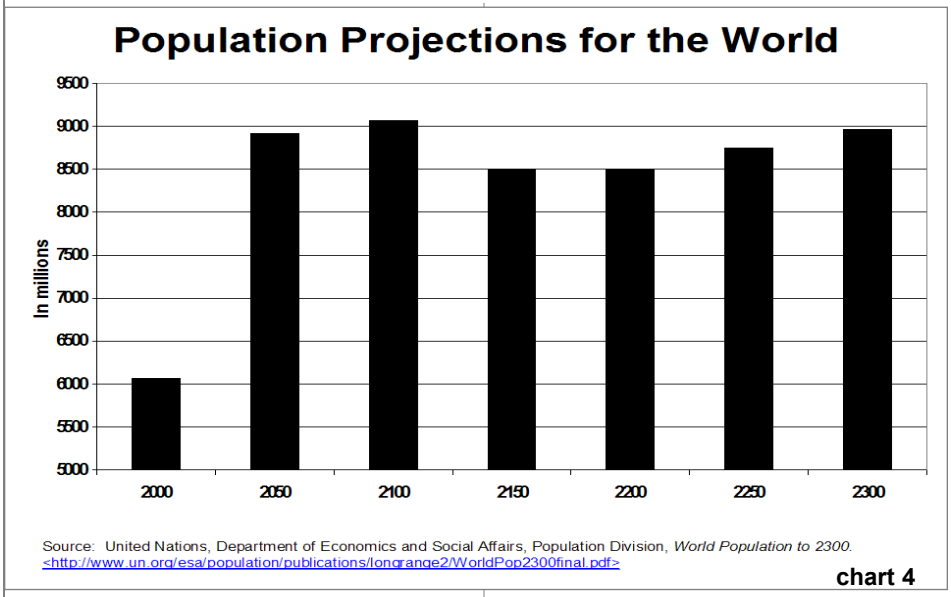
Source: United Nations, Department of Economics and Social Affairs, Populations Division, *World Populations to 2300.* www.un.org/esa/population/publications/longrange2/WorldPop23000final.pdf

chart 3

The second line is a logarithmic plot, which takes an exponential trend and smoothes it more into straight-line like trends (so that humans can adapt their narrow straight-line thinking to the reality of exponential growth over of time). But even here we see waves of more exponential trends building as time has progressed. From Greek times into the peaking of the Roman Empire we saw a faster acceleration at first. Then we saw a slowing around 100 B.C. and then a flattening between 300 and 600 A.D. and a slow expansion at first into 900. In this time period we saw Rome first peak, then fall followed by the Dark Ages – not a pretty picture. Then we saw the next acceleration from around 900 into the Great Plague of the early to mid-1300s, and then the most dynamic surge after the Printing Press around 1,500, accelerating even more so after the Industrial Revolution around 1,800. This is clearly a bubble building even when adjusted for logarithmic or exponential trends.

One of the classic signs of the end of a bubble is that it doubles in the last short period. Like the Nasdaq from late 1998 into early 2000, the population of the world is projected to double between the mid-1800s and mid this century – a very short 200-year period of time given the more exponential increase over the last 1,000 years or so, building upon the general exponential increase since the last ice age around 13,000 years ago. This simply can't continue for long and the beginning signs of slowing are already clearly evident.

Most interesting is how population growth has differed between the East and West. ***Chart 3*** shows population growth in Japan, China and Western Europe back 2,000 years. China started at a higher base than Western Europe in 0 A.D. (and back to 13,000 years ago) due to higher numbers surviving in the more benign climate in Southeast Asia during the last ice age. Population growth has been particularly higher there since 1700. Japan has seen the least progressive population growth although it has accelerated since the late 1800s up until the 1950s.



Source: United Nations, Department of Economics and Social Affairs, Population Division, *World Population to 2300.* <http://www.un.org/esa/population/publications/longrange2/WorldPop2300final.pdf>

chart 4

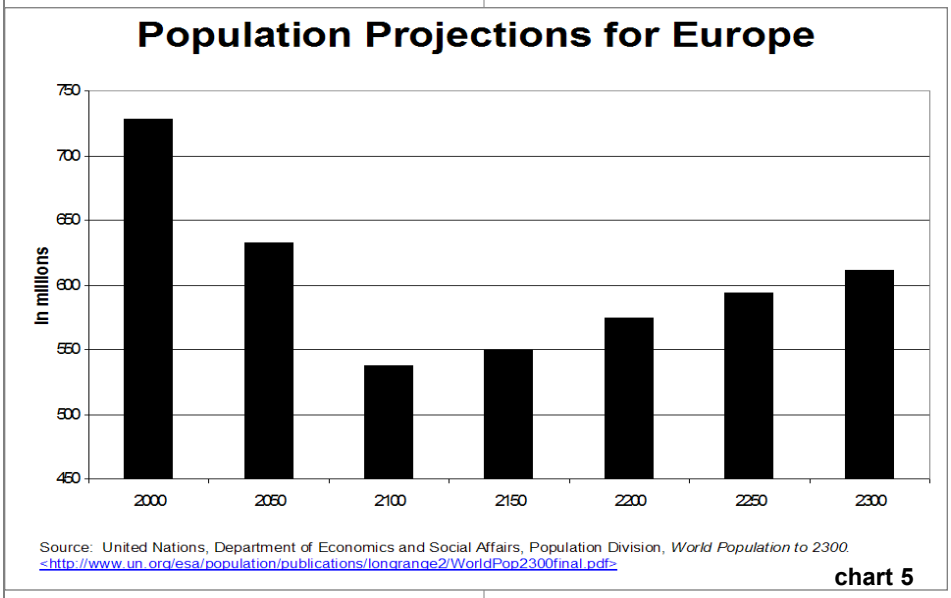


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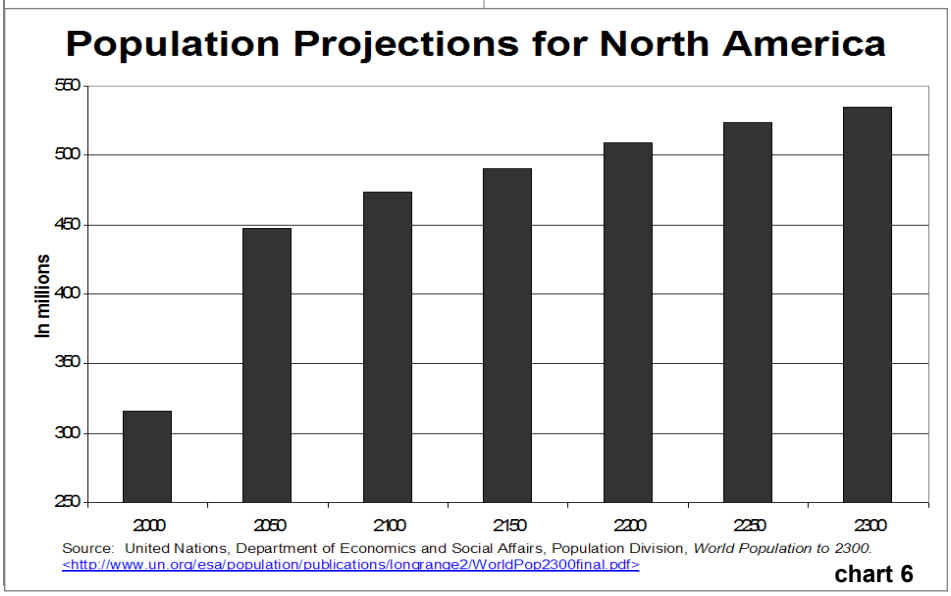
chart 5



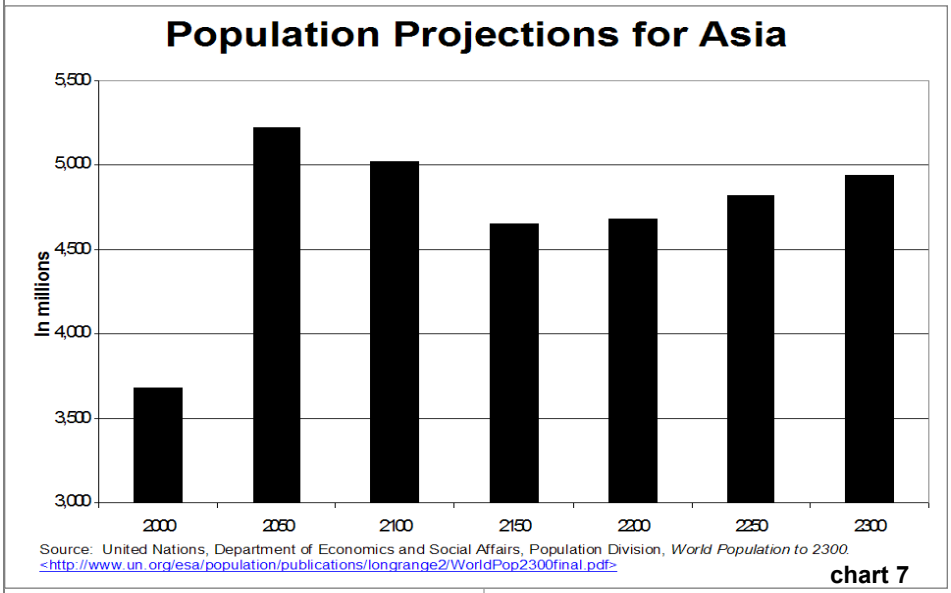
Source: United Nations, Department of Economics and Social Affairs, Population Division, *World Population to 2300.* <http://www.un.org/esa/population/publications/longrange2/WorldPop2300final.pdf>

chart 6

But this rapid population growth is slowing even in places like China. By looking at the population forecasts for the World in ***Chart 4***, the U.N. projects that there will be a slowdown in population growth between 2000 and 2050 and that World population could peak around 9 billion by 2100. We think their estimates for Africa are likely too optimistic due to rising disease and unrest, and North America likewise given the downturn we see coming that will adversely affect immigration rates. We would estimate that the peak could come more like 2065 when Asia and Latin America are projected to peak. As China and other countries in Asia develop into stronger economies we think the immigration to North America will also slow longer-term, beyond the downturn from 2010 to 2022.

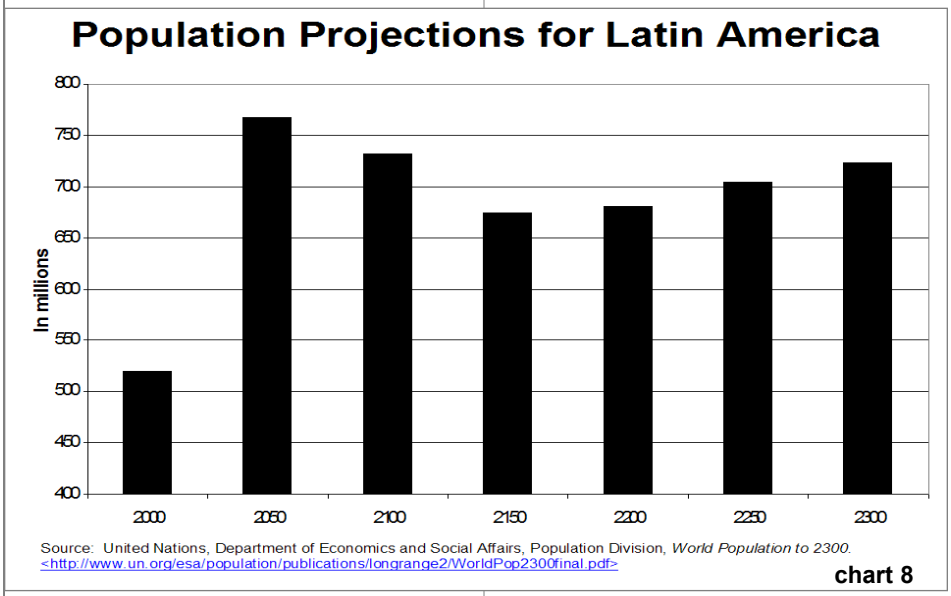
Europe is clearly leading the trends towards slowing births and declining population that other countries are likely to follow down the road. Broader Europe (including East Europe and Russia) in ***Chart 5*** already peaked around 2000 at just over 700 million and is projected to lose almost 200 million people by 2100. North America in ***Chart 6*** is slowing less fast due to slightly higher birth rates than Europe and higher immigration. It is projected to grow to 450 million by 2050 and perhaps 480 million by 2100. But again we think that is overly optimistic. We would be surprised not to see a peak at significantly lower levels in North America by 2050 to 2065.

Asia holds the largest population at 3.8 billion today and has by far the greatest potential for growth as is shown in *Chart 7.*



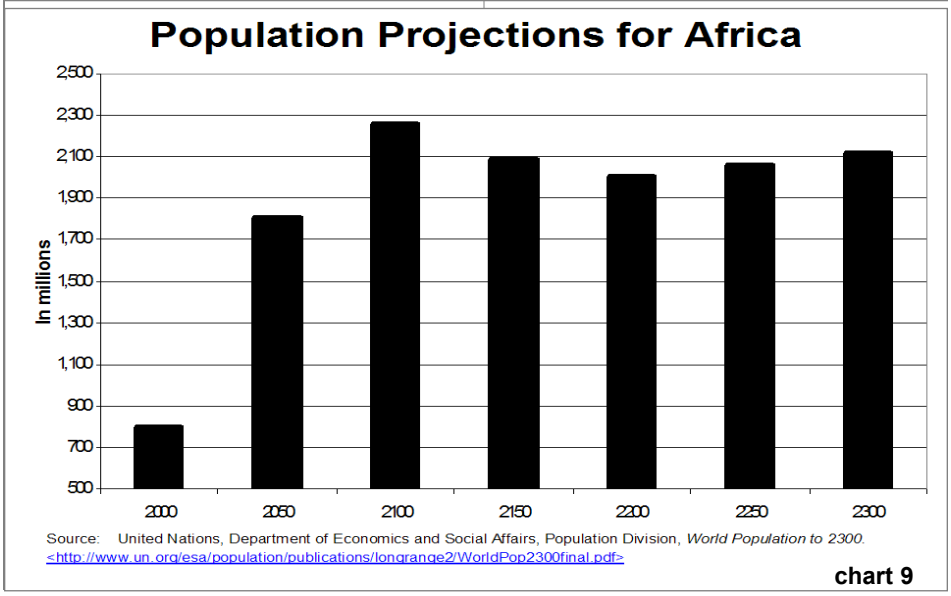
Source: United Nations, Department of Economics and Social Affairs, Population Division, *World Population to 2300.* <http://www.un.org/esa/population/publications/longrange2/WorldPop2300final.pdf>

chart 7



Source: United Nations, Department of Economics and Social Affairs, Population Division, *World Population to 2300.* <http://www.un.org/esa/population/publications/longrange2/WorldPop2300final.pdf>

chart 8



Source: United Nations, Department of Economics and Social Affairs, Population Division, *World Population to 2300.* <http://www.un.org/esa/population/publications/longrange2/WorldPop2300final.pdf>

chart 9

It is projected to peak around 5.2 billion in 2065, and China is already slowing dramatically today as it urbanizes and industrializes with low birth policies from the government for decades past. China's population is projected to peak by 2030 at around 1.45 billion rising from just over 1.3 billion today. China is already slowing rapidly, but it is the one large country that is still urbanizing rapidly and that should provide strong economic growth for decades to come.

India should rise to almost 1.6 billion from just over 1.3 billion today by 2050 and is projected to continue to rise more slowly into 2065 to 2100. Yet India is already more urbanized so the economic gains there are not likely to be as strong. China's GDP (in purchasing power parity) is projected to surpass that of the U.S. by 2020, and with our projections for the downturn in the U.S., it may surpass us even earlier. India's GDP is projected to surpass the U.S. by 2050. Hence, economic and political power will progressively pass to Asia over the next 20 to 50 years. Then there is Southeast Asia with Indonesia as the largest country in population and still growing more rapidly. But there is a lot of political unrest and potential instability there from growing terrorist camps.

Latin America/Caribbean in ***Chart 8*** at just over 500 million today is due to peak around 2065 at 770 million. This region is also largely urbanized and is not showing the same growth in productivity trends recently as China and Asia. Hence, there is growth potential here economically, but not as great as Asia. Africa has clearly been the

laggard in economic growth, urbanization and productivity gains. But it still has the highest birth rates, though they are declining. *Chart 9* shows that population is projected to grow to almost 2.3 billion by 2100 from 800 million today. Again, we think this is overly optimistic given rising disease rates and political unrest. But Africa is truly the wild card in the world economy. If there are greater trends towards urbanization and rising productivity in the future, this area could be the last great growth region in the world following India. But for now we would assume that growth rates in population would be lower than forecasted and peak earlier. We would also assume that economic progress would continue to be minor until we see signs to the contrary.

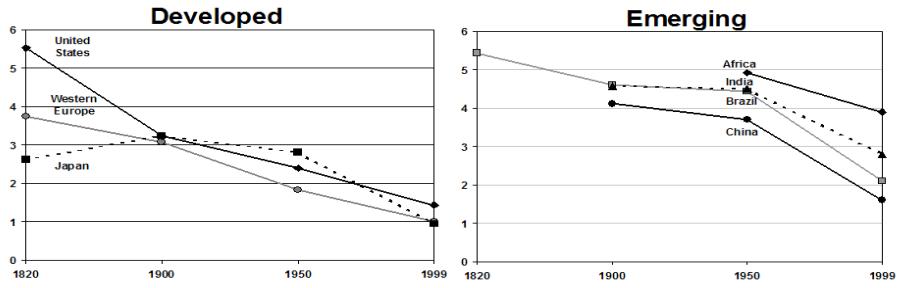
We would expect that world population could peak between 2050 and 2065, but by 2100 at the latest. So this major bubble in human population is very likely coming to an end in this century. And remember, the last time population growth slowed and then flattened we saw the Dark Ages to follow and a period from 0 A.D. to 1,000 where human progress in standard of living was minimal as we will show in GDP per capita statistics ahead. This scenario could be different now that we have such incredible advances in knowledge and technology that are more transferable and should be more sustainable than those coming into the Dark Ages where most of the gains of thousands of years in knowledge and culture were largely lost for 500 years.

There was something important that happened since the printing press in the late 1400s. We can record information and knowledge and pass it down to many people and to future generations. Writing had this effect but was limited to so few people who had access to written texts before that point. How many people had access to the libraries of Alexandria back at the time of Christ? Hence, it was easy to lose gains in knowledge and science before the 1500s. The computer and Internet have expanded the access to and storage of knowledge and information exponentially beyond printed material.

When Rome fell in the 400s, centralized knowledge and access to it almost disappeared into the Dark Ages and our standard of living regressed largely back to the feudal, local level of organization and structure of Sumeria in 3,000 B.C. Most of the gains in civilization and standard of living built into the Roman Empire were lost for hundreds of years until they were slowly rediscovered from the Crusades to the Renaissance. Hence, we don't think it is likely that such a regression in civilization and knowledge will occur in this slowing era ahead. Productivity may continue to increase, despite slowing demographics – unless there is such a rate of terrorism, warfare and isolation of regions that we lose some of these benefits. Yet even if we see greater unrest and fragmentation in the world, it is unlikely we would lose most of our gains in technology and organization.

Why is this long-term exponential population finally peaking? The Industrial Revolution has and is continuing to raise middle class incomes around the world to the point that more people are having fewer kids due to the rising costs of raising kids in urban societies, expanding social opportunities in life and the non-necessity of needing kids to work on farms. The Agricultural Revolution was a great boon to births and larger families as life stabilized into homes vs. constant migration. Agriculture greatly stimulated urbanization and population growth.

The bubble in population growth is the reason we have seen such dramatic technological, stock market and GDP per capita growth (on a lag), as demo-



Source: Maddison, Angus. *The World Economy: A Millennial Perspective*. Development Center Studies, OECD, 2001: Table 1-5a, p.30.

chart 10

graphics drive innovation and growth across the board. The Industrial Revolution continued the trend towards centralization and urbanization, but raised incomes to the point that most people have desired less and less to have more kids. And the recent Information Revolution only adds to that slowing in births and will allow our population to decentralize into more rural areas again for the first time in 10,000 years. We will grow by moving to more exurban areas in the future, first in the developed countries and then in emerging countries. But we are not likely to start having more kids per household any time in the near future, even in emerging countries.

Chart 10 shows very clearly that birth rates are declining everywhere in the world, not just in Europe and Japan which have the lowest rates. Especially since 1950 when the Industrial Revolution started spreading worldwide, birth rates have seen a sharp decline everywhere. They have declined the least in Africa, but death rates are higher there to offset somewhat and that could increase with present trends in HIV and rising poverty levels and droughts. Birth rates even in India are declining dramatically and more so than in Africa. Brazil (and South America), China and Japan have seen the most dramatic declines since 1950. The United States is declining at a slower rate only due to high immigration rates that are likely to slow in the coming decades, and then birth rates could slow here faster as well.

Since the Industrial Revolution in the early 1800s, birth rates have been slowing. But they have been slowing more dramatically since 1950 with the dawn of the Information Revolution. This trend shows no sign of abating at this point. Hence, we are certain to have slower demographic growth for many decades and likely centuries to come.

The 3000-Year Western Civilization Cycle

If we look at the most refined economic data we have in modern times, we saw a long-term and increasingly bubble boom from at least early Greek times into the peak of the Roman Empire, and we are seeing a second long-term boom from the end of The Dark Ages that is evolving into a bubble since the Industrial Revolution into the current period. Since we didn't have stock markets or regular GDP data back then, Chart 9.10 just ahead shows this long-term trend in the best way we can accurately display it today, through long-term rises in inflation levels. Contrary to popular economic opinion which considers inflation a negative factor, inflation – or the rise in general price levels over time — actually reflects rising productivity and specialization in labor and skills.

As new technological innovations over time allow us to specialize more in what we do best, we sub-contract more functions to more "middlemen" and specialists. Although we pay more for these outside services, we earn even more by focusing on higher-value-added tasks and create a net gain in income and prosperity. This specialization of labor and inflation theory was covered in detailed research in an article in Forbes "The Great Hamburger Paradox" (September 15, 1977).

We also noted in The Roaring 2000s Investor (Simon & Schuster, 1999) and previous books, that inflation is our economy's means of initially financing the growth of new technologies and the entry of new young generations into the workforce, as well as major wars which spur major economic transitions to new economies and broader empires of commerce. Hence, these inflationary periods lead into great booms to follow, and in rough proportion to their magnitude. This greatest boom in history was preceded by the largest sustained period of inflation for a long time in the 1970s.

Hence, inflation generally comes with the expense of raising new generations and financing their innovations, but pays off in the decades to follow as they become productive citizens and adopt those new innovations and bring them into the mainstream. But the long-term evidence is clear, just like DNA research. Higher levels of inflation, although painful at first in the short-term, correlate very closely with population growth, and subsequent economic expansions and long-term advances in our standard of living. The Great Wave by David Hackett Fischer (Oxford University Press, 1996) documents the correlation between population growth and long-term inflation trends in great academic detail as well as looking at other correlations.

I started off my research into long-term economic trends by comprehensively studying over 10,000 pages of a set of history books over the expanse of Greek to modern times. I noted in as much detail as was documented when there were major advances in technology or commerce,

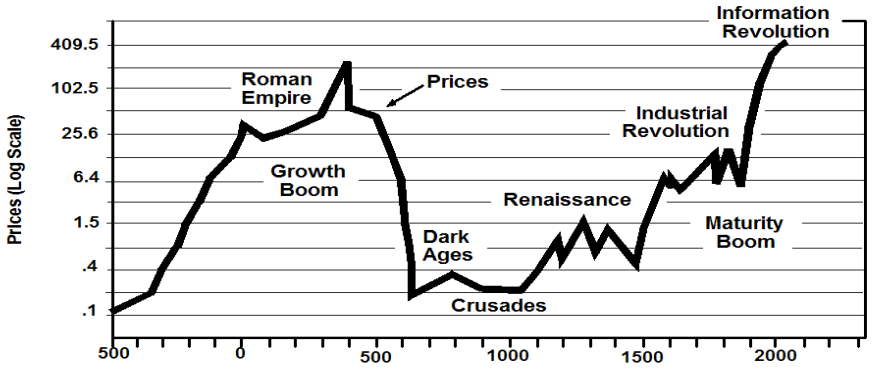


chart 11

when there were major power shifts politically and militarily, when the economy was booming or busting, and most measurably when there were significant changes in prices levels or inflation. Fortunately, most historians regularly note when there are periods of inflation and deflation.

Chart 11 was the most interesting chart and insight that came out of that research. I wasn't looking for any particular pattern when I charted such rough changes in inflation levels over the last 3000 years. In fact, I would have presumed at the time that rising inflation was a negative factor for economics, not a positive one. What emerged was an alternating long-term boom and bust cycle similar to what we have shown for the four-stage economic and technology cycles covered in this book ranging from shorter-term S-Curve accelerations to the 80-year new economy cycle.

There was a long-term rise in inflation and prosperity from early Greek times into the plateau peak of the Roman Empire from around 100 to 450 A.D., then a huge bust or "shake-out period" from the late 400s into the late 900s, and then another very long-term boom in prices and economic prosperity from the Crusades into current times. In the very fundamental four-stage model of economic progress we have presented throughout this book, the Greeks represented the Innovation Stage (with the early stages of science and democracy), the Roman Empire the Growth Boom (through military power and infrastructure/empire building), the Dark Ages the Shakeout Stage, and Western Europe/North America the Maturity Boom over about 3,000 years or a bit longer.

Here we see an approximate 3000-year Democracy or Western Civilization Cycle that follows the same four stages or seasons of our 80-year new economy model or for any S-Curve cycle for the emergence of new products, technologies or social trends, and for human life cycles as well.

The same growth process and life cycle occurs from the shortest-term to the longest-term cycles! This validates the very fundamental nature of this four-stage economic growth model and how it is the basic building block of human and natural processes of growth and evolution. And demographic and population trends are the engine that drive these four-stage cycles. That was the insight I first got from a longer expanse and overview of human history.

We can see this specialization of labor and inflation trend clearly accelerating in just the last century with the advent of electricity, phones and automobiles. We were mostly "jack-of-all-trades" farmers, craftsmen, trappers and merchants. Now we have thousands of specialized job classifications in factories and increasingly in offices and professional avocations. This specialization again paradoxically increases the prices we pay for goods and services, as we have to pay more specialists and middlemen for goods and services we used to produce more ourselves. But the paradox is that our higher earning capacities as specialists more than make up for those increasing prices – increasing our standard of living. Labor productivity has gone up 10 times since the invention of the phone in the 1870s, and so has inflation.

How Western Civilization Emerged in Greece and Expanded Through Rome

Now that we've explained the relationship of long-term inflation and prosperity cycles let's look back at Chart 11. The very concept of Democracy started (in only the most elite circles of landholders at first) in Greece. Greek philosophy and science (Socrates, Plato, Pythagoras,

Plotinus, Archimedes and many more scholars) emerged around 600 B.C. and 200 B.C. during the declining stages of the Persian Empire (1,0000 – 500 B.C.) with the Ionian Renaissance that peaked in 546 B.C in Greece. Revolutionary philosophical, mathematical and scientific thought flowered into 200 B.C. peaking with Archimedes. Major advances or breakthroughs in science and philosophy were not made after that period until around the 1500s into the 1700s ("The Enlightenment") in Western Europe.

The Golden Age and commercial revolution in Greece started from the defeat of Xerxes by the Spartans at Thermopylae in 480 B.C. (where the Greeks exhibited major advances in sailing and warfare) and continued to 399 B.C. That would have represented the Growth Boom in Greek civilization back then. Then after a pause (or Shakeout period), there was the rise of Alexander the Great and his empire conquering Persia from 336 B.C. forward which lead to an influx of science and commerce into the 200's B.C. in Greece. But that was the relative peak of Greece in European history. From 200 to 146 B.C. Rome conquered Greece. That 500-year period in Greece from about 600 B.C. to 200 B.C. would represent the Innovation stage of Western Civilization from a broader point-of-view.

The Romans then acquired Greek philosophy and science and built the Roman Empire starting with the conquest of Hannibal in Carthage from 264 to 202 B.C. Their greatest contributions were basic infrastructures ranging from aqueducts to paved roads and couriers – but mostly military might and ambition. The greatest surge of growth came from just before Christ into just after the time of Christ between 60 B.C. and 100 A.D. wherein the Western Empire was built and included the rule of Caesar (58 – 44 B.C.), Marc Antony (44 – 30 B.C.) and Augustus (30 B.C. – 18 A.D.). This period was called the Golden Age of Rome. Then the Silver Age followed into 96 A.D. that was considered the peak of Roman commerce and industry. Prosperity continued to grow marginally into around 193 A.D.

Then there was a difficult period of collapse in the Roman Empire and then consolidation from 193 into 305 A.D. when Diocletian finally restored order by breaking the empire into East and West for greater manageability. Then Constantine ushered in a new era of prosperity using the Christian religion to unify the Empire that marked the first great expansion or Growth Boom for Christianity. In 330 A.D. Constantinople was made the capital of the Empire as growth and prosperity shifted more towards the Eastern Empire. The Western Empire started to deteriorate to the point that barbarians and mercenaries had to be hired to maintain the army as more migrants moved in and took over more functions broadly.

Ultimately, these internal and external "huns" revolted and sacked Rome in the 450s and the Roman Empire fell with only a brief resurgence in Italy, Spain and North Africa in the 500s, but with the Arabs/Persians resurging in power from 640 on and growth occurring more eastward towards Istanbul. The period from at least 246 B.C. (Carthage conquered and then Greece) or better from Alexander the Great's first empire starting around 336 B.C. to around 450 A.D., would have represented the Growth Boom stage of Western Civilization, or about 800 years. It ended in a minor bubble in prices and wealth around 450 A.D. that followed the stronger previous bubble into around 100 A.D. (like the twin bubbles in 1919 and 1929 in the last modern technological revolution).

The Long Shakeout of the Dark Ages

As we all know, that was a major turning point in modern Western history. From the late 400s until the Crusades we saw a five hundred year bear market and a regression to subsistence farming and local feudalistic empires! The longer the cycle the longer the Shakeout stage that occurs. That's why it is so important to get a longer view of history even in looking at current cycles. Another major event occurred from a religious and political perspective, the rise of Islam during the Dark Ages (from 569 to 1258) that is now the greatest potential reaction and threat to the long expanse of Western and largely Christian-based culture – again on a lag.

That 500-year period from the late 400s to the late 900s represented the Shakeout stage of Western Civilization. The extended depression and deflationary period that evolved saw the extreme wealth and relative urbanization of the Roman Empire deteriorate into a long period of feudal subsistence back into rural areas throughout Europe with the near disappearance of trade and coined

money. But then finally, after centuries of boredom and economic regression, the knights and warring feudal classes decided to re-conquer Europe for the glory of Christianity in the late 900s and those travels and pursuits regenerated trade, communication, Christianity and the rise of Western Civilization again.

Hence, the Crusades ushered in the beginning of the longer-term Maturity Boom of Western Civilization – starting with another great expansion of population and a movement back into towns and cities starting in the early 1,100's particularly in Northern Italy and the Netherlands. A cluster of agricultural innovations dating back to the 900s, including the heavy plough, horseshoes, harnesses, three-field rotation and open field planting, drove innovation and lead to greater specialization in food production throughout Europe. The greater long-term trend is that we've been in a boom for a little over 1,000 years since the Crusades or slightly earlier – about the same time period that the boom from early Greek times into the Roman Empire lasted (from around 600 B.C. to 450 A.D.).

The Long Maturity Boom in Western Civilization – 1000-Year Cycle

From 1,000 to 1,500 Western Europe grew the fastest in population especially in the North, but the center of wealth and innovation came with the Merchant Revolution in Northern Italy especially when its navy conquered Istanbul and gave it dominance of the Mediterranean shipping routes. Venice was the center for shipbuilding, trade, wealth and GDP per capita growth in that era. But it peaked between the late 1400s and 1500s, as did its population when the Turks started closing off major trading routes to the East again, greatly diminishing Northern Italy's dominance of trade.

The migration back to towns and cities flourished through the 1200s until growth started to slow. Eventually the environmental problems with sewage from this great expanse lead to The Great Plague (1347 - 1348) and a long crisis period (The 100 Years War 1337 – 1453) into the mid-1400s for Europe during which the Renaissance period (in Northern Italy) brought renewed interest in the urban culture of the Roman Empire and Greek philosophy and culture. Major innovations started to emerge in Northern Italy in banking, accounting and insurance that sowed the seeds for the Capitalist Revolution to follow in the next era of growth. From 1,000 to 1,500 GDP per capita approximately doubled in Western Europe while only increasing 33% in China (which became increasingly more adverse to trade and global commerce), and GDP per capita regressed in Africa.

Growth re-emerged strongly by the early 1500s, with major innovations like the printing press, improvements in tall sailing ships and navigation, and gunpowder in the mid- to late 1400s. Population growth resurged again and rapidly rising inflation and economic progress naturally followed. Portugal and Spain lead the discovery of America (Columbus, 1492) and the Portuguese first took leadership of trade in Africa and the Far East for a century while the Spanish first moved to dominance in the Americas. In 1588 the English defeated the Spanish Armada that marked the peak of Spanish and Portuguese leadership in world trade and colonization.

Then it was the rise of the Dutch in wool production, banking and shipping who dominated population growth and GDP per capita advances from around 1600 – 1820 while the British also started to build an empire of trade and colonization. 1603 saw the East India Company (in the Netherlands) that represented the first more noted stock shares for investors in a company for financing long-term sailing expeditions for trade with Asia in spices and silk (although that first began back in Venice on a smaller scale in the 1300s). From 1500 to 1820 the greatest population growth was in larger cities in Western Europe like Paris, London, Vienna and Amsterdam. But by 1700 population growth peaked in the Netherlands and the tide of innovation and growth shifted more decidedly to Britain and France, with Britain emerging into leadership in innovation, trade and commerce.

The Industrial Revolution Lead by Britain

The foundations for the Industrial Revolution were laid in the slowing period of population and economic growth between the mid-1600s and the late 1700s. The scientific revolution or "The Enlightenment Period" brought the first major advances in science since Greek times. This represented the first great phase of complex abstract thinking! We saw breakthroughs in science from Galileo, Descartes, Bacon, Kepler, Darwin, Newton, Kant, Locke,

and Adam Smith, and many others. Then a commercial revolution followed. Between 1738 and 1793 the next macro set of technology innovations hit largely in Britain. Spinning mills saw a series of innovations, especially the Spinning Jenny in 1765, that increased their productivity 16 times and that was followed by Eli Whitney's cotton gin (U.S.) in 1793 that processed raw cotton more cheaply to feed those mills. We saw the zenith of France with Louis XIV from 1643 – 1715 and the peak of the Dutch trading empire with the bursting of the South Seas Bubble in 1720. This left the lead clearly to Britain who dominated increasingly into the late 1800s.

There was a major shift from wool to cotton and from agriculture to industry that greatly favored Britain from the late 1700s on. But the greatest innovation in Britain was of course the steam engine by Watt in 1765, the first stage in powered machinery that brought a new era to economic progress and laid the practical foundations for the factory system and brought the greatest single turning point in the acceleration of our standard of living in history: The Industrial Revolution. GDP per capita has been soaring at unprecedented rates ever since as the stock market has reflected since the late 1700s.

The Democracy Revolutions and the Decline of Monarchies

Simultaneously, in the political realm came the American and French Revolutions that struck a blow to the rampant rise in monarchies and the narrow control of wealth and power since the late 1400s (and since the Agricultural Revolution 10,000 years ago). Democratic governments and the broader accumulation of economic gains began to emerge. This has continued to be a powerful trend driving modern economies today. 1820 –1913 represented the fastest rise in productivity with growth in GDP per capita tripling in that period for Western Europe until 1950 when productivity accelerated even faster from the mass production phase of the Industrial Revolution that followed. GDP per capital advanced another 32% in Western Europe from 1913 to 1950 and then quadrupled from 1950 to 1998. The British Empire was greatly expanded from 1820 into 1913 before it began to collapse.

1812 saw the first steamship and by 1869 the Suez Canal opened much quicker routes to India and the Far East. But perhaps the biggest impact of steamships was the strong surge in immigration from Europe into North America, Latin America and Australia/New Zealand. It was these nations that lead growth in the next era and the U.S. became the world leader in the age of automobiles and mass production. Railroads were also initially innovated in Great Britain in 1825 just after steamships, but ultimately had a much greater impact in the U.S. by uniting such a vast continent of resources and growth potential.

Electrification decentralized power access and made location less important in manufacturing which gave an advantage to the U.S. who then led in the innovations of scientific work design and management (Frederick Taylor), the assembly line (Henry Ford), the modern decentralized corporation (Alfred Sloan) and large-scale R&D labs (Thomas Edison) in the early 1900s. The U.S. has clearly lead innovation and productivity growth since the late 1800s. After World War I the British Empire began to fall apart and was largely dismantled by 1948 as the U.S. rose into world leadership not just economically, but politically and militarily following World War II.

The Information Revolution emerged with the first computers in 1946 along with Jet engines and the A-bomb. Then came the first microchip in 1971, PCs in 1976, and the first integrated PC software operating systems in 1983. And the U.S. is clearly leading this revolution that began to accelerate into the mainstream around 1994 with the Internet, home computers and cellular phones – and now broadband. And we have seen major advances in genetics in the last two decades after Watson discovered DNA in 1953. Technological innovation is clearly not slowing and is still centered in the U.S. for now. Radical new innovations have yet to emerge in Asia at this time to suggest new leadership. The trends in recent decades have been for Asian countries – from Japan to South Korea to China to India – to incrementally improve new technologies and to duplicate new products at lower prices from lower wage rates.

To review briefly, the long-term Maturity boom of Western Civilization that emerged out of the Dark Ages around the late 900s A.D. is still expanding today. That boom starting with the Merchant revolution from 1000 – 1500 lead by Venice and Northern Italy, then expanded to

the Capitalist revolution from 1500 – 1800 lead increasingly by the Netherlands, and then moved into The Industrial Revolution lead by Great Britain from the late 1700s into World War I. Since then, the U.S. has lead the mass manufacturing phase of the Industrial Revolution from 1914 on (with the assembly line) and leads the Information Revolution currently. And this revolution is far from over but is about to hit its first zenith around 2009/2010 and see the slow passing of increasingly more incremental innovation and economic power to China, Southeast Asia and India in the coming decades and centuries.

A Summary of Inflation and Standard of Living Progress in Modern Times

Now briefly to get a tangible look at the economic evidence of the unprecedented boom since the Crusades since the late 900s A.D., ***Chart 12*** shows a much more accurate plotting of inflation and economic progress in Great Britain over the past 1000 years (by E. H. Phelps Brown and Sheila V. Hopkins). But note here that this analysis of inflation trends is only in Great Britain. Great Britain was a laggard at first in the Merchant and Commercial Revolutions that re-ignited in Northern Italy first and then spread to Northern Europe. Hence, this chart may be underestimating the trends in progress into the 1400s. Also note that the U.S. has dominated increasingly since the 1900s, and hence, trends may be a bit under-estimated as well there. But this is the best solid economic evidence of the basic inflationary trends and general rise in standard of living back 1,000 years in Western Europe.

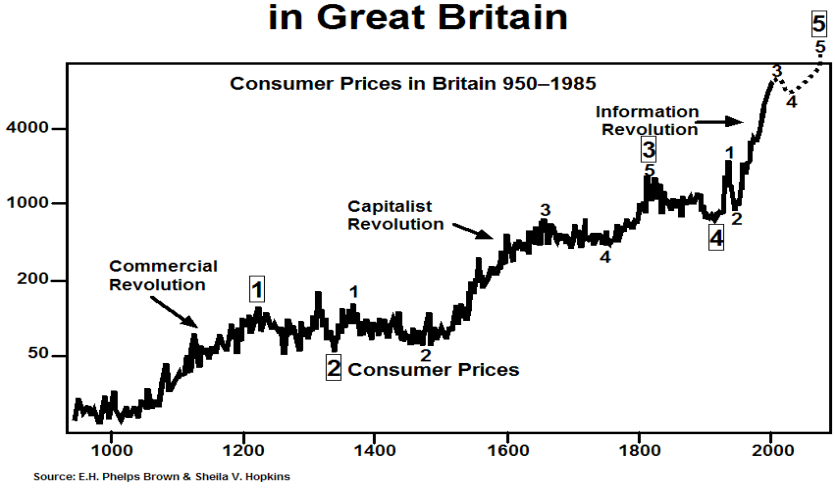
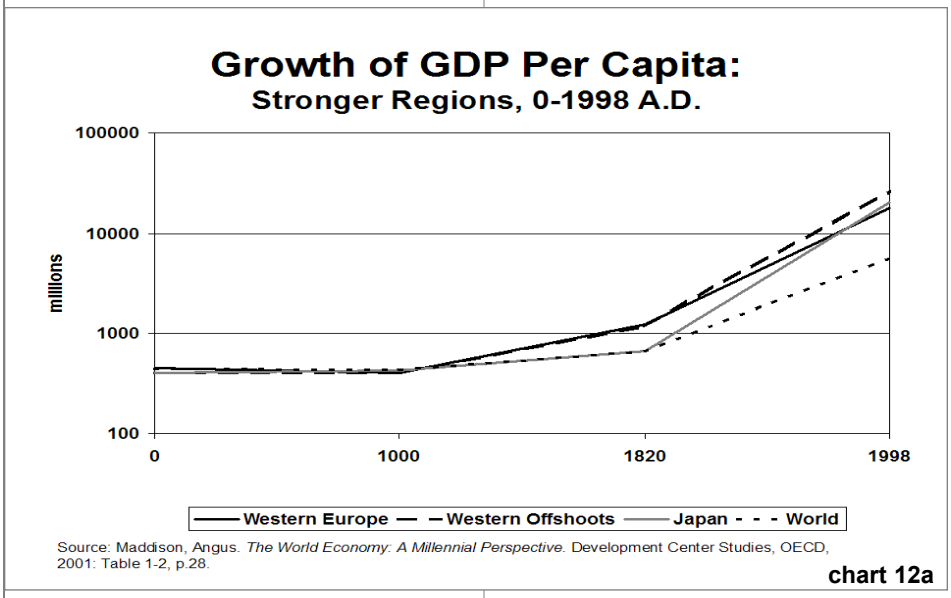


chart 12

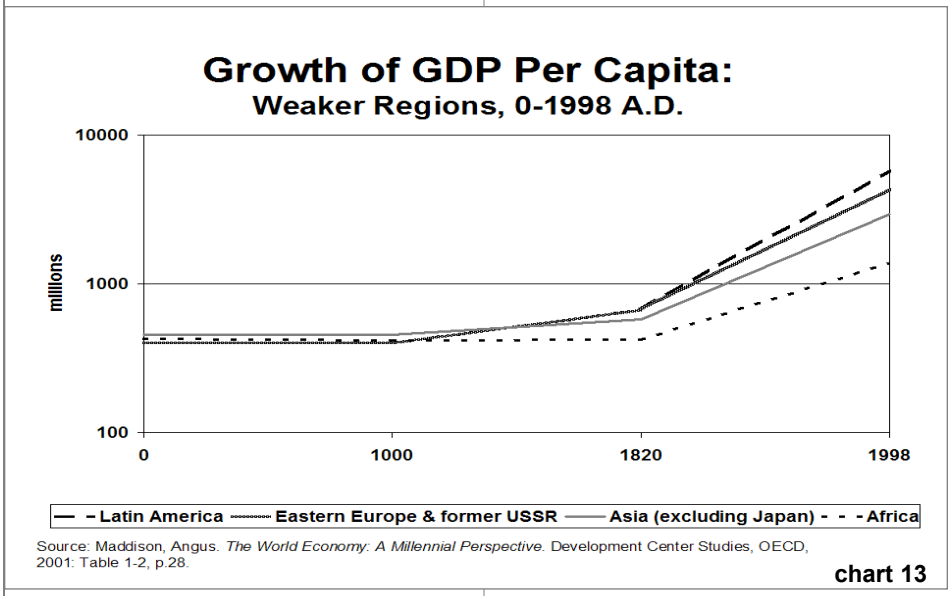
On this chart we add likely Elliott Wave patterns of growth and progress. The 1st recovery wave out of the Dark Ages was the Commercial or Merchant Revolution and saw a dramatic expansion back into cities from around 1000 to the early 1200s and then that wave saw a plateau peak and then a decline into The Great Plague in the mid-1300s. Then we saw the Renaissance in the late 1300s and 1400s that lead into the Capitalist Revolution following the printing press and tall sailing ships innovated in the late 1400s. That 3rd wave advance occurred from the mid-1300s slowly at first into the early 1700s when the South Seas bubble from peaked in 1720 and lead into a decline into the late 1700s, and then peaked with the early stages of the Industrial Revolution into the early 1800s. From this point-of-view, the Industrial Revolution was more the crescendo of the Capitalist Revolution that emerged after the Printing Press.

The 5th and final wave up began in the late 1800s with the beginning of electricity and the mass production revolution in the U.S. into the early 1900s and the Information Revolution (which actually began with the telegraph and telephone in the mid- to late 1800s and was greatly extended by computers and the Internet). This wave has clearly become the most dramatic and exponential following the extreme demographic bubble that is likely beginning to peak with the demographic trends around the world in this century. The first wave of this broader wave occurred into the 1920s and the 3rd wave advance is still in progress after the Great Depression, but should be peaking around 2010 with the deflation trends we are projecting for 2010 - 2022. This chart would suggest that we are likely to see one final wave upward later in this century driven more by the extended boom into Asia that is likely to peak by 2065. But then we could see very flat to even declining prices for centuries with the slowing demographic growth that has already occurred in developed countries and is starting to occur rapidly even in emerging countries as they industrialize.



Source: Maddison, Angus. *The World Economy: A Millennial Perspective.* Development Center Studies, OECD, 2001: Table 1-2, p.28.

chart 12a



Source: Maddison, Angus. *The World Economy: A Millennial Perspective.* Development Center Studies, OECD, 2001: Table 1-2, p.28.

chart 13

This is what we mean when we say that we seem to be nearing the top of a very long boom – a top that is likely to occur as early as 2010 in the most developed countries, and as late as 2065 to 2100 in developing countries from Southeast Asia to India and perhaps Africa.

Progress in Standard of Living in the Last 1000 Years

In this long boom since the Crusades, there has been great progress in our standard of living, but it has obviously been stronger in regions like Western Europe and North America. ***Chart 12a*** shows the rise in GDP per capita for the regions that have been stronger than the world average back to two thousand years to 0 A.D. There was little progress anywhere in the world from 0 A.D. (near the peak of the Roman Empire) to 1,000 A.D. (through the Dark Ages). But since 1,000 A.D. the greatest progress centered in Western Europe and then even greater after the Industrial Revolution from 1820 on in the "Western Offshoots" (U.S., Canada, Australia, New Zealand). Since 1820 Japan has had the most dramatic rise, just surpassing Western Europe since the 1980s.

In ***Chart 13*** we look at the larger regions that have under-performed the world average. Africa has lagged the most since 1,000 and then Asia (excluding Japan). Latin America has made the most progress, along with Eastern Europe, especially since 1820. In this century ahead, we would expect the greatest rise to come in Asia and for Africa to continue to lag unless there is some dramatic revolution in productivity and political structure there. Despite the slowing in demographics ahead especially for the more developed countries, we would expect GPD per capita to continue to increase from the Information Revolution and a more powerful 500-Year technology cycle.

500-Year Macro-Technology Cycles – From Centralization to Decentralization

In addition to the 10,000-Year Agricultural Cycle, the 3,000-Year Western Civilization Cycle and the 1,000-Year bull market cycle since the Crusades we have covered. There appears to be a very powerful 500-Year cycle in macro technology innovations. In the mid-to late 1400s we saw very powerful innovations that have driven unprecedented progress since: The Printing Press, Long-range Sailing Ships and Gunpowder. The printing press expanded communication and knowledge beyond tiny elite circles for the first time in history. The Protestant Revolution in religion followed in the 1500s, then revolutionary insights from Copernicus and Galileo and the

Capitalist Revolution in business. There was a never-ending expansion of science and business from the 1500s onward due to this massive information revolution.

Tall sailing ships and advances in navigation led quickly to the discovery of America by Columbus and later the rest of the world by entrepreneurial sailors like Cook. World trade expanded enormously ever since this innovation. Gunpowder changed power and led to the building of larger nation-states and regional empires for the first time since Rome. As we mentioned earlier, the Industrial Revolution with powered machinery and factory systems was more the pinnacle of the Capitalist Revolution that followed the printing press, sailing ships and gunpowder. The next 500-Year cycle would come with The Information Revolution.

The computer was first invented in 1946, along with the jet engine in 1943 and the A-bomb in 1945. The computer came 492 years after the printing press and represented the next major revolution in communication, information and knowledge. The jet engine was the next radical transportation innovation to transform world travel and trade. The A-bomb and nuclear weapons have obviously transformed power relationships in politics around the world between the haves and have-nots. But there is a difference in these new technologies.

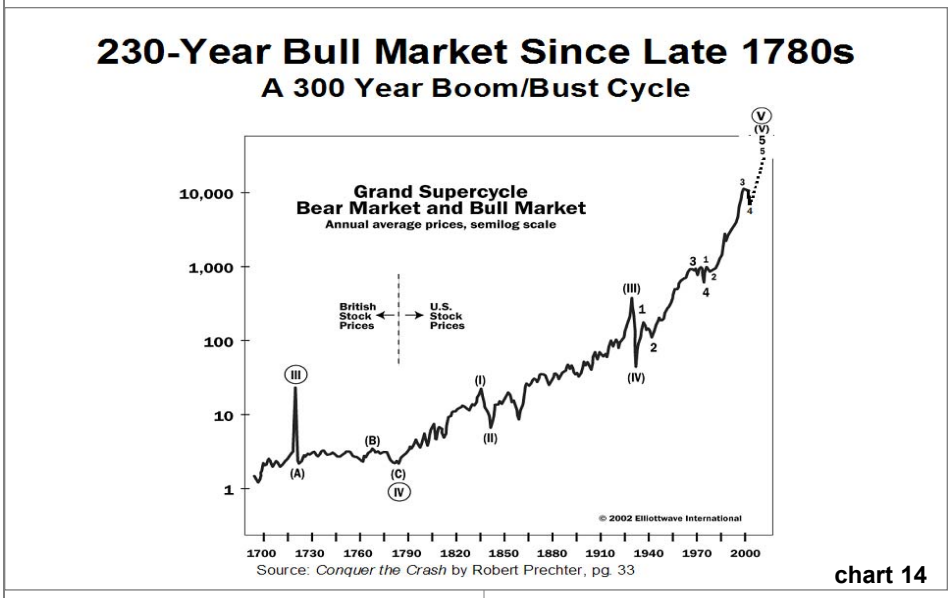
Over time they are clearly proving to be more decentralizing rather than centralizing. Information is increasingly available to anyone anywhere, small companies and large companies, small nations and large nations. Micro-jets are allowing smaller areas and towns in ex-urban areas to grow and all countries to be accessed more easily. Nuclear weapons are becoming smaller and smaller in scale and are increasingly giving power to smaller political and terrorist groups. Many emerging nations, from Iran to North Korea, are close to having nuclear weapons now.

If we look back at past 500-year cycles we see innovations like the heavy plough back in the 900s and the stirrup in the 400s. The stirrup was an example of a decentralizing technology in warfare and political power. It doesn't sound like a big deal but it was. It allowed small groups of highly trained knights to have great superiority in battle over foot soldiers. This meant that local feudal lords could have great power over the serfs and peasants in any small region. The stirrup added to the trends from urbanization back to rural subsistence living after the fall of Rome.

The decentralizing qualities of this Information Revolution create a paradox. There is much continued potential for rising productivity despite slowing demographics as we are still in the early stages of this powerful 500-year cycle. The biotech revolution is just starting to emerge with nanotechnology to follow. Yet there is also the potential for increasing fragmentation of power in the world with smaller groups and nations having the capability to disrupt trade, leading to a less stable political and trading environment. That would actually work against the trends towards a more integrated global economy. This could cause living standards to fall rather than rise, or for there to be flat to minimal increases in standard of living for most countries much as occurred in the Dark Ages.

This is likely to be the greatest issue ahead for our future: whether these decentralizing technologies create more positive effects in personal and corporate productivity vs. more negative effects in destabilizing broader political and economic systems. That is something we cannot fully predict. But the fact that so many long-term cycles are nearing a peak makes us suspect that we will see longer-term declining trends set in somewhere between 2010 and 2065. As we mentioned in the beginning of this chapter, the increasing clash between cultures seems to be the key factor in today's increasingly complex global economy. It may take decades and centuries to sort out the unavoidable differences in culture that have evolved from such uneven economic progress in the past centuries and the clear trends now toward a more global economy.

For the first time in history, we have a world economy with major regions existing in three very different levels of economic, cultural and political development: third world/agricultural, second world/industrial, and first world/informational. We will discuss in the Epilogue how there are even more very discrete differences at the human level of psychology and development. These differences cause nations and peoples to view the world differently. Hence, aligning these differences into a new global economy will be very



Source: *Conquer the Crash* by Robert Prechter, pg. 33

chart 14

challenging – and just may not be possible until the rest of the world catches up to the Industrial and Information Revolutions over the rest of this century bringing a more unified world view. Hence, it is likely that it will take many decades or even centuries for the world to make the real transition into a global economy. That likely means an increasingly less stable environment ahead, despite the unprecedented progress from new technologies.

The 300-Year Cycles Before and After the Industrial Revolution

We are clearly still in the early stages of this 500-year macro technology cycle, much like the early 1500s. But we get a different picture if we look at the progression of cycles since the Industrial Revolution that we showed in Chapter 2 of The Next Great Bubble Boom in ***Chart 14***. There has been an approximate 230-year bull market and bubble boom since the late 1700s and the Industrial Revolution that is due to very likely peak in the U.S. and Europe by around 2009/2010 with three major bubbles evolving and all of the key canal to railroad to automotive to information technologies bubbles that have occurred during this cycle.

Again, there was a 69-year bear market in stocks from the burst of the South Seas Bubble in 1720. Since the late 1780s there has been a bull market that will have lasted about 231 years by 2009/2010 if there is a major peak there as we are projecting. That makes a 300-year boom/bust cycle. If there had been a stock market before then, we estimate roughly that there was another approximate 230-year bull market from the late 1400s into the South Seas Bubble peak in 1720. And then there would have been a boom and bubble from the late 900s or early 1,000s into the late 1200s or mid-1300s before the Great Plague.

That would mean that this 230-year bubble boom cycle projected to peak between 2009 and 2010 would represent the 5th and final major wave up dating back to the Crusades and the beginning of this 1,000-year boom cycle. That would even more strongly suggest that stock prices and economic advances could peak in the more developed countries in North America, Western Europe and Japan for many decades to come. The peaking of the most developed countries in the world is likely to have some impact on the continued progress of the developing countries and would only add to economic and political instability in the world. But the greatest progress is likely to be in Asia from 2010 onward. If this 300-year cycle is peaking in most developed countries around 2010, the "B" wave of this coming 70-year plus bear market is likely to take the U.S. market back towards the likely highs of 2009/2010 between 2038 and the early 2040s before bottoming around the 2080s or perhaps later.

Where are we on this 300-year boom/bust cycle? We are likely heading into a 5th wave peak for most developed countries with an extended 70-year plus bear market after 2010.

The 80-Year New Economy Cycle

In *Chart 15* we show the 80-year new economy cycle from Chapter 7 of The Next Great Bubble Boom since the late 1970s/early 1980s and how we are transitioning from an assembly-line-driven standardized economy to a network-driven customized economy. This cycle has seen its Innovation Stage from 1968 to 1982, its Growth Boom from 1983 to 2009/2010 to peak ahead, its Shakeout Stage will come from 2010 into 2022, and its Maturity Boom from 2023 into the late 2030s or early 2040s,

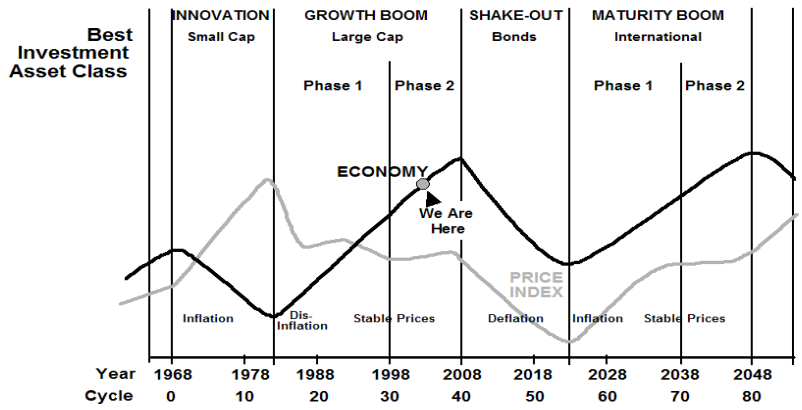


chart 15

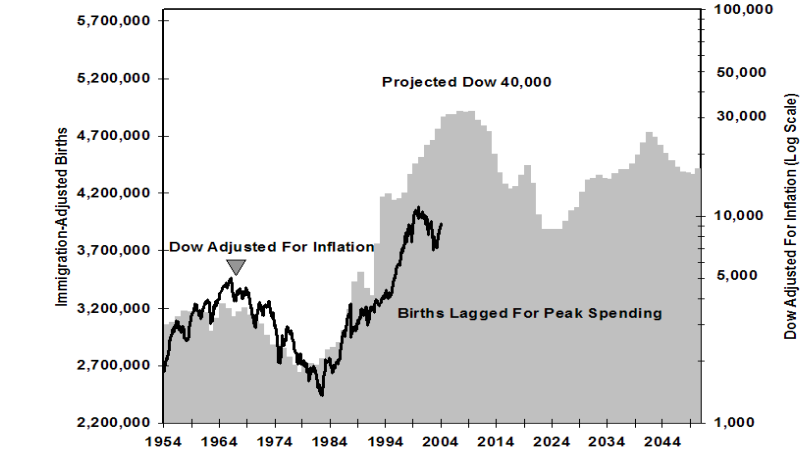


chart 16

and possibly later with stronger world trends – in the U.S. which is still the leading economic, technology and political/military leader in the world – for now.

Where are we on this 80-year cycle? Nearing the end of the Growth Boom Stage and about to enter the Shakeout Stage between 2010 and 2022/2023 with a Maturity Boom to follow in the U.S. between 2023 and the late 2030s to early 2040s. In view of the 300-year cycle, that is likely to only be a major bear market rally before another extended decline into the 2060s to 2080s.

The Baby Boom Spending Wave

Chart 16 shows the Spending Wave of the baby boom generation in the U.S. (and a good average of that trend in the most developed countries from Europe to Japan) that represents the 40-year generation cycle since the early 1980s. The boom in spending and the stock market started in late 1982 and should continue into late 2009/mid-2010, representing the Growth Boom of the 80-year Cycle in ***Chart 15***. This 40-year cycle will see a downturn from around 2010 into 2020/22 or so, representing the Shakeout Stage of the 80-year cycle.

Where are we on this 40-year generation boom and bust cycle? In the last bull market just before a 12- to 14-year decline ahead from around 2010 on.

And how is this last bull market from late 2002 into 2009/2010 likely to unfold? In three waves of expansion as we can see in *Chart 17*. The first recovery wave started in late 2002 and peaked in early-to mid-2004. The third wave is likely to peak by mid-to late 2006, and possibly extend into late 2008. The fifth wave should occur from late 2006 at the earliest and possibly as late as late 2008 when we likely see the most extreme short-term bubble in history before peaking between late 2009 and early 2010.

If we look at all of our long-term cycles only one is clearly still pointing up – the 500-year cycle. The 1,000-year boom cycle and the 3,000-year Western Civilization cycle are all nearing a peak – but the time frames there could obviously extend further out. More ominous, the 230-year bull market (300-year cycle), the 80-year Growth Boom cycle and the 40-year Spending Wave cycles all look to clearly peak by 2010 in the U.S. with the crescendo of technological innovations of the massive baby boom generation also by 2009. That would suggest, along with other indicators we have, that

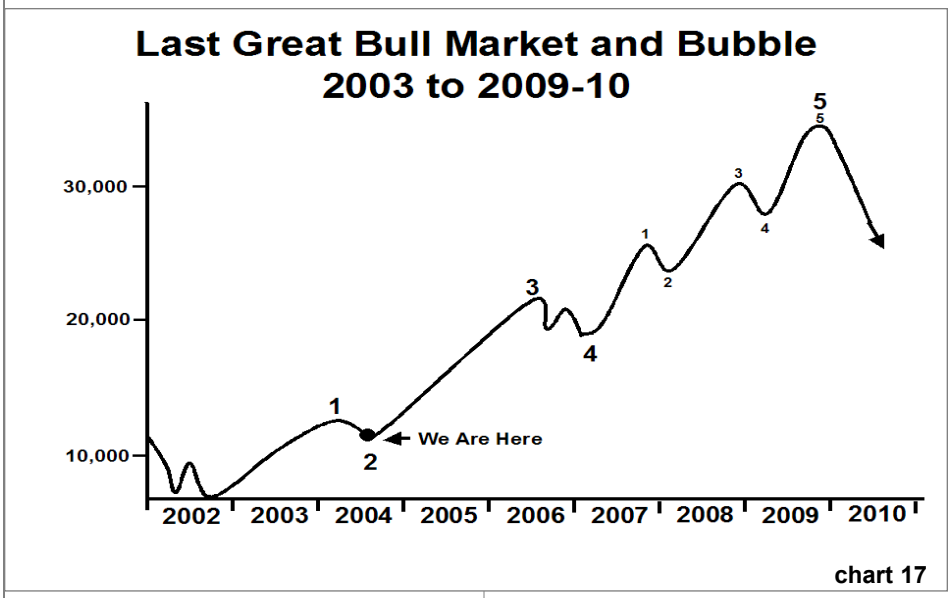


chart 17

we may see a peak in our stock markets that will be the last for the rest of our lifetimes and even most of our kids' lifetimes in the U.S., Europe and Japan. Hence, this clearly could represent the last great bull market for a long time in the U.S. and the developed world, and Japan's bull market very likely peaked for many decades in late 1989.

The greatest variable as we mentioned earlier, is how well this new world of very different nations and human stages of evolutionary growth can integrate into a workable global economy – or not! In truth we all see our lives and the world from our present stage of evolution - not realizing that every stage progresses and leads to a new stage. Hence, we don't live in reality! We don't understand the stages that other groups and nations are in and we are in denial about the natural cyclical and exponential nature of growth throughout human history and the universe altogether.

The best thing we can do to make a smoother transition into a more prosperous win/win global economy is to better understand the realities of the natural life cycles of human development, economic development — and organizational, cultural, social, and political development. If we persist only in our individual points-of-view as ethnic groups and nations this inevitable transition to a more global economy will be very difficult and painful – and that is the greater likelihood at this point

The vastly different rates of economic development since the Dark Ages have created the most extreme array of economies and cultures in history. The different stages of economic and cultural development we find across the world causes different cultures to view the world differently. Hence, we are seeing a clash of cultures with the "terrorist threat" as just the tip of the ice berg. There will be many continued opportunities for economic and investment growth even as the Western world starts to slow markedly. But there will also be rising threats as we make the difficult transition to a global economy and sift through this inevitable clash of cultures.

We are in an auspicious and potentially ominous time in history and the challenges and opportunities to come – both at a personal level and at a broader level of human evolution are great. Knowing how to react to this new environment will be critical to every aspect of your life from family to investments to business to where you live. But understanding more fully the exponential and cyclical nature of life may just motivate you to consider an entirely different approach to your own life and what is most important to you in the future.