



BY RON CROUCH

The New Future of the World

The World's Population is Changing — But Not How One Might Think.

It is time we rethink international population trends by understanding the new demographic realities and their global implications for the future. What are the new international population trends? What will be required to engage in the new knowledge economies? Does technology offer serious solutions addressing the new demographic realities?

Is the world population getting younger due to fertility increases and more children, or older based on a longevity revolution and more senior citizens? What demographic trends are happening across regions and countries, and how do they vary from country to country? Will the world population be increasingly better educated and prepared for a growing knowledge economy? Where will the workforce of tomorrow come from and what are the challenges facing employers? Is technology an answer to addressing the

needs of a changing world? These questions all require a rethinking of the future tied to a new understanding of changing world demographics.

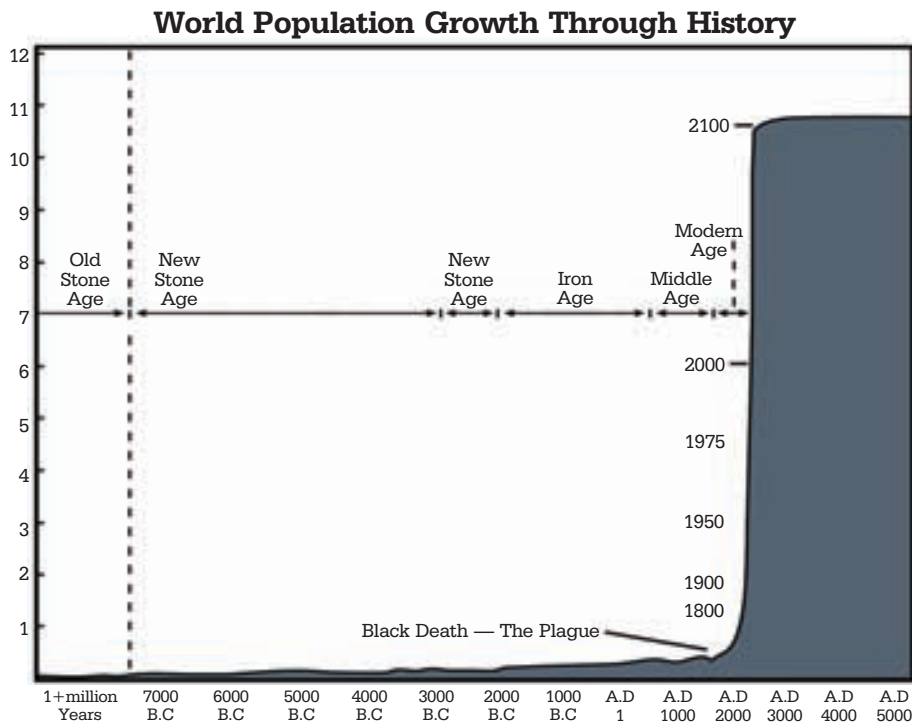
A Short Demographic History of the World

Many authors who have written about world population growth are in basic agreement on population trends and numbers; however, the dates and population numbers may vary. John Weeks estimates a world

population of around 8 million in 8000 B.C., growing to 300 million by A.D. 1 and doubling in size every 1,530 years. Prior to 8000 B.C., the world population grew very slowly due to the limitations of a hunter-gatherer society. The year 8000 B.C. is associated with the start of the Agricultural Revolution, which allowed nomadic populations to settle with a more stable source of food. In A.D. 1750, the start of the Industrial Revolution, the world population had increased to 800 million and was doubling every 1,240 years.

Between 1750 and 1950 the world population tripled to 2.5 billion, doubling every 122 years, and increased to 5 billion between 1950 and 1985, doubling in 35 years. In 2000, the U.S. Census Bureau's International Data Base estimated a world population of 6.07 billion, showing the world population growth rate starting to slow. Stable food supplies, better living conditions, disease control and safer societies all contributed to

Chart 1



Source: Population Reference Bureau

a growing world population. As infant mortality declined and life expectancy increased, the world population grew. Jared Diamond, in his book *Guns, Germs, and Steel*, provides an excellent overview of societal development — from bands to tribes, to chiefdoms, to states — and how these varied by region across the world. Chart 1, produced by the Population Reference Bureau <www.prb.org>, shows the historical and projected population growth of the world based on 1998 U.N. population data. It provides an interesting fact: most of the world population has existed within the last 250 years. The world population dramatically exploded in size after 1750 (also shortly before the United States became a nation in 1776), from 800 million in 1750 to 6 billion in 2000. The 1998 data also shows the world population peaking in 2100 at 11 billion and then stabilizing.

A New Demographic Future for the World

We have grown up in a world of a population explosion. Remember the book *The Population Bomb*, about unsustainable population growth? Welcome to the new future

world of international population trends. The world may not see population peaking at 11 billion in 2100 as stated in earlier U.N. projections. The U.N. home page, <http://www.un.org>, now states that “over the past few years, the world’s population has continued on its remarkable transition path from a state of high birth and death rates to one characterized by low birth and death rates ... never before seen in the history of civilization.”

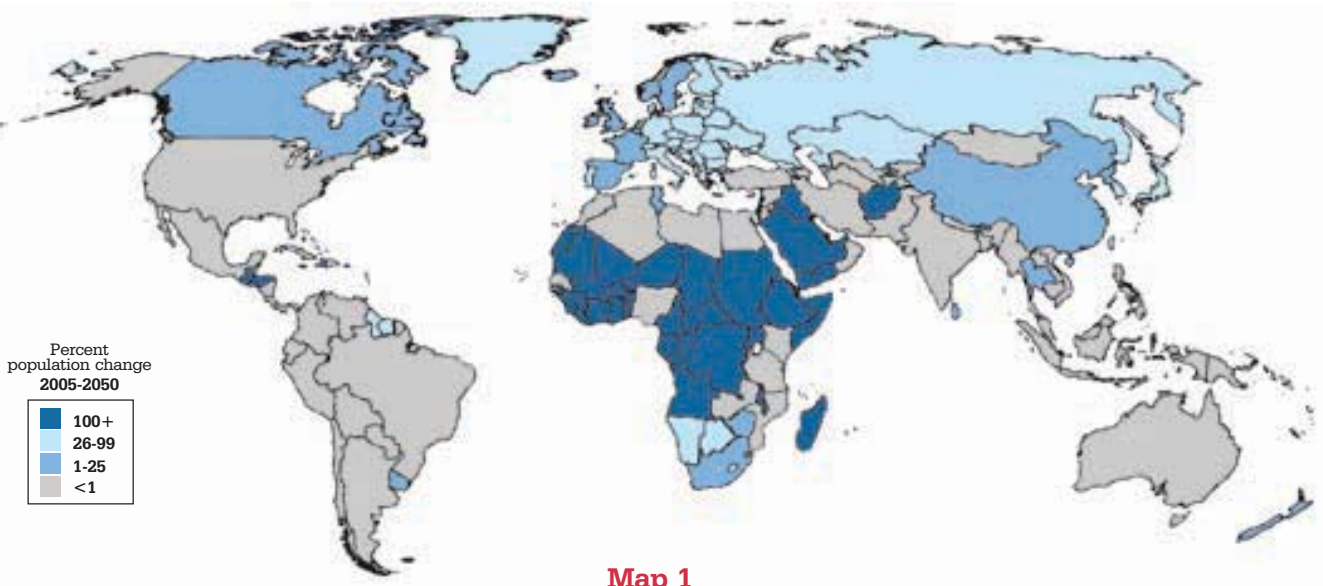
India has a highly educated tier of workers, but also growing urban poverty and inequality.

The U.N. report, *World Population Prospects: The 2004 Revision*, states global life expectancy was 47 years in the timeframe of 1950 to 1955, 65 years in 2000 to 2005 and that it will reach 75 by 2045 to 2050. It also projects a total world fertility rate in 2045 to 2050 of 2.05. A total fertility rate of 2.1 is needed to sustain a population, which is one child for each parent and 0.1 for infant mortality.

Map 1, from the Population Reference Bureau <www.prb.org>, shows the population change projected between 2005 and 2050 by country and the dramatic differences by region and country. Fewer and fewer countries will grow by high fertility; most will grow by increasing life expectancy or longevity. Two recent book titles say it all: Ben J. Wattenberg’s *Fewer: How the New Demography of Depopulation Will Shape Our Future*, and Phillip Longman’s *The Empty Cradle: How Falling Birthrates Threaten World Prosperity and What to Do About It*. European countries and a growing number of Asian countries are now well below replacement level with shrinking young populations.

The expected population growth throughout the next 50 years varies dramatically between more developed countries, less developed countries and least developed countries. The U. N.’s population projections show the population in more developed countries will stay unchanged, dropping total world population from 19 percent to 14 percent. Less developed countries will account for 86 percent of the world population, including 19 percent in the least developed countries — which are projected to grow by 129 percent. *Population Matters*, published in 2001 by Oxford University Press, says, “Countries with higher rates of population growth have tended to see less economic growth” and “poverty contributes to high fertility and high fertility reinforces poverty.”

The book suggests Asia’s economic boom was driven by declining fertility rates, which created a one-time window of opportunity when the working age population has relatively few dependents, of either young or old age, and results in a healthy burst in economic output. Map 1 also shows regional population growth trends as heaviest in the least developed countries located in Africa



Map 1

Source: Population Reference Bureau

and the Middle East with continuing high fertility rates as compared to the slower growing countries of Asia and South America, which have declining fertility rates.

Our New World and the Longevity Revolution

The U.S. Census Bureau's International Data Base projects the world population will grow from 6.07 billion in 2000 to 9.4 billion by 2050 – a 54.8 percent growth. A number of experts now forecast a declining world population after 2050. Population projections are just that – projections – and can change due to many factors. A world disease pandemic or natural disaster could shift population projections downward. Increasingly, rapid migration to urban areas is negatively impacting fertility. The world population growth of 3.33 billion between 2000 and 2050 is driven not by fertility, but by life expectancy increases or the longevity revolution. Only 10 percent of world population growth projected over the next 50 years will be due to a growing child and young adult population ages 0 to 24. The population age 80 and older will have a percentage growth rate of a whopping 556.5 percent. Additionally, two-thirds of world population growth will be ages 45 and older between 2000 and 2050 if U.S. Census Bureau population projections hold.

Welcome to the new world of a middle-aging and aging population. What are the implications of an aging workforce on

economic productivity? What does it mean for world prosperity? What does it mean for the future of a new knowledge economy worldwide? What does it mean for the need for an educated younger population?

Countries in Transition: A Few Examples

Four out of 10 persons on earth currently live in either China or India. As China's population ages, India, due to its higher fertility rate, will surpass China as the world's largest population. How will India deal with its growth and how will China deal with its aging?

The highly-touted technology sector employs less than 0.2 percent of India's population and India accounts for only 1 percent of global trade. Massive movement is taking place from rural areas to urban areas in India, as it is across the world. A recent headline announced that for the first time in world history, the majority of the world's population now lives in urban areas. India has a highly educated tier of workers, but also growing urban poverty and inequality. Will India expand its prosperity across its population or have a growing educational divide with too many left behind? Will India's government provide the infrastructure to move goods as well as information? It is estimated that 40 percent of India's farm produce rots in the field or spoils en route to market. The March 19, 2007 *Business Week* cover story was entitled, "The Trouble with India: Crumbling roads, jammed airports,

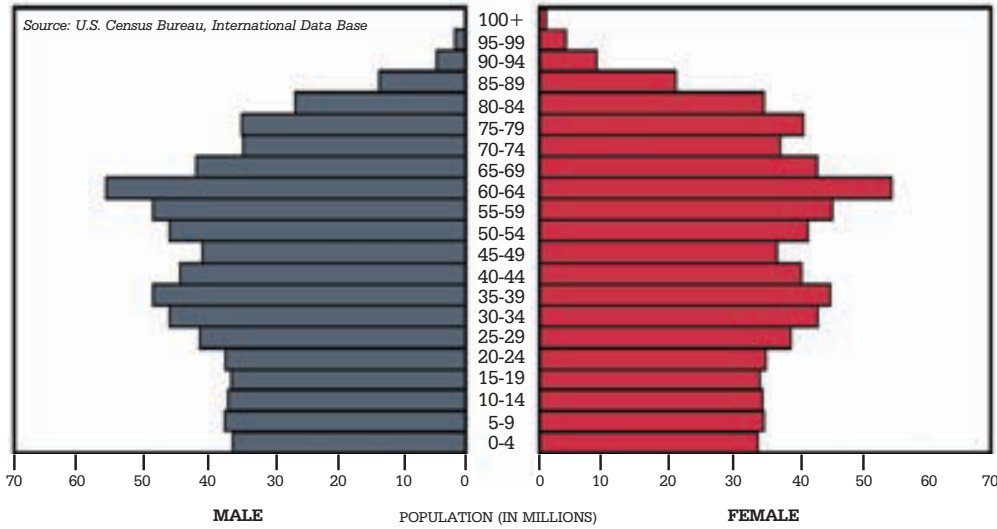
and power blackouts could hobble growth," and closes with the statement, "Unless the nation shakes off its legacy of bureaucracy, politics, and corruption, its ability to build adequate infrastructure will remain in doubt. So will its economic destiny."

China is moving from a young society with a growing workforce to an aging society with a declining young workforce. How will these trends affect China's growing economy development and world power status? Some say China will grow old before it can grow prosperous. China View, <www.chinaview.cn>, dated March 24, 2007 says, "China's economic growth is set to slow in 2010 when the dependent population rises to a level that cancels out the country's 'demographic dividend,' which existed since the mid-1960s." It goes on to say, "China has to invest in education and training to raise productivity and steer its manufacturing industries to create high value products ... otherwise the demographic dividend is over and everything will slow down."

A Population Reference Bureau article entitled "China's Concern Over Population Aging and Health" (June 2006) says that China already has one-fifth of the world's elderly population, ages 65 and older, and its elderly population will grow from its current 8 percent to 24 percent in 2050. China is moving toward the 4-2-1 problem: Four aging grandparents, two aging worker parents and one young replacement worker. China's one-child policy did not actually result in a total

Chart 2

China Population, by Age and Sex, in 2050



fertility rate of 1.0, but did drop the rate to 1.6. Chart 2 shows the dramatic demographic changes projected for China in the next 50 years based on U.S. Census Bureau's International Data Base

Mexico is projected to grow at a slower rate than the United States throughout the next 50 years. Its young population, after rapid growth due to high fertility in earlier decades, will stop growing and the country will have a growing young and middle-aged workforce. Mexico's official total fertility rate has dropped to 2.4 and some experts think it is already down to only 2.1. Some economic theories, namely the demographic dividend (a rise in the rate of economic growth due to a rising share of working age people in a population), indicate that a growing population percentage of young and middle-aged workers can lead to significant economic growth, resulting in a rapidly growing Mexican economy.

Chart 3 shows the demographic changes projected for Mexico in the next 50 years. Some people want to build a wall between the United States and Mexico, while other, cooler heads may say, "President Bush, tear down that wall" when they understand the new demographics of Mexico and its potential as an economic trading partner. Certainly Mexico will have to stabilize its government, invest in its infrastructure and better educate its workforce to take advantage of its demographic dividend. The World Bank's 2002 educational attainment data for Mexico

indicates only 60 percent of students ages 15 to 19 have a ninth grade education or above, and the percentages vary significantly by urban and rural populations.

The Challenge of an Aging World

Many more developed countries have declining young populations and as less developed countries follow, the shortage of younger workers will become increasingly critical. Chart 4 shows current population age structures comparing the less developed and more developed countries in 2005. A March 2007 Population Reference Bureau article entitled

"The Divergent Paths of Baby Boomers and Immigrants" focuses on the United States but raises an issue for the more developed countries worldwide with increasing aging populations and shrinking young populations. A fear expressed in the article is that the sharply increasing elderly population in the United States will be costly and the growth of younger taxpayers will not be able keep up with that expense. In the United States and other more developed countries immigration will have to help supply the need for younger workers. The fear is, "The older, mainly white voters who dominate the electorate, are less inclined than younger, mainly minority residents to vote for higher taxes that will go to schools and other public services." Will an aging world value the needed investments in education to grow and maintain an educated workforce, to support global economic development and to enhance technology to improve our lives?

There are only three more developed countries experiencing growth: Australia, Canada and the United States, all settler nations that have allowed and benefited from immigration. The United States is really the only developed country experiencing growth. Instead of building walls, more developed countries may want to welcome a younger

Chart 3

Mexico Population, by Age and Sex, in 2050

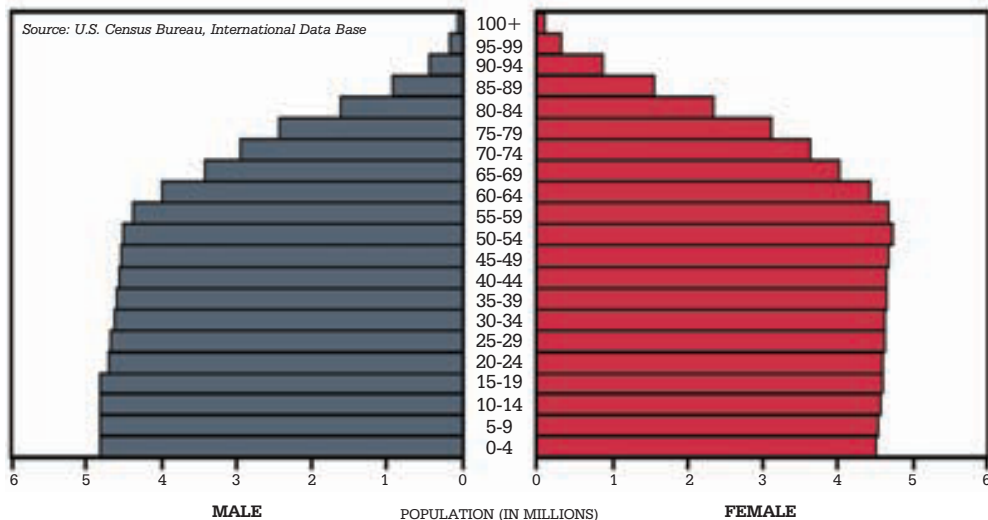


Chart 4

Age Distribution of the World's Population

Population Structures (in millions) by Age and Sex, 2005

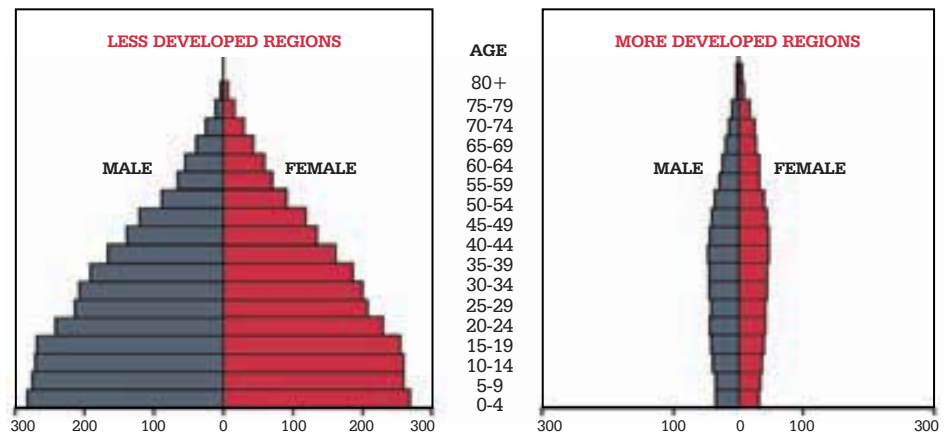
immigrant population to their new home. Instead of fighting illegal immigration, a greater effort needs to be placed on opening legal immigration with more liberal policies, increasing green card and guest worker programs and bringing immigrants out of the shadows. The consequence of not realizing this vision is more developed nations will increasingly become like the 15 countries of the European Union with a total fertility rate of 1.5 – 30 percent below replacement level with projected major population declines.

Smart Investments, Secure Futures

James Martin, in his book *The Meaning of the 21st Century: A Vital Blueprint for Ensuring Our Future*, states, “We must either bring down our birthrate, or nature will decimate humankind in brutal ways.” However, he also discusses leverage factors, literacy and the impact of the remarkable correlation between higher female literacy and lower fertility rates. The new world demographics throughout the next 50 years are moving to a stable or declining world population. Yet we still will have to absorb an additional 3 billion people, a projected 55 percent increase in the world’s population, mainly older and hopefully wiser. Of course new medical breakthroughs, new technologies and healthier world populations could increase world population in even greater numbers if longevity increases even more.

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The world cannot continue to use resources at the level of developed countries like the United States. The world will have to get smarter in its use of resources, which means it will have to be more efficient to allow more of its population to live well. This will require: new technologies addressing efficient energy use, sustainable uses of land and agricultural production, the teaching of societies on how to live lighter on their planet and global cooperation on many issues.



Source: United Nations, World Population Prospects: The 2004 Revision Revision, 2005.

The Future of Education and Work

The world’s future throughout the next 50 years will move to population stability. It will be a population that morphs from a pyramid shape, with many young and few old, to a squaring of the pyramid, with equal age cohorts into our 60s, and even longer if longevity continues its increase. Thinking of life in quarters may be of increasing value; the first quarter being ages 0 to 25, the second ages 26 to 50, the third ages 51 to 75 and the fourth ages 76 to 100. Some people may even age past 100.

The changing world population and demographics will require us to rethink education and work. Can you imagine retiring in your

any more and the common retirement age will increase to age 70 or 75.

We will also have to redefine life cycles as we move into the new knowledge economy worldwide. Life has always been seen as linear. You are born, you are educated, you get a job, you get old and then you get a tombstone. We must now redefine life as a series of cycles. You are born, you are educated, you get a job, you get downsized, you get more of an education, you get a higher-skilled job, you get rusty, you get retrained, you get old, you get to slow down but not quit, you get older, you get a new computer and then you get to work from home until you die. We need to redefine education worldwide as a lifelong process in which people have to continually re-educate, retrain, and retool themselves. Education can no longer be seen as a K-12 process, but increasingly a K-80 process.

The Good News

The good news is that we will be seeing each other a lot longer. The world’s population will stabilize and population will not grow out of control, leading to decreasing poverty and increasing opportunities. Technology and a knowledge economy will make our lives easier. We will be healthier and able to work longer. We will appreciate the world’s diversity as an opportunity. We will embrace lifelong learning and reinventing ourselves. It is the only way the world will survive. All we have to do open the door to a new world future. ●

second quarter, ages 26 to 50, and living into your fourth quarter, ages 76 to 100? That may be a dream, but it is unsustainable. Economist Herbert Stein was asked to define “unsustainable” when he used it in a speech. His definition of unsustainable was simple; if something is “unsustainable” it tends to “stop.” If a population lives longer, it will be required to work longer. Otherwise we will run out of money before we run out of life. It is a possibility that 65 will not be old