The Demographic Future

What Population Growth—and Decline—Means for the Global Economy

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It is already possible to draw a reasonably reliable profile of the world’s population in 2030. This is, of course, because the overwhelming majority of those who will inhabit the world 20 years from now are already alive. As a result, one can make some fairly confident estimates of important demographic trends, including manpower availability, the growth in the number of senior citizens, and the resulting support burden on workers.

Overall, it is apparent that the future global economy will not be able to rely on the kind of demographic inputs that helped fuel growth in the era before the current global recession. For today’s affluent Western economies, the coming demographic challenge of stagnant and aging populations combined with mounting health and pension claims on a shrinking pool of prospective workers is already generating concern, especially in Europe and Japan. But at the same time, demographic constraints in the rising economies that are expected to fuel future global growth are more serious and intractable than generally recognized.

When the current painful and protracted economic crisis is eventually resolved, the global economy will likely embark again on a path of sustained long-term growth—but at a slower pace, because of new demographic realities. These demographic pressures can be substantially offset only if both rich and poor countries undertake profound and far-reaching changes in working arrangements, lifestyles, business practices, and government policies.

MORE HEALTH, FEWER BABIES

The twentieth century was an era of unprecedented population growth. Between 1900 and 2000, the world’s population almost quadrupled, from about 1.6 billion people to around 6.1 billion. This huge expansion did not occur because people suddenly began reproducing at higher rates; instead, population surged because humans finally stopped dying like flies. Over the course of the twentieth century,
global life expectancy at birth more than doubled, soaring from about 30 years in 1900 to about 65 years in 2000. This global population explosion was, in reality, a health explosion: the entirety of the enormous increase in human population over the past several generations was due to dramatic declines in mortality and improvements in general health conditions.

If the twentieth century’s revolutionary demographic trend was a health explosion, the twenty-first century’s hallmark trend appears to be a fertility implosion. A dramatic, far-reaching, and, as yet, unremitting global reduction in childbearing and birthrates is now under way. Sustained and deliberate reductions in family size through birth control began to lower national fertility levels in certain European countries long ago. But sustained fertility decline only became a worldwide phenomenon after the end of World War II. Over the past half century, according to the United Nations Population Division (UNDP) and the U.S. Census Bureau, the number of births per woman dropped by almost half, from 4.9 in the early 1960s to an estimated 2.5 today, with the steepest decline occurring in less developed countries.

Close to half of the world’s population now lives in countries with fertility rates below the replacement level, which, as a rough rule of thumb, is 2.1 births per woman. In these states—absent steady compensatory immigration—current childbearing patterns will lead to an eventual and indefinite depopulation. Almost all of the world’s developed countries have sub-replacement fertility, with overall birthrates more than 20 percent below the level required for long-term population stability. But developed countries account for less than a fifth of the world’s population; the great majority of the world’s populations with sub-replacement fertility in fact reside in low-income societies.

China is one such low-income society with sub-replacement fertility. It may seem exceptional, given Beijing’s one-child policy. Yet sub-replacement fertility is also the norm today in many low-income countries without coercive population controls. Strikingly, some of these are countries with predominantly rural populations where educational opportunities for women remain limited and health conditions are still poor. One such case may be Myanmar (also called Burma), an impoverished and isolated country where, according to the UNDP, birth levels have fallen below the replacement rate.

The U.S. Census Bureau and the UNDP both estimate that sub-replacement fertility is the norm in every East Asian country and in much of Southeast Asia, including Vietnam and Thailand; in most of the Caribbean islands; and, increasingly, throughout Latin America. What is no less striking, sub-replacement fertility has also come to parts of the great Islamic expanse that stretches from northern Africa through the Middle East and into Asia.

Much remains unexplained about the continuing march toward ever-lower levels of fertility. For example, there are few socioeconomic preconditions for rapid and pronounced fertility decline or even for slides into sub-replacement fertility, as the case of Myanmar underscores. Furthermore, it is not known how long a society that has entered into sub-replacement-fertility mode will stay there: Japan, for example, began reporting sub-replacement fertility in the 1950s and has had uninterrupted sub-replacement fertility since the early 1970s. Demographers, it should
be emphasized, still have no reliable techniques for making accurate long-term fertility forecasts. Nevertheless, some specialists argue that ultralow fertility rates may be but a harbinger of future—and currently unimaginable—fertility declines.

Although little is conclusively known about the underlying causes of the fertility revolution, some of its consequences are discernable. First, pronounced fertility declines today imply a slowdown in the growth of the working-age population tomorrow. Second, low fertility today leads to population aging tomorrow—a process that becomes turbocharged if sub-replacement birthrates are sustained over time.

MEN AT WORK

On a global level, returning to pre-crisis economic growth rates will be complicated by the impending—and inalterable—trends in worldwide manpower availability. Between now and 2030, the global supply of potential workers is set to grow much more slowly than in the previous two decades. According to U.S. Census Bureau projections, the absolute increase in the world’s working-age (between 15 and 64) population between 2010 and 2030 will be around 900 million people, 400 million fewer than over the past two decades. The projected average rate of global manpower growth for the coming decades is 0.9 percent per year, only half the rate for the period between 1990 and 2010.

Complicating matters still further is the prospective regional distribution of the coming growth in global manpower. Over the past 20 years, the two greatest centers of manpower growth have been China and India, which also happened to be two of the world’s most rapidly growing economies. Over the next 20 years, however, the largest share of growth in the world’s working-age population—well over a third of the total—will take place in sub-Saharan Africa, the region with the worst record of long-term economic performance. Bangladesh and Pakistan will account for nearly another eighth of the world’s manpower growth. In other words, over the next two decades, sub-Saharan Africa, Bangladesh, and Pakistan will generate nearly half the growth in the world’s working-age population.

At the same time, most of the current advanced economies of the Organization for Economic Cooperation and Development (OECD) and many promising emerging economies are set to experience shrinkage in their working-age populations. This group includes China, Japan, the countries of eastern and western Europe, and the former Soviet states.

The prospect of shrinking manpower does not look any better when broken down into subsidiary age-group components. Younger workers are important for growth, because they typically have higher levels of education and better knowledge of the latest technology. But over the next 20 years, growth in the worldwide pool of young manpower will undergo a severe deceleration. According to U.S. Census Bureau projections, total young manpower—defined here as men and women between the ages of 15 and 29—will increase by just four percent, or 70 million people, between today and 2030, representing barely a fifth of the increase over the past two decades. Only the countries of sub-Saharan Africa will see appreciable growth in young manpower. Japan and the states of western Europe are on course for significant prospective drops in this
key manpower pool over the next 20 years (in the case of Japan, by almost 25 percent). But by far the most massive falloff in young manpower is set to take place in China: over the next 20 years, this working-age group will fall in China by around 100 million people, or about 30 percent.

Yet as young manpower grows relatively scarcer, older manpower is becoming increasingly abundant. Over the next 20 years, the oldest segment of the conventionally defined working-age population—men and women between 50 and 64 years of age—is projected to account for nearly half of all global manpower growth, nearly twice the share for the period between 1990 and 2010.

China will face a particularly huge increase in older manpower; the working-age population will also age in many other emerging markets, as well as in all the developed Western economies. Older workers do bring some particular skills, based on experience, but they also tend to be less educated and less healthy than younger workers. Furthermore, labor-force participation rates for older workers tend to be lower, and in some affluent societies, much lower.

The prospective global work force of 2030 is on track to being more educated and healthier than previous generations of workers, which should increase overall labor productivity. But the economic
potential of such prospective benefits should not be exaggerated. Projections by the International Institute for Applied Systems Analysis, in Austria, and the Vienna Institute of Demography suggest that improvements in educational levels for the world’s working-age population stand to be slower over the next 20 years than they were over the past 20 years. For example, the proportion of global manpower with no education at all is projected to drop by less than five percentage points, compared to an eight-point drop in the past 20 years. And the share of the working-age population with secondary schooling or better is estimated to increase by ten points, three points fewer than in the previous two decades.

Taken as a whole, these manpower trends point to mounting demographic pressures—and, quite possibly, a slowdown in the rate of long-term economic growth. All other factors being equal, these trends also suggest a slowdown in consumer spending, which could perhaps lead to a slowdown in business profits, as well.

AGING UNGRACEFULLY?
The economic performance of the world’s six major economies will largely determine growth patterns for the world as a whole over the next 20 years. China, India, Japan, Russia, western Europe, and the United States account for over half of the world’s current population and over 70 percent of the world’s GDP, adjusted for purchasing power parity. And over the decade before the current financial crisis, they accounted for about 70 percent of global economic growth.

No major economy has more radiant prospects for the coming decades than China. Its economic transformation has been nothing less than dazzling—according to World Bank estimates, in the three decades following Deng Xiaoping’s 1978 moves toward systemic reform, China’s GDP grew by almost ten percent a year. (Other sources suggest a slightly slower rate of growth but still one that is historically unprecedented.) Beijing officially forecasts annual growth rates of roughly seven percent per year between now and 2030. But this rosy prognosis does not take into account China’s looming demographic tempests. Population specialists believe that China became a sub-replacement-fertility society about two decades ago and that since then, birthrates have fallen far below the replacement level. For example, the U.S. Census Bureau puts China’s total fertility rate at about 1.5 children per woman, or 30 percent below the level required for long-term population stability. Persistent, and now extreme, sub-replacement fertility is the demographic driver shaping the China of tomorrow. Given current trends, U.S. Census Bureau projections anticipate fewer people under the age of 50 in China in 2030 than today and many fewer Chinese in their 20s and early 30s. These same projections foresee many more elderly Chinese in their 60s, 70s, and 80s. China’s older workers are much less educated than their youthful successors—nearly half of today’s working-age population between the ages of 50 and 64 has not completed primary school.

Educational levels for older workers will improve in the decades ahead but will still lag behind Chinese national averages. And China will be experiencing a population explosion of senior citizens over the next 20 years; they are the progeny of the pre-population-control era. In 2010, about 115 million people in China were
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65 or older. By 2030, this number is projected to approach 240 million people—meaning that China’s cohort of senior citizens would be soaring at an average rate of 3.7 percent per year.

How Beijing will support this coming tsunami of senior citizens remains an unanswered question. As yet, China has no national public pension system and only the most rudimentary provisions for rural health care. Meeting the needs of its rapidly growing elderly population will place economic and social pressures on China that no country of a comparable income level has ever had to confront.

Moreover, in the decades ahead, China will face a growing number of young men who will never marry due to the country’s one-child policy, which has resulted in a reported birth ratio of almost 120 boys for every 100 girls (most societies report the births of 103 to 105 boys for every 100 girls). This imbalance is setting the stage for a “marriage squeeze” of monumental proportions. By 2030, projections suggest that more than 25 percent of Chinese men in their late 30s will never have married. The coming marriage squeeze will likely be even more acute in the Chinese countryside, since the poor, uneducated, and rural population will be more likely to lose out in the competition for brides. Beijing will have to determine how it will cope with a growing demographic of unmarried, underprivileged, and, quite possibly, deeply discontented young men.

China still has potential sources for enhancing productivity, including the migration of rural workers to more productive urban jobs, the wider application of currently underutilized technical know-how, improved financial intermediation for the country’s high savings rates, and broader institutional and policy reforms to enhance efficiency. Such untapped potential can fuel future growth, but nevertheless, China’s serious demographic challenges could slow economic growth more than is currently expected.

Russia is another emerging-market country widely regarded as holding immense economic promise, not least by the leaders in the Kremlin. Despite the current economic downturn, official Russian plans envision economic growth of six percent a year through 2020 and continuing rapid growth thereafter. But these ambitious visions seem to ignore the fact that the country has been in the grip of a protracted demographic crisis since the end of communist rule. Since 1992, Russia’s deaths have outnumbered births by roughly 50 percent, or about 13 million, and official figures suggest that the country’s population has shrunk by about five percent—nearly seven million people—from 148.6 million in 1993 to 141.9 million today. Immigration has helped slow the country’s population decline but has not been able to prevent it. The outlook is for further depopulation: medium variant projections by the Kremlin’s official statistical service envision ten million more deaths than births over the next two decades.

Even more troubling for Russia is the country’s disastrous public health situation. In 2009, as hard as it may be to believe, Russia’s overall life expectancy was a bit lower than it had been in 1961, almost half a century earlier. To make matters worse, at least from an economic standpoint, Russia’s health crisis is concentrated in its working-age population. Over the 40 years between 1965 and 2005, for example, the death rates for men between their late
20s and their mid-50s virtually doubled. Death rates for women in that same age group generally rose by about 50 percent. Public health experts do not entirely understand the reasons for this death spiral—although poor diet, smoking, sedentary lifestyles, and, above all, Russia’s deadly romance with vodka can explain much of the deterioration, the actual decline is worse than what these risk factors alone would suggest. In some respects, contemporary health levels for Russian adults are akin to those for adults in the world’s most impoverished states. According to estimates by the World Health Organization, life expectancy for a 15-year-old man in 2008 would have been lower in Russia than in Cambodia, Eritrea, or Haiti. Between now and 2030, the U.S. Census Bureau projects that Russia’s working-age population will fall by nearly 20 percent, and Russia’s work force will almost surely suffer more ill health than its counterparts in the OECD and than the work forces of the other BRIC countries (Brazil, India, and China). In 2008, according to World Health Organization estimates, mortality levels for Russia’s working-age population were 25 percent higher than those for India’s.

Urban centers are typically the hubs of economic growth, but Russia’s urban population is smaller today than it was at the end of the communist era, and the UN projects that there will be even fewer inhabitants in Russia’s cities 20 years from now. In addition, Russia’s old-age burden will be steadily increasing—whereas 13 percent of the Russian population today is 65 or older, the projected proportion for 2030 is 21 percent. Taking all the above into account, it is difficult to see how Russia can hope to generate sustained and rapid economic growth on the basis of its human resources. Natural resources may offer the country economic opportunities in the years ahead, but these opportunities should not be exaggerated. Despite all of Russia’s energy and mineral wealth, its annual export earnings have never exceeded those of Belgium, not even at the height of the pre-crisis oil boom.

India’s GDP growth has averaged an impressive 6.5 percent a year since the economic reforms that began in 1991. Recently, the economy has been humming along at eight percent growth per year. Not a few observers think the best may be yet to come. In just one example, a member of India’s Planning Commission suggested in 2008 that India’s economy would be growing at eight to nine percent a year for the next quarter century. In the same time frame, India’s total population is set to grow by just over one percent per year, and about five-sixths of that growth will be in its working-age population. Thanks to the disproportionate growth of India’s manpower pool, the country’s dependency ratio (the ratio of children under 15 and persons over 65 to the working-age population) will be falling, and the society will remain relatively youthful. Such changes in population structure could facilitate higher levels of national savings and investment—and, thus, economic growth. In short, India appears to be a poster child for a potential demographic dividend.

But India has striking regional disparities in population profiles. India is bisected by a great north–south fertility divide: in much of the north, including parts of the Ganges river belt and some of the country’s westernmost districts, fertility levels remain quite high, at four, five, or more children per woman; in much
of the Indian south, however, fertility levels are at, or already below, the replacement level. In effect, this means that two very different Indias are being born today—a youthful, rapidly growing northern India whose future population structure will be akin to that of a traditional Third World society and a southern India whose population growth will be slowing or ceasing, where manpower growth will be coming to an end, and where pronounced population aging will be taking hold.

This demographic divergence could make sustaining rapid economic growth a trickier proposition than it might seem at first. India’s engines of economic growth are mainly its sub-replacement-fertility areas, which include much of the south and practically all its major urban centers: Bangalore, Chennai, Kolkata, and Mumbai. But its demographics mean that the country’s future workers will increasingly come from the high-fertility areas of the north. This reveals a fundamental mismatch: India’s continued economic growth requires workers who are relatively well educated, but India’s mostly rural high-fertility areas are producing a rising generation with woefully low levels of schooling.

India, it is true, can boast of a cadre of millions of highly trained engineers, scientists, researchers, and professionals. But in a country of well over a billion people, these specialists compose only a tiny fraction of its overall manpower. In the country as a whole, educational levels are still remarkably limited, and remedial efforts will take generations to achieve substantial improvement. Currently, about a third of India’s working-age population has no education at all; 20 years from now, a sixth of the country’s work force may still be totally unschooled. These educational shortfalls place material constraints on the prospects for sustaining rapid rates of economic growth.

Broadly speaking, all the developed economies will face demographic slowdowns and population aging in the coming decades, but Japan stands to be the most heavily burdened by the looming trends. It has had the steepest and longest fertility falloff in modern history. In 2008, the country recorded around 40 percent as many births as it had 60 years earlier. Japanese childbearing is currently estimated to be nearly 35 percent below the replacement level. But Japan has also enjoyed rapid and continuing improvements in public health since the end of World War II. The Japanese have an average life expectancy of 83 years, higher than any other country in the world. Taken together, the country’s fertility, migration, and mortality trends are propelling Japan into demographic decline, and into a degree of aging thus far contemplated only in science fiction.

Over the next two decades, according to U.S. Census Bureau estimates, the surfeit of deaths as compared to births is expected to drive Japan’s total population down from 127 million to 114 million, a ten percent decrease. The relative decline in the working-age population is projected to be even steeper, from 81 million to 67 million, or a 17 percent decrease. All the while, the number of Japanese senior citizens would be rising—and by 2030, the country’s median age will be above 52 years, with 30 percent of the total population 65 or older. The economic implications of these impending changes are far from positive. Even with healthy aging and later retirement, these trends suggest a
marked contraction in the country’s labor supply. Moreover, the social and economic strains from Japan’s looming old-age boom could further complicate efforts to maintain even the country’s current sluggish rates of economic growth.

Western Europe, for its part, can expect population stagnation, according to the U.S. Census Bureau—its population may grow by just three percent over the next two decades, with near-zero growth projected by 2030. Germany and Italy are expected to experience population decline. A stagnating Europe will also be a graying Europe. The U.S. Census Bureau estimates that western Europe’s median age would rise from 42 years today to nearly 46 years by 2030. Despite overall population stagnation, western Europe’s 65-and-older population is set to rise by nearly 40 percent, while its manpower pool is slated to shrink by 12 million people. And these projections are premised on a net inflow of approximately 20 million immigrants, mainly of working age.

Two unanswered demographic questions loom over the future of the western European economy. First, can the countries in the region succeed in attracting and incorporating the foreign workers their economies will need in the coming decades? Thus far, western Europe’s record on the social inclusion of immigrants may have been somewhat better than many appreciate; however, there have been increasing assimilation problems, which, if left unattended, could impinge on economic growth, as well as social cohesion. Second, can the countries of western Europe translate public health improvements into longer working lives for progressively aging populations? At the moment, overall life expectancy at birth in western Europe is about two years higher than in the United States (80 years compared to 78 years). But the average retirement age in western Europe is lower than it is in the United States, even despite recent increases in the labor-force participation of older workers in northern Europe. This summer’s public protests in France against a proposed increase in the French retirement age from 60 to 62 shows how tough it may be to achieve political consensus.

### The Demographic Exception

The United States will avoid the demographic stagnation and decline that faces most other OECD countries. The U.S. population, according to U.S. Census Bureau projections, is set to grow by 20 percent, or over 60 million people (from 310 million to 374 million), between 2010 and 2030. By such projections, the United States’ population growth rate will nearly match India’s. According to these calculations, the United States’ rate of population growth approximates that of the world’s average, meaning that the U.S. share of global population is not set to shrink. Virtually every age group in the United States is set to increase in size over the next 20 years. Unlike all other affluent countries, the United States can expect a growing pool of working-age people (a moderate but steady rise averaging 0.5 percent per year over the next 20 years), and it can expect a slower pace of population aging than virtually any other state in the OECD.

The United States’ demographic exceptionalism is explained by the country’s relatively high fertility rate and its continuing influx of immigrants. Over the past generation and a half, while fertility rates in most other Western countries were
plunging, the fertility rate in the United States was actually increasing, and unlike that of any other large rich country, its rate has been hovering just around the replacement level for the past generation. If fertility and immigration in the United States remain more or less at their current rates, as U.S. Census Bureau projections assume they will, the United States will enjoy a surplus of births over deaths of nearly 35 million and will tally a net inflow of almost 30 million immigrants over the next 20 years. Both factors would keep the nation growing and relatively young, shaping a distinctly more auspicious outlook for economic growth in the United States than exists for Japan or western Europe.

Nevertheless, there are also clouds on the U.S. demographic horizon, all of them regarding the quality of future U.S. human resources. The United States has a relatively good record when it comes to assimilating immigrants as productive newcomers, but resistance to continued immigration, or unexpected new problems in absorbing immigrant inflows, could limit future success. Furthermore, the United States’ primary and secondary public education system produces uneven results that are mediocre in comparison to other affluent societies. The percentage of Americans graduating from high school has been slowing and could possibly plateau in the years ahead. And advances in health in the United States do not compare well with those under way in other affluent states. Education and health will be key to enhancing the productivity and wealth of the U.S. population in the decades ahead, which means there are few grounds for complacency when contemplating these challenges.

Despite the particular differences in their demographic outlooks, Japan, western Europe, and the United States share a common fiscal problem: the relationship between population aging and public-debt obligations. Over the past two decades, a striking feature has emerged in the macro-economies of the OECD countries. The gross burden of public debt as a proportion of GDP has come to correspond with the proportion of the population that is 65 or older. Very roughly speaking (as my colleague Hans Groth and I have shown), costs associated with population aging are estimated to account for about half the public-debt run-up of the OECD economies over the past 20 years. In the next two decades, the increase in the 65-and-older population will be about twice as great as it was in the decades just past. Coping with the fiscal and public-debt implications of the pressures that population aging places on macroeconomic performance may not be an entirely new challenge for affluent societies, but it promises to become an ever more salient one over the next 20 years.

HUMANITY’S SECRET WEAPONS
Left unattended, the global demographic trends outlined above suggest serious and gradually mounting pressures on global economic development and may lead to downward revisions of worldwide material expectations. But feasible options do exist to alleviate some of these pressures—and to capitalize on new demographic opportunities that may arise. Addressing these new demographic challenges will require deliberate, concerted, and sustained efforts. Such an approach must focus on augmenting human capital by expanding education, improving health conditions, and creating
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an economic environment in which greater returns can be generated by the world’s precious human resources.

Improving educational opportunity and quality in low-income areas, for example, should figure centrally in enhancing prospects for local and global growth. Better-educated workers tend to be not only more productive but also healthier and better placed to lead longer working lives. Simply put, populations in developing countries cannot hope to generate First World income levels with Third World educational profiles. Improving health status should also be a central objective, since health advances could prove critical to maintaining or increasing long-term economic growth rates in an ever-grayer world.

For affluent, graying societies, taking economic advantage of healthy aging will become ever more crucial to the quest for higher national income levels. This suggests that the existing disincentives in so many rich countries to continuing to work at older ages should be reexamined and ultimately eliminated. At the same time, governments should consider careful incentives for the voluntary extension of working life. More generally, in both rich and poor countries, governments should enact business and economic policies that enhance the efficiency of manpower resources, thereby eliciting higher productivity and faster economic growth.

Humanity has one additional “secret weapon” in accelerating growth in the years ahead: knowledge production and technological innovation. The revolutions of the past generation in health and life sciences, information technology, and materials science point to the sorts of opportunities that may lie ahead for improving productivity. More than ever before, research and development must be incentivized to reward risk takers.

For the sake of the world’s future prosperity, reforms and innovations must be pursued with urgency. Demographic changes unfold slowly from month to month, but the cumulative impact can be staggering. It is not alarmist to warn that there is no time to lose in recognizing—and adapting to—the enormity of the world’s unavoidable demographic challenges.