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World Population Shifts

Boom or Doom?

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PREFACE

A version of this lecture was given at the Rocco C. Siciliano Forum entitled *Considerations on the Status of the American Society* at the University of Utah on October 4, 1999. The purpose of the forum, which is now in its fifth year, is to enable participants to analyze and discuss some of “the country’s most pressing, but least tractable issues.”

Work on this documented briefing was supported by RAND’s *Population Matters* project. The primary focus of *Population Matters* is synthesizing and communicating the findings and implications of existing research in ways that policy analysts and others will find accessible.

The *Population Matters* project is funded by grants from the William and Flora Hewlett Foundation, the David and Lucile Packard Foundation, and the Rockefeller Foundation. This document should be of interest to anyone concerned with demographic trends and issues and their implications for public policy. For a list of our publications, please see the inside back cover. For further information on the *Population Matters* project, contact

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SUMMARY

The structure of world population growth is changing. The world's current population of roughly 6 billion is likely to grow by an additional billion people every 12 to 13 years. This average growth rate (1.4 percent) masks the fact that some parts of the world are growing much faster than others. Developed countries are growing at less than 0.3 percent per year, while the rest of the world is growing almost six times that fast. These demographic differences, as well as widening economic differences, between the developed and less-developed world are increasing the flow of people toward the developed world. How the developed world responds to these immigration pressures will largely determine whether such pressures become a precursor to boom or doom.

This presentation examines population shifts in different parts of the world, their effects on the flow of people across borders, and potential responses by the developed world to growing immigration pressures.

Demographic Trends in Different Regions of the World

Demographers have characterized the history of population growth in Western Europe in terms of a model of the "demographic transition." The model provides a useful framework for understanding population trends in the rest of the world as well. It charts the history of population growth into four stages, characterized primarily by different rates of births and deaths:

- Stage 1, which characterized the vast majority of human history, is marked by high death and high birth rates.
- Stage 2, which began in the West around 1800, starts with a decline in mortality rates as a result of improved living standards, better sanitation procedures, and, most recently, greater control of infectious diseases.
- Stage 3 starts with a decline in birth rates, primarily in response to social and behavioral change.
- Once sustained, lower fertility rates work their way through the age structure, birth and death rates balance each other out, and the population stops growing. This is Stage 4.

Once an equilibrium of low death and birth rates is reached, immigration becomes the principal driver of additional growth within countries.

The major regions of the world are at different demographic stages. Sub-Saharan Africa, for example, is the world's fastest-growing region, despite its high death rates. Nearly 60 percent of the population lives in countries that are either in Stage 1 or Stage 2. The Middle East is the second fastest-growing

region, somewhat further along in the transition than Africa. Asia presents a more bipolar picture: About half the population lives in countries that have reached Stage 4; the other half are in countries still at some earlier stage. China and India, for example, where 40 percent of the world's population lives, are at different ends of the transition. China, despite its relatively low level of economic development, is nearing Stage 4. India, as a whole, is still in Stage 2.

Latin America, on the other hand, is largely at Stage 3. Fertility rates there have dropped dramatically, and the principal reason for continued population growth is the youthful age structure. The behavioral changes necessary for progression to Stage 4 have largely occurred.

North America and Europe, both in Stage 4, are at or below replacement fertility levels, but North America continues to experience population growth as a result of immigration. Most of Western Europe is actually losing population. Europe's resistance to immigration is likely to have a major impact on its demographic—and economic—future.

These population trends are likely to continue into the foreseeable future. Regions at the early stages of the transition will generate most of the world's population growth over the next 25 years. The developed world will experience either very modest growth or population loss.

Immigration Pressures

The low fertility rates characteristic of Stage 4 produce a rapid aging of the population. By 2025, for example, the median age of the U.S. population will rise from 34 to 43 years. In Germany, it will go up from 39 to 50 years. One-quarter of the German population will be over 65 and the number of new labor-force entrants will decline by one-third. These trends raise some crucial questions:

- With fewer working-age people, how will such a society support increasing numbers of older people?
- Where will new labor-force entrants come from?
- How can society generate the public investment needed to educate the young and provide health care for the elderly?

These issues, as well as the growing economic inequality among nations, will increase pressures for immigration from less-developed nations to the developed world. Yet only a handful of developed countries admit immigrants in any substantial numbers. Several European countries admit a small number of refugees for humanitarian reasons, but restrict entry for other immigrants. Japan, which faces the prospect of losing a quarter of its population over the next 25 years, makes little allowance for immigrants.

Although it seems unlikely that many of these countries might adopt more liberalized immigration policies any time soon given current political opposition to immigration, this picture may well change. Among the possible options that might be considered are a new “guest worker” program and regional immigration arrangements, comparable to special trade agreements, that would allow reciprocal flows of goods and people across certain borders.

The U.S. immigration debate offers some interesting lessons for other countries. In the United States, which has a history and tradition of welcoming immigrants, immigrants are currently responsible for about two-thirds of total population growth. Various studies have documented that immigration has both costs and benefits and that these effects depend upon the skill levels of the immigrants and the state of the economy. Moreover, the public debate about these effects is complicated by the fact that there are interest groups on every conceivable side of the issues. As a result, the debate continues on the key policy issues: (1) how many to admit, (2) whom to admit, and (3) under what conditions.

Two Wild Cards

Further complicating the public debate about immigration are increasingly skeptical attitudes about technological change and the environmental effects of economic and demographic growth. These issues are “wild cards” because they appear to represent reversals in what have been long-held attitudes about the desirability of technological change and economic growth and it is not clear how they will influence the immigration debate. The first is the view that technological change poses a threat to the environment rather than a means of coping with population growth and economic development. The second is the view that economic growth inevitably harms the environment and that both population growth and economic development should be rejected because environmental degradation is too high a price to pay for them.

The prevalence of such attitudes will make it more difficult for the West to embrace population increase through immigration in the years to come.

The growing pressure on the developed world to receive immigrants from the less-developed world will be difficult to resolve. It raises issues that go well beyond demographics; in fact, the debate pushes us to define the kind of society we wish to build. Since public opinion is ill-informed about both population growth and the costs and benefits of immigration, it will take strong leadership to frame these issues so that the political process serves the public interest. In any case, both the public and its leaders need to be better informed about the issues and the challenges they pose.

ACKNOWLEDGMENTS

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World Population Shifts: Boom or Doom?

Kevin F. McCarthy
October 4, 1999

My topic is the dynamics of world population growth. I will assert that both the dynamic and the patterns of growth are changing and that this will have consequences for both the developed and the less developed world. The American public remains largely uninformed of these trends. In fact, conventional wisdom about population growth is tied more to the way things were 50 years ago than to what is happening in the world today.

Indeed, the central feature of today's world is its growing interdependence—a byproduct of an increasingly complex system of exchanges of trade, capital, ideas, and technology. These exchanges, collectively referred to as globalization, have brought tremendous benefits to the world but that have also constrained the ability of all countries to act independently. Developments almost anywhere in the world along a wide variety of dimensions, including demographic developments, will have repercussions elsewhere. How the governments of the world react to the demographic phenomena described here will go a long way towards determining whether these world population shifts are viewed as a precursor to boom or doom.

Thesis

- Interdependence and global exchanges key to future
- Attention mostly focused on economic, communications, and technology flows
- But pressures for demographic flows are certain to grow
- How these pressures are resolved will be key

Much has been written about interdependence. But the focus has typically been on economics, trade and investment, communications, and technology flows. But these are not the only global flows. As a demographer, I'm just as aware of the increasing global flows of people. Indeed, immigration pressures are already being felt in the developed world from the less developed world and they will almost certainly increase. Although it's unclear how the developed world will respond to those pressures, how they do so will play a central role in the history of the 21st century.

Overview

- • World population today: where we stand and how we got there
- The new dynamic for growth and its implications
- The U.S. immigration debate
- Two wild cards: attitudes towards growth and technological change
- Conclusions

Let me take a moment to provide you with an overview of my presentation.

First, I will describe where we are today demographically and how we got there. I will focus on differences between different regions and countries at different stages of economic development.

Second, I will identify how the dynamic of population growth has changed and why we are likely to see increasing pressures for migration from the less developed to the developed world. I will also discuss how the developed world might react to these pressures.

Third, I will talk about the immigration policy debate in the United States. This topic is particularly instructive given the United States' role as the leading immigrant-receiving country in the world.

Fourth, I will introduce two trends in the developed world—attitudes toward growth and technological change—that I suspect will play a wild card function in the debate.

Finally, I will present some conclusions—or at least considerations—about these issues.

Where Are We Now?

- Current world population=6 billion
- Adding 1 billion new people every 12-13 years (1.4%/yr)
- Growth rate has begun to slow
- Projections suggest approx. 9 billion by 2050
- Rapid growth a very recent phenomenon

The current world population is about 6 billion. This is as large as it has ever been. We are currently growing at about 1.4 percent per year, which translates into an additional billion people every 12 to 13 years. This average growth rate masks the fact that some parts of the world are growing much faster than others. The developed countries, for example, are growing at less than 0.3 percent per year, while the rest of the world is growing almost six times as fast. Although this overall growth rate is obviously quite rapid, it represents a decline from the peak reached in the 1960s of about 2 per cent per year. Had that growth rate continued, the world's population would be doubling every 35 years instead of every 55 years, as it is today.

If the world's population growth rate continues to slow, demographers predict that the world's population will peak at about 9.3 billion sometime in the middle of this century. However, you should not place any bets on such long-term projections—they are notoriously suspect.

It is also important to keep in mind that extremely rapid population growth is a very recent phenomenon indeed. Humans have been on the earth for something like 2.5 million years, but the world did not reach a population of 1 billion until about 1800 and it did not reach 3 billion until about 1960. This means that about half of the historical growth in the world's population has occurred in the past 30 or 40 years.

How Did We Get There?

- Theory of “demographic transition”
- Describes the historical experience of growth in West
 - how birth and death rates interact to create growth
 - how ordered series of changes in vital rates trigger growth
 - how migration affects growth

Demographers describe the history of growth in terms of the theory of the demographic transition. It's not really a theory; it is a description of the historical pattern of population growth in Western Europe. However, as we shall see, it also works reasonably well in describing what is happening in the rest of the world.

The demographic transition offers explanations of three aspects of population growth:

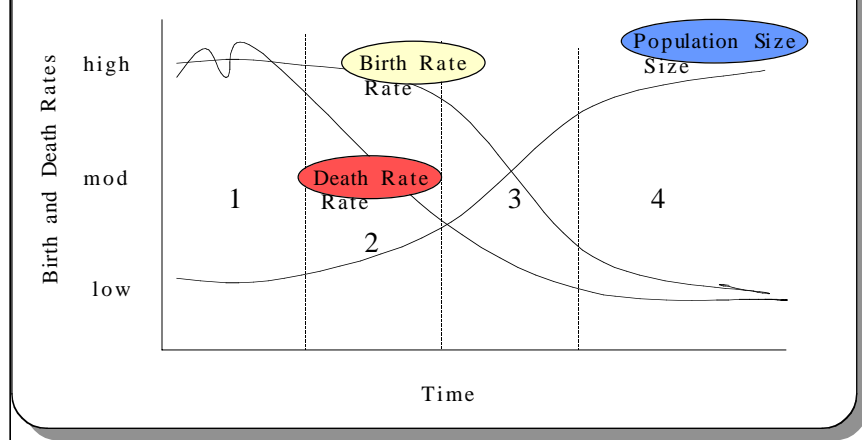
First, it describes how the different factors that create growth (primarily births and deaths) interact;

Second, it explains the pattern of growth in terms of an ordered sequence of changes in the death and birth rates that trigger growth; and

Third, it suggests how migration affects the growth equation.

The following chart illustrates how the demographic transition operates.

Model of Demographic Transition



This figure presents a model of the demographic transition that compares patterns of change in birth and death rates in terms of a series of ordered stages and indicates how these shifts drive total population size.

For the vast majority of human history, the population was in Stage 1. Death rates fluctuated up and down and the birth rate (roughly double the current rate) was relatively constant and at approximately the same level as the death rate. Life in Stage 1 was—to use Hobbes’ phrase—nasty, brutish, and short. High fertility rates were needed to guarantee that when you got old you had someone to support you. To keep up with death rates, fertility rates of six and seven children per woman were the norm. Migration was not a factor since most people never willingly journeyed far from where they were born.

In the West around 1800, this pattern began to change as mortality rates began a prolonged decline. This process (Stage 2) began earlier in some countries than in others but eventually began to spread. The reduction in deaths was the result of greater control of infectious diseases—the real killer in countries with high death rates.

Initially, because the drop in death rates was not matched by a drop in birth rates, this difference triggered population growth. At some point, however, birth rates also began to decline as the number of children needed to reach a desired family size declined because of drops in childhood mortality. This condition marks Stage 3. The initial decline in family size, however, did not stop population growth. Indeed, a key aspect of the demographic transition is that population growth tends to generate its own momentum as a result of the age structure of a population.

To understand this effect, it's important to recognize that the number of births in a society is a product of both the number of children women have and the number of women of childbearing age.

The initial decline in birth rates was a byproduct of smaller family sizes. However, since past growth produces an age structure that has a large share of the people in the childbearing years, even after fertility rates decline, the age structure is still conducive to a large number of births. It's not until the effects of sustained low fertility work their way through the age structure that the total number of births reaches low levels.

It takes a long time for birth rates to get that low, but if these trends continue they eventually lead to a new equilibrium in which birth and death rates balance each other out. At that point, population stops growing. This is Stage 4.

Key Contributions of the Model

- Explains the dynamics of growth that “fit” the empirical reality
- Provides basis for projecting future
- Highlights the structural and behavioral factors underlying these changes
- Suggests how migration can come into play

Although based on the European experience, this model of the demographic transition helps provide an understanding of the overall pattern of population growth in both the developed and less developed world.

However, the pace of decline in mortality and the reasons behind it differed sharply between Western Europe and the U.S. on the one hand and the less developed world on the other. In the West, the decline in mortality (and subsequent drop in fertility) were tied to gradual improvements in standards of living and took close to 100 years. Since these declines—first in mortality and later in fertility—were relatively gradual, the pace of growth was also gradual.

In the developing countries, however, the decline in mortality occurred much more rapidly—within the space of a decade or two—as a result of the rapid introduction of medical technology and sanitation procedures. Because mortality rates declined much more quickly than fertility rates, the pace of population growth in the less developed world has been much more rapid.

By identifying the mechanics behind the transition (first a decline in death rates followed with a lag by a drop in birth rates), the model provides a benchmark for assessing where countries stand today and where they may be headed in the future. Although the model does not predict how large the population of any country may be or when it will reach that level, it does point to the factors that will drive that transition. The model highlights, for example, that the movement from stage 1 to stage 2 are triggered by structural change while the movement from stages 3 to 4 is predicated on behavioral change. In sum, the model suggests that the demographic transition begins with structural changes in society but requires behavioral changes to complete the transition.

Finally, the model provides a framework for understanding the role migration can play in the transition. Once a new equilibrium of low death and birth rates is reached, then the dynamic behind additional growth is driven by immigration. It's important to note, for example, that the economic transition in Western Europe was also the period of the great waves of immigration from Europe to North America. This migration gave Europe an opportunity to slough off its surplus population, which the U.S. gladly absorbed at a time when it needed all the laborers it could get. These early waves of European immigration thus served as a precursor to the the surge of immigration from Mexico and the rest of the developed world today.

Structural Changes

- Sustained economic growth and improved living conditions
- Improved sanitation, medical knowledge and diets
- Increased access to education and technology
- Growing opportunities for women
- Improved transportation and communication

What are some of the structural changes that explain population change?

Transition theory identifies the drop in death rates as the trigger for growth and suggests that broader societal changes are necessary to activate that drop in mortality. Although we clearly had periods of economic growth prior to the 18th century, the sustained economic growth that has so transformed the world in the past two centuries really began about 1800. This growth set in motion a period of slow but steady improvements in living conditions and sanitation practices, medical knowledge, and human diets that eventually reduced mortality levels. This pattern contrasts sharply with what has happened in the less developed world where the importation of technology from the West caused the drop in mortality.

Rising living standards, increases in education, and, later, access to modern techniques of birth control, provided both the incentive and the means to control family size. Improving child survival rates, in turn, removed the need to compensate for high rates of infant mortality to reach desired family size.

More recently, increases in women's labor force participation have led to delayed marriage and child bearing, which also reduce fertility. And finally, dramatic improvements in transportation and communication have lowered the cost of moving, both financial and psychic, and have increased awareness of the conditions outside of the person's place of birth and thus, the motivation for migration.

The key to starting this process, then, is structural changes. But continued movement through the transition also requires behavioral change.

Behavioral Changes

- Predictability/controllability of individual behavior
- View of childbearing
- Importance of work/economic mobility
- Attitudes towards women's role

No behavioral change is more important than a shift from a fatalistic a view of demographic behavior—in which one views life's circumstances as a matter of fate—to a view that one's circumstances are at least partly a consequence of free choice. This shift allows individuals to consider how many children to have, what kind of lifestyle to lead, and where they want to live. That is a dramatic difference.

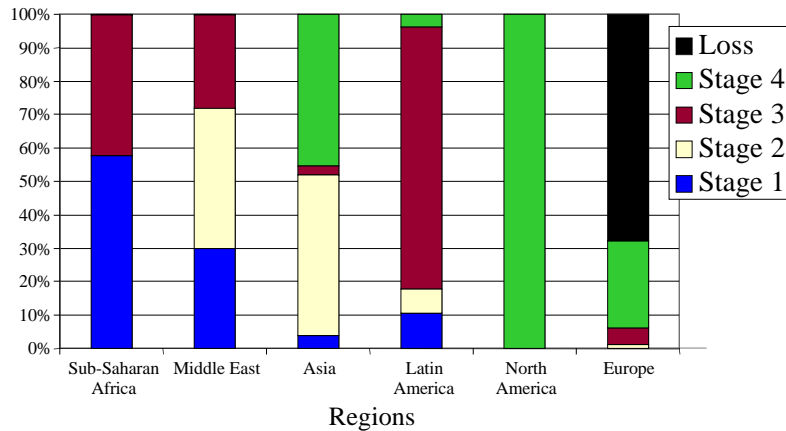
A related change involves views of childbearing. In the early stages of the transition, large families are often viewed as a form of social security—an investment for the future. People tended to have many children to help with the labor of the family and to provide for the elderly when they could no longer work. In later stages of the transition, desired family sizes decline and increasing emphasis is placed not on how many children to have but rather on how well educated children are. In this view, children are more likely to be considered a consumption than an investment good and the emphasis is directed more towards the quality than the quantity of children—clearly, a pronounced attitudinal shift.

Indeed, in some societies today, childbearing is viewed by some as an obstacle to self-fulfillment. In some European countries, for example, up to one-third of the population believes that childbearing is an obstacle to self-fulfillment. The increasing importance of work and economic mobility in modern society,

as well as a dramatically different view of women's roles, have promoted these changes. Although most pronounced in the West, these shifting attitudes are evident in other areas as well.

In Mexico, for example, often considered a prototypical high-fertility society, desired family sizes are declining, modern contraceptive practices are becoming more prevalent, and the percentage of women in the labor force is increasing. Recent projections suggest that Mexico will reach replacement-level fertility, defined as 2.1 children per woman—or Stage 4—in about 2025.

Where Does The World Stand?



This slide indicates where the major regions of the world stand in terms of the four stages of the model. Countries in stage 4 (in which births and deaths are in rough equilibrium) are further distinguished as to whether their total populations are continuing to grow or whether they are currently losing population. This later category refers to the situation in which birth rates are currently lower than death rates and their populations are actually shrinking.

Remember that death rates in Stage 1 often fluctuate before they begin a sustained decline. In this case, populations are often growing but will not really face major growth pressures until Stage 2.

The fastest growing region is sub-Saharan Africa, despite the fact that many countries in this region still have high death rates. Over half of the population in this region lives in countries that are either in the later part of Stage 1 or the early part of Stage 2. Birth rates are very high and, although there are signs that they are dropping in several countries, they remain very high by the standards of the demographic transition.

The Middle East, the second fastest-growing region, is somewhat farther along in the transition than Africa, but most countries here are still concentrated in the early stages. However, close to one-third of the population in the region lives in countries that have reached Stage 3, where fertility rates have declined but youthful age structures perpetuate continued growth.

Asia presents a much more bipolar picture. About half of its population lives in countries that appear to have completed the transition to Stage 4 and the other half in countries still at an early stage. This finding is not terribly surprising because the two largest Asian countries, China and India—where 40 percent

of the world's population is located—drive the regional pattern. Moreover, these two countries are at very different stages of the transition. China, despite its relatively low level of economic development, is in the advanced stages of the transition (nearing Stage 4). India, as a whole, is still in Stage 2.

Over 80 percent of Latin Americans live in countries that are well along in the transition (Stage 3). Fertility rates in Latin America have dropped dramatically, and the principal reason for their continued growth is the youthful age structure. The behavioral changes necessary for progression through the transition have mostly occurred.

The patterns in two parts of the developed world, North America and Europe, are very different. Both areas are at or below replacement fertility levels, yet North America continues to experience population growth while Europe does not. Approximately 70 percent of Europeans live in countries that are actually losing population, a phenomenon that may be a symptom of the advanced stages of Phase 4. The big difference between these regions is immigration. North America allows immigrants; Europe, by and large, does not. This difference in governmental policy will have a major impact on their demographic—and economic—futures.

A recent publication by the United Nations, *Replacement Migration: Is It a Solution to Declining and Aging Populations* (ESA/P/WP.160, 21 March 2000), addresses this problem.

Population Growth Will Be Concentrated

REGION	Population (in millions)		% CHANGE
	1998	2025	
Sub-Sahara	617	1,095	78
Middle East	307	523	70
Asia	3,358	4,398	31
Latin Amer	508	695	37
Europe	798	785	-1.6
North Amer	301	374	24

Future growth will be concentrated in those areas that are still in the early stages of the transition. The developed world, North America and Europe, will experience either very modest growth or loss of population, depending upon future levels of immigration.

How much confidence should we place in these projections?

There are several uncertainties. The AIDS epidemic has had dramatic effects, especially in sub-Saharan Africa. While AIDS has indeed taken a dreadful toll, it is not expected to alter the overall pattern of population shifts in Africa so much as slow the rate of growth.

Will the developed world continue its pattern—or might we see some new baby boom in the future? Several governments in the developed world have tried to encourage higher fertility, but they have not been very successful. In fact, the only major governmental intervention in reproductive behavior that has been successful is in China, and its intended effect has been to lower fertility.

The major uncertainty about these projections is likely to be governmental policy with regard to immigration.

Overview

- World population today: where we stand and how we got there
- • The new dynamic for growth and its implications
- The U.S. immigration debate
- Two wild cards: attitudes towards growth and technological change
- Conclusions

The pressures for immigration from the less developed to the developed world are going to increase in the future. The reasons for this are both demographic and economic.

Demographic Pressures

- Age structure—the most important demographic feature of a population
- Low fertility “ages” the population
- Without migration, slow-growth countries face rapid aging of population
- Aging will raise three critical issues:
 - how to support senior population
 - where to find new labor force entrants
 - public investment

The demographic argument for increasing immigration revolves around the age structure. Let me emphasize that no feature of a population's demography is more important than its age structure. Virtually all demographic phenomena (births, deaths, marriage, and migration, etc.) as well as many economic behaviors (entering and retiring from the labor force as well as such major consumption decisions as buying a house) are tied in some way to the age structure or life cycle. Just think about how America's social and economic structures over the last 40 or 50 years have been shaped by adjusting to the baby boom.

What may be surprising, however, is that the most important determinant of a population's age structure is fertility—not life expectancy. Essentially, the age structure (a measure of how the population is distributed by age) is much more a function of the relative sizes of particular birth cohorts than of how long people live. Thus, without migration to bring young adults into the population, countries with low fertility face rapid aging.

An aging population will raise three critical issues for countries with slow-growing, stable, or declining populations:

1. How does it support the senior population?

The United States is already facing a crisis with its social security system and the baby boomers have not even reached retirement age. This crisis will emerge much more clearly in the future and will be even more pronounced in other countries.

2. Where does it find new labor force entrants?

Economic growth has long been predicated on each new group of labor force entrants being larger than the group that preceded it. Although population growth may not be necessary for economic growth, a shrinking labor force, particularly if the decline is pronounced, will pose serious challenges for the economy. There are adjustments that economies can make, but they will require significant changes in the standard ways of doing business.

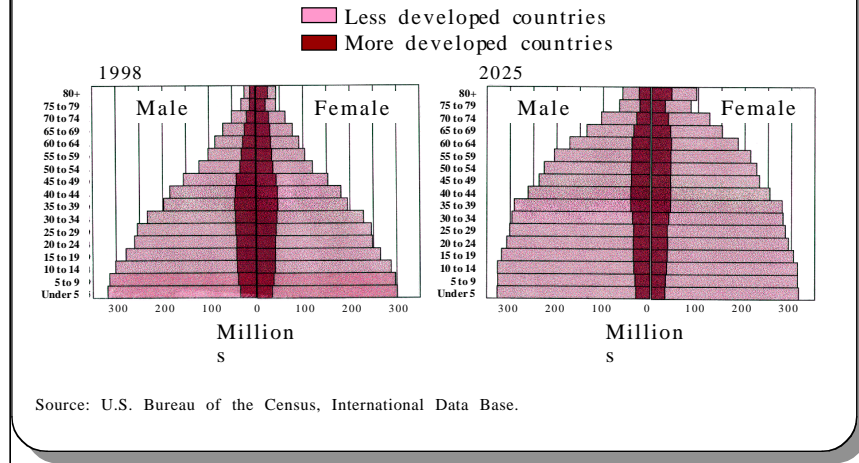
3. How does it provide for the dependent populations?

An economy's ability to support public investment is directly related to the relative sizes of its dependent (the young and the old) and working populations. As the populations age, societies will have fewer workers to support dependents (particularly those in the retirement years), and that means they will move toward either more (or higher) taxes or lower services. Questions about whether to invest in education or health care will become more acute.

These issues will be brought dramatically to the fore as aging populations spread through the developed world.

Comparison of Ages Structures

Population by age, sex and development



This chart shows what demographers refer to as age pyramids. They illustrate the age structure (the distribution of the population classified by age and gender) in developed and less developed countries as it looks today and as it will appear in 2025. There are, for example, approximately 325 million males under the age of 5 today in the less developed world and fewer than 50 million in the more developed countries.

Note how the age structures differ between developed and less developed countries. In the developing world the largest single age cohort is the youngest, those at the bottom of the pyramid. In the developed world it is between 35 to 39 years of age—a pronounced difference.

Looking at the current differences between developed and developing countries, it may surprise you to know that 150 years ago the developed world looked exactly like the developing world today. However, as fertility declined and the size of succeeding cohorts became more and more alike, the base of the pyramid became narrower relative to the rest of the pyramid. In effect, the average age of the population rose dramatically.

What can we expect in the future—say by 2025? Assuming fertility in the less developed world drops, the largest cohort will still be found at the base of the pyramid, but the difference will be nowhere near as dramatic as it is today. In the developed world, the largest cohort will be 55 to 59—nearing what we currently consider retirement age.

To provide some concrete examples, the median age of the German population today is 39. In 2025, it will be 50. In the U.S. the median age will rise from 34 to 43. In addition, over one-quarter of the German population will be over 65

and the number of new labor force entrants will decline by one-third. As a result, many of these countries may be desperate to find new workers, just as many European countries were in the 1950s as they sought to rebuild their economies after World War II. This pattern seems certain to raise the issues listed above.

Structural Pressures

- Persistent economic inequality will increase political and security pressures on developed countries
- Free flows of trade and capital will make it difficult to exclude people
- CNN effect

Besides these demographic factors, there are also economic reasons to expect the pressures for immigration to increase.

Perhaps the single greatest challenge facing the world today is the growing inequality among nations. Although some developing countries are on the road to sustained economic growth, a very large proportion of the world's population lives in dire poverty, often in what are euphemistically called "failed states," where population growth is rapid, economic growth fitful at best, and corruption rampant. The growing gap between rich and poor countries is increasingly evident in international forums for a dealing with global issues. Consider, for example, the recent disruptions at the World Trade Organization meeting in Seattle.

The polarization of the planet into the haves and the have-nots could very well imperil the trend toward globalization that has been such a boon to economic growth and interdependence. Moreover, to the extent that current international flows of trade, capital, and ideas are predicated on all nations having a continued stake in these exchanges, based on the principle of comparative advantage, then the poor nations may well insist on reciprocal flows of the one resource they have in abundance: people. They might say, "Unless you take more people, we will not take your goods."

There is also what I call the "CNN effect." Consider the responses by Americans and Europeans to natural and man-made disasters throughout the world. It has become harder for affluent societies to ignore the human suffering that persists around the globe. Instead, an increasing proportion of the population is calling upon their governments to do something to ameliorate the conditions that are creating such suffering.

Possible Responses by Developed Countries

- Current policies are restrictionist
- Options:
 - strict border enforcement while attempting to reduce demand
 - temporary worker programs
 - more liberal policies
 - regional arrangements

What are the possible responses by the developed world to pressures for immigration?

Currently, only a handful of developed countries admit immigrants in any substantial numbers. Several European countries do have refugee policies, but they admit only a small number of refugees for humanitarian reasons. Japan, which faces the prospect of its population declining from 120 to 90 million in 25 years, makes no allowance for any immigrants at all. Consider the implications if Japan were to lose one-quarter of its population. Its economic preeminence could well be threatened, at which point calls for a more liberalized immigration policy might well be heard.

On the other hand, if you look at the political situation today, it seems unrealistic to think that the Europeans will admit large numbers of immigrants. Many of these countries have strident anti-immigrant parties that staunchly oppose any liberalization of policy. On the other hand, remember the post-war period when the Europeans invited millions of “Gastarbeiters” or guest workers in response to labor shortages. The U.S. initiated its own guest worker policy, the Bracero Agreements, with Mexico during the Second World War for very similar reasons. Even the oil-rich countries of the Middle East imported large numbers of Arabs and others from poor countries subsequent to the oil boom. History is replete with examples of countries liberalizing their immigration policies in the face of economic necessity.

Were the European countries to change their policies, what might they consider doing? It seems to me that the preferred option would be some combination of stricter border enforcement and humanitarian aid to decrease

the demand for entry. However, for a variety of reasons, including the ineffectiveness of most humanitarian aid programs, the fact that most foreign aid or economic assistance programs really do not deal with the underlying structural conditions, and the unwillingness of governments to resist the pressures of their own domestic interest groups, these policies are not likely to provide the solution. Moreover, border enforcement as the primary tool for solving immigration problems generally has not worked.

Temporary guest worker programs like the “gastarbeiter” and “bracero” programs are possible; however, it is very difficult to enforce these programs and to prevent family members from joining the workers. Such programs can also create a second-class resident category that may be anathema to democratic states.

Another option is to move towards a regional immigration arrangement. Many countries today, for example, have joined in special trade agreements to facilitate economic exchanges among regional partners. Consider the European Union, the Mercator Agreement in Latin America, and the North American Free Trade Agreement. Might we see some sort of comparable agreements with regard to reciprocal flows of goods and population between developed and underdeveloped countries also organized along similar regional grounds, such as the United States with Latin America or parts of Europe and North Africa? Whatever agreements or policies are considered, they seem certain to involve multilateral responses.

Potential Implications

- Definitions of sovereignty
- Impact on trade and globalization
- National identity and culture
- Domestic politics
- Security considerations

There are real problems with anything we do. Whatever policies are considered, they are certain to provoke opposition among segments of the electorate, at least in the developed world. There may be several grounds for these objections.

First, most developed countries view control over their borders as an essential element of national sovereignty. Since any resolution to immigration issues in the European context will involve a multilateral response with an attendant surrender of sovereignty, they are likely to engender political opposition on sovereignty grounds.

Second, as suggested above, if the developed world refuses to open its borders, this policy could have negative ramifications for the liberalized system of trade and globalization.

Third, one prominent rationale for restrictive policies today is an argument based on national identity and culture. Most European countries, for example, base citizenship on blood (ethnicity) rather than country of birth, as we do in the U.S. This difference reflects the fact that most European countries are ethnically homogeneous and view immigration as a threat to their national identities.

Fourth, domestic politics will be an important factor. Any change that involves bringing in foreigners to take jobs that native workers might want is likely to engender opposition. However, if immigration policies remain restrictive, countries facing labor shortages will almost certainly be required to modify their labor force practices, such as raising the retirement age of workers to

reflect the fact that people now live longer. Whatever response governments adopt in this vein is likely to result in winners and losers.

A final concern involves the security implications of allowing large numbers of immigrants to enter a country. To the extent that immigrants pursue the interests of their sending countries by political or other means, they may pose a threat to the host country.

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- World population today: where we stand and how we got there.
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- Two wild cards: attitudes towards growth and technological change
- Conclusions

Given the complexity of these issues and the fact that most developed countries have no history of immigration, it may be instructive to look at the current debate about immigration policy in the U.S.

Using the U.S. as a Model

- U.S. one of handful of developed countries with history of immigration
- Two-thirds of current U.S. population growth due to immigration
- On-going debate about U.S. policy
- Key policy questions
 - how many to admit?
 - who?
 - under what conditions?

The U.S. is one of a handful of developed countries with a history of welcoming immigrants. As such, it may provide a useful barometer to the shape of the policy debate elsewhere.

Approximately two-thirds of the current population growth in the U.S. results from immigration. About one-third is a direct result of immigrants and about one-third due to the higher fertility of immigrants. Current immigration levels are high compared to their historical levels as the number of immigrants entering the country today rivals that at the turn of the century. Close to three-quarters of the immigrants in the United States live in six states—California, New York, Florida, Illinois, New Jersey, and Texas. If current levels of immigration continue, there will be higher percentages in other states as well.

The debate about immigration in the U.S. centers around three key policy questions: (1) how many to admit, (2) which ones to admit, and (3) under what conditions.

Central Questions About Immigration

- Economic effects
 - aggregate
 - distributional
- Public sector effects
- Assimilation
 - economic
 - social
- Externalities

The debate about these three questions revolves around the economic and social effects of immigration. The economic effects of immigration are considered in terms of aggregate and distributional effects.

The central aggregate questions are whether immigrants as a whole are a net drain or a net benefit to the economy. The evidence suggests that, although immigration is a net benefit to the economy, these effects are very small. At one time, the question of net benefits was the central issue in the immigration debate, but it has recently been given less attention. As labor markets become increasingly tight due to existing or potential labor shortages, this may again become a more important issue.

Today, more attention is devoted to the distributional effects of immigration: that is, who wins and who loses from immigration? And there is little question that there are both winners and losers. The winners are the employers of immigrants and those who consume services that are supplied by immigrants. The losers are those who compete with immigrants in the labor market.

A related question concerns the effects of immigrants on the public sector. Specifically, do immigrants contribute more to the public coffers than they draw in services? The answer is: it depends. There is more than one kind of immigrant. High-skilled immigrants contribute more in taxes than less-skilled immigrants—a pattern that is also found among the native-born population. There are also differences in the net contributions to the public coffers that relate to the legal status of immigrants. Refugees are entitled to a range of resources and services that other immigrants are not. The two major public services most used by immigrants are education and health care.

Another set of questions concerns the integration and assimilation of immigrants into the economy. Will today's immigrants experience the upward mobility of their predecessors, or will they be trapped in low-wage, low-skilled jobs? The historical evidence suggests that immigrants have indeed been upwardly mobile; more recent evidence, however, indicates that low-skilled immigrants are not doing as well as they used to do.

Questions are also raised about the social integration of immigrants: will they learn English, become citizens, and generally fit into American society? These social concerns are even more important to Europeans than they are in the U.S. On balance, the evidence (although somewhat ambivalent) suggests that the key to social integration is education—a finding that underscores the importance of public investments in education.

Finally, proponents and opponents often focus on externalities, or the indirect effects of immigration that are felt over time. Proponents of immigration cite the initiative and drive of immigrants as well as the diversity of their cultures as necessary for the re-invigoration of American society. Opponents question immigration's effects on social and political cohesion. They emphasize the ethnic composition of recent immigrants and how it differs not only from the native-born population but also from earlier waves of immigrants.

Arguments about externalities are often couched in the long-term and, as such, are difficult to measure. No one really knows the answer. Moreover, if the composition of immigrants changes, we can only know the impact of such changes over time. On balance, however, the historical record suggests that we have reason to be optimistic about these issues.

Key Findings

- Immigration has both costs and benefits
- Balance varies:
 - with the skill level of immigrants
 - by the state of the economy
 - across regions
 - over time
- Positions on issues also vary by interest group

Immigration clearly has both costs and benefits. The magnitude of these effects varies with the skill level of immigrants, the state of the economy, and what region of the country you focus on. Moreover, these effects vary over time. The public debate about these effects is further complicated by the fact that there are interest groups on every conceivable side of the issues. These groups are often very vocal in pushing for their position and make the task of distinguishing between public and private interests extremely difficult.

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Although the current debate focuses on the issues just discussed, I believe there are two other trends that will play a growing role in debates about population growth in general and immigration in particular. I refer to these issues as “wild cards” because they seem to represent a reversal in what have been long-held attitudes toward the desirability of economic growth and technological change, and their importance may well increase in the future.

Malthus and the Desirability of Technological Change

- The neo-Malthusian argument (law of diminishing returns)
- Role of technology in changing the equation
- Arguing from the available evidence
 - developed world
 - less-developed world
- Changing attitudes towards technology
 - green revolution vs. genetically modified foods

The first of these wild cards is a variant of the traditional Malthusian argument. The classic Malthusian argument against population is that over the long term, the rate of growth of the population will far outstrip the growth of available resources. This argument is based on the law of diminishing returns, which relates to growth in the three factors of production: land, labor, and capital or—in the current context—resources, population, and technology. The key assumption is that while the supply of resources is fixed, the supply of labor is infinitely expandable. Thus, without attempts to limit its growth, population will increase more rapidly than resources and the population will eventually be impoverished.

What Malthus failed to realize is the role that technology can play in affecting productivity. By changing the organization of production, technology can increase productivity and total output. Thus, while Malthus' critics acknowledge the law of diminishing returns, they note that since 1798, the year Malthus wrote his treatise, both the population and the level of income in the developed world have increased manifold.

This pattern is less clear, however, in the developing world. Certainly, rapid population growth has been an obstacle to economic development in developing regions. However, the Malthusian critics suggest that this finding is more a byproduct of capital shortages and organizational problems than population growth per se. As evidence, these critics cite economies that are relatively less developed, such as those in Korea, Taiwan, and Mexico, that have flourished after they opened their economies to trade and capital.

The relationship between population growth and development is complex and the evidence is mixed. On balance, however, the evidence tends to support the technologists. Moreover, it is clear that technology's effect on productivity will play an absolutely essential role in the world's ability to adjust to population growth.

In this context, it is important to consider a new derivative of the traditional Malthusian argument. Many neo-Malthusians today are increasingly skeptical about the effects of technological change. They emphasize the uncertainties surrounding new technologies and their potential negative externalities. As a result, they are more inclined to view technological change with suspicion or outright hostility, compared to the dominant view just a few decades ago. Compare, for example, the almost universal acclaim that was accorded the green revolution of the 1960s with the current opposition to the introduction of genetically modified foods in Europe and some segments of the U.S. population today. In the former case, technological change in the form of new fast-growing grains and other foodstuffs was treated as an unmixed blessing that greatly relieved the pressures of rapid population growth. In the latter case, technological change in the form of genetically modified food is viewed as a potential threat despite its potential to help the developing world cope with rapid population growth.

I am simplifying the underlying arguments to make a point—that is, that coping with population growth in the future will be even more difficult if large segments of the developed world view technological change not as a potential way around the law of diminishing returns but rather as potential threat to the world as we know it. Because this growing skepticism about the effects of technological change represents such a departure from the historical pattern, it could serve as an unknown or wild card in the policy debate.

Are Economic Growth and a Clean Environment Compatible?

- Evidence of anti-growth sentiment growing
- Public attitudes in developed countries strongly pro-environment
- Some question whether a clean environment and economic/population growth are compatible
- What is the appropriate balance and how might immigration affect this?

The second wild card is the presence of divergent views on the desirability of economic growth. Economic growth and population growth have traditionally been viewed as different facets of the same diamond. And they were viewed as diamonds—growth was good.

More recently, however, the desirability of economic growth has been questioned primarily because of its presumed environmental effects. Indicators of anti-growth sentiment are abundant. Consider the proliferation of local growth and development curbs, the emergence of the NIMBY (not in my backyard) phenomenon, and the Green Movement's opposition to anything less than sustainability. The connection between development and immigration policy was never more obvious than in the recent debate about immigration policy within the Sierra Club that almost tore that organization apart.

This argument takes different forms, but its most extreme form can be summarized as follows: If population growth contributes to economic growth, both by adding to the productive capacity of the economy and by adding demand for goods and services, and if economic growth inevitably harms the environment, then we should reject both economic and population growth. Increasing prosperity is too high a price to pay for environmental degradation.

The empirical evidence that addresses this argument is far from clear. Historical data from the developed world suggest that economic growth and environmental improvements are in fact compatible. Indeed, concern about environmental quality seems to be a correlate of rising incomes. The evidence from the less developed world is far more mixed. Again, it's unclear whether this divergence represents differences in organization and policy emphasis rather than direct evidence about the underlying relationships.

Attitudes about what constitutes an acceptable—indeed, required— level of environmental quality in the developed world have changed. The issue of whether environmental and population growth are compatible needs to be examined more fully since it is central to how we deal with the disparities between the developed and less developed world. Uncertainty on this issue is the other wild card in the immigration debate.

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I have focused my presentation on description rather than prescription. In conclusion, I would like to provide some perspective on these issues. This will not be in the form of prediction—I remember what Sam Goldwyn said, "Never prophesize, especially about the future"—but rather, in the form of considerations we should bear in mind when we think about how to deal with these issues.

Conclusions (1)

- Difficult issues to resolve
 - not simply a “demographic” problem
 - costs and benefits to every action
 - cannot resolve unilaterally
- Public opinion should not rule; leadership is essential
 - public attitudes fluctuate
 - simple answers unlikely to solve problem
 - conflicting interests are inevitable

My first point is that the issue of how the developed world deals with the pressures for immigration from the less developed world is going to be very difficult to resolve. Although these pressures are driven by demographic phenomena, they go considerably beyond demographics. Indeed, they go to the heart of what type of society we want and they address central questions about how we should allocate resources and what our society values.

Second, regardless of the approach the developed world adopts in an attempt to solve these issues, there are going to be benefits and costs, winners and losers.

Third, underlying my initial points about globalization, neither the U.S. nor the other developed countries can solve these problems unilaterally. We are part of an increasingly interdependent world and we must operate multilaterally. As a result, we should consider the consequences of what we do for the larger system of exchange in which we have a central stake.

Fourth, public opinion should not rule. Leadership is crucial. Attitudes toward immigration among the American public, for example, are notoriously volatile. They are extremely susceptible to economic conditions and to how the media frames the issue. As a result, it is very difficult to know whether the public really understands what the issues are. Leadership has to frame the issues before the public can make an informed decision.

Fifth, the issues these phenomena raise do not lend themselves to simple answers. Immigration policy in this country has been contentious issue. As a result, we do not like to create new policies because it is so hard to do. Immigration policy tends to stand for 10 to 20 years before the issue is addressed again. Because conditions change much more quickly than that, our policies are often out of step with economic and social realities. I believe it would be wiser to promote more flexible immigration policies that would allow policies to adapt to changing conditions.

Sixth, the policy debate is certain to trigger a battle of among many narrow, competing interests. We must be aware that it will not be easy to recognize who speaks for the public interest.

Conclusions (2)

- At root: question of values
 - how we respond to change
 - how we define community

The last point that I want to make is about values. It is not often that someone who is trained as a policy analyst talks about values, but I believe that at base most policy issues come down to a question of values. The most a policy analyst can do is say, "If you take this course, these are the likely consequences—these are the costs and benefits." But whether one course of action is better than another is an issue that must be decided on the basis of an understanding of the priority of certain values over others.

In this context, I believe there are two sets of values that will be crucial to how we seek solutions.

The first test is how we view and respond to change. Listening to the immigration debate in the United States, I am struck by the number of people who would like to return to the "good old days." Even if the good old days were as good as some would like to believe (and that is uncertain), the world has changed. We can't go back. On the other hand, we have to be hard-headed and not simply view change as inevitable. We have to think about what is in our interest and try to shape change to serve those interests.

My final point has to do with how we define community. I think this is part of what the no-growth phenomenon is all about. Do we define it in a narrow way or do we define it in a much broader way? Between family at one end and the entire world at the other end, there are an almost limitless number of possibilities in between. Where we fall on that continuum will make a big difference to how we respond to the problems we face in the future.

ABOUT THE AUTHOR

Kevin McCarthy, Ph.D., is a senior social scientist at RAND. He has written extensively on immigration issues, including the causes and consequences of immigration trends in California and migration patterns within the United States. He has authored several publications exploring the problems immigration poses for the public and private sectors including studies of the economic progress of immigrants, the costs of immigration to taxpayers, and meeting the economy's labor needs through immigration. In addition, Dr. McCarthy has led several studies of demographic trends and their implications for such policy areas as education, employment, health and housing policy, and municipal finance.