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Low Birth Rate Policy: A Global Adoption to Alleviate Savings and Investment of Nations

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Abstract

Population refers to the total human inhabitants of a specified area, such as city, country or continent at a given time. Population studies yield knowledge that is important for planning, particularly by governments in fields such as health, education, housing, social security, employment and environment. This paper examined the benefits of reducing birth rates for overall improvement of living conditions. Decline on the number of children per couple leads to a decline in dependency ratios, thus freeing up money for savings and investment which leads to enhanced productivity, strong economic growth, rising income and improvements of living standards. Acceptance of low birth rate policies will improve savings and investment of nations.

Keywords: Population, Birth rates, planning, savings and investment.

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INTRODUCTION

The population of the world grew at an infinitesimal rate for most of human history, about 0.002 percent per year (Brown & Kane, 1994). Not until the 17th century, with advances in science, agriculture and industry, did world population growth begin to accelerate. Over the last 300 years, the world's population increased fivefold, from about 500 million in 1650 to about 2.5 billion in 1950. In the second half of the century, the population grew even faster, reaching more than 6 billion in 2000, according to the United Nation (2000). These figures mean that the world's population has grown more in 50 years than it did during the more than 4 million years since our early ancestors first stood upright.

This unprecedented surge in population, combined with rising individual consumption of food, water, and natural resource has begun to strain Earth's capacity to sustain human life.

Demands for water are draining supplies from aquifers (layers of permeable rock, sand, or gravel that serve as repositories of water) and other water sources. Demand for fish, a food staple in many areas of the world, is contributing to the depletion of fish stocks around the world. Human activities that cause pollution and encroach on natural habitats are responsible for the greatest extinction of plant and animal species since the dinosaurs disappeared about 65 million years ago. Meanwhile, global warming (an increase in Earth's surface temperature caused largely by the burning of fossil fuels) has begun to change Earth's climate in ways not yet fully understood. In short, the growth in human population and the scale of human activities appear to be redirecting the natural course of our planet.

MALTHUS AND HIS INFLUENCE

British economist Thomas Robert Malthus raised an alarm about growth in the late 18th century. In 1798, Malthus wrote an influential treatise, titled, An Essay on the Principle of Population, in which he argued that population growth would eventually outstrip food supplies. The gap between population growth and the growth of food supplies would eventually trigger natural checks on population such as war, famine and disease. Abhorring such an eventuality, Malthus advocated the imposition of "preventive checks" on population growth, namely the encouragement of premarital chastity and controls on marriage. Malthus's essay was extremely influential and established him as the father of the field of Demography; the study of populations.

Malthus based his theory on the assumption that populations grew faster than food supplies. Under Malthus's theory, a country with no constraints on population would grow according to the rules of geometric progression, a population of one million would double to two million in 25 years, to four million over the next 50 years and so on. But according to Malthus, food supplies could be expected to grow by the rules of arithmetic progression from one million over the next 25 years. Over time, the ratio of people to food would drop below subsistence level, Malthus reasoned, triggering checks on population growth.

Malthus's theories influenced many important thinkers, including English naturalists Charles Darwin, who laid the foundation of modern evolutionary theory. Malthus also inspired many critics and one of the fiercest was Karl Marx, the 19th century German philosopher and revolutionist who, in conjunction with German economist, Friedrich Engels, founded the political philosophy of modern Communism. Marx argued that the scenario Malthus proposed resulted from capitalism's tendency to concentrate wealth and resources in the hands of the few. A socialist model, Marx theorized, would distribute those resources evenly. The government of China, one of the few remaining communist governments in the world, has soundly rejected Marxist thinking on population by instituting a one child family policy. Other critics of Malthus argued (and continue to argue) that his pessimistic scenario never unfolded. The world population reached 1 billion in Malthus's lifetime, crossed the 2 billion mark in the early 20th century and stood at more than 6 billion in 2000. Under Malthus's theory, the world should have faced massive starvation long ago.

Supporters of Malthus, however, note that scores of major famines emerged to check population growth. The Irish potato famine of 1845 to 1847 occurred within half a century of his writing. Since then, there have been many famines in Africa, India, and in China that claimed more than 20 million lives during the late 1950s and early 1960s. Today, 1.2 billion people are chronically hungry and undernourished. One reason these famines have not affected even greater

numbers of people is the advances in agriculture. Mechanized farming has increased the world's food production capacity faster than Malthus could have anticipated. According to the Food and Agricultural Organization (FAO, 2000), right from the 1960s to the 1990s, advances in agricultural technology led to a 30 percent increase in the daily calories available to people in developing countries, even as the world's population doubled. The FAO has expressed hope that new technologies, such as genetic engineering, will further increase crop yields, but others believe the world may be nearing its food production limit.

Malthus's supporters believe he was simply ahead of his time. The massive growth in population that occurred after the end of world war 11 in 1945 drew new attention to Malthus's theories. One of Malthus's most visible modern backers is Paul Ehrlich, an American entomologist and author of 'The Population Bomb' (1968). Like Malthus before him, Ehrlich warned that the world's population was outgrowing its resources and that two courses of action were available: reduce the birth rate or increase the death rate. Modern opponents to Malthusian thinkers such as Ehrlich include those influenced by Marx, who argues that inequitable distribution of resources, not overpopulation, condemns many of the world's people to poverty and hunger. Many religious groups, such as the Roman Catholic Church, also oppose Malthusian population control methods, such as contraception on moral grounds. Other critics include those in the developing world who viewed calls to reduce births in their countries as paternalistic. The debate over the proposals of Malthus and his followers rages on but most demographers agree that the problem Malthus identified is real and must be addressed.

THEORY OF DEMOGRAPHIC TRANSITION

Great as the population growth of the last 50 years has been, the population boom is far from over. Depending on what is done to address population growth, UN demographers project that the world's population will grow by anywhere from 1.6 billion to 5.1 billion people over the next 50 years. The UN expects almost all of this growth will take place in the developing world, much of which is already densely populated. The concept of demographic transition helps in the assessment of whether the UN projections will actually occur. Developed in 1945 by Frank Notestein, a demographer at Princeton University in Princeton, New Jersey, this model divides the countries of the world into three categories: stage one countries, stage two countries, and stage three countries.

In the first stage countries, generally pre-industrial societies, birth rates and death rates are both high, essentially offsetting each other and leading to little or no population growth. Life expectancy (the average expected length of life) is low, and the infant mortality rate (the probability of death in the first year of life) is high. Countries enter stage two, when they begin to modernize. Modernization is typically accompanied by improvements in health care and standards of living. As a result of these improvements, death rates decline. Birth rates, however, remain high, and lowering birth rates requires changes in human reproductive behaviour, a change that does not come early as rapidly as the introduction of vaccines, antibiotics, improved public health measures, and expanded food supply. Thus, population growth typically reaches 3 percent a year, or 20 fold per century, in stage two countries. Countries cannot remain in this stage long simply because continual population growth will eventually overwhelm their available resources.

When birth rates begin to fall, countries enter the third stage. In the third stage, birth and death rates again balance, but at low levels, and the country's population size stabilizes. Under

Notestein's model, economic and social gains such as rising income and educational levels encourage the birth rate to fall, which in turn leads to further economic and social gains because families with fewer children devote fewer resources to raising their children freeing those resources for other purposes, such as savings and investment. As of 2000, only 32 countries, many of them in Europe, had made it to stage three, according to the Population Reference Bureau, a population research organization based in Washington DC. The rest of the world's countries remained in stage two. About 39 of these stage two countries, including China and the United States, are approaching stage three, but others continue to grow at a fast clip. As of year 2000 there were no countries in stage one (Brown, 1999).

Can the 160 or so countries still in stage two make it to stage three? Most of them probably will but some may not. This transition will be achieved most easily if the world takes quick steps toward reducing birth rates but, even, if such measures are in place, many countries will likely face population-related crises before they can reach stage three.

RESOURCE AVAILABILITY AND POPULATION GROWTH

Countries with stable populations and stable diets have stable demands on key resources such as land, food and water. As of 2000, the population of the European Union (EU), for example had stabilized at roughly 380 million. The EU's consumption of grain per person has also leveled off at around 470kg (1,0401b) per year, according to the United States Department of Agriculture (USDA, 2000). As a result, the 15 member nations of the EU have essentially stabilized their claims on the earth's agricultural resources, becoming the first region in the world to do so, perhaps more, importantly; Europe has done this within the limits of its own land and water resources. Barring radical climate changes, the EU can probably sustain its current population levels indefinitely.

Not all countries are so fortunate. As the populations of countries such as Pakistan and Nigeria rise, the amount of grainland (land planted with grain) per person is expected to fall below what most experts consider the survival level. The UN estimates that Pakistan's population will reach 357 million by 2050. According to the USDA (2000), this will reduce Pakistan's grainland per person from 0.08 hectares (0.2 acres) at present to 0.03 hectares (0.07 acres) roughly the strip of ground between the 10 yard markers on an American football field. Nigeria's projected growth will reduce its grainland per person from the currently inadequate 0.15 hectares (0.37 acres) to 0.07 hectares (0.17 acres).

The UN projects that India's population will grow by about 500 million people by 2050, meaning that India is likely to face steep reductions in the amount of water available for irrigation David Seckler, head of the international water management institute, a water research body based in Sri Lanka, observes in a 1998 study, that "the extraction of water from aquifers in India exceeds recharge by a factor of 2 or more thus almost everywhere in India, fresh-water aquifers are being pulled down by one to three meters (three to ten feet) per year." The resulting cutbacks in irrigation could reduce India's harvest by 25 percent, Seckler says. The corresponding drop in food supplies could create a national food emergency.

Many smaller countries also face potentially overwhelming population growth. Among them is Tanzania, which the UN projects to grow from 31 million in 2000 to 81 million in 2050, and Yemen, projected to grow from 17 million to 61 million in the same period. Both countries face crippling water shortages, according to a 1997 study by Population Action International, an organization based in Washington DC. that promotes policies to slow population growth.

THE DEMOGRAPHIC TRAP

Most expert believe that the approximately 160 countries currently in stage two will be able to make the transition to stage three. However, countries with rising population and limited resources and limited resource risk falling into what demographers call the demographic trap. This occurs when resources shortage and population increase combine to keep living standard low. A country in this situation continues to experience high birth rate, which compounds the original problem and can eventually lead to higher death rate as living standard continue to fall. This increase in death rate can put the country at risk of falling back to stage one. According to the World Watch Institute(2009), a research organization based in Washington DC. Afghanistan , Egypt, Ethiopia, Ghana , Haiti, Honduras, India, Myanmar, Nigeria, Pakistan, Sudan, Tanzania , and Yemen, all face this possibility unless they quickly check their population growth.

Countries that have been in stage two for several decades, such as Pakistan and Ethiopia, typically have seen their financial resources drained by the pressure of many years of rapid population growth. This pressure includes the need to educate ever-growing numbers of school-age children, provide job for swelling numbers of young people and deal with the various environmental problems associated with rapid population growth, such as deforestation and the depletion of water resources. Countries in this situation are suffering from what is called "demographic fatigue". Governments of countries suffering from demographic fatigue are often unable to respond effectively to emerging threats such as water shortage or food shortage. This situation is perhaps most evident in the inability of many governments to cope with new diseases, such as the human immunodeficiency virus (HIV), the virus that causes acquired immune deficiency syndrome (AIDS), Ebola, Dengu fever, etc.

THE THREAT FROM HIV AND EBOLA VIRUS

Most industrial nations have been able to control the spread of HIV, Ebola, holding infection levels under 1-2 percent of their population, according to UN(2000). But many developing countries, already overwhelmed by the pressures of large and growing population, have been unable to do so. Some of these countries are in danger of slipping back into the stage one because of the rising death rates caused by AIDS and Ebola virus. In Zimbabwe, for example, 26 percent of the adult population is infected with HIV, according to UN figures. As a result, life expectancy in Zimbabwe, perhaps the sentinel indicator of a society's health, dropped from 61 year in 1990 to 44 year in 2000. If the present pace of HIV infection in Zimbabwe continues, life expectancy there could fall to 39 years by 2020, erasing the gains of the last century.

Due to her inability to pay for costly drugs needed to treat the disease, Zimbabwe was expected to reach population stability in 2002 as death rates climbs to offset birth rates. In effect, Zimbabwe would have fallen back into stage one, marking perhaps the first time a developing country would reach population stability primarily as a result of rising death rates. Other African countries expected to reach zero population growth due to rising death rates caused by AIDS are Botswana (an HIV infection rate among adults of 25 percent, according to UN figures), Namibia (20 percent), Zimbabwe (19 percent), and Swaziland (18 percent). Other nations where roughly 10 percent of the adult population is infected with the virus include Burundi, the Central African Republic, the Democratic Republic of the Congo, Cote d' Ivories, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, South Africa, and Tanzania. In the absence of a concerted effort to check

the spread of the virus, these countries too are heading for a rise in death that will halt their population growth.

THE CHALLENGE OF REDUCING BIRTH RATES

If the world takes action, it should be able to achieve the lowest of the UN's population projections. This would mean a world population of 10 billion by 2050 rather than 11.5 billion. Reaching the lower number will require an all-out effort to lower fertility, particularly in high-fertility countries, before demographic fatigue takes over. Many experts call for taking two steps in this effort. The first step is to assess each nation's carrying capacity (the number of people that a local ecosystem will adequately support). This assessment involves a careful accounting of land, water, and other resources, that will enable governments to calculate their optimal population. Once these calculations are complete, governments can use them to assess and develop a population policy.

The development of appropriate population policies is an important step in combating overpopulation. As Harvard University biologist Edward O. Wilson observes in his landmark book, The Diversity of Life (1999) stated that every nation has an economic policy and a foreign policy. The time has come to speak more openly of a population policy. By this, I mean not just the capping of growth when the population hits the wall, as in China and India, but a policy based on a rational solution to this problem. What, in the judgment of its informed citizenry, is the optimal population? The second step, once a country has assessed its carrying capacity is to set a target population, and develop a population policy, many experts call for reducing birth rates by encouraging families to have fewer children.

Fertility decline is a dynamic process involving multiple factors. The availability and awareness of contraception, improved literacy rates, and better economic prospects all typically help to reduce infant mortality and drive declines in fertility. The more these factors present, the more likely the transition to lower fertility will be rapid, widespread, and sustained. The transition to lower fertility rates is enhanced by affording women the same educational, political and economic opportunities available to men. In every society for which data are available, the more education women have, the fewer children they have. In Egypt, for example, 56 percent of women with no schooling became mothers while still in their teens, compared with just 5 percent of women who remained in school according to a study by the United Nations (1997). Women often delay marriage and childbirth because they wish to finish their formal education. This delay reduces the total number of children women ultimately bear. Education also gives women an opportunity to venture beyond their traditional roles, changing their aspirations and values and giving them the confidence to break from the norm.

Also important are increased economic and political opportunities for women, such as the right to vote, to own land and other property and to hold a job. These opportunities broaden women's life style choices and often give them the independence needed to determine their own reproductive destiny. Recent efforts to couple family planning programs with micro leaning (small loans to help jump-start businesses), jobs skills training and other economic programs have also helped boost the social standing of women. Increased economic opportunities reduce the emphasis on a large family as a source of future financial security according to Family Health International (FHI), a North Carolina-based nonprofit that provides family planning aid in more than 40 counties around the world.

In countries where infant and child mortality rates are high, couples may have large families for fear that some of their children will die. In the 1970s, China implemented its " bare foot doctor" campaign, which trained thousands of villagers in rudimentary health care. This campaign was instrumental to the rapid fertility reduction over the same period. According to UN figures (2000), infant mortality rates in China dropped from 195 per 1000 births in, 1955 to just 31 per 1,000 births today. The benefits of encouraging lower birth rates can be seen most clearly in countries such as South Korea and Taiwan, where efforts to reduce fertility resulted in an overall improvement of living conditions. According to Bulatao (1998), declines in the number of children per couple led to a decline in dependency ratios easing the financial burden of supporting these dependents. This freed up money for saving and investment, which led to enhanced productivity, strong economic growth and rising incomes. The resulting improvements in living standards then reinforced the trend toward smaller families.

METHODS OF STABILIZING POPULATION LEVEL

Once the number of children per couple has been reduced the primary tool for stabilizing population growth is family planning. Family planning provides potential parents with reproductive health services, contraception and counseling on fertility control choices. There is a substantial unmet need for these services in the developing world. According to Bulatao (1998), from 10 to 40 percent of married women of reproductive age in developing countries and a large, but unknown, number of unmarried women want, but do not have access to these services.

Beyond the many maternal and child health benefits of family planning , such as improved health care, the AIDS epidemic offers another powerful reason for filling this family planning gap. The same family planning network can provide the grassroots foundation for halting the spread of AIDS. The same condoms that limit fertility can also limit the spread of the virus that causes AIDS. High population growth rates and high rates of HIV infection are connected to the same social problem such as inadequate public education and health services.

In some countries, efforts to empower women and promote family planning encounter religious or cultural obstacles (UNICEF, 1996). From Indonesia, where majority of the population are Muslim, to Central America, where Roman Catholicism is dominant, efforts to reduce fertility have overcome these barriers. In Iran, for example, a state governed by the principles of Islam, the population growth rate fell from about 3 percent in the early 1980s to 1.8 percent after religious leaders began speaking publicly about the dangers of unbridled growth. Nations whose population programs are less successful or nonexistent can learn from successful nations that share similar cultural, religious and socioeconomic concerns.

ECONOMIC HELP

Reducing births and stabilizing population growth can be an expensive task for many poor countries. Accomplishing these goals involves not only providing family planning services, but also making heavy investment in education and health care as well. Many countries receive help form international and non-governmental agencies. The International Planned Parenthood Federation (IPPF), for example, is an umbrella organization that coordinates the activities of non-governmental family planning and reproductive health organizations in more than 150 countries around the world. UN agencies such as the United Nations Population Fund (UNPFA) and the World Health Organization (WHO) also provide these services.

Debt relief could also help poorer countries address their population issues. The international debt of nations in Sub-Saharan Africa where populations are growing at a rate of 2 percent or higher per year is more than 70 percent of the region's annual income, according to the World Bank, (2003), debt relief for nations facing high fertility rates could help them slow population growth before they are overwhelmed by demographic fatigue, according to the European Network on Debt and Development (EURODAD) (2009), a network of European non-governmental organizations. The relief world allows those countries to divert funds toward basic social services necessary to stabilize population and improve the welfare of their citizens.

CONCLUSION AND RECOMMENDATION

The challenge of controlling population growth is both complex and demanding, but it is not an impossible task. Quick action is necessary. People regularly buy insurance to reduce uncertainty and to protect themselves from future disasters, but no insurance policy will pay greater dividends for the next generation than a modest investment in efforts to stabilize population growth today.

It may also be time for a campaign to convince couples everywhere to restrict their childbearing to two children. In a recent book, May be One: A Personal and Environmental Argument for Single-Child families (1998), environment writer McKibben (1998) urges American couples to consider having only one child in order to slow population growth. Zero Population Growth, a fast-growing U.S. non-governmental organization based in Washington DC. has long urged that couples limit the number of their surviving children to two.

The world is more integrated and more environmentally and economically interdependent than ever before. We no longer have the luxury of thinking about overpopulation as a problem that faces only poor, developing countries. It is no longer "their problems" but "our problems."

REFERENCES

Brown, L. R. (1999). Beyond Malthus: *Nineteen Dimensions of the Population Challenge*. Norton Press.

Brown, L. R., & Kane, H. (1994). Full House Magazine: *Reassessing the Earth's Population Carrying Capacity*.

Cohen, J. E. (1996). *How Many People Can the Earth Support?* Oxford: Oxford University Press.

Edward O. W. (1999). *The Diversity of Life.* Oxford: Oxford University Press

Ehrlich, P. R. (1968). *The Population Bomb.* London:. Longman.

Edward, O. W, (1996). *The Diversity of Life.* Norton Press.

Elusted Nations Yearly Report (2009). *Society for Family Health International Population*.

Malthus, T. R. (1798). *An essay on the principle of population*, from the Norton Critical Edition.

McKibben, B. (1998). May be One*: A personal and environmental Argument for Single-Child Families.* London: Simon and Schuster.

Postel, S. (1999). Pillar of Sand*: Can the irrigation Miracle Last?* Norton.

Saving, T.R. (1985). *The Overpopulation Myth*. Texas A&M University Press.

EURODAD (European Network on Debt Relief)

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