

Free research paper on effect of population increase on economic growth across pa...

[Sociology](#), [Population](#)



Introduction

In the starting years of twentieth century the world population reached to million people and it can be said that developing countries were the major contributors. Asian countries including china contributed to 80% of the total population growth in the world. Majority of the researchers believe that population growth is strongly connected to the economic development in a country. It is also deemed the relation between these two is a close one and in other words it can be said that population plays an integral role in economic growth (Bloom 1997). There is a wide range of argument about the impact of population on economic development and it is believed to be one of the complicated problems. Some economists believe that population growth has positive impact on the economic development and some other believe that population growth and economic development are negatively correlated. In this research paper, we are going to examine the relation between population growth and economic development in details. To examine this issue, three countries have been selected and these countries are The United States of America, China and Denmark. The reason behind selection is that there three countries differ in population base and increasing scale. Another reason for this selection is that economic development is strongly related to the population growth in each of these selected countries (Hong 13-18).

Part 1: How Population Change Brings Positive Effect on Economic Growth

In this segment of the research paper, we are going to examine the positive impact of population growth on economy development. Some economists believe that population growth has significant role in economy development and it has the power to change nation economy from ineffective economy to effective economy that is considered as “ economies of scale” state (Fan 295-311).

Some of the economists including Kendrick (1977) believe that economies of scale can be considered as an important factor and it largely contributed to increase in productivity of countries. It can be said that countries with rapid population growth can have larger market size and this fact can be seen in the United States of America. Large size market demands more product and US with large size market has to develop more manufacturing plants to meet the product demand of its population (Arabmazar 27-50). Countries such as US have to deal with two important costs the first one is producing cost and the second one is set up cost and therefore these two cost per one output can be reduced. US can be one of the best examples of this case, it has large size market, and it can be seen that large size market benefits US in this way (Fan 295-311).

The second contribution of large size market is large number of labors. In such countries, lack of labor force cannot be experienced and it allows firm to allocate professional labor force in each division and they would be responsible to execute some specific task (Kremer 699). China possesses cheap labor force and it can be seen that it has largely contributed to the

GDP growth in this country. Hence, china can utilize its cheap labor force in an effective way and this fact made many firms to invest in this country (Fan 301).

Division of labor benefit china in many ways and it has a crucial role in production. Hence, division of labor brings diversification and this diversification plays integral role in China's industry improvement.

Specialization allows labor force to improve their skills as they are more chance of working in different industries and through this opportunity, they will be able to enhance their skills practically (Votano 25). A large size market is in need of variety of products and this allows labor force in China a chance to enhance their skills (Kuehnel 02).

It has been seen that in countries such as China and US the required time for producing one unit of output is comparatively less than the average time required to produce one unit of output in small size market such as Denmark (Hempel 05). Producing time can be saved in this way and it leads to reduction in product cost. Rapid population growth has positive impact on the communication and transportation in China (Votano 5). No one can deny the importance of transportation role in economic development.

Transportation system has direct impact on transportation cost and transpiration cost can be reduced through proper transportation system.

America is the best example of this fact because it has one of the best transportation systems in the world and this factor has largely contributed to the reduction of transportation cost. In china case, it can be said that this country has one of the dense population in the world and this fact has made government to come up with different plans to improve the transportation

system of this country more effectively (Fan 299).

According to the statistics revealed by United Nations Population Division, China population density was approximately around 110 people per square Kilometer and China has about 52, 000 km rail road. In 2010, China population density was 141 people and it can be seen that there was 28% increase in the population density but the total amount of railroad in this country was 91, 000 km, which shows 75% increase in the total length of railroad in this country (Kremer 715).

It can be said that transportation improvement is considered as one the major requirement of economic development and no one can deny this fact that population density has positive impact on the improvement of transportation system. David Victor Glass one of the famous economist stated that improvement of the transportation system is directly connected to the population growth (13).

Some of the economists believe that population growth lead to technological growth. These economists believe that when a country faces critical event such as shortage of food or electricity, they strive hard to develop plans to overcome this situation. These countries use all their resources to find new way to effectively manage the situation. It has been seen that in this process new machines and technologies are developed to overcome the situation (Hempe I 05). Simon-Steinmann Economic growth model can be presented here to elaborate this fact. He stated that greater population leads to greater technological development and it can be said that it eventually cause greater capita income (Hempe I 05).

Part 2: Adverse Effects that Population Change Bring to the Economy

In this segment of the research paper, the negative impacts of population growth on economic development are going to be discussed. Capital dilution is one the major negative impact of capital dilution (Hempel 05). For instance, China has highest Gross Domestic Product among the developed countries but if we consider the total population of this country then China has the lowest people's GDP per capita (Cochrane 2008). Population growth has negative impact on standards of living and it should be mentioned here that population growth increase total consumption rate and more goods and products are required to meet people's demand. China huge population causes inequality and besides this, rapid population growth will have adverse effect on people's living standard, education.

Resource shallow is other negative impacts of population growth on economic development (Hempel 05). There are limited amount of natural resources and these amount cannot be increases in any way. Hence it can be said that population growth decrease amount of natural resources per capita. Some of the economists believe that there a relation can be established between the capital-labor ratios and the other important factor which is the gender-gap wage ratio. Two type of dimension can be defined for labor and these two dimensions are physical and mental (Cochrane 2008).

One unit of mental and physical labor is assigned to each man and in this model only one unite of labor is allocated to each women(Cochrane 2008). It can be seen that this distribution of dimensions leads to generating gap

between earned wages by men and women. In such condition, women prefer not to work and pay more attention to upbringing of their children. This fact has been seen in rural areas of China where women prefer to stay at home. This fact has adverse affect on economic growth because the level of output per capita can be lowered through it. Hence it can be said that population growth and GDP per capita are developing in opposite direction (Hempel 05).

High pollution is considered as another negative impact of high population. United States, for example, high population density in particular areas brought environmental contamination to the city and cost huge amount of money to recovery the environmental. For example, carbon dioxide and toxic pollution is one side effect of population increase, and this brought health problems to citizen and more money will put into medical care.

Age structure is other negative impact of population growth on economic growth. Age structure of a country has adverse impact on the output per capita. Population of a country can be divided into three categories. The first category is young age population, the second category is working age population and the final category is old age population. The first category and the last category have adverse affects on the output per capita. Two reasons can be presented for elaborating this fact (Glass 33). People in the first group have not abilities to work, people in the last category have stopped working, and they are no longer capable of working. In this way, the total number of people that can participate in productive working will be decreased and this fact largely contributes to the reduction of output per capita. China can be taken as a practical example. The following figure

shows the available ratio between working and non-working age in China (Cochrane 2008).

There is “one child policy” in China, according to this policy there can be only one child per household, and this causes decline in fertility rate.

Automatically it can be seen that total number of older population is increasing over time. Hence, it can be said that China population is rapidly moving toward aging and the working age is decreasing. Decrease in the fertility rate has worsened the situation (Votano 12). For instance, between the year 1995 to 2000 China experienced one percent increase in old age growth rate while this country had 2% percent decrease in GDP per capita growth rate. Secondly, the saving rate varies in different age group and it highly depends on the ages. People belonging to working group are able to save more money from their salaries and they are capable of saving money for their retirement. Young people are not capable of saving money because these people have no source of income. Countries such China and US with higher percentage of non working people are more vulnerable because the saving rate per capita is not too much high (Cochrane 2008).

Part 3: Analysis

The required data for performing regression test in this segment of the research are population growth rate and GDP growth rate. China, Denmark and the United States of America are our observation. The real data for performing regression rest has been obtained from Worldbank. org. We have used the real data in the period of 1965 to 2012 for our analysis (Ram 419-428).

Model

Regression analysis has been used to find is there any relation between the population growth and economic development. GDP growth rate in dependent variable and population growth rate is our independent variable. Three different models have been used to interpret the possible relation between these two variables, which are population growth, and economic growth. Per capita GDP growth is has been defined as independent variable and we have three independent variables, the first one is the population growth rate, our second independent variable is the GDP/capita level and our third independent variable is working-age population rate.

1st model: $GDP_{gi} = \beta_0 + \beta_1 POP_{gi} + \beta_2 GDP_i + \varepsilon$

2nd model: $GDP_{gi} = \beta_0 + \beta_2 GDP_i + \beta_3 WPR_i + \varepsilon$

3rd model: $GDP_{gi} = \beta_0 + \beta_1 POP_{gi} + \beta_2 GDP_i + \beta_3 WPR_i + \varepsilon$

Result

The first model aims to find out the impact of our two dependent variables on independent variable. The first dependent variable in this model is population growth rate and the second one is GDP/capita level. From the above table it can be found out that all coefficients have been found significant in the mentioned confidence level. As it can be seen in this table, β_1 and β_2 both are carrying a negative sign, which indicates this fact that the two variables in this model have negative impact on economic development. As we mentioned earlier the first used variable in this model is the population growth and the second used variable in first model is GDP/capita level.

Second model aims to provide information about the kind of relation

between the population structure and our dependent variable. As it can be seen, there is a 99% confidence level in this model and the obtained result is consistent with our anticipation. It can be said that Working-age population that was one of the variables in this case and the second variable, which is the GDP/capita growth rate, are strongly connected to each other. It can be seen that value of R-square in all developed models is low which suggest this fact that there are some other variables, which can affect the GDP/capita growth rate.

The higher level of R square value shows this fact the developed model is more adequate. It should be mentioned here that there are set of other factors that can affect the GDP/capita growth. From the above analysis it can be seen that model 1 and two suggest this fact that population growth has adverse affect on the economic growth while result from the model three suggests that population growth is directly connected to the economic development and in other ways it can be said that it has a positive impact on country's economical development.

Conclusion

In this research paper, we aimed to find out the impact of population growth on economical development. GDP per capita was the major criteria in this study. We performed multiple regression analysis and in conclusion, it can be said that high population growth is capable of lowering GDP rate in countries such as China. On the other hands, it has been seen that the availability of labor force has contributed largely to the economic development of China as compare to America and Denmark. Cheap labor force was the main factor

toward attracting foreign investment but in countries such as Denmark where the population growth rate is stable they can largely participate in welfare activities and people living standard is better than people living standard in China is enjoying better economic growth rate.

References

Arabmazar, A, and A Keshvari Shad. “ The Effect of Change in Population Age Structure on Economic Growth. (In Farsi. With English Summary.)” Quarterly Journal of the Economic Research 15 (2005): 27-50.

Fan, C Cindy. “ Interprovincial Migration, Population Redistribution, and Regional Development in China : 1990 and 2000 Census Comparisons.” March (2013): pp. 295-311. Print.

Glass, David Victor. “ Scandinavia and the Population Question.” (2002): 15-43. Print.

Hempel, Marilyn, and Jan Lundberg. “ Denmark : Small, Happy Prosperous Families -- In Contrast to U. S.” November 2012 (2013): n. pag. Print.

Hong, Y. “ The Quality of Economic Growth and the Effect of Population.” Chinese Journal Of Population Science 6. 1 (1994): 13-18. Print.

Kremer, Michael, The Quarterly, and No Aug. “ Population Growth and Technological Change : One Million B. C. to 1990.” 108. 3 (2007): 681-716. Print.

Kuehnel, Johanna. “ Population Aging, the Composition of Government Spending, and Endogenous Economic Growth in Politico-Economic Equilibrium.” Population English Edition 510 (2011): n. pag. Print.

Ram, R. “ Population Increase, Economic Growth, Educational Inequality, and

Income Distribution: Some Recent Evidence.” *Journal of Development Economics* 14. 3 (1984): 419-428.

Votano, JR, M Parham, and LH Hall. “ GLOBAL DEMOGRAPHIC CHANGE: DIMENSIONS AND ECONOMIC SIGNIFICANCE.” *Chemistry &* (2004): pp 1-45. Web. 29 Mar. 2013.

Zhang, Z. “ Population Increase and Economic Development: a Research into the Relation Between the Rural Population and Economy in China from 1949 to 1979.” *Population research Peking China* 6. 2 (1989): 1-17. Print.

Appendix

(The data and graph was collected from Global Financial Data)