THE IMPACT OF RAPID POPULATION GROWTH ON THE ECONOMIES OF DEVELOPING COUNTRIES

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Abstract: According to various studies, in the near future, population growth will occur in developing countries. While some experts assume that population growth is an issue for the developing countries, others consider it a natural process that does not impede economic development of those countries. The significant issue is whether rapid or steady population growth would lead to additional burden for a developing country's economy. The government expenditure for the establishment of new workplaces, healthcare, social welfare, and education might increase. If economic growth is slower than population growth, unemployment and poverty rate consequently increases. The population change is basic information for policymakers who create policies for development, economics, demographics, social planning, business, human resource management. In addition, population change is one of the main factors behind social and technological shifts all over the world. This study attempts to find answers to several questions. In general, the main question is how population growth affects developing countries, such as Uzbekistan, in terms of the economic situation, implemented policies, and the determination of whether the government can support population growth. This study similarly discusses family planning or birth restriction as forms of solution to the problem. The analysis shows that even though the world's population is growing, the growth rate is sharply declining – and the situation in Uzbekistan is not an exception. Our main conclusion is that population growth is an economic problem but can also be a factor to boost a country's economy. In addition, according to UN estimates, the population of Uzbekistan will reach its peak in 2048 and then begin to decline. Therefore, one of the statements in the study is that limiting population growth can lead to bad outcomes, for instance, a decrease in the birth rate. Family planning also refers to measures that may have a negative effect on future population changes. Population change is a natural process that is regulated naturally through the course of the circumstances in a society. Increasing the economic role of women of reproductive age in society also may lead to declining fertility.

Key words: Population change, rapid population growth, family planning

Introduction

The rapidly growing world population is the situation that everyone concerns today. It is no secret that natural resources are limited in the world, but human needs are unlimited. The phenomenon of population growth has received a lot of research attention. An increased interest in population growth in developing countries has emerged in recent years. Over the years, an enormous amount of research has done assessments of the impact of population growth in developing countries (Newbold,2010; Peterson, 2017;Kuiper et al., 2018).

A limited number of studies have addressed the effect of population growth in the Commonwealth of Independent States (CIS) countries. Uzbekistan leads by the population (33.6 million in 2018) in Central Asia, and third among CIS countries after Russia(145.7 million) and Ukraine(44.2 million) and its the population is steadily growing. Within the rapid population growth, several crucial questions remain unanswered. For example, the unemployment rate in the country is extremely substantial for a developing country. Based on the official statistics in 2018, the unemployed people were 1.4 million, which means 9.3 percent of the economically active population in Uzbekistan(Statistic Committee,2019). Moreover, according to official statistics, more than three million Uzbek people went abroad to work in 2018(EADaily,2019).

The consequences of rapid population growth, which are the main factor in price increases in agricultural products, are exposed through its impact on demand. (Kuiper et al., 2018). While some experts assume that population growth is an issue for developing countries, others consider it as a natural process that does not impede economic development. One of the central claims of this study is that population growth is an economic issue, not a social issue.

The main purpose of this paper is to reveal the effects of rapid population growth on the economic situation in Uzbekistan, and to examine the consequences of these impacts on the welfare of developing countries, like Uzbekistan. An especially important part of the research is the creation of a policy recommendation template that help consider this "phenomenon" appropriately to the strengths or weaknesses of developing countries.

Several questions will guide this study. First, what is population growth and what are the current trends of population growth around the world? Second, how does the population growth impact on developing countries, and in the case of Uzbekistan, what are its strengths and weaknesses? Third, how can a country achieve the balance between population growth and economic growth? Fourth, can family planning or birth restriction be a part of the solutions? What can be the future policy recommendations for the resolution of the issues?

This paper has two (2) main parts. The first part examines the current level of population growth and assesses the capabilities of the Uzbekistan economy. The second part will discuss policy recommendations regarding population growth.

Literature Review

Before proceeding further, it is necessary to define clearly the key terminologies referred to in this research paper. On the outset, it is imperative to clarify what we mean when we talk about population change, growth, and rapid population growth. Several definitions had been offered regarding rapid population growth. In some cases, meanings prescribed gets confused with the description of the terms. According to the United Nations (2017),

population growth is the increase in the number of individuals in a population. Namano (2014) applied the term to the global human population in general, and further clarified that population change is the increase or decrease in numbers of the race over a determined period. Generally, there is no difference between the concept of the amount of growth and rate of growth. We can quickly calculate the average growth rate if the amount of growth and the period are indicated (Simon, 2019).

It seems reasonable to argue that population growth, in general, means when the number of individuals is increasing in a particular country. This paper adopts the view that the population growth rate tells us how quickly the amount of population is increasing or decreasing in a certain area.

Various hypotheses have been adopted to define the optimum population level and impact of population growth (Malthus,1798; Wicksell,1909; Mckewon,1955; Sanyal,2011; Rosling,2013; Haub & Kaneda,2014). One of the most important historical investigations into demography, which might explain the population dynamic, is Malthusianism, created at the end of the 18th century by the English scientist Thomas Malthus. According to Malthus (1798), if population growth is not restrained by anything, it increases exponentially, while food production is arithmetically progressing. Therefore, this will inevitably lead society to hunger and social upheaval (Malthus, 1798).In his investigation, Malthus (1798) stated that population growth is inevitable when conditions developed, and it impeded real progress on the path to a utopian society: “The strength of the population is infinitely greater than the strength of the earth to provide food for humans” (p.13). Marx (1970) argues that poverty results not from over-population but from a poorly organized society, and the population is the reserve army of labor. Marx (1970) reacted very strongly against Malthus' population theory and stated “this is a law of population peculiar to the capitalist mode of production; and in fact, every specific historic mode of production has its special laws of the population historically valid within its limits alone. An abstract law of population exists for plants and animals only in so far as man has not interfered with them” (p. 631- 632).

McKeown (1955) assumed that population growth observed in the 19th century was caused not so much by an increase in fertility, as by a decrease in mortality, especially child mortality and infant mortality. The decrease in mortality is explained as a consequence of increases in living standards, in particular, improved nutrition.

It seems reasonable to argue that against McKeown’s theory, nowadays, many countries with rapid population growth have low living standards. In contrast, many countries with low population growth have high living standards (Haub & Kaneda, 2012).

International organizations such as the office of the United Nations High Commissioner for Refugees are interested in these issues, including population growth, fertility, and the movement of people. According to

Newbold (2010), the population growth models are different and can roughly be divided into the developed world and the developing world. Put in another perspective, over 121 million children were born in the developing world in 2008, compared to about 13.3 million in the developed, industrialized countries."

However, it should be kept in mind that over the past 100 years there has been a massive fourfold population growth due to advances in medicine, reduced mortality, and increased agricultural productivity– all made possible by the Green Revolution (BBC,n.d.). Notwithstanding, the population of Japan began to decline in 2005 despite that the country now has one of the highest standards of living in the world (Associated Press in Tokyo, 2009).

In contrast, the findings of Bartlett (2007) explained that steady growth is often contradictory. In his view, a low percentage increase could mean a significant increase in a relatively short period. The UN (2011) predicts that the world's population will peak at more than 10 billion by the end of the 21st century, while Sanyal (2011) argues that global fertility will be lower than the replacement rate, and a continued decline in the world's population will follow. Likewise, Rosling (2013) claims that the total number of children in the world is currently at a stable level of around 2 billion, and the population explosion has happened. Therefore, the population growth is expected to essentially stop by the end of this century, due to low fertility rates in the world (Rosling, 2013; Cilluffo & Ruiz, 2019).

Besides, there is a vast amount of literature about population growth and its impact on a country (Persson & Sharp, 2015; Bashford & Chaplin, 2016; Salas, 2016). The pieces of research discussed previously was mainly based on findings from western literature conducted in the area of population growth. In comparison, there is a dearth of study on the effect of population growth in Central Asian countries, especially in the case of Uzbekistan (Batsaikhan & Dabrowski, 2017). Therefore, this study aims to examine the effect of population growth on the economy of Uzbekistan. Similarly, this study investigates the causes of variations, and it evaluates their future consequences. In addition, this study subsequently reviews policy recommendations aimed at lowering or raising birth rates in developing countries of rapid population growth.

Research methodology

Researchers (Bologna& Flores, n.d.) of the University of in Arica, Chile, recently developed a mathematical model that describes the evolution – rapid ups and downs – of the island during its golden age. Their model takes into account the interaction between natural resources and populations, and provides an accurate estimate of the time of the collapse of civilization, which can be applied to other similar civilizations. But, as researchers argued in their study, the island's rapid growth also meant that society had reached the "carrying capacity" of its ecosystem. In other words, the isolated area could no longer support its inhabitants. The Rapa Nui people continued to steadily cut

down their palm trees, which once covered nearly the entire 160 km2island, and ignored the long-term consequences.

By using the model, they were able to discover the equilibrium point of civilization at which people can coexist indefinitely with the available natural resources. However, the researchers noted that a minimum number of individuals are required to maintain a population, which means that some species cannot exist at all if natural resources are too scarce to maintain the minimum size. In the researchers' model, this requirement is a state of collapse of an isolated civilization with a primitive level of technology. [1]

What can we learn from the Rapa Nui phenomena? In our study, we stated three (3) main points that can be applied not only to isolated areas, but also to certain countries as well:

-Earth is also considered as an isolated place and country borders are limited.

-Overpopulation may become a real problem in the future if technologies for resource conservation are not fully developed.

-Resources on earth are more limited than we assume.

Results and analysis

According to the UN (2020) , the current world population estimate is 7.8 billion people. For further analysis of population growth, it is necessary to find the answer on what period mankind will be able to supplement in this amount. Let's look through history. There were approximately 5 million people in the world when humans began the agriculture period. During the 8,000 B.C. to 1 A.D., this number reached 200 million with a growth rate of under 0.05 percent per year. A huge growth occurred in the period of the industrial revolution after1800. Until the 1800s world population was 1billion, and in 1930 it reached 2billion, soon in 1960 3billion, later in 1974 4billion, and in 1987, the number of inhabitants reached 5 billion. Merely in the 20th century, the population has risen from 1.65 billion to 6 billion. In 1970, it was about half the modern population of the world. [2]

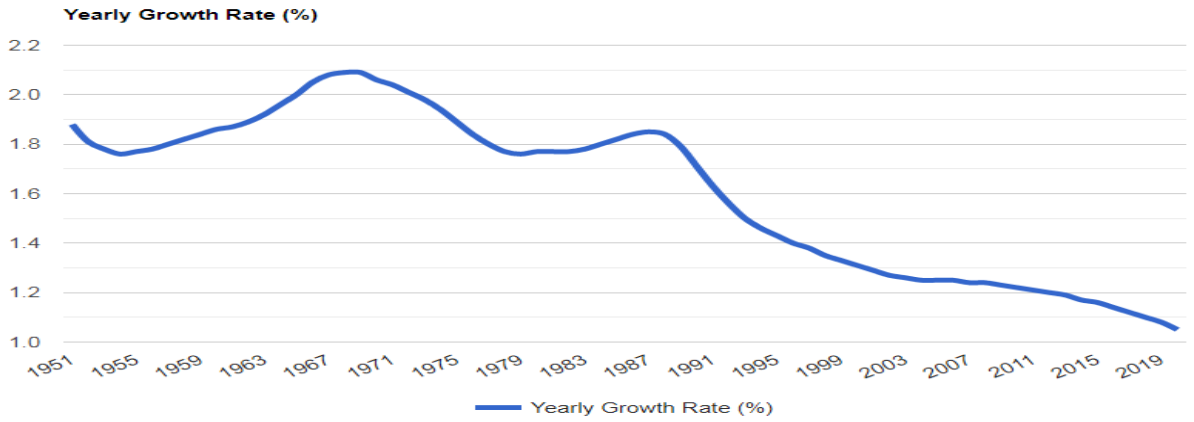
How to calculate population change? In our study, we are attempting to investigate the economic impact of population change, so we will use a simple demographic formula and existing data. In general, the formula for population change is as follows:

Population Change = (Births + Immigration) - (Deaths + Emigration)

For the easiest understanding, we can assume that we had 100,000 people in a certain area, and within a year there had been 1,000 births, and 500 deaths. In this case, population changes by births is 1,000/100,000 = 0.01 or one percent of the population. However, population growth is 500 (=1,000 births-500 deaths) / 100,000 = 0.005 or 0.5% of the population.

Can we conclude that the rate of population growth is rising rapidly comparing to the number of inhabitants in the world? According to existing data (UN,2019), the world's population is currently increasing at about 1.05% per year. In previous years, the population growth rate was higher than now.

In 2019 this figure was 1.08%, in 2018 1.10%, and in 2017 1.12%. The current average population growth is estimated at 81 million people per year. Annual growth peaked in the late 1960s when it was around 2%. Since then, the growth rate has almost dropped twice and will continue to decline in the coming years.



Line chart, 2 World's Population Growth Rate
Source: www.Worldometers.info

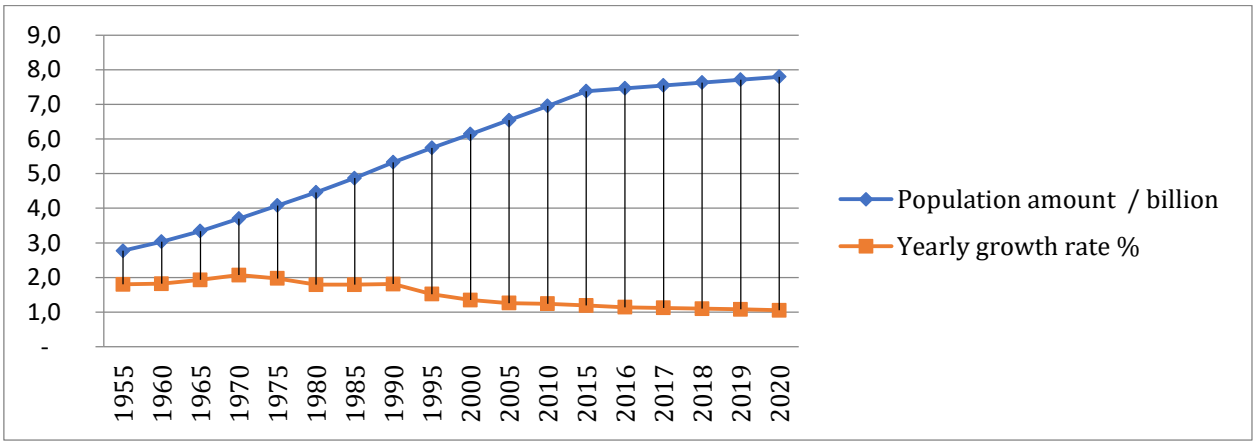
Despite the increase in the number of inhabitants, oddly enough, the rate of population growth rate is declining and may become zero in near future. Such a paradoxical consideration leads the research claims to agree with the statement of Rosling. On the line chart below, two (2) lines of population growth in the number and the rate were drawn on one graph.

We can see how these two lines oscillate in opposite directions away from each other. To analyze this situation and arrive at a predictable or reliable conclusion, we will use a simple population change formula.

Change in Population Size = Births - Deaths

Let's designate conditionally that population change - Y, growth rate (births) - Z, decrease rate (mortality) - D, period - N.[11]

$$Y_n = Y_0 + Y_n Z - Y_n D$$



Line Chart 3. Variation in Population Growth Rates and Population Size

[11] Migration is equal to zero.

If we take into account that death is inevitable, then our coefficient D cannot be equal to zero, but the growth rate indicator Z goes to zero as we can see in the line chart. Consequently, we can determine if:

-Y_n Z> Y_nD we can observe a positive change of populations,

-Y_n Z> Y_nD then there is a negative change which means a decrease in the total number of populations.

Based on this crude calculation, we can argue that growth in population by the number of inhabitants will eventually stop after a while because decreasing growth rate eventually decreases the number of inhabitants as well. However, if we summarize our logical consequences, we will face a demographic transition theory which proves and explains our statement.

Analysis of research results.

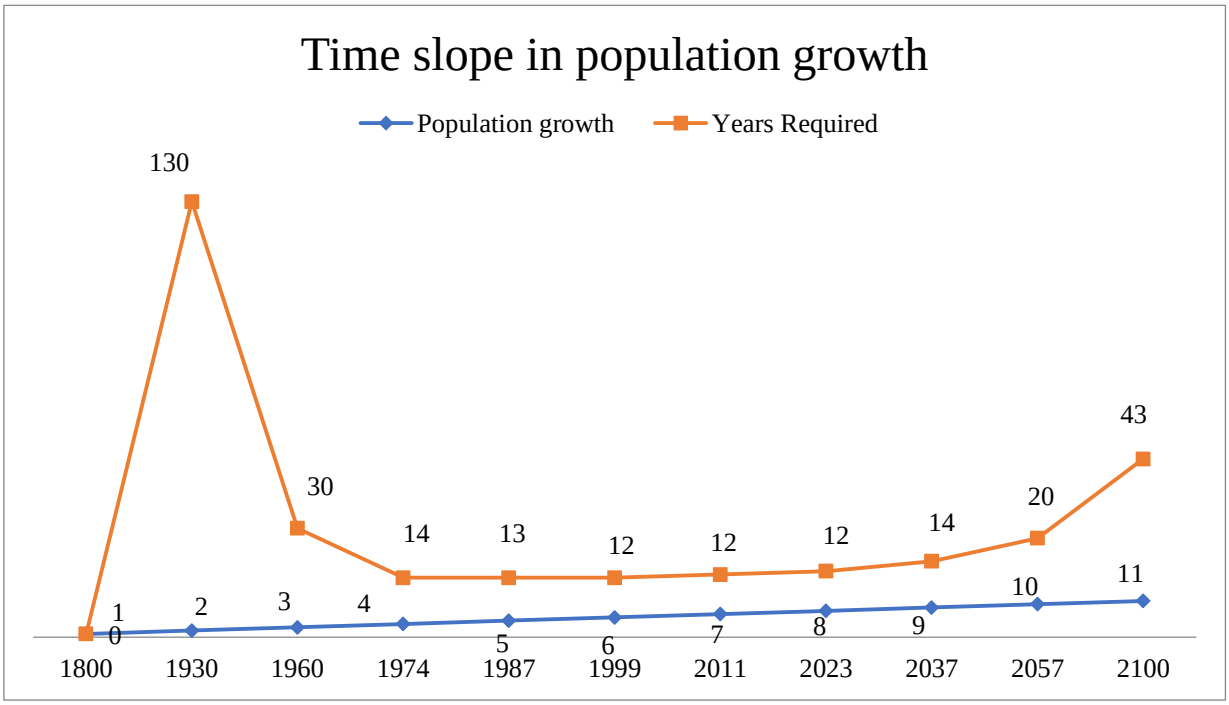
According to the UN (2019) forecast, the population will reach 8 billion in 2023, respectively 9 billion in 2037, 10 billion in 2057, and 11billion in 2100. At first glance, this looks like a frightening forecast of relatively high rates of population growth in the world. However, a farther thorough investigation reveals one of the patterns of population change – the algorithm for required time period for every one billion increase in populations. It took mankind about 1800 years to reach the first billion of the population. In our analysis, we set the year 1800 as a starting point and indicated the time it would take for humanity to grow for every billion people on a synchronous timeline.

Table 1. Time Slope during Population Growth

Amount in Billion	Year	Requiring Years
1	1800	Entire Human history before
2	1930	130
3	1960	30
4	1974	14
5	1987	13
6	1999	12
7	2011	12
8	2023	12
9	2037	14
10	2057	20
10.9	2100	43
Source: UN Population Division (World Population Prospect, 2019)		

Using the datasheet above, I draw a line graph that illustrates the time factor algorithm more clearly. On the line chart below, for the period marked with a rectangle, we can understand how significantly the population growth trend has slowed down. The line chart illustrates that to reach from the first to the second billion, it took 130 years in human history – which is the longest

time. From 2 to 3 billion it took about 30 years, from the three to four billion it took 14 years.



Line Chart4. Time Slope during Population Growth

We can see on the above graph that the time required for population growth of every one billion has been stabilized and will take an upward trend in the near future. This reveals that in our century, there is a golden point or a stable change period in the dynamics of population change. It is obvious that in 2037, humanity will need even more time to add the next one billion because the growth rate will decrease significantly. Once again, we can conclude that human growth is not eternal and the peak in numbers is almost accomplished.

What caused such rapid population growth or decreasing growth rate? In this chapter, I try to find the regularity of population change, and the tools that affect the indicators. Demographic transition has shown historically speedy decreases in fertility and mortality, as a result of which population reproduction is reduced to a simple replacement of generations. It is the transition process from a traditional society characterized by high birth rates and high death rates, to a society of low fertility rates with low mortality rates.

The demographic transition concept was first brought by the demographer Frank Noutstein in 1945, although similar ideas have been stated before. The concept of demographic transition gained particular attention during the changes in demography, which took place during the WWII among the countries that were liberated from colonialism.

In the long run, because of the significant decrease in mortality and the persistence of a high birth rate in these areas, population growth was accelerated steadily and called as the demographic explosion. It turned out

that the same changes took place in the 19th century in the countries we consider today as developed. Their sharp boost in population growth was a consequence of a decrease in the birth rate, and since then population growth was stabilized. The rapid decline in fertility is currently being observed in Turkey, a newly industrialized country, and therefore it looks like that Turkey is on the route of finishing demographic transition.

Demographic transition begins with a modernization processes that leads to increasing GDP per capita, and improvements in the quality of nutrition, sanitary conditions, the quality and availability of medical services, and many others. These indeed lead to a significant increase in life expectancy and a decrease in mortality rate. The modernization processes in human life ultimately lead to an equally noticeable fall in the birth rate, but this happens with a noticeable lag behind the mortality rate.

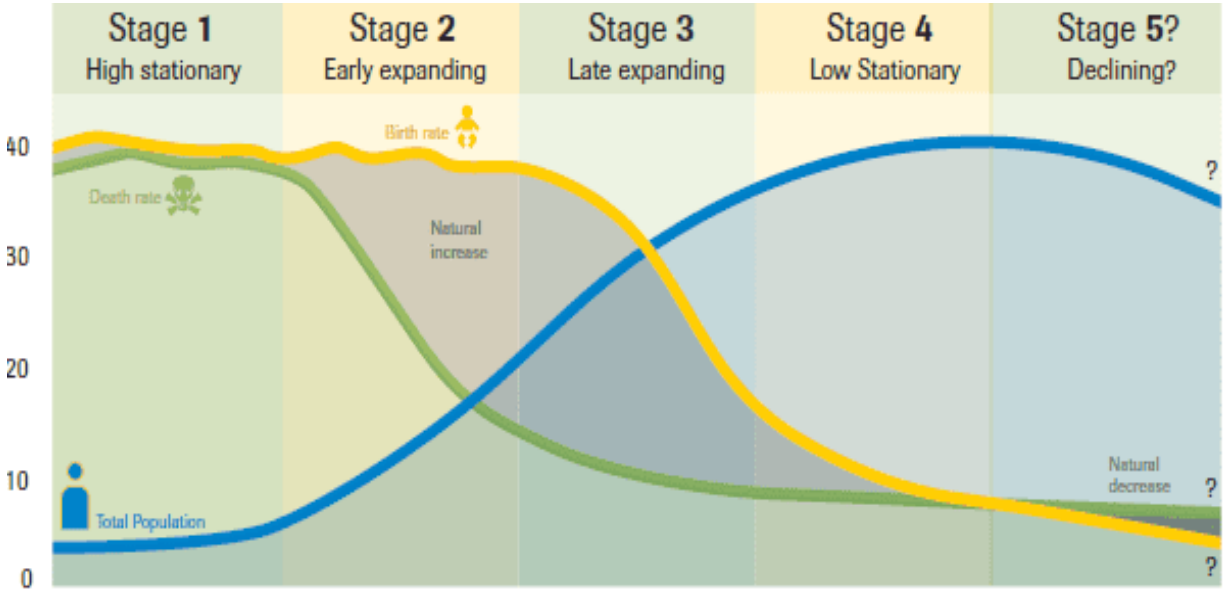
The demographic transition can be thought of as two (2) rapid processes: the transformation of rural areas to urban cities, and the concentration of wealth into large urban cities. In this case, the evolution of population growth will ultimately stop, and humanity returns to the beginning of demographic evolution (Kapitsa,2015).

In a traditional agrarian society, children were considered as additional supports to the farm. Therefore, having as many as children made economic sense. In addition, having many children is a kind of guarantee of procreation considering relatively high infant mortality. The presence of a significant number of children was also the only reliable guarantee of age old parents in the absence of a social pension system.

Urbanization and industrial-type labor leads to a decrease in the birth rate when more generations started to live in towns after moving from the countryside.

In a developed industrial society, children must study for a long time to obtain qualifications that meet modern requirements. This leads to their release from economic life and they become a burden for adults instead of helpers. Parents must spend their time and financial resources for their children to achieve a high educational level. They prefer to raise only one or two “high quality” children since too many kids in a family negatively affect their educational level and future careers. In addition, a long period of study contributes to an increase in the average age of a woman giving birth. Age of delivering the first child has been shifted from 16 years old to 25 years and older now. In an agrarian society, children, working with their parents, naturally acquired the necessary labor skills, in other words, they do not need specific knowledge.

Increasing independence and education of women is an additional factor in the reduction of birth rate. Higher educational level of women leads to more independence of women. Since the main burden of caring for and raising children falls on women, they are objectively not interested in having many children.



Source: www.populationeducation.org

Line Chart 5. Stages of the Demographic Transition Model

According to the theory of demographic transition, it can be divided into five (5) subsequent stages of the demographic history of humankind.

-In the first stage, which was applied to most of the world before the industrial revolution, birth and death rates were high. As a result, the population remained constant but could fluctuate greatly depending on wars or pandemic.

-In the second stage, the introduction of modern medicine reduced mortality rate, especially among children. Therefore, while maintaining a high birth rate, there was rapid population growth. Most of the least developed countries are at this stage.

-In the third stage, as a result of improved economic conditions and an increase in the status of women and accessibility to contraceptives, fertility gradually decreases. Population growth continues at a slower pace. Most developing countries are at this stage.

-In the fourth stage, there is population stability due to the low birth and death rates. The country generally has a stronger economy, better education, better health care, higher proportion of women in the labor force, and fertility rate of about two (2) children per woman. Most developed countries are at this stage of transition.

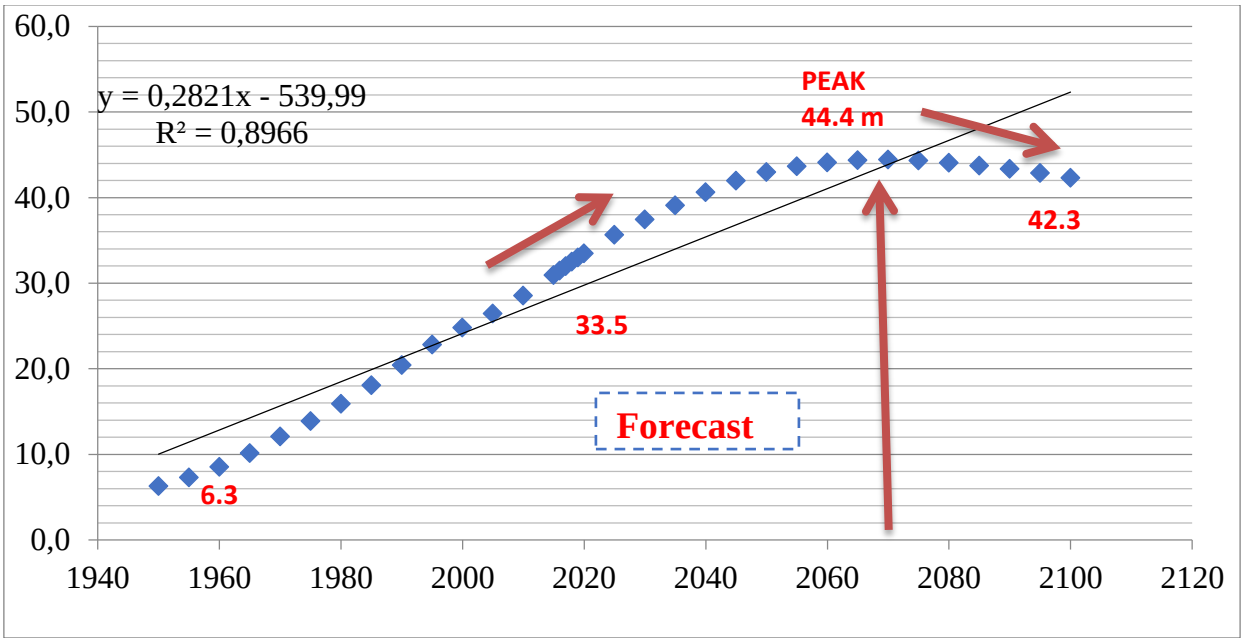
-There are different interpretations about the 'fifth' stage. Some scientists distinguish it from the fourth stage in the aspect of the fertility level even below the level of reproduction. Others hypothesize a different "fifth stage" associated with an increase in fertility. [3]

Nowadays, developing countries are at Stages 2 or 3, while developed countries have reached Stage 4. In many developed countries, the mortality rate is higher than the birth rate, thus negative trends in population dynamics are observed.

In general, my initial statement in this research is that there is no need to worry about population growth, even though each country has its own population dynamics. However, it is true that recommended population policies and population management strategies in this research cannot be applied to all in the same way, but rather to one or more specific countries.

Up to now, we investigated the general trends of population change in the world. Now it is time to investigate the Uzbekistan case. According to Berger (2015), 97% of the world population growth from 2013 to 2030, which is expected to be 1.2 billion people, will be from developing countries.

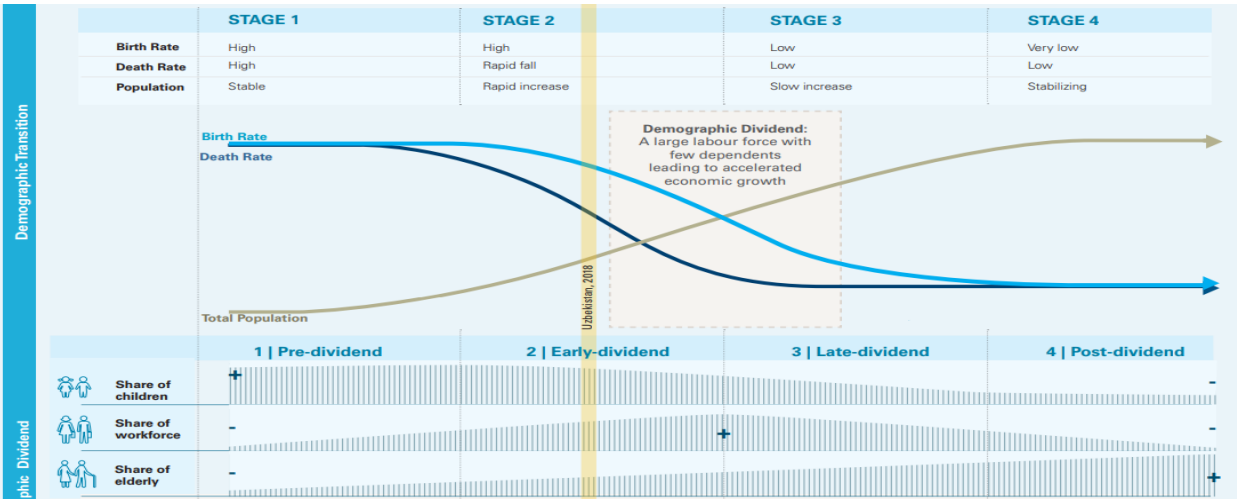
The Soviet Union was destroyed in 1991, thus, after the long 75 years of occupation, Uzbekistan achieved its independence. In this study, the Republic of Uzbekistanis considered as a developing country. Based on the statistics of UN (2018), the population of Uzbekistan had increased from 6.3 million people in 1950, to 32.5 million in 2018, of which the average yearly growth rate is 2.18%. Uzbekistan leads on the population in Central Asia and third among CIS countries after Russia and Ukraine. The population of Uzbekistan is coequal to 0.43% of the total world population, 42nd place on the list of countries by the population quantity in 2018.



Line chart 6. Population perspective in Uzbekistan during 1950-2100 years

In the line chart above, we can see an upward trend in the population change. Current population is 33.5 million and it will continue to grow to reach its highest, 44.4 million in 2070. We can state that the peak is the estimated maximum number of people to exist at the same time in the entire history of Uzbekistan, and after that, the population will start to decline. According to UN forecasts, the population of Uzbekistan will reach 44.0 million in 2080 and will continue to decrease to 42.3 million in 2100. I should say so, in this case, the number of people who need sustainable work will

increase significantly. Based on the UN report (2018), Uzbekistan is passing the second stage of demographic transition. According to this prediction, the working-age population from 15 to 64 years old continues to grow and it will reach its peak at 27.6 million in 2048. From 2048 it will start to decline.

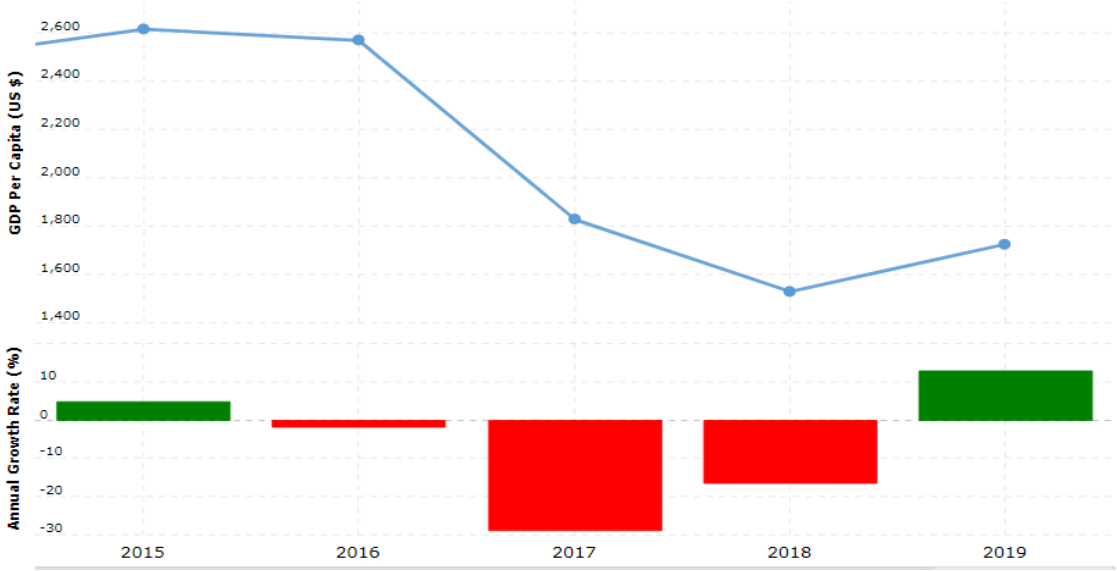


Line Chart 7. Stages of Demographic Transition in Uzbekistan
Source: UNICEF report in 2018.

To understand the scale of difference, we should compare the 27.6 million people of working age in Uzbekistan with its bordering neighbors in Central Asia. Using the same data of UN about its prediction on populations in 2050, we realized that working-age populations of Uzbekistan are more than the entire population of Kazakhstan with 24.0 million citizens, Tajikistan with 16.2 million citizens, and the Kyrgyz Republic with 9.1 million or Turkmenistan with 7.9 million people.

The significant issue is whether rapid or steady population growth would lead to an additional burden for the country. The government must consider that the country needs more food production, and needs to create more workplaces, to provide more health care and social welfare, and to spend more educational expenditures. If economic growth is slower than population growth, unemployment and poverty rate naturally increases. “The most often quoted causes of chronic unemployment are population growth….”(Kaloo, 2016). According to official statistics of the government, about 3 million Uzbekistan people went abroad to work in 2018. [4] It is quite challenging to discuss all the effects of population growth in one study. Therefore, I would like to focus on unemployment issues in Uzbekistan. The foremost problem of rapid population growth in Uzbekistan is the creation and contribution of the new workplaces, to reduce the unemployment rate to the minimum.

Below, I will discuss and compare the trend of population growth and some annual economic indicators such as GDP per capita, food production, and others. GDP per capita is an economic output divided by its population in the country. It is a good presentation of a country's standard of living. It also describes how much advantage citizens can get from their country's economy.

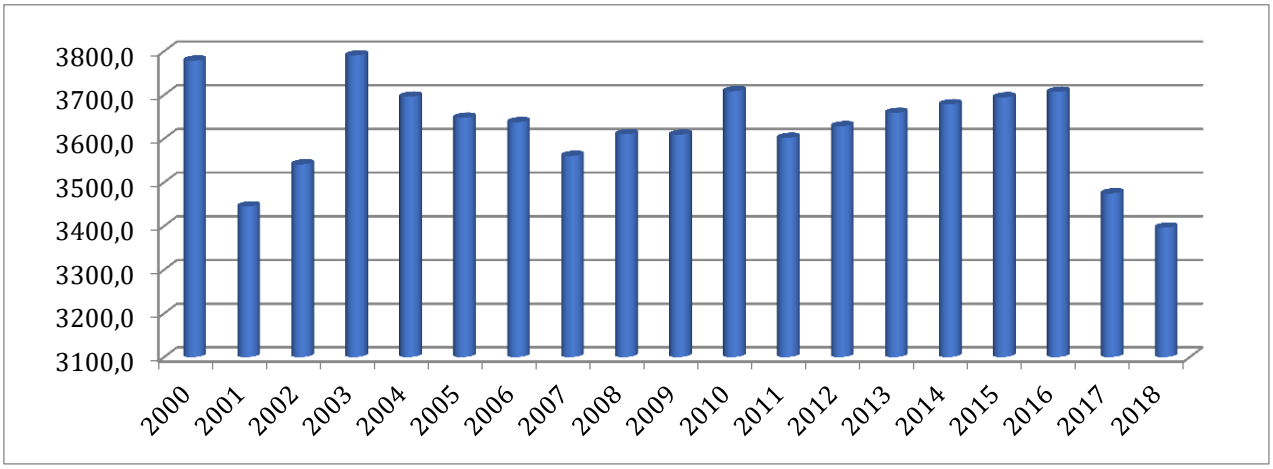


Graphic 1. Uzbekistan GDP Per Capita 2015-2019

Uzbekistan GDP per capita in 2015 was $2.615, a 4.92% decrease from 2014, and the number in 2016 was $2.568, a 1.81% decrease from 2015; in 2017 $1.827, a 28.87% decrease from 2016; in 2018$1.529, a 16.29% decrease from 2017. In 2019 it was $1.725, a 12.8% increase from 2018.

Unfortunately, we observed continuous decline in per capita GDP except 2019. In other words, this means that population growth cannot be supported by the economy of which the growth rate is way lower than the population growth.

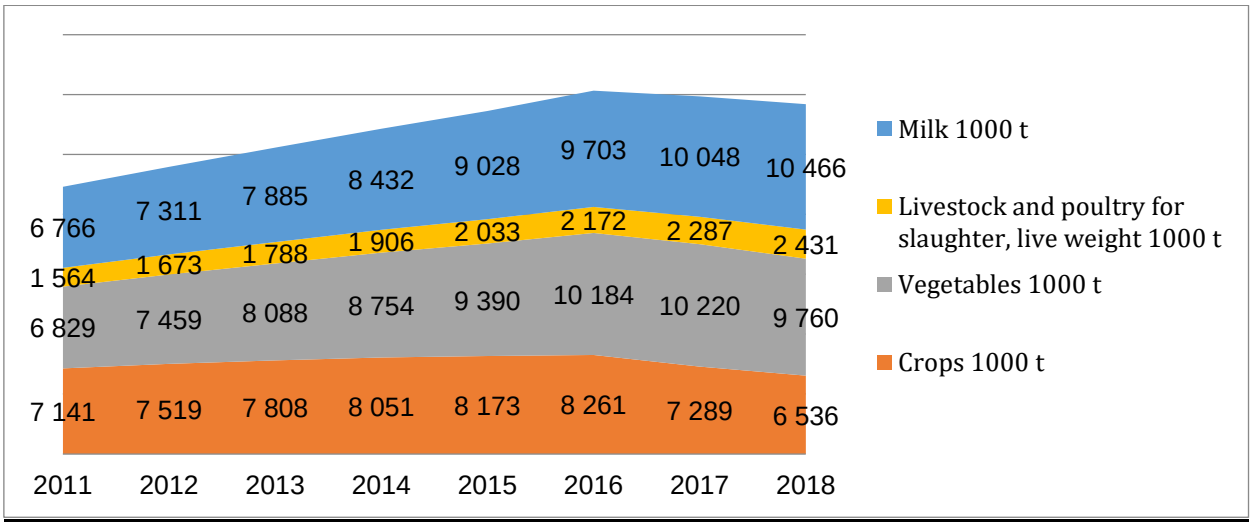
An overview of volume of crop production in the country and their production potential is neither encouraging.



Bar Chart 1. Area of crops, thousand hectares in Uzbekistan.

From the bar chart above, we may observe that in recent years the cultivated area has been sharply decreased. In 2018, the allotted land area was 3.396 thousand hectares, and the population was almost 33 million people. This is even less than 3444.5 hectares in 2001 when the population was 25.1 million. The assumption that the overall yield may offset the impact

of decreased cultivated land with increasing productivity was not justified, the following analysis explains the opposite fact.



Graphic 2. Production of Crops and Livestock Products in All Categories of Farms in the Republic of Uzbekistan

Source: Data of Stat Committee of Uzbekistan

It can be seen that a continued downward trend in the total production of food through the last few years, despite of the steady population growth and increasing consumption. This has caused rising food prices in the country. Meanwhile, according to official statistics [5], the import has been steadily growing from 12,095 billion in 2016 to 13,991 billion in 2018. This clearly explains that further population growth may lead to food shortages or hyper-inflation of food prices in Uzbekistan.

4.2 Government response and policies to manage the impact of population growth with regard to unemployment in Uzbekistan

I analyzed the "main burden" of population growth, which is unemployment in the case of Uzbekistan. Now I am going to discuss policy measures that the Uzbekistan government has implemented to cope with this issue.

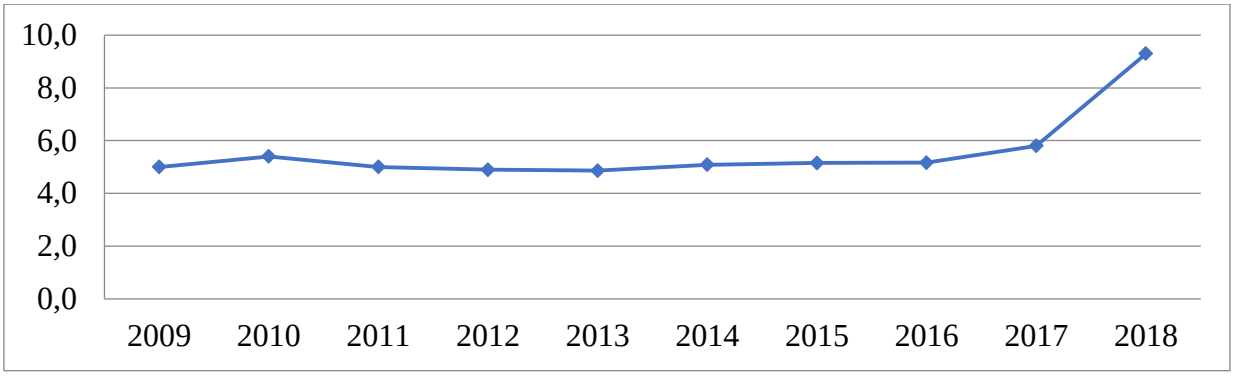
Table 2 The share by age bracket of the populace of Uzbekistan in 2018

Age bracket	Age bracket share in total	Percentage %
Young 0-14	9.639.146	28,80
Adults 15-64	22.227.260	66,41
Old 65+	1.602.793	4,79

Source: www.worldometers.info

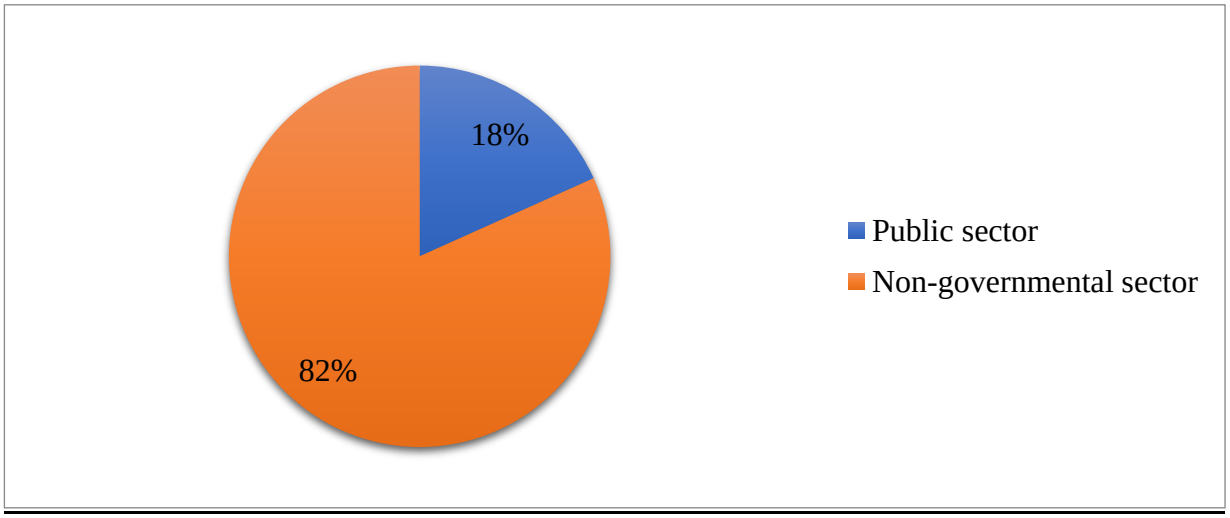
From the above table, we can see that 66.41% of the population was of working age. In the case of developing countries, it is critical to consider the unemployment rate. Based on the stat committee data of Uzbekistan in 2018,

the economically-active population was 14.6 million of which 13.3 million employed and 1.4 million unemployed. , It means 9.3 percent of the active population is unemployed in 2018.("Statistic committee - Demography," n.d.).



Line Chart 8. Unemployment Trend in 2009-2018.
Source: www.stat.uz

From the graph above, we can see that unemployment rate was increasing during the period of 2017 to 2018. If this trend continues, there is a possibility that a large number of people will be unemployed in 2030. One of the implemented reforms in 2017 was a policy to support small and medium-sized businesses to reduce unemployment. The share of small business and private entrepreneurship in GDP is around 53.3% in 2017 in Uzbekistan (Japan 55%, Germany 54%, the USA 52%, Kazakhstan 25.6%, Russia 20%). Moreover, 78.3% of the country's employed population work in small businesses, while in 2000 it was only 49.7%.(MERU," n.d.)



Pie Chart 1. Distribution of the Employed Population by Forms of Ownership

This policy included both financial and legal support for small businesses to help reduce the unemployment. In line Chart No. 8, we can see a steady trend of unemployment rate during the period of 2009 to 2016. However, even though the reform started in 2017, the unemployment rate began to rise, and in 2018 the unemployment rate **reached to 9.3 percent** of the active

population, a 4.1%p increase from 2017. The number of operating small enterprises and micro-firms was 261.1 thousand units at the end of 2018 in Uzbekistan, a 13.6% increase from the end of 2017. (iteca.uz, n.d.).

The reasons of increasing unemployment rate despite the government policy can be explained as follow:

Policies to support SMEs helped small business to invest more in business capital. Behind these policies, there were expectations that more investment would require more labor to maintain expanded business activities. However, one of the main obstacles to the development of small business is the indirect labor costs and difficulties in recruiting qualified specialists and the lack of qualified workers. In our case, the policy has created better job opportunities, but the vacancies created by the newly-emerged business entities have not been supported by the specialization of the existing labor force. Moreover, some of those job opportunities have been occupied by non-economically active people who could work but did not try to find any work in the labor market before. While more opportunities are open, these people started to actively seek to work again. Specialists from the World Bank [6] argued that the rapid population growth is an opportunity for Uzbekistan. They stated that:

"Uzbekistan has a fast-growing working-age population and can use its labor force **to drive growth**. In 2017, Uzbekistan had a working-age population of about 23 million, which is 72 percent of its population; about 13 million participated in the labor force. By 2030, the labor force will increase by 4 million, making Uzbekistan's the fifth largest in the Eastern Europe and Central Asia (ECA) region. However, many in the working-age population are inactive, unemployed, or working abroad. Youth are especially discouraged – one in 10 people aged 20 to 24 are not even looking for work.

It is necessary to analyze the current situation and implemented policies of developed countries that have passed the second stage of demographic transition to make a reliable deduction of unemployment. It was revealed that the problem of unemployment requires a different approach. To achieve the goal, development policies focused on one sector (like SMEs) do not work and therefore it is necessary to create an integrated approach and strategy.

Conclusion

At first glance, population growth appears to be dangerous due to the increase in the unemployment rate in Uzbekistan. Nevertheless, in my conclusion, it is a problem of a poor economic situation due to ineffective economic policies. For example, Uzbekistan, a country with rich natural resources and 34 million people, has a GDP of $1.529 per capita (2018); meanwhile Korea does not have natural resources with 50 million citizens, but its GDP per capita reaches $31.362(2018). Uzbekistan is, at this stage, experiencing an increase in the share of the working-age population which leads to a decrease in the dependency ratio and opens a window for

demographic dividends. The de facto government cannot provide enough jobs; thus, the big fraction of Uzbeks has to work abroad.

In general, I would consider population growth, not as a problem but rather an economic opportunity in shaping GDP growth. However, the economic potential of Uzbekistan does not fully correspond to the current population growth. Therefore, we can observe a large number of unemployed people with low income, and a large number of migrant workers in the country. Nevertheless, this does not grant the government with justification to artificially restrict population growth. Population restriction or reduction may have negative consequences in the near future. It is necessary to apply nudge policy for family planning and the issue should be settled by straightforward methods. I conclude that the only social measure that should be applied by the state is a policy that aims at increasing role of women in society. All other measures should be focused on economy. The priority of foreign and domestic policy of the state should be the creation of new job opportunities. I do believe that if the government creates enough jobs for the population, then social and economic issues will be automatically resolved. In short, if a citizen works and earns, then he creates demand and, consequently, demand will trigger economic growth. Nowadays, the economy is not ready to use this window of opportunity brought by population growth, due to shortage of food supplies and because of unstable economic conditions or any circumstance to do it.

Recommendations

I. Short terms strategy

1. No need for family planning program; otherwise, it may impact future population dynamics. If the government decided to slow down population growth due to the lack of economic opportunity, then the proper strategy would be to increase the role of women in reproductive age. Naturally, the birth rate will decrease, and at this case, society will become more literate and democratic.

2. Increased export workforce; The state should preferentially negotiate with Korea, Russia, and European countries that need labor to facilitate the export of labor and negotiate legal temporary migration of people.

3. Prices and consumption of foodstuffs are increasing due to population growth. It is necessary to expand agricultural production to prevent the deficit of food supply and consequent overpricing. Essentially, there are several lands which do not require additional expenditure of financial resources from the state.

4. The analysis shows that in the agricultural sector, the share of production in private land is large, which means that free rental lands, preferential loans, and tax benefits should be provided to private farms.

5. An abundance of human resources can be attractive to foreign investors because projects will be relatively convenient due to the cheap

labor. Our investment policy should be focused on the maximum possible reduction of unemployment. To achieve this:

a. Creation of free economic zones in densely populated areas.

b. Consideration of full tax-free and other incentives for well-known corporations (Samsung or Kia) or any companies that want to invest and create over 1000 job places.

c. Improving proficiency in English as a second language in Uzbekistan. Nowadays, the language of business is English, therefore investors need English-speaking workers.

II. Long term strategy

1. The state policy should focus on developing the economy to maximize new jobs in the country in the next 10years.

2. The number of unemployed is large, however, unemployment cannot be reduced through job creation. Thus, while there are many specialists in some areas, there are no qualified specialists in the others. For example, there are many accountants or foreign language teachers, but there are almost no engineers in the labor market.

a. It is necessary to create a system of special vocational education and training following the demand of the labor market.

3. Examine the prospects for a demographic dividend from population growth, taking into account the experience of Korea and the other four (4) tiger countries, and take steps to implement the as soon as possible.

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