The effect of the epidemic between the Malthus perspective and the revival of economic growth for some countries in North Africa and the Middle East

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Abstract

The COVID-19 brings a major transformation in every sector of business. Most of the business sector are worst affected during this pandemic period. Successful sustainable business strategy in the post pandemic period only can help revival of the business. The post pandemic has many consequences for instance pay cuts and layoffs etc. all the business sector in general and banking sector in particular. The financial services will be globally reformed at an unacceptable level across the world. Government across the world after 2008 crisis had made major financial reforms for greater transparency of transactions and reduce risk in order to make financial services more safer. Many banking sectors worldwide are going to reform their bank structure. The present study relates to giant multinational bank operating across globe HSBC under consideration. The post pandemic revival strategy HSBC is committed to implement its restructuring plan considering market structure, tax transparency, capital and liquidity. HSBC bank reported 48% fall in profit before taxes in Q1 2020 as compared to the last year. HSBC disclose declines of revenue in three major segments that is adjusted pre-tax profit collapsed by 84% in retail banking and wealth management, 70% in commercial banking business and 35% in global banking and market segment.

Keywords: Malthus • Population • Growth • Panel estimation

Introduction

According to [1], increasing the rate of population growth can decrease the rate of growth of a country. The explanation of Malthus must be linked by four points:

- Slow down the population rate in the less civilized parts of the world;
- Slowing down the population rate in the different states of the modern era;
- The different predominant systems arising from the population principle;
- Prospects for eliminating the ills caused by the population principle2.

The policies of demographic control revolved around the idea that the demographic progression will be more proportional than the resources which confirms the weakening of the population by wars and by epidemics (Famine, Black Death, Coronavirus ...) playing their roles more, he imagines new obstacles, he decides to put a tax on the size of the children (Famine, Black Death, Coronavirus ...) playing their roles more, he imagines new obstacles, he decides to put a tax on the size of the children and their weight. This is Malthusian demographic control. The discourse of the decrease of the population by the epidemic as the example of Coronavirus, in the MENA region translates a fall in the demographic rate which an effect on economic growth, favors the general idea of the thesis of Malthus .Against this background, the OECD published in 2020 a report on the economic impact of the coronavirus epidemic on economic activities and forecasts that growth will decline. "The world economy is in danger", it is the most serious danger since the financial crisis which generates a phenomenon of world rupture. In addition, the population (demography) persisted in the 20th century, the authors put the theme of the population namely the mercantilists, the classics... According to existing theories, the high population actually resulted in a high value of economic output. In addition, actual production almost depends on the favorable climate and the absence of epidemics (famine, coronavirus, etc.), so the current situation is a phenomenon of death of large populations. This is why there are economists (like Malthus) who criticize this situation which seems favorable to an elevated growth of the population. It was always the interesting exception and the debate that can lead to a controversy between economists and experts. These will give significance to the position of the population as an ideological argument that has an impact on economic growth. Our review of the literature is diverse and also based on a set of local policies in developing countries. The major population conferences (Bucharest 1974, Mexico City 1984, Cairo 1994) [1] saw the generalization of national policies to reduce fertility and that of an idea unthinkable in the early 1980s, namely the intervention of a Government on human fertility. Moreover, we will admit that the rate of demographic growth is more or less decreasing during the period of study which describes the thesis of Malthus on the one hand and on the other hand, the validity hypotheses surely require a comparison with the rate demographic for having noticed the difference. With regard to the Malthusian interpretation of the relationships between population growth and well-being, accusing Malthusians of neglecting real processes (in particular technical progress in the theory of exogenous and endogenous growth) and of wanting to make growth demographic responsible for unemployment and other vices arising from the very nature of capitalism. The controversy with Malthusianism has led to extreme attitudes: to deny, for example, the negative influence of the population explosion on the solution of countries' economic and social problems. Thus for the Swedish economist Goran OHLIN (1998): “The simple and irrefutable argument which condemns the demographic expansion of the disadvantaged countries is that it absorbs a very significant quantity of resources which could be used to increase consumption and, above all, the development [2]. On the other hand, the economist [3] said: “population, more precisely population density, is a factor of economic progress; the population is not determined by wealth but it determines it thanks to the creative pressure it generates”.

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point. Second, we will analyze the link between the demographic rate in the presence of the epidemic and economic growth. Finally, a methodology which will be developed by an empirical test for the MENA region during a well-defined period without and with the Malthusian population growth rate. Also, we will show to what extent the real demographic aspect can promote economic growth to conclude us in an objective academic way.

Sterile Population: Demographic Control

Thesis of malthus

In the classical Malthusian economic discipline rests on the logic of observation, namely that the fall in mortality had preceded that of the birth rate, the natural increase in population had been temporarily very rapid. Malthus proposed a solution to curb this excessive gap between population and resources by birth control through abstinence and late marriage.

According to this extension, Malthusianism has two types of explanations:

- In the narrow sense, all policies aimed at restricting the birth rate.
- In the broad sense, all artificial measures to limit production.

According to Malthus, poverty occurs when population development requires a large division of livelihoods. This idea was germinating in Adam Smith's theory of wages, according to which wages fell as an increase in the number of workers necessitates a greater division of capital. In passing from Smith to Malthus, capital is identified with food, and the number of workers with the population. Now the proportions of Malthus are absurd, and all the historical facts contradict his thesis, which is based on a gratuitous supposition. Finally, demographic control by mechanisms can decrease the rate of demographic growth (population) according to the author and which has an impact on the growth rate.

Antithesis of malthus

Many authors also criticize problems of methodology, for example, John Stuart Mill, without contradicting the general idea of Malthus, points out the absence of justification of the precise mathematical representation used. *Some obtained an easy victory over a remark Malthus had made in passing, and advanced mainly by way of illustration, according to which one could perhaps suppose that the increase in food took place in an arithmetic proportion, while the population grew in a geometric proportion [4]. On the whole, the theoretical arguments still remain open to criticism since the population or the demographic rate can participate in consumption and thus in growth.

The world economy and demographic stationarity (Control by the Epidemic).

Effect of population on growth

According to the endogenous growth theory with Romer (1986) and Lucas (1988), it is a question of extending and even going beyond the classic growth model (Solow, 1956). The empirical explanation of the growth phenomena rests on the introduction of a certain number of explanatory factors such as the existence of increasing returns, the level of capital.

With regard to the economic consequences of strong population growth, the most pessimistic and optimistic debates seem contradictory given the uncertainty of the empirical results; in other words, they are not sufficiently reliable to establish the link between the two dynamics of GDP and population growth. Within the framework of the neo-classical model (extension of the Solow model, 1956), the growth of production depends on two factors, capital and labor, which can be substituted for each other. It is explained not only by the quantitative progression of these factors (extensive growth) but also by the increase in their overall productivity (intensive growth). Population growth leads to an increase in the active population, should have a positive effect on extensive growth. However, the solution then lies in an increase in savings since the current standard of living experiences a temporary decline. Thus, for example, under the assumption of a 2% increase in total factor productivity (exogenous technical progress), “an acceleration of one point in economic growth, at a given savings rate, is reflected by a decrease of 6.25% in the level of product per capita, and therefore a drop of the same magnitude in the wage rate”. The idea of considering population growth as a stimulus to innovation was put forward in the 1960s by Esther Boserup (1965 and 1961). Subsequently, Boserup’s thesis was developed by [5-8] “to the Malthusian vision of a demography which acts as a brake on growth, this approach opposes a framework in which these are the exogenous demographic shocks which push the adoption of new technologies beneficial to growth”. The positive results of population growth on economic dynamics also appear in the exponential learning models of Arrow (1962) and Phelps (1966). In these models, the positive effect of population growth results from the proportional relationship observed between the size of the population and the effort devoted to research.

OECD economic forecasts in the world

In these global circumstances, overall growth will be limited by 0.5 percentage point this year, compared to the last forecasts dated November 2019:

It would then reach 2.4% instead of the 2.9% previously envisaged. In addition, world trade should fall by 1.4% in the first half and by 0.9% over the whole year[7].

According to the OECD report, the Asian nations most closely linked to China, such as the example of Japan, South Korea and Australia, should, however, feel the full impact of its decline in 2020. However, the other regions will be relatively less affected. In fact, several new barriers are more damaging than the global economy. Major geopolitical events such as the trade war between strong countries can translate into a drop in sales, a stagnation in industrial production.

Economic forecasts of the OECD in Europe

In Europe, the situation remains uncertain and depends above all on a protectionism disagreement between the United Kingdom and the European Union in 2020.

The global economic slowdown via all the socioeconomic and political indicators which depend essentially on global integration to absorb the existing stagnation crisis to overcome this catastrophic phenomenon (The epidemic). Also, according to the OECD report, if the epidemic continues to exist there will be a drop in world trade. Faced with this global disaster (the epidemic), the OECD organization calls on countries to stay focused in the face of changing circumstances and advises them to be ready to act, if necessary, to strengthen their health systems and boost activity. According to the Figures 1 and 2, the growth rate has decreased considerably for the majority of OECD countries, for example this rate decreases from 1.3 in 2019 to 1.2 in 2020 in France. However, the global economy will continue to have remarkable effects as the proliferation of the Coronavirus epidemic, which has posed a great threat to the global economy since the financial crisis, according to the OECD. "It is inevitable that the epidemic will have a huge impact on the economy and society [8]." 

Changes in the global economy

The global economy will save the traces of the epidemic (Coronavirus). According to the OECD, this virus presents "the greatest threat to the world economy since the 2008 financial crisis". Besides, there will be mutations already underway, namely:

1. The regionalism of companies' productions;
2. Investment does not become a priority;
3. Debt will become the great economic debate;
4. China is no longer participating in global growth;
5. The economic stagnation expected soon;
6. The existence of global inflation;
7. Coordination becomes a priority between economic decision-makers;

Methodology

The demographic control of Malthus (Stationarity) represents another theoretical reproductive contribution. The concept of population exists in the sciences which relate to the socio-economic world. We’re going to examine how valid this idea remains if we move from the economy to the social state. In addition, our empirical attempt is based on applying the economy to cross-sectional data over a period of five years (2016-2020) with and without demographic control (pessimism from Malthus). In this context, assuming that the demographic rate is controlled in the first case and in the second case this rate presents a concrete reality. We therefore choose the methodology based on hypotheses to build our sample.

Assumptions

Among the hypotheses which can raise work in this case, we can cite the following:

H1: For country (i) on date t, the population growth rate takes the normal state in the first case and in the second takes Malthus’ logic as this rate decreases gradually and the GDP growth rate increases during the study period for all the member countries of the MENA region.

H2: We assume that Malthus’ idea is effective for all the nations of the world.

H3: We admit that the Coronavirus epidemic actually describes five years of declining population growth rates and the higher the population growth rate, the poorer the country.

H4: Probably, GDP can be representative of wealth and production to have the possibility of testing the Malthusian hypothesis.

Note:

According to these hypotheses, if the population becomes vigilant then it has effects on the capacity to undertake society (Caballero and Hammour, 1994). In this respect, many elements seem to indicate that the capacity to undertake depends on the Age of the individual According to Duhautois (2000), the propensity to start a business is twice as high for those under 45. All other things being equal, demographic changes.

Sample and Period

We considered that the demographic rate of the countries in our region of study during a period of five years (2016-2020) of the cross-sectional data which takes on the one hand the optics of Malthus and on the other hand, no and we We will then compare the results obtained in the two cases (economic growth rate without and with demographic control: the pessimism from Malthus). Our sample is formed by 14 countries.

Estimation model

The empirical model used in this study is based on the study of Dar and Amir Khalkhali (2002) who adopt the growth model of Solow (1956) in which economic growth is a function of the accumulation of capital and labor and of total factor productivity. The production function is of the Cobb-Douglas type:

\[ Y_{i,t} = F(A_{i},K_{i,t},N_{i,t}) = A_{i}K_{i,t}^{\alpha}N_{i,t}^{\beta} \]  

(1)

The function F is production for a given level of capital K and a given level of labor N. With \( Y_{i,t} \) is PIB per capital measures the value added of all producers and it is logical to think that the level of GDP depends on the amounts of labor and capital that are actually used in this economy. There is therefore a national production function. Of which A is a dimension coefficient characteristic of the economy and the units of measurement used; K is the amount of capital used, N is the amount of labor used; \( \alpha \) and \( \beta \) are respectively the share of production that pays for K and the share of production that pays for N. By applying Log to the production function, we will have the following equation:

\[ \log Y_{i,t} = \log A_{i} + \alpha \log K_{i,t} + \beta \log N_{i,t} \]  

(2)

By adding all the economic players in an econometric model. So the linear equation translates the following sum:

\[ Y_{i,t} = Y_{i,t} + \Sigma \beta X_{i,t} + \epsilon_{i,t} \]  

(3)

So the growth rate per capita is explained by the following indicators:

\[ \log \left( \frac{Y_{i,t}}{Y_{i,0}} \right) = \beta_{0} + \beta_{1} FDI_{i,t} + \beta_{2} INV_{i,t} + \beta_{3} TRAD_{i,t} + \beta_{4} POP_{i,t} + \epsilon_{i,t} \]  

(4)

With: \( Y_{i,t} \) is GDP per capital and \( \epsilon_{i,t} \) is the random variable in equation (4).

Descriptive Analyzes, Presentation of Results and Comments

Descriptive analyzes

Descriptive Measures: First, our analysis will focus on the descriptive measures in this case the characteristics of position (mean), dispersion (standard deviation) and coefficients of variation of the explanatory variables. This, to allow us to have an idea of the distribution and the degree of homogeneity of the series. The mean: The mean is a measure of position which identifies the value around which the observations are distributed. Standard deviation: The standard deviation is a measure of dispersion which makes it possible to assess the variability of a series. In other words, it makes it possible to determine the fluctuations of the observations around the arithmetic mean. The coefficient of variation: The coefficient of variation is a composite measure formed by the mean and the standard deviation. It makes it possible to gauge what the average is worth with regard to all the observations.

Table 1: Descriptive statistics for some MENA countries without the pessimism of Malthus.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs.</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>70</td>
<td>4.220088</td>
<td>4.587714</td>
<td>-10.47967</td>
<td>17.7</td>
</tr>
<tr>
<td>POP</td>
<td>70</td>
<td>3.319681</td>
<td>3.649273</td>
<td>.8384876</td>
<td>16.48251</td>
</tr>
<tr>
<td>FDI</td>
<td>70</td>
<td>2.784979</td>
<td>3.266604</td>
<td>-2.246876</td>
<td>14.40629</td>
</tr>
<tr>
<td>INV</td>
<td>70</td>
<td>1.673796</td>
<td>5.136883</td>
<td>0.0002134</td>
<td>23.56618</td>
</tr>
<tr>
<td>TRAD</td>
<td>70</td>
<td>4.491218</td>
<td>13.4681 .0000214</td>
<td>57.995</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Descriptive statistics for some MENA countries with the pessimism of Malthus.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs.</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>70</td>
<td>4.031926</td>
<td>2.549438</td>
<td>-2 7.94982</td>
<td>17.7</td>
</tr>
<tr>
<td>POP-MALTHUS</td>
<td>70</td>
<td>0.2526847</td>
<td>0.027451</td>
<td>0.2070988</td>
<td>0.358992</td>
</tr>
<tr>
<td>FDI</td>
<td>70</td>
<td>21.30485</td>
<td>11.72016</td>
<td>5.0394 37.07784</td>
<td></td>
</tr>
<tr>
<td>INV</td>
<td>70</td>
<td>0.5905378</td>
<td>0.0126371</td>
<td>0.5555556</td>
<td>0.6111111</td>
</tr>
<tr>
<td>TRAD</td>
<td>70</td>
<td>0.40879</td>
<td>0.1262514</td>
<td>0.0502233</td>
<td>0.8255163</td>
</tr>
</tbody>
</table>
Tables of matrices: Secondly, we present the Tables 3 and 4 of the correlation matrices, namely also the analysis of the graphs which will allow us to appreciate the nature and the type of relation existing between the endogenous variable and the exogenous variables taken. In other words, it allows us to detect the presence of a statistical relationship between the variables.

Multivariate analysis: At this level, we will seek to specify the model. Unlike linear regression models where one can specify a one-dimensional model based on economic theories and then perform model validation tests, in the case of panel-type models, the analysis involves two dimensions.

We analyze the characteristics of a set of countries over a defined period of time, we perform various tests in order to define the shape of the model studied. In other words, we are trying to find out whether it is a stacked model, a fixed effect model (country / time) or a random effect model, from the tests. It is in this context that we are led to make the [9] test for the specification of the model.

Presentation of Results Comments

The regression of the growth rate as a function of the demographic growth rate in the presence of an epidemic for the two cases explains the individual and global significance of the model Table 5.

**Table 3: Correlation matrix between the variables for the MENA region without the pessimism of Malthus.**

<table>
<thead>
<tr>
<th>Variables</th>
<th>GDP</th>
<th>POP</th>
<th>FDI</th>
<th>INV</th>
<th>TRAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POP</td>
<td>0.2442</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDI</td>
<td>0.3093</td>
<td>-0.0472</td>
<td>1.0000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INV</td>
<td>-0.0268</td>
<td>-0.1541</td>
<td>-0.0739</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>TRAD</td>
<td>-0.0589</td>
<td>-0.1528</td>
<td>-0.0786</td>
<td>0.9935</td>
<td>1.0000</td>
</tr>
</tbody>
</table>

**Table 4: Correlation matrix between the variables for the MENA region with the pessimism of Malthus.**

<table>
<thead>
<tr>
<th>Variables</th>
<th>GDP-POP-MALTHUS</th>
<th>FDI</th>
<th>INV</th>
<th>TRAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP-POP-MALTHUS</td>
<td>1.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FDI</td>
<td>0.3093</td>
<td>0.0195</td>
<td>1.0000</td>
<td></td>
</tr>
<tr>
<td>INV</td>
<td>-0.0268</td>
<td>-0.1574</td>
<td>-0.0739</td>
<td>1.0000</td>
</tr>
<tr>
<td>TRAD</td>
<td>-0.0589</td>
<td>-0.1528</td>
<td>-0.0786</td>
<td>0.9935</td>
</tr>
</tbody>
</table>

**Table 5: The link between growth and population according to Malthus’ pessimism**

**Simple Case Study regression: Y = β1 + ΣβX + βP + εi, i = 1**

<table>
<thead>
<tr>
<th>MENA region Variables</th>
<th>Sample without Malthus’ pessimism (Equation 1)</th>
<th>Sample with Malthus’ pessimism (Equation 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>GDP</td>
<td>GDP</td>
</tr>
<tr>
<td>CST</td>
<td>(1.9481)** (2.28)</td>
<td>(1.7522)** (2.19)</td>
</tr>
<tr>
<td>Popi</td>
<td>(0.3418)**</td>
<td>(0.4288)**</td>
</tr>
<tr>
<td>(2.48)</td>
<td>(3.24)</td>
<td></td>
</tr>
<tr>
<td>FDi</td>
<td>(0.4386)**</td>
<td>(0.4111)**</td>
</tr>
<tr>
<td>(2.87)</td>
<td>(2.76)</td>
<td></td>
</tr>
<tr>
<td>INVi</td>
<td>(2.1582)**</td>
<td>(2.2053)**</td>
</tr>
<tr>
<td>(2.57)</td>
<td>(2.70)</td>
<td></td>
</tr>
<tr>
<td>TRADi</td>
<td>(-0.8231)**</td>
<td>(-0.8375)**</td>
</tr>
<tr>
<td>(-2.54)</td>
<td>(-2.87)</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.6399</td>
<td>0.4616</td>
</tr>
<tr>
<td>Obs.</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>F</td>
<td>7.13</td>
<td>4.97</td>
</tr>
<tr>
<td>Prob.</td>
<td>0.0001</td>
<td>0.002</td>
</tr>
</tbody>
</table>

Equation N°1 : Sample without Malthus’ pessimism

Equation N°2 : Sample with Malthus’ pessimism

*** Significant to 1%, ** Significant to 5%, * Significant to 10%.

Case study: Interpretations and comments

From a natural population point of view Interpretations: The estimation of the model of table n°5 for the first case without control (without pessimism of Malthus), the model has an explanatory power (a quality of adjustment) (R²) which is almost 0.6 including (F=7.13). Regression N°1 describes a positive significance (0.3418) between the population (P: the rate of demographic growth) and the growth (GDP) of 5%. An increase in the population growth rate (Pop) of 5% reflects an increase in (GDP) almost 3 points. This last result actually describes the endogenous growth theory [10-11], it is a question of extending and even going beyond the classic growth model of [12] whose population is justified as human capital [13]. Furthermore, the estimation of equation N°1 shows that there is a positively significant link between economic growth (GDP) and foreign direct investment (FDI) (0.4119527) including an increase in GDP growth per capita 3 points when the controlled demographic growth rate (pessimism of Malthus) increases by 1%, on the one hand, and negatively on the other hand with the commercial opening (TRAD) (-0.8375534) to 1%. However, this link reflects a decrease in GDP growth per capita 3 points when the controlled population growth rate (pessimism of Malthus) increases by 1%. In fact, [14] analyze the effects of the trade opening policy on the instability of economic growth rates for the countries of the Middle East and North Africa from 1960 to 1999. After this study, the author concludes that the openness policy has a beneficial effect on the resilience of countries, which outweighs the negative effect caused by the increased exposure to external shocks. In addition, the equation N°2 clarifies the relationship between investment (Inv) and the GDP growth rate (GDP) which was positive and significant at 1% confirming the review of the economic literature. This found result really collaborates the review of the previous literature. The estimation of the model of table n°5 for the first case with control (with pessimism of Malthus), the model has an explanatory power (a quality of adjustment) (R²) which is almost 0.6 including (F=7.13). The estimate of equation N°2 describes a positive significance (0.4288) between the population (P: the rate of demographic growth) and the growth (GDP) of 1%. An increase in the population growth rate (Pop) of 1% reflects an increase in (GDP) almost 4 points. However, according to classical and neoclassical theory, the growth of production depends on two factors, capital and labor, which are substitutable for each other. It can be explained not only by the quantitative progression of these factors (extensive growth) but also by the increase in their overall productivity (intensive growth). Population growth leads to an increase in the active population, should have a positive effect on extensive growth. In addition, equation N°2 clarifies the relationship between investment (Inv) and the GDP growth rate (GDP) which was positive and significant at 1% confirming the review of the economic literature. In this context, changes in geographic location, ownership and control ties could have consequences on the level of investment in advanced economies, in particular by accentuating the degree of dependence of investment decisions in a country with not only with regard to the state of its economy but also to global demand and the relative costs of investing in other economies (Young, 1999; Belderbos et al., 2012).

In addition, regression N°2 shows that there is a positively significant link between economic growth (Tcran) and foreign direct investment (FDI) (0.4119527) on the one hand, the conclusions of global international studies, which are based on the links between savings and investment, and generally contain elements attesting to a substitution, outward FDI tends to reduce domestic investment by a ratio of one to one. Aussi, par exemple, des investissements en R&D fructueux pourraient déboucher sur des investissements matériels décalés dans le temps et les logiciels d’entreprise viennent compléter les investissements en biens d’équipement liés aux technologies d’information et de communication (TIC). In this regard, there is great complementarity between different types of investment. Therefore, investment in organizational capital and investment...
Committed: Empirically, the control or even the stationarity of the demographic growth rate (in the presence of the epidemic like coronavirus: the pessimism of Malthus) represents another real reproductive contribution. The Malthusian version is valid in an economic context based on an empirical attempt is based on application of cross section data during a period of five years (2016-2020) without and with the control of the rate of demographic growth (describing the population). In this sense, the first two hypotheses $H_1$ and $H_2$ are validated since the results found in our empirical test are too relevant and explanatory. However, the validity of the other hypotheses remains on the condition that the population is completely stationary in the context of the epidemic. Moreover, if by admitting that the demographic growth rate presents a concrete reality at the level of participation in economic growth in the first case and in the second case this rate is controlled according to the idea of Malthus and we therefore choose the methodology based on hypotheses to build our sample while using a cross sectional panel estimate. The population remains essential for the creation of wealth but on condition that participation will be strong. On the whole, the rate of demographic growth stationary or controlled according to the optics of Malthus in the presence of the epidemic favors a closed economy for a country or group of countries which have the same characteristics and specificities.

**Conclusion**

The relationship between population (demography) and economic growth offers another angle of research to clarify political and economic decisions in the presence of the epidemic (Coronavirus). The central question raised in this article highlights the nature of the effects between economic growth and population control. Indeed, it is necessary to adopt the notion of pessimism of Malthus and also demographic control (population) as a productive factor to be explained according to the theory of endogenous growth while comparing the results found for the two cases (with and without pessimism by Malthus) from cross-sectional estimates for the MENA region. The comparative analysis between the two studied cases shows that the version or the theoretical optics of Malthus remains almost valid for our region of study (MENA), but this validity suffers from some failures since our empirical attempt of the data cross section during six years cannot fully clarify the pessimism of Malthus who was criticized by the theory of endogenous growth as well as the classical theory. Moreover, the results found generally confirm the reality of the decisions adopted concerning the rate of demographic growth which was accompanied by demographic control for some countries like Tunisia even in the presence of an epidemic. In addition, the epidemic or pessimism of Malthus remains valid for countries where their populations are not active. However, according to classical and neoclassical theory, the growth of production depends on two factors, capital and labor, which are substitutable for each other. It can be explained not only by the quantitative progression of these factors (extensive growth) but also by the increase in their overall productivity (intensive growth). Population growth leads to an increase in the active population, should have a positive effect on extensive growth. In total, the population or the rate of demographic growth remains necessary to participate as being Manpower for economic growth or also as quality human capital and all this shows the optional deceases for MENA countries and remains the skills of capital human as an active population a question which will be dealt with in future work.

**References**

13. Endogenous growth theory and classical (exogenous) growth theory.