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DEMOGRAPHIC BONUS TO SUPPORT ECONOMIC GROWTH IN INDONESIA

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ABSTRACT

In Indonesia, the demographic bonus is an ongoing phenomenon with the peak expected to occur in 2030. This phenomenon can have a positive impact with an increase in labor supply and the potential of the community to save, on the other hand, the increasing population makes the needs of the community more and more. This study aims to determine the effect of demographic bonus on growth and how much growth prospects can occur in the future. The research method used is OLS time series data from 1986-2020. The results show that the TO, Population aged 15-64 and Unemployment variables significantly affect GDP growth. Meanwhile, the TPAK and GCF variables are not significant. From this, forcasting Indonesia's economic growth shows a downward trend if the government does not immediately form appropriate policies in dealing with this problem.

KEYWORDS *Demographic Bonus, Economic Growth, Unemployment*

INTRODUCTION

The demographic bonus can generally be defined as the demographic transition in the working-age population (15-64 years old) which is more numerous than the dependent or non-working-age population (ages < 14 and > 65). The demographic bonus can also refer to an acceleration of economic growth that begins with a change in the age structure of the population as it transitions from high to low birth and infant mortality rates. (UNFPA, 2015). In Indonesia, this phenomenon is ongoing with the peak of the demographic bonus expected to occur in 2030. This is shown by an increase in the population aged 15- 64 years by 1.6% or 2.5 million people per year from 2000-2016. Furthermore, low infant mortality rates and a downward trend in fertility rates also support this. Based on existing demographic trends, it is projected that this demographic bonus can increase real GDP by 1 percentage point during 2020-2050 (International Monetary Fund, 2018).

This demographic transition can bring many potential economic benefits. The larger the working-age population, the more supply there will be in the labor market and women will also participate more due to lower fertility rates. Furthermore, it is likely that people who save more during their working age, especially workers who

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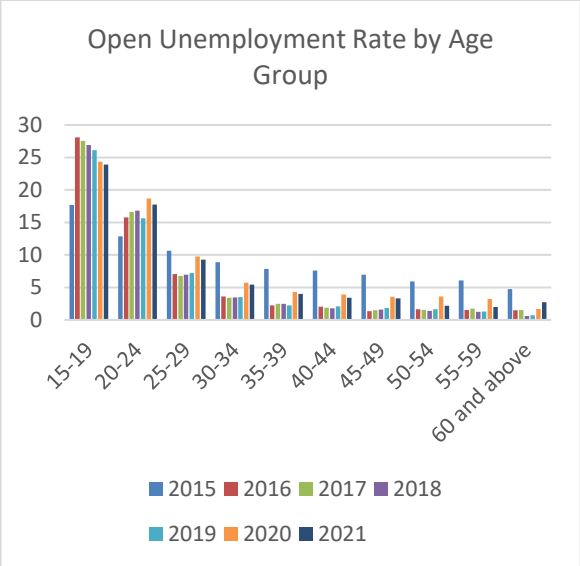
earn more than they consume, will have the ability to put their income into savings, as well as when they reach an age where they are no longer responsible for investing in young children (UNFPA, 2015). On the other hand, as the population increases, people need more social security, infrastructure and jobs to keep up with population growth. If these are not met, unemployment can become an issue and lead to potential political and social instability.

Chart 1: Open unemployment rate by age group



Source: BPS 2021 (processed by the author)

It can be seen in Indonesia that the young population aged 15-29 still dominates the number of open unemployment, without careful preparation the government will be faced with an increasingly large number of young workforce who are potentially unemployed if employment is not increased to accommodate this demographic bonus. Sources of employment can be obtained through government spending on development as well as foreign investment and international cooperation such as AFTA. In addition, Indonesia with 130 million active social media users, shows that Indonesia has the largest digital economy in Southeast Asia with the potential to increase the economy by 10% in 2025. Digitalization of this economy can potentially open 3.7 million jobs through online platforms such as the use of Big Data usage, digital finance and e-commerce. (International Monetary Fund, 2018).

This demographic bonus is of particular interest because it was witnessed in Asia in the period between the 1960s and 1990s. During this period, economic growth in East Asia especially Japan, the Republic of Korea and China was the strongest in the world. Among them, the increase in per capita income exceeded 6% between 1960 and 1995. Moreover, the low dependency ratio from 1970 to 1995 further increased the contribution of a quarter to a third of growth in the region (Jafrin, Mahi, Masud, & Ghosh, 2021).

The phenomenon of demographic bonus in Indonesia can be one of the opportunities to increase economic growth, where developed countries in East Asia

have already felt it first and also managed to utilize it well. In Indonesia itself, youth unemployment is still relatively high, showing that there are still many labor forces that have not been successfully absorbed from the supply market. This can hamper the potential for economic growth, forcing Indonesia to look for additional jobs both from within and from abroad. Moreover, outside ASEAN, Indonesia's participation in the Global Value Chain is still relatively low, limiting the potential for increased productivity, competitiveness and technology (IlMF, 2018).

THEORETICAL OVERVIEW

Demographic transition theory

The demographic transition describes the development of growth rates that are initially small, high, then leading to sustainable growth. The demographic transition starts from the condition of high birth and death rates gradually low because there are driving factors both economically from a pre-industrial economy to an industrialized economy and from social factors such as the availability of better health facilities. This transition has 3 stages, namely:

Phase I, 1780-1840s: The birth rate was high and the death rate was relatively high and fluctuating. This happened because the country was still unstable in terms of economy and health facilities were still minimal, so the growth of pupulation was not stable.

Phase II, 1850-1890s: There was a transition where the birth rate was still high but there was a decline in the death rate. This happened because European countries entered the stage of the industrial revolution which encouraged high income, rising living standards or improved health facilities and better education.

Stage III, 1910-2010s: There was a downward slope of the curve and it entered a more stable state than the previous stage. This occurred due to the factors of delayed marriage, good health facilities that can emphasize mortality, quality education, and the increasingly diverse employment opportunities that can also be accessed by women to meet family needs (dual income family).

In contrast, developing countries are divided into two (Case A and Case B). Case A in stage II occurred in countries such as South Korea, Sri Lanka and Cuba where the growth rate began to rise. The phenomenon that occurs is that the birth rate is high and the death rate is falling. This was due to rising incomes and better access to health services. With the onset of modernization (1970-2000) in case A, the birth rate and mortality rate were relatively low. Delayed marriage, health facilities, dual income families, and a good education system were the influencing factors. In Case B the birth rate is still relatively high, although the mortality rate has dropped there is still a gap in mortality. This happens in African countries (absolute poverty) which makes access to health difficult to obtain, in addition to epidemics such as HIV/AIDS affecting population growth there.

Demographic Bonus and Demographic Burden

The demographic bonus phenomenon is an increase in the number of people of productive age (15-64 years) or working age that is greater than the non-productive age and can bring benefits to the economy of a region (BPS, 2022). This working-age population becomes the driving force of resources and technology owned by a country so that output can increase. Over time, this working-age

population will not always be able to work and requires a different approach from the state to avoid becoming a demographic burden. Demographic burden generally refers to the population that is not working or dependent on the working-age population, also known as dependency burden.

Adam Smith's Theory

Economic growth is divided into four stages, namely the period of hunting, farming and animal husbandry, trade and industry or the transition from traditional to modern capitalist society. Countries that have abundant population tend to have more needs, creating more and diverse demand for goods/services. Where the division of labor (specialization) and diversification that occurs can increase labor productivity. The division of labor cannot be separated from driving factors such as the increasing skills of workers and the invention of new machines. The increasing complexity of economic activities and the needs of life require that people no longer do the work alone, but are emphasized to work in certain fields. The country's success in production can open up greater market potential through international trade or in this case exports, excellence in producing a particular good can provide more income for the country.

RESEARCH METHOD

This study uses the *Ordinary Least Square* (OLS) analysis method on time series data from the World Bank Database for the 1986-2020 period at Indonesia followed by a classical assumption test. The model used is as follows:

Model

$$PDB_{growth_t} = a + \beta 1(Penduduk15-64)_t + \beta 2(TPAK)_t + \beta 3(Pengangguran)_t + \beta 4(GCF)_t + \beta 5(TO)_t + e_t$$

Description:

PDB_{growth_t} = GDP growth rate in period t

$(Penduduk15-64)_t$= Total working age population (demographic bonus) in period t

$(TPAK)_t$ = Labor force participation rate in period t

$(Pengangguran)_t$= Unemployment rate in period t

$(GCF)_t$= Gross Capital Formation (annual %) in period t

$(TO)_t$ = Trade openness in period t

a = constant

βX= regression coefficient

et = standard error

Object of Research

GDP, demographic bonus, labor force participation rate, unemployment rate, and Gross Capital Formation (annual %), and trade openness.

RESULT AND DISCUSSION

OLS regression results

Table 1. OLS Regression

Variables	Coefficient	T-stat	Prob.	Description
TPAK	-0.611318	-1.172352	0.2506	Not significant
TO	-0.271193	-4.778803	0.0000	Significant
GCF	0.002546	0.469251	0.6424	Not Significant
POPULATION_15_64	-7.65E-08	-3.223442	0.0031	Significant
CHANGE	0.726423	1.711169	0.0977	Significant*
R-squared	0.504090			
Adjusted R-squared	0.418588			
F-statistic	5.895670			
Durbin-Watson stat	1.299783			

* = significant at α=0.1 or 10%

It can be seen in the regression table that the TO, Population aged 15-64 and Unemployment variables significantly affect GDP growth. The population 15-64 variable has a negative influence on GDP growth with a 1% increase in the working age population can reduce growth by 0.0000000765%. Then, the Unemployment variable has a positive influence with a 1% increase in unemployment can increase GDP growth by 0.726423% and the TO variable has a negative influence with a 1% increase in TO can decrease GDP growth by 0.271193%. Meanwhile, the other two variables do not significantly affect economic growth, namely TPAK negatively and GCF positively. Consumption, which is still one of the main contributors to GDP growth as stated in previous studies, is also shown through this study with a positive effect. This can be explained by the Philips curve theory which states that there is a trade-off between inflation and unemployment, where increasing inflation can reduce the unemployment rate. This study shows the opposite, with falling prices tending to make people consume more.

Classical Assumption Test

Table 2. Autocorrelation Test

Run Test	
R1	15
R2	0.2706263772545237

Table 3. Heteroscedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.658408	Prob. F(5,29)	0.1763
Obs*R-squared	7.782397	Prob. Chi-Square(5)	0.1686
Scaled explained SS	10.95151	Prob. Chi-Square(5)	0.0523

Table 4. Multicollinearity Test

Variance Inflation Factor

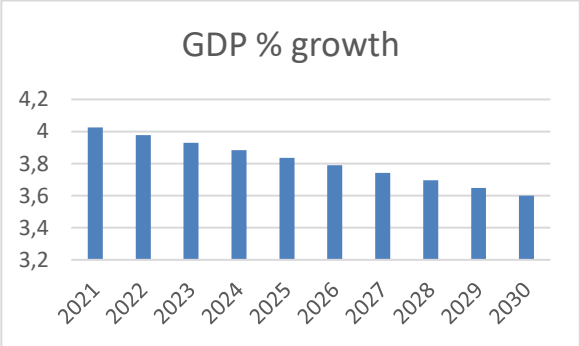
Variables	Centered VIF
TPAK	1.303786
TO	1.896774
GCF	1.086422
POPULATION_15_64	1.738211
CHANGE	2.208307

In table 4 the run test is above alpha 0.270626> 0.05 which means the model has no autocorrelation problem, then the Heteroscedasticity test has Prob. Chi-Square (5) 0.1686 or greater than alpha, indicating the absence of heteroscedasticity problems and for the VIF test all variables show values below 10 without multicollinearity problems.

Model

$$PDB_{growth_t} = 67.25248 + -0.0000000765(Penduduk15-64)_t + -0.611318(TPAK)_t + 0.726423(Pengangguran)_t + 0.002546(GCF)_t + -0.271193(TO)_t + e_t$$

Forcasting results 2021-2030



In the future, economic growth is expected to experience a downward trend in GDP growth until 2030. With the existing opportunities, improving the quality of the working-age population, infrastructure and public facilities and increasing internet usage can help increase economic growth. Meanwhile, negative variables such as trade openness require further development so that trade that occurs can actually help improve the quality of production and industry in Indonesia through the global value chain.

CONCLUSION

Indonesia is one of the countries that is experiencing the demographic bonus phenomenon with its peak expected to occur in 2030. This has the potential to increase economic growth through the abundant supply of labor. Some countries in East Asia that experienced the phenomenon first have utilized it well and managed to become superpowers. Based on this research, results were obtained: (1) TO, Population aged 15-64 and Unemployment variables significantly affect GDP growth. Meanwhile, the variables of TPAK and GCF are not significant. (2) The population variable 15-64 has a negative influence on GDP growth. Then, the unemployment variable has a positive influence and the TO variable has a negative influence. Meanwhile, TPAK affects negatively and GCF positively. (3) The trend of estimated GDP growth in 2021-2030 shows a decrease in the trade off between unemployment and Inflation, as seen in the positive effect of unemployment.

Based on the results of this study, it is known that the demographic bonus aspect must still be studied further, especially in the development of human resources so that they can compete and get competitive jobs in new technology-related fields such as AI. The use of the internet and GCF can go together through new IT-based investments so that Indonesians are also getting ahead of developments and can learn relevant skills in the future. For future trade openness, it would be great if Indonesia can participate more in the value chain.

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