Economics essay - population growth indonesia

Population Growth Indonesia

This paper examines correlation between population growth and economic growth in Indonesia by adding lagged fertility and net-migrants as potential explanatory variables. In this way, we differentiate the short run and long run effects of population growth on economic growth. Since extensive migration policies have been taken nationwide in Indonesia, we hypothesize that adding net migrants in the regression as a new control could significantly affect the correlation between the two variables. The results suggest that lagged fertility does not affect the two-variable analysis. Once net-migrants are incorporated into a regression model, we obtain the significance of negative correlation between population growth and economic growth. The results not only support both Malthusian and Non-Malthusian schools of thought but also suggest that net migrants are key determinants to be controlled to analyze economic growth in Indonesia.

CHAPTER 1: INTRODUCTION

This paper attempts to examine correlation between population growth and economic growth in Indonesia. More than one century the relationship between population growth and economic growth has been debated. On this issue, it is well known that there are mainly two schools of thought: (i) Malthusian and (ii) Non Malthusian (Boserupian) schools. The claim of Malthusian is that population increases at a geometric rate, whereas the food-supply grows at an arithmetic rate. Therefore, the Malthusian school concludes that population growth has adverse effects on economic growth overall.

Non Malthusian school (Boserupian) asserts that population may have a scale effect that is positive for economic growth. In particular, Boserup (1981) studies the long-term interrelationship between demographic trends and technological development, and concludes that technological innovation and diffusion respond substantially to demand-pulls generated by population growth. Boserup further insists that population growth is not a bad thing or even considered benefit to society. Following his argument, several studies also suggest that population growth stimulates the growth of economy (Mokyr, 1982; Cavin, 1984).

Although many times in debates, there is little systematic research about the impact of population growth on economic growth. The negative correlation between population growth and economic growth could hold when the growth in total output is unaffected by the growth of population. In this case, a rise in the rate of population growth would entail a corresponding reduction in the growth of output per capita. The scientific community generally accepts the conjecture that population growth hinders economic development. Several past studies also find this negative relationship between the two variables, such as Hazledine and Moreland (1977), Jackman (1982), McNicoll (1984), Coale (1986), Bloom and Freeman (1988), Kelley and Schmidt (1994, 1995), and Barlow (1994).

In the other branch of results, several empirical analyses, such as Easterlin (1967), Kuznet (1967), Simon and Gobin (1980), Bairoch (1981), Firebaugh (1983) and Simon (1989), find no correlation or even a positive one. In other words, a negative causal effect of population growth on economic growth is not identified statistically. One of the distinct works is Crenshaw, Ameen and

Christenson (1997) that study 75 developing countries, and analyzed the annual average percentage change in real gross domestic product per capita from 1965 to 1990 on demographic models. They find that an increase in the child population hinders economic progress, while an increase in the adult population fosters economic development.

The most influential work in this vein of research is Simon (1989), which provides the logic of why many studies yield different conclusions on relationship between population growth and economic growth. He claims that most of past works do not refer to the very long run, but rather usually cover only a quarter of century or a century at most. He further argues that shorter term effects upon the standard of living operate chiefly through capital dilution that includes the public costs of raising children and the costs of providing production capital for the additional persons in the work place. He also claims that the most important positive effects of additional people can be realized only in the long run through improvement of productivity, the contribution of new ideas and the learning by doing resulting from increased production volume.

Simon mentions that absence of correlation between two variables can usually be considered a strong indication that neither variable is influencing the other, in other word, that slower population growth does not cause faster economic development. More specifically, his argument is as follows: *The only persuasive argument against such a conclusion as a plausible scenario in which one or more specified variables that have been omitted from the analysis would, if included, lead to a negative partial relationship between*

population growth and economic development. The variables must be named by the critic, and they must seem reasonable.

Barlow (1994) responds to Simon’s challenge by using lagged fertility as one omitted variable for his research. This variable is added to the current population growth as a predictor of current per capita income growth, because this enables us to disentangle short run and long run effects of population growth, which otherwise become confused statistically. He argues that in the short run, an increase in fertility tends to have negative effects on per capita income growth and in the long run, its partial effects tend to be positive due to an increase in labor force or other causes. Since current fertility is highly correlated with past fertility, current population growth rates include both the short run negative and the long run positive effects without controlling lagged fertility.

Utilizing the data of 86 countries, he finds that if lagged fertility is now added to the current rate of population growth, the correlation between current economic growth and current population growth becomes significantly negative, while a simple two variables model without lagged fertility exhibits no correlation or even positive one. In his paper, a lagged fertility variable is operationally defined as the net fertility rate averaged over the six year period beginning 17 years before the start of the period over which economic growth is measured. His regression result is considered salient since it is the first empirical research that demonstrates, without controlling lagged fertility in the regression, current population growth appears to have a zero impact on current per capita income growth, even when it really has a negative short run effect.

In this paper, we extend Barlow’s analysis to examine the impact of population growth on economic growth in Indonesia. We consider net-migrants as a new independent variable by drawing on provincial level data in Indonesia. Since extensive migration policies have been taken nationwide in Indonesia, we hypothesize that adding net migrants in the regression not only significantly affect the correlation between the two variables, but also partially capture the long run positive effect of population growth on economic growth. Furthermore, of our particular interest is whether our result is consistent with the Barlow’s analysis of cross-country data.

Indonesian people have traditionally been in constant movement over time. Migration within and across the regions or provinces has been both voluntary and involuntary. Through transmigration policy implemented by the government, many Indonesian families who resided in the densely settled regions were resettled to lower population density regions (Rogers et. al., 2007). Since 1950, transmigration policy has moved 6, 271, 240 peoples from 1, 223, 892 families. Migration contributes to demographic change in Indonesia relating to the separate people from one province to others province that influences economic development in their old region and their new region. Because of its significant role in population change, we newly add net-migrants to population growth as a predictor of economic growth.

The results suggest that lagged fertility does not affect the two-variable analysis. Once net-migrants are incorporated into a regression model, we obtain the significance of negative correlation between population growth and economic growth. The results not only support both Malthusian and Non-Malthusian schools of thought but also suggest that net migrants are key

determinants to be controlled to analyze economic growth in Indonesia. Furthermore, these results give answer to Simon’s invitation. Here, net-migrants are the variable which Simon mentioned to make relationship between population growth and economic becoming negative significantly. Overall, we could say that our results are consistent with Barlow’s claim.

This paper is organized as follow: Chapter 1 is Introduction. Chapter 2 discusses economic growth, population growth, fertility and migration in Indonesia. Chapter 3 presents methodology and results, that contains model, data description and regression result of correlation among economic growth, population growth, lagged fertility and migration in Indonesia. The last chapter is Chapter 4 that it is conclusions and recommendations.

CHAPTER 2: ECONOMIC AND POPULATION OF INDONESIA

Population in Indonesia is estimated to be more than 218 million (2005), and it is the world’s fourth-most populous nation. With 124 million people, the Java Island becomes one of the most densely populated areas in the world or some 945 persons per square kilometer. The most densely populated Outer Islands have 90 persons or fewer per square kilometer. Indonesia experienced an impressive decline in population growth 2. 42% in 1971-1980 to 1. 98% in 1981-1990. With such a decreasing trend of population growth in the past, Indonesia has increased living standards in terms of per capita gross domestic product as well as social welfare around that decade.

2. 1. Economic Development

Indonesia terminated the first long term (25 years) phase of development which started in 1969 and entered the second, beginning in 1994. The first long term has exhibited an improvement in people’s welfare to an extent that most of the basic needs for the majority of people were satisfied. An increase in both per capita income and economic growth has contributed to significant reduction in the number people living in poverty and an improvement of some basic social indicators, such as in health, nutrition and education (World Bank, 1990).

Although Indonesia successfully improved the standard of living in the past, there still exist 15 percent of people that live in absolute poverty; the disparity in the rate of economic growth among regions is getting disturbance for national economic growth; the labor force is still growing at an alarming rate, 2. 3 million per year. Thus there has remained a strong need to improve living standards and the quality of education, health and nutrition. These challenges must be solved with accelerated sustainable economic growth based on the achievements in the long term development phase.

After recovering from an unstable political and economic situation in the early 1960s, Indonesia has maintained a high growth rate of about 7% per annum until 1997. However, in the 1997-98 economic crises, Indonesia experienced the largest decline in growth compared to neighboring East Asian countries. During 1998-2000, Indonesia also fell behind other Asian countries in recovering from the economic crisis. This occurrence yields a set of new problems, which are intense unemployment as well as high population density in this country.

Indonesia’s growth remains modest in 2003, but the economy has performed better than expected. The year of 2003 was marked by various external and internal threats. Contrary to the speculations of many economic observers, the war in Aceh has so far not had a significant impact on the Indonesian economy (Basri, 2003). After economic crisis, Indonesia’s gross domestic product (GDP) grew continuously. In 2005, GDP grew 4. 9 percent, while in 2003 grew 4. 1%, slightly higher than 2002 (3. 7%) (Kuncoro and Reksosudarmo, 2006).

Figure 1: Growth rate of Gross Domestic Product of Indonesia per year, 1993-2005

2. 2. Population of Indonesia

During 35 years population of Indonesia increased sharply from 119, 208, 229 people in 1971 to 218, 868, 791 people in 2005 Such an increase in population becomes a serious problem for people to keep good living standards, whereas it could be considered potential resource to increase production activity in the future.

Although a change in human population could be characterized by many factors, such as fertility, mortality, migration, public health, labor force and family planning, we focus on fertility and migration to be second opinion in analysis on the relationship between population growth and economic growth in Indonesia. Given the empirical data, population growth in province of Indonesia appears to be influenced by both fertility and migration.

2. 2. 1. Fertility

Indonesian government has family planning policy, which significantly contributed to reducing fertility. The fertility rates have decreased by 40% due to a combination of family planning and the use of modern contraceptives, economic development and improved education for women. conceptual framework for Indonesia’s fertility reduction, 1950-1985.

The declines in fertility, which reached replacement levels in parts of Java, contribute to declines in the number of risky births and gives better infant health. The contribution of the Indonesian family planning program can be confirmed by looking at decreasing annual population growth rates from 2. 32% in 1971-1980 to 1. 97% n 1980-1990.

We also find that the key factor in declining Indonesia’s fertility is the availability of modern contraceptive methods.

Ideology

Old order

Liberation/nationalism

“ Revolution reject yesterday”

New Order

Pancasila principles

Socialization

Expansion of mass education

Higher education

New world view

Mass communications: press, TV, radio

Governance

Development-oriented bureaucracy

Strengthened vertical lines of authority

Foreign aid

Family

Couple-arranged marriages

Romantic marriage

Liberation of children: schools, reverseal of obligations

Family Planning

Pill

Sterilization

IUD

Depo-Provera

NORPLANT

Logistic system

Economy

Green Revolution

Industrialization

Expansion of labor force

Rising economy

Rise of middle class

Expansion of public works

Domestic and imported mass consumption goods

Proximate variables

Increased premarital sex

Reduced postpartum abstinence

Increased use of birth control

Increased use of abortion

Improved reproductive health of women

Fertility decline

The Government by the National Family Planning Coordination Board has developed an efficient logistics system to provide a seamless supply of

modern contraceptive methods to clinics and other points of distribution. A large proportion of Indonesia women of reproductive age have adopted using of reversible contraceptive methods, such as the IUD, the pill and Norplant. This policy encouraged men to take more responsibility for fertility control, and have spurred the use of condom.

2. 2. 2. Migration

Migration is defined as the number of people moving from one locality to another, sometimes over long distances or in large group. Interregional migration in Indonesia has been dominated by movement from the densely settled rural areas of Java to the outer island, such as Sumatra, Kalimantan and Sulawesi.

More than 60 percent people of Indonesia resided in Java and Bali that comprised 7 percent of the nation’s land area. In 1990, more than 60 percent people of Indonesia resided in Java and Bali, two islands that comprise just 7 percent of the nation’s land area. The high population densities contrasted with the vast areas of the outer islands of Sumatra, Kalimantan, Sulawesi and Papua where population densities are significantly lower.

Indonesian Government implemented a policy to separate people from more population density to the less population density area. This policy is well-known as transmigration. Transmigration was initiated under Dutch colonial rule during the early 20 th century and taken over by the Indonesian Government. The major goal of the transmigration program in Indonesia was to stimulate regional development and create employment opportunities.

The government finances movement of landless people from the crowded inner islands of Java, Bali, Madura and Lombok to agricultural based settlements in the outer islands of Sumatra, Kalimantan, Sulawesi and Irian (Papua) where population densities are lower. It is now believed that this program would alleviate poverty and provide land, also new opportunities to generate income for poor landless settlers (Arndt and Sundrum (1977).

Transmigration in Indonesia encompasses three different groups. First, *sponsored transmigrants group* , that people receives extensive support from the government during the initial five years of settlement in the form of transport, land, housing, and social services. Second, *local transmigrant group* that people of this group which originate in or near the settlement areas would be developed and receive the same benefits as the sponsored transmigrants. Third, *spontaneous transmigrants group* that people move at their own expense and settle in a site of their choice.

Another important note in migration of Indonesia is that recently Indonesia faces several conflicts whose effects are realized in the grassroots population and tents as internally displacement persons. Since 1998 the moving of internally displacement people is already more than 1. 3 million, from Kalimantan, Maluku, Sumatra, Papua and Nusatenggara. The roots of conflict based on region and largely on the sidelines, such as violence between the majority Muslims and minority Christian on eastern Maluku islands and Poso-Central Sulawesi, between local ethnic and Maduras in East Kalimantan. Figure 5 shows Internally Displacement Persons Champs in Indonesia.

Conflict in Poso, Central Sulawesi left at lease 200 dead and an estimated 60, 000 people displaced. In Aceh, the number of persons displaced by the conflict ebbed and flowed, but tens of thousand fled their homes over the course of the year. Thousands of non-Acehnese migrated to other province in Sumatra and Java, many after having been threatened by rebels. In July 2001, approximately 60, 000 people from Central and West Kalimantan of the recent outbreaks of violence lived in appalling in tents and shelters in Pontianak, West Kalimantan (Pudjiastuti, 2002).

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CHAPTER 3: METHODOLOGY AND RESULTS

We analyze correlation between economic growth and population growth in Indonesia from 1993-2005 by using ordinary leas square (OLS). We start from Simon build in his research. He notes Ronald Lee explanation which summarized correlation between population growth and economic growth.

“ Starting with Kuznets’, have found no association between the population growth rate and per capita income growth rate, despite the obvious fact that at least since WWII, population growth rates have varied considerably…. over period as long as a century or as short as 25 years, there is no significant association of (the population growth rate and the rate of change of per capita income), for either DCs or LDCs …” (Reviewed by Simon, 1989; italics added).

Then, Julian Simon (1989) stated that population growth and economic growth would have negative partial relationship if included one or more specified variables in the analysis. We use lagged fertility and net-migrants to investigate Simon’s argument.

The reason using lagged fertility in the analysis between population growth and economic growth is that it can differentiate short-run and long-run

effects of population growth on economic growth. The argument is that in the short-run, an increase in lagged fertility tends to have negative effects on economic growth and in the long-run, tends to be positive effects. Current fertility has high correlation with past fertility, thus current population growth covers the short-run negative and the long-run positive effects. Therefore, we argue that in a two-variable analysis, correlation between current population growth appear to have a zero impact on current economic growth. The reason using net-migrants in Indonesia’s study is that migration is the mainstream policy in economic development which started in the early 1900s. Recently, employment generation through investment in labor-intensive enterprises was given high priority, and migration policy was a way for job creation.

Here, economic growth is represented by average annual growth of real Gross Domestic Product (GDP) in period 1993-1999 and 1999-2005. Population growth is average annual growth of population in period 1993-1999 and 1999-2005. Lagged fertility is defined as the net fertility rate averaged over the six-year period beginning 17 years before the start of the period over which economic growth. In this analysis if the economic growth period is 1993-1999, lagged fertility is the average net fertility rate over the 1976-1982. The net fertility rate is defined as the total fertility rate adjusted for infant mortality. Net-migrants growth is average annual growth of net-migrants in period 1993-1999 and 1999-2005. We use data from Central Bureau Statistic of Indonesia (http://www. bps. go. id) and Data Statistik Indonesia (http://www. datastatistik-Indonesia. com). The data consists 26 provinces in Indonesia composing of 2 period year each province.

When we add lagged fertility in the regression model, the correlation between economic growth and population growth is not significant This result is contradictive with Barlow’s investigation by using cross country data analysis. He found that adding lagged fertility in two-variable analysis makes the coefficient on current population growth significantly negative.