

## Research Article

## How important are the Government Expenditure and Bank Lending in Promoting Regional Economic Growth?

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**Abstract:** A steadily increases in government expenditure, bank lending, and the population has been a major phenomenon in Indonesia since the last few decades. However, their increasing trends have been dissimilar across the regions nationwide that might contribute differently towards promoting regional economic growth. This study empirically explores the effects of changes in bank lending, government expenditure, and population on the regional economy across 23 districts in the province of Aceh, Indonesia over the period from 2006 to 2016. Using a panel multiple regression model, the study documented that bank lending and government spending have contributed positively to the regional economic growth, while population growth has an insignificant impact on economic growth in the province of Aceh, Indonesia. These findings imply that to further promote economic growth; the focussed should be given on enhancing the government expenditure and bank lending. Managing government budget more efficiently and providing more bank lending with a low level of interest rate for the micro-, small- and medium-enterprises would accelerate the regional economic growth in the province.

**Keywords:** Regional economic growth; government expenditure; bank lending; population.

### INTRODUCTION

Achieving a higher level of economic growth is the aspiration of all countries worldwide, including Indonesia. Although Indonesia's economy has increased from 5.07% in 2017 to 5.17% in 2018, but it failed to achieve its 5.40% target of economic growth. The failure to achieve the national economic growth target in Indonesia has been very much related to the level of economic growth of other countries (Kassim and Majid, 2008) as well as related to all 34 provinces in the country. For example, as one of the provinces in Indonesia, Aceh only recorded its economic growth by only 3.34% in 2018, the economic growth below the level of provinces in Sumatra, 4.37% (BPS-Statistics Indonesia, 2019). The economic growth of Aceh province was recorded as the third lowest economic growth in Sumatra. In the last decade, the slowing trend of economic growth of Aceh has been a questionable issue discussed both by practitioners and researchers as the province received the third largest development budget in Indonesia since the province has received the special autonomous funds from the central government for 20 years ahead started from 2008.

Additionally, the other selected macroeconomic variables such as the number of government expenditure, bank lending, and population in Aceh province have increased sharply from 2014-2017 by the average of 88.62%, 31.57%, 14.73%, respectively. However, the increasing trend in these selected macroeconomic variables has not significantly contributed toward the higher level of economic growth in the province. Based on these stylized facts, the increasing trend of government expenditure, bank lending, and population, but slowing growth of economy in the province of Aceh, it motivates our study to question: how important are the changes in government expenditure, bank lending, and population in promoting economic growth across 23 districts in Aceh province? Do the changes in government expenditure, bank lending, and population positively contribute to economic growth in the province? These questions are timely and extremely urgent to be researched as it provides a recommendation for policy makers in designing policies for the further promotion of economic growth in the province.

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There have been many previous studies investigated the factors contributing to economic growth. The investigated determinants of economic growth include economic factors (i.e., natural resources, capital accumulation, technological progress, and division of work), non-economic factors (i.e., social, human, political, administrative, legal factors) (Jhingan, 2000). For example, Beck *et al.*, (2000) found that the banking sector is an important determinant of economic growth. Majid (2007a, 2007b, 2007c, 2007d), (Majid 2008,; Majid and Musnadi 2010; Majid *et al.*, 2018; and Juwita *et al.* 2018) found the important role of banking sector, including Islamic bank (Majid and Kassim, 2015) in promoting economic growth in Indonesia, Thailand, the Philippines, Malaysia and other ASEAN countries. Additionally, (Cheng and Lai 1997; Attari and Javed 2013; and Sani *et al.*, 2019) documented that government expenditure positively related to the economies of South Korea, Pakistan, and Indonesia, respectively. Finally, Coale (1986), Simon (1989), Barlow (1994) and Febriani (2017) found a positive contribution of population growth on economic growth.

These previous studies focused on the economic growth of developed and developing countries using the aggregated national data. Our study is different from earlier studies, as our study explores the economic growth and its determinants using panel data of 23 districts in Aceh province, Indonesia. The findings of our study would shed some lights on different levels of economic growth of 23 districts in the Aceh province and their connections to different levels of district government expenditure, bank lending, and population. These findings would be used as an important reference by the policy makers to further boost the economic growth by a proper controlling of government expenditure, bank lending, and population.

The rest of the study proceeds by reviewing the relevant literature in Section 2. Section 3 provides the empirical framework and data, while Section 4 discusses the findings and their implications. Finally, Section 5 concludes the paper.

## LITERATURE REVIEW

Economic growth has been a focus of the economic development agenda of all countries worldwide as it is closely related to the increase in society's welfare. Economic growth is influenced by both economic and non-economic factors (Jhingan, 2000). Economic factors affecting the growth of economy include natural resources, capital accumulation, organization, technological progress, division of work, and priority scale, while the non-economic factors include social, human, legal, environment, political, and administrative factors. Our study only focuses on the effect of economic factors of government expenditure, bank lending, and population on the economic growth across 23 districts in the province of Aceh, Indonesia.

### Bank lending and economic growth

In his study, Beck *et al.*, (2000) stated that bank lending is one of the sources of economic growth because of the interrelation between banking lending structure and investment accomplished by industry or business. Thus, bank lending plays an important role in determining the level of investment and consequently economic growth. As an intermediary institution, banking sector distributes funds to the business entity and, in turns, encourages real sector productivity, capital accumulation, and aggregate output growth (Bencivenga and Smith, 1991; King and Levine 1993; and Demircuc-Kunt and Maksimovic 2002) provide support for the positive impact of bank lending on per capita income growth, both in developed and developing countries.

The importance of the financial sector, including bank, has begun to receive more attention lately after its initial introduction by Schumpeter (1912) in his book, *The Theory of Economic Development*. The pioneering studies on this area such as Goldsmith (1969), McKinnon (1973), and Shaw (1973) documented a positive relationship between financial development and economic growth. Demetrides and Hussein (1996) and Greenwood and Smith (1997) found a bidirectional causal related between the banking sector and economic growth. Finally, Majid (2007a, 2007b, 2007c, 2007d), Majid (2008), Majid and Musnadi (2010), Majid *et al.*, (2018), and Juwita *et al.* (2018) also provided evidences on the positive role of the banking sector, including Islamic bank (Majid and Kassim, 2015) in promoting economic growth in Indonesia, Thailand, the Philippines, Malaysia and other ASEAN countries.

### Government expenditure and economic growth

The government expenditure is part of the fiscal policy that aims to promote economic growth and it depends on the amount of government revenue (Rother, 2004). If the government has set a policy to buy goods and services, the costs that the government must incur to implement the policy are a reflection of the government expenditure. If the government has more expenditure, the people of a region would have a greater income. Wahyuni (2014) provides evidence on the positive impact of government expenditure on economic growth in the regency of Bali, Indonesia over the period from 2000 to 2012.

However, the link between government expenditure and economic growth has been a controversy as previous studies documented the mixed findings. For example, Atesoglu (1998) and Mallik and Chowdhury (2002) found a positive impact of government expenditure on economic growth for the cases of Australia, Canada, Finland, New Zealand, Spain, Sweden, the UK, and the US, while Landau (1986), Barth *et al.*, (1990) found a negative impact of economic growth on economic growth. In his study on

63 developed and developing countries, Ram (1986) found inconsistent empirical evidence on government expenditure-economic growth relations. In short, the neo-Classical theory explains the negative government expenditure-economic growth is due to crowding out of the private investment, while the positive government expenditure-economic growth relation is due to positive externalities created by the economic growth (Attari and Javed, 2013).

### Population and economic growth

The population is basically an economic development actor. Explaining the relationship between income and population is one of the oldest challenges in economics. Malthus (1803) developed a powerful model that links better technology with constant living standards that allows a higher total output. According to Todaro (1977), population growth and labour force growth has been traditionally considered as one of the factors contributing to economic growth. The larger number of workforce indicates an increase in the number of productive workers and increases the size of its domestic market. Thus, the more population, the more development actors would accelerate economic development in a region. But rapid population growth can cause serious problems for the economic development due to the imbalances of the population and available natural resources, which in turns caused the poverty (Majid *et al.*, 2017; Dewi *et al.*, 2018; and Naqsadiqa *et al.*, 2019).

The connection between population and the economic government has been one of the issues intensively discussed among economists and demographers. Population growth can be limiting, driving, or even having no significant impact on economic growth. It depends on the condition of the population in an area. The effect of population on economic growth could be divided into four groups, namely: the pessimist, optimistic, neutral, and multidimensional group. In her study, Febriani (2017) found that generally, population growth in the countries of ASEAN have a positive impact to economic growth, (while Coale 1986; Simon 1989), Barlow (1994), Dao (2012) found a positive relationship between the two variables. However, Murib (2018) documented no influence of population on economic growth.

In his study, Fernandez-Villaverde (2003) summarized that the 'neutralist' or 'revisionist' has viewed the high population growth rates in developing countries since the middle of the twentieth century has had little effect on economic growth. Nevertheless, the current consensus is that the rapid population growth has exerted a significant negative effect on economic growth in developing countries. Thus, it is important to note that countries such as Indonesia that go through this stage of the demographic transition, namely fertility decline, have a narrow window of opportunity to better themselves economically. This explains a negative

association between economic growth and population growth as some countries have been able to take advantage of this opportunity to increase economic growth while reducing population growth.

### EMPIRICAL FRAMEWORK

This study explores the impacts of government expenditure, bank lending, and population on the regional economic growth across 23 districts in the province of Aceh, Indonesia over the period from 2006 to 2016. Economic growth is the value of goods and services produced by the people of a region in a certain period of time, which is measured in this study by real economic growth in percentage, while the government expenditures is measured by the amount of regional income and expenditure budget allocated by the government for development and routine expenditures in a given year period, which measured in units of Indonesian Rupiah (IDR). Bank lending is measured as the total credit or loan disbursed by the banking industry in units of the IDR, and finally, population growth is measured by the changes in the number of the population over the study period. The data of economic growth, government expenditure, and population are gathered from the report of the BPS-Statistics Indonesia, while the data for bank lending is gathered from the report of the Bank of Indonesia.

To measure the effects of the government expenditure, bank lending, and population on the regional economic growth across 23 districts in the province of Aceh, Indonesia over the period from 2006 to 2016, the generalized least square (GLS) model is used. In analyzing panel data, there have been two prominent GLS models commonly used, namely: fixed effect model (FEM) and random effect model (REM). Since all variables are impossible to include in the estimated model that result in a non-constant intercept, while the intercept might change and the slope between individuals is fixed for each individual and time. This technique adds a dummy model to the panel data to capture the difference in intercept between individuals or between unit cross sections. This approach is known as the FEM or the least square dummy variables (LSDV) or also called a covariance model (CM).

Generally, the equation for this FEM could be written as follows:

$$Y_{it} = \alpha_0 + \alpha_1 X_{1it} + \alpha_2 X_{2it} + \alpha_3 X_{3it} + \varepsilon_{it} \quad (1)$$

Meanwhile, in the REM, there is individual differences and time, which is reflected by an error. This technique also takes into account that errors may correlate throughout time series and cross-sections. There are two components that contribute to the formation of errors, namely the individual and time so that random errors in the REM also need to be parsed into errors for individual components and errors for the time component. In general, the REM model could be written as follows:

$$Y_{it} = \alpha_0 + \alpha_1 X_{1it} + \alpha_2 X_{2it} + \alpha_3 X_{3it} + \varepsilon_{it} + U_{it} \quad (2)$$

$$Y_{it} = \alpha_0 + \alpha_1 X_{1it} + \alpha_2 X_{2it} + \alpha_3 X_{3it} + W_{it} \quad (3)$$

However, to identify which models, the FEM or the REM as the most appropriate model to estimate the effects of the government expenditure, bank lending, and population on the regional economic growth in the study, the Hausman test is conducted to ensure the suitability of the selected model. If the result of the  $p$ -value of the Hausman test is insignificant or the Chi-square  $p$ -value is greater than the specified significance level, the REM would be selected as the most appropriate panel regression model. Conversely, if the  $p$ -value is significant, then the FEM would be selected as the most suitable model in our study.

Thus, the following GLS model would be estimated in our study:

$$EG_{it} = \alpha_0 + \alpha_1 BL_{it} + \alpha_2 GE_{it} + \alpha_3 PG_{it} + \varepsilon_{it} \quad (4)$$

where  $EG$  is the economic growth,  $BL$  is the bank loan,  $GE$  is the government expenditure,  $PG$  is the population growth,  $\alpha_0$  is the constant term,  $\alpha_i$  is the estimated coefficient of independent variables,  $i$  is the regency  $i$  and the time period of year  $t$ ,  $\varepsilon$  is the error term.

## FINDINGS AND DISCUSSION

As stated earlier, to estimate the effects of government expenditure, bank lending, and population on economic growth in the province of Aceh, the study should first select the suitable GLS model between the fixed effect model (FEM) and random effect model (REM) using the Hausman test. As reported in Table 1, the Hausman test showed an insignificant finding of the cross-section random, indicating the FEM as the best suitable model to be adopted in the study. Thus, the next section would only provide and discuss the findings of the effects of government expenditure, bank lending, and population on the economic growth across 23 districts in the Aceh province, Indonesia from the estimated FEM.

**Table 1. Finding from the Hausman test**

| Test Summary         | Chi-Square Statistics | Probability |
|----------------------|-----------------------|-------------|
| Cross-section random | 94.2309               | 0.0000      |

The empirical findings of the effects of government expenditure, bank lending, and population on the economic growth across 23 districts in the Aceh province over the period from 2006 to 2016 are reported in Table 2.

**Table 2. Findings from the fixed effect model**

| Variable                                                                      | Coefficient | Probability |
|-------------------------------------------------------------------------------|-------------|-------------|
| Constant                                                                      | 4.3374***   | 0.0000      |
| Government expenditure                                                        | 1.5713***   | 0.0032      |
| Bank lending                                                                  | 0.9342***   | 0.0000      |
| Population growth                                                             | -0.3484     | 0.3005      |
| $R^2 = 0.6893$ ; $\text{Adj-}R^2 = 0.6741$ ; $F\text{-stats} = 20.2413^{***}$ |             |             |

Note: \*\*\* indicates significance at the 1% level.

As illustrated in Table 2, government expenditure, bank lending, and population growth simultaneously and significantly affected the regional economic growth in Aceh at the 1% level of significance. Particularly, the variations in the regional economic growth are explained 67.41% by the variations in government expenditure, bank lending, and population growth, as indicated by the  $R^2$  adjusted value of 0.6741. This indicates that the promotion of economic growth across 23 districts in the Aceh province, Indonesia could be mainly focused on controlling these three-independent variables, as the other variables that are not included in the estimated FEM explained variations in economic growth only by 32.59%.

As for each independent variable's effect on economic growth, the study found that government expenditure positively affected economic growth. Specifically, a 1% increase in the government expenditure contributed to 1.57% increase in economic growth. The government expenditure has promoted increased economic growth across 23 districts in the province of Aceh, Indonesia. This finding is in accordance with the study by Wahyuni (2014) who found government spending affected the economic growth of Indonesia over the period of 2000-2012. Our finding is also in harmony with the findings of the studies by Atesoglu (1998), Mallik and Chowdhury (2002) who recorded a positive impact of government expenditure on economic growth for the cases of Australia, Canada, Finland, New Zealand, Spain, Sweden, the UK, and the US.

Next, the study found that bank lending positively affected economic growth. Specifically, a 1% increase in bank lending contributed to 0.93% increase in economic growth. The distribution of credit by the banking industry has promoted the real economic sector in Aceh. This finding supported the importance of the banking sector to economic growth, as highlighted by the by Schumpeter (1912) in his book, *Theory of Economic Development*. The finding is also in line with previous studies that documented positive contribution of the conventional banking industry (Majid et al., 2018; Hapsari and Iskandar, 2018; and Juwita et al., 2018) and Islamic banking industry (Majid and Kassim, 2015; and Saputri, 2018) to the promotion of economic growth in Indonesia and Malaysia.



Finally, the study found that population growth has no effect on economic growth. A steady increase in population in Aceh is not followed by an increase in the skills of labour forces, thus contributes no effect to the regional economic growth. Our finding is in harmony with the previous studies by Febriani (2017) and Murib (2018) who documented no influence of population on economic growth. Similarly, our study supported the finding of Fernandez-Villaverde (2003) who viewed the population growth in developing countries have had little effect on economic growth. Indonesia that has experienced a fertility decline, thus have a small opportunity to better herself economically. This explains a non-significant association between population growth and economic growth as the province of Aceh has been unable to take advantage of the increase of population to promote its economic growth.

Overall, our findings imply that to further promote the regional economic growth in the province of Aceh, Indonesia the government should allocate government spending on the productive economic activities and avoid spending for the non-productive economic activities. The government expenditure should also be managed efficiently, thus it allows a greater allocation of the spending by the government could be provided for funding economic development programs. Our finding also suggested the importance of the banking industry to provide more lending to support the business entities in the provinces, especially a financial support to further enhance the existing micro-, small- and medium-enterprises (MSMEs) as they closely linked to the low- and middle-income groups and offer greater job opportunities for the low educated level of labour. Thus, the government should provide and enhance its policy to regulate the banking industry to give priority for disbursing a more loans to the real sector of economy, particularly to support the financing of the MSMEs in the province at the lower interest rate level or on the basis of profit-loss sharing as practiced by the Islamic banking institutions.

## CONCLUSION

Slowing growth of the economy in Aceh province, Indonesia has been a focus of practitioners and researchers lately. This issue becomes more important to highlight as the province has experienced a steadily increases in government expenditure, bank lending, and population growth since the last few decades. On this basis, thus this study empirically explores the effects of changes in bank lending, government expenditure, and population on the regional economy across 23 districts in the province of Aceh, Indonesia over the period from 2006 to 2016. Using a panel multiple regression model, the study documented that government expenditure, bank lending have contributed positively to the regional economic growth, while population growth is found to have an

insignificant impact on the regional economic growth in the province of Aceh, Indonesia.

Our findings imply that to further promote regional economic growth, the government should well-managed its expenditure and is allocated more for productive economic activities. In addition, the government should regulate the banking industry to provide more lending with a low level of interest rate for the micro-, small- and medium-enterprises (MSMEs), thus consequently accelerate the regional economic growth in the province. The financing based on the profit- and loss-sharing scheme as practiced by the Islamic banking institutions should be further encouraged to promote the real economic sector in the province of Aceh through the financing of the MSMEs.

To enhance the empirical findings on the relationship between government expenditure, bank lending, and population growth on economic growth, further studies might consider more economic and non-economic factors into the model. Identifying the causal relationship between the variables could also provide a comprehensive insight into the directional causalities between economic growth and its determinants using a more advanced estimated model such as panel cointegration analysis. Finally, comparing economic growth across 34 provinces nationwide in Indonesia could also provide a better picture of the relationship between economic growth and its determinants.

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