OIL ABUNDANCE, GENUINE SAVING, ECONOMIC GROWTH, AND SUSTAINABLE DEVELOPMENT IN INDONESIA

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ABSTRACT

Much of the research in the world say that countries with abundant natural resources have negative economic growth, such as Sachs and Warner (1995a / b, 2001), Gylfason (2001a, 2004, 2007, 2011), Auty (2001). Conversely, during the period 1970 to present, the countries that do not depend on natural resources, experienced more rapid economic growth than countries that produce oil and gas. The phenomenon of slow development in the presence of an abundance of natural resources is known as the resource curse hypothesis.

This study aimed to analyze the effect of direct and indirect oil abundance for Indonesia's economic growth through genuine savings. This study uses secondary data for the period 1980 to 2010, sourced from several institutions such as the Central Bureau of Statistics, World Bank, BP Migas, and the PRS Group. The method of analysis used in this research is the analysis of the path (path analysis), which assisted with the package SPSS version 16.00.

In this study found that the oil abundance has no direct negative effect on economic growth in Indonesia. The results of this study showed no evidence of a negative indirect effect of oil abundance on economic growth through genuine saving. Economic growth in countries with non-renewable natural resources is the process of extracting natural resources efficiently and investment income from natural capital that can continue to generate income after non-renewable natural resources depleted. Only in this way the natural resources can be used to promote sustainable development.

Keywords: Oil abundance, Genuine Saving, Resources Curse, Sustainable Development

INTRODUCTION

Recent studies such as (Atkinson and Hamilton, 2005; Neumann, 2004; Dietz et al, 2007) showed a relationship with the resources curse and genuine saving, which are meant to measure the concept of sustainable development taking into account the reinvestment of income or rents from natural capital into capital
physical and human capital. Hamilton et al. (2005) stated that the state with the energy and mineral revenues typically have levels of genuine saving is negative. This means that many countries become poorer each year, although they have abundant natural resources, because they effectively squander their natural resources at the expense of future generations without investing back with energy and mineral revenues into other forms of productive wealth. Hartwick Rule (1977) states that if an economy is to use the income or rents from natural resources to invest in the capital stock of other types such as human capital and man-made capital is productive it will be ensured sustainable development (Hamilton, Hartwick, 2005). The crucial question is why so many countries are rich in natural resources have genuine saving is so small and even negative. Political economy reasons probably is associated with poor institutions, corruption and capital markets are not functioning properly, as happened in Indonesia today. For the years 1996-2008 the level of genuine saving Indonesia is still below the level of genuine saving Singapore, Japan and Korea, even in 2004, 2007 and 2008, Indonesia has a genuine saving is negative, the value is almost equal to the level of genuine saving of Congo (Figure 1).

![Source: World Bank](image)

**Figure 1.** Genuine Saving Indonesia, Singapore, Congo, Saudi Arabia (1996-2008)

1. **Method of Analysis**

To analyze the effect of oil abundance to genuine saving and economic growth in Indonesia, the method of analysis used in this study is the method of path analysis. Path Analysis was developed by Sewall Wright (1934). Path analysis is used when in theory we are confident dealing with problems relating to cause and
effect. The goal is to explain the direct and indirect effects a set of variables, as a variable causes, to the other variable is a variable effect.

2. Oil abundance and Economic Growth in Indonesia

The results of the estimated effect of oil abundance directly to economic growth in Indonesia showed no significant positive effect. Positive effect suggests a direct relationship between oil abundance and economic growth. This means that an increase in oil abundance in Indonesia will not affect the increase in economic growth in Indonesia, and vice versa. Thus, by testing the hypothesis, the hypothesis that oil abundance significant effect on economic growth in Indonesia is unproven and unsupported by the facts. Based on the results of statistical tests, oil abundance direct effect on economic growth above, hypothesis Gylfason (1999,2001,2004), which states that natural resource abundance negatively affect economic growth, not shown to occur in Indonesia. The findings of this study do not support the empirical study Auty (1990, 2001), Gelb (1988), Sachs and Warner (1995, 1999, 2001), Karl (1997), who also suggested a negative relationship between the abundance of natural resources with economic growth. The findings of this study support the theory of economic growth, Adam Smith (1776) which states that economic growth can not just rely on natural capital, but also on the development of physical capital and human capital.

In spite of the wealth of its natural resources, Indonesia performed very well in terms of the economy in the three decades before the Asian economic crisis in 1997. Indonesia's economic performance achieved can be seen in Figure 2, where Indonesia has high average economic growth from 1970 to 2012 by 6%, which is greater than Gabon, Congo, Algeria and Cameroon. Although it is clear that Indonesia is not growing as fast as some neighboring countries (such as South Korea, Taiwan, Singapore and Hong Kong).

**Figure 2 Economic Growth Indonesia, Singapura, and Other Countries**

**Source:** World Bank, 2012
3. Oil abundance, Genuine Saving, and Sustainable Development In Indonesia

Economic growth in countries with non-renewable natural resources is the process of extracting natural resources efficiently and investment income from natural resources in the form of other productive capital that can continue to generate income after non-renewable natural resources depleted. Only in this way the natural resources can be used to promote sustainable development.

The estimation results of the direct effect of oil abundance on genuine saving in this study showed no significant negative effect. Negative influences show the trade-offs between oil abundance and genuine saving. This means that the increase in rent in Indonesian oil will not have an impact on the decline of genuine saving in Indonesia, and vice versa. Therefore, based on testing the hypothesis, the hypothesis that oil abundance significantly influence the genuine saving in Indonesia is not proven and is not supported by the facts.

The findings of this study do not support the "Solow-Hartwick rule" (Solow, 1974), "Hartwick Rule" (Hartwick 1977), the weak sustainability paradigm, recommend reinvestment of all profits or rents from natural resources that can not be renewed for the reproducible capital, offset the consumption of natural capital and ensure future prosperity. The findings of this study do not support the model and empirical studies Gylfason, 2004 which states that natural resource abundance negatively affect saving, investment, or physical capital in rich countries in natural resources, because of the abundance of natural resources can have a demoralizing effect on the private and public to save and invest. Not supporting studies (Atkinson and Hamilton, 2003; Neumann, 2004; Dietz et al, 2007) which states that the extraction of oil, gas and minerals can increase GDP but reduces genuine saving ceteris paribus.

Figure 3 shows, oil abundance is negatively related to genuine saving Indonesia, although not statistically significance. Important cause of the negative relationship between oil abundance and genuine saving, according to (Auty 2006), is that the proceeds of oil and gas are often used in ways that cumulatively transferring inputs from activities that are not competitive to competitive activity.
Since 2000, many low-income countries, which are rich in natural resources have failed to take advantage of their non-renewable natural resources for broader development. In fact, they have a genuine saving indicator is negative for several years and their total wealth also fell (Table 1). From the table looks Indonesia, Congo, Gabon, Nigeria, and Venezuela, which has oil and natural capital assets are larger, but have produced capital, intangible capital or human capital, and total wealth per capita is much smaller compared with Japan and Singapore which do not have oil and other natural resources at all.
Table 1 *Total Wealth in Oil Countries (2010)*

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**Source:** World Bank, 2011

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**Figure 4 Total Wealth in Asian Countries and Japan**

- Red: Natural capital US$ per capita
- Green: Produced capital + urban land US$ per capita
- Blue: Intangible capital US$ per capita
- Black: Total wealth US$ per capita
Based on the theory of Harold Domar, in conditions of full employment and without capital mobility, savings are essential for economic growth, which is the mechanism through investment growth. It can therefore be said to be an investment as a function of savings. The higher savings rate the higher the level of investment, further increase in investment adding more capital and through the multiplier process generating higher economic growth rate.

The estimation results of the direct influence of genuine saving on economic growth showed no significant positive effect. A positive effect indicates a unidirectional relationship between genuine savings and economic growth. That is an increase of genuine saving in Indonesia will not have an impact on economic growth in Indonesia, and vice versa. Therefore, based on testing the hypothesis, the hypothesis that genuine saving significant effect on economic growth in Indonesia is not proven and is not supported by the facts.

The results of this study do not support the the theory of growth of Adam Smith (1776) who stated investment stimulates economic growth through capital accumulation. It does not support the theory of Harold Domar (1939) which states that economic growth depends on three factors, namely the level of savings, capital / output ratio, and the rate of depreciation. The results of this study also did not support the Solow growth model (1956) which indicates that the savings rate is an important determinant of capital stock at steady-state conditions. That is, if the saving rate is high, then the economy will have a large capital stock and a high level of output. The results of this study do not support the model and empirical studies Gylfason 2004 that the abundance of natural resources negative effect on genuine saving and genuine saving positive effect on economic growth, so that genuine saving or physical capital as the transmission mechanism of the resource curse to Gylfason models do not apply in Indonesia. Figure 5 shows the trend in the same direction between genuine saving and economic growth in Indonesia.

Relationship abundance of natural resources and savings or investments also depends on a number of factors, including the quality of the institutions that have an impact on the efficiency of investment and the risks to economic resources invested for the future. These results, offers another perspective on the resource curse hypothesis that states that economic growth has lagged below average is a country that is a combination of natural resource policy, macroeconomic and public expenditure have led to low levels of genuine saving.
Conclusion
Simultaneously, it can be concluded that directly, oil Abundance not significantly affect economic growth in Indonesia. Effect of Oil Abundance to economic growth in Indonesia indirectly through transmission mechanisms genuine saving is negative and no significant. The findings of this study do not support the "Solow-Hartwick rule" (Solow, 1974), "Hartwick Rule" (Hartwick 1977), the weak sustainability paradigm, recommend reinvestment of all profits or rents from natural resources that can not be renewed for the reproducible capital, offset the consumption of natural capital and ensure future prosperity. The findings of this study do not support the model and empirical studies Gyfason, 2004 which states that natural resource abundance negatively affect saving, investment, or physical capital in rich countries in natural resources, because of the abundance of natural resources can have a demoralizing effect on the private and public to save and invest. Not supporting studies (Atkinson and Hamilton, 2003; Neumann, 2004; Dietz et al, 2007) which states that the extraction of oil, gas and minerals can increase GDP but reduces genuine saving ceteris paribus.
REFERENCES


Ayittey BNG, 2006. *Nigeria’s Struggle with Corruption* (A testimony before the Committee on International Relation’s Subcommittee on Africa, Global Human Rights and International Operations House


-------------------2004. “Natural Resources and Economic Growth: From Dependence to Diversification”. *CEPR Discussion Papers 4804*


political economy of economic growth, Discussion paper no 03-08R, Department of Economics, Middlebury College, Vermont

ICRG (International Country Risk Guide), 2010. Researchers Dataset from the PRS


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Rosser, K. Middle East Oil is turning 100. Hold the Bubbly”, St. Antony’s CollegeDatabase 2007.


Van der Ploeg, Frederick, 2010. Natural Resources: Curse or Blessing?, CESifo Working Papers

