The Determinants Of Human Development Index And Economic Growth In Indonesia

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Abstract: The performance of government could be indicated by its economic growth, and the economic growth is influenced by several factors such as national income, fundamental economic, foreign debt, export and human development index. The aim of this research is to identify and analyze the effects of foreign debt and export on human development index and economic growth ini Indonesia. The time data series will be used is from 2010 to 2018, while the analysis instrument is Structural Equation Model SmartPLS 3.20 version which built the foreign debt and human development index as the exogenous variables, human development index as the intervening variable and economic growth as the endogenous variable. The results of this research, it is examined that only Indonesian foreign debt has a positive effect significantly, while export has a negative effect but not significant on human development index. The foreign debt has a negative effect but not significant and export has a positive effect on Indonesian economic growth. The human development index has a positive effect but not significant on Indonesian economic growth. It is also proved that all of indirect effects of foreign debt and foreign debt and export have effects but not significant.

Index Terms: Foreign Debt, Export, Human Development Index, Economic Growth.

1 Introduction

The economic walfare can be indicated by the economic growth which is influenced several essential factor such as national income, entrepreneurship, investment, export, foreign debt, and human development index. Indonesian economic growth tends to decrease for last decade, and it is recorded that the highest rate is in 2010 at 6.22 percent, while the lowest one is in 2015 at 4.88 percent. Fortunately, it increases gradually since 2015 until now. The strength factors to influence Indonesian economic growth are export, foreign debt and human development index. One of the pushing factor for Indonesia economic growth is the volume or value of export. It is obviously that the Indonesian export value decreased dramatically since 2010 to 2015. It is recorded that the lowest value of Indonesian export in 2015 at US $ 131,791.90 million and it was down at about -9,71 percent from 2014. Unfortunately, Indonesia foreign debt tends to increase in the latest decade. It is noted Indonesian foreign debt at US$ 202.413 billion and and US$ 225.375 billion in 2010 and 2011 respectively. Tragically, the highest Indonesian foreign debt is in 2018 at US$ 355.19 billion. (BPS, 2019). Human Development Index (HDI) is the most essential factor in improving Indonesian economic indicators, especially economic growth because since the human capital is in a highest quality leads to improve Indonesian government management, and it is expected that human capital quality which could be indicated by human development index pushes Indonesian economic growth. Indonesian human development indext increases slightly since 2010 until 2018. It is recorded that Indonesia HDI only 66.22 in 2010 and it increases to 71.39 in 2018. (BPS, 2019).Theoretically, since the foreign debt increase, it should be followed by improving the economic condition such as export value or economic growth. Obviously, Indonesian foreign debt jumped 75.48 percent from 2010 to 2018, while the export value only in 2010 to 2011 increased at about 24.88 percent, and then it is recorded decreased continuously until 2015. Unfortunately, it influenced to decrease Indonesian economic growth, from 6.22 percent in 2010 to be 5.17 percent in 1018. (BPS, 2019). For these reasons, it needs to done the research regarding the determinants of Indonesian human development index and Indonesian economic growth.

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2 Literature Reviews

2.1 Foreign Debt

The debt one government owes to a foreign government or corporation. Foreign debt may occur when one buys the debts securities issued by another government. While foreign debt can be advantageous because it may allow a country to finance its development or other government functions, a government owing too much foreign debt (or too much debt generally) may find itself beholden to another country. It is also called external debt or international debt.(Lawn 2003) Foreign debt is the result of domestic agencies or residents (public or private) contracting abroad short- or long-term loans that are payable in a foreign currency. (Encyclopidia.com, 2019). According to (Fosu 1996), (Panizza and Presbitero 2014) and (Ajayi and Oke 2012) that foreign debt has impact on the economic growth. Specifically, (Roland 2001) empirically examines the relationship between government foreign debt and the growth rate of per capita GDP and it was proved. In regarding on human development index, the countries with large foreign debts have difficulty maintaining the investment levels needed to keep their stock of human-made capital intact. They are often forced to liquidate natural capital stocks to repay debt (Lawn 2003)

2.2 Export

Export is the activity to sale the commercial goods to another country, or exporting entails the act of trading for entering in the international market. According to (Balassa 1978) that there is a the relationship between exports and economic growth, while (Kavoussi 1984) argued that the relationship between export expansion and economic growth is substantial in more advanced developing economies. Sepecificly, Fosu argued that export has a positive and significant impact on economic growth. (Fosu, 1990 The export has an effect on other aspect such as social development or human development index. It could be a positive impact or a negative impact, depend on the country condition. According to (Carmignani and Avom 2010) that for higher dependence on primary commodity exports is negative for social development. Other opinion is from (Didenko, Kunze et al. 2015) that the export of raw materials can significantly improve the development of social sector.

2.3 Human Development Index

The Human Development Index (HDI) is a statistical tool used to measure a country's overall achievement in its social and economic dimensions. The social and economic dimensions of a country are based on the health of people, their level of education attainment and their standard of living. Calculation of the index combines four major indicators: life expectancy for health, expected years of schooling, mean of years of schooling for education and Gross National Income per capita for standard of living. (Economic Times, 2019) Human development index is measured based on three essential aspects, such as a long and healthy life, knowledge, and decent standard of living. (BPS, 2019). One of the social aspect is human development index, because the human capital capacity could be measured by this index. There is a relationship between human development index and economic growth. Dewi and Sutrisna proved that the education index and index of purchasing power of society in a positive and significant impact on economic growth, while education is one of human development index. (Dewi and Sutrisna 2014)

2.4 Economic Growth

The economic growth is one of the indicator of the countries' economic welfare. Todaro and Stephen C Smith defined that economic growth as a long increamental ability for providing economic goods of the country for their people. (Todaro and Stephen C Smith , 2000). Sadono Sukirno stated that the rate of economic change in one period continously is the economic growth (Sadono Sukirno, 1992) Fixed investment such as in human capital investment can improve the economic growth (Stern 1991), and (Blomstrom, Lipsey et al. 1993). The human capital quality can be identified by human development index.

2.5 Hypothesis

There are several hypothesis already been built such as:

Hypothesis 1

H0 : α1= 0 -→ There is no effect between foreign debt and human development index

Ha : α1≠ 0 -→ There is an effect between foreign debt and human development index

Hypothesis 2

H0 : α2= 0 -→ There is no effect between export and human development index

Ha :α2 ≠ 0 -→ There is an effect between export and human development index

Hypothesis 3

H0 : α2= 0 -→ There is no effect between foreign debt and economic growth

Ha :α2 ≠ 0 -→ There is an effect between foreign debt and economic growth

Hypothesis 4

H0 : ∂1 == 0 -→ There is no effect between foreign debt and economic growth

Ha : ∂1 = ≠ 0 -→ There is an effect between foreign debt and economic growth

Hypothesis 5

H0 : ∂3 = 0 -→ There is no effect between human development index and economic growth

Ha : ∂3 ≠ 0 -→ There is an effect between human development index and economic growth

Hypothesis 6

H0 : ∂3 = 0 -→ There is no effect between foreign debt and economic growth from human development index

Ha : ∂3 ≠ 0 -→ There is an effect between foreign debt and economic growth from human development index

Hypothesis 7

H0 : ∂3 = 0 -→ There is no effect between export and economic growth from human development index

Ha : ∂3 ≠ 0 -→ There is an effect export and economic growth from human development index

3 METHODOLOGY

3.1 Research Road Map

The road map of this research could be done by path analyzing or by using the software of Smart Partial Least Square (PLS) with the steps as follows:

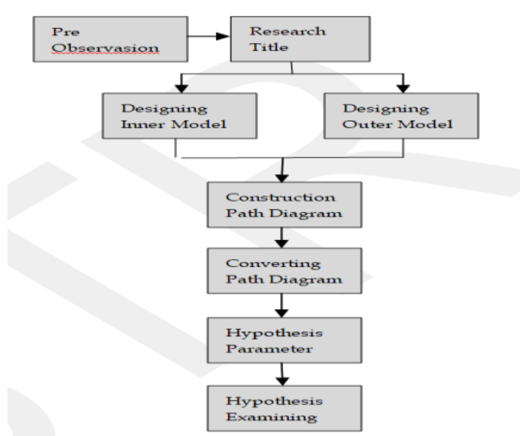

Chart 3.1 *Road Map Research*

From Chart 3.1, the first steps to be done is literature reviews and followed by deciding a research title. The next step is designing the structural equation model or inner model and the followed by designing the measurement model (outer model) but it is not necessary to be done, because this is a pure quantitative research. Construction a path diagram or research model is the the next step and then followed by converting a path diagram to regression formulation. Based on the model, hypothesis parameter needs to be designed and its hypothesis needs to be examined.

Designing Structural Model

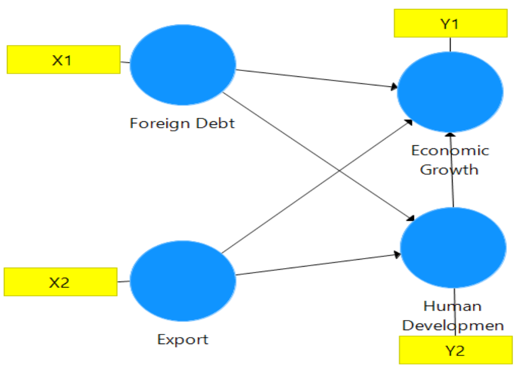

Chart 1 *: Research Model*

whereas:
$\alpha 1$ = direct influence X1 to Y1
$\alpha 2$ = direct influence X2 to Y1
$\partial 1$ = direct influence X1 to Y2
$\partial 2$ = direct influence X2 to Y2
$\partial 3$ = direct influence Y1 to Y2

Designing the measurement model (outer model) This is a pure quantitative research, so there is no designing the measurement model or outer model. Constructing Path Diagram For contructing the path diagram, the regression needs to be estimated by using PLS with the data as follow: This research is to analyze the influences between the independent variables and the dependent variables, so the formulation can be built as follows: Tjt Y1 = $\alpha 0 + \alpha 1X1 + \alpha 2X2 + \alpha 3X3 + \alpha 4X4 + €1$ ....(1b)

$Y1 = \alpha 1X1 + \alpha 2X2 + €1$ ....(1)
$Y2 = \partial 1X1 + \partial 2X2 + \partial 3Y1 + \mu$ ……………….. ....(2)

This formulation nedds to be modified to be
$Y1 = \alpha 1 \text{ Log } X1 + \alpha 2 \text{ Log } X2 + €1$ ....(1)
$Y2 = \partial 1 \text{ Log } X1 + \partial 2 \text{ Log } X2 + \partial 3 \text{ Log} Y1 + \mu$….........(2)

Whereas:
€1 = error term of Y1
$\mu 1$ = error term of Y2
X1 = Indonesian foreign debt
X2 = Indonesian export
Y1 = Indonesian human development index
Y2 = Indonesian economic growth

Hypothesis Parameter Hypothesis will be accepted can be decided by comparing P Value with 0.05 with the level of confidence 95 percent (alpha 0.05)
Since P Value <= 0.05 so H0 is rejected and Ha is accepted or the Hypothesis is accepted.

3 Result and Discussion

The research data can be mentioned as follow:

TABLE 1

DISPLAYING THE PROGRESS OF THE DETERMINANT OF ECONOMIC GROWTH, 2010 - 2018

Year	*Foreign Debt (billion USD)*	*Exportr (million USD)*	*Human Development Indext*	*Economic Growth*
2010	*202,413*	*129.739,5*	*66,53*	*6,22*
2011	*225,375*	*162.019,6*	*67,09*	*6,17*
2012	*252,364*	*153.042,8*	*67,70*	*6,03*
2013	*266,109*	*149.918,8*	*68,31*	*5,56*
2014	*293,328*	*145.961,2*	*68,90*	*5,01*
2015	*310,730*	*131.791,9*	*69,55*	*4,88*
2016	*320,006*	*132.080,8*	*70,18*	*5,03*
2017	*352,247*	*153.083,9*	*70,81*	*5,07*
2018	*355,190*	*162.840,9*	*71,39*	*5,17*

Source : BPS, 2019
Based on Tabel 1, it is indicated that foreign debt increase radically, export is in fluctuating, but it tends to decrease, human development index is slightly increase, and economic growth is decrease continuously.

3.1 Results

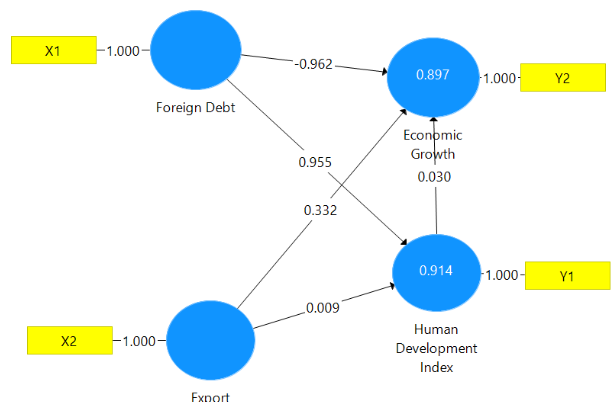

Chart 2 *: Model Estimating Result*

The estimating result using Partial Least Square software as follows:

TABLE 2

Estimating Result using SmartPLS

	original sample estimate	*T-T-T Statistic*	*P Value*
Export -> Economic Growth	*0.332*	*0.667*	*0.507*
Export -> Human Development Index	*0.009*	*0.029*	*0.977*
Foreign Debt -> Econmic Growth	*-0.962*	*0.365*	*0.365*
Foreign Debt -> Human Development Index	*0.955*	*3.465*	*0.001*
Human Development Index -> Econimic Growth	*0.030*	*0.031*	*0.975*
Foreign Debt -> Human Development Index -> Economic Growth	*0.000*	*0.001*	*0.999*
Exportt -> Human Development Index -> Economic Growth	*0.028*	*0.030*	*0.977*

Source : BPS 2019, processed
From the Table 1, the formulation results of path analysis can be mentioned as below:
$Y1 = 0.955X1 + 0.009X2$
$Y2 = - 0.962X1 + 0.332X2 + 0.030Y1$

$\alpha 1$ = 0.955, it means that when the foreign debt (in billion USD) increases 1 unit, the human development index will increase 0.955 unit

$\alpha 2$ = 0.009, it means that when export (in million USD) increases 1 unit (in million), human development index will increase 0.009 unit

$\partial 1$ = - 0.962, it means that when foreign debt (in billion USD) increases 1 unit, economic growth will decrease 0.962

$\partial 2$ = 0.955, it means that when human development index increases 1 unit, economic growth will increase 0.955 unit.

3.1.1 Examining the Hypothesis
Examinig Hypothesis 1
P Value = 0.001 less then 0.05 and it means
H0 is rejected and Ha is accepted or
There is a significantly effect between foreign debt and human development index

Examinig Hypothesis 2
P Value = 0.977 greater then 0.05 and it means
H0 is accepted and Ha is rejected or
There is no effect signifcicantly between export and human development index

Examinig Hypothesis 3
P Value = 0.365 greater then 0.05 and it means
H0 is accepted and Ha is rejected or
There is no effect signifcicantly between foreign debt and economic growth

Examinig Hypothesis 4
P Value = 0.507 greater then 0.05 and it means
H0 is accepted and Ha is rejected or
There is no effect signifcicantly between export and economic growth

Examinig Hypothesis 5
P Value = 0.975 greater then 0.05 and it means
H0 is accepted and Ha is rejected or
There is no effect signifcicantly between human development index and economic growth

Examinig Hypothesis 6
P Value = 0.999 greater then 0.05 and it means
H0 is accepted and Ha is rejected or
There is no effect signifcicantly between foreign debt and economic growth from human development indext

Examinig Hypothesis 5
P Value = 0.977 greater then 0.05 and it means
H0 is accepted and Ha is rejected or
There is no effect signifcicantly between export and economic growth from human development index

3.2 Discussion
Based on the analysis, it can be discussed that the exogenous variables effected the endogenous variables because of several reasons. It could be argued based on the country's economic condition (internal factors) or world economic condition (external factors). It is examined that foreign debt has a significantly positive effect on human development index. It is reasonable, because Indonesian government has allocated at least 20 percent for education and health from the total Indonesian budget, while according to Economic Times (2019) that human development index is developed from several factors such as life expectancy for health, expected years of schooling, mean of years of schooling for education and Gross National Income per capita for standard of living. It is Indonesian government commitment and it is already implemented by education and health policy that the main priority of development are education and health fields. It reasonable the allocation of Indonesian budget dominated by education and health fields, even though it is from the foreign debt. The most education and health allocation budget for education and health facilities and infrastructures which supported from Indonesian foreign debt. The effect is significant because of province governments and local governments should implement 20 percent for education and health every year. It is supported by Didenko Kunze et al that the export of raw materials can significantly improve the development of social sector, while HDI is one of social sector. (Didenko, Kunze et al. 2015) It is already proved that Indonesian export has a positive effect, but it is not significant on Indonesia human development index. It is reasonable, because when the export increases both from government or private company, the Indonesian incomes from the export taxes are increase. The incremental of government income will be allocated improving Indonesian human development index such as for education and health facilities. This matter is supported by Fosu which argued that export has a positive and significant impact on economic growth. (Fosu, 1990) This effect is not significant because export taxes have a small contribution for Indonesian income. It is expected that the foreign debt impacts on economic condition especially national income and economic growth. Unfortunately, in Indonesia foreign debt leads to economic growth decreases. It is examined that Indonesian foreign debt has a negative effect but it is not significant on economic growth. The first reason is Indonesia foreign debt is allocated on none productive sectors in the short term such as infrastructure which has payback periods more 20 years or in a long term, while the annuity and interest should be paid each year. That is the caused why it reduces the economic growth rate in Indonesia. The second reason Indonesia foreign is already over limit. It is recorded that Indonesia Debt Service Ratio (DSR) more then 30 percent, while the safe rate of DSR is less then 30 percent. Since the DSR more than 30 percent, most of national income for paying the annuity and interest, so the real sector tends lack of capital. The negative effect of foreign debt on economic is not significant, because the foreign debt policy followed by other specific value such us empowerment policy for small and middle business in Indonesia, clustering potential exports, and potential industry revitalization, and deregulation economy package policy. It is supported by (Fosu 1996), (Panizza and Presbitero 2014) and (Ajayi and Oke 2012) that foreign debt

has impact on the economic growth. It is also expected the value of export improves the economic growth and it is examined that export has a positive effect but it is not significant on economic growth. It makes sense, because when the value of export is increase, the companies will enlargement their production capacity. For this reason they need more labor, they need more production facilities, and more experts. It pushes the increasing of people income and it could increase the economic growth itself. It is supported by Fosu (1990) examined that export has a positive and impact on economic growth. The export positive effect on economic growth, but is is not significant because Indonesian economic foundation is not appropriate condition which indicates by a high rate of inflation, a high rate of unemployment, and a high rate of foreign debt. The quality of human capital can be indicated by the rate of human development index (HDI), while HDI could influence the quality of economic development, especially economic growth. Since the HDI is in a high rate, it means human capital as a practical person economic development has a good quality, the production productivity is in an appropriate rate, and the production is efficient. All of them will increase the national income and they push the economic growth. It is supported by Dewi and Sutrisna who proved that the education index and index of purchasing power of society in a positive and significant impact on economic growth, while education is one of human development index. (Dewi and Sutrisna 2014). The HDI has a positive effect but it is not significant on economic growth because the fundamental of economic is still unstable condition, inflation rate is still high, rupiah exchange rate in unstable condition, foreign debt is in unsafe condition and unemployment rate is still high. The government still fail in recovering economic condition. Regarding to the indirect effect, it is examined that there is no significantly affect between foreign debt or export on economic growth from human development index. It is reasonable, most of the foreign debt or export value been allocated on infrastructures or on long term investment, while human development needs to be increased each year or short term needs.

4 Conclusion

Based on analysis, result and discussion, it can be conluded that only Indonesian foreign debt has a positive effect significantly, while export has a negative effect but not significant on human development index. The foreign debt has a negative effect but not significant and export has a positive effect on Indonesian economic growth. The human development index has a positive effect but not significant on Indonesian economic growth. It is also proved that all of indirect effects of foreign debt and foreign debt and export have effects but not significant.

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