Analysis of the Association of Foreign Debt with Macro Economic Variables and View of Islamic Economy: Study of the Indonesian State Budget Period 1968-2018 Using Vector Autoregression (VAR) Method and Tawhidi String Relation (TSR)

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Abstract

This study aims to look at the state budget deficit and the effect of foreign debt on macroeconomic variables. These variables are economic growth, domestic savings, investment, exports, labor force growth and Indonesia's GDP. Zakat is used for the possibility of being used as a funding source to cover existing budget deficits. This study also looks at the interrelationship (causality) of the influence of foreign debt with macroeconomic variables as above. The methods used are Vector Autoregressive (VAR) and Tawhidi String Relations (TSR). These methods are used simultaneously, namely applying the VAR method to TSR. Also proposed is the variable zakat as the financing for the budget deficit that occurs. That the budget deficit was caused by an imbalance between the state's sources of income and government expenditure. To find that this government deficit is refinanced by adding new debt, both foreign debt and domestic debt. Resulting, that the existing debt becomes burdens the State in the installment process, both principal and interest. Another finding from this study all variables studied have a causal relationship with each other. Only 8 variables related to one direction are economic growth and debt, FDI with saving. Then exports with debt, debt and labor force, saving and also GDP per capita and debt and labor force also saving. When these findings were applied to the TSR method, the results showed better results and conditions. This study also found that the variable zakat as an Islamic economic variable can and able to cover the budget deficit that occurs in the APBN, as seen from the large potential of existing zakat which is Rp. 217 trillion per year. But if this zakat is applied to APBN, it must be channeled to a minimum of 4 categories who are eligible as recipients of zakat according to Islamic law. The implication of this finding is that the government pays attention to variables that affect other variables and also the nature of causality. Meanwhile, zakat can be managed more professionally because it has greater potential at least to be used as an alleviation of poverty and poverty as two becomes variables of zakat recipients that can be submitted to APBN revenues

Keywords: deficit, budget, foreign debt, economic growth, saving, investment, GDP per capita, unemployment rate, exports, zakat. VAR and TSR.

1.1. Introduction

The structure of the state budget has two important sides, namely the income or revenue which is usually obtained from taxes collected by the state or from other revenues outside of taxes. The other side is government spending that is used by the state to finance all state activities. If state expenditure is greater than revenue, the state budget will experience a deficit (a budget deficit). The state budget deficit - which has been embraced by Indonesia - usually financed by both domestic and foreign debt, this happens because of inability and lack of income from taxes as a supplier factor of the costs needed by the state and inadequate income from other sources. Arief and Sasono (1987), Basri (2004), Soelistianingsih (2012; 2003) and Simandjuntak and Panjaitan (2007).

The budget deficit is financed by debt, specifically foreign debt so that it does not have a good impact on economic growth, domestic savings rates and the level of investment. Empirical studies conducted by Weisskoff (1972), Papanek (1983), Hojman (1986), van Wijnbergen (1989) and Adam and Bevan (2005) prove this.

In the era of the Soekarno government (old order - Orla) these functions did not work optimally, marked by budget deficit policies (deficit budget) that triggered high inflation in 1965 reached 650% per year Suparmoko (1984). Aware of the weakness of the budget system above, so since the beginning of the New Order (New Order) the Soeharto government overhauled the system and during the New Order always applied a balanced budget system which was the embodiment of the balance between the amount of revenue on the other side including financing for routine expenses and expenditures. Unfortunately to maintain this balance, the government consciously choose foreign debt funding systems, both bilateral and multilateral, which later gave birth to the IGGI consortium and turned into CGI. Although there is another line of financing systems that can be taken. But later due to the weakness of the debt management system, Indonesia was unwittingly in the debt trap and it has not shown signs of ending, even then with a pattern of foreign debt that widens national economic disparity.

In the Islamic perspective the debt can be categorized in al-Mal al-Hukmi: "Something that is owned by the lender, while the property is in the person who owes it." So that the country's debt belongs to the people and is used for

people's needs, in addition, debt (al-Dayn) also means providing loans. Al Dayn requires a certain period of debt repayment, this distinguishes from al-Qardh which does not require a certain period of time to repay the debt. Dayn is more common than qardh. Dayn actually also includes qardh. Each qardh is dayn, but not every dayn is qardh (Az-Zain, 1995). In terminology debt is a sum of money that can be valued with money received from other parties based on an agreement with the obligation to repay or pay off. As for accounts payable (al-Qardl) is giving something to someone by agreement he will pay the same as that ..

Besides that, in the Quran we can also see the word of God in QS. al-Hadid (57):11; also in Shahih Buchari (HR.Al-Bukhari, 2/83) also (Narrated by Al-Bukhari, 1/2 14), "*All the sins of the martyr will be forgiven, except for debt*." (Narrated by Muslim)

Government debt is not something that is prohibited as long as it can be used for productive things so that the interest and installments can be paid through revenue obtained from an economic activity financed by the debt. But in reality, this debt often cannot be fully utilized because of a significant leak (Parkins 2004 and 2017).

At least there are two schools of thought regarding government debt in influencing the country's economy (Mankiw, 2017). The first is the traditional view of government debt that will drain national savings and create an effect - crowding out - on capital accumulation. This view is believed to be the view of most world economists. The second view is an alternative view that sees Ricardian Equivalence which believes that government debt does not affect national savings and capital accumulation. This view is shared by a small number of economists but influential.

1.2. Potential of Zakat

The potential of zakat funds in Indonesia is like a sleeping giant for at least two reasons. Gazali (2010). First because there are many Muslim populations in Indonesia who, according to the 2013 Central Bureau of Statistics (BPS), account for 85% of the total population, which means more than 195 million people. Second because of the increasing number of middle class transformations through vertical integration because the country's economy is getting better so that their numbers are dragged into a number that is also increasing. Their number is not less than 20% of the total population of Indonesia or equal to 46 million people. (BPS, 2013).

Another study conducted by the Center for the Study of Religion and Culture (CSRS) of UIN Syarief Hidayatullah Jakarta and the Ford Foundation, estimated that the number of ZIS funds each year was 217 trillion rupiahs. (Kurniawati, 2004).

2. Literature Review
2.1. Budget Deficits and Causes

Since the birth of the New Order government (Order), it has determined some policies of the state budget with the aim of maintaining economic stability, growth and development in Salim, (1971). Theoretically there are several causes of the Budget Deficit, Barro (1989), namely: First, government efforts to accelerate the process of economic growth and accelerate development so that large investments and large funds are needed. So that if domestic funds are insufficient, countries usually make choices by borrowing foreign funds abroad or domestic loans. Secondly, the government seeks to make public income evenly distributed where extra expenditure and relatively greater costs are needed for equitable distribution of income. Third, the value of a country's currency depreciates so that it weakens against the major currency (hard currency). Fourth, large government spending to overcome the economic crisis. Fifth, the realization of the budget - especially the revenue side - deviates from the plan. Sixth, large expenditures due to the high inflation rate are beyond estimates.

For this reason, in the New Order era, several actions taken by the New Order government related to the budget can be seen in Both and McCawley, (1981) and Abimayu and Megantara (2002). First, the budget is maintained so that it is balanced between income and expenditure.

2.2. Sources of Revenue in the Budget

The government is trying to increase its revenues, both domestic revenues and other development receipts. In this revenue aspect, the government always includes foreign loans in the revenue side, which is actually a reflection of the deficit suffered by the government and must be financed from loans. So that the structure of a balanced budget is more accurately called the budget deficit structure which was later revised by the Habibie government, Abdurrahman Wahid and finally Megawati (Arief and Sasono, 1987, Arief, 1998; Tarmidi and Wijaya, 2000 and 2001; Pangestu and Goeltom, 2001 and Siregar, 2001).

2.3.1. Budget Deficit and "Barro-Ricardian Equivalence"

There is three economics of though groups who differ in their views on the impact of the budget deficit on the country's economy, namely Ricardian, Neoclassical (Neo Classical), and Keynesian. The Ricardian group with its theory Ricardian Equivalence (RE) argues that the budget deficit will have no effect on the economy of a country. This concept,

known as the Ricardian Equivalence Hypothesis (REH), later became an interesting debate in the academic world. This theory originated from David Ricardo's Funding System and was reiterated by Barro (1974) so that it was often named the Ricardo-Barro Preposition. This preposition is based on the assumptions that are built, namely: intergenerational altruism or immortality, perfect capital markets, lump sum taxation, and the condition that the level of debt is not higher than economic growth. The core of the preposition is financing the government budget deficit and government debt with a neutral impact on economic activity. REH proposed the hypothesis that some government policies would not have an important impact on the economy (neutrality preposition). REH combines two fundamental approaches, namely the government budget constraints and the Permanent Income Hypothesis (PIH) initiated by Milton Friedman.

REH argues that changes in tax and financing budget deficits have the same impact on macro variables (especially private consumption). REH is built on the premise that the issuance of state bonds at this time is always accompanied by plans for tax increases in the future. Government debt financing is assumed to only undergo changes in accordance with changes in taxation so that aggregate consumption will remain. Within the framework of the REH the individual assumes that future taxes are equal to the size of the government's debt burden (Barro, 1989).

The REH model is described as follows. Suppose that each individual is faced with a capital market that is in perfect competition. They want to maximize the utility function so that the equation becomes

$$U(t) = \sum_{t=0}^{\infty} u(C_{t+i})\delta i \tag{2.1}$$

with budget constraint:

$$\sum_{i=0}^{\infty} Y_{t+i} R^i = \sum_{i=0}^{\infty} C_{t+i}R^i \tag{2.2}$$

Where U is an intertemporal utility function (between times), u is an intratemporal utility function (in the same time), C is consumption, Y is total income, δ is a time preference factor of $1/(1+\rho)$ where ρ is the time preference level and R is the discount factor $1/(1+r)$ where r is the real interest rate (which is assumed to be constant). The above model can be enriched again by dividing income into human components so that the wage rate will vary over time.

Maximizing each individual's problem with the increase in income can be described with Langrage

$$L = U(t) + \lambda(\sum_{i=0}^{\infty} Y_{t+i}R^i - \sum_{i=0}^{\infty} C_{t+i}R^i) \tag{2.3}$$

And increase it to C, where λ is the Langrage product. The first derivative condition (with Euler's equation) is

$$u'(C_{t+i}) = (\delta/R)i\lambda \tag{2.4}$$

Where consumption can be issued as a function of λ and r; especially when C rises and increases, or remains or decreases every time where λ is less than, or equal to or greater than r.

Suppose there is no government debt then G (government purchases) is equal to T (tax revenue) for each period. Also happens if the tax is a lump sum, then the amount of the tax will vary every time. So that the situation will make each individual budget constraint like the following equation

$$\sum_{i=0}^{\infty} (Y_{t+i} - T_{t+i})R^i = \sum_{i=0}^{\infty} R^i C_{t+i} \tag{2.5}$$

By replacing (2.2) and (2.5), the equation below will be obtained

$$u'(C_{t+i}) = (\delta/R)i\lambda \tag{2.6}$$

The same as (2.4).

2.3.2. Neoclassical

The second group is the neoclassical group which believes that each individual has sufficient information, so that they can plan their level of consumption throughout their lives. The budget deficit will increase consumption levels over time because the budget deficit will also increase consumption patterns in the long run by taxing the next generation. If all resources can be fully used, then an increase in consumption will reduce the level of savings and interest rates will increase. An increase in interest rates will then drive down demand for private investment. From this situation, the Neoclassicals concluded that under conditions of full employment, a permanent budget deficit would cause crowding-out effects. So that in general Neoclassicals argue that the budget deficit will be detrimental to the economy.

2.3.3 Keynesian

While the third group, the Keynesians, argues that the budget deficit affects the economy with the assumption that economic actors have a short-term view (myopic), relations between generations are not tight, and not all markets are always in a position of balance. One imbalance occurs in the labor market, and unemployment is always in the economy. According to the Keynesians, the budget deficit will increase income and welfare, and consumption in the next turn.

The debt-financed budget deficit means that the tax burden in the present is relatively lighter, causing an increase in income that is ready to spend which will then trigger consumption increases and the demand side as a whole. If the economy is not yet in full employment conditions, an increase in the demand side will encourage production which further increases national income. In the following period, an increase in national income would drive the economy through the effects of the Keynesian multiplier. Because the budget deficit increases consumption and income levels at once, the level of savings and capital accumulation also increases. So according to the Keynesians as a whole, short-term budget deficits will benefit the economy.

2.4. Budget Deficit and "Crowding Out Effect"

In the expansion of the Keynesian model, it was discussed that the magnitude of the multiplier would decrease due to crowding out. This impact occurs when government expenditure (demand) acts as a substitute for private expenditure. However, the impact of the crowding out was not to make the multiplier change marks. The impact of crowding out comes from decreasing investment and appreciating currency values, as a result of rising interest rates due to fiscal stimulus. Thus, the magnitude of the decrease in multiplier effects depends on the following:

First, the sensitivity of investment to interest rates. That is, the increase in investment sensitivity to the interest rate will increase the reduction in the multiplier coefficient. But if the investment is a positive function of income, the multiplier number is not affected. Second, the relationship between money demand in relation to interest and income. Related to this second factor, the greater the influence of the interest rate on demand for cash, the greater the impact on multipliers, but the increase in income. The three levels of economic openness and exchange rate system are used. Economic openness raises demand substitution opportunities, from domestic to import, which causes a smaller impact of expected fiscal policy. Thus, the flexible exchange rate system used can increase the impact of crowding out, which consequently is the decrease in the effectiveness of fiscal stimulus. Also in subsequent developments, the factor of price flexibility is said to have a negative effect on the magnitude of the multiplier.

Another factor that also affects crowding out is the rational expectation. If the fiscal stimulus policy is taken permanently, it will raise hopes of an increase in interest rates and a stronger exchange rate. Therefore the fiscal stimulus policy becomes less effective because it has a considerable crowding out impact on the economic system, so that the multiplication rate becomes smaller and can even be negative. In addition to the above factors, according to the Ricardian Equivalance view, fiscal policy does not affect permanent income and consumption patterns of the people. This happened because of the mindset of the people who argued that the increase in income from the fiscal stimulus policy would definitely be followed by a tax increase in the future. With the Mundell-Fleming argument model, fiscal stimulus policies will not be effective in open economy countries and have a floating exchange rate system because crowding out will occur through exchange rates which ultimately affect net exports.

So that in order for effective fiscal policy to be seen, the existing conditions and systems, as well as how other policies respond to fiscal policy. Because generally fiscal multipliers will tend to be positive and may also be large if, the following factors exist Dornbusch, Fisher and Startz (2008): First, there is excess capacity in an open or closed economy with a fixed exchange rate system. On the other hand households have limited time horizons or liquidity constraints.

Second, the increase in government expenditure is not a substitute for private expenditure if it can increase the productivity of labor and capital. Also lower taxes, thus increasing labor and / or investment offers. The third factor is, low government debt and at the same time the government does not have problems in the financing process. The fourth factor is monetary expansion with a controlled increase in inflation. Meanwhile, fiscal multipliers may be small and may even be negative if the following factors also exist, Dornbusch, Fisher and Startz (2008): First, there is the effect of crowding out because government spending is a substitute for private spending and an increase in imports, interest rate increases and exchange rate appreciation due to fiscal expansion. Second, the Ricardian Equivalance proposition applies if there are no obstacles financing (borrowing constraints), a decrease in taxes currently does not have an impact on consumption, maybe even can reduce consumption. Third, the existence of debt sustainability constraints and interest rate risk premiums, so that credible fiscal contraction can reduce interest rate premiums. Expansive fiscal policy increases uncertainty, thus encouraging economic actors to be careful in making savings and investment decisions. Fourth, fiscal policy, according to the Moneterist, will lead to what is called "Crowding Out". That is, an increase in government spending will push the interest rate to rise, so it will strangle private investment, as a result aggregate demand does not change, because the increase in government spending is offset by a decline in private investment. Dornbusch, Fisher and Startz (2008).

The crowding out mathematical model can be described as follows using the model (Blinder and Solow, 2003) whose composition is like the following equation:

(Goods market equilibrium)	$Y \equiv NNP = C + I + G$	(2.7)
(Consumption Function)	$C = C(Y - T, W)$	(2.8)
(Net Investment Function)	$I = I(r)$	(2.9)
(Tax Function)	$T = T(Y)$	(2.10)
(Demand for real balance)	$Md / P = L(r, Y, W)$	(2.11)
(Exogenous money supply)	$Ms = M$	(2.12)
(Money Market Equlibrium)	$Ms = Md$	(2.13)
(Wealth - Welfare)	$W = K + M / P + V(r) / P$	(2.14)

$V(r)$ here is the nominal market value of bonds that are supplied by the government. Which is often exchanged with government deficits, so it becomes

$$P[G – T(Y)] = \dot{B} + \dot{M} \qquad (2.15')$$

Where B is the number of bonds. If it is assumed that each bond is paid \$ 1 each year, then the interest payment rate will be B so that the market value of the bond will be B / r. Thus the government budget can be written like the following equation

$$P[G + B – T] = \dot{B}/r + \dot{M} \qquad (2.15)$$

The two processes in this model that need to be considered are first, the definition of wealth, namely B / r for V (r). Second, consumption variables and taxes depend on personal income, which includes interest paid and benefits of the State; thus (2 ') and (4') become

$C = C(Y + B - T, W)$ on equation (2.8) becomes $T = T(Y + B)$ in equation (2.10).

So the first model discussed consists of equations (2.7) - (2.15) because the price level for all equations is fixed. But if the price level is made P = 1 then the nine equations above will be reduced to just three equations, namely

$$Y = C[Y + B - T(Y + B), M + B/r + K] + I(r) + G \qquad (2.16)$$
$$M = L(r, Y, M + B/r + K) \qquad (2.17)$$
$$\dot{M} + (B/r)\dot{} = G + B - T(Y + B) \qquad (2.18)$$

Equations (2.16) and (2.17) are static IS and LM equations while equation (2.18) is an equilibrium model whose money and bond stock changes.

2.5. Aspects of Government Expenditures

There are several expenditure indicators that can be used as a reference in seeing this. A simple indicator is the elasticity of expenditure growth towards GDP. For 1969/70 until 1977/78 development expenditure was faster than routine expenditure, wage and salary posts. The growth elasticity of development spending on GDP - excluding foreign aid - is 1.4 while the elasticity of routine expenditure on GDP is 1.13 and development spending by sector (including foreign aid) is 1.54. The elasticity of each expenditure group in the development expenditure category with each other shows a big difference, where the development expenditure group managed directly by other central government departments and agencies grows at a rate that does not exceed the GDP growth rate. While the development funds provided to local governments have an elasticity of GDP of 1.7 and "other" expenditure items - especially fertilizer subsidies and government capital participation in state enterprises - show an elasticity of 2.2. So if it is broken down by sector, then expenditures for the industrial and mining sectors, electricity and social services, health, family planning, education are growing faster than those for infrastructure in the agriculture and transportation sectors, Alesina A. and S. Ardagna (2010) , Alesina A., C. Favero and F. Giavazzi (2012).

Other empirical evidence by Roubini and Sachs (1989) shows that during the budget deficit, the budget for capital expenditure is the first time to be cut and reduced. Another study by the World Bank (1988, 1994) for countries in Africa also shows the same thing, namely when reducing the deficit budget must cut spending on capital goods. Likewise for OECD countries De Haan et.al. (1996).

2.6. Foreign Debt and Economic Growth

Literature surveys related to foreign debt that are quite comprehensive can be seen in the writings of Basri (2003). From the viewpoint of donor countries there are two important things that motivate the flow of aid to debtor

countries, namely political motivation and economic motivation, both of which are interrelated. The first motivation then became a reference for the United States (US) to disburse aid funds in reconstructing the economy of Western Europe after being destroyed during World War II namely the Marshall Plan (Todaro, 1985). This success was used in the process of economic development in various other parts of the world, South Asia, Southeast Asia, Latin America and even to touch Africa and Central America. While economic motivation as the second foundation used in providing assistance, is reflected in important arguments (Todaro, 2013):

First, is foreign exchange constraints. This argument is based on a two gap model in which recipient countries, particularly developing countries, experience shortages in accumulating domestic saving, so that the existing savings rate is unable to meet the need for the level of investment needed in the process of triggering economic growth. And on the other hand is the shortage experienced by the country concerned in meeting the needs of foreign exchange (foreign exchange) to finance the needs of imports of capital goods (capital goods) and the import of intermediate goods (intermediate good). Thus to cover these two deficiencies, the mainstay is foreign aid. Mathematically a summary of the two gap models can be written as follows:

$$I \delta F + sY \tag{2.19}$$

Where, I is the level of investment, F is the temporary capital inflow s and Y each is the level of savings and national income. A new saving gap exists if $F + sY \varepsilon I$ where the economy is at full capacity. Whereas for foreign exchange constraints occur if a country has marginal import m1 and marginal propensity to import is m2, then the foreign exchange constraint is:

$$m1I + m2Y - E \delta F \tag{2.20}$$

where E is the exogeneous level of exports.

Another way the issue of debt and foreign aid can also be approached by using the national income identity equation.

$$Y = C + I + G + CA \tag{2.21}$$
$$CA = RB - Tr - rD \tag{2.22}$$
$$Y = C + S + T \tag{2.23}$$

Where Y is gross national income; C = consumption; I = investment; RB = export and import of goods plus net services (resource balance); Tr = services of factors of production excluding capital; rD = interest payments on foreign loans; S = savings; and T = tax, while G and CA are government and current account, respectively.

The combination of equations (2.21) and (2.22) will be obtained by the following equation:

$$- CA = - RB + Tr + rD \tag{2.24}$$

The current account deficit in the context of Balance of Payment (BOP) is always closed by the inclusion of private capital (DI) and additional or increases in net government loans (⊗D). Both of these variables are included in the capital estimation post, so equation (2.24) becomes:

$$- CA = -RB + Tr + rD = DI + ⊗D - CF \tag{2.25}$$

but there are pressing posts, namely short-term capital movements (short term of capital, STC) and error and omission or "incremental differences (EO). These two posts are often used as proxies as capital flight (capital flight, CF). Thus the balance of payments equation can be formulated as follows:

$$- RB = DI + (⊗D - rD) - Tr - CF \tag{2.26}$$
$$\text{or} \qquad (⊗D - rD) = - RB - DI + Tr + CF \tag{2.27}$$

Equations (2.26) and (2.27) show the relationship between net foreign loan transfers (⊗D - rD), the difference between exports and imports of goods plus non-factor services, private capital income, transfers, and capital flight.

Second, is growth and savings, namely to facilitate and accelerate the development process by increasing domestic savings as a result of higher growth rates. Because the high growth in developing countries will positively correlate to the increase in profits that can be enjoyed in developed countries Cooper (1995). Third, is technical assistance, which is a companion of financial assistance in the form of high-level human resource transfers to recipient countries. This is done to ensure that the inflow of funds can be used efficiently in the process of triggering economic growth. The last is the absorptive capacity, in the form of what funds will be used. There is one more thing to keep in mind that driving factors and pull factors (push and pull factors) are the two key words that determine the occurrence of capital movement to developing countries, Taylor and Sarno (1997).

2.7.1. Neo Classic- Solow Growth Model (Solow Growth Model)

There are two periods where studies of growth theory were intensively carried out, namely in the 1950s and early 1960s as the first period pioneered by Solow (1956). The second period, 30 years later, was in the late 1980s and

early 1990s. Neo-classical growth theory focuses on capital accumulation and its relationship to savings and so on, while the second period is known as endogenous growth theory.

The neoclassical growth theory begins with simple assumptions that assume no technological development. So that the economy reaches an established level of output and long-term capital or is called the steady-state equilibrium, this condition is where there is no longer a per capita economic variable that changes both the combination of GDP per capita $\Delta y = 0$ and capital per capita $\Delta k = 0$ which is a stable condition.

Solow (1956) designed a growth model that showed how the growth of the capital stock, labor force and technological progress interacted in the economy. He also saw how all of these factors affect the output of goods and services in a country as a whole. The supply of Solow model goods is based on the Cobb-Douglass production function which states output depends on the capital stock and the labor force

$$FY = F (K, L) \tag{2.28}$$

Assuming that the production function has a constant return to scale, this assumption is realistic and makes analysis easier. The production function has a constant scale of returns if,

$$zY = F (zK, zL) \tag{2.29}$$

with positive z. If multiplying capital, labor with z and also put out with z. The production function with a scale of constant returns allows us to analyze all variables in the economy compared to the number of the labor force. So if $z = 1 / L$ then the equation above becomes,

$$Y / L = F (K / L, 1) \tag{2.30}$$

This equation shows that the number of outputs per worker Y / L is a function of the amount of capital per K / L worker, while number 1 is constant and can be eliminated. The assumption of a constant scale of returns indicates that the size of the economy does not affect the relationship between output and capital per worker.

Because the size of the economy is not a problem, all variables can be expressed in terms of per worker with lowercase letters. So that $y = Y / L$ is output per worker and $k = K / L$ capital per worker. So the function can be written as follows,

$$y = f (k), \tag{2.31}$$

where $f (k) = F (k, 1)$.

The economy is in a steady-state condition when income and capital per capita are constant as explained, so $y *$ and $k *$ are the values where the investment needed to provide capital for new workers and replace outdated machines is the same as the savings rate produced by the economy. If savings are greater than the investment needed, capital per labor will increase as well as output. If savings are less than the investment needed, capital and output per labor will decrease. Steady-state values $y *$ and $k *$ are output values and capital where the required savings and investments are balanced.

2.7.2. Endogenous Growth Model

The second part of growth theory is the endogenous growth theory or also called the new growth theory. He emerged because the performance of the neoclassical growth theory was deemed inadequate and satisfying in explaining the source of long-term economic growth. According to this theory there are no intrinsic characteristics of the economy that can cause it to grow in the long run. Instead the discussion is directed at a dynamic process that makes the ratio of capital-labor to near the point of long-run equilibrium. The economy will move to a zero growth point because there are no external surprises or technological changes so that the increase in GNI per capita is a momentary phenomenon caused by technological changes or short-term balancing processes when an economy approaches its long-run equilibrium. Blanchard and Fisher (1989) also Barro and Sala - i - Martin (2003), Lucas (2015) and Romer (2015).

Any increase in GNI that is not related to short-term adjustments to the supply of labor or capital, is seen as coming from the third category referred to as Solow (Solow residual) residues. This residue contributes around 50% of the economic growth of industrialized countries. The neoclassical growth theory views the magnitude of economic growth due to the process of advancing technology that is exogenous or independent, although intuitively this is possible. But this approach is considered to have two important weaknesses. First, by using a neoclassical framework, we cannot analyze the determinants of technological progress because they are totally free from the decisions of economic agents. Both of these theories cannot explain the large difference in residues in all countries that have similar technologies. Todaro and Smith (2011).

The low ratio of capital and labor in developing countries according to neoclassical growth theory will lead to very high returns on investment. In fact, despite the liberalization of domestic trade and markets, many developing countries have only experienced low growth or not at all. They failed to attract new foreign investment and also failed to stop the flight of domestic capital. It is this anomaly which then encourages the development of the concept of endogenous growth theory or also called the new growth theory. Romer (1986) and Helpman (1992).

The most interesting aspect of endogenous growth is the ability of this model to help explain the anomalies that occur in the flow of international capital which then allegedly exacerbates the wealth gap between developed countries

and developing countries. The high potential return on investment in developing countries that have a low capital-output ratio will decrease rapidly because there are complementary investments in human capital (education), infrastructure and lower research and development. Romer (1986), Lucas (1988) and Barro (1990).

2.7.3. Endogenous Growth Model - Romer

To describe endogenous growth models, the Romer model that is often used as a reference is called the endogenous growth model in detail. This model starts with the assumption that the growth process begins at the level of the company or industry that produces constant returns to scale. The Romer model assumes that the capital stock $\bar{K}$ in an economy positively influences output at the industry level, thus allowing the scale of output to increase at the level of the economy at large. The share of knowledge in the company's capital stock is basically public goods, such as A in the Solow model, which benefits various other companies in the economy.

In the following explanation with an example of the household sector, the equation is,

$$Y_i = AK_i^{\propto}L_i^{1-\propto}\underline{K}^{\beta} \tag{2.32}$$

It is assumed that all industries are symmetrical so that they operate at the same level of capital and labor. So the aggregate production function is as follows

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It is assumed that all industries are symmetrical so that they operate at the same level of capital and labor. So the aggregate production function is as follows

$$Y = AK^{\propto+\beta}L^{1-\propto} \tag{2.33}$$

In order for endogenous growth to stand out it is assumed that A is constant rather than increasing over time meaning that there is no progress in technology. So that the chain rule is obtained,

$$\dot{Y} = \frac{dY}{dt} = \frac{\partial Y}{\partial K}\frac{\partial K}{\partial t} + \frac{\partial Y}{\partial L}\frac{\partial L}{\partial t} \tag{2.34}$$

Based on the rules of this component we know that,

$$\frac{\partial Y}{\partial K} = A\,(\alpha + \beta)\,K^{\propto+\beta-1}L^{1-\propto} \tag{2.35}$$

$$\frac{\partial Y}{\partial L} = AK^{\propto+\beta}\,(1-\alpha)\,L^{1-\propto-1} \tag{2.36}$$

So by combining the three equations above we get

$$\dot{Y} = dY/dt = [AK^{\propto+\beta}L^{1-\propto}]\left[(\propto + \beta)\frac{\dot{K}}{K} + (1 - \alpha)\frac{\dot{L}}{L}\right] \tag{2.37}$$

The first term in big parentheses is output Y for a fixed state, while $\frac{\dot{K}}{K}, \frac{\dot{L}}{L}$, and $\frac{\dot{Y}}{Y}$ all are constant.

From the previous discussion about Solow we know,

$$\dot{K} = 1 - \delta K = sY - \delta K \tag{2.38}$$

Where δ is the depreciation rate. By dividing the equation above with K, it will be obtained

$$\frac{\dot{K}}{K} = \frac{sY}{K} - \delta \tag{2.39}$$

In order for $\frac{\dot{K}}{K}$ to be constant we must have a $\frac{Y}{K}$ constant, so if this ratio is constant it will get $\frac{\dot{K}}{K} = \frac{\dot{Y}}{Y} = $ g, a constant growth rate. So from the above dY/dt for the aggregate production function with $\frac{\dot{L}}{L} = $ n which is also constant, we get the following equation,

$$\frac{\dot{Y}}{Y} = (\alpha + \beta)\frac{\dot{K}}{K} + (1-\alpha)\frac{\dot{L}}{L}\boxed{}\,g \tag{2.40}$$

$= (\alpha + \beta)g + (1-\alpha)\,n\,\boxed{}\,g - n$

$$= \left[\frac{(1-\alpha)+(\alpha+\beta)-1}{1-(\alpha+\beta)}\right] n \tag{2.41}$$

Which is the equation:

$$g - n = \frac{\beta n}{1-\alpha-\beta} \tag{2.42}$$

This equation can also be stated as follows

$$g = \frac{n(1-\alpha)}{1-\alpha-\beta} \tag{2.43}$$

with g is the output growth rate and n is the population growth rate. Without this there is a technological effect like in the Solow model and with a constant scale of output $\beta = 0$ and per capita growth will be 0 (without technological progress). But on the Romer model because there is a positive capital externality, $(\beta > 0)$, g - n> 0 and Y / L will grow.

2.8. Debt Crisis and Payment Capacity

A country's foreign debt repayment crisis occurs if it meets three requirements Eaton and Taylor (1986) , namely, first, is unable to pay (insolvent) or is unable to repay debt in the long run. Second, illiquid - that is, they do not have enough money to pay obligations when due. Third, there is no desire to pay. The first two conditions are strongly related to the ability of a country to fulfill its obligations, in the sense that a country has the desire to pay but is unable to fulfill these obligations because it faces foreign exchange shortages whereas the last problem was more due to the unwillingness to pay which could have been due to the economic benefits that would be achieved or for political reasons.

The debt crisis can take many forms. First, the state or creditor accepts the delay in payment of installments but still receives interest payments on the agreed schedule. Second, creditors postpone both repayments and installments at once. Besides these two forms there are still many other variations of this debt crisis and the treatment of creditors on this delay also varies, for example in certain cases creditors are willing to extend their maturity but by increasing the interest rate on debt. While in other cases it is precisely the interest rate that is lowered as an effort to reduce the debt burden of the country concerned.

The capacity to repay debt can be seen by measuring the economic capacity of a country in providing a source of funds to fulfill its obligations in the form of installments and debt interest. To estimate debt repayment capacity, the following equation can be used:

$$DS1 = f(Do) = (i + a) Do \tag{2.44}$$

where:

DS1 = debt load in period 1; Do = debt in period 0; i = interest rate; a = amortization by assuming that the analysis is carried out in two periods t = 0, 1; and when owing starts at t = 0; and the debt burden arises in the first year, grace period = 1. The equation above shows that the debt payment schedule depends on the interest payment schedule and amortization. If the potential source of funds that can be provided by the economy is Q, a portion of Q is determined by debt in the period t = 0 (Do) because Do is a resource that can be used for economic growth. If E is the number of domestic expenditures, the Debt Burden Payment Capacity (DBPC) is the number of resources that the economy can provide to finance the debt burden, namely the difference between the total source of funds and total domestic expenditure, or the equation is

$$DBPC1 = Q1 (Do, ..., ...) - E1 \tag{2.45}$$

from equations (2.44-35) and (2.45-37) it is seen that DBPC and DS1 are both functions of Do. Thus equality (2.45-37) can be used as a general form

$$DBPC1 = [Q1 (Do, ..., ...) + L1] - E1 \tag{2.46}$$

However, the above equation has not clearly demonstrated the problem of the debt crisis. Another approach that can clarify the debt crisis problem is an indirect approach, which is to show the minimum conditions that must be met in order to avoid debt, namely:

Total Source of Funds - Aggregate Domestic Expenditure = Foreign Bill, or

$$(Q - L) - (C + I) = DS \tag{2.47}$$

and Q is GDP; Q = Y - DS, where Y = GNP. If Q = C + S and or Q = C + I + X - M then equation (2.13) can be simplified into two forms as follows:

$$(S + L) - I = DS \qquad (2.48)$$
$$(X + L) - M = DS \qquad (2.49)$$

Where, Q = Gross Domestic Product; L = Gross External Debt; C = Total Domestic Consumption; I = Investment; S = Domestic Savings, S = S (Q); X = Export of non-factor goods and services; M = Import of Goods and Services; DS = Debt burden to be paid.

Thus the condition (2.47) shows the overall resource constraint, which is divided into two constraints namely the savings - investment constraints (2.48) and foreign exchange constraints (2.49). Equation (2.48) illustrates that foreign debt is not only used to cover the gap in domestic savings and investment but is also needed to finance the debt burden that must be paid. The same thing applies to equation (2.49) which shows that foreign debt other than being used to cover the current account deficit is also needed to pay the previous debt burden. Overall, the last three equations show that payment of debt burden requires the fulfillment of three conditions, namely: total aggregate expenditure, other bills on savings, other bills on sources of foreign exchange which must be smaller than the total debt burden.

If equation (2.48) is substituted into equation (2.49) then it is obtained:

$$(S - I) = (X - M) \qquad (2.50)$$

The above equation is an ex post identity.

2.10. Foreign Debt, Savings and Investment

If you look at the relationship between foreign aid and domestic savings, almost all studies show that foreign aid has a negative impact on the increase in domestic savings. Studies conducted by Rahman (1968), Areskoug (1973) and Griffin and Enos (1970) by using cross section data and using the savings function, $S = f (Y, F)$, where Y is GDP and F is external assistance The country shows the estimated coefficient of foreign aid is negative and less than one. This means that a portion of foreign aid has a substitute effect on domestic savings.

Another study by Gupta and Islam (1983) shows that for Asian countries, foreign private investment has a positive influence on domestic savings, while foreign aid has a large substitute effect on domestic savings. But this does not apply to other parts of the world, where foreign aid actually shows a positive or complementary impact on domestic savings. So that there is no one general conclusion that can be taken, because the three studies estimate the saving function with the total financial flow as an explanatory variable, and no substitution impact is found as shown in the case study in Asia.

Other studies using the Neo Classic production function indicate that foreign capital inflows have had a negative impact on the economic growth of developing countries in the Asia and Pacific region of Stoneman (1975), Dowling and Hiemenz (1983). The assumption they use is that every single dollar of foreign capital that enters will result in an increase of one dollar in imports and investment, Papanek (1972). Go (1985) in his study for Asian countries, found that foreign aid tends to increase investment efficiency, as described in Lee (1986).

In more recent studies on the effect of foreign debt on savings and the level of investment, economically can be explained as follows (Arief, 1998): First, foreign debt has a negative effect on domestic savings rates. Second, foreign debt is used to maintain the overvalued currency so as to facilitate imports for unproductive purposes as in Latin American countries, Geiger (1990). Third, most of the government sector foreign debt funds are spent in creditor countries not in debtor countries and some of the variables are difficult to control, Hancock (1989). So that it reduces net resource transfers in the interest of economic growth in the recipient country, fourth, when payment of installments and foreign debt interest clearly diverts funds that can be used as domestic investment due to this payment, this implies the warning of foreign debt burden, Kenen (1990); Sachs, (1990). Fifth, massive repayments and interest on foreign debts directing the government in the country intensify tax revenues which hinder investment activities and cause capital flight.

2.11. Study of Indonesian Foreign Debt

Research conducted by Arief and Sasono (1987) which took the study period between 1970 and 1986/87 by using the Hojman (1986) model to see the effects caused by the net flow of foreign capital coming in to fertilizing domestic investment and savings. They use this model because the net flow of incoming foreign capital is used as a determinant of macroeconomic quantities. The empirical results of the linear regression of the domestic investment function indicate that the net flow of foreign capital entering Indonesia does not have a large effect on overall domestic investment. This small positive role is solely due to the use of foreign capital to finance the import content of investments carried out, especially in the sector of the country and the modern sector which is highly dependent on imports.

Based on the domestic saving function they obtained that the effect of incoming foreign capital on domestic savings was negative (- 0.9885). Thus this means that every one dollar additional net flow of foreign capital entering Indonesia has resulted in almost one dollar worth of potential domestic savings that cannot be realized as realized savings, Arief and Sasono (1987). The net flow of foreign capital entering Indonesia in the period under study turned out to have substituted domestic savings instead of adding to it. They further explained that at least two explanations could be given in seeing the negative contribution of foreign capital in fertilizing domestic savings in developing countries.

First, it is an explanation that is associated with the institutionalist-structuralist view, which says that the entry of foreign capital has taken over the most profitable activities in the economy so that investment opportunities that can generate high returns are relatively scarce. Then there was the crowding-out effect so that it did not encourage the emergence of potential domestic savings for investment purposes, and the influx of foreign capital had also encouraged the consumption of luxury goods due to the foreign investment being used to produce luxury goods for consumption of high income groups. So that there is a demonstration effect in negative sense that has turned the potential of savings into consumptive, second, is the lack of mobilization of funds and domestic funds by the government because foreign capital can continue to be sought to finance development activities.

While the role of foreign capital in national economic growth they found a negative regression coefficient even though it was not statistically significant. This finding clearly rejects the hypothesis that foreign capital encourages economic growth. Because the effect of growth generated by foreign capital at the time of entry has been drained by the outflow of national resources that must be done as a result of the entry of foreign capital. So, on the one hand foreign capital raises a growth promoting effect and on the other hand raises a growth defeating process, so that the net effect is negative. Thus from the explanation above it is increasingly clear that foreign capital does not play a positive role in fertilizing domestic savings in Indonesia.

Another study was carried out by Ikhsan as reported by Kuntjoro-Jakti and Ikhsan (1988) who saw the threat of a crisis in the process of repaying Indonesia's foreign debt. Various debt indicators show a symptom of a decline in Indonesia's foreign debt repayment capacity for the period 1970-1987. The cause of the decline in the payment capacity of the foreign debt burden will be different for each period. In the period 1975-78, the cause came from the Pertamina crisis which almost bankrupted the country, but in the 1980s, the cause was a combination of external and internal factors. A prominent external factor is a decline in oil and gas prices and Indonesia's main commodities; the existence of currency realignment between important currencies and an increase in the real interest rate while internal factors include the low level of mobility of domestic funds; bad debt management; appreciation of real effective value due to poor management of price controls, and enlarged domestic budget deficit; capital flight; deteriorating level of investment efficiency and poor management of foreign exchange reserves.

Studies using the logit model, Kuntjoro-Jakti and Ikhsan (1988) show that the probability of Indonesian foreign debt scheduling in 1988 reached 0.96, or slightly improved compared to 1987 which reached 0.97. This improvement was due to factors that showed the solvency of the Indonesian economy in financing debt payments has improved, although the debt service ratio (DSR) that reflected Indonesia's economic liquidity deteriorated. However, for the period 1980-1987, the debt-output ratio tended to increase, Ikhsan, Basri and Basri (1993). There are at least five components that have contributed to the increase in Indonesia's foreign debt, namely: First, the increasing trend in the current account deficit. It seems that the increase in the current account deficit is not due to worsening resource balance, but this deficit is solely due to the rising interest costs of Indonesia's foreign debt. Second, there is a tendency for capital flight from Indonesia. This capital flight tendency is actually one of the hot issues discussed in the years of research. Possible factors that encourage the occurrence of capital flight are expectations of changes in domestic political temperature, as well as over-protected real sector conditions and scarcity in the supply side that encourages investors to delay or move their investment locations abroad. Third, is the occurrence of strong currency realignment after the weakening of the US $ against other strong currencies, especially DM and Yen. This problem can actually be reduced if the composition of the export currency and foreign exchange reserves are not much different from the composition of foreign debt. Fourth, is the accumulation of foreign exchange reserves, especially those managed by the monetary authority. This accumulation is important to be carried out by the government in order to guard against speculation steps carried out by a group of economic agents who want to gain a gain from changes in exchange rates. Fifth, there is a positive correlation between the increase in the ratio of output debt and the state budget deficit. The APBN deficit encourages an increase in the need for financing deficits that generally come from foreign debt, Sadiq (1991).

Another study by Kuncoro (1988) saw the impact of foreign capital flows on economic growth and domestic savings for the period 1969-1984. The results concluded that foreign aid had a direct impact and a totally negative impact on economic growth. On the other hand the direct impact of negative foreign aid on domestic savings shows that foreign aid has acted as a substitute for domestic savings. However, the positive impact of foreign aid for domestic savings

indicates an increase in the proportion of savings from the community that earns income. The most recent study of Indonesia's foreign debt is carried out by Radelet (1995). In his study he suggested the existence of "triple shock" scenario that caused "negative external shock". These three factors are, first, the decline in the export growth rate of 4%, second, the increase in interest rates by 2%, and third, the appreciation of the yen against the dollar by 20%. He also projects that DSR will increase from 33% in 1993 to 45% in 1998. He estimates that Indonesia will experience a severe foreign debt crisis in the near future. And from the findings above Radelet suggested that the government take steps in overcoming the problem, which among other things was to prevent the government from investing in certain industrial sectors, especially in industries that use high-tech and capital intensive levels. But this study received quite a strong argument from McLeod (1996), who refused that Indonesia would experience a severe foreign debt crisis.

Another more recent study, even though it does not directly refer to foreign debt but is related to public debt and bonds and its relation to fiscal deficits can be seen as Gale and Prszag (2002) found, Engel and Hubbard (2004), who saw who saw the impact of budget deficits on interest rates. The budget deficit here of course must be financed by debt whether domestic or foreign debt. In line with this the findings from Engen and Hubbard (2004), Reinhart and Sack (2000) and Kinoshita (2006) are also worthy of scrutiny. Their findings reveal that an increase in the budget deficit of 1% of GDP will cause a rate increase of 2 to 7 basis points.

2.12. APBN, Fiscal Policy in Islamic Economics

In Islam fiscal and budgetary policies aim to develop a society based on the distribution of balanced wealth with material and spiritual values at the same level. The zakat mechanism ensures that economic activity can run at a minimal level, namely at the level of meeting primary needs, while charity and other similar instruments encourage aggregate demand, because of its function to help people reach a standard of living above the minimum level. This productive economic activity means that economic resources are rotating at a maximum level. Islamic fiscal instruments dominated the economic discussion of classical Islamic economists. Moreover, the main pillar of the Qur'an in the context of the Islamic economy states that the fiscal zakat mechanism is a requirement in the real economy. Some fiscal instruments that become tools for the state to run the economy towards spiritual and material welfare are zakat, kharaj, jizyah and ushur which are obligatory and infaq. Alms, grants, endowments that are voluntary (volutary) while ganimah is a result that depends on the victory of a war carried out by the state.

2.13. APBN and Zakat in Islamic Economics

Zakat is the third pillar of Islam someone who pays zakat because his faith will undoubtedly get a lot of good. Allah says in the letter of At-Tawbah verse 103, meaning: "Collect zakat from some of their wealth, with zakat you cleanse and purify them". It is also stated in the hadith of the Messenger of Allah, which was narrated by Bukhari and Muslim, there were angels who always prayed every morning and evening. "O Allah, give people an injection instead".Zakat is a big matter, and is one of the five pillars of Islam where the building of Islam will not erect without it, the Prophet said: *"Islam is built on five foundations: the Creed that there is no god but Allah, and Muhammad the Messenger of Allah, establishes prayer, performs zakat, romadhon's fasting and hajj."* (HR: Bukhori, Muslim). On the other hand there is a severe threat from Allah towards people who are stingy, negligent and do not issue zakat, Allah SWT says (QS: At-Tawbah: 34,35).

Zakat is obliged on four assets: produce in the form of fruits and grains, livestock, gold and silver and commercial property with certain Nisab and is not obliged to be zakat if less. Included in the law of gold and silver are paper money, also dirhams or dinars or dollars or other names. If the amount reaches silver and gold and has been rotating for one year. The group of recipients of zakat according to the word of Allah, (QS: At-Tawbah: 60). The types of assets that are the source of zakat are stated in detail in the Qur'an and Hadith, according to some scholars there are basically four types: namely (1) plants and fruits; (2) livestock; (3) gold and silver and; and (4) trading assets. At the time of the Prophet the group of assets determined to be zakat objects is limited to: (1) gold and silver; (2) growing certain plants such as wheat, barley, dates and grapes; (3) certain livestock such as sheep or sheep, cattle and camels; (4) trade assets (tijarah); (5) assets found in the bowels of the earth (rikazh). Meanwhile, according to other scholars stated that the assets that must be paid for zakat are nuqud (gold and silver), mining goods and findings, commercial assets, plants and fruits, animals or livestock.

The research results of the Center for the Study of Religion and Culture (CSRC) at UIN Jakarta together with The Ford Foundation, estimated ZIS funds of around IDR 19.3 trillion per year, in the form of goods worth IDR 5.1 trillion and IDR 14.2 trillion. The amount of this amount, the third comes from zakat fitrah (Rp. 6.2 years) and the rest of the zakat is Rp. 13.1 trillion. In 2004 the results of the PIRAC study showed that the pattern of ZIS distribution trends, 84% of respondents channeled it through amil around their homes or directly to those entitled, through BAZ and LAZ

around 12.5% in 2000, only 6% (Kurniawati, 2004). In fact, one of their studies revealed the potential of zakat to find Rp. 217 trillion.

2.14. Expenditures for Alms For Asnaf

In the Islamic economic system, all state revenues derived from zakat are actually categorized as individual property *(milkiyah fardiyah)* - not state property *(milkiyah daulah)*, namely eight asnaf and the state is responsible for the management of zakat. According to the word of God in QS.at-Taubah (9): 103. Those who have the right to get zakat *(mustahik zakat)* have been determined by Allah in His word, at-Taubah (9): 60.

2.15. Debt in the Islamic Perspective

There are two views on foreign debt as an alternative to closing the state budget deficit. The first view assumes that external financing is permissible in Islam, even though the form and mechanism require modification. The second view assumes that Islamic countries should not seek foreign debt as a saving gap cover (Mannan, 1992). The first view basically allows the existence of budged deficits which are closed by external financing, as long as the forms and mechanisms are adjusted to the Shari'a. This view is motivated by the concept and historical fact that cooperation with other parties in business is permitted, even encouraged. The forms of cooperation permitted in the Shari'a, such as mudharabah, musyarakah, and murabahah, can be developed as a form of external financing in the state budget. These forms are principally more of flow creating equity than in flow creating debt, where many begin to be implemented by international financial institutions. The Islamic Development Bank (IDB) has funded projects in Islamic countries with this scheme. Compared to debt, equity participation is seen as more constructive, proportional and fair in financing, because there is a division of income and risk (loss-profit sharing) (Muhaimin, 2010). The second view, prohibits Islamic countries from closing budged deficits with foreign debt. This view is actually more due to factual and preventive considerations, where the involvement of Islamic countries in foreign debt will inevitably interact with the interest system (Muhaimin, 2010). Other views, practices and processes and implications of foreign debt are not in accordance with Islamic teachings because, first, debt based on usury. Secondly, foreign debt causes the collapse of the nation's dignity, even though Islam teaches always to maintain integrity both individually and nationwide. Third, foreign debt violates the fair dealing principle in Islam. There is no fair bargaining process in the provision of debt (Misanam, 2000).

Another alternative is Islamic banking institutions can act as intermediary institutions between the community and the government through the concept of buying and selling such as greetings, istisna ', leasing, and the concept of cooperation such as mudarabah and musyarakah. It is hoped that this financing instrument will be able to help the government in meeting development financing needs.

2.16. The Epistemological Approach of Tawhidi in Islamic Finance.

The concept of Tawhidi String Relations (TSR) is a concept put forward by Masudul Alam Choudury, which explains the United of knowledge, namely that everything on earth has a relationship with one another. The form of the relationship reflects that the creator is one, and the word "one" comes from monotism, namely the oneness of Allah SWT. Monotism is also called "Tawheed" (Tawhid), according to Choudury (2004) "Tawheed" namely, "... the Oneness of God (Allah), as the domain of complete, absolute and perfect knowledge". Allah Almighty is the only God, the creator of all nature and the ecosystem that runs in it, Surah Ash-Shuro (42) verse: 49. The concept of TSR is a source of knowledge, with the principle that the word of Allah SWT in Surah As-Syuro (42) verse: 52, is clearly mentioned as the source of knowladge which will illuminate and show the guidance of life, then the Qur'anic knowledge source (Q) in the TSR concept is symbolized by (Ω), a symbol Ω representation of complete, absolute and perfect knowledge, as the knowledge revealed by Allah SWT in the Qur'an to the prophet Muhammad SAW.

As-Sunnah, is an explanation in understanding the scientific content in the Qur'an contained in the behavior of the Prophet SAW which consists of words, pembuataan, and consent. Based on this, the TSR concept adopted the Sunnah as part of the source of knowledge symbolized by "S". Knowledge of the Qur'an (Q) and As-Sunnah (S), as a source of knowledge in the concept of TSR denoted by (Ω (Q, S)). (Aryandra, 2018: 28). The source of knowledge based on (Ω (Q, S)) can be interpreted through the process of the ijma 'of the scholars, the participation of scholars in the interpretation of scientific sources from (Ω (Q, S)) symbolized by ($\Theta*$). Process ($\Theta*$) also called suratic process (according to the deliberation process), according to Aryandra (2018) suratic process is a process where humans conduct discussions on the affairs of each other. Such human behavior, mentioned in the Word of God Almighty in Sura Ash-Shuro (42) verse: 38.

Deliberation behavior as in the Surah Ash-Shuro (42) verse: 38, is a common thing for humans. Mariyanti (2011) describes the suratic process, as a process relating to humans and nature. The knowledge generated from the process (Ω (Q, S)) $\rightarrow$ ($\Theta *$) is symbolized by (Θ), as a form of consistency and consequence (Harahap, 2016). Based on this in the process implementation (Ω (Q, S)) $\rightarrow$($\Theta *$) $\rightarrow$(Θ), through several stages called the stages IIE (Interacation,

Integration, Evolution). The stage of suratic process is IIE according to Harahap (2016), a condition of the occurrence of the learning process by including all the variables both exogenous and endogenous. Based on this, the stages of implementation of scientific sources in each variable in real life are symbolized $(X, (\Theta))$. The symbol (X) indicates a variable, can be positive and negative. Every (X) in the TSR concept is required to attach (Θ) to it, as an indication of the consistent level of the learning process. The impact of placement (Θ) on (X) will make the effect even better, so it is not negative.

The process of epistimologi stages are marked $(\Omega (Q, S))$ ☺ up to the ontology stage $(\Theta *)$ → then ontic (Θ) → then the stages of implementation of science in real conditions are marked $(X, (\Theta))$ ☺ has the ultimate goal of realizing the benefit of the whole community. The Social wellbeing function, through the development process slowly. Based on this, the Social wellbeing function is symbolized in the TSR concept with $W (\Theta, X (\Theta))$. The first stage of the TSR concept is symbolized as follows $(\Omega (Q, S))$ →$\Theta*$ →Θ →$(X, (\Theta))$ →$(W (\Theta, X (\Theta))$, also called the tasbih process. the first prayer beads as mentioned by Ariyandra (2018), the evaluation phase is carried out at the end of the process, after the process evaluation will continue in the second stage and subsequently, this process will be repeated (recalling). and As-Sunnah) in the TSR concept, referring to the word of Allah Almighty in the Surah As-Syuro (42) verse: 53. Pasca - the evolution of the process continues at the next stage (recalling), the process in the Qur'an is called "Khalqan Jadid" is the creation of a new system that has previously gone through the IIE process. This growth process is called sustainability of the Islamic knowledge, this stage is symbolized by The New $(\theta 1)$. (Choudhury and Haque, 2004). Ω is a symbol knowledge originating from the Al-Qur'an and Hadith and in the subsequent process knowledge and humans meet through the process of muswah (suratic proces) symbolized by $X (\theta)$.

With an understanding of this relationship humans and society create a world order based on the Qur'an and Sunnah and the knowledge they have. Therefore through interaction and integration between them, through the slowly developing process, the Social Wellbeing Function arises, this is represented by $W (\theta, X (\theta))$. Whereas implementation in decreasing foreign debt and balancing the state budget for $W (\theta, X (\theta))$. is $W ((\theta)$, taxes, loans and other sources of income $(\theta))$ with these functions whether the variables included in the model are variables that can affect the decline in foreign debt through suratic processes. At the end of process 1 and the beginning of process 2, it is the evolutionary process in the TSR until the end of time where we must return to the source of knowledge, namely the Qur'an and Sunnah (omega). In formulating a new text (θN), the previous process must be remembered so that we as human beings can remain in the right process in accordance with the Qur'an and Sunnah as explained by verse 53 that finally all matters return to Allah Mariyanti (2011).

Choudury and Hasan (2006; 60), Choudhury (2006a, 2006b, 2006c) then concluded, "IIE-Interaction, Integration, Evolution-process methodology as a learning process on a continuum, to end in Akhirah Learning process as circular causationary motions evolving and spanning from episteme to ontic". It is explained that the characteristics of the TSR model and the socio-economic variables of the relationship between these variables can be made in the form of functions $Si = Si (X1, X2, X3, X4, X5, X6, X7, \theta)$, and Social Wellbeing subject to the Circular Causation function, $Si: f (Xi, \theta)$

$S1 = f1 (X2, X3, X4, X5, X6, X7, \theta)$
$S2 = f2 (X1, X3, X4, X5, X6, X7, \theta)$
$S3 = f3 (X1, X2, X4, X5, X6, X7, \theta)$
$S4 = f 4 (X1, X2, X3, X5, X6, X7, \theta)$
$S5 = f 5 (X1, X2, X3, X4, X6, X7, \theta)$
$S6 = f 6 (X1, X2, X3, X4, X5, X7, \theta)$
$S7 = f 7 (X1, X2, X3, X4, X5, X6, \theta)$

(θ) → indicates that knowledge is transferred from person to person and from person to assembly, then from assembly to assembly as a form of process paper so as to produce consensus. Referring to the Chawdory model, the TSR model for budget deficits and foreign debt can be made as follows: Economic growth (PER) will be influenced by the following factors: foreign aid (HUT), private investment ratio (FPI), deep savings country (S), exports (EKSP), pace of labor force growth (GBek) and GDP per capita (PDBC). Thus economic growth can be written as follows:

PER = f {(HUT), (FPI), (S), (EKSP), (GBek), (PDBC)}

So that economic growth that is beneficial to the State and the community as social well being fuction (SWB) can be written as follows:

SWB Simulation → PER $[\Theta]$ = f {(HUT), (FPI), (S), (EKSP), (GBek), (PDBC)} $[\Theta]$

So that by referring to the Circular Causation equation, the general functions above can be written as follows:

HUT $[\Theta]$ = f {(PER), (FPI), (S), (EKSP), (GBek), (PDBC)} $[\Theta]$ (2.51)

FPI $[\Theta]$ = f {(HUT), (PER), (S), (EKSP), (GBek), (PDBC)} $[\Theta]$ (2.52)

S [Ө] = f {(HUT), (FPI), (PER), (EKSP), (GBek), (PDBC)} [Ө]   (2.53)

EKSP [Ө] = f {(HUT), (FPI), (S), (PER), (GBek), (PDBC)} [Ө]   (2.54)

GBek [Ө] = f {(HUT), (FPI), (S), (EKSP), (PER), (PDBC)} [Ө]   (2.55)

PDBC [Ө] = f {(HUT), (FPI), (S), (EKSP), (PER), (GBek)} [Ө]   (2.56)

While domestic savings (S) will be influenced by foreign aid (HUT), the ratio of private investment (FPI), exports (EKSP) and the rate of growth of the labor force (GBek) and GDP per capita (PDBC).

S = f {(HUT), (FPI), (EKSP), (GBek), (PDBC), (PER)}

So that domestic savings will benefit the State and the people as social well being fuction (SWB) can be written as follows:

SWB Simulation → S [Ө] = f {(HUT), (FPI), (EKSP), (GBek), (PDBC), (PER)} [Ө]

So that by referring to the Circular Causation equation, the general functions above can be written as follows:

HUT [Ө] = f {(S), (FPI), (EKSP), (GBek), (PDBC), (PER)} [Ө]   (2.57)

FPI [Ө] = f {(HUT), (S), (EKSP), (GBek), (PDBC), (PER)} [Ө]   (2.58)

EKSP [Ө] = f {(HUT), (FPI), (S), (GBek), (PDBC), (PER)} [Ө]   (2.59)

GBek [Ө] = f {(HUT), (FPI), (EKSP), (S), (PDBC), (PER)} [Ө]   (2.60)

PDBC [Ө] = f {(HUT), (FPI), (EKSP), (GBek), (S), (PER)} [Ө]   (2.61)

PER [Ө] = f {(HUT), (FPI), (S), (EKSP), (PDBC), (GBek)} [Ө]   (2.62)

From the equation above, it can be explained that there are interrelationships between one and the other variables.

3.1. Research Methodology

In an effort to obtain empirical evidence in this study using the Vector Autoregression (VAR) model and then the VAR model is used as a reference to see the causality relationship of the TSR model. That's why this research is grouped into two forms of research, namely first using the conventional method and the second using the TSR / Causality model between the variables studied. This study uses secondary data sources, taken from various institutions such as the Central Bureau of Statistics, Bank Indonesia and the Ministry of Finance of the Republic of Indonesia. In certain parts data from the World Bank, IMF and sources considered relevant for the period 1968 - 2018 were also taken.

3.2. VAR Model and Application of the Tawhidi String Relationship Model (TSR)

From the framework above, the econometric model is as follows:

PE = {⟨0 + ⟨1HUT + ⟨2FDI + ⟨3 S + ⟨4EXP + ⟨5GBEk} (θ) + u *   (3.1)

HUT = {⟨0 + ⟨1PE + ⟨2FDI + ⟨3 S + ⟨4EXSP + ⟨5GBEk} (θ) + u *

FDI = {⟨0 + ⟨1HUT + ⟨2PE + ⟨3 S + ⟨4EXP + ⟨5GBEk} (θ) + u *

S = {⟨0 + ⟨1 HUT + ⟨2FDI + ⟨3 PE + ⟨4EXP + ⟨5GBEk} (θ) + u *

EKS = {⟨0 + ⟨1HUT + ⟨2FDI + ⟨3 S + ⟨4PE + ⟨5GBEk} (θ) + u *

GBEk = {⟨0 + ⟨1HUT + ⟨2FDI + ⟨3S + ⟨4EKSP + ⟨5PE} (θ) + u *

S = {⟨6 + ⟨7HUT + ⟨8FDI + ⟨9 EKSP + ⟨10PDBC + ⟨11PE} (θ) + v *   (3.2)

HUT = {⟨6 + ⟨7 S + ⟨8 FDI + ⟨9EKSP + ⟨10PDBC + ⟨11PE} (θ) + v *

FDI = {⟨6 + ⟨7HUT + ⟨8S + ⟨9EKSP + ⟨10PDBC + ⟨11PE} (θ) + v *

EXP = = ⟨6 + ⟨7HUT + ⟨8 FDI + ⟨9S + ⟨10PDBC + ⟨11PE} (θ) + v *

PDBC = {⟨6 + ⟨7HUT + ⟨8FDI + ⟨9EKSP + ⟨10S + ⟨11PE} (θ) + v *

PE = {⟨6 + ⟨7 HUT + + 8FDI + ⟨9EKSP + ⟨10PDBC + ⟨11S} (θ) + v *

St = ⟨10 + ⟨11St-1 + ⟨12HUTt-1 + ⟨13FDIt-1 + ⟨14 EKSPt-1 + ⟨15PDBCt-1 + ⟨16PEt-1 + e1t

HUTt = ⟨20 + ⟨21St-1 + ⟨22HUTt-1 + ⟨23FDIt-1 + ⟨24 EKSPt-1 + ⟨25PDBCt-1 + ⟨26PEt-1 + e2t

FDIt = ⟨30 + ⟨31St-1 + ⟨32HUTt-1 + ⟨33FDIt-1 + ⟨34 EKSPt-1 + ⟨35PDBCt-1 + ⟨36PEt-1 + e3t

EKSPt = ⟨40 + ⟨41St-1 + ⟨42HUTt-1 + ⟨43FDIt-1 + ⟨44 EKSPt-1 + ⟨45PDBCt-1 + ⟨46PEt-1 + e4t

PDBCt = ⟨50 + ⟨51St-1 + ⟨52HUTt-1 + ⟨53FDIt-1 + ⟨54 EXPt-1 + ⟨55PDBCt-1 + ⟨56PEt-1 + e5t

PEt = ⟨60 + ⟨61St-1 + ⟨62HUTt-1 + ⟨63FDIt-1 + ⟨64 EKSPt-1 + ⟨65PDBCt-1 + ⟨66PEt-1 + e6t

where, PE = gross domestic product (GDP) growth rate; HUT = ratio between foreign aid and GDP; FDI = ratio of private foreign investment (including long-term loans) to GDP; S = ratio of gross domestic savings to GDP; EKSP = ratio of exports to GDP; GBEk = the rate of growth of the workforce; PDBC = GDP per capita; ⟨i = structural parameter

estimation coefficient; $\square i$ = the coefficient of the estimation parameter of the concise form; u, v, ε and η = disturbance variables.

The empirical model and approach in TSR and Circular Causation are very significant with the Vector Autoreggression (VAR) model developed by Sim (1980) so that in this study the VAR model was used to see the interplay between fellow variables in the study.

3.3. TSR and VAR

To see the work of TSR in the estimation results carried out with VAR, only 2 criteria are used. First, is the probability of a negative result, which describes the decline, attenuation and degradation of the variables studied. So that it takes an effort to increase to a certain level as desired. The second is a positive probality result which means that there is an increase, improvement and strengthening of these variables so that it needs to be at least maintained or if it is indeed possible to make more positive improvements.

So the criteria in the form of a matrix are like the following:

The TSR Criteria matrix uses VAR

No	Nilai Prob. VAR	TSR (θ*)	The results
1	Positive	Positive	Occurs Improvement and Better
2	Negative	Negative	Decline and Worse

4.2. Results of Analysis of the VAR Model
4.2.1. Stationarity Test

The results of stationarity testing for all variables used in the study using Augmented Dickey-Fuller are shown in table 4.1. The results of stationarity testing for the level show that from the 7 research variables used only 4 stationary variables, namely the variables PE, SAV, EKSP and GBEK while the other three variables are HUT, FDI and PDBC as indicated by prob values from ADF statistics which are less than 5%.

Table 4.1.
Research Variable Stationarity Test Results

Variabel	Root Unit Test			
	Level		1st Difference	
	ADF	Prob	ADF	Prob
PE	-5.0262	0.0009**	-8.8802	0.0000**
HUT	-0.2397	0.9901	-3.3706	0.0683*
FDI	-2.9234	0.1649	-9.0607	0.0000**
SAV	-3.7895	0.0261**	-8.3860	0.0000**
EKSP	-3.2226	0.0927*	-9.5897	0.0000**
GBEK	-6.9239	0.0000**	-10.3660	0.0000**
PDBC	4.6402	1.0000	-4.7252	0.0022**

*= alpha 10%   **=alpha 5%*

Sumber : data processed

Because in the stationary test there are still 3 variables that are not stationary, then the next test is to test the unit roots (unit root) at the 1st difference level (degree 1). The results of processing for unit root testing show all 7 variables passed in the testing of union roots as indicated by the prob value of the ADF statistic whose value is less than 0.05 except for the HUT variable passed the unit root test at alpha 10%,

4.2.2. Lag Length Testing

Estimates with VAR require data in stationary conditions and from the test results the variable data is stationary at the 1st Difference level, the estimation is expected to produce a valid model output. The estimation of the VAR model begins by

determining how long the appropriate lag in the VAR model results of processing long lag tests can be seen in table 4.2. By using the HQ criteria, it can be concluded that the lag length in the VAR model is 2 as indicated by the lowest HQ value of 71.490.

Table 4.2.
Research Variable Stationarity Test Results

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1505.215	NA	4.43e+22	72.01022	72.29983*	72.11637
1	-1427.465	125.8798*	1.16e+22*	70.64120	72.95810	71.49044*
2	-1382.257	58.12547	1.70e+22	70.82174	75.16591	72.41405
3	-1320.117	59.18070	1.62e+22	70.19604	76.56749	72.53143
4	-1239.264	50.05157	1.45e+22	68.67925*	77.07799	71.75772

Sumber : data processed

4.2.3. Cointegration Testing

Cointegration test to find out whether there is a balance in the long run, that is, there are similarities in movement and stability of relations between the variables in this study. Cointegration testing is done using the Johansen's Cointegration Test method and the results of cointegration testing processing can be seen in table 4.3.

Table 4.3.
Cointegration Test Results

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.783742	187.9411	125.6154	0.0000
At most 1 *	0.708116	122.0958	95.75366	0.0003
At most 2	0.568380	69.14566	69.81889	0.0565
At most 3	0.328427	33.01660	47.85613	0.5559
At most 4	0.199195	15.89690	29.79707	0.7195
At most 5	0.130162	6.344990	15.49471	0.6548
At most 6	0.008077	0.348721	3.841466	0.5548

Sumber : data processed

Based on the table above, it can be seen that the trace statistic value has only 2 equations that have a trace statistic value greater than the table value (cointegration occurs) while the other 5 equations produce conclusions Ho is accepted (no cointegration occurs). This means that the null hypothesis which states that no cointegration is accepted and the alternative hypothesis which states that there is cointegration is rejected. Thus, the results of the cointegration test indicate

that between the movements of PE, Anniversary, FDI, SAV, EKSP, GBEK and PDBC there is no relationship between stability / balance and similarity of movements in the long run. Because the data is not cointegrated, the VAR model is used by using the first difference data.

4.2.4. Testing of Granger Facilities

Then a cointegration test was carried out. The next step was to test causality between 7 variables used in the study as shown in table 4.4. From the 21 causality tests carried out the following results were obtained:

1. There is no single pair of variables that statistically occur causality (reciprocity). Because none of them has a probability value of <0.05 for the two F values of the statistics.

Table 4.4.
Granger Causality Testing

Null Hypothesis:	Obs	F-Statistic	Prob.	Results
HUT does not Granger Cause PE	45	2.18714	0.1255	PE influence HUT
PE does not Granger Cause HUT		5.77558	0.0063	
FDI does not Granger Cause PE	45	0.02218	0.9781	PE influence FDI
PE does not Granger Cause FDI		4.65024	0.0153	
SAV does not Granger Cause PE	45	0.40635	0.6688	PE influence SAV
PE does not Granger Cause SAV		10.6742	0.0002	
EKSP does not Granger Cause PE	45	1.03921	0.3631	no causality PE and EKSP
PE does not Granger Cause EKSP		0.45041	0.6406	
GBEK does not Granger Cause PE	45	0.66402	0.5204	no causality PE and GBEK
PE does not Granger Cause GBEK		0.83291	0.4422	
PDBC does not Granger Cause PE	45	0.14026	0.8696	no causality PE and PDBC
PE does not Granger Cause PDBC		0.58735	0.5605	

FDI does not Granger Cause HUT	45	2.67188	0.0814	no causality HUT and FDI
HUT does not Granger Cause FDI		0.51560	0.6011	
SAV does not Granger Cause HUT	45	0.75105	0.4784	no causality HUT and SAV
HUT does not Granger Cause SAV		0.23790	0.7894	
EKSP does not Granger Cause HUT	45	5.06196	0.0110	EKSP influence HUT
HUT does not Granger Cause EKSP		0.60172	0.5528	
GBEK does not Granger Cause HUT	45	0.47844	0.6233	HUT influence GBEK
HUT does not Granger Cause GBEK		6.45163	0.0037	
PDBC does not Granger Cause HUT	45	5.19259	0.0099	PDBC influence HUT
HUT does not Granger Cause PDBC		0.84611	0.4366	
SAV does not Granger Cause FDI	45	1.58196	0.2182	no causality FDI dan SAV
FDI does not Granger Cause SAV		1.53473	0.2279	
EKSP does not Granger Cause FDI	45	2.03182	0.1444	no causality FDI dan EKSP
FDI does not Granger Cause EKSP		0.13412	0.8749	
GBEK does not Granger Cause FDI	45	0.98551	0.3821	no causality FDI dan GBEK
FDI does not Granger Cause GBEK		0.54639	0.5833	
PDBC does not Granger Cause FDI	45	0.96691	0.3890	no causality FDI dan PDBC
FDI does not Granger Cause PDBC		0.30903	0.7359	
EKSP does not Granger Cause SAV	45	6.29263	0.0042	EKSP influence SAV
SAV does not Granger Cause EKSP		0.45509	0.6376	

GBEK does not Granger Cause SAV	45	3.37890	0.0441	GBEK influence SAV
SAV does not Granger Cause GBEK		0.20615	0.8146	

PDBC does not Granger Cause SAV	45	0.52750	0.5941	no causality SAV and PDBC
SAV does not Granger Cause PDBC		0.16975	0.8445	

GBEK does not Granger Cause EKSP	45	0.16689	0.8469	no causality EKSP and GBEK
EKSP does not Granger Cause GBEK		3.12601	0.0548	

PDBC does not Granger Cause EKSP	45	0.23243	0.7937	no causality EKSP and PDBC
EKSP does not Granger Cause PDBC		1.77866	0.1820	

PDBC does not Granger Cause GBEK	45	1.01901	0.3701	no causality GBEK and PDBC
GBEK does not Granger Cause PDBC		0.78261	0.4641	

Sumber : data processed

2. There are 8 relationships that are proven to have a 1-way relationship, namely:

    a. Economic growth (PE) affects the ratio of foreign aid to GDP (HUT) with a prob value from Fstatistik as 0.0063 <0.05

    b. Economic growth (PE) affects the ratio of private foreign investment to GDP (FDI), the prob value of F is 0.0153 <0.05

    c. Economic growth (PE) affects the ratio of savings to GDP (SAV) with a prob value of F statistics of 0.002 <0.05

    d. The ratio of exports to GDP (EKSP) affects the ratio of foreign aid to GDP (HUT), the prob value of the statistical F is 0.0110 <0.05

    e. The ratio of external assistance <0.05 of the country to GDP (HUT) affects the growth of the workforce (GBEK) the prob value of F statistics as of 0.0037 <0.05

    f. Per capita income (PDBC) affects the ratio of foreign aid to GDP (HUT), the prob value of F statistics is 0.0099 <0.05

    g. The ratio of exports to GDP (EKSP) affects the saving ratio to GDP (SAV), the prob value of F statistics is 0.0042 <0.05

    h. Labor force growth (GBEK) affects the ratio of savings to GDP (SAV), the prob value of F statistics is 0.0441, 0.05

3. A total of 13 relationships between two varaibles show no causality or one-way relationships as indicated by prob values of F statistics> 0.05

4.2.5. Impulse Response Analysis

The impulse response analysis is used to see the shock response (shock) of innovation variables towards other variables. The processing results for the impulse response are indicated by the following tables and figures.

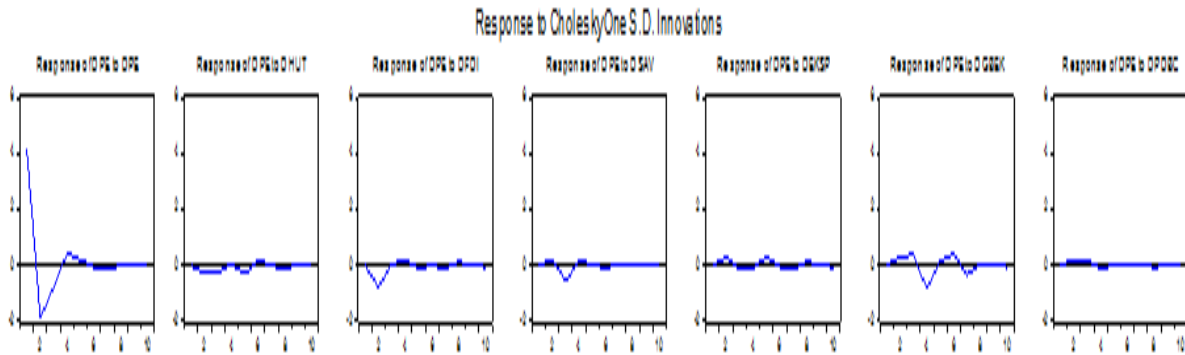### 1. Response changes to 1 standard deviation from changes in economic growth.

The results of processing for impulse response from changes in economic growth in period 1 have an impact on the increase of own economic growth of 4,096 while for other variables it has not given an impact as indicated by the value of change of 0. The next change in period 2 to period has an increase and decrease of economic growth itself. The response of changes in economic growth (DPE) to changes in the ratio of foreign aid to GDP (HUT) has a changing pattern, which is an increase over 10 periods. The impact of changes in economic growth on changes in the ratio of private investment to GDP (DFDI), changes in the saving to GDP ratio (DSAV), changes in the ratio between exports and GDP (DEKS) have almost the same pattern of fluctuating fluctuations.

The response of the change in 1 standard deviation from changes in Economic Growth (DPE) to changes in labor force growth (DGBEK) as a whole for 10 periods has more positive impacts than the negative impact, as well as its response to changes in per capita income (PDBC). The effect of change in 1 standard deviation from economic growth (DPE) on changes in per capita income (DPDBC) also produces a changeable sign of negative positive. For more details, Figure 4.5 explains the change in 1 standard deviation from changes in economic growth (DPE) to changes in other variables including changes in the DPE itself over the period 1 to period 10.

Table 4.5.
Impluse Response of Change in Economic Growth D (PE)

Response of DPE:

| Period	DPE	DHUT	DFDI	DSAV	DEKSP	DGBEK	DPDBC
1	4.096705	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
2	-1.871773	-0.321380	-0.781903	0.214223	0.277598	0.310508	0.200518
3	-0.792339	-0.254379	0.050273	-0.577366	-0.136378	0.379588	0.167754
4	0.441143	0.057959	0.184143	0.182406	-0.072533	-0.844226	-0.109397
5	0.176569	-0.311907	-0.107244	-0.002420	0.288765	0.162861	-0.004759
6	-0.064045	0.163483	-0.016703	-0.083277	-0.050910	0.386022	0.011539
7	-0.147666	-0.001720	-0.101299	0.018488	-0.147469	-0.336260	0.054959
8	0.002003	-0.135761	0.104377	-0.019837	0.116657	0.034351	-0.086254
9	0.092466	0.081993	-0.013180	-0.015451	0.041906	0.076269	0.037359
10	-0.006825	0.006936	-0.051754	0.033741	-0.081939	-0.052425	-0.028764

Sumber : data processed

2. Response to changes in 1 standard deviation from changes in the ratio of foreign aid to GDP (HUT)
The results of processing for impulse response from changes in economic growth in period 1 had an impact on the increase of own economic growth of 4,096.

Table 4.6.
Impluse Response to Change in the Ratio of Foreign Assistance to GDP (DHUT)

Response of DHUT:

Period	DPE	DHUT	DFDI	DSAV	DEKSP	DGBEK	DPDBC
1	-195.5241	591.8260	0.000000	0.000000	0.000000	0.000000	0.000000
2	-80.35118	228.8365	61.77368	-47.41815	-191.6603	-142.0513	166.3494
3	17.47944	187.0565	177.6947	54.50041	-155.7627	5.333044	70.47535
4	61.18911	101.9398	14.76049	22.60053	-50.93937	-13.86750	254.1917
5	-16.25186	26.14551	7.798523	54.43615	-97.07089	26.42234	174.4090
6	-79.83281	-38.68940	0.754216	1.148840	-60.22365	-29.94178	271.2837
7	-42.48020	-60.21660	-17.62477	-2.042549	-47.80818	1.337930	206.2949
8	-50.54384	-81.35786	-21.74671	0.267434	-35.12398	-44.51315	259.0312
9	-58.25980	-95.31331	-37.20065	-12.89038	-41.66558	-7.065302	216.3103
10	-70.16350	-95.80804	-30.51283	-19.46613	-28.33883	-29.43407	245.4759
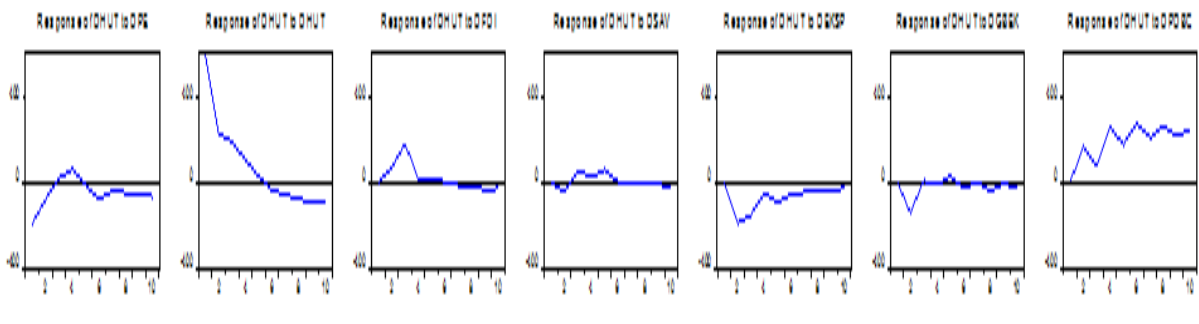
4.3. ANALYSIS AND DISCUSSION

4.3.1. Indonesian Foreign Debt

The Suharto government since 1966 prepared several steps to liberate Indonesia from the economic crisis by taking important steps as described in the first Fauker (1973) paper by changing the direction of the economic direction: from pro-East to pro-West. Arndt (1984) explains, the recovery plan is divided into three stages, namely: stabilization, rehabilitation, and development. All three are manifested in a number of substantive steps such as stopping hyperinflation and restoring macroeconomic stability, scheduling foreign debt, and opening the door for foreign investment. Simanjuntak and Panjaitan (2007) showed the results later that after the economic crisis of 1997-1998 the movement of public debt tended to be increasingly explosive so that the situation caused the government budget to become unsustainable.

During the New Order construction, according to Mack (2001), relations between international financiers, donors, and the government had closed the possibility for entrepreneurs or local companies to control important economic sectors. The bad effects of dependence on foreign debt were also felt when the economic crisis hit. On January 15, 1998, Indonesia requested IMF assistance to save economic conditions. The IMF also agreed to provide a multilateral financial assistance package that was given in stages over a period of 3 years worth 43 billion US dollars. However, a number of conditions must be met, including the necessity of the Indonesian government to liquidate 16 "Ailing" banks which trigger a rush of funds so that the level of investor confidence decreases. The result: Indonesia's domestic debt soared to the US $ 80 billion at that time. Since the fall of the New Order, the government has continued to depend on the IMF. At least, throughout the 1997-2003 period, Indonesia has signed 26 times an agreement with the IMF. Three years later, during the SBY administration, Indonesia's debt to the IMF was repaid. The loss of Indonesia's debt to the IMF does not mean stopping Indonesia's dependence on loans from donor countries. The dependence was continued by Joko Widodo's government. Data for June 2017, Indonesia has debts to related parties: Islamic Development Bank (Rp. 9.95 trillion), Germany (Rp. 24.3 trillion), France (Rp. 24.3 trillion), Japan (Rp. 196.98 trillion), America (Rp. 8.26 trillion), to the World Bank (Rp. 234.68 trillion). At the end of 2016, Indonesia's total foreign debt was US $ 317.08 billion, 2.04 percent more than the previous year (310.73 billion).

Based on data on existing debt developments and central government debt ratios from time to time, the peak was in 1998, when the monetary crisis hit Indonesia. At that time, the 2nd President of Soeharto who stepped down in May 1998 left a debt of Rp. 551.4 trillion or equivalent to the US $ 68.7 billion with a debt ratio of 57.7 percent of GDP. During SBY's reign, Indonesia's debt debt ratio to GDP of 24.70% (2014) and 2018 was 34.50%. Government debt Period II Susilo B. Yudoyono. 722.9 trillion rupiahs or an increase of 296.33% from the period I period. During Joko Widodo's reign debt was amounted to 1,267.1 trillion rupiahs or an increase of 75.28% from SBY's time so that the total debt at the end of 2018 was IDR 5,642 trillion.

4.4. Discussion of Analysis Results in the VAR Model

The findings and statistical analysis described in the previous section show that there is no single pair of variables that have a causal relationship (reciprocal relationship). This is clearly seen in each pair testing for causality which has a probability value <0.05 for both of its statistical F values. But there are 8 causal relationships that occur but only one direction.

The variables that have a one-way relationship are as follows.

4.4.1. The reason for a large amount of the government budget deficit and how much the budget deficit is and can be accepted and how it affects the Indonesian economy.

The main cause of the government budget deficit is due to an imbalance between state income and expenditure. Taxes on the one hand as sources of income are not sufficient to finance the country's economic activities as well as other sources of income. So that every year the government must look for sources of deficit financing that occur and are usually carried out through state debt to both foreign (bilateral and multilateral) parties and by issuing securities in the form of domestic debt.

There are no definite benchmarks to see how much a budget deficit can be received by a country. The budget deficit policy is one of the instruments of fiscal policy that will transfer public purchasing power to the government through tax, duty and loan instruments and then redistributed to the public both directly and indirectly (Musgrave and Musgare, 1989). The expansionary budget policy is pursued in conditions of state revenues smaller than expenditures. On that basis, the measure of the size of the government budget deficit may vary depending on the way in which the revenue and expenditure items are classified.

4.4.2. The relationship and influence of the causality of foreign debt as a source of state revenue towards the growth of the Indonesian economy and vice versa.

The causal relationship between foreign debt and economic growth shows a one-way relationship that is only a significant influence between economic growth and debt (0.0063 <0.05). While the foreign debt statistically in this study does not affect prob economic growth. 0.1255> 0.05.

As already mentioned, the failure of foreign debt to trigger economic growth and progress of borrowing countries (debtors) is the basis of the contra economists in criticizing the role of foreign debt. The most vocal and extreme are the Structuralist groups, among others, pioneered by Paul Baran, Raul Prebisch, Samir Amin, A. Cardoso and others, Arief and Sasono, (1984) and from other groups which are driven by Lance Taylor, Buffie , Bacha and van Wijnbergen who became known as the Neo Structuralist group. They argue that foreign capital and foreign aid only create a pattern of dependency on developed countries. Foreign aid as shown in empirical research has eliminated the opportunity for the emergence of domestic funding sources; and besides that it will also cause a dangerous demonstration effect on the country's economic, social and political conditions, Wie (1987).

The thinker group incorporated in the dependencia theory proposed two important hypotheses, Mariakasih (1982): First, the more a country depends on foreign investment and foreign aid, the less economic growth of the country concerned. Second, the more countries depend on foreign investment and foreign aid the greater the difference in income and economic equality is not achieved. Furthermore, this group led by Christopher Chase-Dunn and Richard Robinson (John Hopkins University) and Volker Bornschier (Zurich University) took the initiative to gather 16 research results on the problem of dependence on investment and foreign aid in terms of economic growth and equity, drawing a conclusion that quite surprising: First, the consequences of foreign investment and foreign aid indeed increase income differences so that welfare distribution does not occur. Second, foreign investment and foreign aid in the short term increase economic growth, and third, in the long term (5-20 years) economic growth decreases. Fourth, foreign investment and foreign aid have negative consequences for rich and poor countries.

Meanwhile other more moderate groups that use the welfare theory approach try to connect the influence of foreign aid on economic growth, domestic savings and investment. The results of the research they conducted showed varied conclusions. Papanek (1973), Dowling and Hiemenz (1983), Stoneman and Gupta and Islam (1983) as well as Garnaut (2015) and van der Eng (2010), Spiegel (2012) show that foreign aid as well as domestic savings have a significant contribution. quite large in economic growth in developing countries. However, the above studies - except the Papanek study - show that foreign aid is still less important than domestic savings for its contribution to the process of economic growth.

4.4.3. The relationship and influence of the causality of foreign debt as a source of state revenue to Indonesia's domestic savings level.

There is no significant relationship between foreign debt and domestic savings rates. The prob number is 0.7894> 0.05 and so is the opposite, there is no significant relationship between the level of domestic savings and foreign debt, the prob number is also large, which is 0.4784> 0.05.

The role of domestic savings or domestic savings as a source of funds for financing development is enormous. Domestic savings are obtained from the government sector and the public sector. Government savings in question is government savings in the APBN, which is the difference between domestic revenues and routine expenditure. Public savings are an accumulation of tabanas, taska and time deposits (Mudrajad, 1997). Accumulation of savings by the government has a very important role in the formation of domestic capital, especially in developing countries where the mobilization of funds and the allocation process through market mechanisms are considered less effective. Another more recent study, even though it does not directly refer to foreign debt but is related to public debt and bonds and its relation to fiscal deficits can be seen as Gale and Prszag (2002) found, Engel and Hubbard (2004), who saw who saw the impact of budget deficits on interest rates. The budget deficit here of course must be financed by debt whether domestic or foreign debt. In line with these findings from Engen and Hubbard (2014), Reinhart and Sack (2000) and Kinoshita (2016), it is also worthy of observation. Their findings reveal that an increase in the budget deficit of 1% of GDP will cause a rate increase of 2 to 7 base points. (Blanchard, 2019).

Simanjuntak and Panjaitan (2007) found that there was a tendency for Indonesia's foreign debt to be more explosive and increase which according to their studies would lead to a continuation of the state budget. So they suggested that the government reduce strong efforts from the government to reduce the budget deficit at least in the medium term so that fiscal sustainability could be implemented. Another study was Soelistianingsih (2012) that the Indonesian government after the crisis in Europe had been very active in seeking funding sources of deficits through the capital market, arguing that the financing source of deficits from foreign debt with foreign currencies would have a significant impact on the domestic economy and ability to pay debt itself. Although other studies show that fundraising through the capital market especially bonds will trigger an increase in the tax burden so that it will be burdensome for future generations. Scarth (1998).

Another study found that the increase in foreign debt that occurred was not commensurate with the large level of the gap that occurred between savings and investment. Arief and Sasono (1987) revealed that the effects of foreign capital flow in the form of foreign debt and investment have a negative relationship to domestic savings. In the sense that any additional 1 dollar increase in the flow of foreign capital results in almost one dollar worth of potential domestic savings that cannot be realized. The capital flows have substituted domestic relations with the sign of the "Crowding Out Effect" and encouraging consumption patterns for luxury goods which have resulted in "demonstration effects" in a negative sense, encouraging consumptive domestic savings potential.

In 2007, total domestic savings in Indonesia reached Rp 1,084.3 trillion. This figure is more than twenty times that of savings in 1990 which amounted to Rp. 53.8 trillion. The savings are sourced from the government and the public / private sector. Nevertheless, the contribution of government savings is relatively small. Of the total savings in 2007, only 8.03 percent (Rp. 87.1 trillion) was government savings, while most of the others (91.97 percent or Rp. 997.3 trillion) were community savings. In addition, if viewed from the period 1990 - 2007, the development of government savings is also relatively slower than public savings. Total community savings in 2007 were more than twenty-two times that of public savings in 1990, while government savings in 2007 were only about nine times that of 1990.

4.4.4. The relationship and influence of the causality of foreign debt as a source of state revenue to the level of foreign investment in Indonesia;

The results of Granger Causality testing also show that there is no significant relationship between foreign debt and investment level. The prob number is $0.6011 > 0.05$. Likewise, the reverse relationship between FDI and foreign debt also shows an insignificant number of $0.0814 > 0.05$.

4.4.4.1. Foreign Direct Investment in Indonesia

As an important note FDI inflows to Indonesia over the past 40 years (1970– 2014) have shown an increasing trend, despite falling during the 1997–2000 period caused by the 1997/98 Asian financial crisis. Increased FDI inflows began to occur since 1988 and increased significantly since 2004. Recorded FDI inflows to Indonesia increased from 145.4 million USD in 1970 to 22.3 billion USD in 2014. Trends in increasing FDI flows per Indonesian GDP occurred during the Asian Miracle period, namely from 1980 to before the 1997/1998 financial crisis. The trend of FDI flows per GDP has increased again since 2006–2014 despite falling in 2009 due to the subprime mortgage crisis. The increase in the FDI per GDP trend shows the increasing contribution of FDI to GDP. The Asian financial crisis of 1997/1998 and the 2009 subprime mortgage crisis caused a decline in Indonesia's FDI per GDP. Lindbald (2015) and Lipsey and Sjoholm (2011). However, the impact of the subprime mortgage crisis on FDI inflows to Indonesia was not as severe as the impact of the 1997/1998 Asian financial crisis. During the period 1998-2001 (the period of the 1997/1998 Asian financial crisis) FDI flows per GDP were below 0 percent or minus, while FDI flows per GDP in 2009 (the subprime mortgage crisis) was still above 0 percent. It was suspected that at the time of the subprime mortage crisis, Indonesia's economic fundamentals were stronger than the previous crisis so that the shock that occurred from overseas did not have a major effect on foreign direct investment in Indonesia.

Based on its components, FDI entering Indonesia consists of three components, namely: (i) equity, (ii) reinvested earnings, and (iii) other capital inflow in FDI. Both components of equity and reinvested earnings generally have a higher value than other inflow in FDI capital, both for FDI from ASEAN and non-ASEAN. If observed further, it appears that the trend of the three components of FDI has increased over the period 2004-2014. As one of the countries with the largest economic output in ASEAN, Indonesia is a country that is the main destination for intra-ASEAN FDI. The share of investment flows to Indonesia in 2014 was 55.2 percent of the total intra-ASEAN FDI. Furthermore, the second position is occupied by Singapore (18.6 percent).

In the midst of the slowing down of the Indonesian economy, which was marked by the weakening of the Rupiah against the US Dollar, rising poverty and unemployment, in fact this had no effect on investment interest. There are some countries that seriously express their interest in investing in Indonesia, such as Japan, South Korea, India, Italy, America, and so on. A surprising fact was also released by The Economist, stating that Indonesia was ranked second after China as a world investment destination. Global investment flows throughout the first semester fell 158%. However, Asia Pacific is the only region that has recorded positive investment flow growth. The flow of investment entering the Asia Pacific during the first six months of 2015 grew by 9.2%. Among other ASEAN countries, foreign investment entering Indonesia reached 31% of the total foreign investment entering the region. Higher than Vietnam at 17% or Malaysia, which is 16%.

4.4.5. Linkages and influence of causality of foreign debt as a source of state revenue to exports;

The Causality Test shows that exports significantly affect Debt with Prob 0.0110 <0.05 but it is not the opposite that exports do not affect foreign debt. The probability number is not significant at 0.5528> 0.05.

This finding is in line with the study conducted by Mahadika, Kalayci and Altun (2017) which shows that there is an association between foreign debt and the increase in exports.

4.4.5.1. Indonesian exports

Several studies have been conducted to analyze export performance and the factors that influence it. For example, the study by Tambunan (2001), Abdurohman and Zuladin (2002) analyzed the factors that influence exports in aggregate. Both studies emphasized the performance of labor-intensive exports, while Narjoko and Atje (2007) focused more on the performance of product manufactured exports. In general, there are two aspects that are not detailed analyzed in these studies. First, the analyzed exports are total, not based on several superior commodities. In reality, the export dynamics only occur on certain products. Second, the export destination is made into one, namely exports to world markets. Export dynamics are often country specific and product specific. The case of the financial crisis in the United States will greatly affect Indonesia's exports to America, but it does not significantly affect Indonesia's exports to Japan. Thus, an analysis model needs to be developed that allows capturing the dynamics of exports based on supply and demand based on the main destination countries. The problem to find how is the best export projection model that can be used in setting short and long term targets, based on economic and trade developments that occur in the global market, especially the main export destination countries?

The government's promise to focus more on working on the non-traditional export market has not been accompanied by efforts to escape dependence on traditional trading partners. Data shows, 2018 export growth target to all non-traditional trading partners - if the value is combined - apparently has not been able to compete with the total growth target of exports to China. China in 2018 was one of the largest export destination countries reaching the US $ 26.02 billion or grew 22% year on year (yoy). Indonesia is still quite dependent on traditional trading partners. Because free trade cooperation to non-traditional markets is still limited. Marks and Raharja (2012) also Marks (2015).

4.4.6. Linkages and the effect of causality of foreign debt as a source of state revenue to the growth of the workforce;

From the Causality Test shows that debt does not significantly affect the growth of the workforce with Prob 0.6233> 0.05 but on the contrary foreign debt affects the growth of the workforce significantly with Prob 0.0037 <0.05.

The study conducted by Garcia-Jimenez and Mishra (2010) shows that foreign debt has a positive impact on the increase in the absorption of the existing workforce although several other studies show the reverse findings.

4.4.6.1. Workforce

Based on the unemployment rate can be seen the condition of a country, whether the economy is developing or experiencing setbacks. In addition to the unemployment rate, it can also be seen the inequality or inequality of income distribution received by a society of that country. From the BPS data, the population of Indonesia has increased from year to year. Starting in 1980 amounted to 146,777,000 until 2007 amounting to 224,904,000 people (BPS, 1980 and 2007).

The increase was also followed by an increase in the number of unemployed. Unemployment in Indonesia is a problem that continues to swell. Before the 1997 economic crisis, the unemployment rate in Indonesia was generally below 5 percent and in 1997 it was 4.68 percent. (Sukirno, 2008). This condition is getting bigger after the economic crisis due to layoffs. From the data, it can be seen that the number of the workforce in Indonesia has increased by an average of 2.1 percent in the 1998-2007 period and has experienced a negative labor force growth of -0.45 percent in 2003 amounting to 100,316,007 people (Statistics Indonesia, 1998 - 2007). This is caused by changes in the population census figures carried out by the government.

In August 2010, the total workforce reached 116.5 million people, up by around 530 thousand compared to February 2010 and up 2.7 million compared to August 2009. The population working in August 2010 increased by 800 thousand compared to February 2010 , and increased by 3.3 million people compared to the situation a year ago (August 2010). The number of unemployed people in August 2010 decreased by around 270 thousand people compared to the conditions in February 2010, and decreased by 640 thousand people compared to the situation in August 2009. The increase in the number of workers and a decrease in the unemployment rate had increased the Labor Force Participation Rate of 0.49 percent over the past one year period.

4.4.7. The relationship and influence of the causality of foreign debt as a source of state revenue for per capita Gross Domestic Product;

From the Causality Test shows that debt does not significantly affect GDP with Prob 0.4366> 0.05 but conversely GDP significantly affects debt with Prob 0.0037 <0.05.

4.4.7.1. Gross Domestic Product

Indonesia's GDP per capita in 2017 reached Rp. 51.89 million, equivalent to 8.1% compared to the previous year at only Rp. 47.97 million. The Indonesian economy in 2017 measured by Gross Domestic Product (GDP) on the basis of current prices reached Rp 13,588.8 trillion. With a population of 261.8 million, Indonesia's GDP per capita reached Rp. 51.89 million, equivalent to US $ 3,876.8. Indonesia's population income last year rose 8.1% compared to the previous year at only Rp. 47.97 million / year. GDP per capita is the average income of the population obtained from the distribution of national income divided by the population. GDP per capita is one indicator to measure the prosperity of a region. The greater per capita income indicates that the region is increasingly prosperous. Conversely, the smaller the per capita GDP indicates that the region is less prosperous. Based on Indonesia's spatial economic structure in 2017 it is still dominated by provinces in Java with a contribution of 58.49%. This means that the economy is still dominated by people on Java. While the contribution of Sumatra Island is only 21.66%, Kalimantan Island 8.2%, Sulawesi Island 6.11%, and other islands 5.54%.

Between 1965 and 1997 the Indonesian economy grew with an annual average percentage of almost seven percent. This achievement has enabled the Indonesian economy to grow from the rank of 'low-income country' into the category of 'lower middle income countries'. However, the Asian Financial Crisis that "erupted" in the late 1990s had a very negative impact on the Indonesian economy, causing a decline of 13.6 percent in 1998 and a very limited growth of 0.3 percent in 1999. This condition is in line with the research conducted by Adrian. Nina and Giannone (2019).

4.5. Discussion of the TSR Model

4.5.1. How much mutual influence between fellow variables in this study using the Tawhidi String Relationship (TSR) method, which is applied in the VAR method.

Like creativity, which has been conveyed in Chapter 3, if the VAR is positive, the TSR will also be positive and vice versa if the findings on the VAR are negative, the TSR will also produce negative findings. The meaning of positive here is that there is "improvement" or a condition that is better than the variable under study as well as if it is negative then what happens is "decline" or the situation becomes worse on the variable under study. So from the findings that can be conveyed the following things. From the variables studied only 8 variables that have a one-way influence on other variables which in the TSR concept are categorized as "improvements" or better off. While the other variables do not have a causality relationship.

4.6. Zakat and State Budget Deficit

4.6.1. How does the Islamic economy see the state budget, how much variable zakat can be included in reducing the budget deficit and how big the potential of these components is in Indonesia.

As already stated that the potential of zakat is approximate Rp. 217 trillion. If the numbers are included in the APBN, they will be able to overcome the deficit that occurs because every year there is a deficit number even though it shows an increase but smaller than Rp. 217 trillion. But the problem is that zakat according to Islamic sharia provisions has been allocated for asnap 8. So the allocation must also be allocated to the intended recipients. Of the 8 asnap recipients that are most likely to be implemented by the government there are only 4 asnap, namely the allocation for the needy and the poor as well as people struggling fisabilillah and amil zakat bodies as managers

It can be explained that there are a number of fiscal instruments that become tools for the state to run the economy both as required by sharia and those carried out according to state authority, such as zakat, kharaj, jizyah and obligatory and infaq, charity, grants, endowments Voluntary while ganimah is a result that depends on the victory of a war carried out by the state. (Sakti, 2007): a). Zakat, the fiscal instrument that is a requirement in sharia is zakat. Zakat is a mandatory system (obligatory zakat system), not a voluntary (volutary zakat system). b). Kharaj, is a special tax imposed by the state on productive land owned by the people whose size is determined by the state. c). A poll tax is a tax that is only for non-Muslim citizens who can afford it. d). Ushur, is a special tax imposed on commercial goods that enter

Islamic countries (imports). e). Infaq-endowments, is a voluntary gift from the people for the benefit of the people to expect the blessing of Allah SWT alone. f). Ghanimah or wae booty, is the state income earned from war victories. Its use is in accordance with the terms of the Qur'an. Distribution of four-fifths of rice is given to soldiers who fight (mujahidin), while one-fifth are khunis, that is according to Al-Qur'an surat al-Anfaal (8): 41. g). Fai ', which is the property of the enemy country that has been defeated (it can not be through war or on the battlefield), which is then owned and managed by the state. h). Special tax (nawaib), this tax determines the collection depends on the state of the country's economy (temporary in nature) and becomes a prerogative right. i). Others, state revenues can also come from variables such as inheritance that has heirs, results of confiscation, fines, grants or gifts from fellow Muslim countries, hima and other non-binding assistance from outside countries and financial institutions world.

Conclusion

The main cause of the government budget deficit is due to an imbalance between state income and expenditure. Taxes on the one hand as sources of income are not sufficient to finance the country's economic activities as well as other sources of income. So that every year the government must look for sources of deficit financing that occur and are usually carried out through state debt to both foreign (bilateral and multilateral) parties and by issuing securities in the form of domestic debt.

1. The causal relationship between foreign debt and economic growth shows a one-way relationship, that there is significant influence between economic growth and debt. While statistical foreign debt in this study does not affect economic growth.
2. There is no significant relationship between foreign debt and domestic savings rates. Likewise, there is no significant relationship between the level of domestic savings and foreign debt.
3. The results of Granger Causality testing also show that there is no significant relationship between foreign debt and investment level. Likewise, the reverse relationship between FDI and foreign debt also shows insignificant figures.
4. From the Causality Test shows that exports significantly affect Debt but not vice versa that exports do not affect foreign debt. The probability number is not significant.
5. From Causality Test shows that debt does not significantly affect the growth of the workforce, but on the contrary foreign debt significantly affects the growth of the workforce.
6. From Causality Test shows that debt does not significantly affect GDP but on the contrary GDP significantly affects debt.
7. The mutual influence between fellow variables in this study using the Tawhidi String Relationship (TSR) method, there are 8 variables that have a one-way influence on other variables. While the other variables do not have a causality relationship.
8. Variable zakat proposed to be used in overcoming the budget deficit but must go through a national consensus for all components of the nation involved in the collection and distribution of the zakat. There are at least 4 asnap that can get benefits from the entry of zakat in the components of the state budget.

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