Remittance, Economic Growth and Household Consumption in Indonesia

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Abstract
International migration is not only affects population movements but also increases cash inflows in the form of remittances to encourage increased macroeconomic indicators such as consumption, economic growth and Gross Domestic Product. The purpose of this research is to examine the relation of causality of remittance, economic growth and consumption in Indonesia. The research data was collected from the publication of the World Bank from 1983 to 2016. The test of stationarity data of research variables was taken by using Augmented Dickey-Fuller test statistic concluded that stationary data at the 1\(^{st}\) level difference. The 2 optimal lag length is based on the Likelihood Ratio test, Final Prediction Error, Schwarz Information Criterion and Hannan-Quinn Information Criterion. Cointegration test results have a long-term relationship by comparing Trace Statistic value and maximum eigenvalue with Critical Value (5%). While the Granger Causality Test results, there is no causality relationship of research variables. However, there is a one-way relationship of remittance to consumption which means that the increase in remittances statistically encourages household consumption expenditure. Household consumption expenditure also boosted economic growth especially in Indonesia within 34 years from 1983 to 2016.

Keywords: remittance, economic growth, household consumption, Indonesia

1. Introduction
The latest update, on March 26, 2018 the government of the Republic of Indonesia enacted the Presidential Regulation (Perpres) No. 20 of 2018 on the Use of Foreign Workers (TKA). According to this Presidential Regulation, the employers of foreign workers are not only foreign private companies working in Indonesia and foreign countries, but also government agencies, legal entities such as Limited Liability Company, social, religious, educational and cultural institutions. These foreign workers have a Limited Stay Visa (Vitas) which includes the approval of foreigners to travel inside the
territory of Indonesia and the Limited Stay Permit (Itas) is granted to foreigners to reside in Indonesia for a period of time to work.

The promulgation of this Presidential Regulation certainly has a positive impact for foreigners migrating to seize opportunities and compete with domestic workers. Foreigners working in Indonesia are popularly referred to as migrant workers or external migrants ie individuals who move and settle from one place to another across political / country boundaries (international migration). Meanwhile, the internal migrants are individuals who move and settle from one place to another over administrative boundaries. Sudhinaraset, et al (2016) explains that internal migrants are individuals working in the country to find better jobs or educational opportunities. From the economic aspect, both external and internal migrants have a positive externality for themselves because they have income, and for the state can reduce unemployment and increase economic growth.

Claros (2016) explained that the number of migrant workers has increased rapidly in recent years due to various reasons: employment opportunities, shortage of labor due to falling birth rates, internal conflicts and wars, natural disasters, climate change, and increased access to information by telephone and the Internet. These migrants then send income back to their families in developing countries at levels above US $ 441 billion. This cash inflows account for more than 10% of Gross Domestic Product (GDP) in approximately 25 developing countries and lead to increased investment in health, education and small businesses. Skilled labor migration that has these competencies can affect the provision of basic services and is beneficial to increased trade, investment, knowledge, and technology transfer.

The process of sending income back to their families is a practical notion of remittance. Remittances also mean the process of transferring money from foreign workers to recipients in their home country. Especially in developing countries, the international aid and money sent by foreign workers are a source of income for state finances. Ghumro and Karim (2017) explained that remittance is one source of financial income and substitute foreign aid in developing countries like Pakistan, and can affect money demand. Even remittances are the second most important source of foreign exchange income in Pakistan after exports. Meanwhile, the World Bank explains that remittance is the transfer or transfer of money in cash or goods made or received by the resident household to or from non-residents households. This transfer comes from employee compensation employed in an economy where they are not residents.

The following figures represent the development of Indonesian remittances in the last 10 years from 2007 to 2016.
Based on the above figures, Indonesia’s remittance value increased up to 2015 (US $ 9,659,168,639) and decreased in 2016 (US $ 8,891,260,927). This decline continues in 2017 as reported by World Bank Group (2017), that Indonesia’s trend remittance is predicted to decrease as the prohibition of female domestic workers works to the Middle East. Nevertheless, Indonesia still occupies the fourth rank after Vietnam, the Philippines and China as the highest receiver of remittance in East Asia and Pacific region (note 2).

According to Bank Indonesia (2018), remittances have a positive impact on improving inclusive finance. With the ease of making funds transfers, it will help direct unbanked using formal financial products and services. Remittances can increase demand for savings or electronic money as a means to keep money safer. Furthermore, with such savings and electronic money, unbanked track records can be monitored and analyzed to further become an important part of financing.

Previous research related to this research was conducted by Ghumro and Karim (2017); Ratha; Zogjani and Pantina (2014); Panagiotou (2012); UNDP (2010); Nirean and Corețchi (2016); Simionescu and Dumitrescu (2017); Bonsu and Muzindutsi (2017); Karim, et al (2012); Mukit, et al (2013); Chirila and Chirila (2017). The study of Ghumro and Karim (2017) found that in Pakistan remittances will increase household incomes used for consumption purposes. Zogjani and Pantina (2014) in his research found that...
remittances are essential to the Kosovo economy primarily to stimulate private consumption and investment and the impact is very high in improving the welfare of society. Panagiotou (2012) explains, the occurrence of labor market movement is reflected significantly in countries that send money, where most are used for consumption. Similarly to the research of United Nations and Development Program (2010), the use of remittances is divided into different categories, where most of the remittances for consumption are then investment in housing, human capital, business, savings and other financial obligations. In Moldova, remittances have an important role in economic development especially the consumption sector. Meanwhile, Simionescu and Dumitrescu (2017), in developing countries, remittances of migrants are positively associated with private consumption expenditures.

Different results are shown by research by Medina and Cardona (2010), that in Colombia there is more than 10% of remittances are used for education and not for consumption, investment and health. Similarly Nepal, according to Thagunna (2013) in his study found that there is no relationship either one way or two-way remittance with consumption using data as much as 9 years i.e in 2001 until 2009. Based on the results of previous research, in general remittance can increase the flow
cash inflows in a country and increase people’s incomes. This increase in revenues will encourage increased public consumption, so remittance is positively associated with household consumption expenditure. The following figure shows the amount of household consumption expenditure in Indonesia in the last 10 years.

**Figure 3:** Indonesian Consumption 2007-2016 in Billion US$. Sources: World Bank, Processed (2018).

In addition to household consumption, remittances also encourage economic growth in a country. Mankiw (2010) explains, to measure economic growth, economists use data on gross domestic product, which measures the total income of everyone in the economy. While previous studies that examine the relationship of remittance to economic growth proposed by Ghumro and Karim (2017); Ratha (2007); Mukit, et al (2013) and Chirila and Chirila (2017). The study of Ghumro and Karim (2017), that an enormous increase of cash inflows contributes to reducing poverty and current account deficits, increasing foreign exchange reserves and economic growth and stabilizing exchange rates. Ratha (2007) in his research found that in developing countries, remittances play an important role in increasing revenue and stable investment. In Bangladesh, remittance is one of the major locomotives of economic growth and poverty reduction and is considered an important mechanism for transferring resources from developed countries to developing countries [10]. While in Romania, remittances have a positive effect on macroeconomics and are directed at productive fixed investment to stimulate economic growth [3].
The observation in Figure 4 shows that Indonesia’s economic growth in the last 10 years has decreased. This result is inversely proportional to the level of consumption whose tendency has increased. While earlier studies that examined the relationship between consumption and economic growth were conducted by Karim, et al (2012) that in Malaysia in the long run there is no significant influence of fixed investment and household consumption on growth. Empirical results indicate that household consumption and investment remain significant in affecting output growth in the short term. Bonsu and Muzindutsi (2017) in his study in Ghana showed that in the short term household consumption has a significant effect on real economic growth. Based on observations on remittance, economic growth and consumption in Indonesia in the last 10 and associated with research findings in several countries, the purpose of this study is to examine the relation of causality of remittance, economic growth and household consumption in Indonesia.

2. Method

This research uses quantitative approach with explanatory research design on research variables. The source of research data comes from secondary data in the form of documentation published by the World Bank and can be accessed through the web www.
worldbank.org. Periodization of research for 34 years from 1983 to 2016. The variables of this research are remittance, economic growth and household consumption. Remittances are money transfers made by foreign workers to a recipient in their home country and measured in units of money. Economic growth is a process of increasing the production capacity of an economy which is realized in the form of an increase in national income, namely gross domestic gross and measured in units of percent (%). Household consumption is the market value of all goods and services, including durable products purchased by households based on constant prices and measured in units of money.

Based on the purpose of the study and to test the hypothesis are: (1) there is a relationship of causality of remittance with economic growth; (2) there is relation of causality of remittance to household consumption and (3) there is relation of causality of economic growth with household consumption, so this research use Granger Causality Test by adopting data analysis step from Sujiarto and Effendi (2016) that is: (1) Unit Root Test; (2) determination of lag length; (3) cointegration test and (4) Granger Causality Test. Granger Causality Test was chosen because this research data is time series as stated by Gujarati (2003) that the Granger causality test assumes information relevant to the predictions of each variable, which is contained only in the time series data in the research variables.

3. Results and Discussion

3.1. Unit root test

The following table presents the results of testing stationarity data using Augmented Dickey-Fuller test statistic.

<table>
<thead>
<tr>
<th>Variables</th>
<th>t_statistics</th>
<th>Critical values</th>
<th>P-values</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1%</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>LR</td>
<td>-7.956470</td>
<td>-3.653730</td>
<td>-2.957110</td>
<td>-2.617434</td>
</tr>
<tr>
<td>LE</td>
<td>-7.923270</td>
<td>-3.653730</td>
<td>-2.957110</td>
<td>-2.617434</td>
</tr>
<tr>
<td>LC</td>
<td>-6.371401</td>
<td>-3.653730</td>
<td>-2.957110</td>
<td>-2.617434</td>
</tr>
</tbody>
</table>

Remark: Log Remittance (LR), Log Economic Growth (LE) and Log Consumption (LC)

Based on the test stationarity data at the level of 1\textsuperscript{st} difference or I (1) can be stated that the data research variables are remittance, economic growth and household consumption in stationary conditions. This decision is based on Augmented Dickey-Fuller test statistic test result: absolute value of statistic t is greater than the critical value according to MacKinnon table at 1%, 5% and 10% level. The absolute statistic t value for the remittance variable is 7.956470 greater than the critical value of 3.653730 (1%), 2.957110 (5%) and 2.617434 (10%) so it can be concluded that the data is stationary. Another approach is to compare the value of Prob (P-values), if the value is smaller than 0.05 (5%) then the data stationary. The value of P-value for remittance variable is 0.0000 smaller than 0.05 (5%) so that the decision is variable data of stationary remittance.

Similarly, the variable of economic growth, at the level of level or I (1) the absolute value of statistic t (7.923270) is greater than the critical value according to MacKinnon table ie 3.653730 (1%), 2.957110 (5%) and 2.617434 (10%). Other considerations based on the value of P-value of 0.0000 is smaller than 0.05 (5%) so that the variable data of stationary economic growth. The variable of household consumption with the test at the level of 1st difference or I (1) the absolute value of statistic t (6.371401) is greater than the critical value according to MacKinnon table that is 3.653730 (1%), 2.957110 (5%) and 2.617434 (10%). While value of P-value equal to 0.0000 less than 0.05 (5%) so that variable data of household consumption of stationary. Because all data of research variable have stationary then variable of remittance, economic growth and household consumption ready to be analyzed further and expected to produce valid model output.

3.2. Determination of lag length

Determining the optimal lag or lag length becomes an important requirement in VAR modeling. If the optimal lag is too short it can be stated that the VAR stability test is statistically incapable of explaining the dynamics of the model. However, if the optimum lag is too long, it results in an inefficient estimation value due to the reduced degree of freedom especially on the model with small samples. The length of the lag is used to identify the time required for the influence of each variable on its past variables.

Theoretically to determine the lag length using several approaches are: Likelihood Ratio (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC) and Hannan-Quinn Information Criterion (HQ). Based on the
lag selection criteria test above it can be argued that AIC statistically shows different lag lengths, whereas the same lag length is indicated by the LR, FPE, SC and HQ values in lag 2. Since the four criteria give the same statistical results, this uses the length of lag 2. Determination of the length of the lag can also be based on the number of stars most, and because the optimal lag length has been found it can be done further testing, namely cointegration test.

3.3. Cointegration test

After the selection criteria of lag length (decided using lag length 2), the cointegration test was then performed to identify the long-term relationship balance or not among the research variables. In this study, the cointegration test was chosen using Johansen’s Cointegration Test method.

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Trace Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.570609</td>
<td>37.18211</td>
<td>29.79707</td>
<td>0.0059</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.221939</td>
<td>10.12972</td>
<td>15.49471</td>
<td>0.2709</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.063497</td>
<td>2.099296</td>
<td>3.841466</td>
<td>0.1474</td>
</tr>
</tbody>
</table>

The above table describes the relationship of cointegration or the relationship of mutual influence between research variables. If there is cointegration of research variables means that there is a relationship of mutual influence. Based on the Johansen cointegration test results indicate that there is 1 cointegration equation at the 5% level. Another explanation that these three data are integrated with indicators of trace statistic value (37.18211) is greater than the critical value of 0.05 (29.79707). In addition, Prob value (0.0059) is smaller than 0.05 so it can be concluded that all research variables have long term cointegration relationships.

<table>
<thead>
<tr>
<th>Hypothesized No. of CE(s)</th>
<th>Eigen value</th>
<th>Max-Eigen Statistic</th>
<th>0.05 Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.570609</td>
<td>27.05239</td>
<td>21.13162</td>
<td>0.0065</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.221939</td>
<td>8.030423</td>
<td>14.26460</td>
<td>0.3756</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.063497</td>
<td>2.099296</td>
<td>3.841466</td>
<td>0.1474</td>
</tr>
</tbody>
</table>


The cointegration test based on the maximum eigenvalue also shows 1 cointegration equation at 5% level, shown by max-eigen statistic value (27.05239) greater than critical value = 0.05 (21.13162). Another test that the value Prob (0.0065) is smaller than 0.05 so that based on cointegration test found a long-term relationship between the variables that are estimated remittances, economic growth and household consumption.

3.4. Granger causality test

Granger causality test is intended to identify the causal relationship of each independent variable to the dependent variable namely remittance, economic growth and household consumption. The level of test used in the granger quality test is at the level of $\alpha = 0.05$ (5%) with optimum lag length up to lag 2 as the optimum lag length testing has been done (note table 2). Here is presented the results of granger casualty test for research variables.

Based on the granger causality test results (table 5), note the probability column values (Prob). If the probability value is greater than 0.05 then it can be concluded that there is no causality of research variables, based on the hypothesis as follows:

Ho: The dependent variable is not significantly influenced by the independent variable.

Ha: The dependent variable is significantly influenced by the independent variable.
Granger variable causality test on economic growth and vice versa shows that both are not statistically significant. This result is based on Prob value greater than 0.05 that is 0.4573 so remittance is not statistically significant influence economic growth, hence accept null hypothesis. The same result on economic growth that does not statistically significantly affect remittance because the value of Prob is greater than 0.05 is 0.7356 so as to accept the null hypothesis. Thus it can be concluded that there is no causality of two-way remittance with economic growth, so the hypothesis that “there is a relationship of causality of remittance with economic growth” is untested.

The results of this study show that there is not enough statistical evidence that remittance can promote direct economic growth in Indonesia, therefore this result is contrary to the research of Ghumro and Karim (2017) that the increase in remittance contributes greatly to the increase of economic growth. In general, remittance can affect economic growth as suggested by Ratha (2007) in his research in developing countries, Mukit, et al (2013) in Bangladesh and Chirila and Chirila (2017) in Romania. While in Indonesia remittances do not affect direct economic growth, but indirectly through increased consumption of households can increase GDP and of course economic growth has increased.

Remittance variable statistically significant influence household consumption with Prob value less than 0.05 that is 0.0285 so it can be concluded accept alternative hypothesis. The results of this study are relevant to the research of Ghumro and Karim (2017) that in Pakistan in the period 1972-2014 remittances affect household consumption. In Kosovo remittances are essential to stimulate public consumption in 2008-2013 [21]. Similarly, the Panagiotou (2012) studied that the transfer of migrant workers in the Balkans was a major economic force in the years before the Albanian, Bosnian Hertzegovina, Montenegrin and Serbian crisis. After the transfer crisis has decreased and certainly affect the decline in consumption and GDP countries. The study also

<table>
<thead>
<tr>
<th>Null Hypothesis</th>
<th>Obs</th>
<th>F-Statistic</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>LR does not Granger Cause LE</td>
<td>32</td>
<td>0.80552</td>
<td>0.4573</td>
</tr>
<tr>
<td>LE does not Granger Cause LR</td>
<td></td>
<td>0.31053</td>
<td>0.7356</td>
</tr>
<tr>
<td>LR does not Granger Cause LC</td>
<td>32</td>
<td>4.07262</td>
<td>0.0285</td>
</tr>
<tr>
<td>LC does not Granger Cause LR</td>
<td></td>
<td>0.01842</td>
<td>0.9818</td>
</tr>
<tr>
<td>LE does not Granger Cause LC</td>
<td>32</td>
<td>0.00229</td>
<td>0.9977</td>
</tr>
<tr>
<td>LC does not Granger Cause LE</td>
<td></td>
<td>17.3587</td>
<td>0.00001</td>
</tr>
</tbody>
</table>

supports the findings of Nirean and Corețchi (2016), that remittance in Moldova in 2013-2015 plays an important role in economic development, especially the consumption sector. Similarly, the study of Simionescu and Dumitrescu (2017), that in 74 developing countries including Indonesia in 1989-2015 found that remittances of migrants were positively associated with personal consumption expenditures.

Thus, there has been considerable empirical evidence that remittances may encourage a nation's economy as consumption increases can affect GDP growth as suggested by Mankiw (2010), that the component of GDP consists of consumption, investment, government spending and net exports. Consumption consists of goods and services purchased by the household. It is divided into three subcategories namely: non-durable goods, durable goods, and services. Non-durable items are items that last only a short time, such as food and clothing. Durable goods are durable items, such as cars and TVs. Services include work done for consumers by individuals and companies, such as haircuts and doctor visits.

Different result that household consumption statistically does not significantly affect remittance in Indonesia as evidenced by Prob value greater than 0.05 that is 0.9818 so that statistically accept null hypothesis that variable of remittance is not significantly influenced by household consumption variable. Thus it can be concluded that there is no two-way causality, and the hypothesis which reads “there is a relation of the causality of remittance with household consumption” is untested.

Meanwhile, the variable of economic growth statistically does not significantly affect household consumption with Prob value greater than 0.05 that is 0.9977 so accept null hypothesis. While household consumption statistically significant influence economic growth shown by the value of Prob smaller than 0.05 0.00001 so accept the alternative hypothesis that the variable per economic plants are significantly influenced by household consumption. Thus, it can be concluded that there is one-way causality of variables of household consumption and economic growth, that is, only statistically significant consumption affects economic growth. And it does not happen otherwise. The result of this research is that consumption encourages economic growth relevant to Karim’s research, et al (2012) that in Malaysia household consumption is significant in influencing output growth in the short term. The results of this study also support Bonsu and Muzindutsi (2017) in his study in Ghana that in the short term household consumption has a significant effect on real economic growth.
4. Conclusions

Remittance in Indonesia become one of the income of the state and of course to the households of the population, so that the presence of Indonesian workers working abroad become one of the economic support of the nation. Indonesian labor becomes a hero of foreign exchange because it can really bring in cash inflows to build the country’s economy. This is indicated by the increasing value of household consumption, making it more convincing that cash inflows as a result of Indonesian labor activities overseas can drive the real sector through increasing household consumption. As one of the Indonesian economic players in addition to the monetary sector, the government’s financial sector and the external sector, the increase in real sector economic activities contribute to maintaining price stability and inflation. In addition, the production output generated by the real sector is able to be absorbed by the market so that the economy will move forward to increase the national income as reflected in GDP. This increase in national income at some point can increase economic growth to achieve a full employment national economy. Further research opportunities, there is a deep empirical study of remittances, consumption and economic growth if associated with unemployment and investment in Indonesia and some countries in the Association of Southeast Asian Nations other using panel data.

References


