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Factors Affecting the Purchasing Power Parity of Currency of Member Countries of the Asia Pacific Economic Corporation (APEC)

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ABSTRACT
This study aims to analyse the factors that affect the purchasing power parity of the middle income Asia Pacific Economic Corporation (APEC) member countries consisting of 9 countries (Mexico, China, Russia, Peru, Malaysia, Thailand, Indonesia, the Philippines and Papua New Guinea) using the data analysis method, namely panel data regression with the Random Effect Model using the variable net exports, the number of stock transactions and inflation. The results obtained indicate that net exports have a positive and insignificant effect, the number of stock transactions has a significant positive effect and inflation has a significant negative effect. From the research results, it is suggested the government of a country should develop more types of exports that play a greater role in state revenue. simplify the investment process and also maintain legal certainty in order to attract investors to invest their stocks and it is hoped that the government and central bank will maintain price stability which can be done with monetary policy.

Keywords: *Middle income countries, APEC, Purchasing power parity, Net export, Total stock transaction, Inflation.*

1. INTRODUCTION

The Purchasing Power Parity of a country's currency is an important factor in the country's international economy. The value of the purchasing power parity of a country's currency can be an illustration of how the country's currency is. Because the purchasing power of currency shows how much a country's currency is in buying goods and services compared to other countries.

Because of this, the real currency value is important for each country, so that policy makers in each country try to maintain the stability of the real currency value as a form of the economy and the macroeconomic condition of the country is good and stable against small or large shocks. can come from within and from outside the country concerned. Especially in developing countries, where the problem of currency stability depends on the world's reference countries.

One of the economic cooperation groups with a similar type of economy is the Asia Pacific Economic Corporation (APEC). This collaboration was formed because of the dynamics of the globalization process which has a very broad and global impact. Therefore, APEC member countries are required to make adjustments through changes in the economic structure so as not to harm each other in the region and also for more effective economic cooperation for the Asia Pacific region.

Currency Purchasing Power Parity instability is focused on groups of upper middle and lower middle income, because countries with this classification often experience economic shocks both internally and externally which create instability for income and resilience from the economy to the resilience of their currency values and the purchasing power of the country. Table 1 shows the development of the Purchasing Power Parity conditions for currencies in the last 5 years for countries in APEC with the upper middle and lower middle income group.

Table 1. Currency Purchasing Power Parity of APEC Member Countries 2014-2018 (Index)

No	Country Name	Years				
		2014	2015	2016	2017	2018
1	Mexico	0.61	0.53	0.47	0.48	0.49
2	China	0.49	0.41	0.40	0.40	0.41
3	Russia	0.55	0.39	0.36	0.42	0.41
4	Peru	0.53	0.48	0.46	0.49	0.48
5	Malaysia	0.44	0.37	0.35	0.34	0.36
6	Thailand	0.38	0.36	0.35	0.37	0.38
7	Indonesia	0.33	0.30	0.31	0.31	0.30
8	Filipina	0.41	0.39	0.38	0.36	0.35
9	Papua New Guinea	0.78	0.66	0.60	0.62	0.63
Average		0.50	0.43	0.41	0.42	0.42

Sources: World Bank, 2018

In Table 1, it shows how the development of the purchasing power parity conditions for each country in APEC for the middle income group of countries from 2014 to 2018 from the table shows that Purchasing Power Parity has fluctuated every year in each country. In Table 1, it can be seen that the purchasing power parity of the Philippines has a value that tends to decrease every year in the last 5 years. Meanwhile, countries that experienced fluctuation were Mexico, China, Russia, Peru, Malaysia, Thailand and Papua New Guinea. The average Purchasing Power Parity value each year can be said to be stable but has decreased relatively overall.

Macroeconomic factors that can affect the Purchasing Power Parity level of a country's currency, including the rate of inflation, namely when inflation increases it will reduce Purchasing Power Parity because the price of goods becomes expensive, the value of net exports can also affect it because the better exports will increase the purchasing power of the country and the total stock transactions of a country.

[1] the purchasing power parity exchange rate theory is a comparison of the prices of domestic goods and services with other countries. First, absolute purchasing power parity states that the exchange rate of one country's currency against the value of another country's currency is determined by the price level in each country. Second, exchange rate fluctuations within a certain period of time will be proportional or proportional to the change in price levels prevailing in both countries during the same period which is defined as relative Purchasing Power Parity.

[2] inflation is the process of increasing general prices of goods continuously for a certain period. [3] inflation is the rate of change in prices, and the price level is the accumulation of previous inflation. The law of a country which is applied in the international market including the value of a country's currency will tend to balance the cost of purchasing goods in the country. In the cost of purchasing these goods abroad and also states that countries with high inflation rates tend to experience depreciating currency values [4].

[5] states that net exports or net exports are the difference in value of goods and services exported to other countries with the value of goods and services imported from other countries. Net exports are positive if the export value is greater than the import value and on the other hand, the net export is negative if the export value is lower than the import value. [6] states that export commodities have a statistically significant supply elasticity with their relationship to currency value, where there is a short-term effect of export elasticity on currency value movements with panel data.

Stock price is money issued to obtain proof of ownership of a stock. The determinants of the price of a stock that occur in the capital market are market players and also the demand and supply of these stock [7].

[8] shows that several things that can affect the real value of a currency are the openness of the capital account, the ebb and flow of the stock market which can be related to the capital inflows and outflows of the portfolio. [9] revealed that between Purchasing Power Parity and stock returns have a positive long-term relationship.

2. METHOD

This research is to use secondary data, namely data that are officially published by certain agencies. The data used is panel data with 17 years of time series data (2001 to 2018) and 9 countries with cross section data (Mexico, China, Russia, Peru, Malaysia, Thailand, Indonesia, Philippines and Papua New Guinea).

Mathematically it can be written with the following equation:

$$Yit = \alpha 0 + \alpha 1X1it + \alpha 2X2it - \alpha 3X3it + \varepsilon i \quad (1)$$

Where:

Y_{it} = purchasing Power Parity
X_{1it} = net Export
X_{2it} = total Stock Transaction
X_{3it} = inflation
ε_{it} = error term
α_0 = a constant

The operational definition of the variables used in this study is:

1. *Purchasing Power Parity* (Y) is the ratio of the ability of a country's currency to buy goods and services compared to the currency of another country with the dollar reference currency. expressed by index;
2. Net export (X1) is net exports originating from the difference between exports and imports by each country. Net exports used in this study are the ratio of net exports to GDP in percentage units;
3. Total Stock transaction (X2) is the total money or value paid for stock based on the demand and offering of stock in the international capital market. In this study, the number of stock transactions is the ratio of stock transactions to GDP expressed as a percentage;
4. Inflation (X3) is the increase in prices as a whole and continuously over a period that has varying degrees in countries. Inflation is used as a percentage.

3. RESULTS AND DISCUSSION

Based on the results of the Chow Test in the table above, it can be seen that the chi-square probability value is 0.0000 where this value is less than $\alpha = 0.05$. so that the Fixed Effect Model is more appropriate to use. The results of the Hausman Test in the table above, it can be seen that the Chi-Square probability value is 0.6186 which is greater than $\alpha = 0.05$ so that the Random Effect Model is more appropriate to use. however, it is still necessary to perform the Langrange Multiplier Test. The results of the Langrange Multiplier test show that the probability value of Breusch-Pagan is 0.0000 which is smaller than $\alpha = 0.05$, which means that the Random Effect Model is more appropriate to use.

Based on data analysis, the results of the panel regression equation are as follows:

$$Yit= 0.4369+0.0026X1it+0.0007X2it – 0,0089X3it \quad (2)$$

Table 2. Random Effect Model Estimation

Dependent Variable: Y
Method: Panel EGLS (Cross-section random effects)
Date: 10/20/20 Time: 00:44
Sample: 2001 2018
Periods included: 18
Cross-sections included: 9
Total panel (balanced) observations: 162
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.436917	0.046033	9.491329	0.0000
X1	0.002670	0.001940	1.376021	0.1708
X2	0.000727	0.000247	2.940892	0.0038
X3	-0.008989	0.002862	-3.140702	0.0020

Effects Specification	S.D.	Rho
Cross-section random	0.125717	0.6492
Idiosyncratic random	0.092418	0.3508

Weighted Statistics			
R-squared	0.116057	Mean dependent var	0.073739
Adjusted R-squared	0.099273	S.D. dependent var	0.097002
S.E. of regression	0.092061	Sum squared resid	1.339095
F-statistic	6.914861	Durbin-Watson stat	0.393380
Prob(F-statistic)	0.000210		

Unweighted Statistics			
R-squared	-0.075225	Mean dependent var	0.431914
Sum squared resid	3.247080	Durbin-Watson stat	0.162230

Sources: Data Proceed by author

Net Exports have a positive and insignificant effect on the Purchasing Power Parity of upper middle and lower middle income APEC member countries with a regression coefficient of 0.0026. if the net export increases, it will increase the Purchasing Power Parity of the currencies of upper middle and lower middle income APEC member countries. The more the surplus in the value of a country's exports, the higher the

country's foreign exchange reserves, when a country has sufficient foreign exchange reserves, the central bank can intervene in reducing the value of the dollar against the country's currency so that the Purchasing Power Parity of the country's currency increases. This result is in accordance with [5] When domestic goods are relatively cheaper in price compared to prices of foreign goods, and net exports increase, the value of the currency will appreciate. This study has a positive effect between net exports on currency value according to research by [6] which states that export commodities have statistically significant supply elasticity with their relationship to currency value, where there is a short-term effect of export elasticity to value movements. currency with panel data. Regression indicates a higher export response over a longer time period correcting the currency value. However, the value of imports is higher than exports. This can be caused by the country's weak productivity. The failure to achieve this can be caused by the quality of exports that have not been made to provide significant returns to state revenues. In addition, the value of imports carried out by the state is still large because the state has not been able to meet the needs of the people and also imports made in the form of goods / services with a greater return value so that the expenditure is greater than the state income.

Total of Stock Transactions (X2) This influences the purchasing power parity of the currencies of APEC member countries with the upper middle and lower middle income positively and significantly with a regression coefficient of 0.0007. It can be interpreted that when the number of stock transactions increases, the purchasing power and the value of the currency also increases. In accordance with the research results by [8] shows that several things that can affect the real value of a currency are the openness of the capital account, the ebb and flow of the stock market which can be related to the capital inflows and outflows of the portfolio.. This result is in accordance with the results of research by [9] revealed that between Purchasing Power Parity and stock returns have a positive long-term relationship.

Inflation has a significant negative effect on the purchasing power parity of the currencies of the upper middle and lower middle income APEC member countries with a regression coefficient of -0.0089. This result means that when the rate of inflation increases, it will decrease the value of the currency and the purchasing power of the country. This finding is in accordance with the theory by [4] that the law of a country applied in the international market includes the value of a country's currency which tends to balance the cost of purchasing goods in the country. in purchasing these goods abroad and also states that countries with high inflation rates tend to experience depreciating currencies. [5] When domestic goods are relatively cheaper than the price of foreign goods, and net exports increase, the value of the currency will appreciate. [10]results show trade openness, current account balances and inflation significantly affect the long-term real value of currency in Indonesia.

4. CONCLUSION

Based on the results of processed data with panel data regression analysis, research discussion between net exports, total of stock transactions and inflation on the purchasing power parity of the currencies of upper middle and lower middle income APEC member countries, either jointly or partially, the following conclusions are obtained: total of stock transactions and inflation together have an influence on Purchasing Power Parity. Net exports have a positive and insignificant effect on the Purchasing Power Parity value of the currency. Total of stock transactions has a positive and significant effect on currency Purchasing Power Parity. Inflation has a negative and significant effect on currency purchasing power parity. Therefore, for the government of a country to further develop the type of export that plays a greater role in revenue for. It should simplify the investment process and also maintain legal certainty in order to attract investors to invest in the state. And it is hoped that the government and the central bank will maintain price stability which can be done with monetary policies such as interest rate policies and controlling the amount of money circulating in society that does not cause inflation.

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