Original Article

The Effect of Capital Income, Economic Structure, Tax Rates, and Corruption of Tax Ratio in Countries Low Middle Income

Elok Kurniawati[1], Putri Octa Fadillah[2]

Faculty of Economics and Business, MercuBuana University, Indonesia

Abstract - *This study aims to empirically examine the relationship between income per capita, economic structure, tax rates, and corruption to the tax ratio. The research sample is 11 Asian countries with low, middle income in 2013-2017, determined by the purposive sampling method. The data in this study are secondary data taken from the official website of the World Bank and transparency. Hypothesis testing uses multiple regression analysis with Eviews 10. The results of this study indicate income per capita and economic structure has a significant positive effect, and tax rates have a significant positive effect on the tax ratio. At the same time, corruption has an insignificant negative effect on the tax ratio.*

Keywords - *Capital Income, Economic Structure, Tax Rates, And Corruption Of Tax Ratio*

I. INTRODUCTION

Tax revenue is one source of state revenue that contributes quite large in almost all countries in the world. Based on the latest estimates from the International Center for Tax and Development, state revenue sourced from taxes accounts for more than 80% of total government revenue in about half of the world's countries and more than 50% in almost every country. And one of the indicators used in measuring the performance of the government in collecting taxes in a country is through the tax ratio figure. Prasetyo (2016) said that a tax ratio is a comparison number between the amount of tax revenue of a country with gross domestic product.

The Indonesian Minister of Finance, Sri Mulyani, said that the standard threshold tax ratio from the World Bank for a country is 15%. Indonesia is one of the countries whose tax ratios are still below the standards of the World Bank for five years in a row from 2013 to 2017. YustinusPrastowo, Director of the Center for Indonesia Taxation Analysis, revealed that the phenomenon of a low tax ratio in Indonesia is a deviation from the concept. Because the Indonesian economy continues to grow positively, it is not in line with the performance of tax collection, which tends to be stagnant (Ministry of Finance of the Republic of Indonesia 2019: 18).

So, based on this phenomenon, researchers are interested in researching things that affect tax ratio figures in middle-income countries down the Asian region. There are several things that affect the magnitude of the tax ratio, including income per capita, economic structure, tax rates, and corruption.

II. LITERATURE REVIEW

According to the results of research by Wibowo (2015) and Ikhsan& Amir (2016), the variable income per capita does not have a significant effect on tax ratios, and economic structure variables have a significant effect on tax ratios. Meanwhile, the results of research by Gupta (2007) and Ansari (1982) variable income per capita has a significant effect on the tax ratio. Another research result from Lim &Toly (2013) states that tax rates have a significant negative effect on tax ratios. While Damayanti, Suhadak, &Pemungkas (2016) stated that the tax rate had a significant positive effect on the tax ratio. And Baum, Gupta, Kimani, &Tapsoba (2017) say that the relationship between corruption and the tax ratio is negative and significant. At the same time, Potanlar et al. (2010) said that the corruption perception index had a positive and significant effect on the tax revenue ratio.

Based on the description above, the purpose of this study is (1) to know and analyze the effect of income per capita on tax ratios, (2) know and analyze the effect of economic structure on tax ratios, (3) know and analyze the effect of tax rates on tax ratios, and (4) find out and analyze the effect of the corruption perception index on the tax ratio. In low-income countries in the Asian continent during the period 2013-2017.

III. METHODOLOGY

This research is quantitative research. The data used in this study are secondary data in the form of world bank data for low, middle-income countries in Asia during the period 2013-2017. The population in the study amounted to 16 countries. Meanwhile, the research sample was determined using the purposive sampling technique so that there were 11 countries that fit the criteria. With five years of observation, the number of analyzes is 55 data.

The variables used in this study include the dependent variable (tax ratio) the independent variable (income per capita, economic structure, tax rates, and corruption). The operational definitions of the research variables can be seen in Table 1 below.

The data collection techniques used in this study are documentation. Secondary data was obtained from the official website of the World Bank and the Transparency website during the period 2013-2017. Data were analyzed using descriptive statistics and multiple regression. Descriptive statistics are performed to provide an overview or description of the data seen from the mean (standard), standard deviation, maximum value, and minimum value.

IV. RESULTS AND DISCUSSION

Descriptive statistics of the variable tax ratio with the size of tax revenue (% of GDP), per capita income with GDP per capita (current US $), economic structure with Industry size (including construction), value added (% of GDP), tax rates with a total tax and contribution rate (% of the profit), and corruption with a Corruption perception index Score.

Descriptive Statistical Analysis Test Results

	Tax Ratio	Capital Income	Economic Structure	Tax Rate	Corruption
Mean	13.49643	2778.981	33.57648	34.31636	36.27273
Median	12.75610	2831.317	30.84890	33.10000	36.00000
Maximum	23.77410	4888.317	79.92750	93.70000	67.00000
Minimum	5.529600	1013.420	20.63840	11.20000	17.00000
Std. Dev.	4.639887	1100.923	11.10403	16.26960	13.12681
Skewness	0.838327	-0.124114	2.066274	0.888459	0.744147
Kurtosis	3.490932	1.761805	8.565012	4.497789	3.061895
Jarque-Bera	6.994586	3.654620	110.1084	12.37686	5.084859
Probability	0.030279	0.160846	0.000000	0.002053	0.078675
Sum	742.3034	152844.0	1846.706	1887.400	1995.000
Sum Sq. Dev.	1162.542	65449684	6658.168	14293.80	9304.909
Observations	55	55	55	55	55

Source: Output Eviews 10 (2019)

The results of the panel data regression model selection tests were conducted using reviews 10, namely through the Chow test, the results of which are shown in table 3, and the Hausman test. Through both tests, it is known that the data The panel is a Fixed Effect model. The decision making criteria is that if the value of Chi-square Cross-section Probability count <5% and Random Cross-section Probability count <5%, then H1 is accepted, meaning the model to be used is Fixed Effect.

Chow Test Results

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	64.439328	(10,40)	0.0000
Cross-section Chi-square	156.180930	10	0.0000

Cross-section fixed effects test equation:
Dependent Variable: Tax Ratio
Method: Panel Least Squares
Date: 10/06/19   Time: 21:40

Sample: 2013 2017
Periods included: 5
Cross-sections included: 11
Total panel (balanced) observations: 55

Source: Output Eviews 10 (2019)

Hausman Test Results
Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	12.629712	4	0.0132

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
Capital Income	0.001170	0.001591	0.000000	0.1146
Economic Structure	0.241805	0.207864	0.000584	0.1603
Tax Rate	0.045932	0.047778	0.000074	0.8296
Corruption	-0.123993	-0.079139	0.001828	0.2942

Cross-section random effects test equation:
Dependent Variable: Tax Ratio
Method: Panel Least Squares
Date: 10/06/19   Time: 21:47

Sample: 2013 2017
Periods included: 5
Cross-sections included: 11
Total panel (balanced) observations: 55

Source: Output Eviews 10 (2019)

Furthermore, the results of the classical assumption test, which includes tests of normality, multicollinearity, and heteroscedasticity, show that the model used in the study is free from problems of classical assumptions and is feasible to proceed to the next stage of analysis. The results of the normality test can be seen in Figure 1and the heteroscedasticity
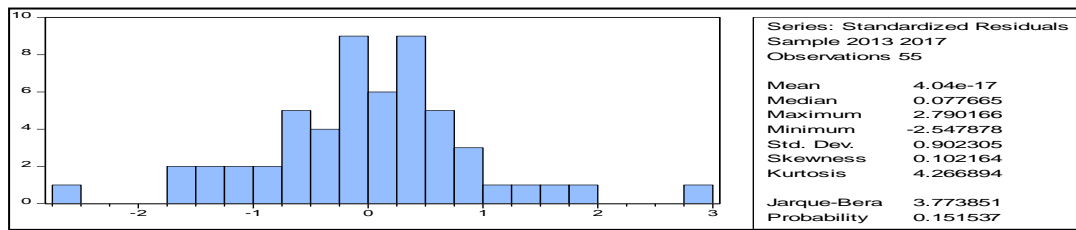

Fig. 1 Normality Test

Fig. 1 shows that the JB Probability value is 0.151537, which means the JB value> α value (5%). So it can be concluded that the data in this study are normally distributed. Thus, the data in this study are worthy of further analysis because residual data do not find extreme low values and extremely high values.

Multikolinieritas Test Results

	Tax Ratio	Capital Income	Economic Structure	Tax Rate	Corruption
Tax Ratio	1.000000	0.494931	0.063364	-0.380247	0.259939
Capital Income	0.494931	1.000000	0.163335	-0.163634	0.475139
Economic Structure	0.063364	0.163335	1.000000	-0.349567	0.036658
Tax Rate	-0.380247	-0.163634	-0.349567	1.000000	-0.094015
Corruption	0.259939	0.475139	0.036658	-0.094015	1.000000

Source: Output Eviews 10 (2019

The results of the multicollinearity test. It can be seen that independent variable does not occur multicollinearity. This can be seen from the results of testing that the entire value of the correlation coefficient (R^2) <0.80. Thus, it can be seen that the data does not occur multicollinearity, which means there is no correlation between independent variables whose values are more than 95%.

Heteroskedastisitas Test Results
Dependent Variable: RESABS
Method: Panel Least Squares
Date: 10/06/19   Time: 22.13
Sample: 2013 2017
Periods included: 5
Cross-sections included: 11
Total panel (balanced) observations: 55

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.895016	1.587135	1.193986	0.2395
Capital Income	0.000175	0.000257	0.678936	0.5011
Ekonomic Structure	-0.026792	0.023592	-1.135632	0.2629
Tax Rate	-0.002908	0.011011	-0.264102	0.7931
Corruption	-0.019553	0.032736	-0.597294	0.5537

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.504292	Mean dependent var	0.672167
Adjusted R-squared	0.330794	S.D. dependent var	0.594963
S.E. of regression	0.486709	Akaike info criterion	1.624702
Sum squared resid	9.475441	Schwarz criterion	2.172156
Log-likelihood	-29.6793	Hannan-Quinn criteria.	1.836407
F-statistic	2.906614	Durbin-Watson stat	2.397561
Prob(F-statistic)	0.004121		

Source: Output Eviews 10 (2019)

The results of the heteroscedasticity test through the Glejser Test. It can be seen that the probability value of each variable is more than 0.05. These results indicate that this shows there is no heteroscedasticity in the regression model in this study, and the independent variables can be declared not experiencing Heteroscedasticity.

Autokorelasi Test Results

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.962183	Mean dependent var	13.4964
Adjusted R-squared	0.948946	S.D. dependent var	4.63989
S.E. of regression	1.048384	Akaike info criterion	3.15938
Sum squared resid	43.96438	Schwarz criterion	3.70683
Log-likelihood	-71.88290	Hannan-Quinn criteria.	3.37108
F-statistic	72.69373	Durbin-Watson stat	1.93317
Prob(F-statistic)	0.000000		

Source: Output Eviews 10 (2019

This shows that the Durbin-Watson (DW) value was 1.93317. The DW value of 1.93317 will be compared with the DW table value using a significance level of 5%, the number of observations (T) = 55 and K (the number of independent and intercept variables) of 4. It can be concluded that the DW value is located as follows:
• dl<du <DW <4-du
• 1.4136 <1.7240 <1.93317 <2,276

Based on these results, it can be concluded that the DW value lies between the upper bound of the upper bound (du) and (4-du), so the coefficient of autocorrelation is zero, which means there is no autocorrelation.

The results of data analysis through the regression equation measured through the coefficient of determination, the statistical value of F, and the statistical value of T, are shown in tables 8 to 10 below. This equation examines the ability of the independent variable in explaining the dependent variable also tests the significance of the effect of the variable income per capita, economic structure, tax rates, and corruption on the tax ratio both simultaneously and partially.

Koefisien Determinasi (R²) Test Results

R-squared	0.962183	Mean dependent var	13.49643
Adjusted R-squared	0.948946	S.D. dependent var	4.639887
S.E. of regression	1.048384	Akaike info criterion	3.159378
Sum squared resid	43.96438	Schwarz criterion	3.706833
Log-likelihood	-71.88290	Hannan-Quinn criteria.	3.371083
F-statistic	72.69373	Durbin-Watson stat	1.933173
Prob(F-statistic)	0.000000		

Source: Output Eviews 10(2019)

After processing the data using the panel data regression method, using the Fixed Effect Model, the coefficient of determination (R2 test) is used to measure how much the ability of the independent variable can explain the dependent variable. The coefficient of determination is between zero and one. A small R^2 value means that the ability of independent variables to explain the variation of the dependent variable is very limited. A value close to one means that the independent variables provide almost all the information needed to predict the dependent variables (Ghozali&Ratmono 2017: 55).

The result of the R-squared is 0.962183, which means that income per capita, economic structure, tax rates, and corruption have an influence on the variable Tax Ratio of 96.21%. At the same time, the remaining 3.79% is explained by other factors outside the independent variables in the study.

Statistik F Test Results
Dependent Variable: Tax Ratio
Method: Panel Least Squares
Date: 10/06/19   Time: 21:37
Sample: 2013 2017
Periods included: 5
Cross-sections included: 11
Total panel (balanced) observations: 55

R-squared	0.962183	Mean dependent var	13.49643
Adjusted R-squared	0.948946	S.D. dependent var	4.639887
S.E. of regression	1.048384	Akaike info criterion	3.159378
Sum squared resid	43.96438	Schwarz criterion	3.706833
Log-likelihood	-71.88290	Hannan-Quinn criteria.	3.371083
F-statistic	72.69373	Durbin-Watson stat	1.933173
Prob(F-statistic)	0.000000		

Source: Output Eviews 10(2019)

A significant simultaneous test (F test) was conducted to find out whether all the independent variables used had a simultaneous influence on the dependent variable.

The results of this study, the statistical F test was 72.69373 with an F statistical probability value of 0.000000. The statistical F probability value is 0.000000 <0.05. So it can be concluded that the independent variables in this study are income per capita, economic structure, tax rates, and corruption simultaneously have a significant effect on the tax ratio-dependent variable.

Statistic T-Test Results
Dependent Variable: Tax Ratio
Method: Panel Least Squares
Date: 10/06/19   Time: 21:37
Sample: 2013 2017
Periods included: 5
Cross-sections included: 11
Total panel (balanced) observations: 55

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.047684	3.418729	1.476480	0.1476
Income Capital	0.001170	0.000555	2.109618	0.0412
Economic Structure	0.241805	0.050817	4.758326	0.0000
Tax Rate	0.045932	0.023718	1.936642	0.0599
Corruption	-0.123993	0.070514	-1.758425	0.0863

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.962183	Mean dependent var	13.49643
Adjusted R-squared	0.948946	S.D. dependent var	4.639887
S.E. of regression	1.048384	Akaike info criterion	3.159378
Sum squared resid	43.96438	Schwarz criterion	3.706833
Log-likelihood	-71.88290	Hannan-Quinn criteria.	3.371083
F-statistic	72.69373	Durbin-Watson stat	1.933173
Prob(F-statistic)	0.000000		

Source: *Output* Eviews 10(2019)

A T-test is used to test the effect of each independent variable on the dependent variable. In this study, the t-test was used to find out how much influence per capita income, economic structure, tax rates, and corruption, partially on the tax ratio. If the probability value <5%, then the result is significant, meaning that there is a significant influence of the independent variable on the dependent variable, and if the probability value> 5%, then the result is not significant, meaning that the effect of the independent variable on the dependent variable is not significant.

The results of the t-test statistic in this study indicate the t-statistic value obtained from the variable income capital of 2.109618 with a probability value of 0.0412. Of the probability value of 0.0412, which is smaller than the significant value of 0.05 (5%), the income per capita variable has a significant positive effect on the tax ratio-dependent variable. Furthermore, the t-statistic value obtained from the economic structure variable is 4.758326 with a probability value of 0.0000. Of the probability value of 0.0000, which is smaller than the significant value of 0.05 (5%), the economic structure of the Industrial sector has a significant positive effect on the tax ratio-dependent variable. The next result shows the t-statistic value obtained from the tax rate variable is 1.936642 with a probability value of 0.0599. Of the probability value of 0.0599, which is greater than the significant value of 0.05 (5%), the tax rate variable has a significant positive effect on the tax ratio-dependent variable. Other results also show the t-statistic value obtained from the corruption perception index variable in this study is -1,758325 with a probability value of 0.0863. Of the probability value of 0.0863, which is greater than the significant value of 0.05 (5%), the corruption perception index variable has a significant negative effect on the tax ratio-dependent variable.

A. Effect of per capita income on tax ratio.
The results of the analysis of this study indicate that income capital that is proxied by GDP capital (current USD) has a significant positive effect on the tax ratio. Per capita income is the average income of the population in a country. The higher the income generated by the population in a country, the greater the country's potential to collect taxes.

B. Effect of economic structure on tax ratio.
The results of the analysis of this study show that the economic structure of the industrial sector, which is proxied by industry (including construction), value added (% of GDP) has a significant positive effect on the tax ratio. The higher contribution of the industrial sector can indicate the progress of the country's development. Countries that depend on the agricultural sector are considered more difficult to collect taxes because agrarian countries tend to produce smaller output compared to industrial countries because agricultural products have low added value and involve many actors.

C. Effect of tax rates on tax ratios.
The results of the analysis of this study show that the tax rate, which is proxied by the total tax and contribution rate (% of the profit), does not have a significant effect on the tax ratio. This can happen because the greater the tax rate, the higher the likelihood of people to carry out tax avoidance practices and cause people to not do their tax obligations.

D. Effect of economic structure on corruption.
The results of the analysis of this study show that the tax rate proxied by the corruption perceptions index does not have a significant effect on the tax ratio. The higher the value of the corruption perception index, the more it shows that the country is clean of corruption. However, for middle-income countries down the Asian continent, it does not have a significant effect. This can happen because people still have a high level of trust in the government even though the corruption perception index in the country tends to be below.

V. CONCLUSION

Based on the test results, it can be concluded that per capita income and economic structure have a positive and significant effect on tax ratios. The higher the income capital of a country's population, the higher the ability of residents in the country to deposit taxes. And the higher the contribution of the industrial sector in the economic structure will make it easier for a country to collect tax revenue. Because of the higher income, the demand for clothing, housing and industrial consumer goods will increase. In addition, the results of this study indicate that tax rates have a significant positive effect on tax ratios. This explains that the tax rates in middle to low-income countries do not have a significant influence on the level of a country's tax ratio. High tax rates in a country can make people reluctant to report their income. Other research results, namely, corruption does not have a significant negative effect on the Tax Ratio. This shows that in a country with a middle income and lower Asian region, the importance of corruption in that country is not important in the success of collecting tax revenue in a country.

This research is limited because it only takes samples from middle-income countries down the Asian continent. Therefore, for future research, it can add research samples including observation years.

REFERENCES

[1] Ansari, M. M., Determinants of Tax Ratio: A Cross-Country Analysis Economic and Political Weekly, 17(25)(1982) 1035–1042.

[2] Baum, A., Gupta, S., Kimani, E., & Tapsoba, S. J.,Corruption, taxes and compliance. EJournal of Tax Research, 15(2)(2017) 190–216.

[3] Damayanti, O., Suhadak, & Pemungkas, M. G. W. E. N., Pengaruh Tingkat Inflasi, Economic Gowth, dan Tarif Pajak Terhadap Penerimaan Pajak di Negara-negara Asia (Studi pada World Bank Periode 2005-2014). Jurnal Perpajakan (JEJAK), 9(1)(2016).

[4] Ghozali, I., & Ratmono, D., Analisis Multivariat dan Ekonometrika: Teori, Konsep, dan Aplikasi dengan EViews 10 (Edisi 2). Semarang: Badan Penerbit Universitas Diponegoro (2017).

[5] Harnovinsah, Full Adoption Of International Financial Report Standards (Ifrs) And Its Impact On Accounting Information Quality In Indonesia. European Journal of Business, Economics and Accountancy, 5(3) (2017).

[6] Hasyim, A. I.,Ekonomi makro / Ali Ibrahim Hasyim. Jakarta: Kencana (2016).

[7] Ikhsan, S. L., & Amir, A., Analisis Struktur Pajak Dan Faktor Yang Mempengaruhi Rasio Pajak Di Indonesia. Jurnal Perspektif Pembiayaan Dan Pembangunan Daerah, 3(4) (2016)195–208.

[8] Kementerian Keuangan Republik Indonesia., Media keuangan transparasi informasi kebijakan fiskal. Jurnal Teknodik, 14(138)(2019) 2.

[9] Lim, R., & Toly, A., Analisa Korelasi Inflasi, Economic Growth, Economic Structure, Dan Tax Rate Terhadap Tax Revenue Di Negara-Negara Asean. Tax & Accounting Review, 3(2) (2013) 1–12.

[10] Malik, N., Dinamika Pasar Tenaga Kerja Indonesia. Malang: UMM Press (2016).

[11] Prasetyo, A.,Konsep dan Analisis Rasio Pajak (Fathur, ed.). PT Elex Media Komputindo (2016).

[12] Sen Gupta, A., Determinants of Tax Revenue Efforts in Developing Countries; Abhijit Sen Gupta; IMF Working Paper 07 (184) (2007).

[13] Tuanakotta, T. M., Akuntansi Forensik Dan Audit Investigatif. Jakarta: Lembaga Penerbit Fakultas Ekonomi Universitas Indonesia (2007).

[14] Wibowo, D., Pengaruh Pendapatan Per Kapita, Economic Growth Rate, Economic Structure, Dan Tax Rate Terhadap Tax Ratio Pada Negara-Negara Oecd Dan Indonesia. Jurnal Akuntansi Universitas Jember, 11(1) (2015) 45.