Tax Ratio, Tax Capacity and Tax Effort in Indonesia Period 2001-2020

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Abstract--- Taxes are a very important source of state revenue in sustaining development. The size of the tax will determine the capacity of the state budget to finance state expenditures. Therefore, in order to get a large state revenue from the tax sector, a series of efforts are needed that can increase both the subject and the object of the existing tax. This study aims to analyze the magnitude of the tax ratio, tax capacity, and tax effort, in Indonesia for the period 2001–2020. The data used in this study is secondary data, sourced from: 1) Central Statistics Agency, 2) Bank Indonesia, 3) World Bank Website. The analytical methods used are: 1) Simple linear regression model, which is used to estimate the amount of tax capacity by treating per capita income as the independent variable and the tax ratio as the dependent variable, and 2) The approach to tax ratios, tax capacity, and tax effort. By comparing the amount of real tax with tax capacity, it will be obtained the amount of tax effort (E); is less than its capacity, more than its capacity, or equal to its capacity. The results of the study show that during the period 2001-2020, tax effort in Indonesia is still relatively low as indicated by the value of E which is smaller than one. Although during the period 2001-2020 real tax revenues continued to increase except in 2020, the real tax value was always lower than its capacity. Tax effort that are smaller than one indicate that there are still opportunities to continue to increase tax revenues.

Keywords: tax ratio, tax capacity, tax effort.

I. INTRODUCTION

All countries in the world have been and are increasingly dependent on taxes as the main source of income. The more developed a country, the greater the role of taxes. The size of the tax will determine the capacity of the budget to finance state expenditures. Therefore, in order to get a large state revenue from the tax sector, a series of efforts are needed that can increase both the subject and the object of the existing tax. Nasution (2016), in human history, no country can become big and glorious without tax revenues that meet the needs of state expenditures. As one of the main sources of state revenue, taxes have a very important meaning and function for the development process. In this case, the tax besides functioning as a budgetair can also function as a regularend. From the collect funds which will later be used to finance government expenditures. Meanwhile, seen from its function as a regularend, taxes are used as a tool to achieve certain goals in the economy (Mukhlis: 2010). Therefore, serious efforts are needed to increase the source of funds derived from these taxes gradually, little by little, but surely.

One of several indicators commonly used to assess tax performance is the size of the tax ratio, which shows the comparison between the amount of central government tax revenues and Gross Domestic Product (GDP). The higher the tax ratio, the better the tax performance, and vice versa. Basri (2009: 265-266) shows that in 2005 Indonesia's tax ratio was 13.2 percent, which is still lower than the achievement of other developing countries and neighboring countries in Southeast Asia (eg Malaysia 22.3 percent and Singapore 24.2 percent). Meanwhile, according to Nasution (2016), tax revenue in Indonesia is one of the lowest in the world with a tax ratio of around 13 percent. In developed countries, there has been agreement and consensus that taxes are a shared obligation to maintain the existence of the government, the state, and even themselves as a nation.

Theoretically, the size of the tax potential growth is largely determined by the level of economic growth. The economy which continues to increase from year to year should also be followed by an increase in tax revenues. This is because theoretically the elasticity of taxes (especially direct taxes) to changes in income is greater than one. In the sense that an increase in income of 1 percent will result in direct tax revenues greater than 1 percent. An increase in income will result in an increasing number of taxpayers and an increasing number of taxpayers who are taxed at a higher rate (Chenery: 1980: 24). Associated with indirect taxes, economic development causes changes in people's consumption patterns in the form of an increase in the percentage of income used to consume non-food goods and is marked by an increasingly broad division of labor. Both of these things will encourage economic activity in a more modern direction. Thus, it is expected that there will also be an increase in indirect taxes (Anwar: 1992). Based on the background described above, the research question in this studi are: How is the tax effort in Indonesia period 2001-2020. By comparing the amount of real tax with tax capacity, it will be obtained the amount of tax effort (E); is less than its capacity, more than its capacity, or equal to its capacity.

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II. METHODOLOGY

Data Type

This study is based on annual data on the Indonesian economy for the period 2001-2020, and publications from the World Bank. The data used are: 1) Indonesia's Gross Domestic Product according to current prices for the 2001-2020 period, 2) Indonesia's per capita income for the 2001-2020 period, 3) the realization of Indonesia's tax revenues for the 2001-2020 period, 4) the per capita income of various countries, and 5) the ratio Taxes of various countries. The data are sourced from: 1) Statistics Indonesia (Statistic Yearbook of Indonesia), the Indonesian Central Statistics Agency, various editions, and 2) The World Bank Website.

Analysis Method

To answer the purpose of this study used the method of analysis/approach to tax ratios, tax capacity, and tax effort. Bahl (1971: 582), the relationship between tax ratio, tax capacity, and tax effort is as follows: tax ratio (T/Y) is assumed to be a function of two factors, namely tax capacity (Ť/Y), and tax effort (E) . Thus, the tax ratio equation can be written as follows:

$T/Y = f(\check{T}/Y, E)$ ..... (1)

Since (Ť/Y) is tax capacity, and E is tax effort (defined by the extent to which tax capacity is utilized), then the tax effort (E) in a country is obtained by the following equation:

$E = (T/Y)/(\check{T}/Y)$ .....(2)

Or

$E = T/\check{T}$ .....(3)

Equation (3) shows that the amount of tax effort (E) is determined by the extent to which a country can utilize its tax capacity. If E > 1 means the actual tax collected (T) is greater than the tax capacity (Ť), if E = 1 means the actual tax collected is the same as the tax capacity, and if E < 1 means the actual tax collected is less than the tax capacity, or in other words the greater the value of E indicates the existence of a better tax effort.

Furthermore, the tax capacity (Ť) in a country is strongly influenced by the stages of development, namely per capita income. As per capita income increases, the tax capacity will also increase (Bahl: 1971:587). According to Suparmoko (2000: 323) tax effort is the amount of tax actually collected by the tax office and compared to the tax potential (tax capacity = tax potential), namely the amount of tax that should be collected from the tax base, which is usually in the form of income per capita. Similar to the definition above, Goode (Ahmad: 1988: 1017) defines tax capacity as the ability of the population to pay taxes and the ability of the government to collect them. Tax effort indicates the degree to which tax capacity is utilized.

To estimate tax capacity is predicted through the tax ratio regression equation using cross section data of various countries, by treating per capita income as an independent variable and tax ratio as a dependent variable, so that equation (4) is obtained:

$\check{T} = a + b\,Y$ .....(4)

Information:

Ť is the tax ratio (percent)

a is a constant

b is a coefficient that shows the comparison between changes in the tax ratio and changes in per capita income

Y is income per capita (million rupiah)

From the regression equation obtained (equation 4) then using the Gross Domestic Product (GDP) variable, the predicted tax value (tax capacity) will be obtained. By knowing the amount of tax capacity, then compared with the actual amount of tax that can be collected, it will be known whether the actual amount of tax collected is in accordance with its capacity, exceeds its capacity, or can still be increased (less than its capacity). By using the tax effort approach as described above, it will produce: tax effort > 1, or tax effort < 1, or tax effort = 1. If tax effort > 1 then the actual amount of tax successfully collected has exceeded its capacity, tax effort < 1, then the actual amount of tax that has been collected is smaller than its capacity, and if it is equal to 1, it means that the actual tax is equal to its capacity. Efforts to increase overall tax revenue (taking into account the size of the tax effort), are expected to be able to reduce/overcome the fiscal deficit, by adjusting the amount of government spending with the amount of taxes. With the increase in tax revenue, it is hoped that it will reduce the tendency of the continuous increase in state debt, both in the form of foreign debt and domestic debt.

III. RESULTS AND DISCUSSIONS

The Influence of Per capita Income on Tax Ratio

By using a simple regression approach regarding the effect of per capita income on the tax ratio based on the data in Appendix, the following equation is obtained:

$Y = 15.027 + 0.085X$ .....(5)

(5,611) (2.160)

From equation (5) shows the constant value of 15.027. The constant value can be stated that when per capita income has a value of zero, the tax ratio is 15.027 percent. The tax ratio is 15.027 when the per capita income is zero, it is possible that the tax ratio comes from tax revenues that are not influenced by per capita income, for example Value Added Tax, Sales Tax on Luxury Goods, Excise, and so on.

Meanwhile, the coefficient of the effect of variable X (per capita income) on variable Y (tax ratio) is 0.085, this indicates that when per capita income increases by 1 million rupiah, there will be an increase in the tax ratio of 0.085 percent. To determine the significance level of the effect of per capita income on the tax ratio, the t test will then be used. As explained in the tax regression above, the t-test is a test of the coefficients of the estimator variable or the independent variable. The t-test was performed by comparing the t-statistical values in the regression results with the t-table. If the value of t-Statistics > t-Table then H_0 is rejected (H_1 is accepted). In other words, partially there is a significant effect of the independent variable on the dependent variable. On the other hand, if the value of t-Statistic < t-Table then H_0 is accepted (H_1 is rejected), so that there is no significant effect of the independent variable on the dependent variable. T-test can also be done with the concept of p-value. This concept is done by comparing with p-value. If the p-value is less than then H_0 is rejected.

In this regression analysis, which discusses the effect of per capita income on the tax ratio, 95% confidence level (α = 5 percent) is used, with parameter (k) = 2, and involves 35 countries, so that the degree of freedom = 33 is obtained so that the t-table value is obtained. two sides of 2.021. From the statistical test based on the data in Appendix, the t-statistic value is 2.160 so that the t-statistic value is greater than t-table (2.160 > 2.021) thus it is stated that there is a significant effect of per capita income on the tax ratio.

The significant effect of per capita income on the tax ratio is in line with Jeffrey (Bahl: 1971: 575) who examines the effect of per capita income on the tax ratio using data from 33 developing countries. The results of the study indicate that there is a positive and significant effect of per capita income on the tax ratio.

Terefe (2018), together with other independent variables, per capita income also has a significant effect on tax revenue. The positive and significant impact of per capita income on the tax ratio, it is suspected that there has been an improvement in tax administration and the level of compliance in paying taxes in the country. With increasing per capita income, the people's ability to pay taxes will also increase. Increasing people's ability to pay taxes coupled with a progressive tax system (especially for income taxes), will have a positive impact on tax revenues.

In addition to per capita income, other factors that also influence tax revenue are tax rates, and the level of optimization of good governance. These factors tend to be macro. Another factor that is more micro is the level of compliance of the taxpayer. The higher the level of taxpayer compliance in paying taxes, the higher the tax revenue in a country (Prasetyo: 2016: 4). The level of taxpayer compliance in paying taxes depends on the trust of citizens to the government. With a high level of trust, the community will voluntarily carry out their obligations, including obligations in terms of taxation.

Chenery (1980; 24) states that the increasing role of taxes on GDP due to an increase in income is due to: an increase in taxable income, and the application of progressive tax rates (especially direct taxes). With the two characteristics above, the elasticity of direct taxes is elastic, meaning that an increase in income of one percent will increase direct taxes by more than one percent.

In 2015 the relationship between the tax ratio and gross national income (GNI) per capita in various groups of countries showed the following results: The group of low income countries with a GNI per capita of less than 1,046 USD has a relatively low tax ratio of 13.1 percent. Furthermore, middle income countries with a GNI per capita ranging from 1,046 – 12,745 USD have a tax ratio in the range of 17.7 – 22.3 percent. Group developed countries (high income countries) with a GNI per capita greater than 12,745 USD have a tax ratio of 31 percent. From this explanation, it shows that there is a positive relationship between the tax ratio and GNI per capita. The increase in GNI per capita will also be followed by an increase in the tax ratio (Wibowo (2015: 17).

According to Stiglitz (2000: 457) there are five characteristics for a good tax system, namely economic efficiency, administrative simplicity, flexibility, political responsibility, and fairness. Meanwhile, according to Mardiasmo (2009: 2), so that tax collection does not cause obstacles or resistance, taxes must meet the following requirements: justice, juridical, economic, financial, and simple collection methods.

Tax Capacity and Tax Effort

In the following section, the tax ratio, tax capacity, and tax effort (E) will be explained based on a simple regression equation for the effect of per capita income on the tax ratio, as shown in equation (5). The regression equation will be used to predict the amount of tax capacity. By comparing the amount of tax capacity with the amount of actual/real tax, it will be obtained the amount of tax effort (E); is less than its capacity, more than its capacity, or equal to its capacity. Tax effort (E) is greater than one shows the actual tax collected is greater than the capacity, E is less than one means the actual tax is less than the capacity, and E is equal to one means the actual tax is equal to the capacity. The amount of the tax ratio, tax capacity, real tax, and tax effort in Indonesia during the period 2001-2020 is shown in Table 1.

Table 1 shows that, using simple regression results as shown in equation (5) and using annual per capita income data, it can be estimated that the tax ratio each year during the period 2001-2020. The amount of the predicted tax ratio after being multiplied by the Gross Domestic Product (GDP) will get the amount of the predicted tax which basically shows the size of the tax capacity. Furthermore, the amount of tax effort (E) is obtained by comparing the real tax with the predicted tax.

Table 1 shows that with the increase in per capita income from Rp 7.8 million in 2001 to Rp 57.3 million in 2020, followed by an increase in the predicted tax ratio from 15.69 percent to 19.90 percent. An increase in the predicted tax ratio coupled with an increase in GDP will also increase the prediction tax/tax capacity. As shown in Table 1, the predicted tax value/Indonesian tax capacity during the period 2001–2020 tends to increase from Rp 234 trillion in 2001 to Rp 843 trillion in 2008 and continues to increase to Rp 3,072 Trillion in 2020.

In the same period the actual/real tax collected by the government also continued to increase except in 2020, from Rp. 186 Trillion in 2001 to Rp 634 trillion in 2008 and continues to increase to Rp 1,285 trillion in 2020. Although during the period 2001-2020 real tax revenues tended to increase, as did tax capacity, during the period 2001-2020 the real tax value collected by the government was always lower than its capacity. In 2001, for example, with a tax capacity of Rp 234 trillion, the real tax collected was only Rp 186 trillion, as well as for the following years. Real tax revenue which is lower than its capacity ultimately results in a relatively low tax effort (E), which is indicated by the value of E being smaller than one. Tax effort (E) which is smaller than one also indicates that there are still large opportunities to continue to increase tax revenues.

From Table 1 it can also be seen that during the 2001-2020 period, Indonesia's tax efforts based on data from 35 developing countries still had a value of less than one indicating greater tax capacity when compared to real tax revenue, so there is still an opportunity to continue to increase revenue tax. From the data contained in Table 1 it also shows a tendency for tax efforts to continue to decline, this also shows the weaker utilization of tax capacity to increase tax revenues.

Table 1
Tax Ratio, Tax Capacity, Real Tax, and Tax Business in Indonesia, Based on Data from 35 Countries 2001 – 2020

Year	GDP/ Capita (million Rp)	Tax Ratio Pereddiction (%)	GDP (trillion Rp)	Tax Capacity (trillion Rp)	Riil Tax (trillion Rp)	Tax effort
2001	7,8	15,69	1.491	234	186	0,80
2002	8	15,71	1.898	298	210	0,70
2003	9	15,79	2.046	323	242	0,75
2004	10,7	15,94	2.296	366	281	0,77
2005	12,4	16,08	2.774	446	347	0,78
2006	14,3	16,24	3.339	542	426	0,79
2007	17,5	16,51	3.951	652	492	0,75
2008	23,7	17,04	4.949	843	634	0,75
2009	21,3	16,84	5.606	944	620	0,66
2010	28,1	17,42	6.864	1.195	723	0,60
2011	33,1	17,84	7.832	1.397	874	0,63
2012	35,8	18,07	8.616	1.557	981	0,63
2013	44,3	18,79	9.525	1.790	1.077	0,60
2014	43,5	18,72	10.566	1.978	1.147	0,58
2015	46,2	18,95	11.541	2.187	1.240	0,57
2016	48	19,11	12.407	2.371	1.285	0,54
2017	51,9	19,44	13.590	2.642	1.344	0,51
2018	56	19,79	14.839	2.936	1.519	0,52
2019	59,3	20,07	15.833	3.177	1.546	0,49
2020	57,3	19,90	15.438	3.072	1.285	0,42

Source: processed from data in Appendix, BPS (Statistics Indonesia Statistical Year book of Indonesia various editions)
Descriptio: Tax capacity (Tax Ratio Prediction*GDP), Tax Effort (Riil Tax/ Tax Capacity)

Table 1 also shows that during the 2001-2021 period real tax revenues grew slower than their tax capacity. Real tax revenues experienced an average annual growth of 10.71 percent, while the tax capacity grew 14.51 percent. Therefore, government policies are needed in an effort to increase real tax revenues to optimize tax capacity. One of several policies taken by the government in order to increase tax revenue is the 2016 Tax Amnesty policy.

The Tax Amnesty Policy is carried out in the form of releasing the state's right to collect taxes that should be owed by disclosing assets and paying ransom money (Directorate General of Taxes: 2016). Therefore, it is only natural that taxpayers are required to pay redemption money for the tax amnesty they receive. In this case the receipt of Redemption Money is treated as income tax revenue in the State Revenue and Expenditure Budget. With the tax amnesty policy, it is hoped that the income tax revenue received by the government in the form of redemption money will increase and it is hoped that there will also be an improvement in the tax base so that it will increase national economic growth. The tax amnesty policy, among other things, aims to increase tax revenue (especially income tax), this is done because the government's revenue comes from taxes is still relatively low (Suharno: 2016).

According to Effendi (2015: 141), sustainable tax revenue growth is an important element in managing fiscal policy for several reasons. **First**, tax revenue is the dominant contributor in state revenue. **Second,** the reforms in taxation carried out by the government in 2002 have not been able to encourage sustainable tax revenues. **Third**, with the maintained growth of tax revenues, the government has stability in the preparation of the budget. There are several factors that affect the level of the tax ratio which are grouped into two, namely macro factors and micro factors. Macro factors include tax rates, per capita income levels, and the level of optimization of good governance. Meanwhile, micro factors include the level of taxpayer compliance, commitment, and coordination between state institutions, as well as the common perception between taxpayers and tax officers (Prasetyo, 2016).

In addition to being influenced by macro and micro factors as explained above, tax revenue is of course very dependent on the number of taxpayers (both individual taxpayers and corporate taxpayers). However, an increase in the number of taxpayers does not necessarily increase tax revenues, when taxpayers have relatively low income, are reluctant to pay taxes (by doing tax evasion due to low levels of compliance), accompanied by weak government administration in terms of collecting potential taxes.

Kaldor (Bahl: 2008: 281), argues that for a country to become a developed country it is required to be able to collect taxes of 25-30 percent of GDP. Most developing countries (like India) can achieve as Kaldor argues. The United Nations Millennium Project (2005) is somewhat less ambitious in advising developing countries to mobilize a tax of just an additional 4 percent of GDP (a 4 percent increase in the tax ratio) from their current average tax ratio of 18 percent. The UN proposal is considered too light for those who think that higher taxes are an important aspect of development, for example for general investment needs in infrastructure. The tax-to-GDP ratio has hardly changed in developing countries in recent decades. The average developing country economy appears to have had (or been limited to) an average tax ratio of 17 percent (Bahl: 2008: 280). In OECD countries, the ratio of taxes to GDP shows an increasing trend. In 1965, for example, the tax ratio in OECD countries was 24.8 percent, continuing to increase to 33.8 percent in 2013. This tax ratio continued to increase to 34.2 percent and 34.3 percent respectively in 2014. and 2015 (OECD, 2016).

In an effort to increase tax revenues, according to Musgrave (1989: 213) points of tax imposition can be classified as follows: 1) taxes can be imposed on products or production factor markets, 2) taxes can be imposed on the seller's or buyer's side of the market, 3) taxes can be imposed on households or companies, and 4) taxes can enter on the source side or the use side of the taxpayer's income. By carrying out the classification as mentioned above it will be very useful in determining the points of economic activity that can be taxed.

The increase in tax revenues by the government, especially in the form of direct taxes, can be caused by an increase in economies of scale in a production unit, so that it will also have an impact on increasing the use of the number of workers. The increasing number of workers will have a positive impact on direct tax revenues in the form of income taxes paid by workers.

IV. CONCLUSION

Based on the discussion that has been stated above, it can be concluded as follows: during the period 2001-2020, the tax effort in Indonesia is still relatively low with a value less than one. The value of tax effort is smaller than one, indicating that there is still an opportunity to increase tax revenue.

During the 2001-2020 period, apart from having a constant value of less than one, the tax effort value also showed a decreasing trend. This also shows the weak utilization of tax capacity in efforts to increase tax revenues.

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REFERENCES

[1] Ahmad, E., Stern, Nicholas (1988*), Taxation for Developing Countries*, dalam Chenery, Holis and Srinivasan, T.N., Handbook of Development Economics Vol. II, Elsevier Science Publising B.V. Amsterdam.

[2] Anwar, M. A., Azis I. J., Basri, F. H. (1992), *Prospek Ekonomi Indonesia Jangka Pendek dan Sumber Pembiayaan Pembangunan*, Pt Gramedia Pustaka Utama Jakarta, 1992

[3] Bahl, Roy W. (1971), *A Regression Approach to Tax Effort and Tax Ratio Analysis*, IMF Staff Papers Volume XVIII No. 3, Washington DC 20431, USA

[4] Bahl, Roy W., Bird, Richaard M. (2008), *Tax Policy in Developing Countries: Looking Back – and Forward*, National Tax Journal, Vol LXI.No.2 Georgia State University Atlanta.

[5] Basri, F. H., Munandar, H. (2009), *Lanskap Ekonomi Indonesia, Kajian dan Renungan Terhadap Masalah-Masalah Struktural, Transformasi Baru, dan Prospek Perekonomian Indonesia*, Prenada Media Group, Jakarta

[6] Chenery, H., Syrquin, M. (1980), *Pattern of Devel opment 1950 – 1970*, Oxford University Press, Worl Bank, Washington

[7] Direktorat Jenderal Pajak (2016), *Materi Terbuka Kesadaran Pajak Untuk Perguruan Tinggi*, Direktoral Jenderal Pajak Kementerian Keuangan Republik Indonesia, Jakarta

[8] Effendi, Yuventus (2015), *Adopsi Teori Pertumbuhan untuk Menjamin Penerimaan Pajak Berkelanjutan (Dinamika Kebijakan Fiskal Merespon Ketidakpastian Global)*, PT Gramedia Pustaka Utama, Jakarta.

[9] Mardiasmo (2009), *Perpajakan, Edisi Revisi*, Andi Yogyakarta.

[10] Mukhlis, Imam (2010*), Peran Pajak Daerah dalam Meningkatkan Pendapatan Asli Daerah*, Makalah dalam Seminar Reional Perpajakan, FE-UNM

[11] Musgrave, R. A., Musgrave, P. B. (1989), *Public Finance In Theory and Practice, Fifth Edition*, McGraw-Hill, United States

[12] Nasution, Anwar (2016), *Paket Kebijakan Ekonomi*, Harian Kompas, 19 Mei 2015

[13] OECD (2016), *Revenue Statistics, Tax Revenue Trends in The OECD*, www.oecd.org/tax/tax-policy/revenue-statistics.htm

[14] Potanlar, S. K., Samimi, A. J., Roshan A. R. (2010), *Corruption and Tax Revenues: New Evidence from Some Developing Countries*, Australian Journal of Basic and Applied Sciences, 4(9): 4218-4222, ISSN 1991-8178

[15] Prasetyo, Adinur (2016), *Konsep dan Analisis Rasio Pajak*, PT Elex Media Komputindo, Gramedia, Jakarta.

[16] Stiglitz, Joseph E. (2000), *Economic of The Public Sector*, Third Edition, W.W. Norton Company, New York

[17] Suharno (2016), *Panduan Praktis Amnesti Pajak Indonesia*, Penerbit Kompas, Jakarta.

[18] Suparmoko, M. (2000), *Keuangan Negara Dalam Teori dan Praktek, Edisi 5*, BPFE-UGM, Yogjakarta

[19] Terefe, K. D., Teera. J. (2018), *Determinants of tax revenue in East African countries: An application of multivariate panel data cointegration Analysis*, Journal of Economics and International Finance, Vol. 10(11), pp. 134-155.

[20] Wibowo, Tri (2015), *Mampukan Indonesia Keluar dari "Middle Income Trap"?, (Dinamika Kebijakan Fiskal Merespons Ketidakpastian Global)*, PT Gramedia Pustaka Utama, Jakarta.

Appendix. Tax Ratio and GDP per capita of MIdddle Income Countries, Year 2015

Num.	Country	*Tax Ratio*	GDP/ Cap. ($ US)	BI middle rate (2015)	GDP/ Cap. (million rupiah)	Num.	Country	*Tax Ratio*	GDP/ Cap. ($ US)	BI middle rate (2015)	GDP/ Cap. (million rupiah)
1	Algeria	7.7	4.206	13.795	58.0	19	Mongolia	33.8	3.973	13.795	54.8
2	Azerbaijan	17.8	5.496	13.795	75.8	20	Nicaragua	17.8	2.087	13.795	28.8
3	Belarus	24.2	5.740	13.795	79.2	21	Pakistan	12.4	1.429	13.795	19.7
4	Bosnia and Herzegovina	41.2	4.198	13.795	57.9	22	Peru	18.0	6.122	13.795	84.4
5	Brazil	34.4	8.539	13.795	117.8	23	Philippines	14.4	2.899	13.795	40.0
6	China	22.0	7.925	13.795	109.3	24	Samoa	25.5	3.939	13.795	54.3
7	C Republic of	5.9	1.851	13.795	25.5	25	Solomon Islands	24.7	1.982	13.795	27.3
8	Dominica	30.3	7.399	13.795	102.1	26	South Africa	26.9	5.692	13.795	78.5
9	Ecuador	13.2	6.248	13.795	86.2	27	Sri Lanka	11.6	3.926	13.795	54.1
10	Georgia	21.7	3.796	13.795	52.4	28	Suriname	22.1	8.984	13.795	123.9
11	Guatemala	11.9	3.903	13.795	53.8	29	Tajikistan	16.5	926	13.795	12.8
12	India	17.7	1.582	13.795	21.8	30	Thailand	17.0	5.816	13.795	80.2
13	Indonesia	12	3.346	13.795	46.1	31	Tunisia	14.9	3.873	13.795	53.4
14	Jamaica	27.2	5.138	13.795	70.9	32	Turkmenistan	20.2	6.948	13.795	95.8
15	Jordan	21.1	4.940	13.795	68.1	33	Uzbekistan	21.0	2.132	13.795	29.4
16	Kyrgyzstan	21.4	1.103	13.795	15.2	34	Vietnam	13.8	2.111	13.795	29.1
17	Macedonia	29.3	4.853	13.795	66.9	35	Zambia	16.1	1.308	13.795	18.0
18	Mexico	19.7	9.009	13.795	124.3						

Sources: - http://databank.worlbank.org/data/home.aspx, World Development Indicators, Last Updated: 10/14 /2016, BI middle rate Year of 2015,