

# Analysis Of Determinants Affecting Gross Domestic Product (GDP) And State Revenue and Its Implications on Tax Ratio

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**Abstract.** Tax ratio is an interesting topic to discuss. There are two major determinants which will be used to calculate tax ratio, that are Gross Domestic Product and Tax Revenue. Gross Domestic Product (GDP) is influenced by investment, public consumption, and economic growth. Tax revenue is influenced by taxpayer compliance and tax administration system, and economic growth. In order to know how far GDP and Tax Revenue affect Tax Ratio, an analysis was carried out based on available data and using multiple linear regression and test of multicollinearity to conclude the relationship between GDP and State Revenue to Tax Ratio. The more State Revenue increase, the more tax ratio increase. Its consequence is to increase state revenues, especially tax revenues, taxation policies must be formulated that refer to taxpayer compliance, the taxation system, including tax intensification and extensification measures, economic growth to increase GDP and ultimately increase tax ratio.

**Keywords:** Gross Domestic Product (GDP), State Revenue, Tax Ratio

## 1 Introduction

Sources of development financing in Indonesia is currently dominated by revenue from the taxation sector. Although there has been an improvement in the amount of state revenue from the tax sector, it has not yet reached a satisfactory point. It can be seen from the low condition of the tax ratio compare to neighboring countries, such as the Philippines, Malaysia and Thailand.

In March 2021, the Organization for Economic Co-operation and Development (OECD) highlighted Indonesia's low tax revenue ratio or tax ratio compared to other countries in the world. OECD Secretary General Angel Gurría said the low tax ratio was very risky because the government's ability to make policy was very limited. Indonesia's tax ratio is 11.9% to GDP. It is one of the lowest in the world. "What happened? This means that the government's capacity is very small. Because the government can't do anything more than 12% of GDP," said Angel in a virtual press conference related to the launch of the OECD survey, Thursday (18/3/2021).

The figure of 11.9% that Angel mentioned refers to the tax ratio data collected by the OECD from various countries as of 2018. Of the total 24 countries surveyed by the OECD, Indonesia appears in the last order, with the lowest level of tax ratio. In comparison, Thailand was able to reach 17.5% GDP, Singapore 13.2% GDP, Malaysia 12.5% GDP, and Papua New Guinea 12.1% GDP. Indonesia's tax ratio has also continued to decline recently. In 2019, for example, it only reached 9.76% of GDP. In 2020 the value is estimated at 7.9% of GDP and is

targeted to increase to 8.25-8.63% in 2021.

According to Angel Gurría, similar conditions also occur in his home country, Mexico. Mexico has a very low tax ratio. It means that the state or government does not do much when dealing with the need for clean water, health, education, and infrastructure. Some of these needs eventually had to be handed over to the private sector and part of it was met from debt. The state has become very dependent on the private sector to provide it because the capacity of the government is limited.

Under these conditions, Indonesia needs to immediately increase its tax ratio in order to be able to finance state expenditure needs. It is suspected that currently many Indonesian taxpayers are still not obedient to paying taxes, especially high-income citizens and corporations. This means that there is still room for improvement that can be made to improve taxpayer compliance, which in turn will increase tax revenue and also the tax ratio.

On several occasions, the Minister of Finance Sri Mulyani did not deny the importance of increasing tax revenues. She ensured that the government would seek to increase revenue, especially through tax policy reform. Sri Mulyani is also eyeing the potential for digital taxes which will be agreed at the G20 forum. According to her, this will significantly increase state revenues in addition to deepening the tax base in Indonesia.

Tax ratio (tax ratio) is a comparison between State Revenue from Taxes and Oil and Gas and Non-Oil and Gas with Gross Domestic Product (gross domestic product). Revenue from the tax sector is the largest part of current state revenues. Tax revenue is supported by non-tax sector revenues. The low income from the tax sector is, among other things, a result of the low awareness of the taxpayers in fulfilling their tax obligations or the low level of taxpayer compliance. The low state revenue apart from taxes is also the result of limited other resources, such as oil and gas and non-oil and gas.

The comparison GDP based on Current Price, State Revenue (tax and non tax) from 2012 to the 2018 State Budget is shown in the table below:

KINERJA PENERIMAAN NEGARA TAHUN 2010 - 2017									
No	URAIAN	Tahun							
		2010	2011	2012	2013	2014	2015	2016	2017
1	PDB Atas Dasar Harga Berlaku	6,864.13	7,831.73	8,615.70	9,546.13	10,569.71	11,526.33	12,406.77	13,588.80
2	Pajak Pusat (Triliun)	722.54	873.85	980.51	1,074.55	1,146.87	1,240.42	1,284.97	1,343.53
3	Penerimaan SDA (Triliun)	165.38	209.86	221.70	222.25	236.18	95.85	59.85	105.60
	Migas	152.73	193.49	205.82	203.63	216.88	78.17	44.09	81.84
	Pertambangan Mineral dan Batubara	12.65	16.37	15.88	18.62	19.30	17.68	15.76	23.76
<b>Tax ratio</b>									
4	Pajak Pusat+SDA thd PDB	12.9	13.8	14.0	13.6	13.1	11.6	10.8	10.7

\* Tahun 2012 adalah realisasi per 4 November 2016; Tahun 2013 adalah realisasi per 21 Oktober 2016; Tahun 2014 adalah data realisasi per 21 Oktober 2016; Tahun 2015 adalah realisasi per Juli 2017; Tahun 2016 merupakan realisasi per Januari 2018; tahun 2017 berupa anggaran per Mei 2017

Sumber: Penerimaan Pajak pusat dan SDA dari LKPP berbagai tahun  
Pajak Daerah dari DJPK, <http://www.djpk.kemenkeu.go.id/?p=5412>; PDB dari BPS tanggal 17 Juli 2018

One way that can be done to increase Indonesia's tax ratio is by optimizing tax revenues, especially by increasing the level of taxpayer compliance and minimizing tax revenue leakage. State tax revenue is one of the sources of state revenue. Regardless of any sector, taxes remain the most reliable point in determining the amount of state revenue, and have a direct impact on the preparation of the APBN. To increase revenue from the tax sector, one of the things that the Government, in this case the Director General of Taxes, is undertaking is tax intensification and

tax extensification.

In tax extensification, the government expands the scope of existing taxpayers in the field by carrying out proactive activities to find taxpayers who have fulfilled the requirements to carry out tax obligations. In tax intensification, the government processes the data it already has and explores in depth the potential taxes that can be obtained from the taxpayer (tax object and subject).

In simple terms, the basic difference between the two procedures is in the target set. If tax extensification targets an increase in the number of taxpayers and tax subjects and objects and generates additional taxpayers who can participate in paying taxes. Meanwhile, intensification is to increase tax revenue from the data already owned by the DGT.

The data that is already owned related to the taxpayer is then explored and investigated to obtain findings of potential tax obligations owned by the taxpayer, and this is done by exploring and observing any gaps that might increase the amount of tax payments from a large number of taxpayers already registered. For example, the DGT will investigate whether the taxpayer has unreported assets. This unreported asset certainly has a tax liability, which can increase state revenue from the tax itself.

From a practical point of view, the tax intensification program itself has actually been implemented by the government either internally or externally. The internal intensification program can be seen from the various new policies prepared by the government and the DGT to increase tax revenues based on the data they already have.

An example of a well-known intensification policy is the Tax Amnesty Program. Actually, this program is the government's strategy to explore the tax potential that has been owned by the state, but taxpayers do not carry out their tax obligations. In this program, taxpayers are given tax relief if they voluntarily report their tax assets and objects, which have not been reported so far, so that they are not subject to tax.

The relief is given in the form of exemption from fines, which of course have a very large value. The amount of the waiver of this fine actually reduces state revenues. However, in the long term, the state will have additional data for assets and tax objects owned by registered taxpayers, which so far have not been reported. This policy of eliminating tax penalties is known as tax expenditure.

The Tax Amnesty Program is practically a tax intensification program that gives very real results. The additional data on assets and tax objects obtained by the government will be used to increase state revenues in the next few years. Here it is clear that the purpose of this program is to explore and explore further the tax potential that has not been recorded and has not been tracked from registered taxpayers.

It is interesting to know the determinants that affect Gross Domestic Product, State Revenue and their effect on the Tax Ratio. The results of the research can be used to make policies that can encourage increased tax revenues, including how the Government should formulate policies that can increase production, investment and consumption to increase economic growth which has an impact on increasing tax revenues.

## **2 Results and Discussion**

Tax revenue is very closely related to GDP because the amount of potential taxation is influenced by GDP as an illustration of the real economic capacity of the Indonesian people. In a *ceteris paribus* condition, when GDP increases, tax revenue will increase even more. In simpler terms, an increase in GDP implies an increase in people's welfare, which in turn increases people's purchasing power. The increased purchasing power comes from the increasing income

of the people. An increase in people's income should clearly have implications for an increase in tax revenue, because people pay taxes based on the income they receive. The data process using regression produces the following description:

Year	LNGDP	LNTax	LNNR	LNOILGAS	LNMineral	LNTaxRatio
2010	8,83	6,58	5,11	5,03	2,54	2,56
2011	8,97	6,77	5,35	5,27	2,8	2,62
2012	9,06	6,89	5,4	5,33	2,77	2,64
2013	9,16	6,98	5,4	5,32	2,92	2,61
2014	9,27	7,04	5,46	5,38	2,96	2,57
2015	9,35	7,12	4,56	4,36	2,87	2,45
2016	9,43	7,16	4,09	3,79	2,76	2,38
2017	9,52	7,2	4,66	4,4	3,17	2,37

Partially, the Tax Ratio variable is very influential on GDP with Prob < 0.05 of 0.0001

Dependent Variable : LNPDB  
 Method : Least Squares  
 Date : 05/20/21 Time: 07.43  
 Sample : 2010 – 2017  
 Included Observation : 8

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNTAXRATIO	-1.742806	0.529639	-3.290557	0.0166
C	13.59933	1.338430	10.16066	0.0001
R-squared	0.643446	Mean dependent var		9.198750
Adjusted R-squared	0.584021	S.D. dependent var		0.237152
S.E. of regression	0.152955	Akaike info criterion		-0.705033
Sum squared resid	0.140371	Schwarz criterion		-0.685173
Log likelihood	4.820132	Hannan-Quinn criter.		-0.838983
F-statistic	10.82777	Durbin-Watson stat		0.733838
Prob(F-statistic)	0.016602			

Estimation Command:

=====LS LNPDB LNTAXRATIO C

Estimation Equation:

===== LNPDB = C(1)\*LNTAXRATIO + C(2)

Substituted Coefficients:

=====

LNPDB = -1.7428057554\*LNTAXRATIO + 13.5993345324

The Tax Ratio variable is very influential on GDP as evidenced by prob < 0.05 of 0.0000

Dependent Variable: LNGDP  
 Method: Least Squares  
 Date: 05/20/21 Time: 07:48  
 Sample: 2010 2017  
 Included observations: 8

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNTAX	1.097873	0.086290	12.72309	0.0000
C	1.549322	0.601468	2.575901	0.0420
R-squared	0.964260	Mean dependent var		9.198750
Adjusted R-squared	0.958303	S.D. dependent var		0.237152
S.E. of regression	0.048426	Akaike info criterion		-
Sum squared resid	0.014071	Schwarz criterion		-
Log likelihood	14.02094	Hannan-Quinn criter.		-
F-statistic	161.8769	Durbin-Watson stat		0.844596
Prob(F-statistic)	0.000014			

Estimation Command:

=====LS LNGDP LNTAX C

Estimation Equation:

=====LNGDP = C(1)\*LNTAX + C(2)

Substituted Coefficients:

=====  
 LNGDP = 1.0978726782\*LNTAX + 1.54932211462

Simultaneously

Dependent Variable: LNGDP  
 Method: Least Squares  
 Date: 05/20/21 Time: 07:42  
 Sample: 2010 2017  
 Included observations: 8

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNNR	0.792148	0.250424	3.163233	0.0871
LNTAX	0.917476	0.033003	27.80001	0.0013
LNMINERAL	-0.122805	0.055216	-2.224099	0.1561
LNTAXRATIO	-0.995668	0.102942	-9.672177	0.0105
LNOILGAS	-0.581164	0.212459	-2.735425	0.1117

	C	4.5308880.257009	17.62928	0.0032
R-squared	0.999812	Mean dependent var	9.198750	
Adjusted R-squared	0.999342	S.D. dependent var	0.237152	
S.E. of regression	0.006085	Akaike info criterion	-7.252263	
Sum squared resid	7.41E-05	Schwarz criterion	-7.192682	
Log likelihood	35.00905	Hannan-Quinn criter	-7.654114	
F-statistic	2126.051	Durbin-Watson stat	2.703793	
Prob(F-statistic)	0.000470			

Estimation Command:

LS LNGDP LNNR LNTAX LNMINERAL LNTAXRATIO LNOILGAS C

Estimation Equation:

LNGDP = C(1)\*LNSDA + C(2)\*LNTAX + C(3)\*LNMINERAL + C(4)\*LNTAXRATIO + C(5)\*LNOILGAS + C(6)

Simultaneously all independent variables have a significant effect on changes in the value of GDP. This can be seen from the Fstatistic value of 2126,051 falling outside the critical region of Ftable.

Substituted Coefficients:

LNGDP = 0.792147844548\*LNNR + 0.91747617843\*LNTAX - 0.122805106327\*LNMINERAL -0.995668494027\*LNTAXRATIO - 0.581164432014\*LNOILGAS + 4.53088808329

## 4 Conclusion

1. Tax Revenue is strongly influenced by taxpayer compliance. Currently, it is suspected that although the percentage of compliance is increasing, the level of taxpayer compliance is low. Taxpayer compliance is also influenced by many things, including the tax collection system, taxpayer awareness, and also economic growth that will increase economic activity. Increasing economic activity will increase ability to product goods and services in one side, and in the other side also will increase ability to consume produced goods and services.
2. Since tax ratio has become critical issue related to government capacity in collecting state revenue, and the reality that percentage of Indonesia tax ratio is still lower compare to neighbour's, then government must take bigger focus to create any rule and policy in order to increase state revenue, especially in tax revenue. Some rule and policy actually has been taken related to tax, like tax amnesty policy, improvement in tax administration and others.

3. The tax ratio is one of the benchmarks for a country's economic condition. The level of Indonesia's tax ratio is currently still relatively low, even the lowest among the countries that are members of ASEAN
4. The low tax ratio is caused by the low tax revenue, as a result of the low awareness or compliance of taxpayers in fulfilling all their tax obligations.
5. Tax ratio continues to decline resulting in tax contributions in The country's economy declines and hampers the development and welfare of the country. Although tax revenue is not the only source of state income, if the tax ratio decreases continuously every year, the government must carry out a policy to increase the tax ratio again so that tax revenue can be optimal. tax ratio is the existence of relief policies granted by the Director General of Taxes to taxpayers or the existence of incentives for an event that is out of control.
6. The test results using regression analysis show that:
  - a. Partially, the variable tax ratio show significant effect on GDP with a probability < 0.05 of 0.0001
  - b. Tax also show significant effect on Gross Domestic Product, as evidenced by probability <0.05 of 0.0000
  - c. Simultaneously all independent variables show significant effect on changes of GDP. This can be seen from the Fstatistic value of 2126,051 falling outside the critical region of Ftable.

With the conclusion of this regression analysis test, it means that taxes will have a negative effect on GDP if there is a reduction in the value of taxes. That is, reduced tax revenue will reduce the value of GDP. On the other hand, an increase in tax revenue will increase the value of GDP.

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