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Research paper

Relationship in Indonesia Tax Receivable Components Period 1990-2016

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Abstract

This paper aims to analyze the revenue from the tax sector in Indonesia during the period 1990-2016. The variables in the analysis tool consist of VAT, PBB, PPH, Domestic tax, international tax, non oil tax, oil tax, other tax, bphtb, excise, cost in, export tax. The data in this study is downloaded from the website of the central body statistics and other web sites. This research uses correlation test, covariance and granger causality test. From the research conducted do explain that almost the variables of tax revenue in the meticulous have a strong linkage relationship, and mutually correlated very high, with the causality test as the tax revenue variable has a two-way relationship and partly 1 direction and mutually unrelated. So with the results in the can, be sure that the tax revenue variable there is a relationship and relevance.

Keywords: *Tax revenue, correlation test, covariance test, causality test.*

1. Preliminary

In APBN 2017, the income from the tax sector is estimated at Rp 1,307.6 trillion. The realization of tax revenue this year is expected to be higher than last year if supported by good economic conditions and increased taxpayer compliance. Until the end of May 2017, the realization of new tax revenue amounted to Rp 398.7 trillion or still has not reached half of the 2017 state budget target. But in total, tax revenue (tax and customs) at the end of May reached Rp 463.5 trillion or 30.9 % of the target in the 2017 state budget of Rp 1,498.9 trillion. There are several customs components that contribute revenue of Rp 45.7 trillion.

With the high level of government dependence on the people's contribution, depicted on the composition of the state income each year. In Law no. 10/2010 on APBN of Fiscal Year 2011, stated that of the total state revenue plan which amounted to Rp 1,104.9 trillion in 2011, around 76.96% or Rp 850.3 trillion is targeted to be sourced from tax revenues, while the remaining Rp. 250.9 trillion or 22.71% came from non-tax revenues and Rp. 3.7 trillion or 0.33% derived from grant revenues. This also occurs in the 2012 State Budget as set forth in Law no. 22/2011 on State Budget Year 2012, which tax revenue is targeted at around 78.74% or Rp. 1,032.6 trillion.

State revenue is an income generated by the state to finance and run every government program, while the sources of state revenues come from various sectors, where all revenue will be used to finance the development and improve the welfare of all Indonesian people. Therefore the authors want to analyze about the acceptance of State components of the taxation sector. Therefore, the authors are interested to do this research by taking the theme of the relationship between the components of tax revenue in Indonesia period 1990-2016.

2. Theory of Tax Revenue

According to RI Law No. 17 of 2003 on state finances, state revenues and grants are all state revenues derived from tax revenues, non-tax state revenues, as well as grant receipts from domestic and overseas.

- Tax receipts are all receipts consisting of domestic taxes and international trade taxes. Domestic taxes are all state revenues arising from income tax, value added tax on goods and services, sales tax on luxury goods, land taxes and buildings on acquisition of land and building rights, excise and other taxes. International trade tax is all state revenues arising from import duties and export taxes / levies.
- Non-tax state revenue (PNBP) is all revenue received by the state in the form of revenue from natural resources, the government's share of the profits of state-owned enterprises, as well as other non-tax state revenues. As one of the sources of state revenues, PNBP has an important role in supporting the budgetary needs of the budget in the APBN although it is very vulnerable to the development of various external factors. PNBP is also influenced by changes in macroeconomic indicators, especially exchange rates and crude oil prices in international markets.
- Grant receipts are all state revenues derived from private domestic donations as well as donations of private and overseas government agencies. The grant receipts recorded in the APBN are donations or grants from foreign countries, national agencies, and individuals with no obligation to repay. The development of state revenues derived from this budget in every fiscal year depends on commitment and the willingness of the state or donor agencies in providing donations (assistance) to the Government of Indonesia.

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3. Research Methodology

In this study used the entire variables in the tax revenue consisting of VAT, PBB, PPH, Domestic tax, international tax, non oil tax, oil tax, other tax, bphtb, excise, cost in, export tax. This research uses data of tax revenue starting peride 1990-2016 which is downloaded from website www.bps.go.id and from other website. This research uses correlation test data analysis technique, covariance test, and causality test. This study was conducted by the authors in February-March 2018. Data in this study categorized have passed to test data of a study, such as stationary tests, lags and other tests.

4. Discussion Result

The results of the covariance and correlation test describe how two variables, where the variables are positively associated if they move in the same direction and are inversely proportional if they move in the opposite direction. Both covariance and correlation indicate whether the variable is positively correlated or reversed. Correlations also tell the extent to which variables tend to move together. For the covariant and correlation tests that appear in the news almost daily as these variables are said to be negative, or inverse, related because they are moving in opposite directions. Here are the results for ovarian correlation test presented in Table 1 and 2 below.

Table 1: Result for correlation test

	BPHTB	COST_IN	CUKAI	DOM_TAX	INT__TAX	NON_OIL_TAX	OIL_TAX	OTHER_TAX	PBB	PPH	PPN	TAX_ESKPOR
BPHTB	1											
COST_IN	0.17762	1										
CUKAI	0.05534	0.96775	1									
DOM_TAX	0.12371	0.98514	0.99215	1								
INT__TAX	0.11382	0.94298	0.87504	0.917853	1							
NON_OIL_TAX	0.09794	0.96561	0.99334	0.993503	0.88365	1						
OIL_TAX	0.32452	0.90850	0.79676	0.856322	0.93822	0.79868	1					
OTHER_TAX	0.13922	0.96215	0.97846	0.979474	0.86088	0.98507	0.79608	1				
PBB	0.46193	0.90348	0.83227	0.882165	0.89547	0.84862	0.92487	0.82608	1			
PPH	0.13437	0.98222	0.98982	0.998867	0.91482	0.99594	0.84958	0.98247	0.88210	1		
PPN	0.08480	0.98436	0.99050	0.997083	0.92305	0.98544	0.86252	0.97062	0.86910	0.99273	1	
TAX_ESKPOR	-0.00209	0.66571	0.56008	0.630870	0.87611	0.58249	0.78756	0.53643	0.69899	0.62832	0.64367	1

Sourced: Proceed author by software

Table 2: Result for covariance test

	BPHTB	COST_IN	CUKAI	DOMESTIC_TAX	INT__TAX	NON_OIL_TAX	OIL_TAX	OTHER_TAX	PBB	PPH	PPN	TAX_ESKPOR
BPHTB	5466633	4425934	5747969	11688900	4390057	41414944	23406000	685894	1196954	6482078	2819829	-36015
COST_IN	4425934	1135775	4581666	42425558	16577539	18609834	29867278	2160539	1067092	2159655	1491992	52197617
CUKAI	5747969	4581666	1973436	17810400	6412235	79800721	10918512	9158573	4097475	9071922	6257956	18305636
DOM_TAX	11688900	4242555	1781040	16329045	6118155	72637862	10674260	8339546	3950637	8327548	5730305	18755931
INT__TAX	4390057	1657753	6412235	6118155	2721032 8	26359852	47741401	2992129	1637039	3113398	2165516	10632757
NON_OIL_TAX	41414944	1860983	7980072	72601237	2635985 2	32703076	44554321	3753484	1700776	3715850	2534510	77499918
OIL_TAX	23406000	29867278	1091851	10674260	4774140 1	44554321	95156935	5174255	3161843	5407000	3784073	17874034
OTHER_TAX	685894	2160539	9158573	83395468	2992129 0	37534846	51742553	4439540	1929002	4270909	2908623	8315859.
PBB	1196954	1067092	4097475	39506373	1637039 8	17007765	31618433	1929002	1228211	2016960	1369848	56994278
PPH	6482078	2159655	9071922	83275488	3113398 8	37158504	54070004	4270909	2016960	4256549	2912917	95373938
PPN	2819829	1491992	6257956	57303053	2165516 7	25345104	37840735	2908623	1369848	2912917	2022700	67352257
TAX_ESKPOR	-36015	52197617	1830563	18755931	1063275 7	77499918	17874034	8315859	5699427	9537393	6735225	54129821

Sourced: Proceed author by software

In table 1 and 2 above, test results for correlation and covariance are shown. All you need to know is Covariance shows how two variables are related. Positive covariance means that variables are positively related, whereas negative covariant means the variables are inversely related. Correlation is another way to determine how

the two variables are related. In addition to telling you whether the variable relates positively or inverted, the correlation also tells you how far the variable tends to move together. The results in Table 2 explain positively the value of the resulting covariance, and can be said to be positively correlated among tax revenue variables. Specifically for interpreting strengths, related sizes called correlations are used stated above, covariance measures variables that have different units of measurement. Using covariance, can determine whether the unit increases or decreases, but it is not possible to measure the extent to which variables move together because the covariance does not use a standard measurement unit. Therefore the authors measure the extent to which variables move together, using the correlation as presented in Table 1 above. The last thing to know is the Main Difference Between Covariance and Correlation that lies in the size used. to indicate the extent to which two random variables change together are known as covariance, whereas to determine the size used to describe how powerful two randomly related variables are known as correlations. Covariance is only a measure of correlation. In contrast, correlation refers to a form of covariance scale. Correlation value occurs between -1 and +1. In contrast, the covariance value lies between -∞ and + ∞. For the results of the correlations presented in Table 1, make sure that some of the variables are medium correlated and many are highly correlated each other very strong, and can be sure only a few variables that correlate weakly. Furthermore, follow with the test of causality, as presented in table 3 below.

Table 3: Result for causality graner test

Pairwise Granger Causality Tests			
Lags: 1			
Null Hypothesis:	Obs	F-Statistic	Prob.
COST_IN does not Granger Cause BPHTB	26	0.05113	0.8231
BPHTB does not Granger Cause COST_IN		1.49504	0.2338
CUKAI does not Granger Cause BPHTB	26	0.24788	0.6233
BPHTB does not Granger Cause CUKAI		0.18353	0.6723
DOMESTIC_TAX does not Granger Cause BPHTB	26	0.21994	0.6435
BPHTB does not Granger Cause DOMESTIC_TAX		3.37419	0.0792
INT__TAX does not Granger Cause BPHTB	26	0.31300	0.5813
BPHTB does not Granger Cause INT__TAX		10.8610	0.0032
NON_OIL_TAX does not Granger Cause BPHTB	26	0.26184	0.6137
BPHTB does not Granger Cause NON_OIL_TAX		0.85594	0.3645
OIL_TAX does not Granger Cause BPHTB	26	0.00127	0.9719
BPHTB does not Granger Cause OIL_TAX		4.55419	0.0437
OTHER_TAX does not Granger Cause BPHTB	26	0.27267	0.6065
BPHTB does not Granger Cause OTHER_TAX		0.57841	0.4547
PBB does not Granger Cause BPHTB	26	0.02823	0.8680
BPHTB does not Granger Cause PBB		7.68556	0.0108
PPH does not Granger Cause BPHTB	26	0.19477	0.6631
BPHTB does not Granger Cause PPH		2.69952	0.1140
PPN does not Granger Cause BPHTB	26	0.26744	0.6100
BPHTB does not Granger Cause PPN		3.03400	0.0949
TAX_ESKPOR does not Granger Cause BPHTB	26	0.85639	0.3644
BPHTB does not Granger Cause TAX_ESKPOR		12.7605	0.0016
CUKAI does not Granger Cause COST_IN	26	0.61905	0.4394
COST_IN does not Granger Cause CUKAI		7.94369	0.0097
DOMESTIC_TAX does not Granger Cause COST_IN	26	1.35071	0.2571
COST_IN does not Granger Cause DOMESTIC_TAX		1.19825	0.2850
INT__TAX does not Granger Cause COST_IN	26	0.08453	0.7739
COST_IN does not Granger Cause INT__TAX		1.26056	0.2731
NON_OIL_TAX does not Granger Cause COST_IN	26	0.91226	0.3494
COST_IN does not Granger Cause NON_OIL_TAX		0.61556	0.4407
OIL_TAX does not Granger Cause COST_IN	26	0.10297	0.7512
COST_IN does not Granger Cause OIL_TAX		0.52627	0.4755
OTHER_TAX does not Granger Cause COST_IN	26	2.30050	0.1430
COST_IN does not Granger Cause OTHER_TAX		1.77957	0.1953
PBB does not Granger Cause COST_IN	26	6.74098	0.0161
COST_IN does not Granger Cause PBB		0.50184	0.4858
PPH does not Granger Cause COST_IN	26	1.33185	0.2603
COST_IN does not Granger Cause PPH		0.46485	0.5022
PPN does not Granger Cause COST_IN	26	0.35234	0.5586
COST_IN does not Granger Cause PPN		2.95962	0.0988
TAX_ESKPOR does not Granger Cause COST_IN	26	0.08449	0.7739
COST_IN does not Granger Cause TAX_ESKPOR		0.46900	0.5003
DOMESTIC_TAX does not Granger Cause CUKAI	26	8.36033	0.0082
CUKAI does not Granger Cause DOMESTIC_TAX		0.83211	0.3711
INT__TAX does not Granger Cause CUKAI	26	7.60273	0.0112
CUKAI does not Granger Cause INT__TAX		1.42980	0.2440
NON_OIL_TAX does not Granger Cause CUKAI	26	1.56814	0.2231
CUKAI does not Granger Cause NON_OIL_TAX		3.55971	0.0719
OIL_TAX does not Granger Cause CUKAI	26	12.3902	0.0018
CUKAI does not Granger Cause OIL_TAX		0.93381	0.3439
OTHER_TAX does not Granger Cause CUKAI	26	23.4723	7.0005
CUKAI does not Granger Cause OTHER_TAX		38.4973	2.0006
PBB does not Granger Cause CUKAI	26	1.55289	0.2253
CUKAI does not Granger Cause PBB		4.39031	0.0474

PPH does not Granger Cause CUKAI	26	6.19003	0.0205
CUKAI does not Granger Cause PPH		0.72916	0.4020
PPN does not Granger Cause CUKAI	26	11.9214	0.0022
CUKAI does not Granger Cause PPN		1.14359	0.2960
TAX_ESKPOR does not Granger Cause CUKAI	26	4.84777	0.0380
CUKAI does not Granger Cause TAX_ESKPOR		0.51080	0.4820
INT__TAX does not Granger Cause DOMESTIC_TAX	26	0.06009	0.8085
DOMESTIC_TAX does not Granger Cause INT__TAX		2.60199	0.1204
NON_OIL_TAX does not Granger Cause DOMESTIC_TAX	26	1.42893	0.2441
DOMESTIC_TAX does not Granger Cause NON_OIL_TAX		1.09729	0.3057
OIL_TAX does not Granger Cause DOMESTIC_TAX	26	1.58348	0.2209
DOMESTIC_TAX does not Granger Cause OIL_TAX		0.71223	0.4074
OTHER_TAX does not Granger Cause DOMESTIC_TAX	26	5.53521	0.0276
DOMESTIC_TAX does not Granger Cause OTHER_TAX		14.8601	0.0008
PBB does not Granger Cause DOMESTIC_TAX	26	5.45356	0.0286
DOMESTIC_TAX does not Granger Cause PBB		3.51413	0.0736
PPH does not Granger Cause DOMESTIC_TAX	26	0.01180	0.9144
DOMESTIC_TAX does not Granger Cause PPH		1.59122	0.2198
PPN does not Granger Cause DOMESTIC_TAX	26	1.07253	0.3111
DOMESTIC_TAX does not Granger Cause PPN		3.87687	0.0611
TAX_ESKPOR does not Granger Cause DOMESTIC_TAX	26	0.00611	0.9384
DOMESTIC_TAX does not Granger Cause TAX_ESKPOR		0.89916	0.3529
NON_OIL_TAX does not Granger Cause INT__TAX	26	2.56285	0.1230
INT__TAX does not Granger Cause NON_OIL_TAX		2.42556	0.1330
OIL_TAX does not Granger Cause INT__TAX	26	1.35626	0.2561
INT__TAX does not Granger Cause OIL_TAX		0.02327	0.8801
OTHER_TAX does not Granger Cause INT__TAX	26	3.80555	0.0634
INT__TAX does not Granger Cause OTHER_TAX		0.24985	0.6219
PBB does not Granger Cause INT__TAX	26	16.3927	0.0005
INT__TAX does not Granger Cause PBB		1.62579	0.2150
PPH does not Granger Cause INT__TAX	26	2.96509	0.0985
INT__TAX does not Granger Cause PPH		1.49521	0.2338
PPN does not Granger Cause INT__TAX	26	1.34291	0.2584
INT__TAX does not Granger Cause PPN		4.39111	0.0473
TAX_ESKPOR does not Granger Cause INT__TAX	26	1.26076	0.2731
INT__TAX does not Granger Cause TAX_ESKPOR		0.46904	0.5003
OIL_TAX does not Granger Cause NON_OIL_TAX	26	0.00079	0.9779
NON_OIL_TAX does not Granger Cause OIL_TAX		0.61111	0.4423
OTHER_TAX does not Granger Cause NON_OIL_TAX	26	10.9293	0.0031
NON_OIL_TAX does not Granger Cause OTHER_TAX		18.8084	0.0002
PBB does not Granger Cause NON_OIL_TAX	26	0.00300	0.9568
NON_OIL_TAX does not Granger Cause PBB		5.54007	0.0275
PPH does not Granger Cause NON_OIL_TAX	26	0.00079	0.9778
NON_OIL_TAX does not Granger Cause PPH		0.03183	0.8600
PPN does not Granger Cause NON_OIL_TAX	26	1.13413	0.2979
NON_OIL_TAX does not Granger Cause PPN		0.25455	0.6187
TAX_ESKPOR does not Granger Cause NON_OIL_TAX	26	5.56195	0.0272
NON_OIL_TAX does not Granger Cause TAX_ESKPOR		0.99328	0.3293
OTHER_TAX does not Granger Cause OIL_TAX	26	0.91845	0.3479
OIL_TAX does not Granger Cause OTHER_TAX		1.52759	0.2289
PBB does not Granger Cause OIL_TAX	26	6.98275	0.0146
OIL_TAX does not Granger Cause PBB		0.94156	0.3420
PPH does not Granger Cause OIL_TAX	26	0.61113	0.4423
OIL_TAX does not Granger Cause PPH		0.03181	0.8600
PPN does not Granger Cause OIL_TAX	26	1.33579	0.2596
OIL_TAX does not Granger Cause PPN		5.97730	0.0226
TAX_ESKPOR does not Granger Cause OIL_TAX	26	0.39776	0.5345
OIL_TAX does not Granger Cause TAX_ESKPOR		0.90574	0.3511
PBB does not Granger Cause OTHER_TAX	26	0.35342	0.5580
OTHER_TAX does not Granger Cause PBB		0.04407	0.8356
PPH does not Granger Cause OTHER_TAX	26	10.7596	0.0033
OTHER_TAX does not Granger Cause PPH		5.97984	0.0225
PPN does not Granger Cause OTHER_TAX	26	8.43991	0.0080
OTHER_TAX does not Granger Cause PPN		3.18295	0.0876
TAX_ESKPOR does not Granger Cause OTHER_TAX	26	1.13419	0.2979
OTHER_TAX does not Granger Cause TAX_ESKPOR		1.28130	0.2693
PPH does not Granger Cause PBB	26	3.79069	0.0639
PBB does not Granger Cause PPH		2.27570	0.1450
PPN does not Granger Cause PBB	26	3.08851	0.0922
PBB does not Granger Cause PPN		10.6015	0.0035
TAX_ESKPOR does not Granger Cause PBB	26	1.50639	0.2321
PBB does not Granger Cause TAX_ESKPOR		6.02036	0.0221
PPN does not Granger Cause PPH	26	0.04936	0.8261
PPH does not Granger Cause PPN		3.70848	0.0666

TAX_ESKPOR does not Granger Cause PPH	26	2.63747	0.1180
PPH does not Granger Cause TAX_ESKPOR		1.03372	0.3199
TAX_ESKPOR does not Granger Cause PPN	26	2.82221	0.1065
PPN does not Granger Cause TAX_ESKPOR		0.52828	0.4747

Sourced: Proceed author by software

From table 3 above, explain how the results of causality test for tax revenue variables. From the whole it is concluded that there are several inter-variables that have a two-way relationship, occurring on domestic tax and other tax, tax and non-tax tax, other tax and PPH, other tax and VAT, PBB and VAT. While some other variables only relate one direction and not interconnected or no causality relationship.[5 and 6]

5. Conclusion

In the correlation test gives a standardization measure for interdependence between two variables that will tell how close the two variables are moving. Correlation measurements, called correlation coefficients, will always take values between 1 and -1. While the covariant will give the result of positive and negative test values, if positive values indicate between the variables have a strong bound relationship, if valu is negative then vice versa. If the correlation coefficient value 0.66 describes two important things: Because the correlation coefficient is a positive number, the rate of return or correlation postively of 0.66. In the covariance and correlation tests identify that the variables are positively or negatively correlated. By measuring standards, the correlation can also measure the extent to which variables tend to move together. The conclusion of this study explains that on the one hand the tax revenue variable has a positive correlation, on the one hand has a strong correlation rate and on the one hand again between the tax revenue variables have a causal relationship that is interconnected.

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