

Tax Avoidance towards Tax Ratio after Tax Amnesty Program

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Abstract. This paper aims to examine the influence of tax avoidance towards tax ratio after implementing Tax Amnesty of firms listed in Indonesian Stock Exchange in Banten. This study took firms in the location in the period of 2014–2017 with fifteen firms listed (N=60). Besides, this study also used multivariate regression to statistically analyse the data. The results indicated that the changes in the Tax Ratio in Banten caused by the implementation of Tax Amnesty correlated with Tax Avoidance carried out by companies listed in the location. It is the first paper to explore the impact of tax avoidance to tax ratio after implementing Tax Amnesty in Banten. This study also used a two-area regression methodology both nationally and regionally to see the comparison of tax ratios in Indonesia and Banten Province.

Keywords: Tax Avoidance, Tax Amnesty, Banten Province, Tax Ratio

1 Introduction

The low level of public compliance with tax obligations in Indonesia is reflected in the condition that is based on the population census of the Central Statistics Agency in 2020. Related to this, there are around 163 million and this number is based on the 2020 DGT annual report. From the data there are only 46.3 million (28%) which are registered taxpayers and if you look back, this number is far in the 40s compared to other countries[1]. Then, from that number there is only around 77% which fulfilled their tax obligations and this had an impact on the tax ratio reaching around 8.33%. This figure is still far from other developing countries which are above the figure. The implication of tax avoidance or tax evasion is a reduction in national tax revenue, which reflects the tax ratio. The tax ratio shows a positive trend in many countries entering the twentieth century, ranging from 5% to 10% in the early century and at 30% to 40% by the twenty-first century.

Tax avoidance and tax evasion are the cause of the low tax revenue in Indonesia, which is only around 8% of GDP[2]. In addition, business profits due to the low of tax revenue also, or assets, belonging to Indonesian citizens and those in circulation are not immediately recorded in the national tax system. The loss of potential government tax revenue is partly due to the phenomenon of taxpayers placing a large number of their assets in countries that impose zero tax rates (0%) or are called tax heaven countries. This condition encourages the government to implement a more effective tax policy to explore potential tax sources, because a large number of these assets can make a significant contribution to the Indonesian national economy. One of the policies in question is the 2016-2017 tax amnesty program. This policy can run effectively, not apart from the perception factor of the taxpayers themselves who expect justice for the current tax system[3].

As stated above, the possibility of the success of the tax amnesty program is related to the factor of the community having good intentions to comply with applicable regulations so as to increase the level of compliance as a taxpayer. In addition, the government's seriousness factor and the perception of justice in the community in the context of implementing the program also determine. This tax amnesty program was implemented after the government implemented the 2015 tax amnesty program in which the elimination of tax administration sanctions was given to taxpayers who had not reported or carried out their tax obligations correctly, and from that there was an allegation of taxpayers that after this amnesty program the government would continue it with regulatory enforcement policies in the following year. And in the end the government issued a decision that all taxpayers had the same opportunity to receive forgiveness. This raises the perception of the unfairness of the tax amnesty program that affects taxpayer compliance[4]. The government estimates that they can repatriate at least IDR 1,000 trillion during the tax amnesty period (Darmayasa et al., 2017) and Although it is overshadowed by the potential for perceptions of injustice from taxpayers over the tax amnesty program, the government claims that the program is running quite successfully, this is supported by data showing that the wealth having been collected from the disclosure of the participants of the tax amnesty program is worth 4,884 trillion rupiah or around 35 % of Indonesia's GDP[5]. This value has become history because previously none of the countries in the world that implemented the tax amnesty program had achieved it, a maximum amount reaching only 10% of GDP[2].

To examine whether tax avoidance has the effect of changing the tax ratio after the tax amnesty, we must consider aspects related to tax avoidance such as taxpayer compliance, taxpayer profitability, related to tax ratios such as gross domestic product, tax revenue by the government, and mandatory participation of taxes in the tax amnesty program. Therefore, the study has three research questions, namely (1) Does tax avoidance have an impact on the growth of the tax ratio? (2) Does the tax amnesty in Indonesia have an impact on the growth of the tax ratio? (3) How big is the impact of tax avoidance on changes in the tax ratio due to tax amnesty?

In accordance with its objectives, descriptive and empirical approaches are the choices in this study. Because this study explains the relationship between tax avoidance variables and the tax ratio variable and the relationship between tax amnesty variables and the tax ratio variable using data from the tax office. In addition, we empirically test the relationship between these variables by using regression on the sample data of companies listed on the Indonesia Stock Exchange (IDX) located in the province of Banten.

Research related to the relationship between tax avoidance, tax amnesty and tax ratios was conducted by Hajawiyah et.al (2021) [2]. The results of the research indicate that there is an increase in tax revenue in the short term after the tax amnesty program runs, in addition to an increase in the tax base and the latter also contributes to the increase of tax compliance in Indonesia. Besides, the results of the study also show a positive relationship between the tax amnesty program and the tax compliance of companies listed in Indonesia Stock Exchange.

Based on the results of Darmayasa's et al. (2017), it shows that based on the values of Pancasila as the basis for social justice development, the tax amnesty program can lead to an increase in voluntary public compliance with taxes.

Samimi et.al (2010) show the results that if the tax ratio is greater, then economic growth decreases which results in the increase of tax avoidance. On the other hand, the results of other studies show that the relationship between the tax ratio and economic growth is negative. Specifically, good economic growth increases people's incomes and people's incomes are related to their tax avoidance behavior [6].

Damayanti, et al (2020) stating that there is justice felt by taxpayers in the implementation of the tax amnesty program can lead to taxpayers wanting to increase their awareness of tax compliance.

Nar's (2015) research results show that examination and criminal sanctions all together, can increase tax compliance rapidly after the tax amnesty.

The existence of a tax amnesty program gives results that are directly proportional to the level of tax revenue[3].

The increase in the value of the comparison of net income to capital or net income to equity ratio has a positive impact on the company's tax avoidance behavior, and the increase in the value of this ratio is because the factor of increasing the company's profit or income actually increases tax revenue which is in line with the increase in the tax ratio[7].

The expected contribution from the results of this study is to first contribute to enriching the tax amnesty literature, in addition to contributing to policy makers, especially the phenomena that occur related to tax amnesty programs that occur in the regions. We want to show by looking at data from the annual report and performance of the Directorate General of Taxes and the tax service of tax office in the Banten area, whether the tax amnesty program in Indonesia in 2016 and 2017, tax avoidance has no effect on the tax ratio. In addition, empirical evidence needs to be done through a sample of companies listed on the IDX domiciled in Banten to see if there is an effect of tax avoidance on tax ratios both national and regional scope (Banten area) after the tax amnesty program. We think that so far no research has been conducted that examines the relationship between tax amnesty, tax avoidance and tax ratios both nationally and regionally (in Banten region). In addition, this study provides input for the directorate general of taxation as an evaluation material for the program. Furthermore, other parts of this article will be explained, namely a literature review, research questions, methods, and conclusions and suggestions.

2 Literature Review

This study examines the relationship between tax avoidance and tax amnesty on the tax ratio. Thus, it will be known how much change in the tax ratio occurs as a result of their influence. Therefore, the relevant theory used in this study is the theory of optimal tax collection, where this theory explains that tax collection must comply with the principles of being equitable, neutral, simple, transparent and economically efficient[8]. This study also uses a supporting theory, namely the EAoL theory or Economic Analysis of Law, namely maximization (maximization). In this case, everyone basically has to maximize something. Intelligent people definitely choose the best options and maximize the possible use of the constraint factor. Therefore, the tax amnesty policy is the best choice to maximize state revenues in order to increase economic growth. At the same time this is constrained by the number of taxpayers who do not report all their assets in the SPT PPh to pay taxes according to the calculations stipulated in the law taxation, with the threat of administrative or criminal sanctions, but this way requires a lot of energy, money and a long time, because in general everyone has a tendency to avoid taxes [9]

2.1. Tax Avoidance

Tax savings, tax evasion and tax avoidance are almost the same concept, namely in order to reduce the tax burden, but the concept of tax avoidance includes tax savings and tax evasion. Tax savings are based on aspects of legality and rationality, while tax evasion is not, because it is said that tax avoidance is between tax savings and evasion [7]. There are various

views on tax avoidance, some of which are the opinion in terms of capital, where tax avoidance is a way of obtaining temporary capital for business activities because it is used as debt financing and leverage in society with certain interests, the media, and so on[10]. One of the users of the company's financial statements is the government. Therefore, the financial statements made must be useful for the government, which can be used as an instrument to evaluate the company's compliance in carrying out applicable regulations, including compliance with taxes[11]. Any increase in the variable business size, assuming all other variables remain constant, will increase the integrity of financial statements [12]. The behavior of taxpayers (both corporate and personal) is basically not much different because the factors that influence it are almost the same. The factors that affect the level of compliance are tariff factors, the risk of being detected, the potential for audits or sanctions and internal factors. Therefore, the government's firmness in enforcing tax provisions will reduce the level of taxpayers' tax avoidance[13]. The company will try as much as possible to reduce its tax burden because for him the tax burden can reduce cash turn over in the future and have a large enough effect on business activities[14].

2.2. Tax Ratio

Many concepts of tax ratios are adopted in various countries in the world, but basically all of them refer to the concept that the tax ratio is a comparison of tax revenue with gross domestic product, the difference is the component of tax revenue itself. Therefore, the relationship between the tax ratio and economic growth has a negative direction[15]. There are several factors related to the tax ratio in addition to GDP growth, namely the long-term relationship between environmental performance and the tax ratio[16]. In addition, the tax ratio is related to economic growth[6]. As explained above that each country uses different elements in calculating tax revenue to get its tax ratio figure, this is because in principle the tax ratio figure shows the government's ability to recover its income (gross domestic product) through tax revenues from the community for development costs [3].

2.3 Tax Amnesty

For taxpayers, the tax amnesty program can be used as a rare opportunity to obtain forgiveness (both for criminal and administrative sanctions) for violating their tax obligations by paying a certain amount as a settlement fee. In addition, from the government aspect, the tax amnesty program is the first step in implementing the provisions for the automatic exchange of information from the OECD (state organization in terms of economic cooperation and development policies) which in essence is to facilitate monitoring of assets of Indonesian citizens out of the country, country in connection with the provisions governing fines for taxpayers who do not report their income and wealth abroad[2]. Tax amnesty is a government program to minimize tax avoidance practices with the primary aim to increase economic growth through repatriation funds (Tax Amnesty Law No 11 2016, article 2 paragraph 2a) [17]. In principle, the tax amnesty program is not aimed at achieving an increase in revenue because there is uncertainty about the effect of the program in the short term, while in the medium and long term it has a definite negative effect on tax equity and income distribution. Experience in other countries proves that this program incurs costs that are not commensurate with the benefits obtained and this is reinforced by the results of recent research that this program has a negative impact on taxpayer compliance and income distribution. Although on the other hand the empirical evidence of the impact of this program is still not much, so it is rather difficult to measure the impact either directly or indirectly[18]

2.4 Tax Amnesty and Tax Ratio

Tax amnesty which is a policy and at the same time a government program is intended to minimize the behavior of taxpayers who carry out tax evasion specifically tax evasion and other actions that avoid their responsibilities in fulfilling their tax obligations. Therefore this program can make people aware to voluntarily increase their tax compliance[17]. The tax amnesty program policy is able to increase tax compliance and for taxpayers who feel justice in the implementation of the program. It has an impact on the emergence of higher compliance intentions than taxpayers who feel injustice to the program[4]. The tax amnesty program carried out by the government in 2016 and 2017 ran according to its objectives in terms of increasing tax revenues, expanding the tax base and having a positive impact on taxpayer compliance of going public companies[2]. Waluyo (2017) based on empirical studies that he has done states that the motivation of taxpayers to participate in the tax amnesty program is nothing but to enjoy facilities in the form of the abolition of tax sanctions does not have a significant impact on taxpayer compliance[19].

Research Question 1: Does the tax amnesty in Indonesia have an impact on the growth of the tax ratio?

2.5 Tax Avoidance and Tax Ratio

Several factors are related to the tax ratio, namely the tax rate policy, tax incentives and exemptions, an effective collection system, and the potential for tax evasion and evasion. Meanwhile, tax avoidance itself is seen as a process of transferring financial resources between governments to the owners of the company which causes an increase in the value of the company after tax. With the tax ratio, it can be seen the level of taxpayer compliance, while factors related to compliance are education and public understanding as well as the culture of tax compliance and enforcement of its provisions[20]. The results of a study conducted by Abdullah et al (2019) revealed that there is a negative relationship between profitability and the value of the tax burden paid and reported by the company, namely when increased profitability has an impact on decreasing the tax burden paid and reported by the company which in turn reduces government tax revenues and potentially lower tax ratio[13]. Tax avoidance activities reduce corporate tax burden [10]. The dependence of corporate taxpayers on debt is a motivation to find other sources of funding, namely from tax avoidance[20].

Research Question 2: Does tax avoidance have an impact on the growth of the tax ratio?

2.6 Tax Amnesty, Tax Avoidance and Tax Ratio

One of the objectives of the tax amnesty program is to increase tax revenues in the years following the implementation of the program, this is due to an increase in the tax database [2]. Tax compliance refers to the degree to which if a taxpayer files all required tax returns in a timely manner and reports tax obligations properly in accordance with his tax regulations or his country. Tax amnesty has varied effects on tax compliance, tax amnesty programs tend to be lower on average over the level of tax compliance. Therefore, the tax amnesty program that must be followed up with proper enforcement of post-implementation tax rules will increase the level of aggregate tax compliance. This does not mean that it recommends the government to repeat the tax amnesty program, because it will destroy credibility[21]. The condition faced by the government in terms of taxation is that there is a gap in tax revenue and fiscal needs, and this can be overcome, one of them with a tax amnesty program that aims to build a tax base[22].

Research Question 3: How big is the impact of tax avoidance on changes in tax ratios caused by tax amnesty?

2.7 Research framework

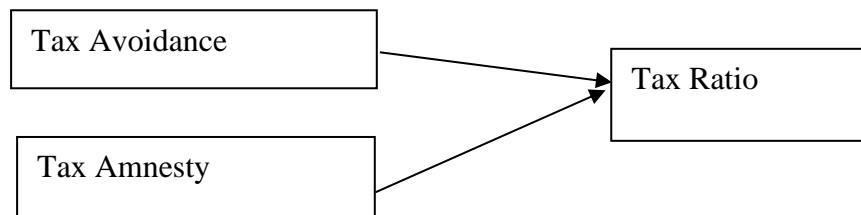


Figure.1 Research framework

3. Method

In accordance with its objectives, this research uses quantitative descriptive and empirical method, where from reports obtained from tax offices both in Banten province and national scope (through the directorate general of taxes) an overview of the relationship between tax amnesty and tax ratios nationally and regionally (in Banten region) is obtained.). From the data of publicly listed companies on Indonesia Stock Exchange located in the Banten area, empirical testing was carried out by means of panel data regression using Eviews to see the relationship between tax avoidance and the post-tax amnesty tax ratio. Based on the population, namely all publicly listed companies on Indonesia Stock Exchange located in Banten area during the 2014-2017 period, we selected a sample using the criteria as in Table 1. The sample selection located in Banten is related to the regional tax ratio, while The selection of the research period (2014-2017) includes the years before and after the 2016 tax amnesty program. The variables in this study are the tax ratio, tax amnesty and tax avoidance as shown in Table 2. The use of this variable is to examine the impact of tax amnesty and tax avoidance tax to tax ratio.

$$TR_{Y1} = \alpha + \beta_1 TA_{v_X1} + \beta_2 TA_{m_X2} + \varepsilon \quad (1)$$

$$TR_{Y2} = \alpha + \beta_1 TA_{v_X1} + \beta_2 TA_{m_X2} + \varepsilon \quad (2)$$

The use of effective tax rates or Effective tax rates (ETR) in this study is to measure tax avoidance, where this ETR shows tax avoidance activities, this proxy is also often used by other researchers[2]. ETR is the actual rate as well as showing the tax rate per currency unit on the corporate income tax rate. Determination of the amount of ETR by dividing the tax paid by income before tax, thus ETR is inversely proportional to tax avoidance but directly proportional to the level of tax compliance.

Table.1 Sample Selection

Criteria	Number of firms
Listed Company located in Banten 2014-2017	216
Firms with no financial statement published	(84)
Listed Company with negative profit	(72)
Total number of Listed Company in sample	60

Table.2 Definition and operationalization of Variable

Variable	Remarks
TAv	Tax avoidance proxies Effective Tax Rate (ETR) = Current Tax Expense/Accounting Income or Pretax Book Income : [2].
Tam	Tax Amnesty, 1 for company participates and 0 if no participates in tax amnesty program in year 2016–2017, [2]
TR_Y1	National Tax Ratio; TR-Nat: (Tax Paid/Tax Base Corp)*(Tax Base Corp/GDP)[23]
TR_Y2	Regional Tax Ratio;(Tax Paid/Tax Base)*(Tax Base/GRDP)[23]

4. Results and Discussion

4.1. Descriptive Analysis

Based on Table 3, tax revenue at the KPP in Banten province in 2014-2017 shows a continuous upward trend and based on table 6 the GDP of Banten region also shows an increase, but the average increase in tax revenue is 14.26% compared to the average increase in the GDP of Banten region of 9.44%, this shows an increased tax ratio after the tax amnesty period in the province of Banten

Based on table 4 national tax revenue in 2014-2017 shows a continuous upward trend and based on table 5 the national GDP also shows an increase but on average the increase in tax revenue is 5.44% compared to the average increase in national GDP of 7.09%, this shows the tax ratio decreased after the tax amnesty period nationally and this is in accordance with the report submitted by the DGT that in 2017 there was a decrease.

Table.3 Tax Revenue in Banten Province

Type of Tax	Year				Total Tax Revenue (in IDR)
	2014	2015	2016	2017	
Income	6.587.649.769.2	7.203.785.392.6	7.114.767.584.2	8.299.111.969.5	
Tax Article 21	53	84	53	22	
Income	1.411.462.065.4	1.466.831.352.3	1.769.196.236.4	2.309.585.845.3	
Tax	98	57	04	16	

Article 22					
Income	920.427.282.78	1.149.301.790.9	1.488.665.434.0	1.824.055.487.7	
Tax	3	97	47	13	
Article 23					
Income	1.836.109.544.0	2.536.219.917.1	2.529.023.981.4	4.333.029.563.4	
Tax	42	40	91	31	
Article 25/29					
Income	735.189.998.83	1.021.908.473.6	995.221.632.03	1.207.080.727.4	
Tax	4	54	4	36	
Article 26					
Final Income	5.613.881.673.3	5.838.788.864.8	6.068.333.699.5	6.219.023.251.7	
Tax	08	22	57	56	
Other Income	2.750.502.528.6	430.523.053.92	3.531.376.110.1	1.069.773.015.7	
Tax	27	3	65	91	
VAT & Sales Tax of Luxury Goods	14.977.443.022.	16.381.664.296.	17.719.187.460.	24.580.704.294.	
	143	136	825	183	
Land and Building Tax	17.176.888.851	16.176.381.092	17.044.189.175	25.017.044.402	
Other Tax	263.608.237.36	276.730.479.59	306.339.266.21	323.911.889.17	
	5	6	1	6	
Total Tax Revenue (In IDR)	36.905.431.306. 099	38.992.340.193. 553	45.438.629.050. 499	54.802.307.598. 803	176.138.708 .148.954

Source : Tax Office in Banten Province

Table.4 Tax Revenue in Indonesia

Type of Tax	Year				Total Tax Revenue (in IDR)
	2014	2015	2016	2017	
Income	105.650.628.02	114.480.163.98	109.644.003.95	117.764.553.59	
Tax	8.716	0.688	9.877	9.746	
Article 21					
Income	46.710.165.824.	48.737.347.761.	49.329.566.290.	59.329.394.065.	
Tax	222	816	613	199	
Article 22					

Income Tax Article 23	25.517.229.950. 252	27.882.131.636. 573	29.142.388.691. 193	34.005.879.655. 650	
Income Tax Article 25/29	153.066.309.64 3.448	191.268.959.89 5.784	175.001.499.09 2.116	214.357.410.10 1.065	
Income Tax Article 26	34.729.211.219. 726	42.231.857.603. 461	36.095.237.400. 838	43.691.062.125. 980	
Final Income Tax	87.318.711.619. 075	119.668.970.07 6.592	117.679.209.26 8.355	106.311.286.05 9.450	
Other Income Tax	93.188.614.054. 569	58.038.699.452. 602	149.320.483.30 8.667	71.333.887.350. 291	
VAT & Sales Tax of Luxury Goods	409.181.627.42 6.617	423.710.816.24 1.713	412.213.453.51 0.472	480.724.607.48 3.756	
Land and Building Tax	23.476.231.891. 365	29.250.341.457. 240	19.443.228.194. 707	16.771.563.848. 703	
Other Tax	168.027.039.44 0.262	185.149.569.51 9.908	187.100.588.84 9.134	199.240.199.50 8.670	
Total Tax Revenue (In IDR)	1.146.865.769.0 98.250	1.240.418.857.6 26.380	1.284.969.658.5 65.970	1.343.529.843.7 98.510	5.015.784. 129.089.1 10

Source :Central Government of Indonesia Financial Statement (Audited)

Table.5 GDP in 2014-2017 Year

Year	Gross Domestic Product (GDP) of Indonesia Country (Billion Rp)
2014	10.569.705,30
2015	11.526.332,80
2016	12.401.728,50
2017	13.587.212,60

Source :BPS-Statistic Indonesia

Table.6 GRDP at Banten

Year	Gross Regional Domestic Product (GRDP) at Banten (Billion Rp)
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2014	432.732,01
2015	479.410,60
2016	519.117,15
2017	567.148,30

Source : Pocket Book of GRDP Banten Province

Table.7 National Tax Statistic Data in 2014-2017 Year

Description	Year							
	2014		2015		2016		2017	
Tax Revenue	Target 985,13 (Trillion Rp.)	Realization 1.072,38 (Trillion Rp.)	Target 1.294,26 (Trillion Rp.)	Realization 1.060,86 (Trillion Rp.)	Target 1.355,20 (Trillion Rp.)	Realization 1.105,97 (Trillion Rp.)	Target 1.283,57 (Trillion Rp.)	Realization 1.151,03 (Trillion Rp.)
Growth of Tax Revenue	excluding Oil & Gas Income Tax 7,81%	including Oil & Gas Income Tax 6,92%	excluding Oil & Gas Income Tax 12,6%	including Oil & Gas Income Tax 7,69%	excluding Oil & Gas Income Tax 5,85%	including Oil & Gas Income Tax 4,25%	excluding Oil & Gas Income Tax 2,88%	including Oil & Gas Income Tax 4,07%
Proportion of Tax Revenue	Non-Oil & Gas Income Tax 46,60%	VAT & Sales Tax of Luxury Goods 41,50%, remain others tax	Non-Oil & Gas Income Tax 52,05%	VAT & Sales Tax of Luxury Goods 39,94%, remain others tax	Non-Oil & Gas Income Tax 56,97%	VAT & Sales Tax of Luxury Goods 37,27%, remain others tax	Non-Oil & Gas Income Tax 51,827%	VAT & Sales Tax of Luxury Goods 41,76%, remain in other s tax
Total Tax Payers	30.574.428	90,56% Individual, 8,09% Corporate, remain Treasurer	33.336.122	90,60% Individual, 8,05% Corporate, remain Treasurer	36.446.616	90,66% Individual, 8,01% Corporate, remain Treasurer	39.151.603	90,78% Individual, 7,95% Corporate, remain in Treasurer
Compliance Ratio of Annual Income Tax Return Filing	58,87%		60,42%		60,82%		72,64%	

Revenues from tax audit	24,47 (trillion Rp)	38,74 (trillion Rp)	46,02 (trillion Rp)	53,93 (trillion Rp)
Tax arrears collection	12,42 (trillion Rp)	15,98 (trillion Rp)	20,32 (trillion Rp)	24,27 (trillion Rp)
Objection, correction, deduction, annulment, and cancellation	52.573 requests	112.038 requests	363.406 requests	100.081 requests
Appeal won by DGT	29,10%	32,52%	36,42%	40,32%
Lawsuit won by DGT	77,67%	79,32%	76,65%	58,51%
List of Indonesia's Tax Treaty Network	65	65	65	67
Organizational Performance Score	101,55%	95,77%	100,97%	105,37%
A. State Expenditure (trillion Rp)	10.569,71	11.526,33	12.406,77	13.588,80
B. Tax Revenue excluding Oil & Gas Income Tax (trillion Rp)	1.146,87	1.240,42	1.284,97	1.343,53
Ratio B : A	10,85%	10,76%	10,36%	9,89%

Source : DGT Annual Report

Table.8 Result Calculation Sample

Firm s in Sam ple	Fi rm s Co de	TA (Tax avoidance) Proxies ETR (Effective Tax Rate (ETR) = Current Tax Expense/Accounting Income or Pretax Book Income				TAm:Tax Amnesty, dummy variable equals 1 if company participates in tax amnesty program			
		2014	2015	2016	2017	2014	2015	2016	2017
PT Sum berAl faria Trija yaTb k.	A M RT	25,2620%	26,2852 %	25,9129 %	32,4137 %	0	0	0	0
BFI Finan ce Indo	BF IN	20,1622%	22,1672 %	22,1079 %	20,1827 %	1	1	1	1

nesia Tbk									
PT Bumi Serp ongD amai Tbk	BS D E	0,0828%	0,4531 %	1,3386 %	0,7526 %	1	1	1	1
Duta Perti wi Tbk	D U T I	0,1529%	0,1385 %	0,4411 %	0,6686 %	1	1	1	1
Gem aGra hasar anaT bk	G E M A	25,4416%	18,7102 %	13,0978 %	11,5861 %	1	1	1	1
Sumi Indo Kabe l Tbk	IK BI	27,7968%	24,9966 %	27,3229 %	28,6436 %	0	0	0	0
Jemb o Cabl e Com pany Tbk	JE C C	28,0088%	70,9914 %	24,5132 %	25,3246 %	0	0	0	0
Jaya Real Prop erty Tbk	JR PT	0,8158%	0,7804 %	0,9373 %	3,8909 %	1	1	1	1
Lipp o Kara waci Tbk	LP K R	5,5358%	20,2913 %	21,2084 %	26,5733 %	1	1	1	1
Mata hari Depa rtme nt Store Tbk	LP PF	23,3135%	20,6686 %	20,2538 %	20,4158 %	1	1	1	1
Midi Utam a Indo nesia Tbk	MI DI	21,0583%	23,0338 %	21,1085 %	16,5819 %	0	0	0	0
Multi Binta	M LB	26,2890%	26,4462 %	25,6068 %	25,7274 %	1	1	1	1

ng Indo nesia Tbk	I								
Pan Broth ers Tbk	PB R X	27,7968%	24,9966 %	27,3229 %	28,6436 %	1	1	1	1
PT Siloa m Inter natio nal Hosp itals Tbk.	SI L O	34,8442%	41,6472 %	42,7130 %	48,2496 %	1	1	1	1
Unile ver Indo nesia Tbk	U N V R	25,2424%	25,2594 %	25,4461 %	25,2581 %	1	1	1	1
Firm s in Sam ple	Fi rm s Co de	Corporate TR-Nat: Tax Paid/GDP (Gross Domestic Product)				Corporate TR-Reg:Tax paid/GRDP (Gross Regional Domestic Product)			
		2014	2015	2016	2017	2014	2015	2016	2017
PT Sum berAl faria Trija yaTbk.	A M RT	0,0013%	0,0014 %	0,0013 %	0,0014 %	0,031 7%	0,032 7%	0,031 8%	0,034 5%
BFI Finan ce Indo nesia Tbk	BF IN	0,0017%	0,0014 %	0,0015 %	0,0021 %	0,041 1%	0,032 5%	0,036 4%	0,051 1%
PT Bumi Serp ongD amai Tbk	BS D E	0,0029%	0,0028 %	0,0026 %	0,0023 %	0,069 6%	0,068 3%	0,061 4%	0,055 7%
Duta Perti wi Tbk	D U TI	0,0008%	0,0008 %	0,0007 %	0,0007 %	0,020 0%	0,020 3%	0,016 7%	0,015 9%
Gem aGra	G E	0,0002%	0,0003 %	0,0002 %	0,0002 %	0,005 6%	0,006 3%	0,005 2%	0,005 1%

hasarana Tbk	MA								
Sumi Indo Kabel Tbk	IKBI	0,0005%	0,0009%	0,0006%	0,0007%	0,0126%	0,0207%	0,0153%	0,0157%
Jembone Cable Company Tbk	JCCC	0,0001%	0,0001%	0,0000%	0,0004%	0,0023%	0,0018%	0,0001%	0,0107%
Jaya Real Property Tbk	JRPT	0,0010%	0,0011%	0,0010%	0,0008%	0,0253%	0,0270%	0,0233%	0,0183%
Lippo Karawaci Tbk	LPKR	0,0043%	0,0053%	0,0044%	0,0042%	0,1041%	0,1267%	0,1041%	0,1012%
Matahari Department Store Tbk	LPF	0,0036%	0,0042%	0,0048%	0,0032%	0,0873%	0,1019%	0,1159%	0,0778%
Midi Utama Indonesia Tbk	MIDI	0,0004%	0,0004%	0,0005%	0,0004%	0,0103%	0,0093%	0,0108%	0,0106%
Multi Bintang Indonesia Tbk	MLBI	0,0032%	0,0016%	0,0020%	0,0034%	0,0785%	0,0382%	0,0486%	0,0825%
Pan Brothers Tbk	PBRX	0,0005%	0,0009%	0,0006%	0,0007%	0,0126%	0,0207%	0,0153%	0,0157%
PT Siloam International	SIL O	0,0002%	0,0005%	0,0006%	0,0007%	0,0051%	0,0115%	0,0138%	0,0158%

Hospitals Tbk.									
Unilever Indonesia Tbk	UNVR	0,0176%	0,0166%	0,0167%	0,0177%	0,4296%	0,3985%	0,3982%	0,4242%

Source : IDX, Pocket Book of GRDP of Banten Province, BPS-Statistics Indonesia

4.1. Empirical Analysis

Based on tables 9 & 10, the mean values for the variables TAM_X1 and TAM_X2 are about 0.73 each, which means 73% of 60 is 44 (the number of companies participating in the tax amnesty program is 11 companies, namely 44 divided by 4 research periods). The mean value for the variables TAV_X1 & TAV_X2 is about 0.20 each, which means that the current tax burden is 20% of the sample company accounting profit.

From Table 13, it can be seen that the relationship matrix between the variables of tax amnesty and tax avoidance is negative and low so that there is no multicollinearity problem.

From Tables 11 and 12, the regression results show that tax amnesty has a positive and significant effect on tax ratios both nationally and regionally (in the province of Banten), while tax avoidance has no effect on tax ratios nationally and regionally. The principles that underlie tax collection in Indonesia as described in the optimal taxation theory have been applied so that tax amnesty affects the tax ratio. These results confirm the research of Hajawiyah et al (2021) that by using ETR, tax amnesty has a significant effect on tax compliance which has an impact on the tax ratio. And it is not in line with the research results of Kim and Im (2017) that the increase in net income to equity ratio has a positive impact on corporate tax avoidance behavior and increases tax revenue which is in line with the increase in the tax ratio. A well-designed tax amnesty and post-amnesty enforcement program will increase the level of aggregate tax compliance[21].

Table.9 Descriptive statistics of variables

Date: 10/23/22 Time: 23:18 Sample: 2014 2017			
	TR_Y1	TAV_X1	TAM_X2
Mean	2.54E-05	0.208819	0.733333
Median	1.01E-05	0.239133	1.000000
Maximum	0.000177	0.709914	1.000000
Minimum	5.00E-08	0.000828	0.000000
Std.Dev.	4.16E-05	0.133160	0.445948
Skewness	2.904029	0.524669	-1.055290
Kurtosis	10.53909	5.141205	2.113636
Jarque-Bera	226.4287	14.21467	13.10046
Probability	0.000000	0.000819	0.001430
Sum	0.001527	12.52913	44.00000
SumSq.Dev.	1.02E-07	1.046165	11.73333
Observations	60	60	60

Table.10 Descriptive statistics of variables

Date: 10/23/22 Time: 23:18 Sample: 2014 2017			
	TR_Y2	TAV_X1	TAM_X2
Mean	0.000614	0.208819	0.733333
Median	0.000243	0.239133	1.000000
Maximum	0.004296	0.709914	1.000000
Minimum	1.19E-06	0.000828	0.000000
Std.Dev.	0.001002	0.133160	0.445948
Skewness	2.905550	0.524669	-1.055290
Kurtosis	10.55822	5.141205	2.113636
Jarque-Bera	227.2388	14.21467	13.10046
Probability	0.000000	0.000819	0.001430
Sum	0.036840	12.52913	44.00000
SumSq.Dev.	5.92E-05	1.046165	11.73333
Observations	60	60	60

Table.11 Regression results of empirical analysis

Dependent Variable: TR_Y1 Method: Panel Least Squares Date: 10/23/22 Time: 22:45 Sample: 2014 2017 Periods included: 4 Cross-sections included: 15 Total panel (balanced) observations: 60				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.80E-06	1.55E-05	-0.310481	0.7573
TAV_X1	4.03E-05	4.18E-05	0.965044	0.3386
TAM_X2	2.98E-05	1.25E-05	2.386196	0.0204
R-squared	0.091352	Meandependent var		2.54E-05
Adjusted R-squared	0.059470	S.D. dependntvar		4.16E-05
S.E. of regression	4.04E-05	Akaikeinfocriterion		-17.34893
Sum squared resid	9.28E-08	Schwarzcriterion		-17.24421
Log likelihood	523.4679	Hannan-Quinnriter.		-17.30797
F-statistic	2.865293	Durbin-Watsonstat		0.028042
Prob(F-statistic)	0.048204			

Table.12 Regression results of empirical analysis

Dependent Variable: TR_Y2 Method: Panel Least Squares Date: 10/23/22 Time: 22:46 Sample: 2014 2017 Periods included: 4 Cross-sections included: 15 Total panel (balanced) observations: 60				
Variable	Coefficient	Std. Error	t-Statistic	Prob.

C	-0.000115	0.000372	-0.309580	0.7580
TAV_X1	0.000969	0.001006	0.963776	0.3392
TAM_X2	0.000719	0.000300	2.392808	0.0200
R-squared	0.091790	Meandependent var		0.000614
Adjusted R-squared	0.059923	S.D. dependvar		0.001002
S.E. of regression	0.000971	Akaikeinfocriterion		-10.98684
Sum squared resid	5.38E-05	Schwarzcriterion		-10.88213
Log likelihood	332.6053	Hannan-Quinnriter.		-10.94588
F-statistic	2.880403	Durbin-Watsonstat		0.029215
Prob(F-statistic)	0.048315			

Table.13 Pearson correlation matrix of main variables

	TAV_X1	TAM_X2
TAV_X1	1.000000	-0.328648
TAM_X2	-0.328648	1.000000

5. Conclusions, Implications, and Limitations

The amnesty program is implemented in order to increase tax revenue, increase the tax base, and improve taxpayer compliance. To find out the impact of the amnesty on the tax ratio, we examined national and local tax revenues in the province of Banten after the amnesty. We also tested empirically as part of our research on publicly listed companies in Banten area, namely the relationship between tax amnesty, tax avoidance and the tax ratio.

The results of empirical testing found that publicly listed companies in Banten area did tax avoidance which had no effect on the tax ratio. Other results also show that the tax ratio is influenced by the tax amnesty program both nationally and regionally.

We acknowledge the following limitations of this study. Due to the short observation period, this study examines only publicly traded companies domiciled in Banten area. The impact on the wider area needs to be studied further. Despite its limitations, this research is important because it can be useful for the Government of Indonesia, the Directorate General of Taxes, especially for the tax office in Banten province, in evaluating policies related to tax amnesty.

Acknowledgement

We are very grateful for the constructive comments of the doctoral program of accounting science at the Universitas Sultan AgengTirtayasa, and the reviewers of this article.

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