The Relationship of Organizing National Sports Events to Local Tax Revenue in Indonesia

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Abstract

The Indonesia National Sports Event, commonly known as Pekan Olahraga Nasional (PON), is a quadrennial multi-sport event involving athletes from all provinces in Indonesia. The PON is expected to encourage economic growth to increase local tax revenue for the host. This study aimed to measure the impact of PON event to local tax revenue, specifically taxes from hotels, restaurant, entertainment and advertisement. Using Even study approach, this study measured the effect of PON event from PON 2000 to PON 2016, involving local tax revenue data from 105 districts and cities in the provinces of PON events. The empirical test results show that PON affects total local tax revenue, restaurant tax, and entertainment tax in the short term, but has no impact on hotel and advertisement tax revenue. This study suggested the local governments to manage and maintain the facilities and infrastructure so that the local government can utilize these facilities and infrastructure after the PON ends to add local tax revenue. Improving the performance in handling PON can also improve the local image to attract the public's interest and investors to the area.

Keywords: National Sports Event; economic growth; local tax revenue; event study; eventdd
JEL Classification: H71; L83

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1. Introduction

The ever-changing host of sporting events proves that holding sport events attracts the interest of many countries or regions. Organizing sporting events can stimulate economic growth, improve town image (Scholtz, 2019), and even become the crucial driver of sustainable development through tourism (Scholtz, 2019; Mansour et al., 2022). The economic impact is not only during the event but also before and after the event (Li & Blake, 2009). Other economic benefits for the host organizers are from the infrastructure improvement before the event as well as sales or tourist visit escalation during the event (Scholtz, 2019). The infrastructure become a long-term benefit as it is a legacy of the sports event for future generation while also promote the region to become a tourism destination in the future (Baade & Matheson, 2016). In addition, sport events have stimulated economic activity through new job creation (Hotchkiss et al., 2003; Baumann et al., 2012; Feddersen & Maennig, 2013), cash flows from the economic activity (Gratton et al., 2000) and tax revenue of an organizing region (Gratton et al., 2000; Porter & Fletcher, 2008; Baade et al., 2010). Some benefits are in form of indirect and intangible social benefits such as regional image, public health, and the environment (Preuss, 2004).

Various studies have been done on the impact of sport events, national or international, for the local communities and the hosted region. The global sport events have been studies are for instance, World Golf Championshiops HSBC Championship (WGCHSBC) tournament located in Shanghai, China (Yao & Schwarz, 2018); The Fauresmith 200 International Endurance Ride (Scholtz, 2019), Snow-Sport tourism in U.S. (Mirehie & Gibson, 2020), and World Ski Championship 2015 in Sweden (Mortazavi, 2021). The regional sport event which have been studies are such as Asian Games (Prasetyo et al., 2021; Revindo et al., 2021), professional basketball Obradoiro (Salgado-Barandela et al., 2018), Standard Charter Hong Kong Marathon (Chen et al., 2018) and PON (*Pekan Olahraga Nasional*) in Indonesia (Kusago & Tzannatos, 1998; Tanasaldy, 2017; Salmiah et al., 2018; Virman et al., 2019; Kogoya et al., 2022).

Even though PON has been discussed by many studies as mentioned beforehand, the previous studies have not focused on the economic benefits of the event. Instead, the previous studies discussed on other topics such as Chinese involvement in the sport event (Tanasaldy, 2017), PON infrastructure utilization (Salmiah et al., 2018), Groundwater identification for swimming pool infrastructure in the sport event (Virman et al., 2019) or the social impacts of the PON event including the sport image, people satisfaction and perception toward the event (Kogoya et al., 2022). It was rarely found studies focusing on investigating the economic impact of the sport event especially on the local tax revenues due to holding the PON. Only one study has been found analyzing the tax revenue to income of the local hosted event but the study was only conducted in one area of the host cities (Kurniawan, 2018). Meanwhile, according to data from the Central Bureau of Statistics (BPS), since 2000 the host of the event was varied, not only

in DKI Jakarta, but involved other cities in Indonesia. Between 2000 and 2020 there have been 105 districts and cities in Indonesia have hosted PON. Therefore, this study main goal was to measure the economic benefits of PON sport event, especially tax revenue to 105 districts and cities which have hosted PON, to get comprehensive understanding on the economic benefits to tax revenue of the host cities.

This study aimed to examine the relationship between the organizing of the National Sports Event (PON) on local tax revenues as a result of an increase in economic activity. The research question of this study is whether there is relationship between organizing PON on the local tax revenue of districts or cities where the sport event hosted? It was employed event study approach to measure the impact of certain events to economic activities. There were 2 (two) methods being used to answer the research questions, namely Ordinary Least Square (OLS) and Fixed Effect (FE). It was employed to groups (treatment and control group) being investigated to compare the effect.

1.1. PON (*Pekan Olahraga Nasional*)

PON is a national-level sporting event that is participated by all provinces in Indonesia and is held every 4 (four) years. Previously, PON VIII in 1973 to PON XIV in 1996 was always held in DKI Jakarta as the capital city of Indonesia. Since 2000, PON has never been held in DKI Jakarta. Instead, the hosts were varied from East Java in 2000, South Sumatra in 2004, East Kalimantan in 2008, Riau in 2012, West Java in 2016, and Papua in 2021.

Since 2004, the selection process for the PON host has been carried out through a bidding process. Initially, several regions volunteered to host the PON for the Indonesian National Sports Committee (KONI). Then KONI made a selection to decide on the PON host area through a meeting and submitted the results of the meeting to the government, in this case, the Ministry of Youth and Sports (Kemenpora). The province is chosen 6 (six) years prior to the event, to organize the PON. There are 3 (three) main criteria should be met by the chosen province to host PON. First, the province must have infrastructure capital, such as matching venue, facilities and accommodation, and adequate transportation services. Secondly, the province should have support from the local government to organize PON. Thirdly, the province needs to have settled sports system in the area.

West Java Governor Regulation Number 85 of 2014 regulated the PON 2016 held in West Java, which is one of the objects in this research. PON 2016 West Java imposes PON financial mechanisms on several funding sources including National budget, West Java Government Budget, Regency and City Government Budget, community participation, business parties, and other legal non-binding sources. The central government distributed the national funding to implement PON through the Regional Government Budget to local governments and also Ministries/Institutions, including the Ministry of Public Works and Public Hous-

ing, Ministry of Transportation, Ministry of Youth and Sports, Ministry of Communication and Information Technology, and Television Service of the Republic of Indonesia (TVRI).

1.1.1. PON and Economic growth

In determining the PON's host, several local governments competed to apply to be the host. Local governments have an interest in hosting the PON based on many factors. By organizing sporting events, the host region hopes to experience an increase in the economy not only during the event but also before the event takes place and after the event takes place (Li & Blake, 2009).

Before the event, the local and central governments jointly prepare sports venues and public infrastructure that will be used when the PON takes place. In this phase, there is an increase in the economy in the construction, transportation, and trade sectors (Solberg & Preuss, 2007) which can trigger increased investment and employment. Infrastructure and facilities that have been built will lead to an increase in economic activity, which means an increase in income, savings, and even taxes.

Previous studies have investigated the effect of sporting events and economic growth to the local hosts. The meta-analysis by Li & Jago (2013) found out that major sporting events have proven to have positive impact to economic growth. The study conducted by Lamla et al. (2014) on Swiss EURO 2008 event also showed that the sport event has improved the sales growth by 2.5% (short term) and 23% (long-term), according to a survey to 700 restaurants and hotels in Switzerland. Several other studies discuss the impact of the Olympics on economic growth such as Kasimati (2003) who measured the economic impact of Summer Olympics between 1984–2012 and concluded that the sport event has given essential role in increasing economic growth, tourism, and employment for the host of the Olympics.

Some studies investigated Asian Games and its impact to economic benefits of the local host. For instance, Revindo et al. (2021) measure the effect of the sport event to the economic stimulus and it is found positive impact as the event stimulated expenditure of participants and spectators. Meanwhile, Bappenas (2019) stated that the 2018 Jakarta-Palembang Asian Games had a positive economic impact that was divided into 3 (three) schemes, namely short-term impacts, long-term impacts, and impacts on business. The tax revenue from post-event will positively impact sports tourism in the host area through repeat visits or visit recommendations (Bappenas, 2019).

Even though some studies showed positive impact of sport events to economic benefits, some other studies showed contradictory result. For instance, Li, Blake and Thomas (Li et al., 2013) found insignificant effect of a sport event for Beijing economy as it only resulted 0.1% of Beijing's total GDP in 2008. Similarly, Baade & Matheson (2016) have proven that the cost of summer or winter Olympics were greater than the benefits obtained. However, Prasetyo et al. (2021) contended that hosting the 2018 Asian Games positively impacted the economy and tax revenue.

1.1.2. PON and Tax Revenue

The increasing economic activity through PON infrastructure development and consumption can increase central and local tax revenues. The local tax from infrastructure development can generate revenue started from the pre-event, during and after the event. When the pre-event, the local tax revenue sources were potentially from land and building tax, advertisement tax, restaurant tax, and hotel tax. During the event, the local tax revenue can be generated from infrastructure and consumption. The expenditure items for participants and spectators include expenses for sports equipment, toiletries & personal care, electronic gadgets & equipment, tourism and recreation, communication, transportation, clothing, food and drink, souvenirs, as well as hotels and lodging (Revindo et al., 2021). In addition, the advertisement tax may also crucial, considering the large number of billboards installed during PON.

The previous studies have showed empirical evidence of the effect of sport events to tax revenue. Porter & Fletcher (2008) examined 1996 Atlanta Summer Olympics and the 2002 Salt Lake City Winter Olympics and found that the two major sporting events increased the hotel room rental prices significantly. This study was supported by Baade et al. (2010) who found that 2002 Salt lake City Winter Olympics increased the taxable sales in restaurants and hotels up to $70.6 million, while taxable sales at merchants in general decreased up to $167,4. However study conducted by Kurniawan (2018) showed that there is significant influence of PON to taxes form Hotel, Entertainment and Parking Local Original Income of Bandung City, as the host of PON in 2016. Therefore, this study hypothesized that organizing PON also has significant impact to tax revenue of 105 other districts or cities who have held PON in 2000–2016.

2. Methodology

2.1. Empirical Methods and Data

This study will use the event study method to estimate the impact of several events that occur in a particular unit and a specific period. This method has been widely applied to analyze the impact of an event in various fields, including the impact of closing automotive factories on opioid dependence (Venkataramani et al., 2020), health reform impact to outpatient use (Dimitrovová et al., 2020), the access family planning impact to the economic situation of children (Bailey et al., 2019), the impact of university reform on intergenerational mobility (Suhonen & Karhunen, 2019) and lastly, the economic impact of the professional sports franchise (Lertwachara & Cochran, 2007).

Using an event study approach allows us to see a comparison of the impact of PON organizing on local tax revenues at certain lags or leads. In this case, lags and leads indicate a certain period from when an event occurred. For example, leads 1 means an impact period of 1 (one) year after PON is implemented, lags 1 means an impact period of 1 (one) year before PON is implemented.

The Stata command used in this event study approach is eventdd (Clarke & Schythe, 2020). There are 2 (two) methods used to estimate, namely Ordinary Least Square (OLS) and Fixed Effect (FE). For the robustness test, the researcher used both methods simultaneously. In addition, regression was carried out using 2 (two) assumptions: unconditional and conditional. An unconditional assumption is an assumption without control variables, while a conditional assumption uses control variables, which are the previous year's GDP and Population Density.

For both assumptions, estimations are made using the following regression equation:

$$PDRH_{st} = \gamma_s + \lambda_t + \beta post_{st} + X'_{st}\Gamma + \varepsilon_{st} \quad (1)$$

$PDRH_{st}$ is the dependent variable, namely local tax revenue per capita in district/city s and at time t; γ is a *fixed effect* attached to the district/city; λ is a *fixed effect* attached to time; Post dummy has a value of 1 which starts when the PON is held and so on, dan has a value of 0 which is before the PON is held; X_{st} is a control variable which includes the previous year's GRDP per capita at the district/city level (lag GRDP per capita) and population density; and β is a parameter that shows the average impact of the organizing of PON on local tax revenues. To estimate the relationship between the organizing of PON and local taxes per capita in total, an estimate is also made using an event study approach to several types of local taxes related to the organizing of PON.

The data from the Directorate of Fiscal Balance (DJPK) and the Central Bureau of Statistics (BPS) become the main data source of the study. The data from DJPK is related to the realization of local tax revenues at the district/city level in Indonesia between 2000 and 2020 for PON host regions and non-host PON regions in the province, specifically in 105 districts and cities. Meanwhile, data from BPS is related to Gross Regional Domestic Product (GRDP) data and population data of the 105 districts and cities. Data selection started in 2000 as the first time PON was no longer held in DKI Jakarta since 1973 or since PON VIII. The PONs that are the object of this research are PON XV Surabaya in 2000, PON XVI Palembang in 2004, PON XVII Samarinda in 2008, PON XVIII Pekanbaru in 2012, and PON XIX Bandung in 2016. The event timeline of this study was presented in Figure 1.

To achieve the research objective, there are three variables involved: independent variable, dependent variable, and control variable. The dependent variable in this study is local tax revenue per capita at the district/city level in rupiah. Based on tax exporting (Morgan et al., 1996), the PON host has the authority and opportunity to get revenue from Hotel, Restaurant, Entertainment, and Advertisement. Therefore, the tax revenue was counted from the mentioned taxes Meanwhile, the independent variable of this research is in the form of a dummy, namely the PON host region and the non-PON host region.

In this study, the control variables used were district/city GRDP in the previous year and population density at the district/city level in Indonesia from 2000 to 2020. In addition, it is necessary to determine the treated group and control group from this study to see the impact of PON organizing on local tax revenue.

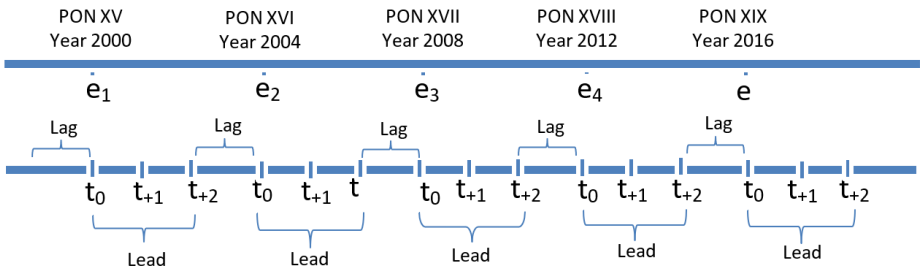


Figure 1: Event Timeline

The treated groups in this study were PON host districts/cities in 5 PON-hosting provinces from 2000 to 2016, while the control groups were districts/cities that did not host PON in 5 PON-hosting provinces from 2000 to 2016. There are 105 regencies/cities as observation units, with 38 regencies/cities as the treated group and 67 regencies/cities as the control group. The summary of the variables in this study is presented in Table 1.

Table 1: Research Variables

Variables	Specification	Detailed Information	
Independent	PON host region and the non-PON host region (Dummy Variables)	Treated Group (Host provinces)	38 regencies/cities
		Control Group (Non- Host provinces)	67 regencies/cities
Dependent	local tax revenue per capita at the district/city level in rupiah		Hotel Tax, Restaurant Tax, Entertainment Tax, and Advertisement Tax

The conceptual framework that showed the relationship between hosting PON and economic growth in the form of tax revenue is presented in Figure 2.

3. Result and Analysis

3.1. The Relationship between the Organizing of PON and Local Tax Revenue

Table 2 shows the estimated relationship between PON organizer and local tax revenue per capita. The estimation results are obtained through an event study approach with OLS (Ordinary Least Square) and FE (Fixed Effect). The impact period of PON on local tax revenue per capita in this study is up to 2 (two) years after PON is implemented (t+2) in order to capture the effect of PON on revenue as a whole. Year 0 means the impact in the year the PON is held, Year 1 is the impact 1 (one) year after the PON is held, and Year 2 is

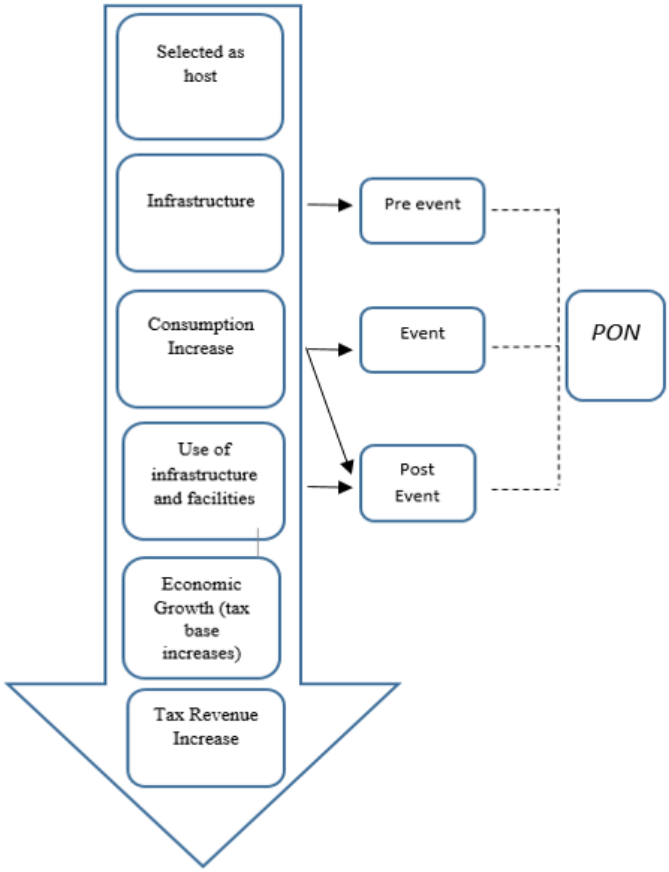
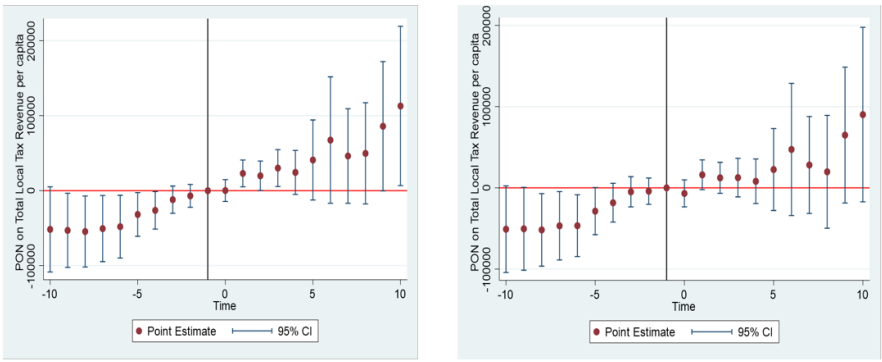


Figure 2: Conceptual Framework

the impact 2 (two) years after the PON is held. The effect and significance of hosting PON on local tax revenue per capita with the assumption that there are no control variables are shown in panel Table 4.1. Meanwhile, to see the effect and significance of the organizing of PON on local tax revenue per capita using the control variables lag GRDP per capita and population density seen in panel b table 4.1. According to Table 4.1, the regression results showed that when using the unconditional assumption, the effect of PON occurs at t+1 and t+2, which is Rp22,991.43 and Rp19,837.33. It means that after PON has been finished, the tax revenue is increased, but the total value is higher at one year after the event, rather than the next second year. However, by applying conditional assumption through control variables GRDP per capita in the previous year and population density, the effect of PON occurs only in t+1 event, which is Rp16,061.12. The

effect of PON event to the total tax per capita from the lag and lead is presented in Figure 3.1.



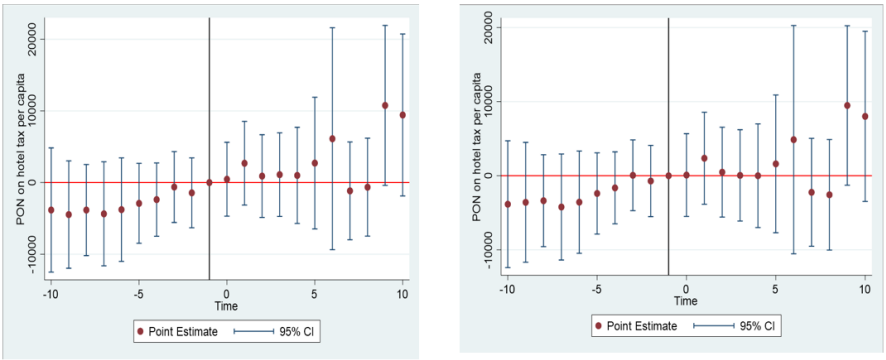
a. Unconditional Assumption b. Conditional Assumption

Figure 3.1: Event Study: Lag and Lead Coefficients for the Effect of PON on Total per Capita Local Taxes

3.1.1. The Relationship between the Organizing of PON and Hotel Tax Revenue

With unconditional or conditional assumption, the regression results of the relationship between organizing PON and hotel tax revenue per capita accepted by the host indicated no significance until 2 (two) years after PON is held. This result means that the PON event did not affect the hotel tax revenue accepted by the district or city host. This situation can happen because the PON organizing committee has provided athletes' homestays and dormitories for accommodation for athletes and officials. Therefore, there is no more spending on lodging for athletes and officials of PON participants (Revindo et al., 2021). In addition, most of the PON event visitors are from athletes, officials, and the local residents who did not need any lodging around the area. This finding is contradictory to the previous studies Baade et al. (2010) and Kurniawan (2018) who found that sport events have increased the tax revenue significantly. The study (Baade et al., 2010) investigated the 2002 Salt Lake City Winter Olympics which was conducted in U.S.A. Thus, it is understandable that the local culture is different with PON. The residents in U.S.A are used to traveling far away from home just to watch sport events, which is different with Indonesians. However, different result was showed by study conducted by Kurniawan (2018) who investigated PON 2016 in Bandung City. The different result due to the number of the city being investigated. Kurniawan (2018) was only analyzed one big city, while this study investigated 105 areas, not only cities but also districts. Residents from districts dominantly are at low-middle income economic level who did not put

watching sport event directly as their premier needs. The effect of PON event to the hotel tax revenue per capita from the lag and lead is presented in Figure 3.2.



a. Unconditional Assumption

b. Conditional Assumption

Figure 3.2: Event Study: Lag Coefficient and Lead for the Effect of PON on Hotel Tax per Capita

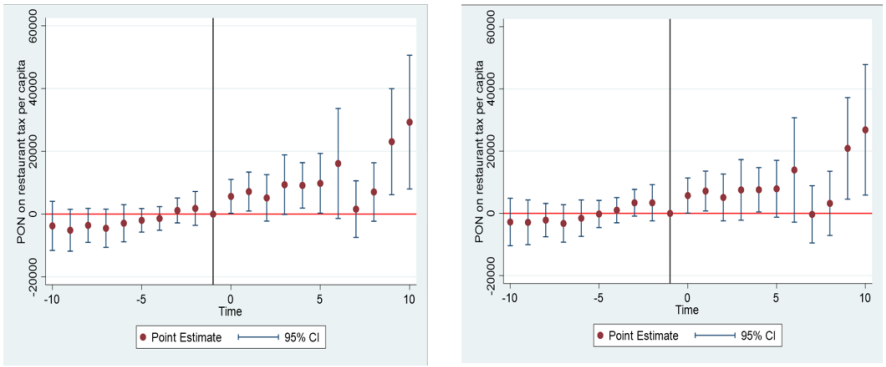
3.1.2. The Relationship between the Organizing of PON and Restaurant Tax Revenue

The regression results of the relationship between organizing PON and restaurant tax revenue per capita obtained the same results. The effect of PON occurred at t and t + 1 event organization, as much as Rp5,642,657 and Rp7,188,288 respectively for the unconditional assumption. Meanwhile, the tax revenue on the conditional assumption was not so much change, which is Rp5,731,577 and Rp7,188,834. It implied that there PON event has big impact to the restaurant tax revenue, which is acceptable as food and drinks are an essential expense and will still be carried out by both spectators and PON participants. This finding was also aligned with research conducted by Baade et al. (2010) and Revindo et al. (2021) who found significant effect of the sport events to the Restaurant Tax revenue. Even though athletes and officials have been facilitated by enough food from the committees, commonly they still want to explore local culinary delights in the host city. This behavior causes the expenditure on food and beverages to remain in the year the PON is held, causing the increase on the restaurant tax revenue. The effect of PON event to the Restaurant tax revenue per capita from the lag and lead is presented in Figure 3.3.

Table 2: The Results of the Event Study of the Relationship between the Organizing of PON and Local Tax Revenue

	Dependent Variable									
a) Unconditional Assumption	Total Local Tax Revenue per capita		Hotel Tax Revenue per capita		Restaurant Tax Revenue per capita		Entertainment tax Revenue per capita		Advertisement Tax Revenue per capita	
Time Treatment	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect
Year 0	188.0568	188.0568	461.6437	461.6437	5642.657**	5642.657**	991.8808	991.8808	183841.6	183841.6
	(0.980)	(0.979)	(0.859)	(0.856)	(0.041)	(0.036)	(0.120)	(0.111)	(0.329)	(0.317)
Year 1	22991.43**	22991.43***	2693.521	2693.521	7188.288**	7188.288**	1705.72**	1705.72**	3307.599	3307.599
	(0.012)	(0.010)	(0.363)	(0.351)	(0.024)	(0.020)	(0.017)	(0.015)	(0.123)	(0.114)
Year 2	19837.33**	19837.33**	900.1979	900.1979	5174.579	5174.579	1298.642	1298.642	1859.721	1859.721
	(0.047)	(0.041)	(0.758)	(0.752)	(0.168)	(0.158)	(0.323)	(0.311)	(0.389)	(0.377)
R-squared	0.7162	0.5645	0.4702	0.1865	0.5577	0.3945	0.4242	0.1687	0.0764	0.0329
b) Conditional Assumption										
Time Treatment	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect
Year 0	-6799.009	-6799.009	90.48235	90.48235	5731.577**	5731.577**	925.1254	925.1254	189526.7	189526.7
	(0.419)	(0.407)	(0.974)	(0.974)	(0.046)	(0.041)	(0.168)	(0.157)	(0.331)	(0.318)
Year 1	16061.12*	16061.12*	2358.574	2358.574	7188.834**	7188.834**	1657.08**	1657.08**	4598.246	4598.246
	(0.084)	(0.076)	(0.453)	(0.441)	(0.028)	(0.024)	(0.029)	(0.025)	(0.218)	(0.206)
Year 2	12372.14	12372.14	481.5518	481.5518	5128.04	5128.04	1209.088	1209.088	3300.8	3300.8
	(0.201)	(0.189)	(0.875)	(0.872)	(0.179)	(0.167)	(0.384)	(0.371)	(0.399)	(0.386)
Lag GRDP per capita	1026.628***	1026.628***	71.93064**	71.93064**	174.7869***	174.7869***	23.34469	23.34469*	-118.4852	-118.4852
	(0.001)	(0.001)	(0.032)	(0.027)	(0.000)	(0.000)	(0.104)	(0.095)	(0.419)	(0.406)
Population Density	35.75727	35.75727	2.39672	2.39672	6.164894	6.164894	1.21182	1.21182	-2.81639	-2.81639
	(0.165)	(0.154)	(0.204)	(0.192)	(0.120)	(0.110)	(0.148)	(0.137)	(0.476)	(0.464)
R-squared	0.7545	0.6118	0.5016	0.2114	0.6116	0.4572	0.4487	0.1840	0.0793	0.0338

Notes: *** significant at 1%. ** significant at 5%. *significant at 10%



a. Unconditional Assumption b. Conditional Assumption

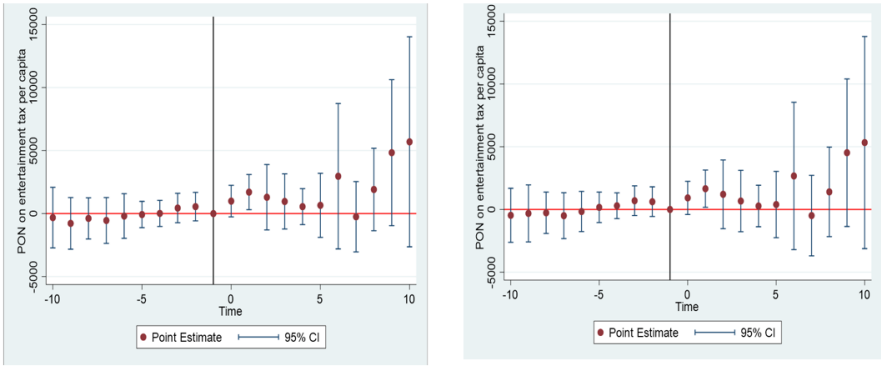
Figure 3.3: Event Study: Lag and Lead Coefficients for the Effect of PON on Restaurant Tax per Capita

3.1.3. The Relationship between the Organizing of PON and Entertainment Tax Revenue

The regression results of the relationship between PON event and per capita entertainment tax revenue when using unconditional and conditional assumptions have the same results, in which the effect is significant after 1 (one) year of the event. When using the unconditional assumption, the effect is Rp1,705.72, while when using the conditional assumption by entering the control variables GRDP per capita in the previous year and population density, the effect is Rp1,657.08. But it occurs after a year of the event. The impact was not significant in the year when the event was conducted because the PON event was more attractive than any other entertainments at that year, as implied by a previous study (Kogoya et al., 2022). While a year later, there were more entertainments using the infrastructure from the events as the legacy for the city or district. This finding was contradictory to the study conducted by Kurniawan (2018) who found that PON event has significant impact to Entertainment tax revenue for Bandung City, as the host of PON in 2016. This result can be due to the status of Bandung city as Paris van Java which is famous for many events prior to big events as this city is the second center of entertainment after DKI Jakarta. The effect of PON event to the entertainment tax revenue per capita from the lag and lead is presented in Figure 3.4.

3.1.4. The Relationship between the Organizing of PON and Advertisement Tax Revenue

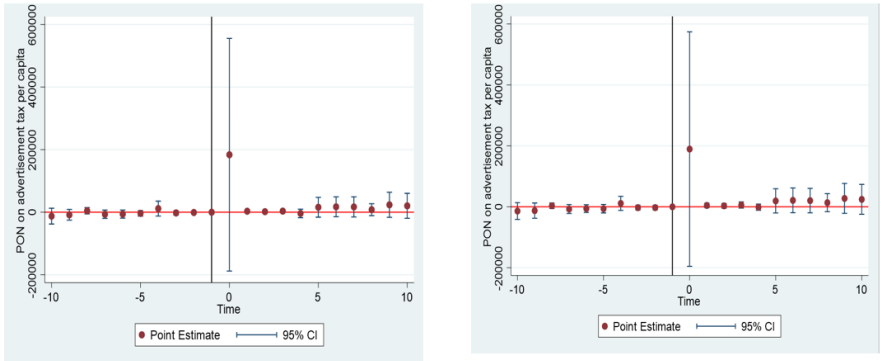
Lastly, the regression of the relationship between the PON event and advertisement tax revenue per capita, both with the unconditional and conditional



a. Unconditional Assumption b. Conditional Assumption

Figure 3.4: Event Study: Lag and Lead Coefficients for the Effect of PON on Per Capita Entertainment Tax

assumption, have the same results. There is no significance until 2 (two) years after PON is held, which means that the PON event does not affect the revenue of advertising tax per capita. These results happen because the local government generally carries out the installation of billboards in the context of promoting the organizing of PON. The local government is an excluded object of the advertisement tax, so it does not significantly affect the tax revenue. The effect of PON event to the advertisement tax revenue per capita from the lag and lead is presented in Figure 3.5.



a. Unconditional Assumption b. Conditional Assumption

Figure 3.5: Event Study: Lag And Lead Coefficients For The Effect Of PON On Per Capita Advertisement Tax

Figures 3.1. to 3.5. are the results of plotting the average event study of the impact of PON event on local tax revenues, both in total and per type of tax. The graph on the left side of each figure shows the average plotting results of the event study with unconditional assumption. Meanwhile, the graph on the right shows the results of plotting the event study with the conditional assumption by entering the control variables GRDP lag and population density. The baseline used in this regression is t-1 organizing of PON to capture the effect of PON on per capita local tax revenue in the year PON is held.

3.2. Placebo Test

A placebo test is used to ensure the validity of the regression results on the model that has been used. In this study, a placebo test was carried out by conducting an additional event study regression using a fake treatment group, namely a group containing districts/cities that were unaffected by the PON. The fake treatment group for the placebo test in this study was taken from some control groups or areas that did not organize PON, which were selected randomly. By using 32 regencies/cities of fake treatment and 35 other regencies/cities as control groups, it was found that the regression results were not significant for all dependent variables in this study. In other words, the PON event did not affect the fake treatment group, which contained regions that were not PON organizers.

Table 3 shows placebo test results of the relationship between PON organizing and per capita tax revenue. It is known that there is no significance to the regression results on all dependent variables, all-time lags, and all methods, both OLS and fixed effects. Thus, these results prove that the model used in this study is valid.

4. Conclusion and Implication

Holding National Sports Event (PON), which is no longer centered in DKI Jakarta, is one of the government's efforts to increase equitable development. The government hopes that PON can encourage economic growth in both short and long term through the construction of sports facilities and infrastructure and other basic infrastructure. With the growth of the economy, it is expected that regional tax revenues will also increase. This study aimed to analyze the impact of PON on total local tax revenue and local tax revenue per type of tax. The outcome of this study is limited to t+2 or two years after PON to capture the impact of PON on local tax revenues. The data used in this study is local tax revenue data for all districts and cities in the province where PON was held in the period 2000–2020 using the event study method.

In general, the estimation results showed a relationship between PON event and local tax revenues, including total per capita local taxes, per capita restaurant taxes, and per capita entertainment taxes in the first 2 (two) years after PON event was held. However, different results occur in the effect of PON on hotel tax

Table 3: Placebo Test: The Relationship between PON organizing and Per capita Local Tax Revenue

Dependent Variable										
a) Unconditional Assumption	Total Local Tax Revenue per capita		Hotel Tax Revenue per capita		Restaurant Tax Revenue per capita		Entertainment tax Revenue per capita		Advertisement Tax Revenue per capita	
Time Treatment	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect
Year 0	-2304.86	-2304.86	652.7795	652.7795	135.9498	135.9498	44.53345	44.53345	-153.228	-153.228
	(0.788)	(0.782)	(0.433)	(0.421)	(0.953)	(0.952)	(0.910)	(0.907)	(0.598)	(0.589)
Year 1	7569.229	7569.229	1084.44	1084.44	412.7113	412.7113	-5.067858	-5.067858	-238.184	-238.184
	(0.170)	(0.159)	(0.226)	(0.214)	(0.871)	(0.868)	(0.990)	(0.990)	(0.463)	(0.452)
Year 2	4948.972	4948.972	415.2218	415.2218	432.9093	432.9093	-468.25	-468.25	-602.240	-602.240
	(0.548)	(0.538)	(0.795)	(0.789)	(0.882)	(0.879)	(0.681)	(0.673)	(0.216)	(0.204)
R-squared	0.6319	0.4847	0.4493	0.1572	0.4899	0.3061	0.4233	0.1455	0.4940	0.2924
b) Conditional Assumption										
Time Treatment	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect	OLS	Fixed Effect
Year 0	-2740.382	-2740.382	1592.614	1592.614	-520.4152	-520.4152	196.5889	196.5889	-716.023	-716.023
	(0.828)	(0.824)	(0.329)	(0.315)	(0.913)	(0.911)	(0.825)	(0.820)	(0.242)	(0.230)
Year 1	958.9145	958.9145	1922.952	1922.952	-1647.604	-1647.604	55.28276	55.28276	-861.420	-861.4204
	(0.925)	(0.922)	(0.258)	(0.245)	(0.741)	(0.734)	(0.951)	(0.950)	(0.195)	(0.183)
Year 2	1982.462	1982.462	2217.771	2217.771	-1071.819	-1071.819	415.4369	415.4369	-1268.76	-1268.761
	(0.856)	(0.852)	(0.256)	(0.243)	(0.839)	(0.834)	(0.732)	(0.725)	(0.112)	(0.103)
Lag GRDP	1138.649***	1138.649***	35.69628*	35.69628*	190.4936 ***	190.4936 ***	15.56356	15.56356	9.2145**	9.2145**
	(0.000)	(0.000)	(0.071)	(0.064)	(0.001)	(0.001)	(0.201)	(0.189)	(0.017)	(0.014)
Population Density	14.6347	146.347	0.7590982	0.7590982	3.684788	3.684788	0.3527508	0.3527508	0.2782628	0.2782628
	(0.476)	(0.464)	(0.620)	(0.610)	(0.297)	(0.284)	(0.662)	(0.654)	(0.473)	(0.461)
R-squared	0.6847	0.5480	0.4713	0.1664	0.5771	0.4122	0.4416	0.1495	0.5122	0.0338

Notes: *** significant at 1%. ** significant at 5%. *significant at 10%

receipts and per capita advertising tax. In this type of tax, the regression results show no significance in the first 2 (two) years after the PON is held.

4.1. Recommendation

Based on the study's results above, the author recommends managing and maintaining the facilities and infrastructure built so that the local government can use these facilities and infrastructure after the PON ends, and also use that as a source of local tax revenue. Another recommendation is that when successfully selected to host the PON, the local government can prepare and organize the PON maximally. This preparation can improve the region's image to attract the public's interest and investors to the area, increasing local tax revenues in the short and long term. In addition, local governments also need to carry out tax extensification and intensification due to the rise in economic activity caused by PON event.

Limitations in this study are as follow. Firs, this study did not consider the sectoral GRDP contribution that varies between regions, which affects regional tax revenues per tax type. Second, this study focuses on the impact of PON on local tax revenues during the event and post-event, not taking into account the potential for local tax revenues before the PON event. Further research can be conducted based on the limitations of this study. A Prospective Evaluation and Cost-Benefit Analysis approach is also recommended for the following similar research to design future policies related to PON or other sporting events.

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