Economic and Tourism Factors Affecting the Real Gross Regional Domestic Product: A Case Study

Nur Feriyanto[1]

Abstract:

Purpose: This study aims to investigate the relationship between Foreign Direct Investment (FDI), Domestic Investment (DI), Employment (EMP), and Number of Tourists to real Gross Regional Domestic Product (real GRDP) of the Special Region of Yogyakarta or Daerah Istimewa Yogyakarta (DIY).

Design/methodology/approach: This research uses panel data modeling for the period of 2007-2019.

Findings: The results show that partially DI and the number of tourists have significant positive effects on real GRDP in the region. On the other hand, EMP has significant and negative effect on real GRDP while FDI has not significant effect on real GRDP.

Practical implications: Policy recommendation for government as an implication of this study to improve real GRDP of the Special Region of Yogyakarta is (a) improving the quality of education and skill of labor; (b) improving domestic investment incentive policies for local investors; (c) improving the investment climate to encourage the entry of right FDI on productive economic sectors; and (d) increasing the number of tourists arrivals in DIY through promotion and improving services in all sectors for tourists.

Originality/value: Domestic Investment and number of tourists have an important role in pushing for the improvement on the real Gross Regional Domestic Product of the Special Region of Yogyakarta. Synergizing economic factors and tourism in deciding for policies can accelerate economic growth.

Keywords: Real GRDP, FDI, DI, employment, number of tourists.

*JEL code: E60, E22, J21, Z32.*

Paper type: Research article.

[1]*Faculty of Business and Economics, Universitas Islam Indonesia, Indonesia,*
e-mail: nur.feriyanto@uii.ac.id

1. Introduction

The role of regional economy is very important in the current scope of national economy. Regional economy is an integral part of national economy so that regional economic development has a strategic role in achieving the success of national development. One of the measure of national development success is achieving the rise of output that is reflected by the rise of real GRDP (Gross Regional Domestic Product). The increasing of real GDRP can be a proxy for regional economic growth. Economists define economic growth is an increase in the long-run capacity of a country to produce goods and services to its people. The increasing of capacity is possible because of technological advances and adjustment.

This paper discusses the determinant of regional development growth in the Special Region of Yogyakarta (DIY/ Daerah Istimewa Yogyakarta), using real GRDP and other determinants. The number of population of the Special Region of Yogyakarta (DIY) in 2019 is 3,843 million people which occupies an area of 3,185.80 km^2 or 17% of Indonesia's area. The Special Region of Yogyakarta (DIY) is divided into four regency and one city, namely Sleman Regency, Bantul Regency, Kulonprogo Regency, Gunungkidul Regency and Yogyakarta City.

Figure 1. *The Dispersion of real GRDP in Regencies and City of the Special Region of Yogyakata (DIY) over the period 2007-2019 (in million IDR).*
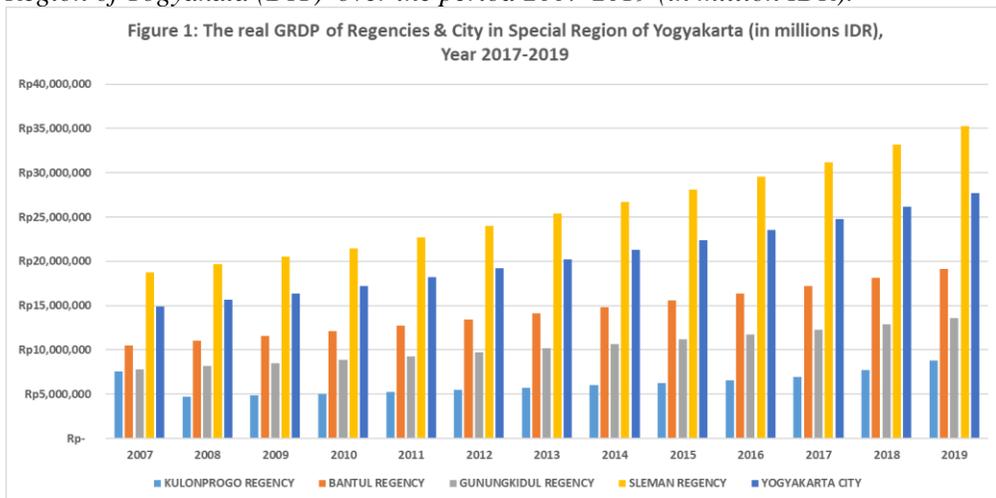
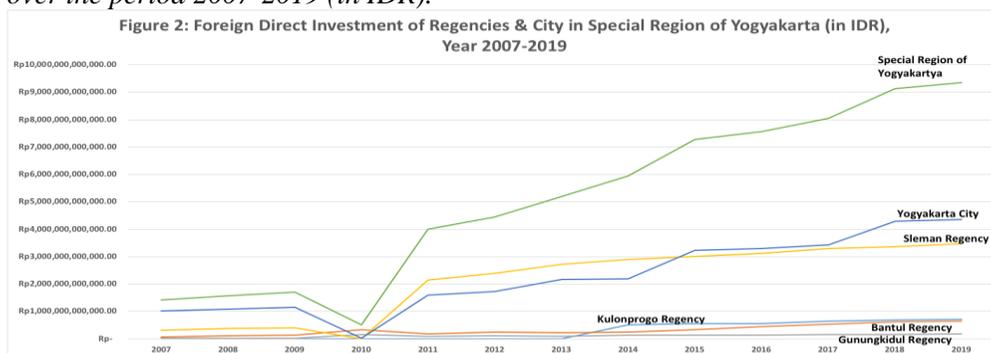***Source:*** *Central Bureau of Statistics of DIY, Indonesia.*

Generally, during the period 2007-2019, Sleman Regency is in the top ranking with the highest real GRDP, followed by Yogyakarta City, Bantul Regency, Gunung Kidul Regency, and Kulonprogo Regency as the lowest real GRDP. In 2007, the real GRDP of Sleman Regency is 18,719,015 million IDR, followed by Yogyakarta City is 14,875,167 million IDR, Bantul Regency is 10,529,619 million IDR, Gunungkidul Regency is 7,815,018 million IDR, and the lowest real GRDP position

is in Kulonprogo Regency is 7,552,497 million IDR. In 2013, the real GRDP of Sleman Regency rises to 25,367,414 million IDR, Yogyakarta City is 20,239,558 million IDR, Bantul Regency is 14,138,719 million IDR, Gunungkidul is 10,177,433 million IDR and the lowest real GRDP is still in Kulonprogo Regency around 5,741,660 millin IDR. Then, in 2019, the real GRDP of Sleman Regency rises to 35,289,810 million IDR, Yogyakarta City is 27,685,130 million IDR, Bantul Regency is 19,154,770 million IDR, Gunungkidul Regency is 13,603,370 million IDR and the lowest real GRDP is in Kulonprogo Regency around 8,772,580 million IDR.

Based on the explanation, it can conlude that the regional economic performances reflected by the value of real GRDP DIY during the period 2007-2019 is quite good. Because of that, it becomes an interesting research to investigate real GRDP growth in the Special Region of Yogyakata (DIY) and its determinants. Many researchers have discussed regional economic growth using real GRDP as variable. Among their findings reveal that real GRDP can be affected by factors, such as investment, both foreign and domestic-investment, and employment.

The economic development of regencies and cities in the Special Region of Yogyakata (DIY) also depends on foreign direct investment and domestic investment because investment is one of the driving factor for economy. General description of the dispersion of foreign direct investment (FDI) in the Special Region of Yogyakata (DIY) is foreign investment during the period 2007-2009 tend to rise. FDI reaches 1,421,061,529,945 IDR in 2007, then it rises to 1,578,925,509,140 IDR in 2008, and it is 1,704,861,626,22 IDR in 2009 (Figure 2).

Figure 2. *FDI of Regencies and City of the Special Region of Yogyakata (DIY) over the period 2007-2019 (in IDR).*

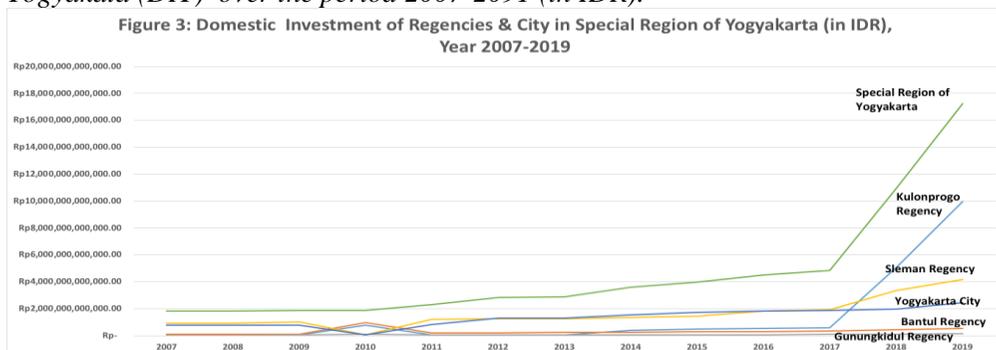***Source:*** *Central Bureau of Statistics of DIY, Indonesia.*

The value of FDI declined dramatically during the period 2009-2010 where FDI fall to 501,262,786,016 IDR in 2010. It means there is decreasing investment almost to 70.60% from 2009 to 2010. But from 2010 to 2011, the value of FDI in 2011 significantly rises to 4,006,761,985,859 IDR or increases 699.33% due to a hard

effort by the government to improve the investment climate in the the Special Region of Yogyakata (DIY) by issuing policies of investement climate. Then from 2011 to the following year, the value of FDI rises steadily. In 2015, FDI reaches 7,271,740,783,735 IDR and it is 9,345,955,161,335 IDR in 2019.

Some researchers investigate the effect of foreign direct investment (FDI) on real Gross Domestic Product (real GDP) are Mamuti and Ganic (2016), Mahembe and Odhiambo (2016). Mamuti and Ganic (2016) examine the relationship of foreign direct investment (FDI) with real GDP in North Macedonia, while Mahembe and Odhiambo (2016) conduct same study in SADC (South African Development Community) countries. The researchers have focused their study on the relationship of foreign investment on real GDP because they acknowledge the important role of foreign investment in financing economic activity in the countries studied and found the real findings through the rise of real GDP in the countries studied.

Mamuti and Ganic (2016) recommend the North Macedonian government to focus on improving the balance of payments and international trade that have a significant positive impact on real GDP and economic growth. Whereas Mahembe and Odhiambo (2016) recommend the government of SADC countries to be able to maintain political stability, social and cultural conditions so that foreign direct investment can develop the use of technology, improve the quality of education and competence smoothly in SADC countries for the optimal economic growth (Figure 3).

Figure 3. *Domestic Investment of Regencies and City of the Special Region of Yogyakata (DIY) over the period 2007-2091 (in IDR).*

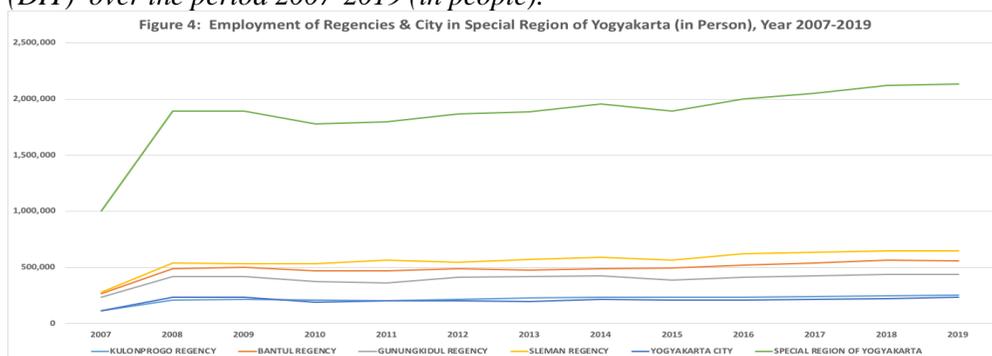**Source:** *Central Bureau of Statistics of DIY, Indonesia.*

Besides of foreign investment, domestic investment also has an important role in rising the real GDP of a country. It is proven in the study of Aziri (2017) for the Republic of North Macedonia during the period 2003-2014, using the method of simple linear regression and ordinary least square method (OLS) to analyse specifically the effect of domestic investment as a form of internal ability of the country in financing economic development. The results state the domestic investments during the study period have a significant positive impact on real GDP

growth in the Republic of North Macedonia so that the economic growth runs faster and better.

The study by Makuyana and Odhiambo (2017) in Zimbabwe from 1970 to 2014, using the recently developed autoregressive distributed lag model (ARDL) bounds testing approach, reveals that domestic investment has a positive effect on real GDP growth. However, according to them, investment from public sectors has a greater impact on economic growth in short-run. Meanwhile, in long-run, private investment has a more significant impact on economic growth. Therefore, the government needs to set development priorities from short-term investment to the public sectors and long-term development to the private sectors. The divisions of this tasks will give priority and focus to government and private parties so that the work will be better and effective, the process of producing outputs will be more efficient and effective, and then real GDP will rise higehr and faster.

The dometic investment development in the Special Region of Yogyakarta (DIY) during the periode 2007-2019 tends to rise. It shows the potential of internal funding sources in DIY is quite well in funding its economic development independently. Domestic investment of the Special Region of Yogyakata (DIY) in 2017   is 1,801,533,851,707 IDR, then in 2012 rises to 2,805,944,605,783 IDR, then in 2017 significantly up to 4,817,448,493,467 IDR, and significantly reaches 17,248,001,393,467 IDR in 2109. Looking at the rise of domestic investment every year from 2007 to 2019, it is surely a good news because it reflects the ability of funding for internal economic development independently (Figure 4).

Figure 4. *Employment of Regencies and City of the Special Region of Yogyakata (DIY) over the period 2007-2019 (in people).*

Figure 4: Employment of Regencies & City in Special Region of Yogyakarta (in Person), Year 2007-2019

Source: *Central Bureau of Statistics of DIY, Indonesia.*

Figure 4 describes the spread of the number of labor absorbed by market, both in regencies and city in the Special Region of Yogyakata from 2007 to 2019. Although the growth of labor absorption in the Special Region of Yogyakata is fluctuating tends to inrease. The labor absorption in the Special Region of Yogyakata in 2017 is 1,005,632 people. Then, because of the rise of local economic activity, the need of

labor in the labor market also increases so that the labor absorption significantly rises to 1,892,205 people in 2008 but fall to 1,867,708 people in 2012 then rises again in 2016 around 1,998,360 people and reaches 2,134,750 people in 2019.

The development of real GDP in a country or real GRDP in region can not be separated from the effect of labor as one of a driving economic factor. It is proven by McFarlane *et al.* (2014) who specifically examine the effect of labor and real wage on output growth (real GDP) in Canada, using Granger causality analysis method found an important role of labor in rising economic activity in Canada. The results describe that labor has a significant positive causality relationship on real GDP, and vice versa. It can be explained that labor is an input factor of production that is actively involved in producing output. The use of labor will process the raw material factors and other factors of production input into output, and then the amount of output will be assessed as real GDP of the country. The more use of productive labor, it will encourage the rise of output or real GDP in a country.

The Special Region of Yogyakarta (DIY) has a very attractive tourism because it has a beautiful natural charm, such as beaches, mountains, lowlands with view of rice fields, an amazing Yogyakarta palace, interesting tourism events, and strategic location because it is in the middle of Java island. The wealth of natural charm spread throughout regencies and cities in DIY. Because of that, DIY is one of tourist destination to enjoy a beautiful natural charm and an interesting attractions. The Special Region of Yogyakarta is the second main destination for tourists, after Bali, both domestic and foreign-tourists when visiting Indonesia. Figure 5 illustrates the spread of the number of tourist visit in the Special Region of Yogyakarta (DIY) during the period 2007-2019. Although the figure tells the number of tourist visit is fluctuating but in overall tends to increase. The number of tourist visits in DIY in 2017 is 3,813,450 people. The more number of tourist attraction and tourism events in the the Special Region of Yogyakata (DIY), the more number of tourist visits too so, the labor absorption tends to rise significantly in 2008 around 7,595,771 people. In 2012, the number of tourist visit DIY significantly rises to 11,376,918 people, then 2016 up to 21,702,510 people, and in 2019 reaches 28,697,357 people. Based on the empirical data of the number of tourists who visit the Special Region of Yogyakata (DIY) is surely interesting to study.

Related to tourism as the variable and its effect on economic growth is the work by Šimundić, Kuliš, and Šerić (2016) who have conducted a study about tourism and economic growth. The study conducted in Latin American and Carribean countries (LAC) during the period 2000-2014. These countries as the object of study are developing countries with international tourism growth that have experienced an important economic development over past decade. The data analysis model uses the dynamic panel data model with Blunded-Bond estimator. The results show that tourism has a significant positive effect on economic growth as measured using GDP per capita. Based on the results, researchers recommend the government to focus

providing policies for tourism promotion as one of the main factors of economic growth.

Figure 5. *Number of Tourists of Regencies and City of the Special Region of Yogyakata (DIY) over the period 2007-2019 (in people).*
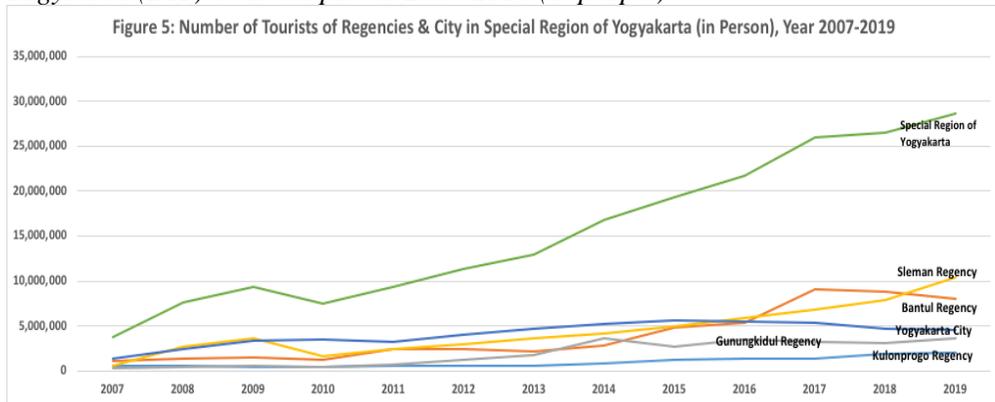
Source: *Central Bureau of Statistics of DIY, Indonesia.*

Adamopoulos and Thalassinos (2020) have also conducted a study in the group of the six leader countries or known as the G-6 Leaders. The study aims to determine the effect of tourism development on real GDP (economic growth) in the six richest countries in the world, using a simultaneous system equations model and the two-stage least squared methodology to examine the long-run relationship. The period of study is taken during 1995-2017. The results reveal that there is a positive relationship between tourism as the variable and real GDP (economic growth) in the six richest countries globally.

DIY's economic activities are getting more advanced because of the continued investment support, the abundant labor, and the increasing of the number of tourist visits everyday make the Special Region of Yogyakarta (DIY) to have an important role as one of the centers of economic growth in Indonesia. The economic improvement of the Special Region of Yogyakata (DIY) is reflected by its economic growth and internal potential impulse that is proven to affect positively by real GRDP in several regencies around of the Special Region of Yogyakarta (DIY) through spillover effect (Feriyanto, 2019b).

The novelty of this research is, first, the study in this section focuses on various problems, not mentioned in previous studies. For example, a study by Alemu and Lee (2015) conduct in Africa by disaggregating the African data into a panel of 20 middle-income countries and 19 low-income African countries during the period of 1995 to 2010. The results of a dynamic generalized method of moments (GMM) model found that there is a positive relationship between foreign direct investment (FDI) and real GDP growth, but only for low-income African countries, not the middle-income countries. Meanwhile, Asad *et al.* (2016) also examine a study about

workers' remittances and economic growth along with labor migration in Pakistan. Using multivariate and bivariate co-integration approach, the results show that there is long-run relationship between workers' remittances and economic growth in Pakistan.

These studies investigate the relationship of FDI, DI and employment to real GDP. Based on these studies, the present study will add a different variable, namely tourist, as it is not used in previous studies by Alemu and Lee (2015), Asad *et al.* (2016) and the others. The reason for using the tourist as a variable is because the Special Region of Yogyakata (DIY) is the second main destination for tourists, both domestic and foreign-tourists, after Bali island. Second, this study uses panel data analysis method that are not used in previous literature. Thus, this study will focus on five variables (real GDP, FDI, DI, Employment, and tourist) during the period 2007-2019 and use methodologies that are not used in previous study to respond the research gap.

2. Literature Review

2.1 Foreign Direct Investment (FDI)

The research findings by Dhrifi (2015) in 83 developed and developing countries during 1990-2012 with simultaneous equations model reveal that foreign direct investment (FDI) has a significant and positive impact on real GDP in middle and high-income countries. While for low-income economies, foreign direct investment (FDI) has a negative impact on real GDP. Then the researcher emphasized that a new economic growth tool should be implemented, especially in middle and high-income economies, in the form of foreign direct investment in the information technology sector, his findings show that technological innovation have an important role to add great value and encourage in raising the real GDP.

Abu and Mohd Zaini (2016) investigate the relationship between foreign direct investment, domestic savings, domestic investment and economic growth (real GDP) in 16 Sub-Saharan African (SSA) countries from 1981 to 2011, using various techniques. The results of VAR estimation and Granger causality tests show that there is a unidirectional causality from foreign investment to economic growth (real GDP) and domestic investment, savings to economic growth. There is a bidirectional causality between economic growth and domectic investment as well as domestic savings and domestic investment. Then the results of the variance decomposition analysis revel that foreign investment have a greater influence on economic growth (real GDP). Based on the results of the impulse response analysis, there is a positive unidirectional causality from foreign investment to real GDP (economic growth) and domestic investment, savings to economic growth, and a positive bidirectional causality between savings and domestic investment, both in the short and long-run.

Although there is feedback causality between domestic investment and real GDP, the impact of investment is negative in the short-run but positive in the long-run. Thus, policies that encourage foreign investment and savings are required to boost domestic investment and promote economic growth (real GDP) in SSA countries. Therefore the government is encouraged to continue to provide policies that raise domestic investment will lead to higher savings and economic growth in SSA countries.

2.2 Domestic Investment (DI)

The finding results of this research are strengthened by the results of the study by Osabuohien, Soogun and Urhie (2017) in Nigeria during the period 1980-2014, using vector error correction model (VECM). Their study examines the relative relevane of foreign direct investment (FDI) and domestic investment on real GDP in Nigeria. The results reveal that both domestic and foreign investment during the period of study are able to encourage the Nigeria's economic performance as indicated by the rise in Nigeria's real GDP during the period of their study. Thus, based on the results of study, the researchers recommend the Nigerian government to create policies in order to raise the real GDP that are able to attract investors, both domestic and foreign investors to invest in Nigeria. The government also provides attractive incentives for investors, improving the investment climate with especially fast and cheap services, an easy of licensing for investors immediately to encourage greater investment into Nigeria, both foreign direct investmend and domestic investment.

Hlotywa and Ndaguba (2017) add findings about the effect of domestic investment (DI) on real GDP in South Africa. It uses time series data during the period 1990-2014 with econometrics models cointegration and vector error correction model (VECM) to analyse data. The findings prove that domestic investment in South Africa espcially the road transport investment have a positive and significant impact on real GDP in Africa countries. Through the availability of quality infrastructure and spread in the South African countries, especially in the center of economic growth areas, the rise of production will occurs faster than before. It is due to the distribution from the raw material supply area to the production center or distribution of goods from the center area to the market can run smooothly so that real GDP rises rapidly then it improves economic growth in South Africa.

2.3 Employment (EM)

Asad *et al.* (2016) examine the relationship between workers' remittances and economic growth along with labor migration in Pakistan. This study also investigate the relationship between workers' remittances and unemployment and reveals the interaction between unemployment and economic growth in Pakistan. They use annual time series data from 1975 to 2010 for analysis. Using multivariate and bivariate co-integration approach, the results show that there is long-run relationship

between workers' remittances and economic growth in Pakistan. Bivariate co-integration describes economic growth has long-run relationship with labor migration and unemployment. There is long-run relationship between workers' remittances and unemployment, and also there is evidence, human capital has long-run positive relationship with workers' remittances. Granger causality test reveals that there is unidirectional causality between workers' remittances and economic growth. Unidirectional causality runs from labor migration and unemployment to economic growth. Similarly, unidirectional causality runs from workers' remittances to unemployment level in Pakistan. The recursive OLS results manifested that workers' remittances have significant positive impact on consumption and consumption in turn has significant positive effect on real sector through the rise of production or real GDP in Pakistan.

2.4 Number of Tourists (TOUR)

The number of tourists is also one of important factors for economic growth in Jordan. A study by Muhtaseb and Daoud (2017) investigate tourist and real GDP in Jordan, using Engle and Granger linear cointegration framework and the non-linear cointegration test of Enders and Siklos. The study uses quarterly data from 1988Q1 to 2015Q4. The results show that there is a positive long-run relationship between the number of tourists and real GDP in Jordan. Meanwhile according to the linear cointegration approach, there is a unidirectional causality between tourist and real GDP, it is supporting the tourism-led growth hypothesis. Then, based on the analysis of non-linear cointegration result, there is a bidirectional significant relationship between tourist and real GDP and influence each other. The study recommends to the government and relevant authorities in Jordan to promote their tourist aggresively and the government needs to emphasize the priority of investment budget in the tourism sector.

The number of tourists in last two decades becomes one of the rapidly increasing factors for economic sector development, especially in Beijing. It is in line with the finding results of study by Songling, Ishtiaq and Thanh (2019) in China during the period 1994-2015. Researchers found that theree is a long-run relationship between number of tourist and real GDP (economic growth) in China. The study uses vector autoregression (VAR) model, error correction model (ECM), and Granger causality test. The hypothesis of the study is taken from tourism-led growth hypothesis, the assumption means real GDP growth as an indicator to represent economic growth in a country that can increase through the tourism sector. The results show there is a strong positive correlation between number of tourist and economic growth in Beijing, China. At the time, number of tourist can improve the economy of local community significantly. The results of the VAR model reveal that real GDP growth (economic growth) in Beijing is mostly affected by domestic tourism sector, while the result of ECM model also shows a relationship between the number of tourists and real GDP (economic growth) in short-run. Researchers recommend the

government to improve investment in tourism sector because it has been proven to be an increasing factor for real GDP that has a significant positive effect.

Table 1. *Research Hypotheses*

Title	Statement
Hypothesis 1 (H1)	Foreign Direct Investment (FDI) has significant positive influence towards real GRDP DIY
Hypothesis 2 (H2)	Direct Investment (DI) has significant positive influence towards real GRDP DIY
Hypothesis 3 (H3)	Employment (EMP) has significant positive influence towards real GRDP DIY
Hypothesis 4 (H4)	Number of Tourists (TOUR) has significant positive influence towards real GRDP DIY

Source: Own study.

3. Research Methodology

This study uses panel data across ranging from 2007 to 2019. The empirical model is represented by the real GRDP and is assumed to be affected by the rate of FDI = Foreign Direct Investment; DI = Domestic Investment; EMP=Employment ; and TOUR = Number of Tourists.

$$\text{Real GRDP}_t = f(\text{FDI}_t, \text{DI}_t, \text{EMP}_t, \text{TOUR}_t) \tag{1}$$

The model becomes:

$$\text{Real GRDP}_t = \beta_0 + \beta_1\,\text{FDI}_t + \beta_2\,\text{DI}_t + \beta_3\,\text{EMP}_t + \beta_4\,\text{TOUR}_t + \varepsilon_t \tag{2}$$

where:

Real GRDP = real Gross Regional Domestic Product of DIY (in millions IDR); FDI = Foreign Direct Investment (in IDR); DI = Domestic Investment (in IDR); EMP = Employment (in person); TOUR = number of tourists (in person); β_0 = constant; β_i = coefficient; i = 1,2,3,4; t = the period 2007-2019; and e = error term. All variables are stated in natural log.

Taking the logarithm of both side of the model produces a linear equation of the form:

$$\text{Log realGRDP}_t = \beta_0 + \beta_1\,\text{LogFDI}_t + \beta_2\,\text{LogDI}_t + \beta_3\,\text{LogEMP}_t + \beta_4\,\text{LogTOUR}_t + \varepsilon_t \tag{3}$$

4. Research Results

This study uses panel data from 4 Regencies and one city in the Special Region of Yogyakata (DIY) namely Regency of Sleman, Bantul, Kulonprogo, Gunungkidul

and Yogyakarta city. Real GRDP of the Special Region of Yogyakata (DIY) models to be estimated are using data from 2007 to 2019 (13 years), so the total pool of observation data exists as much as 65. The test results of empirical data by using Fixed Effect Model are as follows:

Table 2. *Result of Redundant Fixed Effects Tests*

Redundant Fixed Effects Tests

Test cross-section fixed effects, Effects Test	Statistic	d.f.	Prob.*
Cross-section F	121.900945	(4,56)	0.0000
Cross-section Chi-square	147.736481	4	0.0000

*Note: Ho: Common Model is true; Ha: Fixed Effect is true. *= Ho is rejected at 0.05 significance level, Fixed Effects is better than Common Model.*
Source: *Own study.*

Table 3. *Result of Hausman Test: Fixed and Random Effects*

Correlated Random Effects - Hausman Test

Test cross-section random effects, Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.*
Cross-section random	487.603780	4	0.0000

*Note: Ho: Random Effects is true; Ha: Fixed Effect is true. *= Ho is rejected at 0.05 significance level, Fixed Effects is better than Random Effects.*
Source: *Own study.*

The result of an empirical assesment data using Fixed Effect Model are as follows:

Table 4. *Regression Result-Dependent Variable: Log real GRDP*

Independent Variables	coefficient	t-Statistic	Prob.
Constant	14.06975	15.30855	0.0000
Log FDI	-0.006509	-0.484352	0.6300
Log DI	0.040504	2.220108	0.0305 [b]
Log EMP	-0.153951	-1.804562	0.0765 [b]
Log TOUR	0.233693	-4.242774	0.0000 [b]

Note: [a] *=significant at 0.10 , and* [b] *=significant at 0.05 level respectively*
Source: *Own study.*

$$\text{Log real GRDP}_{it} = \beta_0 + \beta_1 \text{ Log FDI}_{it} + \beta_2 \text{ Log DI}_{it} + \beta_3 \text{ Log EMP}_{it} + \beta_4 \text{ LogTOUR}_{it} + e_{it}$$

$$\text{Log real GRDP}_{it} = 14.06975 - 0.006509 \text{ Log FDI}_{it} + 0.040504 \text{ Log DI}_{it}$$

$$- 0.153951 \text{ Log EMP}_{it} + 0.233693 \text{ Log TOUR}_{it}$$

$$R^2 = 0.971772 \qquad N = 65 \qquad \text{F-stat} = 240.9815$$

The results of the regression showed R squared value of 0.971722 or 97.18%. It means the variation of independent variables is able to explain the variation of independent variable by 97.18% and the remains is explained by other factors

outside the model. The results of regression showed the probability value of F-statistics is 0.000000 at significance level 5% ($\alpha = 0.05$) because the probability value is smaller than $\alpha = 0.05$ so the decision is to reject H_0. It means all independent variables together have a significant effect on real GRDP or F-tests result state all independent variables together significantly influence the dependent variable.

5. T-test and Discussion

5.1 Foreign Direct Investment (FDI)

The results of regression showed the two-tailed probability value of t-statistics is 0.6300 and the one-tailed probability value of t-statistics is 0.3150 with a significance level 10% ($\alpha = 0.1$). If the probability value compare to a significance level 10% ($\alpha = 0.1$), it will a greater than $\alpha = 0.1$ so the decision is to accept H_0, it means FDI has no significant effect on real GRDP.

The results prove that the amount of FDI during the period study not yet have a significant effect in supporting investment needs in the Special Region of Yogyakata (DIY). It indicates the local government still needs to improve good investment climate in DIY, especially for foreign investors. It also consider to study the placement of FDI in economic sectors in DIY whether it is right on target or not, whether it is in productive economic sector or less.

Abou Sakar and Aslam Gulam Hassan (2015) in their study in Malaysia also found the same results, about the effect of foreign direct investment (FDI) on real GDP. The results state there is no significant relationship between foreign direct investment and economic growth (real GDP) in Malaysia during the period of study. It is due to economic growth in Malaysia during the period 1980-2010 influenced by other factors besides FDI. The researchers acknowledge that their finding are different from previous studies, according to them, Malaysia with an increasingly advanced and modern economy has begun to experience change in the determinants of economic growth from foreign direct investmen to investment in human resources. This happens considering the use of quality human resources in Malaysia is now demanded o be higher which is accompanied by more advanced technology and demands of society for higher and better services.

Makhetha and Rantaoleng (2017) have examined a study about the long-run relationship among foreign investment, trade openness, and economic growth in Lesotho during the period 1980-2011. The results show that foreign investment has insignificant contribution on economic growth in Lesotho both in the short and long-run. Meanwhile, trade openness has a significant negative effect on economic growth in the long-run but insignificant in the short-run. Researchers recommend a policy for policy maker to improve withdrawal of foreign investment in form of providing more incentives because so far there is no significant effect. Besides that,

the government needs to involve in international cooperation agreements with other countries to attract more foreign investments. The finding results that reveal FDI is insignificant on real GDP also studied by Biørn and Han (2017), and Khalid (2018).

The different results also found in study by Caesar *et al.* (2018) in China during the period 1995-2016. Based on the hypothesis that foreign investment is one of the economic driving factors in a country, Caesar *et al.* examine the causality between FDI and GDP in China using Granger causality test and VECM (vector error correction model). Their findings indicate a bidirectional causal link between foreign direct investment and real GDP in China in the short and long-run. The findings reinforce the opinion of economists who encourage the use of foreign direct investment to accelerate the growth of real GDP or economic growth because some countries that have great economic potential realize that they often difficult to develop their potential because of limited developments funds. The lack of economic development fund can be solved through foreign direct investment so that economic potential of the country can be more explored. The same findings as Caesar *et al.* also found in study by Mamuti and Ganic (2016), Ouhibi *et al.* (2017), and Reza *et al.* (2018).

5.2 Domestic Investment (DI)

Based on the result of t-test, it showed that DI has the one-tailed probability value of t-statistics (0.0305 / 2 = 0.01525) is smaller than a significance level 5% ($\alpha = 0.05$). It is $0.01525 < 0.05$ means domestic investment has a significant effect on real GRDP. Meanwhile, the value of coefficient of DI is 0.040504, it means if DI increases 1%, the real GRDP of the Special Region of Yogyakata (DIY) will increase 0.040504%. This findings indicate the role of domestic investment in the Special Region of Yogyakata (DIY) is quite important, even the role of DI is more dominant than FDI in increasing the real GRDP of the Special Region of Yogyakata. (Feriyanto, 2016a).

The results of the study support the findings of Makuyana and Odhiambo (2017) who conducted research in Zimbabwe during the period 1970-2014, using the recently developed autoregressive distributed lag model (ARDL) bounds testing approach. They divide domestic investment into two categories, namely public investment and private investment. Their findings conclude that domestic investment has a positive and significant effect on real GDP growth in Zimbabwe. Furthermore, the study also explains that private investment has a greater impact on GDP than public investment. The results show that productivity of public and private-investment in Zimbabwe can be improved by reducing non infrastructural public investment to minimum level while stimulating the growth of infrastructural public investment.

Radulescu *et al.* (2019) have investigated a study about the relationship among consumption, investment, real GDP (economic growth), and employment. The study

conducts in the CCE (Central and Eastern Europe) countries over the period 2004-2017. Using an annual data time series, the study aims to find whether the country with the high economic growth rates achieved because of consumption or investment. The study uses two panel least square and pool least squares estimations to determine the impact of the exogenous variables on economic growth. The results reveal that domestic investment has a significant positive effect on economic growth in the CEE countries.

The results of this study are confirmed by Fosu *et al.* (2016), Sánchez-Juárez and Garciá-Almada (2016), Osabuohien *et al.* (2017), Aziri (2017), and Ehigiamusoe *et al.* (2017).

5.3 Employment (EMP)

Based on the result of t-statistics, it stated that the one-tailed probability value of t-statistics of employment is 0.03825 (0.0765 / 2 = 0.03825). It is smaller than a significance level 5% ($\alpha = 0.05$) where $0.03825 < 0.05$ means employment has a significant effect on GRDP of DIY. Then, the value of coefficient of EMP (employment) is -0.153951, it means if employment increases 1%, the real GRDP of the Special Region of Yogyakata (DIY) will decrease 0.153951%.

This findings indicate labor in the labor market in the Special Region of Yogyakata (DIY) is less productive and the labor market is showing saturation so that it is inefficient. As a result, if there is an increase in addition of labor absorption, it will affect in decreasing the value added of output or decreasing real GRDP in the Special Region of Yogyakata (DIY).

Feriyanto (2019b) have investigated the relationship between investment, employment, electricity consumption to GRDP of regencies in the Special Region of Yogyakata (DIY) during the period 2000-2017 and found the same results that employment has a significant negative effect on GRDP in the Special Region of Yogyakata (DIY). These results reveal that the use of labor in DIY has not given good results. It is in line with the findings of this study that prove the addition of labor use still decreases GRDP in the Special Region of Yogyakata (DIY) as the previous studies.

The result is in line with the findings study by Kaseeram and Mahadea (2017) in South Africa during the period 1946-2015. Researchers investigate the effect of employment to GDP. Their findings reveal the use of labor in South Africa has a negative relationship on GDP in their countries. It means the addition of labor will actually decrease GDP in South Africa. This condition implies the condition of South Africa countries during the study period is still classified as a country with a low level of labor productivity and the economic absorption of their labor is still low.

Qayyum and Zaman (2019) investigate a study that aims to examine the long-run relationship between international trade, gross fixed capital formation, and total labor force on economic growth. The study conducts in Pakistan over the period 1980-2017 and uses Johansen co-integration and Granger causality test for data analysis. The results show total labor and gross fixed capital formation has a significant negative effect on economic growth, while trade openness has a positive effect on economic growth. Researchers give an explanation about the labor that has a negative effect due to the existence of labor market volatility as a result of the low productivity of human resources.

5.4 Number of Tourists (TOUR)

The results of analysis stated that the two-tailed probability value of t-statistics is 0.0000 and the one-tailed probability value of t-statistics is 0.0000 with a significance level 1% ($\alpha = 0.01$). The probability value of t-statistics is smaller than a significance level 1% ($\alpha = 0.01$) so the decision is to reject H_0, it means the number of tourists has significant effect on real GRDP. The coefficient value of the number of tourists is 0.233693 and positive, it means if the number of tourists increases 1%, the real GRDP will increase 0.233693 %.

The finding results of this study indicate that the role of tourism sector which is measured by the number of tourists has a significant positive impact on real GRDP in regencies and city of the Special Region of Yogyakata (DIY). The number of tourist visits in regencies and city of DIY can be improved through the support of government policies and a positive effort in attracting tourists by community will be able to increase real GRDP of regencies and city in the Special Region of Yogyakata (DIY). Tourism potential in regencies and city of the Special Region of Yogyakata (DIY) is huge because it is supported by many tourism attractions, such as an interesting natural conditions which is spread in all corners of the Special Region of Yogyakata with exotic beaches, beautiful mountains, plant diversity, then there are unique tourism events with a distinctive local touch, specific local culinary, the existence of a classy international airport with its best facilities, a quality complete banking and hotel services, an easy and affordable access for tourist to go tourism locations and many more.

This finding is in line with the results of study by Yalçinkaya *et al.* (2018) about the effects of tourism on economic growth in the top 20 countries earning most from international tourism in the world (WTR-20 group) during the period 1996-2016. The research model uses an extended form of Cobb-Douglas type of production function hypothesis with analysis of panel data estimation. The results of study show tourism that measured by tourism sector revenues has a positive and statistically significant effect on economic growth in the WTR-20 group countries. These findings support the theory of the tourism-led growth hypothesis that use as the theoretical literature in their study. Researchers recommend the needs to improve the

number of tourist visit growth to ensure the sustainable economic growth in the countries with the highest tourism revenues in the world.

This finding is in line with the results of study by Mazzola *et al.* (2019) in the European Mediterranean countries during the period 2000-2015, using tourism and real GDP (economic growth) as variables. The study specifically discusses how an island in the European Mediterranean countries has economic resilience and how the role of its tourism sector in the reaction to the most recent economic crisis. The findings reveal that determinant of real GDP or economic growth factors for an island are similar to other islands. Tourism is the most powerful factor that affect positively on real GDP growth (economic growth). However, the crisis in the European Mediterranean countries has reduced the tourism demand by community. Researchers recommend the government to pay attention the tourism demand that is higher than its supply so that accessibility is very important. The government needs to make improvements in providing accessibility for tourist to get convenience in finding and reaching certain tourism locations. Besides that, determinats of real GDP growth (economic growth) must be improved.

6. Conclusion

This study aims at investigating the relationship between Foreign Direct Investment (FDI), Domestic Investment (DI), Employment (EMP), and Tourist to real GRDP of the Special Region of Yogyakarta, which makes this topic is very important to discuss. The results show that partially DI and Tourist have significant positive effects on real GRDP of Special Region of Yogyakarta. On the other hand, employment has significant and negative effect on real GRDP of Special Region of Yogyakarta. But FDI has not significan effect on real GRDP of the Special Region of Yogyakarta.

7. Implication

The implications of the findings should help the the Special Region of Yogyakarta government in making policies regarding improving real GDP in the Special Region of Yogyakarta. The increasing investment, both in foreign and domestic-investment, needs to be improved through the creation of a conducive climate for regional investment. The government must continue to encourage the FDI flows on the right target in productive economic sectors. For giving a strong attraction for investors, the government needs to provide incentives for investors to invest their funds in the Special Region of Yogyakarta.

The raising of the Special Region of Yogyakata (DIY) tourism that is indicated by the raising of the number of tourist visits from year to year in each district and city in the Special Region of Yogyakarta needs to get serious attention from Department of tourism, both in the the Special Region of Yogyakarta and in the regencies to cities, such as Regency of Kulonprogo, Bantul, Sleman, Gunungkidul and

Yogyakarta city. Based on empirical data and its prospects, the number of tourists who can come to the Special Region of Yogyakarta can still be increased because the location of DIY is strategic in Indonesia and its supporting facilities. The Special Region of Yogyakarta has a classy air transportation support through YIA (Yogyakarta International Airport), a good and equitable land transportation support, and a quality banking and hotel services. Besides that, through the addition and development of tourism objects, interesting tourism events, exploration of natural beauty of DIY, and the availability of culinary tourism, even for interseting, good, and affordable souveniers in DIY region will rise their regional incomes.

The government also must consider seriously the use of labor in the Special Region of Yogyakarta (DIY) because the results of this study reveal that the addition of labor in the Special Region of Yogyakarta has a negative impact on real GRDP of DIY. The government needs to study deeply and comprehensively on economic sectors of the Special Region of Yogyakarta that are recently less productive in using labor so that the labor can be empowered in other productive sector and prepared to be given education and skills training for labor in accordance with the needs of economic sectors. It is due to the fact that economic sectors of the Special Region of Yogyakata have highly developed in the service sectors where the quality education and skills of labor is a major factors to support the 4.0 revolution era in using of technology. Technology is also used to support the promotion of DIY tourism, which is a special website for DIY tourism. The content on the website includes information about destinations, culinary, accommodation, events and festivals that have been and are planned to be held in the Special Region of Yogyakarta. It is hoped that the DIY tourism promotion website makes it easy for prospective tourists to know, plan and visit tourist objects as well as events, festivals and culinary in the Special Region of Yogyakata.

The government needs to collaborate with the best universities in the Special Region of Yogyakarta, especially the university that have faculties related to development of economic sectors in the Special Region of Yogyakata, such as the faculty of economic, tourism and culture. This collaboration will give a very good synergy for the preparation of labor is in line with the needs of the productive economic sector especially in terms of quality of education and skills. Universities and goverment can also work together in the preparation of regional development planning documents and the implementation and supervision of development program in the Special Region of Yogyakarta. Acceleration of economic growth (real GDRP) in the Special Region of Yogyakarta is expected to be achieved with more targeted, organized, efficient and effective through collaboration between universities and local government.

8. Limitation and Future Research

It is important to acknowledge that this research is only limited to the Special Region of Yogyakata (DIY) and it might not be able to be applied directly to other

provinces in Indonesia, due to the situation and policies in other provinces maybe different from the Special Region of Yogyakarta. Concerning the research of real GRDP in the Special Region of Yogyakarta, it is suggested that the future research will use a variable independent of export and regional expenditure, then provde the ideas for the goverment to solve the problem (solutions) of the large economic disparities between regencies and cities in the the Special Region of Yogyakarta   to provide more comprehensive results in this topic.

References:

Abu, Nurudeen and Karim, Mohd Zaini Abd. 2016. The Relationships between Foreign Direct Investment, Domestic Savings, Domestic Investment, and Economic Growth: The Case Study of Sub-Saharan Africa. Society and Economy, 38(2), 193-217. Doi: http://dx.doi.org/10.1556/204.2016.38.2.4.

Adamopoulos, A., Thalassinos, I.E. 2020. Tourism Development and Economic Growth: A Comparative Study for the G-6 Leaders. European Research Studies Journal, 23(1), 368-380. Doi: https://doi.org/10.35808/ersj/1555.

Alemu, Aye Mengistu and Lee, Jin-Sang. 2015. Foreign Aid on Economic Growth in Africa: A Comparison of Low and Middle-Income Countries. South African Journal of Economic and Management Sciences, 18(4), 449-462. Retrieved from https://search.proquest.com/docview/1747149062?accountid=62100.

Asad, M., Shujahat, H.H., Yousaf, S. 2016. Nexus Between Workers' Remittances, Unemployment, Labor Migration and Economic Growth in Pakistan. International Journal of Organizational Leadership, 5(4), 360-379. Retrieved from https://search.proquest.com/docview/1848113311?accountid=62100.

Aziri, E. 2017. The Impact of Public Investment on Economic Growth in Republic of Macedonia. RSP, (56), 54-63. Retrieved from https://search.proquest.com/docview/1987676108?accountid=62100.

Biørn, E., Han, X. 2017. Revisiting the FDI Impact on GDP Growth in Errors-in-Variables Models: a Panel Data GMM Analysis Allowing for Error Memory. Empirical Economics, 53(4), 1379-1398. Doi: https://doi.org/10.1007/s00181-016-1203-4s00181-016-1203-4.

Caesar, A.E., Haibo, C., Udimal, T.B., Osei-agyemang, A. 2018. Foreign Direct Investment, Growth of Output Indicators and Economic Growth in China: Empirical Evidence on Causal Links. International Journal of Economics and Financial Issues, 8(3), 315-322. Retrieved from https://search.proquest.com/docview/2056362677?accountid=62100.

Dhrifi, A. 2015. Foreign Direct Investment, Technological Innovation and Economic Growth: Empirical Evidence Using Simultaneous Equations Model. International Review of Economics, 62, 381-400. doi: http://dx.doi.org/10.1007/s12232-015-0230-3.

Ehigiamusoe, K.U., Lean, H.H. 2017. Macroeconomic Variables, Investment and Economic Development in Nigeria: A Prognosis. Journal of Economic Cooperation and Development, 38(3), 145-168. Retrieved from https://search.proquest.com/docview/2007670759?accountid=62100.

Feriyanto, N. 2016a. Imbalance Relationship Between Regional Economic Growth and Income Per capita: An Empirical Analysis in Yogyakarta Special Provinces. IJABER, 14(10), 6739-6754. Retrieved from: https://serialsjournals.com/abstract/76323_ch-38.pdf.

Feriyanto, N. 2019b. Regional Spillover Effect to Gross Regional Domestic Product (GRDP) in the Special Region of Yogyakarta, Indonesia. Entrepreneurship and Sustainability Issues, 6(3), 1318-1334. Doi: http://doi.org/10.9770/jesi.2019.6.3.(19).

Fosu, A.K., Getachew, Y.Y., Ziesemer, Thomas, H.W. 2016. Optimal Public Investment, Growth, and Consumption Evidence from African Countries. Macroeconomic Dynamics, 20, 1957-1986. Doi: https://doi.org/10.1017/S1365100515000206.

Hlotywa, A., Ndaguba, E.A. 2017. Assessing the Impact of Road Transport Infrastructure Investment in Economic Development in South Africa. Journal of Transport and Supply Chain Managemant, 11(4), 1-12, Doi: https://doi.org/10.4102/jtscm.v11i0.324.

Kaseeram, I., Mahadea, D. 2017. Marginal Employment Growth Effects in the South African Economy. The International Business & Economics Research Journal (Online), 16(2), 143-156. doi: http://dx.doi.org/10.19030/iber.v16i2.9930.

Khalid, M.A. 2018. The Impact of Foreign Direct Investment and Trade on Economic Growth in Iran: an ARDL Bounds Test Approach. Journal of Defense Resources Management, 9(2), 24-40. Retrieved from https://search.proquest.com/docview/ 2178518701/79A94F1B60534DAEPQ/1?accountid=62100.

Mahembe, E.E., Odhiambo, N.M. 2016. Does Foreign Direct Investment Cause Economic Growth? A Dynamic Panel Data Analysis for SADC Countries. International Journal of Emerging Markets, 11(3), 316-332. Retrieved from: https://search.proquest.com/docview/1801549586?accountid=62100.

Makhetha, L., Rantaoleng, J. 2017. Foreign Direct Investment, Trade Openness and Growth Nexus in Lesotho. Journal of Economic and Financial Sciences, 10(1), 145-159. Retrieved from: https://search.proquest.com/docview/ 2149040884/74449E08794E45DCPQ/13?accountid=62100.

Makuyana, G., Odhiambo, N.M. 2017. Public and Private Investment and Economic Growth in Zimbabwe: An empirical test. Business and Economic Horizons, 13(1), 60-76. Doi: http://dx.doi.org/10.15208/beh.2017.05.

Mamuti, A., Ganic, M. 2016. The Effects FDI on the GDP of Macedonia. International Journal of Management Economics & Business, 12, 109-119. Retrieved from: https://search.proquest.com/docview/1889667270?accountid=62100.

Mazzola, F., Pizzuto, P., Ruggieri, G. 2019. The Role of Tourism in Island Economic Growth and Resilience: A Panel Analysis for the European Mediterranean countries (2000–2015). Journal of Economic Studies, 46(7), 1418-1436. https://doi.org/10.1108/JES-04-2019-0172.

McFarlane, A.A., Das, A., Chowdhury, M. 2014. Non-Linear Dynamics of Employment, Output and Real Wages in Canada. Journal of Economic Studies, 41(4), 554-568. Retrieved from: https://search.proquest.com/docview/1651204537?accountid=62100.

Muhtaseb, B.M.A., Daoud, H.E. 2017. Tourism and Economic Growth in Jordan: Evidence from Linear and Nonlinear Cointegration Frameworks. International Journal of Economics and Financial, 7(1). Retrieved from: https://search.proquest.com/docview/1865226941?accountid=62100.

Osabuohien, E.S., Soogun, A.O., Urhie, E. 2017. Examining the Relative Roles of Domestic and Foreign Direct Investments in Nigeria. International Journal of Economics and Financial Issues, 7(4), 365-371. Retrieved from: https://search.proquest.com/docview/1984683754?accountid=62100.

Ouhibi, S., Zouidi, N., Hammami, S. 2017. The Nexus Between Foreign Direct Investment, Economic Growth and Public Debt in the Southern Mediterranean Countries: Evidence From Dynamic Simultaneous-Equation Models. Journal of Economics and Economic

Education Research, 18(1), 1-14. Retrieved from:
https://search.proquest.com/docview/1987371178?accountid=62100.

Qayyum, A., Zaman, K. 2019. Dynamic Linkages Between International Trade, Gross Fixed
Capital Formation, Total Labor Force and Economic Growth: Empirical Evidence from
Pakistan. Acta Universitatis Danubius, Oeconomica, 15(1) Retrieved from:
https://search.proquest.com/docview/2316729641?accountid=62100.

Radulescu, M., Serbanescu, L., Sinisi, C.I. 2019. Consumption vs. Investments for
Stimulating Economic Growth and Employment in the CEE countries – a Panel
Analysis: Znanstveno-strucni casopis znanstveno-strucni casopis. Ekonomska
Istrazivanja, 32(1) Retrieved from:
https://search.proquest.com/docview/2371541864?accountid=62100.

Reza, S.M., Fan, H., Reza, T., Wang, B. 2018. The Impact of Foreign Direct Investment
Inflows on Economic Growth: Evidence from Bangladesh. Journal of Business and
Retail Management Research, 12(2), 212-223. Retrieved from:
https://search.proquest.com/docview/1990480501?accountid=62100.

Shakar, S.A., Aslam, Moh. 2015. Foreign Direct Investment, Human Capital and Economic
Growth in Malaysia. Journal of Economic Cooperation and Development, 36(1), 103-
132. Retrieved from:
https://search.proquest.com/docview/1687833437?accountid=62100.

Sánchez-Juárez, I., García-Almada, R. 2016. Public Debt, Public Investment and Economic
Growth in Mexico. International Journal of Financial Studies, 4(6), 1-14.
https://doi.org/10.3390/ijfs4020006.

Šimundić, B., Kuliš, Z., Šerić, N. 2016. Tourism and Economic Growth: an Evidence for
Latin American and Caribbean Countries. Tourism & Hospitality Industry, 457-469.
Retrieved from:
https://search.proquest.com/abicomplete/docview/1806208157/fulltextPDF/63F610A1
3AF5464APQ/5?accountid=14744.

Songling, Y., Ishtiaq, M., Thanh, B.T. 2019. Tourism Industry and Economic Growth Nexus
in Beijing, China. Economies, 7(1). Doi: https://doi.org/10.3390/economies7010025.

Yalçinkaya, Ö., Daştan, M., Karabulut, K. 2018. The Effects of International Tourism
Receipts on Economic Growth: Evidence from The First 20 Highest Income Earning
Countries from Tourism in The World (1996-2016). Montenegrin Journal of
Economics, 14(3), 55-71. Doi: https://doi.org/10.14254/1800-5845/2018.14-3.4.