



Tax competition in European Union: The threshold effect of gross domestic product per capita

Tuğay Günel*

* Ph.D., Research Assistant, Cukurova University, Department of Public Finance, Faculty of Economics and Administrative Sciences, 01330, Adana, TURKEY. E-mail: tugaygunel@gmail.com. ORCID ID: <https://orcid.org/0000-0001-7980-1764>

ARTICLE INFO

Received: 11.07.2021
Accepted: 22.12.2021
Available online: 18.02.2022
Article type: Research article

Keywords:

Tax competition, corporate tax, foreign direct investment, GDP per capita

ABSTRACT

The aim of this study is to investigate tax competition in the EU countries using the panel data method from 1996 to 2019. Since the EU countries primarily attempt to attract foreign direct investment through the alteration of corporate tax revenues or rates, the corporate tax rate is used as an indicator of tax competition. This study differs from previous studies by examining the effect of corporate tax on foreign capital investment according to the threshold value of per capita income of the countries. The main result shows the existence of tax competition in the European Union. Moreover, the threshold value of per capita income was found to be \$30,000, according to the results achieved. Changes in the corporate tax rate above and below the threshold value have different effects on foreign direct investment. This finding indicates that tax competition is fiercer in the countries with lower economic growth rates. However, this negative association becomes positive in the countries with per capita income which is more than this value.

Avrupa Birliği'nde vergi rekabeti: Kişi başı gelir eşik değer etkisi

MAKALE BİLGİSİ

Geliş tarihi: 11.07.2021
Kabul tarihi: 22.12.2021
Çevrimiçi kullanım tarihi: 18.02.2022
Makale Türü: Araştırma makalesi

ÖZ

Bu çalışmanın amacı panel veri analizi yöntemi ile 1996-2019 döneminde Avrupa Birliği'nde vergi rekabetini araştırmaktır. Avrupa Birliği'nde doğrudan yabancı yatırımları çekmek için ülkelerin kurumlar vergisi gelirlerinde veya oranlarında değişikliğe gitmelerinden dolayı çalışmada kurumlar vergisi oranı vergi

Anahtar Kelimeler:

Vergi rekabeti,
kurumlar vergisi,
doğrudan yabancı
yatırımlar, kişi başı
gelir

rekabetinin bir göstergesi olarak kullanılmaktadır. Bu çalışma, ülkelerin kişi başı gelir eşik değerine göre kurumlar vergisinin doğrudan yabancı yatırımları nasıl etkilediğini ortaya koyması açısından farklılaşmaktadır. Çalışmada elde edilen temel sonuçlar Avrupa Birliği'nde vergi rekabetinin geçerli olduğunu göstermektedir. Çalışmada ayrıca kişi başı eşik değer 30.000 dolar olarak bulunmuştur. Buna göre bu eşik değer altında veya üstünde kurumlar vergisi oranındaki değişiklikler yabancı sermaye yatırımını farklı şekilde etkilemektedir. Bu bulgu vergi rekabetinin ekonomik büyümenin düşük olduğu ülkelerde daha fazla olduğunu göstermektedir. Fakat bu negatif ilişki ekonomik büyümesi eşik değer üstünde olan ülkelerde pozitif olmaktadır.

1. Introduction

Globalization's increased international integration has had a substantial impact on countries' taxing rights and capacities. The employment of taxes as a mechanism of competitiveness between countries has been one of the most significant breakthroughs in this process. Countries that aim to attract foreign capital, in particular, have begun to utilize taxes as an incentive tool through adjusting tax rates, tariffs, bases, and tax loads (Kargı and Yaygır, 2016). In other words, tax competition is an effort by countries with different taxation powers to bring related income-generating activities into their own borders by partially or completely relinquishing taxation authority over an economic activity in such a way that the tax burden on that activity is lower than in other countries.

The use of low effective tax rates by governments to attract capital and commercial activity to their country is known as tax competition. This is thought to have a two-stage impact on global tax systems. First, certain pioneer countries would drop their tax rates or otherwise adjust their tax systems to provide low effective tax rates. Second, other countries may reduce their own taxes in response to the competition's perceived or actual losses (Teather, 2005).

Barriers to capital mobility have been removed or minimized as a result of globalization, particularly since the 1980s, and capital mobility across countries has expanded dramatically. Because capital is such a crucial component of economic growth, it promotes competition among countries for foreign direct investment. In this context, governments have engaged in tax competition by lowering tax costs for foreign capital in order to attract important foreign capital investments. In order to attract this investment, countries primarily adopt changes to corporate taxation.

Tax competition has intensified in the last decades. Corporate income tax has declined in advanced and developing countries, reaching 22.3 and 24 percent, on average, respectively. For example, USA (from 35 to 21), France (from 34 to 25), Norway (from 27 to 22), Belgium (from 34 to 25), Pakistan (from 34 to 29), and Tunisia (from 30 to 25) (Hebous, 2021).

At the EU level, there is now a heated debate regarding harmonizing corporation tax bases. One of the most visible initiatives in this direction is the EU Commission's proposal for a Common Consolidated Tax Base (CCCTB) (Hunady and Orviska, 2014). The CCCTB is a single set of regulations for calculating taxable profits in the European Union. Instead of several distinct national rulebooks, cross-border enterprises will have to conform with a unified EU framework for calculating their taxable income under the CCCTB.

For the European Union today, tax competition is an important issue. In particular, the importance of tax competition within the Union is revealed by the way some countries in the European Union are trying to reduce corporation tax and attract foreign capital to others. Whilst a common central bank is in charge of monetary policy in the European Union, a common authority does not administer the Union's fiscal policy. One of the important reasons is that tax is regarded as a country's sovereign right. It makes tax adherence between countries difficult by leaving tax policy at the initiative of countries. On the contrary, it is apparent that, particularly in indirect taxes, tax harmonization has been

largely achieved within the Union. Such harmonization was not achieved with respect to direct taxes. Countries have the direct tax initiative in this respect.

The free use of direct taxes by countries has a crucial role to play in the preference of foreign capital movements, particularly as direct tax rates such as corporate taxes are changed. In other words, the main purpose of tax competition between countries is corporate tax. The study, therefore, analyzes the effect of corporate tax on foreign direct investment in the European Union. In other respects, this study, unlike other studies, investigates the threshold value of the per capita income of countries and reveals competition over and below this level of threshold.

The theoretical and empirical literature on tax competition is examined in the first part of the study. In the second part, the econometric method and the data set are explained. Empirical findings from the analysis of panel data are explained in the third section. Finally, the empirical conclusions obtained in the final part of the study are economically interpreted and the common and diverse aspects of the literature results are presented.

2. Literature

There is wide debate in the literature about the effects of tax policies on investment. Discussions in two groups can be examined. Thus, whereas in the first group, the cuts in taxation will increase investments (Ferede and Dahlby, 2012); in the second group, the cuts in taxes cannot have a major impact on investment (Pigot and Walsh, 2014). Agostini (2007) examined the effects of corporate income tax on FDI and found a negative impact on FDI. Similarly, in the period 2005-2016 Öz-Yalaman (2020) investigated the impacts on FDI of the corporate tax and found negative relations between two variables.

Egger and Raff (2015) empirically examined whether governments have taken a strategic approach to changes in tax rates and bases of other countries by applying Nash balance over the period 1982-2005, in 43 European and non-European countries. They show that the changes in corporate tax systems observed comply with tougher FDI competition.

Azemar et al. (2020), by revamping government tax competition for foreign direct investment (FDI), examine the importance of economic dynamism in setting corporate tax rates (CTRs). They found that the strong growth performance of neighboring countries, especially in developed countries, is linked to a lower level of CTR using a database covering the world between 1995 and 2014.

The impact on foreign direct investment (FDI), which is determined by a country's income level, has been examined by Sujarwati and Qibthiyah (2020). They found that the use of an unbalanced fixed effect technique by CITR in 112 countries from 2003 to 2017 does not have a substantial impact on FDI. Furthermore, they found that CITR only has modest significance in countries with lower-middle and low incomes when tax havens are excluded from the sample.

Empirically, Sato (2012) analyzes, by GMM method system in the OECD 30 countries, the effects of corporate revenue tax on FDI over the period 1985-2007. The study shows that the current FDI size is influenced by the previous period's investment level. In addition, the study indicated that corporate tax negatively affects FDI.

Over the period 2003-2013, Abdioğlu et al. (2016) used a fixed effect panel and the GMM approach to examine the impact of corporate income tax rates on FDI in OECD nations. They found that two variables had a negative connection. In other words, tax-diminishing countries attract higher FDI levels. Using a panel gravity model, Bellak and Leibrecht (2009) investigated whether low corporate income tax rates promote FDI in seven home nations from the EU and the US, as well as eight CEECs countries, from 1995 to 2003. They found that decreasing tax rates in CEEC countries had a major impact on foreign companies' decisions to locate in such countries.

Salihu et al. (2015) examined the tax impact of foreign investors' interest in host developing economy by using the GMM method in Bursa and Malaysia top 100 firms. They found a significant positive relationship between foreign investors' interests and the measures of corporate tax avoidance. In another study by Banociova and Tahlova (2019) analyzed the tax competition in EU states by panel regression method over the period 2007-2017 and they concluded that existence of tax competition in

the field of corporate tax among EU states. Recently, Karimi et al. (2020) analyzed the optimal taxation on FDI in Iran and selected countries during the years 2000 to 2017. They found that the optimal tax rate for attracting FDI is close to zero.

In practice, rich and poor countries have vastly different tax regimes. Advanced economies are able to raise a higher proportion of tax revenues as a percentage of GDP than emerging economies, and the composition of tax revenues changes across developed and developing countries. Personal income tax collections account for a major portion of revenues in advanced economies, whereas corporate income tax collections are more important in developing countries (Crivelli et al., 2015).

There are, however, only a few studies that focus specifically on corporate income tax and development. Auriol and Warlters (2005) link the prevalence of the informal sector to varied corporate tax regimes in developing nations. They claim that governments in developing nations have an incentive to enhance obstacles to entry for enterprises in order to keep formal sector rents high, which are then expropriated through entrance fees and taxes. Gresik et al. (2015) recently investigated whether attracting FDI is beneficial for a potential host country in light of multinational firms' profit shifting opportunities. Mardan (2017) shows that, despite increasing profit-shift opportunities, governments in developing, i.e. countries with little financial development, on average establish more generous rules on thin capitalization, to compensate firms for limited access to external finance.

3. Data set and method

3.1. Data set

The analysis is carried out using the 1996-2019 period annual data from 24 European Union countries with different levels of economic development. The Corporate tax rate is obtained from OECD Database and other variables are obtained from the World Bank database. The detailed information regarding the data is provided in Table 1. Foreign direct investment is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital. In other words, it shows the net inflows (new investment inflows less disinvestment) from foreign investors and is divided by GDP. GDP per capita is gross domestic product divided by midyear population and it is in constant 2010 U.S. dollars. Inflation, as measured by the consumer price index, reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services.

Table 1

Detailed Information of Variables

Symbol	Variables	Period	Source
FDI	Foreign Direct Investment net inflow (GDP %)	1996-2019	World Bank
GDPPC	GDP per capita (constant 2010, \$)	1996-2019	World Bank
CTR	Corporate Tax Rate (%)	1996-2019	OECD Database
INF	Consumer prices (annual %)	1996-2019	World Bank

Table 2 presents the summary statistics of variables. The central tendency is represented by the mean, while the central distribution is measured by the standard deviation, minimum and maximum values. As a result of multiplying 24 time dimensions and 24 unit dimensions, the observation has a total of 576 observations.

Table 2

Descriptive Statistics of Variables

Variables	Observation	Mean	Std. Deviation	Minimum	Maximum
Foreign Direct Investment net inflow (GDP %)	576	7.39	22.94	-40.41	280.13
GDP per capita (constant 2010, \$)	576	27370.75	15758.05	3784.07	65820.24
Corporate Tax Rate (%)	576	26	8.44	9	56
Consumer prices (annual %)	576	5.58	44.96	-2.09	1058.374

3.2. Econometric methodology

Cross-sectional dependency analysis is performed in the study utilizing Breusch-(1980) Pagan’s LM and Pesaran (2004) CD tests before the econometric analysis. The LM test statistics of Breusch-Pagan (1980) are calculated as given in equation (1)

$$\lambda_{LM} = \sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij}^2 \tag{1}$$

$\hat{\rho}_{ij}^2$: refers to the number of correlations between the residues of i and j units and is calculated by the formula in equation 2.

$$\hat{\rho}_{ij} = \hat{\rho}_{ij} = \frac{\sum_{t=1}^T \hat{\varepsilon}_{it} \hat{\varepsilon}_{jt}}{(\sum_{t=1}^T \hat{\varepsilon}_{it})^{1/2} (\sum_{t=1}^T \hat{\varepsilon}_{jt})^{1/2}} \tag{2}$$

Where ε shows the ordinary least squares (OLS) estimate of u_{it} . The LM test statistic is distributed with $d(d=N(N-1)/2)$ degrees of freedom le χ^2 .

In circumstances where N is low, the Breusch-Pagan LM test can be used. When N is high, however, consistent findings may be difficult to come by. As a result, the Pesaran CD test was created as an alternative to the Breusch-Pagan (1980) LM test in order to produce consistent results when N is greater. The formula is used to generate the Pesaran (2004) CD test statistic = $\sqrt{\frac{2T}{N(N-1)}} (\sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij})$.

Stationary analysis of variables is carried out by Pesaran (2007) CADF test. This method considers the cross-section dependency between variables. Therefore, it is also known as cross-sectionally augmented Dickey-Fuller (CADF) in the literature. The hypotheses of the test are defined as follows:

$$H_0: \theta_i = 0 \text{ where the unit root is in all units}$$

$$H_1: \theta_i < 0 \quad i=1, \dots, N$$

By comparing the derived test statistic value to crucial values, it may be established whether the variables include unit root or not. It is determined that the variables do not contain unit roots if the calculated test statistic value is bigger than the critical values. The test statistics, often known as CIPS, are computed using the formula in equation (3).

$$CIPS = \frac{1}{N} \sum_{i=1}^N CADF_i \tag{3}$$

Where CADF denotes the averages of the t statistics of the lagged variables in the regression in equation (4)

$$\Delta Y_{it} = \beta_i + \theta_i^* Y_{it-1} + d_0 \bar{Y}_{t-1} + \sum_{k=0}^m d_{k+1} \Delta \bar{Y}_{t-k} + \sum_{j=1}^m c_{j+1} \Delta Y_{it-j} + \varepsilon_{it} \tag{4}$$

The model shown in equation (5) is used to estimate the relationship between foreign direct investment and the corporate tax rate without taking differences in the economic development of countries into account. $Y_{it} = \beta_0 + \theta X_{it} + \beta CTR_{it} + \varepsilon_{it}$ (5)

Where Y_{it} shows the foreign direct investment, CTR is the corporate tax rate, X_{it} denotes the control variables affecting the foreign direct investment, and ε_{it} is the error term.

Foreign direct investment is influenced by the level of economic development. In other words, the impact of corporate taxes on foreign direct investment varies depending on the countries' economic development. As a result, equation (5) was remodeled and equation (6) was created by including the GDP per capita income level as the Z_{it} variable in the analysis, which is one of the important macroeconomic indicators in examining the interaction between the level of economic development and the corporate tax rate.

$$Y_{it} = +\beta_0 + \beta_1 CTR_{it} + \beta_2 (CTR_{it} \times GDPPC_{it}) + \beta_3 GDPPC_{it} + \beta_4 Openness_{it} + \beta_5 INF_{it} + \varepsilon_{it} \quad (6)$$

4. Empirical findings

Table 3 shows the results of Breusch-(1980) Pagan's LM and Pesaran (2004) CD tests. The null hypothesis "there is no cross-sectional dependency between variables" is rejected based on the probability values of the tests.

Table 3

Cross-Sectional Dependence Test Results

Variables/Tests	Breusch-Pagan LM	Pesaran CD
Foreign Direct Investment net inflow (GDP %)	793.70(0.000)	15.87(0.000)
GDP per capita (constant 2010, \$)	4809.02(0.000)	65.47(0.0000)
Corporate Tax Rate (%)	3540.53 (0.000)	56.66(0.000)
Consumer prices (annual %)	1915.76(0.000)	38.49(0.0000)

The Pesaran (2007) CADF unit root test, which takes cross-sectional dependency into consideration, was utilized in the stationarity analysis of the variables since there is a cross-sectional dependency between the units as shown in Table 3. The test's findings are listed in Table 4. The null hypothesis of a unit root is rejected based on the probability values. In other words, the variables' levels were found to be stationary.

Table 4

The Results of Pesaran CADF Unit Root Test

Variables	T-bar Value	Probability
Foreign Direct Investment net inflow (GDP %)	-2.653	0.000
GDP per capita (constant 2010, \$)	-2.331	0.002
Corporate Tax Rate (%)	-2.742	0.000
Consumer prices (annual %)	-4.767	0.020

Fixed effect (FE) and random effect (RE) estimations are used to estimate the results of the basic model provided in Equation (5), and the findings are shown in the first column of Table 5. Except for GDPPC, all of the column's variables of interest and control variables were judged to be 1 percent statistically significant. In FE and RE estimation, however, the Breusch-Pagan LM test demonstrates cross-section dependence. Therefore, to obtain more consistent results, FE and RE were re-estimated

according to the Panel corrected standard error (PCSE) method which takes into account heteroscedasticity and cross-section dependence. All variables are statistically significant at the %1 level. A negative relationship was found between corporate income tax rate and foreign direct investment.

Table 5

The Panel Data Estimation Results

	(FE)	(RE)	PCSE	(4)
Openness _{it}	-15.88*** (5.872)	-10.755** (4.404)	2.207*** (0.0936)	-2.819786*** (1.066757)
INF _{it}	0.0104 (0.0188)	0.0092 (0.018788)	0.00862*** (0.00015)	0.000648 (0.006471)
Constant	40.032***	31.732*** (8.321)	15.971*** (0.0592)	14.85062*** (1.864260)
CTR _{it}	-0.7188*** (0.1956)	-0.6297*** (0.000)	-0.5898*** (0.0016)	-0.159000*** (0.043917)
CTR _{it} × GDPPC _{it}				0.00000514*** (1.82E-06)
GDPPC _{it}	0.000041 (0.00039)	0.0000815 (0.00014)	0.0001639*** (1.72e-06)	-0.000166** (7.60E-05)
Adjusted R ²	0.031	0.027		
F-statistics	3.54			
BP	(0.0000)	(0.0001)		

Standard errors in the blanket. *, ** and *** indicate that the regression coefficient estimates are statistically significant at 10%, 5% , and 1% significance levels, respectively.

Column 4 presents the estimation results of equation (6). As presented in the fourth column of Table 5, the coefficient estimations in CTR_{it} and CTR_{it} × GDPPC_{it} rows ($\hat{\beta}_1 = -0.159000$ and $\hat{\beta}_2 = 0.00000514$) are found to be 1% statistically significant. Suggesting that the effect of the corporate tax rate on foreign direct investment varies based on the levels of economic development of the countries. Within this context, the total derivative representation of the corporate tax rate on foreign direct investment that takes the level of economic development into account is expressed in equation (7).

$$\partial Y_{it} / \partial CTR_{it} = -0.159000 + 0.00000514 GDPPC_{it} \quad (7)$$

When equation (5) is equated to zero, the average threshold value of real GDP per capita, which determines the direction of the relationship between corporate tax rate and foreign direct investment, was found to be $GDPPC_{it}^* \approx \$30,000$. In other words, while corporate tax rate increases foreign direct investment in countries with a real GDP per capita higher than approximately \$30,000; tax revenues decrease as the rule of law increases in countries with lower than \$30,000 income levels. The classification of countries based on this threshold value is provided in Table 6:

Table 6

Classification of Countries according to Threshold Value

Countries =>30.000 \$	Austria, Belgium, Denmark, Finland, France, Germany, Italy, Netherland, Spain, Sweden,
Countries < 30.000 \$	Bulgaria, Czechia, Cyprus, Estonia, Croatia, Greece, Hungary, Latvia, Poland, Romania, Slovakia, Lithuania, Portugal, and Slovenia,

5. Conclusion

In the last few decades, tax competition has been more intense in both developed and developing countries. Many governments have reduced corporate income tax rates to attract foreign direct investments because the amount of corporate income tax revenues in relation to GDP is viewed as tax competition.

Because foreign direct investment is an essential source of economic growth, particularly in European Union countries, the corporate tax rate has been cut to encourage foreign capital investment within the Union. This circumstance paves the path for tax competitiveness among EU member states. Tax competition has recently been a major issue, particularly in the European Union. Because of the opening of borders, resource distribution has become increasingly susceptible to disparities in national tax rates. As a result, taxes are an important policy tool in terms of competition. Because of inefficiently low tax rates and cross-border spillovers, tax competition leads to suboptimal welfare.

In this study, the tax competition in the European Union is examined using the Panel Data technique from 1996 to 2019. The rate of corporate tax income is used as a measure of tax competition. The impact of corporation tax rates on foreign direct investment is evaluated in this context, both with and without taking into consideration disparities in economic development between countries. The results reveal that the corporate tax rate and foreign direct investment have a negative connection. These findings substantiate the presence of tax competition in the EU. However, when the economic growth of countries is taken into account, this negative association becomes positive in countries with a per capita income of more than \$30,000. This finding indicates that tax competition is fiercer in countries with lower economic growth rates. In other words, foreign direct investment is a major component in accelerating economic growth in lower-middle-income countries. As a result, tax competition in these countries is fiercer than in developed countries. These results support the findings obtained by Alvarado et al. (2017).

Author statement

1. Research and publication ethics statement

This study has been prepared in accordance with the ethical principles of scientific research and publication.

2. Approval of Ethics Board

Ethics Committee Approval is not required for this study.

3. Conflict of interest

There is no conflict of interest arising from the study for the authors or third parties.

4. Declaration of support

No support has been granted for this study.

References

- Abdioğlu, N., Biniş, M. and Arslan, M. (2016). The effect of corporate tax rate on foreign direct investment: A panel study for OECD countries. *Ege Akademik Bakış Dergisi*, 16(4), 599-610.
- Agostini, C. A. (2007). The impact of state corporate taxes on FDI location. *Public Finance Review*, 35(3), 335-360.
- Alvarado, R., İniguez, M. and Ponce, P. (2017). Foreign direct investment and economic growth in Latin America. *Economic Analysis and Policy*, 56, 176-187.
- Auriol, E. and Warlters, M. (2005). Taxation base in developing countries. *Journal of Public Economics*, 89(4), 625-646.
- Azémar, C., Desbordes, R. and Wooton, I. (2020). Is international tax competition only about taxes? A market-based perspective. *Journal of Comparative Economics*, 48(4), 891-912.
- Banociova, A. and Tahlova, S. (2019). European States in a bout of corporate tax competition. *Journal of Competitiveness*, 11(3), 19.

- Bellak, C. and Leibrecht, M. (2009). Do low corporate income tax rates attract FDI?—Evidence from Central-and East European countries. *Applied Economics*, 41(21), 2691-2703.
- Breusch, T. S., and A. R. Pagan. (1980). The Lagrange multiplier test and its applications to model specification in econometrics. *The Review of Economic Studies*, 47(1), 239-253.
- Crivelli, E., De Mooij, R. A. and Keen, M. M. (2015). *Base erosion, profit shifting and developing countries*. International Monetary Fund Working Paper, (15)
- Egger, P. and Raff, H. (2015). Tax rate and tax base competition for foreign direct investment. *International Tax and Public Finance*, 22(5), 777-810.
- Ferede, E. and Dahlby, B. (2012). The impact of tax cuts on economic growth: Evidence from the Canadian provinces. *National Tax Journal*, 65(3), 563-594.
- Gresik, T. A., Schindler, D. and Schjelderup, G. (2015). The effect of tax havens on host country welfare, CESIFO Working Paper, (5314).
- Hebous, S. (2021). Has tax competition become less harmful? *De Mooij, Klemm, and Perry*, 87-106.
- Huňady, J. and Orviská, M. (2014). Corporate tax competition and its potential implication for tax policies in EU countries. In *19th International Conference on Theoretical and Practical Aspects of Public Finance*, 126-136.
- Kargı, V. and Yayğır, T. (2016). Küreselleşme, vergi rekabeti ve Türkiye’de vergi yükü. *International Journal of Public Finance*, 1(1), 1-22.
- Karimi, M., Akbarian, R., Shahnazi, R. and Sadraei, A. (2020). An Investigation of the effective factors on foreign direct investment with emphasis on the optimal tax rate in selected countries. *Journal of Econometric Modelling*, 5(3), 63-91.
- Mardan, M. (2017). Why countries differ in thin capitalization rules: The role of financial development. *European Economic Review*, 91, 1-14.
- Öz-Yalaman, G. (2020). The effect of corporate tax on foreign direct investment. *Erciyes Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 55, 221-243.
- Pesaran, H. M. (2004). General diagnostic tests for cross-sectional dependence in panels. *University of Cambridge, Cambridge Working Papers in Economics*, 435.
- Pesaran, H. M. (2007) A simple panel unit root test in the presence of cross section dependence. *Journal of applied econometrics*, 22(2), 265-312.
- Pigott, V. and Walsh, K. (2014). Corporation tax –A note on the context and concentration of payments: part of the economic impact assessment of Ireland’s corporation tax policy. Statistics and economicresearchbranch.http://www.budget.gov.ie/budgets/2015/Documents/Corporation_Tax_Context_Concentration_Corporation_Tax_Payments_Revenue.pdf.
- Salihu, I. A., Annuar, H. A. and Obid, S. N. S. (2015). Foreign investors' interests and corporate tax avoidance: Evidence from an emerging economy. *Journal of Contemporary Accounting & Economics*, 11(2), 138-147.
- Sato, T. (2012). Empirical analysis of corporate tax and foreign direct investment. *Public Policy Review*, 8(1), 1-20.
- Sujarwati, A. I. and Qibthiyah, R. M. (2020). Corporate income tax rate and foreign direct investment: A Cross-country empirical study. *Economics and Finance in Indonesia*, 66, 25-46.
- Teather, R. (2005). The benefits of tax competition. *IEA Hobart Paper*, 153.
- Yakita, A. (2014). Effects of capital taxation on economies with different demographic changes: short term versus long term. *Journal of Population Economics*, 27, 257–273.