# Special Interest Groups and Economic Growth Nexus: The OECD Example

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***ABSTRACT***

*This study aims to revisit the approach which claims special interest groups (SIGs) has a negative impact on economic growth in the long run. In this study, the long run relationship between economic growth and SIGs is examined by panel data techniques for OECD countries during 1990-2011. According to empirical findings, the long run relationship is found between economic growth and the SIGs for OECD sample. In addition, the long run elasticity results of OECD panel states that SIGs have a disruptive impact on economic growth. On the other hand, the long run elasticity results of individual countries indicate that an U-shaped relationship between economic growth and SIGs exists in 28% of the sample.*

***Key words:*** *Special Interests Groups, Economic Growth, OECD, Panel Data*

***JEL Classification:*** *C33, D72, P16.*

## Özel Çıkar Grupları ile Ekonomik Büyüme Arasındaki İlişki: OECD Örneği

***ÖZ***

*Bu çalışma, özel çıkar gruplarının (SIGs) uzun dönem ekonomik büyüme üzerinde negatif bir etkisi olduğunu ileri süren iktisadi görüşü test etmek amacındadır. Bu bağlamda SIGs ve ekonomik büyüme arasındaki uzun dönemli ilişki OECD ülkeleri için 1990 ve 2011 yılları arasında panel veri teknikleri yardımıyla incelenmiştir. OECD örneklemine ilişkin araştırma bulguları, SIGs ile ekonomik büyüme arasında uzun dönemli bir ilişki olduğunu ortaya koymuştur. Ayrıca OECD paneline ilişkin uzun dönem esneklik sonuçlarından hareketle, özel çıkar gruplarının ekonomik büyüme üzerinde bozucu bir etkisi olduğu tespit edilmiştir. Buna ek olarak her bir ülkeye ilişkin uzun dönem esneklik sonuçları ise, örneklem grubunun %28'nin özel çıkar grupları ile ekonomik büyüme arasında ters U şeklinde bir ilişkinin varlığını desteklediğini ortaya koymuştur.*

***Anahtar Kelimeler:*** *Özel Çıkar Grupları, Ekonomik Büyüme, OECD, Panel Veri.*

***JEL Sınıflandırması:*** *C33, D72, P16.*

## INTRODUCTION

The traditional political scientists such as Bentley (1908:240-251) and Latham (1952:378) supposed that special interest groups (SIGs) exist as natural and do not have any individual interest in their formation. Additionally, Olson (1965) has argued and challanged the classical view of SIGs. He claimed that, every economical group seeks its' interests. Therefore, he defined SIGs as an organization searching to influence political and economic actors through political decision making process. According to Olson (1965), SIGs are rent seeking and

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trying to maximize their welfare by affecting the outcome of economic policy. This definition mainly indicates the link between SIGs and the long run economic growth. In the Olson's model, the magnitude SIGs gains will exceed magnitude of the societies' losses. As a result, although participants of SIGs are individually rational, SIGs activity may lead to collectively irrational economic results (Olson, 1965:2; Mitchell & Munger, 1991:514-519). At the begining of 1980s, Olson argued that economic performance is decelerated and capital accumulation is reduced by the activities of SIGs. However, a clear consensus on relationship between SIGs and economic growth has not emerged yet in the literature (Coates et al., 2011:440). For example, McCallum & Blais (1987:17), Heckelman (2000:326), Coates & Heckelman (2003:339), Horgos & Zimmerman (2009:313) and Cole (2015:828) have found significant negative relationship among SIGs and economic growth while Knack & Keefer (1997:1283-1286) and Knack (2003:341) have found little evidence for the Olson's approach. In the light of these information, the empirical findings may not be successfull to identify the strictly true relationship between SIGs and economic growth.

This paper aims to re-examine the long run relationship between SIGs and economic growth for 32 OECD countries during 1990-2011. This relationship is barely investigated by panel data techniques in the literature. This study aims to test two hypothesis: i) an economic growth of a country declines as SIGs activity increases, and ii) the effect of SIGs on economic growth is different between OECD countries in long-run. In this study, the second generation panel unit root test and heterogeneous panel cointegration analysis were used to reach the long run relationship between variables. In addition to that, the long run elasticity results of individual countries and OECD panel were estimated by the fully modified OLS (FMOLS) techniques. This study is organized as follows; section 1 explains the data and methodology, section 2 presents the empirical results and the final section include discussions, policy implications and the concluding remarks.

## I. DATA AND METHODOLOGY

### A. Data

This study includes 32 OECD countries and the time span covers the period from 1990 to 2011. Only Hungary and Mexico were excluded from the sample because of data availability problem. Real gross domestic product (GDP) per capita (constant 2010 US$) was provided from the United States Department of Agriculture (USDA) database. SIGs data was obtained from the Organisation for Economic Co-operation and Development (OECD) database. Special interest groups (SIGs) was measured as active trade union members and the number of wage and salary earners[1]. Additionally, the quadratic term $SIGs^2$ was also included to analysis to examine the possible non-linear relationship between

[1] Olson's interest groups (e.g. labour unions) approach has been followed by this study.

economic growth and SIGs. Besides, four control variables[2] were used in the estimation to avoid from multi-collinearity problem. Gross fixed capital formation (RGFCF)[3] (current US$) has taken from world development indicators of World Bank and deflated by using GDP deflator (2010=100). GINI coefficients were procured from OECD database. Interactive term of (GINI*SIGs) was also involved into analysis as a control variable to consider the joint effect of GINI and SIGs on economic growth. Finally, SLTAX was measured as a ratio of countries real tax revenues to countries personal income. Total tax revenue (current US$) has obtained from OECD database and deflated by using GDP deflator (2010=100). All variables were transformed into their natural logarithm forms.

**B. Methodology**

In this study, the long run effect of SIGs on economic growth has examined by panel data techniques. However, before investigating the long run relationship between Y, SIGs, SIGs$^2$, RGFCF, GINI, (GINI*SIGs) and SLTAX, the existence of a unit root in each series needs to be investigated by panel unit root tests. Unfortunately, the first generation panel unit root tests do not consider the cross sectional dependency or in other words they all assume cross sections are independent. But, cross sectional dependence can cause potential measurement problems according to unobserved common factors, externalities and economic linkages (Pesaran, 2007:265; Hoechle, 2007:281-283). In this context, cross sectional dependence (CD) test which was developed by Pesaran (2004:5) has applied for all series in this study. Pesaran (2004:5) proposed a CD statistics as follows,

$$CD = \left[\frac{TN(N-1)}{2}\right]^{1/2} \bar{\hat{\rho}} \tag{1}$$

CD statistics is based on the average of the pair-wise correlation coefficients $\hat{\rho}_{ij}$ which states as,

$$\bar{\hat{\rho}} = \left(\frac{2}{N(N-1)}\right)\sum_{i=1}^{N} \sum_{j=i+1}^{N} \hat{\rho}_{ij} \tag{2}$$

In this study, after the presence of cross-section dependence was detected for all variables, one of the most popular second generation panel unit root tests has employed to search the unit root in each series. This second generation panel

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[2] The three of the control variables (GINI, (GINI*SIGs) and SLTAX) were choosen by following Cole (2015:826).

[3] Soytas et al. (2007:484-485) has used GFCF as a proxy for changes in capital stock by following neo-classical growth model. In this regard, RGFCF were included in to the empirical model of this study by following Soytas et al. (2007).

unit root test was developed by Pesaran (2007). The cross-sectionally augmented Dickey-Fuller (CADF) regression has been given as below,

$$\Delta y_{it} = \alpha_i + \rho_i y_{it-1} + \beta_i \bar{y}_{t-1} + \sum_{j=0}^{k} \gamma_{ij} \Delta \bar{y}_{it-1} + \sum_{j=0}^{k} \delta_{ij} y_{it-1} + \varepsilon_{it} \tag{3}$$

where $\bar{y}_t$ represents the cross sectional mean of $y_{it}$. The average of the t ratios is indicated as CADF test statistics and provided by Pesaran (2007:269). CADF test statistics defined as below,

$$CADF_i = \frac{\Delta y_i' \overline{M}_x y_{i,-1}}{\hat{\sigma}_i (y_{i,-1}' \overline{M}_x y_{i,-1})^{1/2}}, \tag{4}$$

where $\Delta y_i = (\Delta y_{i1}, \Delta y_{i2}, ...., \Delta y_{iT})'$, $y_{i,-1} = (y_{i0}, y_{i1}, ...., y_{i,T-1})'$, $\overline{M}_x = I_T - \bar{x}'(\bar{x}'\bar{x})^{-1}\bar{x}'$,

$\bar{x} = (\tau, \Delta\bar{y}, \bar{y}_{-1})$, $\tau = (1,1,....,1)'$, $\Delta\bar{y} = (\Delta\bar{y}_1, \Delta\bar{y}_2, ...., \Delta\bar{y}_T)'$, $\bar{y}_{-1} = (\bar{y}_0, \bar{y}_1, ...., \bar{y}_{T-1})'$ and

$$\hat{\sigma}_i^2 = \frac{\Delta y_i' \overline{M}_{i,x} \Delta y_i}{T-3}.$$

If CADF test results indicate that all variables are integrated of order one, $I(1)$, then the panel cointegration test could be apply to examine the long run relationship between Y, SIGs, SIGs$^2$, RGFCF, GINI, (GINI*SIGs) and SLTAX. Pedroni (1999:656-661; 2004:599-607) has developed a panel cointegration analysis which allows heterogeneity across cross sections in terms of intercepts and trend coefficients. This test includes seven test statistics to determine the long run relationship among variables. While four of these test statistics (Panel $v$-statistics, Panel $\rho$-statistics, Panel PP-statistics, Panel ADF-statistics) based on within dimension approach and proposed as panel cointegration test statistics, the others (Group $\rho$- statistics, Group PP-statistics, Group ADF-statistics) based on between dimension approach and declared as group panel cointegration test statistics. Both type of statistics test the null hypothesis of no cointegration. The panel cointegration regression of this study was specified as below,

$$\ln Y_{it} = \alpha_{it} + \beta_{it} + \delta_{1i} \ln SIGs + \delta_{2i} \ln SIGs^2 + \delta_{3i} \ln RGFCF + \delta_{4i} \ln GINI + \delta_{5i} \ln(GINI * SIGs) + \delta_{6i} \ln SLTAX + \varepsilon_{it} \tag{5}$$

where i=1,.......N presents the countries in panel and t=1,.......N states the time period. Additionally, the parameteres $a_{it}$ and $\beta_{it}$ refers the country specific fixed effects and deterministic trends, respectively. On the other hand, quadratic term SIGs$^2$ was also included in equation 5 to investigate the possible non-linear relationship between Y and SIGs. At this point, five implications about Y, SIGs and SIGs$^2$ should be specified: i.) $\delta_1 = \delta_2 = 0$ suggests that SIGs is not related to Y, ii.) $\delta_1 > 0$ and $\delta_2 = 0$ remarks a monotonically increasing relationship between SIGs and Y, iii.) $\delta_1 < 0$ and $\delta_2 = 0$ indicates a monotonically decreasing relationship among SIGs and Y, iv.) $\delta_1 < 0$ and $\delta_2 > 0$ refers an U-shaped relationship between SIGs and Y, v.) $\delta_1 > 0$ and $\delta_2 < 0$ express an inverted U-shaped relationship among SIGs and Y.

In this study, after the long run relationship between Y, SIGs, SIGs$^2$, RGFCF, GINI, (GINI*SIGs) and SLTAX was found by the panel cointegration test, the long run elasticities of each variables were determined by the fully modified ordinary least square (FMOLS) analysis. This method was developed by Phillips & Hansen (1990). FMOLS analysis based on the semi-parametric corrections of OLS estimations. This analysis fixed the second order bias stimulated by the endogeneity of regressors in the cointegrating equation. Thereby this approach allows asymptotically unbiased long run estimations (Phillips & Hansen, 1990:99; Pedroni, 2000:98). In addition to that, FMOLS analysis has also improved by Phillips & Moon (1999) and Pedroni (2000, 2001).

Phillips & Moon (1999:1085) has defined the FMOLS estimator as stated in below:

$$\hat{\beta}_{PFM} = \left( \sum_{i=1}^{n} \sum_{t=1}^{T} Y_{i,t}^{+} X_{i,t}' - nT\hat{\Lambda}_{ex}^{+} \right) \left( \sum_{i=1}^{n} \sum_{t=1}^{T} X_{i,t} X_{i,t}' \right)^{-1} \tag{6}$$

Pedroni (2000:98) consider the following cointegrated system for panel data:

$$Y_{it} = \alpha_{it} + \beta X_{it} + \varepsilon_{it} \tag{7}$$

$$X_{it} = X_{it-1} + \varepsilon_{it} \tag{8}$$

where Y and X cointegrated. However Pedroni (2001) suggests another equation which restrict the endogenous feedback effect due to augmenting the cointegration regression with lead and lagged differences of the regressors. This equation refers as,

$$Y_{it} = \alpha_{it} + \beta X_{it} + \sum_{k=-K_i}^{K_i} \gamma_{ik} \Delta X_{it-k} + \varepsilon_{it} \tag{9}$$

Pedroni (2001:728-729) defines the long run covariance process as $\Omega_{it} = \lim_{T\to\infty} E\left\{1/T\left(\sum_{t=1}^{T}\zeta_{it}\right)\left(\sum_{t=1}^{T}\zeta_{it}\right)'\right\}$ where $\zeta_{it} = (\hat{\varepsilon}_{it}, \Delta X_{it})$. In this regard the long run covariance matrix can be decomposed as $\Omega_i = \Omega_i^0 + \Gamma_i + \Gamma_i'$ where $\Omega_i^0$ is the contemporaneous covariance and $\Gamma_i$ is a weighted sum of autocovariances.

Thereby Pedroni (2001:729) suggest a panel FMOLS estimator for the $\beta$ as state in below,

$$\hat{\beta}^{*}_{FMOLS} = \frac{1}{N}\sum_{i=1}^{N}\left[\left(\sum_{t=1}^{T}\left(X_{it}-\overline{X}_{i}\right)^{2}\right)^{-1}\left(\sum_{t=1}^{T}\left(X_{it}-\overline{X}_{i}\right)Y^{*}_{it}-T\hat{\tau}_{i}\right)\right] \qquad (10)$$

where $Y^{*}_{it} = Y_{it} - \overline{Y}_{i} - \left(\frac{\hat{\Omega}_{21i}}{\hat{\Omega}_{22i}}\right)\Delta X_{it}$ and $\hat{\gamma}_{i} \equiv \hat{\Gamma}_{21i} + \hat{\Omega}^{0}_{21i} - \left(\frac{\hat{\Omega}_{21i}}{\hat{\Omega}_{22i}}\right)\left(\hat{\Gamma}_{22i} + \Omega^{0}_{22i}\right)$.

## II. EMPIRICAL RESULTS

Table 1 presents the cross-section dependency and the second generation panel unit root test results of each variables. According to Pesaran CD test results, cross sectional dependency was detected in each series that included into the empirical model. Therefore, CADF panel unit root test was applied to investigate the existence of unit roots in series.

**Table 1.** Panel Cross Section Dependency and CADF Unit Root Test Results

| Panel A: Cross-Section Dependency Test (CD test) | | | | | | | |
|---|---|---|---|---|---|---|---|
| Variable | Y | RGFCF | SIGs | SIGs$^2$ | GINI | GINI*SIGs | SLTAX |
| CD test | 100.35*** | 51.72*** | 6.169*** | 6.30*** | 11.33*** | 15.03*** | 31.91*** |
| P-value | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Panel B: Unit Root Test with Cross-Sectional Dependency (CADF test) | | | | | | | |
| Level | 0.87 | 0.20 | -0.50 | -0.55 | 0.90 | 3.13 | -1.21 |
| P-value | (0.81) | (0.58) | (0.30) | (0.29) | (0.81) | (0.99) | (0.11) |
| First Dif. | -6.27*** | -6.04*** | -4.76*** | -4.37*** | -1.63** | -1.63** | -8.28*** |
| P-value | (0.00) | (0.00) | (0.00) | (0.00) | (0.05) | (0.05) | (0.00) |

Note: ***,**,* denotes 1%, 5% and 10% level of significancy, respectively. CADF test was estimated by using deterministic trend with 1 lag.

As given in Panel B of Table 1, the first difference of each series have found stationary which means all variables are integrated of order one, $I(1)$. Thereafter, the long run relationship among Y, SIGs, SIGs$^2$, RGFCF, GINI, (GINI*SIGs) and SLTAX were investigated by Pedroni panel cointegration test. Table 2 shows the cointegration test results. According to findings, four of the seven test statistics have found statistically significant at one percent level of significancy. This findings imply a long run relationship between variables.

**Table 2.** Panel Cointegration Test Results

| Panel Cointegration Test Statistics | | | |
|---|---|---|---|
| Within Dimension Test Statistics | | Between Dimension Test Statistics | |
| Panel $\nu$ -statistics | -1.20 | Group $\rho$ - statistics | 7.29 |
| Panel $\rho$ -statistics | 5.17 | Group PP-statistics | -18.51*** |
| Panel PP-statistics | -12.45*** | Group ADF-statistics | -5.54*** |
| Panel ADF-statistics | -7.54*** | | |

Note: ***, **,* denotes the 1%, %5 and 10% level of significancy, respectively. Lag length were selected automatically using the Akaiki Information Criteria (AIC). Cointegration estimation were performed with deterministic intercept and trend.

After the cointegration relationship being found between variables, FMOLS analysis was employed to determine the long run coefficients (or elasticities) of these variables. Table 3 gives the long run output elasticity results of individual countries and OECD panel. According to the OECD panel findings, 1% increase in SIGs increased Y by 0.179% while 1% increase in $SIGs^2$ decreased Y by 0.008 % in the long run. This findings revealed an inverted U-shaped relationship between Y and SIGs for OECD countries in the long term and consistent with the approach that special interest group activities (only after reach a certain threshold level) have a distortion effect on economic growth process in the long run.

**Table 3.** OECD Panel and Individiual Countries Long Run Elasticity Results (lnY:Dependent Variable)

| Country | RGFCF | SIGs | $SIGs^2$ | GINI | GINI*SIGs | SLTAX |
|---|---|---|---|---|---|---|
| Australia | 0.186*** (5.757) | 2.045 (0.854) | -0.716 *** (-2.792) | 86.070*** (3.876) | -11.375*** (-3.856) | 0.025 (1.000) |
| Austria | 0.432*** (5.470) | 54.871* (1.905) | -4.140* (-1.893) | 26.783 (1.493) | -3.831 (-1.493) | -0.154 (-1.351) |
| Belgium | 0.155*** (5.173) | 6.377 (0.678) | -0.385 (-0.603) | -5.232* (-1.895) | 0.630* (1.742) | 0.116** (2.096) |
| Canada | 0.333*** (7.858) | 109.674*** (7.497) | -6.424*** (-7.321) | -30.726 (-1.278) | 3.669 (1.280) | -0.121 (-1.143) |
| Chile | 0.266*** (9.335) | 6.780 (0.908) | -0.355 (-1.537) | -28.031 (-0.405) | 3.938 (0.376) | 0.130* (2.077) |
| Czech Rep. | 0.401*** (5.980) | 1.258 (1.153) | -0.339** (-2.776) | 28.276** (2.826) | -4.288** (-2.858) | 0.359 (1.488) |
| Denmark | 0.260*** (8.728) | 93.070** (2.502) | -6.186** (-2.272) | -0.705 (-0.014) | 0.211 (0.031) | -0.139 (-1.206) |
| Estonia | 0.224*** (8.845) | 5.816** (2.724) | -0.534** (-2.734) | -8.328*** (-3.276) | 1.886*** (3.030) | -0.341** (-2.959) |
| Finland | 0.617*** (9.581) | -160.457*** (-2.982) | 11.550*** (3.041) | -80.255* (-1.928) | 11.134* (1.952) | -0.238* (-1.880) |
| France | 0.594*** (9.545) | 46.382 (1.255) | -3.039 (-1.172) | -12.151 (-0.309) | 1.722 (0.329) | -0.433*** (-2.779) |
| Germany | 0.440*** | -26.222*** | 1.698*** | -51.917*** | 5.964*** | 0.036 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | (8.667) | (-4.879) | (4.618) | (-3.268) | (3.306) | (0.254) |
| Greece | 0.261*** | -4.789 | 0.475 | -9.392* | 1.439* | -0.045 |
| | (10.442) | (-0.477) | (0.592) | (-2.066) | (2.071) | (-1.012) |
| Iceland | 0.222*** | 31.223*** | -2.909*** | -14.427*** | 2.828*** | -0.387 |
| | (12.115) | (4.263) | (-4.198) | (-4.254) | (3.882) | (-4.526) |
| Ireland | 0.287*** | 88.176** | -6.517** | -62.655 | 9.907 | -0.249 |
| | (4.848) | (2.655) | (-2.475) | (-1.561) | (1.548) | (-1.688) |
| Israel | 0.366*** | -4.715 | 0.077 | 31.682 | -4.749 | 0.101 |
| | (4.365) | (-0.509) | (0.120) | (1.230) | (-1.197) | (0.831) |
| İtaly | 0.386*** | 0.743 | -0.015 | -8.737 | 1.020 | 0.053 |
| | (10.688) | (0.074) | (-0.025) | (-0.821) | (0.826) | (1.311) |
| Japan | 0.407*** | -34.466* | 1.945* | -21.765** | 2.338** | -0.119 |
| | (9.663) | (-2.023) | (2.054) | (-2.659) | (2.405) | (-1.636) |
| Korea | 0.302 | 1.870 | -0.108 | -2.816* | 0.389* | 0.275* |
| | (7.209) | (0.191) | (-0.161) | (-1.848) | (1.817) | (1.981) |
| Luxemburg | 0.202** | -2.531 | 0.266 | 3.831 | -0.912 | -0.418** |
| | (2.779 | (-0.220) | (0.232) | (0.839) | (-0.912) | (-2.242) |
| Netherlands | 0.384*** | -1.093 | -0.236 | 42.987*** | -5.842*** | -0.037 |
| | (20.463) | (-0.175) | (-0.596) | (4.656) | (-4.683) | (-0.687) |
| New Zealand | 0.296*** | -0.289 | 0.240** | -20.871** | 3.491** | -0.054 |
| | (13.113) | (-0.327) | (2.616) | (-20.871) | (2.367) | (-1.322) |
| Norway | 0.104*** | 73.900*** | -5.675*** | 42.920** | -6.081** | 0.348* |
| | (3.261) | (3.383) | (-3.985) | (2.477) | (-2.468) | (1.819) |
| Poland | 0.181*** | 2.009*** | -0.134*** | -0.250 | 0.030 | 0.022 |
| | (27.703) | (3.210) | (-3.294) | (-0.379) | (0.357) | (0.929) |
| Portugal | 0.262*** | -8.425 | 0.615 | 3.762 | -0.605 | 0.177** |
| | (10.832) | (-0.940) | (0.761) | (0.174) | (-0.187) | (2.302) |
| Slovak Rep. | 0.207*** | -6.805*** | 0.237*** | 27.981*** | -4.842*** | 0.453 |
| | (5.116) | (-4.607) | (3.912) | (5.101) | (-5.150) | (1.570) |
| Slovenia | 0.104*** | -0.605 | 0.099** | -5.428** | 0.768* | 0.235*** |
| | (3.097) | (-1.415) | (2.792) | (-2.758) | (2.012) | (4.056) |
| Spain | 0.252*** | -4.118** | 0.175* | 14.470*** | -1.833*** | -0.098* |
| | (17.271) | (-2.391) | (1.775) | (5.192) | (-5.062) | (-1.741) |
| Sweeden | 0.430*** | 228.949*** | -14.848*** | 80.425*** | -10.089*** | -0.040 |
| | (13.989) | (8.717) | (-8.264) | (3.096) | (-3.102) | (-0.497) |
| Switzerland | 0.346*** | -186.488 | 11.437 | 206.511 | -37.541 | -0.225 |
| | (5.830) | (-1.478) | (1.505) | (1.443) | (-1.306) | (-1.615) |
| Turkey | 0.350*** | -18.800*** | 0.723*** | 30.812* | -11.080*** | -0.067 |
| | (16.390) | (-4.315) | (4.106) | (1.728) | (-4.596) | (-1.704) |
| UK | 0.243*** | -16.484 | 1.454 | -122.500*** | 13.728*** | 0.112 |
| | (4.729) | (-1.158) | (1.541) | (-3.176) | (3.138) | (1.283) |
| USA | 0.337*** | 16.094 | -0.846 | 3.473 | -0.388 | -0.075* |
| | (13.134) | (0.697) | (-0.663) | (0.132) | (-0.143) | (-2.020) |
| Panel | RGFCF | SIG | $\ln SIG^2$ | GINI | SIG*GINI | SLTAX |
| OECD countries | 0.329*** | 0.179*** | -0.008*** | -0.884*** | 0.131*** | -0.068*** |
| | (94.803) | (4.122) | (-2.710) | (-10.989) | (11.639) | (-7.450) |

Note: ***, **,* denotes the 1%, %5 and 10% level of significancy, respectively. t statistic values were given in paranthesis. The estimations of individual countries were performed with 1 lag.

Besides, the empirical findings of the OECD panel indicate that, RGFCF has a positive impact on economic growth in the long run as it is expected but GINI has an adverse effect on economic development process because economic growth will negatively effect from an increase in income inequality. On the other hand, the long run elasticity result of the interactive term (GINI*SIGs) states that income inequality and special interest groups jointly has an additive role on economic growth in the long term for the OECD panel. Moreover, the long run elasticity results of SLTAX refers that Y decreases by 0.068 % as SLTAX increased by 1 % which means economic growth influences negatively from an increase in tax burden.

According to the individiual countries results, an inverted U-shaped relationship between Y and SIGs has been found for Austria, Canada, Denmark, Estonia, Iceland, Ireland, Norway, Poland and Sweeden which constitutes 28% of the whole sample. In contrast to that, U-shaped relationship has been determined for some OECD countries such as Finland, Germany, Japan, Slovak Republic, Spain and Turkey. According to these results, although special interest groups have a negative impact on economic growth after a threshold level, this impact turn into positive in the long run for these six OECD countries. The findings of this study showed mixed results about the long run effect of SIGs on Y for individiual countries. On the other hand, a statistically significant relationship between Y and SIGs could not have found for Belgium, Chile, Czech Republic, France, Greece, Israel, Italy, Korea, Luxemburg, Netherlands, New Zealand, Portugal, Slovenia, Switzerland, United Kingdom (UK) and United States (USA).

## CONCLUDING REMARKS

In this study, the long run relationship between SIGs and economic growth is re-examined by panel data techniques for OECD countries during 1990-2011. According to panel cointegration test results, the long run relationship has found between Y, SIGs, $SIGs^2$, RGFCF, GINI, (GINI*SIGs) and SLTAX. Thereafter, the long run elasticity results of OECD panel revealed an inverted U-shaped relationship between Y and SIGs which means economic growth reduced by an increase in SIGs activities, especially after a turning point. While the panel sample size is limited, the findings suggest that SIGs has a negative impact on economic growth in OECD countries. This result supports the Olson's approach and also coherence with the findings of Heckelman (2000), Coates & Heckelman (2003), Coates et al. (2011). In addition, the long run elasticity results of individual countries revealed that an inverted U-shaped relationship between Y and SIGs was found for 28% of the sample. Empirical results of this study imply that an excessive activity of SIGs may have a distortion impact on economic growth. Therefore, policy makers should design their future economic growth plans considering this negative impact of SIGs.

**REFERENCES**


Bentley, A. F. (1908). The Process of Government. Chicago: The University of Chicago Press.

Coates, D. & Heckelman, J. C. (2003). Interest Groups and Investment: A Further Test of the Olson Hypothesis. Public Choice, 117, 333-340.

Coates, D., Heckelman, J. C. & Wilson, B. (2011). Special-interest Groups and Growth. Public Choice, 147, 439-457.

Cole, I. M. (2015). Interest Group Activity and Economic Growth: Some New Evidence from the US States. Applied Economics Letters, 22(10), 825-829.

Heckelman, J. C. (2000). Consistent Estimates of the Impact of Special Interest Groups on Economic Growth. Public Choice, 104(3/4), 319-327.

Hoechle, D. (2007). Robust Standard Errors for Panel Regressions with Cross-Sectional Dependence. The Stata Journal, 7(3), 281-312.

Horgos, D. & Zimmermann, K. W. (2009). Interest Groups and Economic Performance: Some New Evidence. Public Choice, 138, 301-315.

Knack, S. & Keefer, P. (1997). Does Social Capital Have An Economic Payoff? A Cross-Country Investigation. The Quarterly Journal of Economics, 112(4), 1251-1288.

Knack, S. (2003). Groups, Growth and Trust: Cross-Country Evidence on the Olson and Putnam Hypotheses. Public Choice, 117(3/4), 341-355.

Latham, E. (1952). The Group Basis of Politics: Notes for a Theory. American Political Science Review, 46, 376-397.

McCallum, J. & Blais, A. (1987). Government, Special Interest Groups, and Economic Growth. Public Choice, 54, 3-18.

Mitchell, W. C. & Munger, M. C. (1991). Economic Models of Interest Groups: An Introductory Survey. American Journal of Political Science, 35(2), 512-546.

Olson, M. (1965). The Logic of Collective Action. Cambridge: Harvard University Press.

Pedroni, P. (1999). Critical Values for Cointegration Tests in Heterogeneous Panels with Multiple Regressors. Oxford Bulletin of Economics and Statistics, Special Issue 0305-9049.

Pedroni, P. (2000). Fully Modified OLS For Heterogeneous Cointegrated Panels. Advances in Econometrics, 15, 93-130.

Pedroni, P. (2001). Purchasing Power Parity Tests in Cointegrated Panels. The Review of Economics and Statistics, 83(4), 727-731.

Pedroni, P. (2004). Panel Cointegration: Asymptotic and Finite Sample Properties of Pooled Time Series Tests with an Application to the PPP Hypothesis. Economic Theory, 20, 597-625.

Pesaran, H. M. (2004). General Diagnostic Tests For Cross Section Dependence in Panels. CESifo Working Paper 1229. Munich, Germany.

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.

Phillips, P. C. B. & Hansen, B. E. (1990). Statistical Inference in Instrumental Variables Regression with (1) Processes. Review of Economic Studies, 57, 99-125.

Phillips, P. C. B. & Moon, H. R. (1999). Linear Regression Limit Theory for Nonstationary Panel Data. Econometrica, 67(5), 1057-1111.

Soytas, U., Sari, R. & Ewing, B. T. (2007). Energy Consumption, Income, and Carbon emissions in the United States. Ecological Economics, 62, 482-489..

**SUMMARY**

The long run impact of special interest groups has investigated by many researchers in the literature. Some of these studies indicate that special interest groups have a distortion impact on economic growth while others couldn't find strong evidence to support this solution. This study aimed to revisit the long run relationship between special interest groups and economic growth, by following Olson's approach of special interest groups, for OECD countries during the period from 1990-2011 by applying both panel data techniques and time series analysis. According to the empirical findings of this study, the long run relationship has found among special interest groups and economic growth for OECD sample. In addition, the long run elasticity results of the variables were determined by econometric methods to find the direction of this relationship both for individual countries and OECD panel. The findings of OECD panel assert that a bell-shaped relationship exists between special interest groups and income level in the long run. This result implies that, an increase in special interest group activity has a negative impact on economic growth for OECD panel in the long run. On the other hand, the long run elasticity results of other dependent variables state that real gross fixed capital formation and interactive term has an additive role on income level while GINI coefficient and tax burden has an adverse impact on economic growth in the long run for OECD panel. Besides, the long run elasticities of each countries were also determined by using time series analysis in this study. Individual country results indicate that an increase in special interest groups activity restrained the economic growth in the long run in Austria, Canada, Denmark, Estonia, Iceland, Ireland, Norway, Poland and Sweeden while the opposite of this impact has determined for Finland, Germany, Japan, Slovak Republic, Spain and Turkey. According to these results, 28% of the sample supports the Olson's approach.