INSTİTUTİONAL CAPACİTY AND FOREİGN DİRECT INVESTMENTS: EVİDENCE FROM D-5 COUNTRİES

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ABSTRACT

Institutional capacity or multifactor productivity has comprised of the variables that affect the productivity differences of countries by demonstrating the differences of productivity, such as management practices, brand names, organizational change, general knowledge, network effects, spillovers from production factors, adjustment costs, economies of scale, the effects of imperfect competition and measurement errors. Institutional capacity expresses the increases in growth rate that cannot be explained with labor and capital productivity. In other words, the difference that cannot be explained with the sum of labor and capital productivity in growth rate emerges from the proper function of institutional capacity or its productivity. Foreign direct investments are that foreign investor constructs a physically production facility in the country. The countries that have the limited investment opportunities, have no capital or desire to increase their production seek to attract foreign direct investments. Theoretically, since the improvements in institutional quality will increase the productivity, this will cause the disappearance of the administrative problems for the arrival of foreign direct investments to the country as well. In other words, the improvements in the institutional capacity will pave the way for the improvement of investment environment as well. In this regard, the relationship between foreign direct investments and institutional capacity for the developed 5 countries (Canada, USA, Japan, Germany and France) in the period of 1990-2019 has been analyzed with panel VAR analysis in this study. According to the result of analysis, there is a long-termed cointegrated relationship between institutional capacity and foreign direct investments and a causal relationship from institutional capacity to foreign direct investments exists as well.

Keywords: Institutional Capacity, Multifactor Productivity, Foreign Direct Investments, D-5 Countries, Panel VAR analysis.

1. INTRODUCTİON AND LİTERATURE

Foreign direct investments can be expressed as the construction of an important production facility for the countries that have the limited investment opportunities, have no capital or desire to increase their production with new investment fields. Institutional variables that affect the job environment of the country and existing production conditions of that country have an importance for the arrival of foreign direct investments. In other words, there is a solid relationship between the existing institutional capacity of a country and foreign investments. Institutional capacity affects producers in all steps such as the arrival of foreign investors, process of production and terms of sale in the market. In this regard, since it has been predicted that the multifactor productivity will affect foreign investors heavily, the impact of the variables that have also been called as multifactor productivity such as management practices, brand names, organizational

change, general knowledge, network effects, spillovers from production factors, adjustment costs, economies of scale, the effects of imperfect competition and measurement errors on foreign direct investments will be analyzed in this study.

The concept that was called as institutional capacity in the literature has been described differently by the researches in a certain period of time. Although it has been defined with different names, institutional capacity is the sum of a series of executions, habits and behaviors that affect all the economic actors in one country in different scales and dominate decision making mechanisms. It is possible to address the common points related to the literature that establishes relationship between foreign direct investments and institutional capacity from the perspective of this study: There is a solid and long-termed relationship between institutional capacity and foreign investments. Along with the spillover effects (behavioral patterns of human, technology and information), foreign direct investments have generally positive effect on the countries. In this study, the expectation is that there is a long-termed relationship between institutional capacity and foreign direct investments and the improvements in institutional capacity increase foreign direct investments. The general discoveries of some studies in the literature about the topic are as below:

In their study, Haddad and Harrison (1993) analyzed whether foreign direct investments have a positive spillover effect. In the analysis that was made for the developing countries, the executions such as tax exemption and import tax exemption have a positive effect on foreign investors. Furthermore, it has been indicated that the production capacity of countries which have been developing with technology transfers increased as well.

In the study, Smarzynska (2002) researched whether foreign direct investments cause an increase for the general information levels of firms with the impact of spillover effects. However, an impact from foreign or domestic investments on the knowledge levels in the caliber of firms was not found.

In their study, Haskel et al. (2002) researched whether foreign direct investments have a productivity-enhancer effect on the firms. According to the result of analysis that was applied for United Kingdom in the years of 1973-1992, a causal relationship from foreign direct investments to productivity in firms was found.

Ng (2007) established a relationship between foreign direct investments and productivity in the study that the analysis was made for 14 Sub-Saharan African countries. Granger causality test was applied in the study and a causal relationship from foreign direct capital flows to productivity was found.

In their study, Contessi and Weinberger (2009) presented a guideline about empirical literature that correlated with foreign direct investments, productivity and growth. In the study, it was detected that foreign direct investments affect growth with productivity according to the obtained information from the literature.

Baltabaev (2013) established a relationship between foreign direct investments and total factor productivity in 46 countries for the period of 1974-2008 by using GMM model in the study. As a result of the analysis in the study, it was discovered that foreign direct investments have a weak but positive effect on productivity and when it was approached with technological development, the effect is more long-dated and strong.

In their study, Bouchoucha and Ammou (2015) researched the impact of political and institutional factors on foreign direct investments. According to the panel data analysis that was made in the period of 2002-2012 for MENA countries, political risk variable was statistically significant on foreign direct investments.

Özşahin (2016) researched whether the indicators of institutional quality affect foreign direct investments in the study. ARDL method was preferred in the study and the relationship between institutional quality-economic risk level and foreign direct investments was analyzed. As a result

of the analysis, it was discovered that a well-constituted institutional structure and low economic risk have a positive effect on foreign direct investments.

In their study, Bonga-Bonga and Phume (2017) analyzed the relationship between total factor productivity and foreign direct investments in South Africa in terms of technological developments and R & D activities. According to the results of analysis that was applied in the study, foreign direct investments increased total factor productivity for South Africa.

In their study, Malikane and Chitambara (2018) preferred GMM method for 45 African countries in the period of 1980-2012. In the study, the relationship between total factor productivity and foreign direct investments in the relevant countries researched with this method. According to the two-stage applied model, the positive but weak effect of foreign direct investments on total factor productivity was discovered in the first stage. When technology limit and revenue gap were added to the model as relative effects, it was discovered that especially foreign technological investments have a positive effect on productivity in long-term.

Li and Tanna (2019) researched the relationship between total factor productivity and foreign direct investments for 51 countries in the years of 1984-2010. As a result of their study, they discovered a weak relationship between foreign direct investments and total factor productivity. In afterwards of the study, however, they determined a relationship from institutional effects to foreign direct investments as a result of the addition of human capital and R & D activities and institutional effects.

A consensus can be found in the literature about the variables such as R & D activities, human capital, technology and information network have a positive effect on foreign investments. This study will analyze the effect of institutional quality on foreign direct investments by describing institutional quality with administrative variables such as management practices, brand names, organizational change, general knowledge, network effects, spillovers from production factors, adjustment costs, economies of scale, the effects of imperfect competition and measurement errors.

2. DATASET AND METHOD

Panel VAR analysis has been preferred as an analysis method in the study. Panel data analysis is superior in case of gathering both time series and cross sections. Panel VAR approach, on the other hand, is the adapted version of causal approach into panel data analysis. A relationship has been established between institutional capacity and foreign direct investments in 5 developed countries (Germany, USA, France, Japan and Canada) for the period of 1990-2019 with this analysis in the study. In order to obtain the most significant results for the selection of the countries, the consistency of data has an important role. GDP is one of the variables that has been used in the analysis. It, however, cannot be explained with the variables in institutional capacity, labor force of growth and the changes in capital inputs which is the reason why GDP is estimated with a part of growth. Therefore, in words of one syllable, if the labor and capital inputs remained unchanged, any change in the output would reflect the changes in multifactor productivity. The data of institutional capacity have been accessed from OECD databank. The amounts of foreign direct investments through World Bank current exchange rate of dollar have been used for another variable, foreign direct investments.

3. RESULTS OF ANALYSİS

Before the panel causality test, stability analyses have been applied to the series as the first stage of the model. In this regard, unit root tests that have been used in the literature most frequently have been applied for both institutional capacity (IC) and foreign direct investments (FDI). According to the unit root test results, series found stable in the values of level. Unit root test results can be found in Table and Table 2.

Table 1: Panel Stability Test for Foreign Direct Investment (FDI) (Foreign direct investments are stable in the values of level)

Panel unit root test: Summary				
Series: FDI				
Sample: 1990-2019				
Exogenous variables: Individual effects				
User-specified lags: 1				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.67075	0.0038	5	140
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.06594	0.0194	5	140
ADF - Fisher Chi-square	19.1411	0.0385	5	140
PP - Fisher Chi-square	24.4276	0.0065	5	145
** Probabilities for Fisher tests are computed by using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.				

Table 2: Panel Stability Test for Institutional Capacity (IC) (Institutional capacity is stable in the values of level)

Panel unit root test: Summary				
Series: IC				
Sample: 1990-2019				
Exogenous variables: Individual effects				
User-specified lags: 1				
Newey-West automatic bandwidth selection and Bartlett kernel				
Balanced observations for each test				
Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.12575	0.0000	5	140
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-5.74674	0.0000	5	140
ADF - Fisher Chi-square	52.0402	0.0000	5	140
PP - Fisher Chi-square	89.6004	0.0000	5	145
** Probabilities for Fisher tests are computed by using an asymptotic Chi-square distribution. All other tests assume asymptotic normality				

Cointegration test has been developed in order to research whether the series, that are stable in values of level, act in unison in long-term. The question whether variables have affected from similar shocks has been researched with the aid of Pedroni cointegration test. Obtained discoveries demonstrate that cointegrated equilibrium has been found in 0,05 significant level. The results of cointegration test can be seen in Table 3.

Table 3: Panel Cointegration Test for Institutional Capacity and Foreign Direct Investments

Pedroni Residual Cointegration Test
Series: IC and FDI
Sample: 1990 2019
Included observations: 150
Cross-sections included: 5
Null Hypothesis: No cointegration
Trend assumption: No deterministic trend
User-specified lag length: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Alternative hypothesis: common AR coefs. (within-dimension)

	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	0.082050	0.4673	-0.782927	0.7832
Panel rho-Statistic	-7.699154	0.0000	-6.273987	0.0000
Panel PP-Statistic	-10.37101	0.0000	-8.572512	0.0000
Panel ADF-Statistic	-6.648379	0.0000	-6.244061	0.0000
Alternative hypothesis: individual AR coefs. (between-dimension)				
	Statistic	Prob.		
Group rho-Statistic	-5.944128	0.0000		
Group PP-Statistic	-13.10905	0.0000		
Group ADF-Statistic	-6.593984	0.0000		
Cross section specific results				
Phillips-Peron results (non-parametric)				
Cross ID	AR(1)	Variance	HAC	Bandwidth	Obs
Canada	0.286	0.578925	0.495892	7.00	29
USA	0.086	0.399830	0.506406	2.00	29
Japan	-0.332	1.048135	0.808761	2.00	29
France	-0.090	0.666002	0.248807	8.00	29
Germany	0.016	1.071441	0.076936	28.00	29
Augmented Dickey-Fuller results (parametric)				
Cross ID	AR(1)	Variance	Lag	Max lag	Obs
Canada	0.092	0.544403	1	--	28
USA	0.311	0.373481	1	--	28
Japan	-0.676	1.012939	1	--	28
France	-0.250	0.633003	1	--	28
Germany	-0.209	1.009383	1	--	28

According to the result of panel causality test that has been made in order to detect the way of relationship among the variables, there is a unilateral relationship from institutional capacity to foreign direct investments. Dumitrescu-Hurlin panel causality test results can be seen in Table 4.

Tablo 4: Panel Causality Tests Result

Pairwise Dumitrescu-Hurlin Panel Causality Tests			
Sample: 1990-2019			
Lags: 2			
Null Hypothesis:	W-Stat.	Zbar-Stat.	Prob.
FDI does not homogeneously cause IC	1.59897	-0.54881	0.5831
IC does not homogeneously cause FDI	4.79016	2.41201	0.0159

4. CONCLUSİON

Institutional capacity is a significant variable that determines the environment of transact business in one country. Institutional capacity harbors several variables inside of itself such as branding process, effects of business networks and administration effects. Due to this complicated structure, institutional capacity affects the arrival process and existing situation of foreign investors. In this regard, the relationship between institutional capacity and foreign direct investments has been analyzed specific to 5 countries. First result of analysis is the existence of a long-termed, cointegrated relationship between institutional capacity and foreign direct investments. In other words, institutional capacity and foreign direct investments affect each other in long-term. The second discovery of analysis is that there is a causal relationship from institutional capacity to foreign direct investments. In other words, the improvements in institutional capacity have an enhancer effect on foreign direct snvestments. In this form, the results of the study have a quality which fits with literature. Moreover, study has a contribution to literature by defining institutional capacity with administrative changes.

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