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Turkish Studies - Economics, Finance, Politics

eISSN: 2667-5625

INTERNATIONAL BALKAN UNIVERSITY
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Research Article / Araştırma Makalesi

Social Capital and Export Performance: An Empirical Analysis Example for Turkish Economy

Sosyal Sermaye ve İhracat Performansı: Türkiye Ekonomisi İçin Ampirik Bir Analiz Örneği

Oktay Kızılkaya*

Abstract: The impact of social capital on economies has been one of the topics discussed recently. It is accepted that in literature social capital increases the productivity of society and creates positive effects on economic developments. Social capital is also considered as a complementary element of physical and human capital. The aim of this study is to analyze the impact of social capital on export performance with monthly data for Turkey for 2006-2014 period. In the first stage of the research, social capital index is developed with principal component analysis (PCA). Seven basic indicators are used in the calculation of the social capital index. The data set on the relevant indicators have been obtained from the International Country Risk Guide (ICRG). Indicators' ratings which representing social capital include democratic accountability (DA), contract enforceability (CONT), law and order (LO), economic risk assessment (ER), financial risk assessment (FR), political risk assessment (PR), and government stability (GOV). In the second stage of the research, the effect of social capital on exports examined by using the cointegration test. Test results show that social capital positively affects export performance and this is one-way relationship from social capital to export. These results indicate that social capital has a significant effect on export performance. The main recommendation of the study is to consider practices that will improve social communication and social trust within the scope of economic policies. Social capital is considered as an important strategic resource that enables companies to compete in international markets.

Structured Abstract: The social capital concept which was initially used by Lyda Hannifan (1916) firstly, has been one of the debated issues in the economic literature in recent years. In the evolution of this concept, Bourdieu (1980; 1986), Coleman (1988; 1990), Putnam et al. (1993) and Fukuyama (1995; 1999; 2002) have had significant contributions. For instance, while Bourdieu (1980; 1986) describes social capital as longevously network that consists of institutionalized acquaintance and by means of these acquaintances; Coleman (1988; 1990) describes social capital as formation facilitating actions of institutions and individuals of social structure. Putnam et al. (1993), explains social capital as organization features like trust, norms and networks which enable cooperation and increase of productivity of society. Fukuyama (1995; 1999; 2002) states social capital as the ability of individuals in groups and organizations to move together for common purpose, norms that allow cooperation among individuals and all informal values. In addition to these definitions, social capital is a factor which decreases transaction costs in economic field and improves the essential relations in politic field for the progress of democracy and management (Putnam, 2001). In a similar approach the World Bank (1997),

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Cite as/ Atıf: Kızılkaya, O. (2021). Social capital and export performance: An empirical analysis example for Turkish economy. *Turkish Studies - Economy*, *16*(1), 349-357. https://dx.doi.org/10.47644/TurkishStudies.47561
Received/Geliş: 12 November/Kasım 2020 *Checked by plagiarism software*
Accepted/Kabul: 20 December/Aralık 2020 **Published/Yayın:** 30 March/Mart 2021

considers social capital as subsidiary factor for economic and social development. OECD (2001), identifies social capital as norm, trust and communication network which facilitates coordination among civil society organizations, public enterprises and individuals that constitute society. It is stated that, by means of relations based on trust between individuals and institutions, reproductivity of society and economic efficiency will take place.

Social capital is also considered as a subsidiary component of physical and human capital. In institutionalized countries where relations among individuals rely on trust, capital accumulations of savings and transmission of these savings to investments get easier; progress of education and health spending are high. Therefore, social capital affects economic developments through contributions to physical and human capital. Kormendi and Meguire (1985), Baumol (1986), Grier and Tullock (1989), Barro (1991) and Mankiw et al. (1992) are the first studies to analyze the effects of factors such as culture, institutions and trust on economic performance. Subsequent studies which evaluating social capital as an important factor in economic development and increase of production, dealt with the issue in the context of productivity. With reference to Knack (1999), progress of social links paves the way for workableness of trust contracts among individuals and decrease transaction costs by avoiding uncertainty. Social capital strengthens democratic structure and improves efficiency and merit in public administration to enhance eligibility of economic policies (Almond & Verba, 1963; Easterly & Levine, 1997). In the same vein, in countries with high level of trust, it is expected that growth and investments will be high as well; organizations in these societies adopt more easily to new technologies (Knack, 1999; Zak & Knack, 2001).

In literature, several empirical studies reveal that social capital has an important effect on economic development/growth (Knack & Keefer, 1997; Temple & Johnson, 1998; Whiteley, 2000; Annen, 2001; Casey & Christ, 2005; Berggren et al., 2008). Nevertheless, empirical studies of the social capital literature investigating factors such as innovation, trade, industry and foreign investment which have critical importance for economic developments are insufficient. This study aims to contribute to literature by analyzing the effect of social capital on export in Turkey for 2006-2014 era using monthly data. In the first phase of this research social capital index is developed by principal component analysis. After that, social capital index effect on export performance was estimated with unit root and cointegration analysis. Industrial production is included as a control variable in to model that is to be estimated. Unit root test results indicate that series used in the analysis is stationary at first difference. Cointegration results reveal a long run relation among social capital, industrial production and export. Coefficients that belong to cointegration relation is estimated with normality method. Accordingly, the social capital effect on export is positive. In other words, an increase in social capital level in Turkey for the era of 2006-2014 increased export value. Correlatively, the industrial production effect on export performance is found positive. According to the related literature, developments which strength trust and increase communication between individuals and institution, make contributions to the economic developments by increasing social capital level. Empirical findings obtained in this study supports the findings of the related literature. As a consequence, main purpose of this study is to consider enforcements which will enhance social communication and trust in the scope of economic policies.

Keywords: International Economics, social capital, export, cointegration, principal component analysis, Turkey.

Öz: Sosyal sermayenin ekonomiler üzerindeki etkisi son dönemlerde tartışılan konular arasında yer almaktadır. Literatürde sosyal sermayenin toplumun verimliliğini artırdığı ve ekonomik gelişmeler üzerinde pozitif etkiler yarattığı kabul edilmektedir. Sosyal sermaye ayrıca fiziki ve beşerî sermayenin bir tamamlayıcı unsuru olarak kabul edilmektedir. Bu çalışmanın amacı 2006-2014 dönemi aylık veriler ile sosyal sermayenin ihracat performansı üzerindeki etkisini Türkiye için analiz etmektir. Araştırmanın ilk aşamasında temel bileşenler analizi (TBA) ile sosyal sermaye endeksi geliştirilmiştir. Sosyal sermaye endeksinin hesaplanmasında yedi temel gösterge kullanılmıştır. İlgili göstergelere ait veriler Uluslararası Ülke Risk Rehberinden (ICRG) elde edilmiştir. Sosyal sermayeyi temsil edecek göstergeler demokratik hesap verilebilirlik (DA), sözleşme uygulanabilirliği (CONT), kanun ve düzen (LO), ekonomik risk değerlendirmesi (ER), finansal risk değerlendirmesi (FR), politik risk değerlendirmesi (PR) ve hükûmet istikrarına (GOV) ait reytinglerdir. Araştırmanın ikinci aşamasında ise sosyal sermayenin ihracat üzerindeki etkisi eşbütünleşme testi ile incelenmiştir. Test sonuçları sosyal sermayenin ihracat performansını pozitif yönde etkilediğini ve bu ilişkinin sosyal sermayeden ihracata doğru tek yönlü olduğunu göstermektedir. Bu sonuçlar sosyal sermayenin ihracat

performansı üzerinde anlamlı bir etkisi olduğunu işaret etmektedir. Çalışmanın temel önerisi toplumsal iletişim ve toplumsal güveni geliştirecek uygulamaların ekonomi politikaları kapsamında dikkate alınmasıdır. Sosyal sermayenin firmalara uluslararası piyasalarda rekabet etme imkânı sağlayan önemli bir stratejik kaynak olduğu düşünülmektedir.

Anahtar Kelimeler: Uluslararası İktisat, sosyal sermaye, ihracat, eşbütünleşme, temel bileşenler analizi, Türkiye.

1.Introduction

The social capital concept which was initially used by Lyda Hannifan (1916) firstly, has been one of the debated issues in the economic literature in recent years. In the evolution of this concept, Bourdieu (1980; 1986), Coleman (1988; 1990), Putnam et al. (1993) and Fukuyama (1995; 1999; 2002) have had significant contributions. For instance, while Bourdieu (1980; 1986) describes social capital as longevously network that consists of institutionalized acquaintance and by means of these acquaintances; Coleman (1988; 1990) describes social capital as formation facilitating actions of institutions and individuals of social structure. Putnam et al. (1993), explains social capital as organization features like trust, norms and networks which enable cooperation and increase of productivity of society. Fukuyama (1995; 1999; 2002) states social capital as the ability of individuals in groups and organizations to move together for common purpose, norms that allow cooperation among individuals and all informal values. In addition to these definitions, social capital is a factor which decreases transaction costs in economic field and improves the essential relations in politic field for the progress of democracy and management (Putnam, 2001). In a similar approach the World Bank (1998), considers social capital as subsidiary factor for economic and social development. OECD (2001), identifies social capital as norm, trust and communication network which facilitates coordination among civil society organizations, public enterprises and individuals that constitute society. It is stated that, by means of relations based on trust between individuals and institutions, reproductivity of society and economic efficiency will take place.

Social capital is also considered as a subsidiary component of physical and human capital. In institutionalized countries where relations among individuals rely on trust, capital accumulations of savings and transmission of these savings to investments get easier; progress of education and health spending are high. Therefore, social capital affects economic developments through contributions to physical and human capital. Kormendi and Meguire (1985), Baumol (1986), Grier and Tullock (1989), Barro (1991) and Mankiw et al. (1992) are the first studies to analyze the effects of factors such as culture, institutions and trust on economic performance. Subsequent studies which evaluating social capital as an important factor in economic development and increase of production, dealt with the issue in the context of productivity. With reference to Knack (1999), progress of social links paves the way for workableness of trust contracts among individuals and decrease transaction costs by avoiding uncertainty. Social capital strengthens democratic structure and improves efficiency and merit in public administration to enhance eligibility of economic policies (Almond & Verba, 1963; Easterly & Levine, 1997). In the same vein, in countries with high level of trust, it is expected that growth and investments will be high as well; organizations in these societies adopt more easily to new technologies (Knack, 1999; Zak & Knack, 2001).

According to Fukuyama (1995a); confidence is essential for successful economic performance in developed economies. Trust plays an important role as a factor that facilitating complex transactions in the issuance of contracts in a well-functioning corporate system while cooperating in the market. As a result of these, while social capital enables the reduction of production costs and increase in productivity, this capital allows the trading volume to increase in economy (Annen, 2003). For this reason the socail capital in terms of economic, is accepted as the reflection of development in trust-based relationships between people and institutions and in economic efficiency and production.

In literature, several empirical studies reveal that social capital has an important effect on economic development/growth (Knack & Keefer, 1997; Temple & Johnson, 1998; Whiteley, 2000; Anne, 2001; Casey & Christ, 2005; Berggren et al., 2008). Nevertheless, empirical studies of the social capital literature investigating factors such as innovation, trade, industry and foreign investment which have critical importance for economic developments are insufficient. This study aims to contribute to literature by analyzing the effect of social capital on export in Turkey for 2006-2014 period using monthly data. As a consequence, main purpose of this study is to consider enforcements which will enhance social communication and trust in the scope of economic policies. Within this context, rest of this study is organized as follows: in the second chapter, after the introduction, social capital index will be estimated with principal component analysis (PCA) method. In the third chapter, model, data set and econometric method will be explained. In the fourth chapter, research findings will be given. In the conclusion chapter, these findings will be discussed and recommendations will be presented within the scope of policy.

2. Social Capital Index

In this study, by using seven basic indicators with the method of PCA social capital index will be estimated. Data that belong related indicators are attained from International Country Risk Guide (ICRG). Indicator which will represent social capital are as below: democratic accountability (DA), contract applicability (CONT), law and order (LO), economic risk consideration (ER), financial risk consideration (FR), politic risk consideration (PR) and ratings belong to government stability (GOV).

PCA is an analysis method that allow to explain important parts of existing variables with one index which is a relation that can be explained by a large number of variables have relation among. Under favor of this method, more than one indicators can be evaluated as one indicator. Before PCA analysis, related indicators are subjected to transformation with the standardization method in manner of combined. In this way, unit values among for every indicator are removed. After that, coherence of data for PCA analysis is estimated with Kaiser-Meyer-Olkin (KMO) and Bartlett tests. Test results support the relation among variables and reveals that there is no inconveniency for constituting index (See Table 1).

For PCA analysis, factors that explain maximum variance among variables are estimated and from estimated factors' components which eigenvalue is bigger than 1 and explanation rate is highest are considered. PCA results are reported in Table 1.

Table 1: Principal Component Analysis Results

	PCA 1	PCA 2	PCA 3	PCA 4
Eigenvalue	4.29	1.05	0.99	0.32
Variance Percentage (%)	0.61	0.15	0.14	0.04
Cumulative Percentage (%)	0.61	0.76	0.90	0.94
Variables	Vector 1	Vector 2	Vector 3	Vector 4
DA	0.45	-0.08	-0.06	0.42
CONT	0.42	0.12	0.21	-0.41
LO	0.42	-0.04	-0.28	0.54
ER	-0.07	0.90	0.30	0.30
FR	-0.21	-0.40	0.75	0.41
PR	-0.46	-0.01	0.15	-0.05
GOV	0.40	-0.02	0.41	-0.28
Sampling sufficiency measurement				
Kaiser-Meyer-Olkin	0.77			
Bartlett Chi-square	153.57			
Bartlett Probability	0.00			

According to PCA results, eigenvalue of first principal component is bigger than 1, explanation ratio of first principal component is %61 and more prospering to the others. Besides, weights of indicators that will constitute social capital index meet the economic expectations. Hereunder, sign of weights belongs to democratic accountability (DA), contract applicability (CONT), law and order (LO), ratings belong to government stability (GOV) is positive and sign of weights belongs to economic risk consideration (ER), financial risk consideration (FR), politic risk consideration (PR) is negative. Therefore, in this study for social capital index, first component is considered.

3. Model, Data Set and Method

3.1. Model and Data Set

In this study the effect of social capital on export performance will be investigated with monthly data for 2006-2014 period. Industrial production index is included as a control variable to the model. Export and industrial production data used in the analysis are obtained from International Financial Statistic (IFS) that published by International Monetary Fund. All of the data's napierian logarithms' were taken and they were seasonally adjusted. Model which is going to be estimated is shown in equation with number (1).

$$Export_t = = \beta_0 + \beta_1 Social_t + \beta_2 IP_t + \varepsilon_t \quad (1)$$

In equation with number (1) Export represents export values (million $), Social represents social capital index, IP represents ındustrial production, t represents time period and ε represents error term. β_0 indicates fixed, β_1 and β_2 respectively indicate elasticity coefficients of the effect of social capital and industrial production on export.

3.2. Method

In this study, primarily, stationary of series belong to variables will be tested for econometric analysis. Because in estimations which is done with nonstationary series, spurious regression problem occurs (Granger & Newbold, 1974). For that reason, traditional unit root tests developed by Dickey and Fuller (1981) and Philips and Perron (1988) are frequently used. In consequence of unit root tests, it is generally observed that series are not stationary on level values but they are stationary at first difference values. Cointegration analysis is needed for this situation to estimate the relation among variables. In case of cointegration relation, spurious regression problem disappears and long run coefficients can be estimated.

Cointegration analysis refer that if series which belong to variables are not stationary, there can be a stationary linear combination of these relations. If there exist a stationary linear combination, it can be specified econometrically. In case of this relation, at the estimation of coefficients belong to variables, spurious regression problem disappears. Cointegration methods developed by Engle and Granger (1987), Johansen (1988) and Johansen and Juselius (1990) are frequently used. Within this context, cointegration method developed by Johansen and Juselius (shortly JJ, 1990) is preferred. Due to JJ testing adopt all variables in the model endogenously, VAR model is estimated and by using information criterions such as Akaike Information Criterion (AIC), Schwarz (SC), Final Prediction Error (FPE) and Likelihood Ratio (LR) and HQ (Hannan-Quinn Information Criterion) optimal lag length is determined. Also, in determined optimal lag length there should not be autocorrelation and heteroscedasticity problem. After determination of optimal lag length, maximum eigenvalue statistics trace statistics tests will be used which developed by Johansen and Juselius (1990). Trace test states null hypothesis as "there are cointegrating vectors mostly as many as r". Maximum eigenvalue test r+1 amount alternative hypothesis in lieu null hypothesis as "there are cointegrating vectors as many as r". In the wake of tests, obtained λtrace and λmax statistic values which are going to be compared by critical values are formed by JJ.

If test results refer an existence of cointegration relation, in the next step long run coefficients will be estimated by doing normalizing process (multiplication with -1). To determine the significancy of estimation results t statistics are benefitted.

4. Empirical Findings

Unit root test results are presented in Table 2. Hereunder, level values of series contain unit root and they are not stationary. It is observed that, series at first difference are stationary after unit root tests.

Table 2: Unit Root Test Results

Variables	ADF	PP
Export	-2.20	-2.17
Social	-1.20	-0.79
IP	-1.34	-2,51
Δexport	-10.88*	-10.87*
Δsocial capital	-12.65*	-23.14*
Δindustry	-21.01*	-22.35*
Critical Values		
%1	-3.49	-3.49
%5	-2.88	-2.88
%10	-2.58	-2.58

Note: *, indicates %1 significance level.

Johansen and Juselius (1990) cointegration results are presented in Table 3. Optimal lag length is selected 3 and for this lag length autocorrelation and changing variance are not confirmed. According to test results, existence of a relation between trace and maximum eigenvalue statistics is supported at %5 significance level.

Table 3: Johansen and Juselius (1990) Cointegration Results

Null Hypothesis (H_0)	Alternative Hypothesis (H_1)	Trace Statistics	Critical Value (%5)	Null Hypothesis (H_0)	Alternative Hypothesis (H_1)	Maximum Eigenvalue Statistics	Critical Value (%5)
r=0	r>0	34.99	29.79*	r=0	r=1	22.98*	21.13
r≤1	r>1	12.01	15.79	r=1	r=2	11.09	14.26
r≤2	r>2	0.01	3.71	r=2	r=3	0.01	3.84

Note: *, indicates %5 significance level.

After determination of cointegration relation, the estimation of long run coefficients which reveal the effect of social capital and industrial production on export performance is estimated. Estimation results are presented in Table 4. Considering estimation results; (i) effect of social capital on export is significant at %1 significance level; sign of coefficient (β_1) is positive. Accordingly, an increase in level of social capital affects export performance positively. (ii) Coefficient belongs to industrial production that included as a control variable is positive and significant at %1 level of significance. In reference to this estimation an increase in industrial production affects export performance positively.

Table 4: Normalized Cointegration Vector (Dependent Variable: Export)

Normalized Coefficients	Export	Social	IP
	1	-0.35[a] (0.08)	-17.95[a] (3.54)
Export = f (Social, IP)			
Export = 26.94 + 0.35Social + 17.95IP			

Not: *, Normalizing process is realized by multiplying reverse sign (-1) of endogenous variable.
[a], Indicates statistically significance at %1 level of significance.

Reverse roots and cointegration graphics of AR characteristic polynomial is demonstrated in Figure 1 for estimated model. All of the roots are in circle and have symmetrical projection. This situation confirms that model has no problem about stationary, cointegration relation has normal distribution and model works with ideal mathematics form. When evaluated cointegration graphics of system, it is seen that cointegration relation fluctuates around 0. This situation reveals that linear components of variables which is in the model and not stationary one by one is stationary.

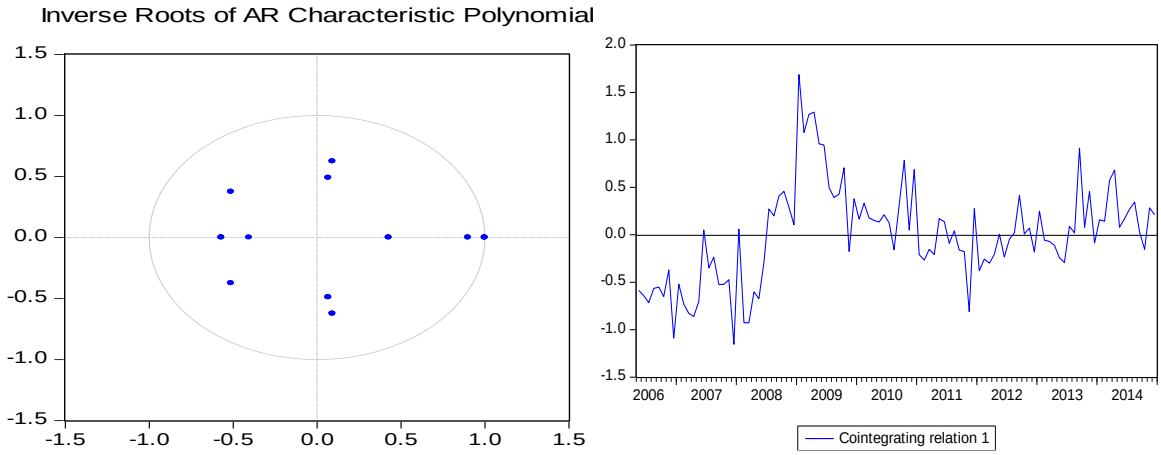

Figure 1: Reverse Roots and Cointegration Graphics of AR Characteristic Polynomial

Conclusion

It is necessary to evaluate the increase in the export performance of countries beyond traditional approaches. Globalization along with technological developments and trade liberalization have led to an increase in the export activities of countries. However, in order, for the economies of the countries to develop their competitive power, they must put forward the factors that will push their companies to internationalization. Social capital is an important resource in this respect, especially in reducing transaction costs and increasing productivity. Djinar etc. (2016), Michael etc. (2016), Easmon etc. (2019) study concluded that social capital has a positive effect on export performance. Social capital is considered as an important strategic resource which enables companies to compete in international markets.

In this study the effect of social capital on export performance in Turkey for 2006-2014 period analyzed with monthly data. First of all, in this study social capital index is estimated with PCA analysis. After that, social capital index effect on export performance was estimated with unit root and cointegration analysis. Industrial production is included as a control variable to model will be estimated. Unit root test results indicate that series used in the analysis is stationary at first difference. Cointegration results reveal a long run relation among social capital, industrial production and export. Coefficients that belong to cointegration relation is estimated with normality method. Accordingly, the social capital effect on export is positive. In other words, an increase in social capital level in Turkey for the period of 2006-2014 increased export value. Correlatively, the industrial production effect on export performance is found positively also.

Increase of social capital is also an important factor in maintaining the institutional order in the economy. Ensuring the institutional order accelerates the adaptation of factors such as the elimination of bureaucracy, the rule of law, and the applicability of contracts to economic life. According to the related literature, developments which strength trust and increase communication between individuals and institution, make contributions to the economic developments by increasing social capital level. Empirical findings obtained in this study back up the related literature. As a

consequence, main purpose of this study is considering enforcements which will enhance social communication and trust in the scope of economic policies.

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