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## IMPACT OF SOCIAL CAPITAL ON THE CORRUPTION: AN EMPIRICAL STUDY

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### **Abstract:**

This study investigates the relationship between corruption and social capital in the sample of thirty-nine developed and developing countries. The basic hypothesis of this study is that the incidence of corruption is lower in nations with higher levels of social capital and higher in nations with lower levels of social capital. Empirical evidence based on the cross-country data for the thirty-nine countries supports this hypothesis.

### **Özet:**

#### **Sosyal Sermayenin Yolsuzluk Üzerine Etkisi: Ampirik Bir Çalışma**

Bu çalışma, gelişmiş ve gelişmekte olan otuzdokuz ülke örnekleminde yolsuzluk ile sosyal sermaye arasındaki ilişkiyi incelemektedir. Çalışmanın temel hipotezine göre, yolsuzluk, sosyal sermayesi yüksek olan olan ülkelerde düşük, düşük olan ülkelerde ise yüksektir. Otuzdokuz ülke verisine dayanan ampirik bulgu bu hipotezi desteklemektedir.

### **INTRODUCTION**

The literature on the determinants of corruption is rapidly expanding. In recent years especially after 1995 there has been numerous empirical studies about causes of corruption. Lack of democracy (Paldam, 1999b; Treisman 2000; Montinola and Jackman, 2002), public sector wage level (Rijkeghem and Weder, 2001; Treisman, 2000), ethnolinguistic fractionalization (Treisman,

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**Anahtar Sözcükler:** Yolsuzluk, sosyal sermaye.

2000), openness (Treisman, 2000), income distribution (Husted, 1999; Barreto, 2001), level of economic development (Paldam, 1999b; Husted, 1999; Treisman, 2000; Montinola and Jackman, 2002), government size (LaPalombara, 1994; Husted, 1999; Montinola and Jackman, 2002), bureaucracy and cultural values (Getz et al., 2001; Husted, 1999) are counted as the determinants of corruption.

Several recent empirical studies investigate cultural determinants of corruption across nations. These studies argue that apart from economic and political factors, social factors such as religion (Paldam, 1999a; Treisman, 2000), gender (Swamy et al., 2001) and social capital are also important determinants of corruption.

Empirical studies related to corruption and social capital nexus is quite a new undertaking. La Porta et al. (1997: 334-335) examined the role of social capital in contributing to the level of corruption in 33 countries. They argue that social capital can be an effective tool for reducing corruption, since it helps bureaucrats to better cooperate with each other and with private actors. Their argument is verified by their empirical evidence. They found that holding per capita GNP constant, a standard-deviation increase in trust raises anti-corruption score by 0.3 points.

The purpose of this paper is to investigate relationship between corruption and social capital across 39 countries. The rest of the paper is organized as follows: Section I presents linkages between corruption and social capital; Section II provides data sources, methodology and model; the empirical results are reported in Section III; and the last section concludes.

## **I. LINKAGES BETWEEN CORRUPTION AND SOCIAL CAPITAL**

Social capital is popularly defined as “the features of social organizations such as networks, norms and social trust that facilitate coordination and cooperation for mutual benefit” (Putnam, 1995: 67). Putnam (2000: 19) describes physical, human and social capital as follows:

*Whereas physical capital refers to physical objects and human capital refers to the properties of individuals, social capital refers to connections among individuals - social networks and the norms of reciprocity and trustworthiness that arise from them.*

According to Woolcock (2001: 13) social capital “refers to the norms and networks that facilitate collective action”. Social capital consists of the stock of

active connections among people: the trust, mutual understanding, and shared values and behaviors that bind the members of human networks and communities and make cooperative action possible. (Cohen and Prusak, 2001: 4). According to the World Bank, social capital refers to the public, private, and non-profit organizations and associations as well as the relationships and norms (such as laws, traditions, and personal networks) that shape the quality and quantity of a society's social interactions. Social capital is not just the sum of the institutions which underpin a society - it is the glue that holds them together ([www.worldbank.org/poverty/scapital/whatsc.htm](http://www.worldbank.org/poverty/scapital/whatsc.htm)).

Fukuyama (1999: 16) stated that :

*Social capital is an instantiated set of informal values or norms shared among members of a group that permits them cooperate with one another. If the members of the group come to expect that others will behave reliably and honestly, then they will come trust one another. Trust acts like a lubricant that makes any group or organization run more efficiently.*

Corruption is dishonest behavior that violates the trust placed in a public official. It involves the abuse of a public position or roles for private benefit. Corruption takes many forms and exists in all societies. Apart from its negative macroeconomic consequences (reducing economic growth, investment, increasing income inequality, distorting markets and allocation of resources etc.), it also undermines national integration. Corruption not only wastes resources by distorting government policies away from the interests of the majority, it also generates apathy and cynicism among citizens, makes laws dysfunctional, and contributes to a rise in crime (Soubotina and Sheram, 2000: 98).

Impact of social trust on economic performance occurs in two major levels namely micro-economic and macro-political. At the micro-economic level social trust can reduce transaction costs and enforce contracts. Abundant social capital considerably lowers the costs of doing business and increases productivity by promoting trust, coordination, and cooperation at all levels (Knack, 2000: 1). Whiteley (2000: 443) pointed out that:

*If widespread levels of citizen trust exists in society, this serves to reduce transaction costs in the market economy, it helps to minimize the deadweight burdens of enforcing and policing agreements, and holds down the diseconomies of fraud and theft. Thus, it can be argued that trust greatly facilitates economic and social relationships.*

At the macro level social trust can support democratic governance, enhance efficiency and honesty of public administration, development and quality of economic policies (Knack, 2000: 1). Arrow (1972: 357) argued that:

*Virtually every commercial transaction has within itself an element of trust, certainly any transaction conducted over a period of time. It can be plausibly argued that much of the economic backwardness in the world can be explained by the lack of mutual confidence.*

Are high-trust nations less corrupt than low-trust nations? Can social capital which is measured by the trust level reduce corruption? According to Knack (2000: 2), citizens of the higher-trust nations can spend less in order to protect themselves from being exploited in economic transactions. Furthermore, he argues that “individuals in high-trust societies are also likely to divert fewer resources to protecting themselves – through tax payments, bribes, or private security services - from unlawful violations of their property rights”(2000: 2). Empirical findings of Knack and Keefer (1997) and La Porta et al. (1997) indicate that higher trust level leads to better government performance (less corruption and less bureaucracy). Cohesive and high-trust societies may be better at keeping their governments honest, but the honesty and efficiency of government officials can affect trust and social cohesion in turn (Knack, 2000: 3). Drobak, (1998: 103) and Gambetta, (1988: 158-63) argued that if government leaders, judges and bureaucrats are corrupt, market participants can more easily justify and rationalize their own dishonest behavior. From the above arguments the following hypothesis can be proposed:

*The incidence of corruption is lower in nations with higher levels of social capital and higher in nations with lower levels of social capital.*

## II. DATA, METHODOLOGY AND THE MODEL

This paper tests the relationship between corruption and social capital. Empirical analysis of this paper is based on a data set of corruption indices and their potential determinants in 39 countries. List of countries is indicated in Appendix 1. This study basically states that corruption is a function of social capital, bureaucracy, income distribution (gini coefficients), government size (measured by government consumption as a percentage of GDP), ethnolinguistic fractionalization and rule of law.

The relationship between corruption and social capital is estimated by regressing the following equation.

$$C_i = \alpha_0 + \alpha_1 S_i + \alpha_2 K_i + \varepsilon_i \quad (1)$$

Where  $i$  indexes the countries in the sample,  $C_i$  denotes the corruption indexes,  $S_i$  represents social capital,  $K_i$  is a vector of control variables and  $\varepsilon_i$  is an error term. Income distribution (Gini coefficients), ethnolinguistic fractionalization, government size, bureaucracy and rule of law are used as control variables. The basic hypothesis to be tested here is whether  $\alpha_1 = 0$  or not in equation (1).

Two different corruption indices are used as the dependent variables. The first one is, Transparency International's (TI) 1998, 1999 Corruption Perception Index (CPI). TI's corruption perception indices are based on a "poll of polls" indicating impressions of business people, local population of relevant countries and risk analyst who have been surveyed. CPI is scaled from 0 (high corruption) to 10 (low corruption).

Second one is the International Country Risk Guide (ICRG) corruption index. It indicates the opinion of analysts on each country regarding the extent to which high government officials are likely to demand special payments, and illegal payments generally expected throughout lower levels of government in the form of bribes connected with import and export licenses, exchange controls, tax assessment, policy protection or loans. It ranks countries on a scale from 6 to 0. A score of 6 denotes lowest corruption, while 0 indicates the highest corruption level. ICRG's corruption index is averaged for 1991-97 period.

Social trust has been used in many empirical studies as a proxy for approximating levels of social capital. The World Values Survey (WVS) asked question on trust like "generally speaking, would you say that most people can be trusted or that you can not be too careful in dealing with people?" in 1981, 1991 and 1995-96. The 1981 survey is based on responses from thousands of individuals across 23 nations, the 1990-1991 survey covers 43 nations, while the 1995-1996 survey covers 47 nations. In 1995-96, Norway had the highest percentage (%65.3) of respondents reporting that "most people can be trusted" while Turkey, Peru and Brazil had the lowest percentage (%5.5), (%5) and (%3) respectively. In this paper, WVS's 1995-96 social trust data is used as a proxy for social capital. The World Values Survey (WVS) data is taken from Norris (2001: 30-31).

Data on the Gini coefficient is taken from World Bank internet data base. Data related to ethnolinguistic fractionalization is taken from La Porta *et*

*al.*(2000). Government effectiveness index prepared by Kaufmann *et al.*(1999) is used as a proxy for bureaucracy. It measures, red tape, institutional rigidities that hinder bureaucratic efficiency, bureaucratic quality and bureaucratic delays. The index ranks countries on a scale from -2.5 to 2.5. A score of -2.5 indicates the highest level of bureaucracy, while 2.5 represents the lowest level of bureaucracy. Rule of law index is also taken from Kaufmann *et al.*(1999). The index ranks countries on a scale from -2.5 to 2.5. A score of -2.5 indicates the lowest level of rule of law, while 2.5 represents the highest level of rule of law. Government size data (measured by government consumption as a percentage of GDP, for the year 1997) is taken from World Public Sector Report: Globalization and the State (United Nations, 2001: 73-176).

For a cross – section estimation, theoretically speaking, the time span for the variables under estimation should be same. However, the unavailability of the data makes me to use different but closer points in time (assuming that these indices or at least their relative magnitude are not changing radically in such a short period of time) in estimating the equation. Descriptive statistics about variables that used in the model are reported in Appendix 2. Correlation coefficients between variables are indicated in Appendix 3.

### III. REGRESSION RESULTS

The method of ordinary least squares (OLS) is employed to estimate equation (1) using cross-country data on the variables included in the model. Results of the models explaining the differences in corruption levels across countries are reported in Table 1. The estimated simple regression results are reported in Model I., II. and III. whereas the multiple regression results are reported in Model IV., V. and VI.

All of the coefficients have the expected signs even though not all are statistically significant. Income distribution variable is not statistically significant in any model. Other control variables namely ethnolinguistic fractionalization, government size, bureaucracy and rule of law have the expected effects on corruption (at different significance levels).

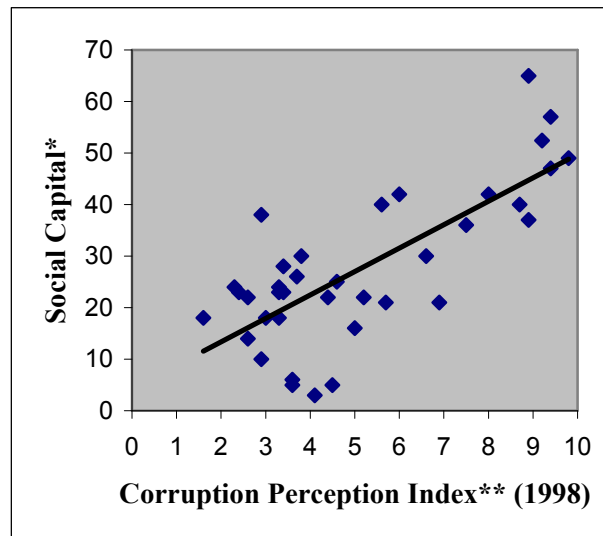
**Table 1. OLS Regressions of Social Capital on TI's (1998-1999) and ICRG's (1991-97) Corruption Indices**

Variable	Model I. TI 1998	Model II. TI 1999	Model III. ICRG (91-97)	Model IV. TI 1998	Model V. TI 1999	Model VI. ICRG (91-97)
Intercept	1.759*** (3.116)	1.708*** (2.956)	2.383*** (8.103)	5.300*** (3.768)	5.551*** (3.864)	4.517*** (5.621)
Social Cap.	0.124*** (6.991)	0.124*** (6.723)	0.059*** (6.285)	0.104*** (6.114)	0.099*** (5.703)	0.056*** (5.910)
Bureaucracy				2.673*** (4.184)	2.597*** (3.965)	1.311*** (3.494)
Ethnolin. Frac.				-1.744* (-1.871)	-1.899* (-1.976)	-0.982* (-1.853)
Income Dist.				-0.004 (-0.189)	-0.004 (-0.164)	-0.019 (-1.313)
Rule of Law				2.707*** (4.174)	2.679*** (4.007)	1.276*** (3.337)
Gover. Size				-0.175*** (-2.435)	-0.181*** (-2.715)	-0.081* (-1.998)
Adjusted R <sup>2</sup>	0.58	0.55	0.53	0.77	0.75	0.74
F statistic	48.877	45.202	39.500	14.322	13.427	11.455
# Obser.	39	39	39	39	39	39

Numbers in parentheses are heteroscedasticity consistent t ratios. \*, \*\* and \*\*\* denote significance at the 10%, 5% and 1% level, respectively.

Since TI and ICRG corruption indices' higher values show less corrupt countries, a positive relationship between corruption and social capital is expected. This relationship is shown in Figure 1 and Figure 2 respectively.

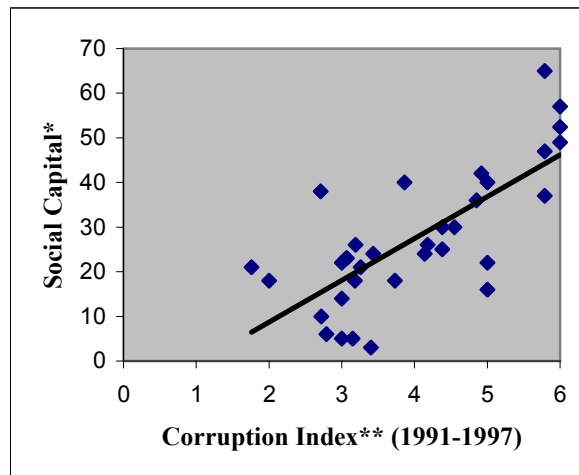




**Figure 1. Corruption, Social Capital Relation**

\* World Values Survey (%) , 1995-96;

\*\* Transparency International Corruption Perception Index



**Figure 2. Corruption, Social Capital Relation**

\* World Values Survey (%) 1995-96;

\*\* ICRG's Corruption Index

Estimation results of simple and multiple models show that social capital has a strong impact on corruption. The statistically significant positive coefficient of social capital means that higher level of social capital is

associated with lower level of corruption. In all models, coefficient of social capital variable has a positive sign and statistically significant at the 1 % level. For example one standard deviation improvement in the social capital index would increase corruption index (less corruption) (TI's CPI), by 0.104 points (Model IV) and would increase corruption index (less corruption) (ICRG), by 0.05 points (Model VI).

## CONCLUSION

A wide range of empirical studies have dealt with the determinants of corruption. This study by using cross country data for the sample of 39 developed and developing countries has shown that Transparency International's (TI) Corruption Perception Index (CPI) and International Country Risk Guide's (ICRG) corruption indices are positively associated with social capital. The results of this paper suggest that high - trust nations tend to have lower level of corruption while low - trust nations tend to have higher level of corruption. The findings of this paper are similar to those of La Porta et al. (1997). The corruption - social capital relationship is robust to the inclusion of other potential determinants of corruption, including the rule of law, bureaucracy, government size, ethnolinguistic fractionalization and income distribution.

### *Appendix 1: List of Countries*

Albania, Argentina, Australia, Bangladesh, Belarus, Brazil, Bulgaria, Canada, Chile, Colombia, Czech Rep, Dominican Republic, Estonia, Finland, Germany, Ghana, Hungary, India, Japan, Korea Rep, Mexico, Moldova, Netherlands, New Zealand, Norway, Peru, Philippines, Romania, Russia, Slovak Rep., South Africa, Spain, Sweden, Switzerland, Taiwan, Turkey, United States, Uruguay, Venezuela.

### *Appendix 2: Descriptive Statistics*

	N	Minimum	Maximum	Mean	Std. Dev.
TI 98	39	1.90	9.60	5.23	2.462
TI 99	39	1.60	9.80	5.13	2.463
ICRG (91-97)	39	1.76	6.0	4.0	1.21
SOCCAP	39	3.0	65.3	27.42	14.54
BUREAUCRACY	39	-1.32	1.99	0.35	0.92
ETH. FRAC.	39	0	0.86	0.22	0.25
INCOME DIST.	39	20	62	37.55	11.10
RULE OF LAW	39	-1.10	2.0	0.39	0.92
GOV.SIZE	39	5.80	27.10	15.29	5.63

*Appendix 3: Correlation Matrix*

	1	2	3	4	5	6	7	8	9
1. TI 98	1								
2. TI 99	0.99	1							
3. ICRG (91-97)	0.87	0.86	1						
4.SOCCAP	0.77	0.75	0.74	1					
5.BUREAUCRACY	0.12	0.06	0.17	0.03	1				
6.ETH. FRAC.	-0.09	-0.08	-0.14	0.06	-	1			
7. INCOME DIST.	-0.22	-0.29	-0.06	0.20	-	0.12	1		
8.RULE OF LAW	0.04	0.09	0.04	-0.03	0.90	-0.26	-0.38	1	
9.GOV. SIZE	-0.12	-0.21	-0.09	0.09	0.31	-0.09	-0.30	0.25	1

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