Government Size and Social Capital in Developing Countries; New Empirical Evidence

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Received: 2017/2/1           Accepted: 2017/8/30

Abstract:
Social capital is one of the most important subjects in development economics. It has a crucial role in development process in developing countries. To the best of our knowledge, there is no study about the importance of government size in social capital. Therefore, the purpose of this paper is considering the relationship between government size and social capital in 109 developing countries during the period of 2008-2014. To do so, we have used a panel data method based on the model of Knack and Keefer (1997). Estimated Results of a fixed effect panel model indicate that there is a non-linear relationship between government size and social capital. When the government size is small (the government size is less than 26.17%), increasing government size has a significant positive impact on social capital. However, when the government size is large (the government size is larger than 26.17%), government size has a significant negative impact on social capital. Before this threshold level of government size, due to preparing safe environment as well as social and economic institutions, ensuring property rights, providing public services as well as social security, building schools and universities, etc., expanding government leads to promoting social capital. But after this threshold level, because of inefficient expenditure, corruption and crowding out private investments in social capital, expanding government has a negative impact on social capital.

JEL classification: H50, H1, Z13

Keywords: Government Size, Social Capital, Panel Data, Developing Countries

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1. Introduction
The idea of social capital is not new in social science. In the past few decades there has been growing interest in this area. In 2000, the concept of social capital occurred in about a quarter of the absolute number of citations in EconLit, a database of publications in economics (Sabatini, 2006 and citing Isham et al., 2002). The definitions of social capital vary widely in related literature, but there is also some degree of consensus around the positive contribution of trust and cooperation to growth and well-being (Franke, 2005). So, Social capital can be defined simply as an instantiated set of informal values, norms or shared attitudes that permit people to cooperate with others. If members of a group come to the conclusion that others will behave reliably and honestly, then they will trust each other (Fukuyama, 1999: 16).
Restricting the concept to informal values or norms, as Fukuyama does, can be problematic. It is clear that cooperation, in part, arises from individual motivations, which may be “informal.” But the climate for cooperation emerging from trust and shared values and norms is not exclusively based on informality. The climate for cooperation emerges from the informal and formal institutions in the societies. To a certain extent, norms and values may be created and fostered through formal institutions and/or externally enforced rules, implying some degree of formality in many kinds of shared values and rules. Norms and rules are often transcribed into laws, which serve to organize society (Ferroni, et. al, 2008). Thereafter, it is the government, through its public institutions, that has the power to establish trust between people if citizens consider the state itself to be trustworthy. So the government has an important role in creation and accumulation of social capital. Although many studies like Ingelhart (1997), Cusackt (1999), Bowles & Gintis (2001), knack (2002), Rothstein (2003), López (2003), Coffe&Geys (2005), Jankauskas & Şeputiene (2007), Miruka & Omenya (2009), Andrews (2011), Vilhelmsdóttir, et. al (2012), Ponzetto (2014) have highlighted the role of social capital in quality of governance and economic performance, to the best of our knowledge, there is no study
about the importance of government size in social capital. So the main contribution of this paper lies in the fact that this is the first time the effect of government size on social capital has been considered.

This paper has been organized in five sections. Section 2 will be devoted to the theoretical background and reviews of empirical research. The model specification and data description will be presented in section 3. Section 4 considers the empirical results and finally a conclusion will be provided in Section 5.

2. Theoretical Framework

The emergence of the term Social Capital is attributed to Hanyfan (1916) in some texts such as Putnam (2000), and in some other texts to Jacob (1961). Loury (1970) was the first economist who noted the concept of social capital and Bourdieu (1986) entered it in the economic literature for the first time. But the literature referred to Coleman (1988) and Putnam (1992) who established the current concept of social capital into economic literature.

According to Bourdieu, social capital is the sum of actual or potential sources obtained from durable network of more or less institutionalized relationships of communication and mutual recognition (in other words, membership in a group). According to Coleman, social capital is not a single object, but a variety of different things that have two features in common; they all include some aspects of social structures and carry out certain actions which would not be achievable without them. Fukuyama (2002) defined social capital as a set of networks, norms, values and institutions which permit individuals to join together to defend their interests and organize to support collective needs. Becker (1996) focused on the results of investment in social capital and noted that Social capital links the results and consequences of the behavior and activities of individuals and groups together over time. In explaining the social capital porters (1998) argued that despite differences in the definition of social capital, it has been agreed that social capital reflects the fact that
individuals can obtain benefits in the light of membership in social networks or other social structures.

The theoretical reasoning for why social capital has positive effects on economic performance comes from Coleman (1988) and Putnam (1993). The core of social capital theory is that activities in informal and formal social interaction settings can create norms of cooperation and generalized trust, leading to positive results for society as a whole. Putnam’s (1993, 2000) empirical researches showed that social capital can be used to explain a range of political, social and economic implications, like government effectiveness. Therefore, the creation of social capital has been widely considered as a solution for social problems such as poverty, crime, economic underdevelopment and inefficient government, in both academic and policymaking communities (Boix & Posner, 1998). The World Bank, for instance, has combined social capital as a key element of its programs aimed at fostering economic development. Along these lines, the World Bank has emphasized promoting the creation of social capital in underdeveloped countries as a critical step in changing their economic and social problems.

Of course, economic performance is the result of creative human behavior. People are involved in the design, financing, implementation and evaluation of various projects permanently and create economic development through their behaviors and decision-makings. In fact, communities, organizations and public institutions, are the major elements in the economy of a country. According to North (2004) the rules of individual behavior or social interaction is the result of their beliefs and mental models derived from them. These mental models shape social paradigms through sharing and interacting in a complex society. According to North, people’s minds suggest different mental models to describe the surrounding environment which is a trial and error process; receiving the answers, the mind refines the models and even suggests other models. Finally, when mental models

3 The World Bank social capital website is:
confirm same environmental responses in most cases, then they are stabilized partially. The structure we impose on our lives to reduce uncertainty accumulates from prescriptions and proscriptions, which produce a complex mixture of formal and informal constraints embedded in language, physical artifacts, and beliefs. It is beliefs that connect “reality” to institutions. The belief system may be broadly held within the society, reflecting a consensus of beliefs; or widely disparate beliefs may be held, reflecting fundamental divisions in perceptions about the society. The dominant beliefs, that is, of those political and economic entrepreneurs in a position to make policies, over time result in the accretion of an elaborate structure of institutions, both formal rules and informal norms, that together determine economic and political performance. The resulting institutional matrix imposes severe constraints on the choice of entrepreneurs when they set out to create new or to modify institutions in order to improve their economic or political positions. This is a story of perceived reality, inducing a set of beliefs, which in turn induced a set of institutions to shape the society, which in turn introduced at the margin incremental policies, which in turn altered reality, which in turn, went back to revising beliefs. The key to the story is the way beliefs are altered by the feedback humans get from changes in perceived reality as a consequence of the policies in action, the adaptive efficiency of the institutional matrix—that is, how responsive it is to alteration—and the limitation of changes in the formal rules as correctives to perceived policy.

The economic and political performance of countries is linked to the concepts of trust and social capital through expanding the discussions above.

Yet, despite the widespread attention it has received, the origins of social capital are still unknown. Although the social capital stocks vary across countries, we currently have a poor understanding of how to explain this variation. For reviewing a series of hypotheses to explain the main factors of social capital, see Brehm & Rahn (1997), Gleaser (2001), Offe & Fuchs (2002),
Krishna & Uphoff (2002). Some theorists insist on the possibility of providing social capital with emphasis on the role of formal governmental institutions (Evans1996). They are joined with development practitioners who make an effort to show explicitly what role the government might play in social capital construction (Skocpol1996, Potapchuck et al., 1998).

Elinor Ostrom (2000) discussed the incomplete information problem may decrease efficiency of government intervention. So, government as an external agent may not even understand that their actions are destroying existing social capital combinations. She also highlighted the possibility of government interventions which lead to crowding out private investments in social capital, as well as discussing the public choice issues associated with interventions. Ikeda (2002, 2004) discussed the dynamics of government intervention as it relates to social capital, and pointed out that these interventions may generate unintended outcomes that require further interventions to achieve the desired end. For more on the nature of the dynamics of intervention, see Rothbard (1977) and Ikeda (1997).

Carilli et al. (2008) examined the implications of government attempts to manipulate the existing structure of social capital to create homogeneity among agents. They found that these attempts can weaken, erode or destroy existing social capital. They argued that social capital reflects the preferences of individuals. Individuals are keen on investing in adopting signs of credibility and trustworthiness when the expected benefit offsets the expected cost. The related costs consist of whatever stages must be taken to adopt the relevant signal. The benefits are the expected gains from possible interplay and exchange in current and future periods. It is commonly thought that government plays an active role in creating social capital. As Fukuyama (1995) mentioned “When there is a deficit in social capital, the shortfall can often be recovered by the state, just as the state can rectify a deficit in human capital by building more schools and universities”. These interventions are useful when social capital is absent or when a society owns social capital
deemed to be undesirable. In this case, government interventions as exogenous shocks aimed at shifting the current structure of social capital. But Fukuyama (1999) recognized the potential problems with government intervention; “Government often has to step in to promote community when there is a deficit of spontaneous sociability”. But government interventions have distinct risks because they can also too easily undermine the automatically established communities in social society.

State interventions are not part of the natural process of social capital formation. Also, state interventions are not part of the process through which entrepreneurs find new combinations of social capital and individuals freely adopt signals to show credibility and trustworthiness to others (Carilli, et. al, 2008). Instead, the combinations of social capital created by the state are imposed on individuals exogenously. This has deviated impacts on the structure of social capital. Specifically, government interventions in the social capital create a signal interpretation problem for individual agents. Before government interventions, individual actors could judge the credibility of others by the signals they freely adopted. Social capital combinations created by government introduce homogeneity into the system that weakens the effectiveness of signals that previously showed underlying agent types. (Carilli, et.al., 2008).

For example, the state may present a set of obligatory standards which decree that a certain activity is either necessary or illegal. Because all individual agents should adopt standards by government order, the adoption of standards no longer assists to signal the fundamental type of the individual to others. Specified differently, actors will not be able to judge whether the signal is credible or not. All individuals, credible or not credible, are required to adopt the same set of standards. Therefore, the signal no longer serves as an effective measure of agent type.

Leeson (2007) showed how government bans that outlawed certain religious practices contrarily affected individuals’ abilities to extract signals following legal changes introduced by
European powers in colonial Africa. There are two possible impacts of the government-created signal interpretation problem. The first impact is that individuals increase interplay and interchange with others. In other words, the level of interaction temporarily rises above its natural level. The dimension of this impact depends on several factors including the nature and extent of the government intervention. The second effect is that individuals decrease their level of interplay and interchange. In this case, individual agents limit their interplays to relationships that can be effectively governed by two-sided penalty. In such relationships individual agents can penalize deceivers by refusing to enter into future transactions. When it happens, government intervention has the reverse effect. These two effects are not mutually exclusive and may both occur following a government intervention.

The process described above provides a means of illuminating the mechanism through which government intervention may crowd out private social capital. Armey (1995) implemented the nonlinear relationship between government size and economic growth. In this regard, some studies such as Sheehy (1993), Vedder and Gallaway (1998), and Chen and Lee (2005) empirically found the nonlinear relationship as an inverse U-shape between the government size and economic growth. Following these studies, this paper is presenting a new approach - Laffer curve- between government size and social capital. Our core thesis is that, in low government size regimes, government size has a positive effect on social capital but this effect in high government size will be negative.

In low government size regimes, due to preparing safe environment as well as social and economic institutions, ensuring property rights, providing public services as well as social security, building schools and universities, etc., expanding government size leads to promoting community.

Robust and sophisticated public institutions can help form social capital by decentralizing power through increasing social
and political participations (Evans, 1996; Fox, 1996; Potapchuck et al., 1997, Warner 2001).

Troiano (2012) showed that social capital is highly positively correlated across countries with government expenditure on education. Idenyi, et al. (2016) showed that government expenditure on health (both capital and recurrent) has incremental impact on social capital and economic growth in Nigeria. Increased budgetary allocation to the social sector brings about skilled and healthy human and social capital that will contribute significantly to the economy.

On the other hand, there may be a considerable time-lag between spending and the benefits that arise. For example, a decision to increase spending on education will take many months and maybe years to implement, and many years or decades to see the full benefits.

In trying to promote growth or reduce unemployment, government spending can be inflationary, especially if the government has to borrow from the financial markets or if the spending is rising too quickly, as might occur if public sector pay increases without efficiency is obtained. Expanding government size has the effect of diminishing returns on accumulation of social capital. Increasing government expenditure through intervention in all sectors of economy often turns into inefficient expenditure and distorted allocation of resources as well as corruption. These force the government to increase the expenditure for fixing such inefficiencies. Several authors have considered some of the potential problems with government intervention aimed at manipulating social capital. Elinor Ostrom (2000: 1-180) discussed that the problem associated with government intervention can create crowding out effect on private investments in social capital (Ostrom 2000: 182). Ikeda (2002, 2004) argued the dynamics of government intervention as it relates to social capital, and indicated that these government interventions may cause unintentional outcomes that require further government interventions to get the favorable end.
Therefore, the effect on development of social capital can be dramatic.

Therefore, we believe that there is nonlinear relationship between government size and social capital. In other words, in small government size regimes, government size has a positive impact on social capital but in large government size ones, government size has a negative impact on social capital.

3. Methodology
According to Bhattacherjee (2012) depending on the goal of scientific research, research designs can be classified into two categories, interpretive and positivist. Interpretive designs are meant for theory building while positivist designs are meant for theory testing. Interpretive designs attempt to find out the subjective interpretations of social phenomena from the perspectives of the subjects involved, while positivist designs attempt to find out the generalized patterns based on an objective view of reality (Bhattacherjee 2012). As there is not an obvious theory about the relation of social capital and government size, this paper is aimed to build a theory about government size and social capital.

As Myrdal (1978; P:774) noticed: “even if we focus on specific economic problems, our study must take into account the entire social system, including everything important for what comes to happen in the economic field. Foremost, among other things, is the distribution of power in society and more generally economic, social, and political stratification; indeed, all institutions and attitudes. To this must be added, as an exogenous set of factors, induced policy measures, applied with the purpose of changing one or several of these endogenous factors. The dynamics of this social system are determined by the fact that among all the endogenous conditions there is circular causation, implying that, if there is change in one condition, others will change in response. Those secondary changes in their turn will cause new changes all around, even affecting the condition whose change we assumed initiated the process, and so on in further
rounds. So the whole system will be moving in one direction or another, and it may even be turning around its axis. There is no one basic factor; everything causes everything else. This implies interdependence within the whole social process” [Myrdal, 1978; P: 774].

So, examining and analyzing the economic issue interdependence within the whole social process should be taking into account. However, the precise knowledge of the quantitative estimation of coefficients of interaction is rarely possible (Myrdal 1978). Therefore, although this paper is seeking to build a framework for quantitative analysis of actual conditions in experimental studies, to our knowledge and understanding social variables and their interrelations are imprecise and limited, so the introduced patterns are just the abstract of facts. However, institutionalists believe in using this limited knowledge to enter non-economic variables and realistic approach to the analysis of economy of countries rather than abandoning it and adopting simple assumptions of conventional economics in economic analysis (Myrdal 1978).

Also, following Wilber & Harrison (1978), the methodology of institutional economics has been used for modeling the institutional variables and this paper is focusing on one of the most important informal institutional variables, i.e. social capital.

3.1. The Model Specification
The present research using panel data, estimates the non-linear relationship between government size and social capital for selected developing countries as follows;

\[ SP_{it} = \delta_1 + \delta_2 GS_{it} + \delta_3 GS_{it}^2 + \delta X_i + e_{it} \]  

Where \( SP_{it} \) is social capital index, \( GS_{it} \) is government size or the share of consumption expenditure in GDP, \( X_i \) is the vector of control variables. Using Knack and Keefer (1997;1277) survey results, we undertake income inequality, education rates, Ethnic polarization, the first lag of social capital and formal institutions
for property and contract rights as control variables determinants of social capital.

3.2 Data Description
Data for social capital\textsuperscript{4} was taken from Legatum Prosperity index\textsuperscript{5}. Data for property rights and ethnic fractionalization was derived from the WEF\textsuperscript{6} and NSD\textsuperscript{7} respectively. The rest was obtained from the WDI\textsuperscript{8} for 109 developing countries during 2008-2014.

4. Empirical Results
We used panel data regression method for estimating the parameters. Also, in order to select the appropriate method of estimation among the pooled model (OLS), fixed effects (FE), and random effects (RE), we used F-Limer and Hausman test. Before estimation of the model, it was necessary to check stationary of the variables. Table 1 indicates the results of unit root test for the variables.

\textsuperscript{4} The Social Capital index in Legatum Institute is evaluated through countries’ performance in volunteering, helping strangers, and donating to charitable organizations, the impact of economic performance and life satisfaction, levels of trust, whether citizens believe they can rely on others, and assesses how marriage and religious attendance. Although variables are weighted differently, the Prosperity Index applies equal weights to each sub-index for all countries. For more information, refer to the Technical Appendix published on www.prosperity.com.
\textsuperscript{5} Legatum Institute. Legatum Prosperity Index. http://www.prosperity.com/prosperiscope/
\textsuperscript{7} Norwegian Social Science Data Services, http://www.nsd.uib.no/nsd/english/index.html
Table 1: Panel Unit Root Test (Levin, Lin & Chu Test)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Test Statistic</th>
<th>P-Value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP</td>
<td>-42.98</td>
<td>0.00</td>
<td>Stationary</td>
</tr>
<tr>
<td>GS</td>
<td>-30.12</td>
<td>0.00</td>
<td>Stationary</td>
</tr>
<tr>
<td>GS$^2$</td>
<td>-89.26</td>
<td>0.00</td>
<td>Stationary</td>
</tr>
<tr>
<td>Property Right</td>
<td>-45.81</td>
<td>0.00</td>
<td>Stationary</td>
</tr>
<tr>
<td>Gini Coefficient</td>
<td>-5.75</td>
<td>0.00</td>
<td>Stationary</td>
</tr>
<tr>
<td>Gross Tertiary Enrolment</td>
<td>-257.52</td>
<td>0.00</td>
<td>Stationary</td>
</tr>
<tr>
<td>Ethnic polarization</td>
<td>-41.02</td>
<td>0.00</td>
<td>Stationary</td>
</tr>
</tbody>
</table>

Source: The Authors’ Finding by Eviews Software

Table (1) presents the result of Levin, Lin & Chu test that test existence of unit root in the variables. The null hypothesis of this test is existence unit root. So, the results of this test indicates stationary situation in all of the variables. Therefore, we can estimate the model through common panel data methods. For selecting the suitable panel data model, firstly, we used F-Limer test for selecting the model between pool model and fixed panel model. Table 2 indicates the results of F-Limer test.

Table 2: The F-Limer test

<table>
<thead>
<tr>
<th>Test Statistic (F-statistic)</th>
<th>P-Value</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.81</td>
<td>0.00</td>
<td>Fixed Model</td>
</tr>
</tbody>
</table>

Source: The Authors’ Finding by Eviews Software

The result of F-Limer test indicates the rejection of null hypothesis-(pool model)- at 1% significance level that shows the fixed model is more suitable than pool model. Then, we should select the suitable model between fixed effect model and random effect model. For selecting the suitable model, Hausman test was applied. The null hypothesis of this test is random effect model against fixed effect model. The result of Hausman test has been shown in Table 3.
The result of Hausman test indicates the rejection of null hypothesis-(random effect model)- at 1% significance level that shows fixed effect model is more suitable than random effect model. So, fixed effect model was selected as the suitable model for analysis the results. Table 4 indicates the estimation results of fixed effect model.

Table 4: Estimation Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-2.17</td>
<td>0.00</td>
</tr>
<tr>
<td>GS</td>
<td>0.044390</td>
<td>0.00</td>
</tr>
<tr>
<td>GS²</td>
<td>-0.000848</td>
<td>0.07</td>
</tr>
<tr>
<td>Property Right</td>
<td>0.273288</td>
<td>0.00</td>
</tr>
<tr>
<td>Gini Coefficient</td>
<td>-0.011572</td>
<td>0.12</td>
</tr>
<tr>
<td>Gross Tertiary Enrolment</td>
<td>0.0005592</td>
<td>0.11</td>
</tr>
<tr>
<td>Ethnic polarization</td>
<td>0.591193</td>
<td>0.00</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.98</td>
<td></td>
</tr>
<tr>
<td>Prob F-Statistic</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

The results of table 4 are as following:
1. As table 4 shows, there is a non-linear relationship between government size and social capital. When the government size is small (the government size is less than $26.17\%$), government size has a significant positive impact on social capital, but when it is large (the government size is larger

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\[ \frac{\partial (SC)}{\partial (GS)} = 0 \]
than 26.17%), government size has a significant negative impact on social capital. Thus, the non-linear situation might exist in developing countries when “final government expenditure divided by GDP” is the index of government size. The non-linear impact of government size on social capital in two regimes of government size confirms our idea that large government size weakens social capital in developing countries.

Figure 1 indicates the relationship between government size and social capital in developing countries. The threshold level of government size for 109 developing countries is 26.17%. Before this threshold level of government size, because of preparing safe environment and social and economic institutions, ensuring property rights, providing public services as well as social security, building schools and universities, etc., expanding government size leads to promoting social capital. But after this threshold level, because of inefficient expenditure, corruption and crowding out private investments in social capital, expanding government size has a negative impact on social capital.

**Figure 1**: The relationship between Government Size and Social Capital in Developing Countries
2. Property right has a significant positive impact on social capital in developing countries. In other words, if property right increases one unit, social capital increases about 0.27 unit. Property right is one of the most important official institutions that affect economic performance and private investment. With an intellectual property right, innovation can be developed. Also, property right will promote trust between government and private sector, so it helps to promote social capital.

3. Gini coefficient and gross tertiary enrolment do not have significant impacts on social capital in developing countries during 2008-2014.

4. Ethnic polarization has a significant positive impact on social capital in developing countries. In other words, if ethnic polarization increases one unit, social capital increases about 0.59 unit. This coefficient indicates that greater gaps between preferences of different ethnics in developing countries promote social capital in these countries.

5. R-square and F-statistic indicate that the model has goodness of fit and the regression is significant, so we have a first idea that such a relationship might exist.

5. Conclusion
Social capital is one of the most important variables in development process. Some researchers discussed about the relationship between quality of government and social capital like Miruka & Omenya (2009), Andrews (2011), Ponzetto (2012) and Vilhelmsdóttir, et.al. (2012), but, to the best of our knowledge, there is no study about the impact of government size on social capital. The lack of studies about this subject motivated us to write this paper.

We used panel data method for considering the impact of government size on social capital in 109 developing countries during 2008-2014. Our empirical results confirm that there is non-linear relationship between social capital and government size. In other words, in low government size regimes, government size has a significant positive impact on social capital, but in large government size ones, government size has a
significant negative impact on social capital. So, large government size weakens social capital in developing countries.

Other empirical results indicate that property right and ethnic polarization have a significant positive impact on social capital but Gini coefficient and gross tertiary enrolment do not have significant impacts on social capital in developing countries.

Based on the empirical results, we suggest policy makers in developing countries to concern about their expanding economic policies that lead to big government size because a large government size might decrease social capital in the society.
Reference:


Government Size and Social Capital in Developing Countries…


