Can Trust Explain Social Capital Effect on Property Rights and Growth?

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Abstract

The consensus in growth literature has recognized the significant effects of institutions (including social capital and political institutions) towards economic growth. Utilizing the World Value Survey (WVS)'s trust variable that has often been used to represent social capital, and employing panel data technique which hitherto has been very limited in social capital studies, this study shows that WVS' trust data suffer severe missing observation problem and the panel fixed effect estimation using such data produce highly unrobust results. Future research in social capital therefore needs to expand their measure of social capital beyond the WVS trust indicator. The results also indicate that political institutions effect on growth could possibly occur indirectly via property rights channel.

Keywrds: Trust; Social Capital; Property Rights; Economic Growth;

1. Introduction

This paper revisits the social capital's, measured via generalized trust[†], link to economic growth as we examine the relationship between social capital and formal institutions and investigate their effects on economic growth. Social capital, as evident in the literature, causes economic growth as it creates a vibrant economic environment by reducing transaction and monitoring costs, facilitates information flows and creates confidence in the regulatory capacity of public institutions.

Coleman (1988) is arguably the first to introduce the term "social capital" and he defines it as "obligations and expectations, information channels, and social norms. In his later work, Coleman (1990) defines it as "some aspect of social structure that enables the achievement of certain ends that would not be attainable in its absence." Putnam (1993) –one of the earliest and widely cited studies on social capital– defines social capital as "the features of social organisation, such as trust, norms, and networks that can improve the efficiency of the society." Another widely cited definition is by Knack and Keefer (1997) i.e. "trust, cooperative norms, and networks between individuals." Fukuyama (1999) suggests social capital can be defined as "an instantiated set of informal values or norms shared among members of a group that permits them to cooperate with one another. If members of the group come to expect that others will behave reliably and honestly, then they will come trust one another." Serageldin (1999) argues social capital is "the glue that holds societies together" and "without it no economic growth or human well-being is possible".

Empirical studies finding robust positive impact of social capital (measured by trust variable obtained from the WVS or other comparable surveys) on economic growth are such as Knack and Keefer (1997); La

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[†] According to Westlund and Adam (2010)'s meta-analysis study of 65 studies on social capital, generalized trust is the most widely used measure of social capital.

Porta *et al.* (1999); Whiteley (2000); Zak and Knack (2001); Beugelsdijk *et al.* (2004); Bjørnskov (2006); Knowles (2006); Berggren *et al.* (2008); Neira *et al.* (2009); Tabellini (2010); and Dincer and Uslaner (2010). The argument supporting trust as an important determinant of economic growth is that trust is often referred to as a factor that serves to expand market activities since people will enter into economic exchanges with anyone as a result of trusting large number of individuals and more importantly trusting the people they do not necessarily know. This is called generalized, or thin, or interpersonal trust. Thus, the positive growth-effects of trust, or social capital in general, are such that it contributes to increasing number of mutually beneficial trades, reducing monitoring and transaction costs, solving collective action problems, and improving information flows that will eventually spur economic activities and improve economic performance (see Knack and Keefer 1997; Whiteley 2000; Knowles 2006; and Roth 2009).

Nevertheless, there are also a number of studies finding negative or no relationship between trust and growth. See for example Helliwell (1996) and Roth (2009) –who find negative relationship, and Beugelsdjik and van Schaik (2005) and Raiser (2008) –no relationship.

In this paper, we test the robustness of WVS' generalized trust data to reflect social capital and seek estimate its effect on property rights and economic growth by employing panel analysis which hitherto has been very limited in social capital studies[‡]. The remainder of this paper is organized as follows: Section 2 outlines the theoretical framework, estimation methodology and data sources. Section 3 explains the estimation results and Section 4 concludes.

2. Theoretical framework, estimation methodology and data sources

In this study, we aim to find answer whether trust is the best proxy for social capital in explaining the latter's effect on economic growth in the developing countries. We also would like to test whether the effect of trust on growth is direct or indirect, and if indirectly, can property rights be the link between trust and growth.

To achieve these objectives, we formulate a theoretical framework as follows: Institutions are divided into three categories i.e. formal (or property rights) institutions, informal institutions (or social capital), and political institutions (political constraints)[§]. This proposition is built from the previous institutional literature specifically that of North (1990; 2005), Putnam (1993) and Acemoglu *et al.* (2005), and based on their frameworks we define and measure property rights, social capital and political institutions, respectively. Intuitively, we postulate social capital and political institutions are the underlying determinants of the property rights institutions that matter for growth. In other words, social capital and political institutions are causing growth via the property rights channel[**]. To test the inter-relationship between multi-faceted institutions (property rights, social capital and political institutions) and economic growth, two hypotheses are proposed:

[‡] There are a few recent studies such as Pérez García *et al.* (2006), Roth (2009) and Baliamoune-Lutz (2011) that use panel analysis technique but except Roth (2009) they use non-trust measures of social capital. Roth (2009) however finds negative effect of trust on growth.

[§] Political institutions, though not our focus in this paper, are nevertheless included as control variable due to the increasing number of studies that advocate the supremacy of political institutions over other forms of institutions as they argue political institutions are actually the underlying reasons as to why different countries have different economic institutions, and eventually have different cross-country economic development. See for example Acemoglu et al. (2005), Stiglitz (2001b), Rodrik and Rosenzweig (2009), to name a few.

[**] Notwithstanding that, it is reasonable to expect social capital and political institutions would have possibly caused economic growth via a channel other than property rights. This is particularly feasible in developing countries where formal institutions are somewhat lacking yet the countries' economies would still somehow grow. Recall that Rodrik (2008), by introducing the term "second-best" institutions, argues the so called first-best property rights institutions (as those adopted by developed and industrial countries) might not succeed to reduce costs and promote growths when they are implemented in developing countries.

First hypothesis: Institutions matter to economic growth in developing countries under study.
Second hypothesis: Social capital affects economic growth via the property rights channel.

The first hypothesis seeks to find evidence on the importance of institutions (proxied by property rights, social capital, and political institutions) to economic growth in the developing countries under study. By including social capital in a growth model, and at the same time controlling for other steady state determinants of growth as well as political institutions, it is possible to uncover any *direct* impacts social capital would have on growth. The findings therefore afford an appropriate comparison to previous studies that find positive relationship between social capital and growth. Although all three institutional aspects are included, we retain the focus of this study on social capital parameter.

The second hypothesis proposes that formal institutions, invariably proxied by a secure property rights environment, are determined by social capital and political institutions[††]. This hypothesis could be viewed as a strategy to unbundle the property rights institutions into two underlying components i.e. social capital and political institutions. Although this study is not the first to embark on this unbundling exercise, we view the previous studies[‡‡] that seek to unbundle institutions are only able to explain the characteristics of property rights institutions only partially, and they do not account for the deep determinants of institutions that are permanent and durable as suggested Glaeser *et al.* (2004)[§§].

To test the above two hypotheses, the following general models are proposed:

$$g_{it} = \beta_0 + \beta_1 \ln y_{it-1} + \beta_2 pr_{it-1} + \beta_2 sc_{it-1} + \beta_2 pol_{it-1} + \beta_3 X'_{it} + \eta_i + \varepsilon_{it} \quad (1)$$

$$pr_{it} = \beta_0 + \beta_1 sc_{it-1} + \beta_2 pol_{it-1} + \beta_3 X'_{it-1} + \eta_i + \varepsilon_{it} \quad (2)$$

In the above equations, $g_{it} = \Delta \ln gy_{it}$ is real GDP per capita growth rates, β_0 is a constant term, $\ln y_{it-1}$ is lagged income or natural logarithm of real GDP per capita in the previous period, pr_{it-1}, sc_{it-1}, and pol_{it-1} are the index of property rights institutions, social capital variable and the index of political institutions, respectively, and they are one-period lagged. X is a vector of control variables, $\varepsilon_{it} \sim N(0, \sigma^2 I)$ is an i.i.d. error term, and η_i is time-invariant country-specific effect term[***].

In Equation (1), we add a set of control variables or steady state determinants, *X*, namely stock of physical (*sk*) and human (*sh*) capitals, (n+g+δ) term that accounts for the sum of population growth, growth in exogenous technological process, and depreciation rate, respectively.

In Equation (2), we follow Williamson and Kerekes (2010) to include the following control variables: real GDP percapita growth, education attainment (measured by secondary school attainment for population age 15 and above), government consumption (as a percentage of total GDP) and urban population (as a percentage of total population) as these set of controls variables has been shown to have significant effects

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[††] We exclude "political institutions" word from the second hypothesis since the parameter of interest is social capital, and nevertheless political institutions index is still included in the estimation to control for its effect that would otherwise be picked up via formal institutions or social capital.

[‡‡] Previously, Acemoglu and Johnson (2005) unbundle institutions in two i.e. property rights institutions and contracting institutions, while Rodrik (2005) unbundle institutions into four components namely market-creating, market stabilizing, market-regulating and market-legitimizing institutions.

[§§] Nevertheless, Glaeser *et al.* (2004) discuss the permanent and durable deep determinants from the perspective of political constraints only i.e. constitutional rules that are designed to constraint government. They however completely omit the private constraints mechanisms from the perspective of social institutions (in other words, social capital).

[***] A closer look at the Equation (1) and (2) reveal that simultaneous equations estimation is not possible even though both equations apparently have the similar explanatory variables. The explanatory variables are included in the equations as lagged variables, i.e. social capital (sc_{it-1}) and political institutions (pol_{it-1}) are lagged by one-period in the Equation (2) to determine the current value of property rights (pr_{it}). When property rights, social capital and political institutions variables appear in Equation (1) as lagged variables, effectively they are different from the variables that appear in Equation (2) due to difference in lags i.e. pr_{it} is different from pr_{it-1} .

on institutional quality measured by property rights, and the inclusion of these controls therefore precludes social capital and political institutions from picking up the effects these control variables have on the property rights. In other words, once these variables are controlled for, the estimated coefficients for social capital and political institutions will truly reflect their effects on property rights.

The estimation begins with a growth model which includes all three institutional variables to test for their significance on economic growth for our sample of 69 developing countries, controlling for the usual steady-state growth determinants. The general model as in Equation (1) reveals a potential endogeneity problem. Firstly, because of the presence of a lagged dependent variable, and secondly institutional variables could be endogenous since reverse causation from growth to institutions is possible. While an endogenous lagged dependent variable is not much of a worry since the focus of this study is on institutions, endogenous institutional variables are tackled by including them with a one-period lag in all models and this could to some extent prevent reverse causation.

Besides, if it is true that social capital and political institutions do cause property rights, including the three of them in a regression would have probably caused multicollinearity problem and, though the estimators remain unbiased, standard errors of the estimators will tend to be large and this will eventually affect the parameters' significance. However, the main objective to include all three institutional variables in a growth regression is to determine their direct impacts towards growth. While property rights' direct impact on growth is expected, the estimation could also uncover any possibility of social capital's and political institutions' direct impact on growth and this could be an interesting finding for comparison against their indirect impacts in the second hypothesis. To mitigate this issue, the three institutional variables are included in the growth models in multiple combinations and related assumptions are specified.

In the second model, we seek to confirm the property rights channel through which the indirect effects of social capital towards growth run. In other words, this model would illustrate the channel and the size of social capital indirect effects towards economic performance in developing countries. Furthermore, the model also enables us to show the underlying determinants of property rights institutions that matter for growth. All explanatory variables in the property rights regressions are also lagged by one-period to mitigate endogeneity problem. We acknowledge the possible multicollinearity problem between the control variables in the second model such as GDP per capita growth, education attainment, government consumption but retain the focus on social capital effect on property rights.

The variable of interest in this study is social capital, and we use generalised trust variable obtained from the WVS to represent social capital. By using trust in the estimation, an appropriate comparison can be made to the findings of previous trust-based social capital studies. Furthermore, since trust has been widely used in previous cross-sectional studies of social capital, this study could be an avenue to investigate the robustness of the WVS' trust data when they are used in panel analysis.

A panel for 69 developing countries from three regions, Africa, East Asia, and Latin America for a period of 25 years beginning from 1984 to 2008 is used in this study. Data on real GDP percapita and population growth are obtained from World Development Indicators (WDI) provided by the World Bank (2009). We follow Mankiw *et al*. (1992) in assuming exogenous technological change plus depreciation rate equal to 0.05, and in using investment share of real per capita GDP as a proxy for physical capital and the data is obtained from Penn World Table 6.3 (2009). To proxy for human capital, we follow Ahmad and Hall (2012) to use secondary school attainment for population age 15 and above based on Barro and Lee (2010) educational data that are converted in annual form.

To measure the property rights institutions and political institutions, we utilize the identical indicators from Ahmad and Hall (2012) that is simple-average property rights index based on ICRG data, and the simple-average political institutions index based on various sources (see Ahmad and Hall, 2012 for further explanation). Generalized trust data to measure social capital are obtained from the World Value Survey (WVS 2009). The measure of trust is obtained by taking the percentage of respondents who choose the answer "*Most people can be trusted*" to the survey question "*Generally speaking, would you say that most*

people can be trusted or that you need to be very careful when dealing with people?". The observations are drawn from Wave II (1989-1993) to the most recent wave, Wave V (2005-2008)[†††]. Only 34 out of 69 countries in our sample are surveyed during the four waves.

3. Results Discussion

We employ fixed effect estimation for Equation (1) and (2) above since the method is capable of reducing omitted variable bias and time-invariant heterogeneity[‡‡‡]. In Equation (1) we augment the growth model with three institutional variables: property rights index, political institutions index and generalized trust to test for their individual significance on growth. Conditional convergence parameter and the standard steady state determinants are also included. Table 1 below presents the results.

In regression (1) to (3), the three institutional variables are included individually respectively to test their individual direct effect on growth. Property rights and political institutions indices are found to be significant at the 5% level but generalized trust is not. For regression (4) and (5), a specific assumption needs to be made regarding the omission of property rights variable (in model 4) and as well as trust's channel of effect (in model 5)[§§§]. Assuming social capital and political institutions could have their effects operating via the property rights channel, property rights index is omitted in regression (4). However, neither social capital nor political institutions is significant although political variable is when included individually (in regression 2). In regression (5), we suppose trust causes growth via a channel other than property rights (perhaps via a political institutions channel –hence the variable's omission– or other possible channels), thus we include property rights index and trust in the regression. Similarly, both are not significant despite that property rights index is when included individually (in regression 1). The result of institutional non-significance stands when all three institutional variables are included in the general model (model 6).

Table 1: Fixed effect regression of growth model augmented with institutional variables

Dependent variable: Log real GDP percapita growth							
Estimation model	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lagged income	-0.05***	-0.05***	-0.075**	-0.076**	-0.065	-0.067	-0.05***
	(0.015)	(0.014)	(0.032)	(0.031)	(0.064)	(0.068)	(0.015)
Physical capital	0.032***	0.033***	0.123***	0.121***	0.122***	0.121***	0.032***
	(0.006)	(0.006)	(0.036)	(0.039)	(0.039)	(0.040)	(0.006)
Population growth	0.024***	0.024***	-0.023	-0.023	-0.024	-0.024	0.024***
	(0.007)	(0.007)	(0.024)	(0.024)	(0.026)	(0.025)	(0.007)
Human capital	0.002***	0.002***	0.002	0.002	0.002*	0.002	0.002***
	(0.000)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)
Property rights index	**0.004****				-0.004	-0.003	**0.004****
	(0.002)				(0.017)	(0.018)	(0.002)
Political institutions		**0.002****		-0.001		-0.001	0.002
Index		(0.001)		(0.005)		(0.006)	(0.001)
Generalized trust			0.001	0.001	0.001	0.001	
			(0.001)	(0.001)	(0.001)	(0.001)	
Constant	0.007	-0.029	0.282	0.311	0.241	0.263	0.002
	(0.082)	(0.075)	(0.296)	(0.268)	(0.364)	(0.388)	(0.082)
Observations	1,404	1,413	59	59	59	59	1,404
Numberof country	62	62	27	27	27	27	62

[†††] We omit trust data obtained from Wave I (1981-1984) from our regressions since there were only two countries from our 69-country sample surveyed in the first wave. Furthermore, there is a gap in the data between 1985-1988 since there was no survey during the period.

[‡‡‡] Hausman tests statistics which indicate fixed effect is preferable to random effect is available upon request.

[§§§] Without this assumption, omitting the variables would definitely cause omitted variable bias in the estimations.

Adj. R-squared	0.297	0.291	0.284	0.258	0.260	0.231	0.297

Note: Robust standard errors are in parentheses. ***, **, * indicate the coefficient is significant at 1%, 5% and 10% respectively.

The main reason for the weak regression results is apparently the limited number of trust observations. A quick look at number of observation in the estimations shows that it drops significantly whenever the trust variable is included. To support this argument, we exclude the trust variable in regression (7) and estimate the growth model with property rights and political institutions only (of course with the assumption that the political variable is affecting growth not via property rights channel). Only property rights index emerges significant at the 5% level and the number of observations increases significantly (to 1404).

The above exercise yields two important findings. Firstly trust data indeed suffer a severe missing observation problem and therefore estimations involving the trust variable in annual panel setting produce highly unrobust results. Secondly, a possible indication could be drawn from the results in regression (2) and (7) –when political variables are significant in individual regression, but not when regressed with property rights –regarding the channel of growth-effect of the political institutions which is probably via the property rights channel. However, it is still too early to make a definitive conclusion that the effect of political institutions towards growth is via property rights channel. We expect a more conclusive finding about the channel of impact is available when the estimation of Equation (2) is done in next section.

We turn our focus now on trust's impact on growth and property rights, based on the Equation (1) and (2) respectively. Since we hypothesize that trust cause growth via property rights channel, property rights index is therefore omitted in Equation (1). Subsequently in Equation (2) we seek to support the hypothesis by testing trust significance on property rights. In both occasions, we test the significance of trust with and without the presence of the political institutions variable. The ultimate aim of this exercise therefore would indicate the robustness of trust data obtained from the WVS when estimated in a panel setting. This is of particular importance since the majority of studies on social capital that use trust data (typically obtained from the WVS which in turn has missing observation problem) are cross-sectional.

Table 2 below shows the results of Pooled OLS and fixed effect estimations of the growth model augmented with the trust variable. In regressions (8) and (9), we assume that generalized trust has enough variations so that its effect can be captured when the variable is included in the estimation. Both models however yield insignificant coefficients for generalized trust variable.

Next, the assumption about the variations in trust data is eliminated. Consistent with the majority of previous studies on trust, now we assume trust is constant, and the effect of the trust variable will therefore be captured via the η_i term i.e. a term to represents the time-constant unobserved country specific effects. We run pooled OLS regressions in (10) and (11) and compare them with fixed effect regressions in (12) and (13). In pooled OLS regressions, generalized trust turns out to be insignificant. Again, we suspect limited trust data is the culprit. Suppose that the trust variable is significant in pooled OLS, and looking at F-test for the null hypothesis of η_i equal to zero that is strongly rejected in fixed effects regressions (model 12 and 13), we conclude that it is highly likely that trust is actually the underlying unobserved heterogeneity between the countries under studies. Furthermore, the test statistics for F-test in regressions (8) and (9), when the trust variable is included, fail to reject the null that η_i is equal to zero. To support our case that limited trust data is ruining the regression results, in regression (13) the political institutions index is now significant at 5% even though it is not in regression (9) earlier, and also note the number of observation now soars to 1413 from 59.

We replicate the estimation strategy in Table 2, but now the dependent variable is the property rights index. Similar assumptions about generalized trust hold, and a number of control variables i.e. real GDP percapita growth, education attainment, government consumption and urban population are included. Table 3 above presents the results which are similar to Table 2. The only exception is that test statistics of F-test in regression (14) and (15) remains significant at least at 5% thus rejecting the null hypothesis of $\eta_i = 0$, and similarly there is significant F-test of $\eta_i = 0$ in regression (18) and (19). Since trust is assumed to be varying in regression (14) and (15) but constant in (18) and (19), significant η_i term in both occasions therefore is

believed to have captured *non-trust* time-invariant country specific effect.

Since this model uses property rights as dependent variable in panel estimation, this finding is particularly interesting. It is highly likely that the possible candidates for the underlying unobserved time-constant country heterogeneity are none other than the widely used instrument variables in the previous cross-sectional institutional studies, for example: ethno-linguistic fractionalization (Mauro 1995; Easterly 2006), settler's mortality (Acemoglu *et al*. 2001; Rodrik *et al*. 2004), and distance from equator and fraction of population that speaks English/European language (Hall and Jones, 1999). Recall these instruments have been used for endogenous institutional variables and are shown to be good predictors in numerous cross-country income and growth estimations. They are however persistent over time and this characteristic apparently makes them the best candidates to be captured in the country fixed effect term in panel analysis.

Another interesting finding from Table 3 is that we obtain somewhat greater coefficient and higher significance level for the political institutions variable i.e. 0.138 and 1% level in the property rights estimation (see model 19) than in growth estimation (Table 2 model 13) with 0.002 at 5% level. Therefore, this finding undoubtedly give credibility to the result in model (2) and (7) in Table 1 earlier which indicates political institutions do cause growth and the causation mostly run indirectly via the property rights channel. Furthermore, this finding is also in line with Acemoglu *et al.* (2005)'s theory of political prominence in determining economic (or formal) institutions that matter to growth.

Table 2: Robustness test for the generalized trust data in growth estimation

	Dependent variable: Log real GDP percapita growth					
Estimation model	Fixed effects[a]		Pooled OLS		Fixed effects[b]	
	(8)	(9)	(10)	(11)	(12)	(13)
Lagged income	-0.075**	-0.076**	-0.006	-0.005	-0.042***	-0.042***
	(0.032)	(0.031)	(0.006)	(0.006)	(0.014)	(0.014)
Physical capital	0.123***	0.121***	0.043***	0.043***	0.035***	0.033***
	(0.036)	(0.039)	(0.014)	(0.014)	(0.006)	(0.006)
Population growth	-0.023	-0.023	-0.000	0.000	0.023***	0.024***
	(0.024)	(0.024)	(0.006)	(0.006)	(0.007)	(0.007)
Human capital	0.002	0.002	0.000	0.000	0.003***	0.002***
	(0.001)	(0.002)	(0.000)	(0.000)	(0.001)	(0.001)
Political institutions		-0.001		-0.001		**0.002****
Index		(0.005)		(0.002)		(0.001)
Generalized trust	0.001	0.001	0.000	0.000		
	(0.001)	(0.001)	(0.000)	(0.000)		
Constant	0.282	0.311	-0.068	-0.066	-0.023	-0.029
	(0.296)	(0.268)	(0.070)	(0.072)	(0.075)	(0.075)
Observations	59	59	59	59	1,418	1,413
Number of country	27	27			62	62
Adj. R-squared	0.284	0.258	0.280	0.269	0.287	0.291
F-test η_i = 0	**1.01**	**0.97**			**6.56**	**6.51**
p-value	**0.486**	**0.532**			**0.000**	**0.000**

Note: Robust standard errors are in parentheses. ***, **, * indicate the coefficient is significant at 1%, 5% and 10% respectively.
[a] This regression assumes that generalized trust has enough variations in its data and FE regression is able to capture its effects.
[b] This regression assumes that the effect of trust is constant and it is captured via unobserved time-constant country specific effect term η_i.

Table 3: Robustness test for the generalized trust data in property rights estimation

	Dependent variable: Property rights index					
Estimation model	Fixed effects[a]		Pooled OLS		Fixed effects[b]	
	(14)	(15)	(16)	(17)	(18)	(19)
Political institutions		-0.012		-0.055		**0.138*****
Index		(0.120)		(0.101)		(0.022)
Generalized trust	-0.036	-0.037	-0.001	-0.005		
	(0.025)	(0.031)	(0.009)	(0.013)		
Real GDP percapita	2.207	2.225	8.410	8.570	3.620***	3.334***
Growth	(5.849)	(5.988)	(5.647)	(5.830)	(0.594)	(0.597)

Education attainment	-0.025	-0.024	0.019	0.018	0.013**	0.013**
	(0.035)	(0.038)	(0.011)	(0.011)	(0.006)	(0.006)
Government consumption	0.075	0.076	-0.031	-0.035	-0.011	-0.009
	(0.068)	(0.069)	(0.029)	(0.029)	(0.008)	(0.008)
Urban population	0.111	0.110	0.013**	0.014**	0.107***	0.094***
	(0.071)	(0.076)	(0.007)	(0.007)	(0.008)	(0.008)
Constant	0.329	0.464	4.890***	5.262***	-0.015	-0.058
	(3.967)	(4.550)	(0.503)	(0.848)	(0.351)	(0.343)
Observations	64	64	64	64	1,441	1,441
Number of country	31	31			62	62
Adj. R-squared	0.553	0.537	0.230	0.224	0.617	0.629
F-test η_i = 0	**2.40**	**2.28**			**21.92**	**23.19**
p-value	**0.011**	**0.017**			**0.000**	**0.000**

Note: Robust standard errors are in parentheses. ***, **, * indicate the coefficient is significant at 1%, 5% and 10% respectively. [a, b] Refer notes in Table 2 above.

4. Concluding remarks

In this study, we seek to test whether trust can be the best proxy to examine the social capital effect on growth and property rights. Using the generalized trust data obtained from the World Value Survey, we show that the data yield unrobust results in panel estimation due to missing observation problem. If trust is omitted from the panel estimation with the assumption that it could be the underlying unobserved heterogeneity country-specific factor, the results of panel fixed effect estimation of growth improves. This is however not the case in panel estimation of property rights which arguably indicate that the underlying heterogeneity factor for property rights could be other than trust. Meanwhile, political institutions is shown to be a significant determinant of growth but its effect could possibly occur indirectly via property rights channel.

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