

Navarra Center for International Development



Working Paper n° 05/2014

Do Institutions Alleviate Poverty? An Empirical Analysis

Maurizio Intartaglia

University of Sheffield, Sheffield, UK

Juan Carlos Cuestas

University of Sheffield, Sheffield, UK

**Navarra Center for International Development
WP-05/2016**

Do institutions alleviate poverty? An empirical analysis
Maurizio Intartaglia and Juan Carlos Cuestas
Working Paper No. 08/2014
November 2014

ABSTRACT

This paper analyses whether institutional quality affects poverty, and unlike previous papers, we use a larger dataset and panel estimations. Whereas cross-section regressions disclose a relationship between the quality of institutions and poverty alleviation, this linkage vanishes in panel regression analysis.

Keywords: Institutions, Poverty, Developing countries

JEL classification: I3, O1

Corresponding author: Mauricio Intartaglia
 Department of Economics
 University of Sheffield
 United Kingdom

Email: intartagliamaurizio@gmail.com

1. Introduction

An enormous body of work has accumulated over the last few decades in an attempt to pinpoint the impact of institutions over the process of economic development. Within this body of literature there are a number of studies that have examined whether a well-working institutional framework affects the standard of living for the poor. This paper aims at contributing to this fast growing literature.

From a theoretical viewpoint, institutions could play an important role in poverty reduction. For example, Grindle (2004) posits that good governance is a precondition for poverty reduction. According to Hasan *et al.* (2007), weak institutions in the forms of ill-defined property rights, mounting corruption and heavy regulatory burden, are likely to foster rent-seeking activities by the rich at the expense of the rest of society, especially the poor. Rothstein and Uslaner (2005) explain that universal welfare programs are unlikely to gain the necessary political support if the tax payers believe that resources will be drained by corruption.

On the empirical front, the literature that examines the links between institutions and poverty rely on pure cross-sectional approaches (Chong and Calderón, 2000; Hasan *et al.* 2007; Tebaldi and Mohan, 2010). One problem with cross-country regressions is that they fail to control for unobserved country-level effects. In the presence of correlation between these effects and the explanatory variables, which is quite likely in large sample of countries, the coefficient estimates may be biased. Moreover, pure cross-sectional analyses do not exploit any piece of information available in the time-series dimension of the data. The panel data analysis allows us to go beyond the cross-country variance and to assess whether changes in institutional quality over time within a country have any effect on poverty. The

only study on the institutional quality-poverty relationship which uses a longitudinal approach is Perera and Lee (2013). However, their investigation is limited to only nine countries from Asia. In this study, we employ both cross-sectional and longitudinal approaches on a larger set of developing countries.

2. Sample

Our investigation focuses on an unbalanced panel of 65 countries over the period 1984-2012. The data are averaged over five-year (non-overlapping) periods (the last period is composed by four years). This allows us to abstract from short run disturbances and to maximize the number of country-observations. The dataset does not record poverty rates for developed countries, thus our analysis is limited to the sample of developing countries.

In keeping with standard development literature, we use the *headcount* index based on the international poverty lines of \$ 2 and \$ 1.25 a day as our main dependent variable. This index simply counts the number of people with per capita consumption (or income) below the poverty lines. One problem with such measure is that it does not reflect the depth of poverty. A reduction in income of those living below the poverty line will not result in a reduction of the headcount. Such kind of information is reflected in our second measure of poverty, namely the *poverty gap* index. The higher the index, the farther the average poor from the poverty line is.

Our main variable of interest is the quality of institutions. The measure of institutional quality comes from the International Country Risk Guide (ICRG) – a dataset collected by the Political Risk Services (PRS). In particular, as a measure of the overall institutional quality we use the arithmetic average of three PRS indicators: (i) corruption within the

political system, (ii) law and order, and (iii) bureaucratic quality. The overall index ranges from 0 to 1, where higher values denote better institutional quality. As for conditional information we control for the initial level of poverty, public spending (expressed as share of GDP), openness (defined as the sum of export and import as a share of GDP) and population growth. Data on poverty and control variables are collected from the World Bank *World Development Indicators*. Data on institutions have been retrieved from Teorell *et al.* (2011).¹

3. Empirical findings

To start our empirical analysis we compute cross sectional estimates based on data averaged over the entire time period. Columns 1 to 4 of table 1 show the results from our OLS estimation. As it can be seen, columns 1 to 3 provide evidence in support of a statistically significant association between institutional quality and poverty alleviation. The magnitude of the relationship is substantial: taken at face value, the coefficient in column 1 implies that a one-standard deviation increase in institutional quality is estimated to lower the poverty rate by 0.022 (2.2%).

Columns 5 to 8 show that once the observations identified as outliers are dropped from the sample, the statistical significance of the estimates generally improves. These results are in line with Chong and Calderon (2000), Tebaldi and Mohan (2010) and Perera and Lee (2013) who also find a significant relationship between institutions and poverty alleviation. On the other hand, our findings are in contrast with Hasan *et al.* (2007) who provide no evidence for an association between institutional quality and poverty rate.

¹ To save space, the list of countries included in the sample has been omitted. The sample is available on request.

Table 1

Poverty and institutional quality: cross section results

	Full Sample				Excluding Outliers			
	Headcount (\$2)	Headcount (\$1.25)	Poverty gap (\$2)	Poverty gap (\$1.25)	Headcount (\$2)	Headcount (\$1.25)	Poverty gap (\$2)	Poverty gap (\$1.25)
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Institutions	-0.267** (0.120)	-0.219** (0.108)	-0.149* (0.080)	-0.098 (0.065)	-0.386*** (0.114)	-0.220*** (0.074)	-0.189*** (0.064)	-0.107** (0.043)
Pov0	0.777*** (0.036)	0.723*** (0.043)	0.691*** (0.045)	0.584*** (0.060)	0.772*** (0.034)	0.671*** (0.038)	0.700*** (0.041)	0.606*** (0.055)
Public spending	0.005 (0.003)	0.005* (0.003)	0.003 (0.002)	0.002 (0.001)	0.003 (0.003)	0.007*** (0.002)	0.003** (0.001)	0.003** (0.001)
Openness	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000* (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Pop. Growth	0.033*** (0.010)	0.023*** (0.008)	0.018*** (0.006)	0.013*** (0.005)	0.036*** (0.010)	0.028*** (0.008)	0.014** (0.005)	0.010** (0.004)
Constant	0.078 (0.069)	0.039 (0.062)	0.044 (0.044)	0.031 (0.033)	0.148** (0.057)	0 (0.042)	0.064* (0.034)	0.02 (0.026)
Countries	65	65	65	65	63	59	59	59
Adjusted R squared	0.931	0.909	0.904	0.843	0.943	0.941	0.934	0.893
Durbin-Wu-Hausman	0.647	0.930	0.938	0.676	0.784	0.889	0.966	0.592

Notes: Robust standard errors are reported in parentheses. The p -values for the Durbin-Wu-Hausman statistic indicate that the null hypothesis that the OLS estimator is consistent cannot be rejected.***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

We now turn our attention to the panel regression model:

$$Pov_{it} = \alpha Pov_{it-1} + \beta Inst_{t-1} + \gamma' X_{it-1} + \lambda_t + \eta_i + \varepsilon_{it}(1)$$

where i represents country and t stands for time period. $Pov_{i,t}$ is the measure of poverty, $Inst_{t-1}$ is the lagged level of institutional quality and X_{it-1} are the lagged values of the control variables. λ_t is a time fixed effect, η_i is the country-specific effect and ε_{it} is the disturbance.

The empirical findings from the fixed effect estimator are given in columns 1-4, table 2. As it can be seen, the coefficients associated with institutions are no longer statistically significant. This result implies that the quality of institutions has no discernible effect in terms of poverty alleviation. However, the fixed effect estimates can be biased because of the presence of the lagged dependent variable in the set of regressors. To correct for the

panel dynamic bias introduced by the lagged dependent variable we also use the system General Method of Moments (GMM) estimator (Arellano and Bover, 1995; Blundell and Bond, 1998). Columns 5 to 8 of table 2 display the estimates yield by the system GMM estimator. We observe that the institutions variable enters with a positive sign. This means that higher levels of institution quality may increase the incidence and the depth of poverty. However, the coefficients associated with institutions are statistically insignificant, indicating that there is no evidence to support an impact of institutional quality on poverty. As for the remaining variable the system GMM estimator validates the findings yield by cross sectional regressions.

Table 2
Poverty and institutional quality: panel results

	Fixed effects				System GMM			
	Headcount (\$2)	Headcount (\$1.25)	Poverty gap (\$2)	Poverty gap (\$1.25)	Headcount (\$2)	Headcount (\$1.25)	Poverty gap (\$2)	Poverty gap (\$1.25)
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
Institutions (t-1)	-0.069 (0.055)	-0.076 (0.052)	-0.050 (0.036)	-0.038 (0.029)	0.051 (0.114)	0.047 (0.114)	0.092 (0.070)	0.108 (0.069)
Poverty (t-1)	0.433*** (0.113)	0.572*** (0.099)	0.450*** (0.097)	0.323*** (0.079)	0.871*** (0.086)	0.751*** (0.075)	0.752*** (0.091)	0.517*** (0.177)
Public spending (t-1)	0.002 (0.002)	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	0.005* (0.003)	0.005* (0.003)	0.004** (0.002)	0.004* (0.002)
Openness (t-1)	-0.001 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)
Pop. Growth (t-1)	0.018* (0.010)	0.014 (0.011)	0.010 (0.008)	0.008 (0.007)	0.065** (0.029)	0.055** (0.024)	0.050** (0.019)	0.046** (0.020)
Constant	0.167** (0.068)	0.086* (0.049)	0.081** (0.033)	0.052** (0.020)	-0.156 (0.124)	-0.141 (0.095)	-0.135* (0.073)	-0.132 (0.080)
Countries	65	65	65	65	65	65	65	65
Observations	209	209	209	209	209	209	209	209
R squared	0.919	0.921	0.895	0.774				
Instruments					15	15	15	15
AR(2) test					0.715	0.822	0.766	0.409
Hansen J test					0.559	0.69	0.842	0.877

Notes: Robust standard errors are reported in parentheses. Time period dummies are included for each 5-year period.***, ** and * denote statistical significance at the 1%, 5% and 10% level, respectively.

4. Conclusion

Almost unanimously previous literature points out a significant impact of institutional quality on poverty reduction. Our results show that the cross-section analysis corroborates a statistically significant relationship between institutions and poverty alleviation, yet this association vanishes in the panel estimations. Such findings suggest that institutional improvement does not necessarily alleviate poverty. However, these empirical findings along with their implications have to be taken with some caution. First, the data on which the analysis relies might suffer from measurement errors and issues of comparability across different countries. Moreover, the relationship between institutions and poverty might be more complex than empirical models so far have supposed. Further research with emphasis on the channels linking institutions to poverty is needed to ascertain the impact of the institutional set-up on poverty.

References

- Arellano, M., and O. Bover (1995). Another look at the instrumental variable estimation of error-components models. *Journal of Econometrics*, 68(1): 29-51.
- Blundell, R., and S. Bond (1998). Initial conditions and moment restrictions in Dynamic Panel Data Models. *Journal of Econometrics*, 87(1): 115-143.
- Chong, A. and C. Calderón (2000). Institutional quality and poverty measures in a cross-section of countries. *Economics of Governance*, 1(2): 123-135.
- Grindle, M. S. (2004). Good enough governance: poverty reduction and reform in developing countries. *Governance*, 17(4): 525-548.
- Hasan, R., D. Mitra, and M. Ulubasoglu (2007). Institutions and policies for growth and poverty reduction: The role of private sector development. *Asian Development Review*, 24(1): 69-116.
- Perera, L. D. H. and G. H. Lee (2013). Have economic growth and institutional quality contributed to poverty and inequality reduction in Asia? *Journal of Asian Economics*, 27: 71-86.
- Rothstein, Bo, and Eric M. Uslaner. 2005. All for All. Equality, corruption and social trust. *World Politics*, 58 (3): 41-73.
- Tebaldi, E. and R. Mohan (2010). Institutions and poverty. *The journal of development studies*, 46(6): 1047-1066.
- Teorell, Jan, Marcus Samanni, Sören Holmberg and Bo Rothstein (2011). *The quality of government dataset*, version 20Dec13. University of Gothenburg: The Quality of Government Institute, <http://www.qog.pol.gu.se>.