



Are all democracies equally good? The role of interactions between political environment and inequality for rule of law [☆]

Uwe Sunde ^{a,b,c,*}, Matteo Cervellati ^{b,d,e}, Piergiuseppe Fortunato ^d

^a University of St. Gallen, Switzerland

^b IZA, Bonn, Germany

^c CEPR, United Kingdom

^d University of Bologna, Italy

^e IAE Barcelona, Spain

Received 11 April 2007; received in revised form 12 September 2007; accepted 1 October 2007

Abstract

Using cross-country data, we find evidence for a significant interaction effect between democracy and equality in determining the quality of growth-promoting institutions like rule of law. Democracy is associated with better rule of law when inequality is lower.

© 2007 Elsevier B.V. All rights reserved.

Keywords: Inequality; Democracy; Institutions; Rule of law; Interactions

JEL classification: O43; P48; P14

The quality of economic institutions, in particular property rights protection and rule of law, are considered crucial for economic development.¹ The empirical debate about the determinants of high-quality economic institutions is still ongoing. Numerous findings point to the central role of inequality for the quality of rule of law.² The role played by democracy for the implementation of high-quality institutions has also attracted increasing attention. Theories of endogenous democratization either leave open whether democracy implies better economic institutions or postulate a positive relationship between democracy and economic development.³ The empir-

ical literature has documented a large variability in the quality of rule of law across democracies. Overall the findings support a positive effect of democracy on institutional quality, but the debate is still ongoing.⁴

While both inequality and democracy affect the quality of rule of law, the role of interactions between inequality and democracy for institutional quality has not been studied. Already *de Tocqueville* (1835, *Second Book, Chapter I*), warned of the possible dangers associated with democracy in societies characterized by large economic disparities. As an ideal state he describes a democracy with perfect equality and freedom, but he also notices the potential problems of larger political equality without the appropriate economic environment, which may lead to a “tyranny of the majority”. If social and economic conditions are unequal, democracies granting more equal political influence may entail excessive redistributive pressure or even public expropriation, thereby reducing private property rights protection, and distorting the incentives for individual entrepreneurship.

[☆] The authors would like to thank an anonymous referee as well as David Jaeger for helpful suggestions.

* Corresponding author. Contact: Schaumburg-Lippe Str. 7-9, D-53113 Bonn, Germany. Tel.: +49 228 3894 221; fax: +49 228 3894 510.

E-mail address: sunde@iza.org (U. Sunde).

¹ See, e.g., Knack and Keefer (1995), Hall and Jones (1999), and Rodrik et al. (2004).

² See, e.g., Chong and Calderon (2000), Keefer and Knack (2002), Gupta et al. (2002), Chong and Gradstein (2007).

³ See, e.g., Acemoglu and Robinson (2005) or Gradstein (2007).

⁴ See Barro (2000), Rodrik and Wacziarg (2005).

Table 1
Determinants of economic institutions (rule of law)

Dependent variable	Rule of law (Kaufmann)				Rule of law (ICRG)				Government Anti Diversion Policies (GADP)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
<i>Democracy-index</i>												
Democracy-indicator	0.551*** [0.174]				0.36 [0.330]				0.122*** [0.035]			
Civil liberties		0.299*** [0.058]		0.300** [0.117]		0.420*** [0.104]		0.544*** [0.186]		0.063*** [0.010]		0.065*** [0.021]
Political rights			0.183*** [0.039]				0.202** [0.083]				0.037*** [0.008]	
<i>Equality measure</i>												
Middle class share	0.060*** [0.011]	0.038*** [0.012]	0.052*** [0.012]		0.102*** [0.019]	0.061** [0.025]	0.085*** [0.022]		0.011*** [0.003]	0.007*** [0.002]	0.010*** [0.002]	
Reverse Gini-index				0.026** [0.011]				0.038* [0.022]				0.004* [0.002]
Ethnic fragmentation	-0.005 [0.003]	-0.002 [0.002]	-0.001 [0.003]	0.000 [0.003]	-0.007 [0.005]	-0.003 [0.005]	-0.003 [0.006]	-0.004 [0.006]	-0.001 [0.001]	0 [0.000]	0 [0.001]	0 [0.001]
Tropical location	-0.609*** [0.184]	-0.651*** [0.156]	-0.648*** [0.165]	-0.614** [0.263]	-0.573* [0.305]	-0.637* [0.326]	-0.657** [0.320]	-0.737 [0.481]	-0.140*** [0.038]	-0.140*** [0.030]	-0.143*** [0.033]	-0.142*** [0.048]
Oil exporting	-0.422 [0.321]	-0.424* [0.226]	-0.386 [0.268]	-0.415 [0.249]	-0.158 [0.419]	-0.054 [0.324]	-0.053 [0.348]	0.592 [0.373]	-0.024 [0.061]	-0.026 [0.042]	-0.02 [0.052]	-0.007 [0.040]
Constant	-2.216*** [0.542]	-0.028 [0.739]	-1.071* [0.623]	0.196 [0.874]	-0.686 [0.937]	2.531* [1.414]	0.714 [1.182]	3.565** [1.600]	0.149 [0.129]	0.611*** [0.139]	0.386*** [0.128]	0.706*** [0.162]
Observations	83	82	82	59	75	74	74	56	82	81	81	58
R-squared	0.64	0.74	0.69	0.62	0.5	0.61	0.54	0.61	0.62	0.72	0.65	0.67

Notes: Robust standard errors are in brackets. *, **, *** denote significance at the 10-, 5-, 1-Percent level, respectively. The number of democracies according to the Persson and Tabellini (2004) definition among the observations in col. (1), (5) and (9) are 58, 56, and 58, respectively.

This paper extends the empirical literature by investigating whether such an interaction between inequality and democracy indeed determines the quality of rule of law. We use available cross-country data and estimate the relation between institutional quality and different measures of economic equality and democracy. Consistent with earlier findings, countries with lower inequality and better democracies exhibit better rule of law. We then extend the specification adding an interaction to investigate how democracy affects growth-enhancing institutions *in conjunction* with economic inequality. We find that institutional quality is significantly affected by the interaction between the quality of democracy and equality.

1. Data description

We primarily use the cross-country data constructed by Easterly (2001) and by Persson and Tabellini (2004). As measure of democracy, the data contain averages of the Freedom House indices of civil liberties and political rights (Gastil) over the period 1990 and 1998 that range from 1 to 7, where lower values indicate better institutions. The Persson–Tabellini data only includes 85 democracies that satisfy a minimum requirement of civil liberties and political rights with a Gastil index not exceeding a value of 5. To have measures of democracy or democratic quality, we generate a democracy indicator that takes the value 1 if a country is democratic according to the definition by Persson and Tabellini (2004), and re-scale the indices of civil liberties and political rights

multiplying them by -1 . As measures of (in-)equality, the data contains information on the average income share of the 2nd, 3rd and 4th income quintile over the period 1960 and 1996, and the average Gini-coefficient of income in the 1980s and 1990s.⁵

We use measures for the quality of rule of law from different data sources. We use the standardized point estimates of the fifth cluster (rule of law) of the World Bank measures of institutional quality and governance, which measure the success of a society in developing an environment in which fair and predictable rules form the basis for economic and social interactions, and importantly, the extent to which property rights are protected” (see Kaufmann et al., 2004, p. 4). As alternative measure, we use the “rule of law” variable provided by the International Country Risk Guide (ICRG), which reflects the degree to which the citizens of a country are willing to accept the established institutions to make and implement laws and adjudicate disputes on a scale from 0 to 10. Lower scores indicate a tendency for using physical force or illegal means to settle

⁵ To have two measures of equality we generate a reversed Gini-Index variable by subtracting the Gini from 100. The middle class income share data are taken from Easterly (2001), the Gini data are taken from Persson and Tabellini (2004); both variables are based on Deininger and Squire (1996). We are aware of the limitations of cross-country data on income inequality that have to do with limited coverage of income data, problems of comparability across countries, and measurement error. Nevertheless, we use the data for lack of more reliable data and for comparability with earlier contributions.

Table 2
Determinants of economic institutions (rule of law) including interactions of political institutions and inequality

Dependent variable	Rule of law (Kaufmann)				Rule of law (ICRG)				Government Anti Diversion Policies (GADP)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Democracy-index	-2.786**				-6.740***				-0.669***			
Democracy-indicator	[1.064]				[1.509]				[0.242]			
Civil liberties		-0.236		-0.943*		-1.253**		-1.579		-0.083		-0.181*
		[0.277]		[0.470]		[0.592]		[0.976]		[0.086]		[0.096]
Political rights			-0.630**				-1.493***				-0.147*	
			[0.279]				[0.467]				[0.081]	
Equality measure	0.008	0.078***	0.109***		-0.017	0.184***	0.203***		-0.001	0.018***	0.023***	
Middle class share	[0.019]	[0.023]	[0.021]		[0.029]	[0.045]	[0.034]		[0.005]	[0.006]	[0.005]	
Reverse Gini-index				0.081***				0.129***				0.015***
				[0.022]				[0.041]				[0.004]
Interaction	0.076***	0.011**	0.017***	0.021**	0.164***	0.036***	0.037***	0.035**	0.018***	0.003*	0.004**	0.004**
	[0.023]	[0.005]	[0.006]	[0.008]	[0.033]	[0.012]	[0.010]	[0.016]	[0.005]	[0.002]	[0.002]	[0.002]
Ethnic fragmentation	-0.006*	-0.002	-0.002	0.001	-0.008	-0.003	-0.004	-0.002	-0.001	0.000	0.000	0.000
	[0.003]	[0.002]	[0.002]	[0.003]	[0.005]	[0.004]	[0.005]	[0.005]	[0.001]	[0.000]	[0.001]	[0.001]
Tropical location	-0.404*	-0.541***	-0.408**	-0.651**	-0.212	-0.306	-0.162	-0.851*	-0.089**	-0.109***	-0.085**	-0.145***
	[0.207]	[0.159]	[0.183]	[0.250]	[0.321]	[0.313]	[0.327]	[0.430]	[0.041]	[0.031]	[0.041]	[0.045]
Oil exporting	-0.637**	-0.527**	-0.629***	-0.311	-0.599*	-0.354	-0.515	0.818**	-0.074	-0.053	-0.074	0.012
	[0.249]	[0.225]	[0.218]	[0.261]	[0.319]	[0.333]	[0.315]	[0.384]	[0.048]	[0.045]	[0.046]	[0.039]
Constant	-0.079	-1.99	-3.886***	-3.184**	4.194***	-3.59	-5.067***	-2.139	0.651***	0.072	-0.258	0.042
	[0.902]	[1.242]	[1.074]	[1.486]	[1.349]	[2.435]	[1.790]	[2.720]	[0.221]	[0.300]	[0.275]	[0.267]
Observations	83	82	82	59	75	74	74	56	82	81	81	58
R-squared	0.67	0.75	0.73	0.66	0.57	0.66	0.61	0.65	0.67	0.74	0.7	0.71

Notes: See Table 1.

claims, see [Knack and Keefer \(1995\)](#). As third measure, we use the composite index of government anti-diversion policies, GADP, which includes an average over the categories law and order, bureaucratic quality, corruption, risk of expropriation, and government repudiation of contracts, see [Hall and Jones \(1999\)](#). All data are averages for the years 1985–1995. Higher values of any of the rule of law or GADP variables imply better institutions.

2. Results

We first run OLS regressions with the quality of economic institutions (rule of law) as dependent variable. Explanatory variables are three alternative measures for democratic political institutions (a democracy indicator, the Freedom House index for civil liberties, and the Freedom House index for political rights, both multiplied by -1) and two alternative measures of equality (the middle class income share and the reverse Gini index). Additional controls include tropical location and an indicator for oil exporting to account for geographic factors that might drive the results (see [Easterly, 2001](#)), as well as an index for ethno-linguistic fractionalization ([Easterly and Levine, 1997](#); [Easterly, 2001](#); [Persson and Tabellini, 2004](#)). The results are presented in [Table 1](#). The first four columns use the World Bank measures of rule of law, columns (5) to (8) use the ICRG rule of law variables, and columns (9) to (12) use the GADP measure as dependent variable. The findings compare to those in the literature: (better) democracies (granting their citizens more civil liberties and political rights) and more equal countries exhibit better rule of law and GADP.

[Table 2](#) presents the results of regressions of a model including an interaction term between democratic institutions and equality. Across all specifications, the results reveal a (weak) negative effect of (the quality of) democratic institutions on the quality of economic institutions. Equality has a strong positive effect. Most strikingly, the interaction between democracy and equality is positive and significant in all cases. Further experiments reveal that these results are robust to changes in the specification.⁶

3. Discussion

Our findings reveal non-monotonic effects of inequality and political institutions on rule of law. Higher equality increases the likelihood of good economic institutions, and the quality of

democratic institutions does not necessarily appear to have a positive effect on the quality of economic institutions. This result contradicts the conventional wisdom from a standard regression without interaction, according to which democracies are associated with better outcomes. Instead, the significant positive interaction term implies that democracies are more likely to implement good rule of law when inequality is low. Intuitively, compared to an unequal oligarchy, an improvement in democracy is associated with better economic institutions if it is associated with an increase in equality. In line with de Tocqueville's argument, a possible mechanism predicting the positive interaction effect is that low inequality, and correspondingly low redistributive pressure, might facilitate the implementation of good institutions under democracy. Complementary to this argument, a rule of law may be more easily implemented under the oligarchy of a rich elite if inequality is high (similar to the Hobbesian view of a Leviathan).⁷ Both arguments imply that the interaction between equality and democracy crucially affect institutional quality and that the effect of democracy on rule of law might be non-monotonic, depending on inequality. The findings thus suggest that the relationship between rule of law and democracy is more intricate than generally assumed in the literature. Democracy by itself does not necessarily seem to be conducive to (or interchangeable with) institutional quality irrespective of the economic environment in terms of inequality. This raises a note of caution concerning models that treat good economic institutions and democratic regimes as synonyms and illustrates the importance of taking the economic environment, in particular the degree of inequality, into account when gauging the potential advantages of implementing democracy for fostering economic development.

Of course, cross-country regressions have to be interpreted with caution. On the one hand, the results have been obtained applying the specification and controls conventionally used in the literature, hold for different measures of institutional quality and inequality, and are closely in line with the findings in the literature. Our main finding of a robust significant interaction between inequality and democracy effect in [Table 2](#) therefore raises questions about the specification of earlier empirical models that omit interactions and thus exclude the possibility of a non-monotonic relationship between inequality, and political and economic institutions. On the other hand, measurement error and endogeneity have not been addressed explicitly and might affect our estimates, and relevant variables could have been omitted in the estimations. While we cannot think of an obvious argument for which omitted or endogenous variables may give rise to a consistently positive interaction coefficient, such a problem cannot be ruled out a priori. We therefore interpret our results as providing suggestive partial correlations that illustrate the need for a better understanding of the determinants of institutional quality, and the mechanisms linking economic institutions like rule of law, and the political regime.

⁶ In particular, the interaction remains significant when considering the reverse Gini instead of middle class share, or including dummy variables for colonial and legal origin, as suggested by [Persson and Tabellini \(2004\)](#) or [La Porta et al. \(2004\)](#). Including (potentially endogenous) controls for income or human capital leaves the interaction qualitatively unchanged, but the coefficients become slightly smaller, and less significant in some specifications, due to likely endogeneity problems. Using a binary measure for equality by grouping countries above and below median equality also delivers consistently positive significant interaction coefficients, suggesting that measurement error in the inequality variables is unlikely to drive the results.

⁷ See [Cervellati et al. \(in press\)](#) for a model that derives these predictions formally.

References

- Acemoglu, D., Robinson, J., 2005. *Economic Origins of Dictatorship and Democracy*. Cambridge University Press, Cambridge.
- Barro, R.J., 2000. Rule of law, democracy, and economic performance. In: Miles, M., et al. (Ed.), 2000 Index of Economic Freedom. The Heritage Foundation, Washington.
- Cervellati, M., Fortunato, P., Sunde, U., in press. Hobbes to Rousseau: inequality, institutions, and development. *Economic Journal*.
- Chong, A., Calderon, C., 2000. Institutional quality and income distribution. *Economic Development and Cultural Change* 48, 761–786.
- Chong, A., Gradstein, M., 2007. Inequality and institutions. *Review of Economics and Statistics* 89 (3), 454–465.
- de Tocqueville, A., 1835. *Democracy in America*. Gosselin, Paris. <http://xroads.virginia.edu/~HYPER/DETOC/home.html>.
- Deininger, K., Squire, L., 1996. A new data set measuring income inequality. *World Bank Economic Review* 10 (3), 565–591.
- Easterly, W., 2001. The middle class consensus and economic development. *Journal of Economic Growth* 6 (4), 317–335.
- Easterly, W., Levine, R., 1997. Africa's growth tragedy: policies and ethnic divisions. *Quarterly Journal of Economics* 112 (4), 1203–1250.
- Gradstein, M., 2007. Inequality, democracy, and the protection of property rights. *Economic Journal* 117 (516), 252–269.
- Gupta, S., Davoodi, H., Alonso-Terme, R., 2002. Does corruption affect income inequality and poverty? *Economics of Governance* 3 (1), 23–45.
- Hall, R.E., Jones, C.I., 1999. Why do some countries produce so much more output per worker than others? *Quarterly Journal of Economics* CXIV (1), 83–116.
- Kaufmann, D., Kraay, A., and Mastruzzi, M., 2004. *Governance Matters III: Governance Indicators for 1996–2002*, World Bank Research Paper, April 5, 2004.
- Keefer, P., Knack, S., 2002. Polarization, politics, and property rights: links between inequality and growth. *Public Choice* 111, 127–154.
- Knack, S., Keefer, P., 1995. Institutions and economic performance: cross-country tests using alternative institutional measures. *Economics and Politics* 7, 207–227.
- La Porta, R., Lopez-de Silanes, F., Pop-Eleches, C., Shleifer, A., 2004. Judicial checks and balances. *Journal of Political Economy* 112 (2), 445–470.
- Persson, T., Tabellini, G., 2004. Constitutional rules and fiscal policy outcomes. *American Economic Review* 94 (1), 25–45.
- Rodrik, D., Wacziarg, R., 2005. Do democratic transitions produce bad economic outcomes? *American Economic Review* 95 (3), 50–55.
- Rodrik, D., Subramanian, A., Trebbi, F., 2004. Institutions rule: the primacy of institutions over geography and integration in economic development. *Journal of Economic Growth* 9, 131–165.