

DEMOCRACY, DEVELOPMENT AND CONFLICT¹

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Abstract

Currently the strategy for promoting internal peace favoured by the international community is to promote democracy, the rationale being that democratic accountability lowers incentives for rebellion. We argue that democracy also constrains the technical possibilities of government repression, and that this makes rebellion easier. While the net effect of democracy is therefore ambiguous, we suggest that the higher is income the more likely is it to be favourable. Empirically, we find that whereas in rich countries democracy makes countries safer, below an income threshold democracy increases proneness to political violence. We show that these results hold for a wide variety of forms of political violence.

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1. Introduction

Many low-income countries are periodically beset by political violence. Since the fall of the Soviet Union the dominant international strategy for promoting peace in these societies has been democracy. The rationale for this strategy, over and above the intrinsic desirability of democracy, is that by making the government more accountable, citizens will have less cause for violent opposition. While such an *accountability effect* is indeed plausible, democracy may also have other effects on the risk of violence. In particular, accountability may curtail some government strategies that are effective in maintaining security. For example, unconstrained by accountability, both Stalin and Saddam Hussein were able to maintain peace through intense repression despite manifest reasons for popular grievance. In both societies, more democratic successor governments have faced more violence because accountability to the law has limited what security services are permitted to do. Democracy thus generates *technical regression in repression*, which can potentially more than fully offset accountability, so that democracy increases the risk of violence.

A priori the relative potency of these opposing effects of democracy is ambiguous and in this paper we investigate it empirically. However, we suggest that the accountability effect becomes more potent as income rises. Hence, while the net effect is ambiguous, it is systematically related to income. A corollary is the possibility that there is a threshold level of income at which the net effect is zero, being differently signed above and below this threshold.

Why might we expect the accountability effect to vary with the level of income? First, as income increases the structure of the economy changes with a rising share of government spending. This can be expected to enhance the importance of the accountability effect of democracy since accountability can be presumed to increase the efficiency of government spending. As this efficiency bonus of democracy will be proportionately more important at higher levels of income, rebellion-for-democracy will tend to have a larger pay-off. This in turn implies that democracy might be more peace-promoting at higher levels of income.

A second change in the structure of the economy as income rises is that the share of primary commodities declines. This is important because primary commodities generate 'loot-seeking' opportunities which are one motivation for rebellion (Collier and Hoeffler, 2004). If at low levels of income 'loot-seeking' rather than accountability is the predominant motivation for rebellion, enhanced accountability due to democracy may have little effect.

Third, as income increases individual preferences change. Inglehart (1997) finds that the 'instrumental' goal of material reward becomes less important relative to the more abstract goals of ideology and identity. A corollary is that 'loot-seeking' opportunities will become less valued relative to accountability: a lack of democracy will be more provoking at higher levels of income.

Finally, as shown by Weinstein (2005), even for a given set of individual preferences the aggregate preferences of the rebel organization are endogenous to the structure of economic opportunities. Where loot-seeking opportunities are prominent, adverse selection in recruitment ensures that the goals of the rebel organization become instrumental. Hence, the preferences of the rebel organization give more weight to abstract goals such as that of democratic accountability at higher levels of income.

An implication of each of these four mechanisms is that the accountability effect of democracy, whereby the incentive for political violence is reduced, becomes more potent as income rises. Indeed, as income rises, not only might democracies become safer, but the greater weight placed upon the goal of accountability might make autocracies absolutely more prone to violence.

Having suggested that the net effect of democracy on political violence is *a priori* ambiguous, and that it will vary systematically with income, we now investigate the relationship empirically. First, we substantiate the regression-in-repression effect: democracies are indeed constrained in deploying a key standard technique of suppressing political violence. We take the accountability effect of democracy to be uncontroversial so that the substantiation of regression-in-repression is sufficient to make the net effect of democracy on violence ambiguous. Second, we show that across all the main types of political violence, and across all the main quantitative models, the net effect of democracy on violence improves with income and that *below a threshold level of income democracy increases violence*. In this short paper we do not aspire to establish which of the various possible mechanisms are responsible for the changing net effect of democracy. Given that democracy has a regression-in-repression effect alongside its effect on accountability, a shift in the balance between these two is a potential explanation. However, our empirical results are likely to be consistent with others.

Our results are superficially troubling for the agenda of promoting democracy in low-income societies. However, democracy may still be highly desirable because of its intrinsic merits. An implication is that in low-income societies that democratize additional strategies may be needed to secure peace.

2. Empirical Evidence

We first investigate in Table 1 whether democracy generates technical regress in state repression. We measure government repression by purges, these being an archetypical aspect of the technology of repression. The main independent variable of interest is the level of democracy. For this our underlying measure is the Polity IV scale (from CIDCM, 2007), but since this is an ordinal measure, we transform it into a dummy variable which partitions the sample at a threshold. To avoid an arbitrary choice of control variables, method and estimation approach we rely upon those adopted in the influential study of

Fearon and Laitin (2003)². Data are discussed in the Appendix.

We find that democracy indeed significantly reduces the scope for government repression. We investigate seven different specifications and in all of them the effect of democracy is negative, highly significant and substantial. In columns (1) and (2) the baseline model without and with interaction term is performed. The purges-reducing effect of democracy is also robust to the inclusion of time effects and country fixed effects in the columns (3) and (4), to the instrumentation of income and the interaction term in column (5)³, and to performing logit and probit estimations in the columns (6) and (7)^{4,5}.

At the mean of characteristics, an undemocratic government is predicted to have a 29-fold greater propensity to purge than a democratic government. If purges are an effective technology of repression this is sufficient to make the net effect of democracy on political violence *a priori* ambiguous.

We now turn to the core issue, whether the net effect of democracy is to reduce or increase political violence and whether this is related to the level of income. To our knowledge this issue has not yet been addressed in the published literature.⁶ In Table 2 we focus on rebellion and in Table 3 extend the analysis to a wider range of political violence.

We measure rebellion both by the number of incidents of guerrilla warfare (columns 1-6) and by the COW classification of civil wars (column 7). In column (1) we present a conventional specification of the effect of democracy without any interaction with income. In this and the next five columns the control variables are again as in Fearon and Laitin (2003). In column (1) development significantly reduces guerrilla rebellion but democracy is not significant. In column (2) we introduce the interaction term between democracy and income. Now both it and the direct effect of democracy become significant but with opposite signs. The direct effect is to increase the incidence of rebellion, consistent with technological regression in repression. This is offset by a favourable interaction with income, creating a threshold level of income per capita at around \$2,750 below which the net effect of democracy is to increase the incidence of rebellion. In the columns (3) to (7) we investigate a

² In particular, in the baseline model we address endogeneity concerns with lagged variables.

³ We have checked that all instruments are valid and not explanatory factors of purges and guerrilla warfare. The first stage regressions are available from the authors on request.

⁴ The dummy variable of purges in the columns (6) and (7) in Table 1 takes a value of 1 if at least one purge occurs and 0 otherwise.

⁵ Ai and Norton (2003) have shown that interpreting the interaction terms for non-linear models such as logit or probit is not straightforward and that the magnitude of the coefficient varies for each observation. We have applied their program "Inteff" and have checked that for all our specifications with logit or probit models all or the overwhelming majority of observations have a negative interaction term.

⁶ The only related work which we could find is an unpublished political science paper by Hegre (2003) who, in an empirical investigation of civil war, finds an income-democracy interaction to be significant.

variety of robustness checks. Column (3) introduces time dummies and column (4) instruments for GDP per capita. Columns (5) and (6) replace the OLS with logit and probit specifications in which the dependent variable takes the value of unity if there is any guerrilla activity in the year. In column (7) we replace guerrilla incidents by whether there is an outbreak of civil war, the specification and control variables following those of Collier, Hoeffler and Rohner (2006). Throughout all specifications the interaction term of income has a negative sign and is significant, implying that *democracy has more benign effects in richer countries*. Further, again in all specifications that include this interaction, the direct effect of democracy is positive and significant. This suggests that democracy *reduces* rebellion in rich countries, while *increasing* it in poor countries. There is also some indication that the direct effect of income is positive. Once the interaction term is included, income has a positive sign in all specifications in which it is significant and becomes highly significant once income is instrumented. This suggests that although income growth makes democracies safer, it increases proneness to violence in autocracies.

The marginal effects show the impact of democracy on guerrilla warfare to be substantial and that it varies considerably depending on the level of income. At the mean of other variables and a GDP of \$200 per capita, a democracy is predicted to face 0.237 guerrilla acts, whereas an autocracy faces 0.195. In contrast, at a GDP of \$10,000 per capita a democracy faces a sharply reduced number of 0.119 attacks, whereas an autocracy faces 0.238 attacks.

In Table 3 we investigate whether the results hold for other forms of political violence. We consider riots, coups, revolutions, assassinations, political strikes and demonstrations. In each case the interaction term of democracy and income is negative and in all but one it is highly significant. Conversely, the direct effect of democracy is positive in the four cases in which it is significant. The direct effect of income is less clear, although the predominant pattern is again for the effect to be positive and significant. Thus, casting the net effect of political violence wider suggests that our core results are not an artefact of one particular measure.

3. Conclusion

Since the fall of the Soviet Union democracy has been widely promoted in low-income countries. We have investigated both theoretically and empirically whether democracy is peace-promoting in these countries. We have suggested that the increased accountability and consequent diminished reasons for legitimate grievance inherent in democracy may be offset by the inability of democratic governments to use techniques of repression that autocracies find effective and we showed empirically that democracies indeed appear to be much more constrained than autocracies in using one key technique of repression. If democracy indeed generates these two opposing effects on

prone to political violence, its net effect is *a priori* ambiguous. However, we suggested why the net effect is likely to be systematically related to the level of income. Potentially, this implies an income threshold below which democracy makes societies more prone to political violence. We have found that empirically across a wide variety of forms of political violence there appears to be such a threshold. While income growth makes democracies safer, we have also found some evidence that it makes autocracies not just relatively but absolutely more prone to violence.

While these results are troubling, they do not necessarily call into question the promotion of democracy. Rather, they might imply that in low-income countries international promotion of democracy needs to be complemented by international strengthening of security.

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Data Appendix

Assassinations: Number of politically motivated murders, from Banks (2005).
Coast: Percentage of land within 100 km of ice-free coast, from Gallup, Mellinger and Sachs (2001).
Coups: Dummy variable being 1 if a coup occurred, recoded of Banks (2005).
Democracy: Dummy variable, based on Polity IV scores, from CIDCM (2007). Coded as democracy for scores higher or equal to 6.
Demonstrations: Number of anti-government demonstrations, cf. Banks (2005).
Distance from USA: Distance (km) from capital city to Washington DC, from Gleditsch and Ward (2001).
Ethnic fractionalisation: Updated variable from Fearon and Laitin (2003).
GDP per capita: Per capita GDP in current US\$, from World Bank (2006).
GDP growth: % change on previous year's GDP per capita (as defined above).
Guerrilla warfare: Number of any armed activity, sabotage, or bombing aimed at the overthrow of the present regime, from Banks (2005).
Instability: Following Fearon and Laitin (2003)'s definition, updated using Polity IV scores, from CIDCM (2007).
Island: Dummy taking a value of 1 for islands. From Hoeffler (2007).
Land in Tropics: Percentage of land area in geographical tropics, from Gallup, Mellinger and Sachs (2001).
Mountainous territory: Percentage of the territory that is mountainous, updated variable from Fearon and Laitin (2003).
New state: Dummy variable taking a value of 1 when a state was founded in the previous two years, updated from Fearon and Laitin (2003).
Non-contiguous states: Dummy variable taking a value of 1 when a state is not contiguous, updated variable from Fearon and Laitin (2003).
Number of Neighbours: Number of neighbouring states, from Hoeffler (2007).
Oil exporter: Dummy variable taking a value of 1 when a country year had greater than 33% fuel exports, updated variable from Fearon and Laitin (2003).
Population: From World Bank (2006).
Population in Tropics: Percentage of population in the geographical tropics, from Gallup, Mellinger and Sachs (2001).
Post Cold War: Dummy variable being 1 for the years 1991 or later.
Purges: Number of any systematic elimination by jailing or execution of political opposition within the regime or the opposition. From Banks (2005).
Religious fractionalisation: Updated variable from Fearon and Laitin (2003).
Revolutions: Number of revolutions. From Banks (2005).
Riots: Number of violent demonstrations and clashes. From Banks (2005).
Rural population: Perc. of population living in rural areas, World Bank (2006).
Strikes: Number of general strikes of 1000 or more workers, cf. Banks (2005).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Normal	Interaction term	Time effects	Fixed effects	2SLS	Dummy - logit	Dummy - probit
GDP per capita (-1)	-0.000 (1.98)**	0.000 (0.05)	0.000 (0.08)	0.000 (0.13)	0.000 (1.76)*	-0.000 (0.14)	-0.000 (0.28)
Democracy (-1)	-0.134 (5.93)***	-0.118 (4.64)***	-0.094 (3.67)***	-0.194 (5.23)***	-0.084 (2.01)**	-1.598 (5.86)***	-0.696 (6.07)***
GDP per cap. (-1) * Democ (-1)		-0.000 (1.38)	-0.000 (1.29)	-0.000 (1.50)	-0.000 (1.99)**	-0.000 (2.66)***	-0.000 (2.48)**
Population (-1)	0.038 (5.49)***	0.040 (5.65)***	0.046 (6.54)***	-0.197 (4.58)***	0.047 (5.90)***	0.341 (6.94)***	0.167 (6.69)***
Mountainous Territ.	-0.000 (0.90)	-0.000 (0.75)	-0.000 (0.68)	-0.007 (0.04)	-0.000 (0.35)	0.001 (0.16)	-0.000 (0.10)
Noncontig. Territ.	0.029 (1.00)	0.032 (1.10)	0.006 (0.20)	-0.019 (0.06)	0.033 (1.02)	0.747 (3.54)***	0.276 (2.58)***
Oil Exporter	-0.074 (2.65)***	-0.082 (2.88)***	-0.061 (2.14)**	-0.063 (1.05)	-0.120 (3.30)***	-1.097 (4.23)***	-0.490 (4.18)***
New State	-0.029 (0.25)	-0.031 (0.26)	0.006 (0.05)	-0.030 (0.25)	-0.031 (0.25)		
Instability (-1)	0.056 (1.41)	0.054 (1.35)	0.047 (1.18)	0.053 (1.25)	0.047 (1.12)	0.470 (1.91)*	0.210 (1.68)*
Ethnic Fract.	-0.151 (3.76)***	-0.147 (3.67)***	-0.137 (3.44)***	-0.177 (0.09)	-0.110 (2.38)**	-0.895 (3.25)***	-0.379 (2.82)***
Religious Fract.	-0.009 (0.19)	-0.007 (0.14)	0.007 (0.15)		-0.115 (0.22)	-0.868 (2.26)**	-0.383 (2.07)**
Constant	-0.390 (3.44)***	-0.425 (3.66)***	-0.606 (4.70)***	3.549 (1.54)	-0.571 (4.19)***	-7.344 (8.85)***	-3.806 (9.20)***
Estimation method	OLS	OLS	OLS	OLS	2SLS	Logit	Probit
Observations	4379	4379	4379	4379	4228	4348	4348
(Pseudo) R-squared	0.02	0.02	0.05	0.02	0.02	0.14	0.13

Note: Dependent variable: Purges. Abs. value of z statistics in parentheses. *, **, *** = significant at 10%, 5%, 1% respectively. (-1) = first lag. Instruments included in column (5) for the instrumentation of GDP per capita and of the interaction term: Post Cold War, Rural Population, Distance from USA, Land in Tropics, Island, Number Neighbours, Population in Tropics, Coast (all variables are explained in detail in the Appendix).

Table 1: The impact of development and democracy on government repression

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Normal	Interaction term	Time effects	2SLS	Dummy - logit	Dummy - probit	Civil War data
GDP per capita (-1)	-0.000 (5.30)***	0.000 (1.76)*	0.000 (1.87)*	0.000 (3.71)***	-0.000 (1.37)	-0.000 (1.47)	0.069 (0.37)
Democracy (-1)	-0.014 (0.69)	0.046 (1.97)**	0.078 (3.44)***	0.134 (3.52)***	0.263 (2.15)**	0.152 (2.28)**	4.462 (2.36)**
GDP per cap. (-1) * Democ (-1)		-0.000 (5.63)***	-0.000 (5.79)***	-0.000 (5.03)***	-0.000 (1.97)**	-0.000 (1.92)*	-0.609 (2.22)**
Population (-1)	0.046 (7.18)***	0.052 (8.05)***	0.059 (9.37)***	0.058 (7.99)***	0.283 (8.60)***	0.158 (8.64)***	0.197 (1.76)*
Mountainous Territ.	0.001 (2.75)***	0.001 (3.33)***	0.001 (3.47)***	0.002 (3.86)***	0.010 (4.35)***	0.005 (4.20)***	0.019 (2.34)**
Noncontig. Territ.	0.231 (8.80)***	0.242 (9.21)***	0.214 (8.40)***	0.273 (9.26)***	1.228 (9.99)***	0.663 (9.48)***	
Oil Exporter	-0.035 (1.38)	-0.066 (2.52)**	-0.039 (1.56)	-0.135 (4.04)***	-0.363 (2.47)**	-0.180 (2.30)**	
New State	-0.119 (1.12)	-0.125 (1.19)	-0.073 (0.69)	-0.130 (1.18)			
Instability (-1)	0.049 (1.35)	0.041 (1.11)	0.036 (1.02)	0.027 (0.71)	-0.230 (1.21)	-0.139 (1.35)	
Ethnic Fract.	0.132 (3.60)***	0.145 (3.96)***	0.158 (4.47)***	0.187 (4.44)***	0.762 (4.06)***	0.417 (4.03)***	
Religious Fract.	-0.235 (5.22)***	-0.226 (5.03)***	-0.209 (4.82)***	-0.198 (4.20)***	-1.007 (4.33)***	-0.560 (4.35)***	
Other control variables	No	No	No	No	No	No	Cf. note
Constant	-0.542 (5.22)***	-0.674 (6.35)***	-0.884 (7.69)***	-0.837 (6.72)***	-6.635 (11.96)***	-3.748 (12.33)***	-7.974 (2.80)***
Estimation method	OLS	OLS	OLS	2SLS	Logit	Probit	Logit
Observations	4379	4379	4379	4228	4348	4348	871
(Pseudo) R-squared	0.06	0.07	0.14	0.05	0.12	0.12	0.25

Note: Dependent variable: Guerrilla warfare. Abs. value of z statistics in parentheses. *, **, *** = significant at 10%, 5%, 1% respectively. (-1) = first lag. Instruments included in column (4) for the instrumentation of GDP per capita and of the interaction term: Post Cold War, Rural Population, Distance from USA, Land in Tropics, Island, Number Neighbours, Population in Tropics, Coast (all variables are explained in detail in the Appendix). In column (7) the other control variables of the core model of Collier, Hoeffler and Rohner (2006) have been included (not displayed): Growth, Primary Co. Exports (PCE), PCE squared, Peace, Former French colonies, Social fractionalisation, Young men.

Table 2: The impact of development and democracy on rebellion

	(1)	(2)	(3)	(4)	(5)	(6)
	Riots	Coups	Revol.	Assassin.	Strikes	Demos
GDP per capita (-1)	0.000 (3.08)***	-0.000 (1.78)*	-0.000 (1.36)	0.000 (1.40)	0.000 (2.30)**	0.000 (3.15)***
Democracy (-1)	0.456 (5.77)***	-0.287 (0.90)	-0.010 (0.50)	0.252 (6.15)***	0.222 (9.84)***	0.241 (3.43)***
GDP per cap. (-1)*Dem. (-1)	-0.000 (5.62)***	-0.000 (1.35)	-0.000 (2.65)***	-0.000 (4.47)***	-0.000 (4.69)***	-0.000 (4.60)***
Population (-1)	0.328 (14.83)***	-0.082 (1.18)	0.029 (5.23)***	0.073 (6.33)***	0.055 (8.76)***	0.331 (16.81)***
Mountainous Territ.	0.000 (0.18)	0.004 (0.94)	0.002 (4.41)***	0.005 (6.04)***	0.001 (1.54)	0.002 (1.55)
Noncontig. Territ.	0.481 (5.36)***	-0.356 (0.85)	0.081 (3.59)***	0.163 (3.50)***	0.031 (1.20)	0.471 (5.90)***
Oil Exporter	-0.199 (2.23)**	-0.551 (1.63)	-0.005 (0.20)	0.008 (0.18)	-0.032 (1.27)	-0.219 (2.76)***
New State	0.013 (0.03)	0.786 (1.05)	0.192 (2.11)**	-0.087 (0.46)	-0.064 (0.62)	0.216 (0.67)
Instability (-1)	-0.152 (1.22)	0.252 (0.80)	0.053 (1.69)*	0.212 (3.28)***	0.097 (2.74)***	0.088 (0.79)
Ethnic Fract.	0.489 (3.90)***	0.828 (2.04)**	0.161 (5.10)***	0.031 (0.47)	0.090 (2.51)**	-0.003 (0.02)
Religious Fract.	-0.212 (1.38)	-0.776 (1.61)	-0.058 (1.49)	-0.418 (5.25)***	-0.391 (8.94)***	-0.145 (1.07)
Constant	-5.064 (13.95)***	-1.820 (1.60)	-0.335 (3.66)***	-0.968 (5.13)***	-0.711 (6.87)***	-4.788 (14.84)***
Estimation method	OLS	Logit	OLS	OLS	OLS	OLS
Observations	4379	4374	4379	4379	4379	4380
(Pseudo) R-squared	0.08	0.09	0.05	0.05	0.07	0.10

Note: Dependent variable: Cf. second row. Abs. value of z statistics in parentheses. *, **, *** = significant at 10%, 5%, 1% respectively. (-1) = first lag.

Table 3: The impact of development and democracy on other forms of political violence related to rebellion