

Economic Origins of Democratic Breakdown?
 Dan Slater, Ben Smith, Gautam Nair

Appendix 1A: Redistribution and Regime Breakdown with OECD Country-Years Excluded

Dependent Variable	(1) Regime- Changing Coup	(2) Successful Coup	(3) Coup Attempt	(4) Plots and Rumors
Sample	<i>Full</i> Neg. Bin (I. Ratios)	<i>Full</i> Neg. Bin (I. Ratios)	<i>Full</i> Neg. Bin (I. Ratios)	<i>Full</i> Neg. Bin (I. Ratios)
Taxes on Income, Capital Gains, Profits (% of GDP)	0.839**	0.892**	0.909**	0.984
standard Error	(0.060)	(0.048)	(0.035)	(0.033)
p-value	0.015	0.032	0.013	0.624
GDP Growth (Annual %)	0.975 (0.016)	0.983 (0.015)	0.955** (0.019)	0.947*** (0.020)
log(Per Capita Income)	0.528** (0.133)	0.676** (0.128)	0.758* (0.114)	0.607** (0.127)
Government Expenditures (% GDP)	1.011 (0.016)	0.998 (0.017)	1.013 (0.019)	0.986 (0.017)
Manufacturing Value Added (% of GDP)	1.005 (0.030)	1.005 (0.020)	1.023 (0.021)	1.009 (0.027)
Resource Rents (% of GDP)	1.000 (0.017)	1.004 (0.013)	1.009 (0.012)	1.006 (0.012)
log(Population)	1.091 (0.175)	1.07 (0.118)	1.074 (0.105)	0.904 (0.113)
Old Age Ratio	0.909 (0.056)	0.963 (0.050)	0.825*** (0.044)	0.987 (0.051)
Trade Openness (%)	1.003 (0.006)	1.003 (0.004)	0.999 (0.004)	1.006 (0.005)
Democracies in Region (%)	1.089 (1.120)	0.728 (0.550)	1.026 (0.579)	0.599 (0.506)
Coup Free Years	0.971* (0.015)	0.966** (0.014)	0.981 (0.013)	0.98 (0.016)
Time Trends	Yes	Yes	Yes	Yes
Observations	2408	2408	2408	2408
Number of Countries	117	117	117	117

*** p<0.01 ** p<0.05 * p<0.1. Robust standard errors clustered on country in parentheses. All independent variables lagged by one period. Linear, quadratic, and cubic time trends estimated but not reported.

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Appendix 1B: Redistribution and Regime Breakdown Polity2 score>4 in place of Cheibub, Gandhi, Vreeland (2008) democracy score

Dependent Variable	(1) Regime- Changing Coup	(2) Successful Coup	(3) Coup Attempt	(4) Plots and Rumors
Sample	<i>Democracy</i> Neg. Bin (I. Ratios)	<i>Democracy</i> Neg. Bin (I. Ratios)	<i>Democracy</i> Neg. Bin (I. Ratios)	<i>Democracy</i> Neg. Bin (I. Ratios)
Taxes on Income, Capital Gains, Profits (% of GDP)	-0.116	-0.116	-0.094	-0.074
standard Error	(0.079)	(0.079)	(0.059)	(0.077)
p-value	0.146	0.146	0.11	0.339
GDP Growth (Annual %)	0.908*** (0.032)	0.908*** (0.032)	0.892* (0.060)	0.927 (0.045)
log(Per Capita Income)	0.71 (0.373)	0.71 (0.373)	0.515 (0.232)	0.551 (0.224)
Government Expenditures (% GDP)	1.05 (0.065)	1.05 (0.065)	0.880** (0.056)	1.039 (0.061)
Manufacturing Value Added (% of GDP)	0.99 (0.052)	0.99 (0.052)	1.044 (0.048)	1.02 (0.055)
Resource Rents (% of GDP)	1.040* (0.021)	1.040* (0.021)	1.039 (0.031)	0.988 (0.033)
log(Population)	1.367 (0.318)	1.367 (0.318)	0.847 (0.210)	1.450* (0.299)
Old Age Ratio	0.969 (0.121)	0.969 (0.121)	0.908 (0.057)	1.006 (0.071)
Trade Openness (%)	1.008 (0.007)	1.008 (0.007)	1.01 (0.011)	1.025*** (0.010)
Democracies in Region (%)	0.003*** (0.005)	0.003*** (0.005)	4.215 (6.042)	1.825 (1.774)
Coup Free Years	0.962* (0.019)	0.962* (0.019)	1.031 (0.022)	1.004 (0.019)
Time Trends	Yes	Yes	Yes	Yes
Observations	1771	1771	1771	1771
Number of Countries	92	92	92	92

*** p<0.01 ** p<0.05 * p<0.1. Robust standard errors clustered on country in parentheses. All independent variables lagged by one period. Linear, quadratic, and cubic time trends estimated but not reported. Note: results in (1) and (2) are identical because successful coups in democracies also result in regime change.

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Appendix 1C: Redistribution and Regime Breakdown Social Spending in place of Government Expenditures as Share of GDP

Dependent Variable	(1) Regime- Changing Coup	(2) Successful Coup	(3) Coup Attempt	(4) Plots and Rumors
Sample	<i>Full</i> Neg. Bin (I. Ratios)	<i>Full</i> Neg. Bin (I. Ratios)	<i>Full</i> Neg. Bin (I. Ratios)	<i>Full</i> Neg. Bin (I. Ratios)
Taxes on Income, Capital Gains, Profits (% of GDP)	0.879*	0.873**	0.877**	0.884***
standard Error	(0.067)	(0.051)	(0.051)	(0.035)
p-value	0.09	0.02	0.024	0.002
GDP Growth (Annual %)	0.955** (0.021)	0.97 (0.019)	0.969 (0.020)	0.939*** (0.021)
log(Per Capita Income)	0.546** (0.149)	0.697 (0.158)	0.668* (0.145)	0.771 (0.141)
Social Spending (% GDP)	1.047 (0.110)	1.053 (0.067)	1.052 (0.069)	1.072 (0.081)
Manufacturing Value Added (% of GDP)	1.01 (0.037)	1.014 (0.023)	1.016 (0.023)	1.018 (0.022)
Resource Rents (% of GDP)	0.994 (0.019)	1.005 (0.015)	1.004 (0.016)	1.012 (0.014)
log(Population)	1.21 (0.239)	1.153 (0.152)	1.166 (0.158)	1.1 (0.140)
Old Age Ratio	0.891* (0.061)	0.959 (0.057)	0.962 (0.059)	0.894** (0.048)
Trade Openness (%)	1.006 (0.007)	1.004 (0.006)	1.005 (0.005)	0.996 (0.005)
Democracies in Region (%)	3.068 (3.225)	1.381 (1.182)	1.442 (1.248)	1.357 (0.959)
Coup Free Years	0.960** (0.019)	0.948*** (0.017)	0.949*** (0.017)	0.992 (0.017)
Time Trends	Yes	Yes	Yes	Yes
Observations	2458	2458	2458	2458
Number of Countries	127	127	127	127

*** p<0.01 ** p<0.05 * p<0.1. Robust standard errors clustered on country in parentheses. All independent variables lagged by one period. Linear, quadratic, and cubic time trends estimated but not reported. Note: model (1) does not achieve convergence. Results are reported for completeness.

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Appendix 1D: Redistribution and Regime Breakdown (OLS)

Dependent Variable	(1) Regime- Changing Coup	(2) Successful Coup	(3) Coup Attempt	(4) Plots and Rumors	(5) Regime- Changing Coup	(6) Successful Coup	(7) Coup Attempt	(8) Plots and Rumors
Sample	Full OLS	Full OLS	Full OLS	Full OLS	Democracy OLS	Democracy OLS	Democracy OLS	Democracy OLS
Taxes on Income, Capital Gains, Profits (% of GDP)	-0.0005*	-0.0008**	-0.0017**	-0.0003	0.0003	0.0003	-0.0006	-0.001
standard error	(0.0003)	(0.0004)	(0.0007)	(0.0007)	(0.0005)	(0.0005)	(0.0006)	(0.0009)
p-value	0.080	0.038	0.021	0.665	0.513	0.513	0.358	0.281
GDP Growth (Annual %)	-0.0004 (0.0003)	-0.0004 (0.0005)	-0.0022** (0.0010)	-0.0020** (0.0008)	-0.0013* (0.0008)	-0.0013* (0.0008)	-0.0030* (0.0016)	-0.0007 (0.0009)
log(Per Capita Income)	-0.0064** (0.0031)	-0.0076* (0.0042)	-0.0074 (0.0077)	-0.0147** (0.0061)	-0.0096* (0.0056)	-0.0096* (0.0056)	-0.0183* (0.0096)	-0.0049 (0.0097)
Government Expenditures (% GDP)	0.0002 (0.0007)	-0.0001 (0.0008)	0.0011 (0.0021)	-0.0007 (0.0007)	-0.0012* (0.0006)	-0.0012* (0.0006)	-0.0026** (0.0011)	-0.0012 (0.0010)
Manufacturing Value Added (% of GDP)	-0.0005 (0.0004)	-0.0008* (0.0005)	-0.0002 (0.0008)	-0.0003 (0.0008)	-0.0007 (0.0006)	-0.0007 (0.0006)	0.0013 (0.0010)	-0.0012 (0.0012)
Resource Rents (% of GDP)	-0.0002 (0.0002)	-0.0002 (0.0002)	0.0001 (0.0004)	0.0002 (0.0004)	0.0002 (0.0005)	0.0002 (0.0005)	0.0009* (0.0004)	-0.0008 (0.0006)
log(Population)	0.0012 (0.0019)	0.0016 (0.0024)	0.0014 (0.0035)	-0.0013 (0.0029)	0.0021 (0.0034)	0.0021 (0.0034)	-0.0012 (0.0028)	0.0067 (0.0049)
Old Age Ratio	0.0002 (0.0004)	0.0004 (0.0005)	-0.0006 (0.0007)	0.0007 (0.0008)	0.0004 (0.0005)	0.0004 (0.0005)	-0.0001 (0.0007)	-0.0009 (0.0011)
Trade Openness (%)	0.0000 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)	0.0002 (0.0002)	0.0000 (0.0002)	0.0000 (0.0002)	0.0002 (0.0002)	0.0006 (0.0004)
Democracies in Region (%)	0.0004 (0.0079)	-0.0036 (0.0099)	-0.003 (0.0169)	-0.0006 (0.0143)	-0.0285** (0.0126)	-0.0285** (0.0126)	0.0161 (0.0230)	0.0121 (0.0180)
Coup Free Years	-0.0002 (0.0002)	-0.0004* (0.0002)	-0.0003 (0.0004)	-0.0003 (0.0003)	-0.0003 (0.0002)	-0.0003 (0.0002)	0.0004 (0.0004)	0.0002 (0.0003)
Time Trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3186	3186	3186	3186	1643	1643	1643	1643
Number of Countries	139	139	139	139	87	87	87	87

*** p<0.01 ** p<0.05 * p<0.1. Robust standard errors clustered on country in parentheses. All independent variables lagged by one period. Linear, quadratic, and cubic time trends estimated but not reported.

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Appendix 1E: Redistribution and Regime Breakdown (OLS Country Fixed Effects)

Dependent Variable	(1) Regime- Changing Coup	(2) Successful Coup	(3) Coup Attempt	(4) Plots and Rumors	(5) Regime- Changing Coup	(6) Successful Coup	(7) Coup Attempt	(8) Plots and Rumors
Sample	Full OLS	Full OLS	Full OLS	Full OLS	Democracy OLS	Democracy OLS	Democracy OLS	Democracy OLS
Taxes on Income, Capital Gains, Profits (% of GDP)	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.002	-0.002
standard error	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
p-value	0.25	0.395	0.52	0.215	0.517	0.517	0.337	0.302
GDP Growth (Annual %)	-0.0003 (0.0003)	-0.0002 (0.0005)	-0.0014 (0.0011)	-0.0014* (0.0008)	-0.0014** (0.0006)	-0.0014** (0.0006)	-0.0021 (0.0020)	-0.0003 (0.0009)
log(Per Capita Income)	-0.0093 (0.0098)	-0.0095 (0.0175)	0.0242 (0.0248)	0.0219 (0.0260)	0.025 (0.0300)	0.025 (0.0300)	-0.0215 (0.0315)	0.0067 (0.0373)
Government Expenditures (% GDP)	0.0006 (0.0007)	0.0001 (0.0009)	-0.0007 (0.0023)	0.0009 (0.0014)	-0.0001 (0.0017)	-0.0001 (0.0017)	0.0005 (0.0023)	0.0027 (0.0024)
Manufacturing Value Added (% of GDP)	0.0007 (0.0007)	0.0004 (0.0009)	-0.0002 (0.0014)	-0.002 (0.0018)	0.0011 (0.0013)	0.0011 (0.0013)	0.0029 (0.0020)	-0.0041 (0.0025)
Resource Rents (% of GDP)	0.0003 (0.0003)	0.0004 (0.0005)	-0.0001 (0.0005)	0.0000 (0.0005)	0.0004 (0.0005)	0.0004 (0.0005)	-0.0004 (0.0004)	0.0001 (0.0007)
log(Population)	-0.0116 (0.0339)	0.0092 (0.0451)	-0.0363 (0.0383)	0.0283 (0.0546)	-0.011 (0.0653)	-0.011 (0.0653)	-0.0179 (0.0900)	0.1494** (0.0739)
Old Age Ratio	-0.0012 (0.0020)	-0.0027 (0.0029)	-0.0018 (0.0034)	-0.0049 (0.0035)	0.0008 (0.0010)	0.0008 (0.0010)	-0.0007 (0.0028)	-0.0058 (0.0041)
Trade Openness (%)	0.0001 (0.0002)	0.0003 (0.0002)	-0.0001 (0.0003)	0.0002 (0.0002)	-0.0003 (0.0003)	-0.0003 (0.0003)	-0.0006 (0.0008)	0.0008** (0.0004)
Democracies in Region (%)	-0.0007 (0.0218)	-0.0625 (0.0396)	-0.0082 (0.0337)	-0.0268 (0.0402)	-0.0517 (0.0497)	-0.0517 (0.0497)	-0.0185 (0.0408)	-0.0215 (0.0442)
Coup Free Years	0.0024*** (0.0008)	0.0045*** (0.0010)	-0.0001 (0.0012)	-0.0017** (0.0008)	0.0132** (0.0062)	0.0132** (0.0062)	0.0051 (0.0053)	-0.0012 (0.0012)
Time Trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3186	3186	3186	3186	1643	1643	1643	1643
Number of Countries	139	139	139	139	87	87	87	87

*** p<0.01 ** p<0.05 * p<0.1. Robust standard errors clustered on country in parentheses. All independent variables lagged by one period. Linear, quadratic, and cubic time trends estimated but not reported.

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Appendix 1F: Zero-Inflated Negative Binomial and Zero-Inflated Poisson Models (with log(Income per capita) as first stage predictor)

Dependent Variable	(1) Regime- Changing Coup	(2) Successful Coup	(3) Coup Attempt	(4) Plots and Rumors	(5) Regime- Changing Coup	(6) Successful Coup	(7) Coup Attempt	(8) Plots and Rumors
Sample	Full ZINB	Full ZINB	Full ZINB	Full ZINB	Full ZIP	Full ZIP	Full ZIP	Full ZIP
Taxes on Income, Capital Gains, Profits (% of GDP)	0.851***	0.889**	0.904***	0.97	0.851***	0.889**	0.904***	0.962
standard error	(0.053)	(0.045)	(0.030)	(0.033)	(0.053)	(0.045)	(0.031)	(0.038)
p-value	0.009	0.02	0.002	0.372	0.009	0.02	0.003	0.332
GDP Growth (Annual %)	0.975 (0.018)	0.984 (0.015)	0.964** (0.016)	0.939*** (0.022)	0.975 (0.018)	0.984 (0.015)	0.964** (0.017)	0.941*** (0.020)
Government Expenditures (% GDP)	1.009 (0.017)	0.998 (0.018)	1.009 (0.011)	0.983 (0.018)	1.009 (0.017)	0.998 (0.018)	1.009 (0.021)	0.982 (0.020)
Manufacturing Value Added (% of GDP)	0.999 (0.026)	0.988 (0.025)	1.027 (0.018)	1.014 (0.022)	0.999 (0.026)	0.988 (0.020)	1.027 (0.021)	1.022 (0.026)
Resource Rents (% of GDP)	0.996 (0.018)	1.001 (0.015)	1.016 (0.013)	1.012 (0.013)	0.996 (0.018)	1.001 (0.014)	1.016 (0.013)	1.015 (0.013)
log(Population)	1.069 (0.154)	1.063 (0.113)	1.032 (0.092)	0.938 (0.103)	1.069 (0.154)	1.063 (0.114)	1.032 (0.102)	0.931 (0.133)
Old Age Ratio	0.951 (0.056)	0.995 (0.047)	0.904** (0.044)	1.057 (0.048)	0.951 (0.056)	0.995 (0.047)	0.904** (0.046)	1.041 (0.064)
Trade Openness (%)	1.000 (0.006)	1.001 (0.004)	0.999 (0.004)	1.006 (0.004)	1.000 (0.006)	1.001 (0.004)	0.999 (0.004)	1.007 (0.005)
Democracies in Region (%)	0.961 (0.018)	0.672 (0.015)	1.674 (0.016)	1.035 (0.022)	0.961 (0.018)	0.672 (0.015)	1.674 (0.017)	1.168 (0.020)
Coup Free Years	0.975 (0.018)	0.984 (0.015)	0.964** (0.016)	0.939*** (0.022)	0.975 (0.018)	0.984 (0.015)	0.964** (0.017)	0.941*** (0.020)
Non-Linear Time Trends	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	No	No	No	No	No	No	No	No
Observations	3186	3186	3186	3186	3186	3186	3186	3186
Number of Countries	139	139	139	139	139	139	139	139
Vuong test (p-value)	.	.	0.64	0.02	NA	NA	NA	NA

*** p<0.01 ** p<0.05 * p<0.1. Robust standard errors in parentheses. All independent variables lagged by one period. Linear, quadratic, and cubic time trends estimated but not reported. Note: log(GDP per capita) is excluded from second stage due to multicollinearity.

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In response to an anonymous reviewer's suggestion, we examined the possibility of potentially using a zero-inflated negative binomial model instead of a negative binomial model. As a first step, we assessed the predicted probabilities in the models reported in the article. No models generated negative predictions. All countries with a predicted probability of a successful coup larger than 1% belonged to developing countries and non-OECD members, with the exception of Turkey (in a small number of years). The mean predicted probability for a successful coup in an OECD country was 0.0008. The mean predicted probabilities for the US and UK, for example, are 0.0003 and 0.0002, respectively i.e. nearly certain zeros regarding coups. Countries with a predicted probability of a coup in any given year of more than 1% are overwhelmingly poor countries in Africa, Asia, or Latin America, with 45% of these countries experiencing at least one successful coup in the years covered by the dataset. This gives us confidence that our models are not generating unusual predictions, and are accurately reflecting countries' (generally very low) coup propensity. Moreover, the results are similar when we exclude OECD country-years from our analysis (as can be seen in Appendix 1A).

In line with the reviewer's suggestions, we attempted to evaluate the zero-inflated negative binomial specifications against the negative binomial model results. Several models do not achieve convergence with the full battery of controls (which in turn are drawn from Albertus and Menaldo 2013), and for those that do, the Vuong tests (which differ from model to model, depending on the measure of coup activity) are not significant at standard statistical thresholds, with the exception of one statistic. The results are also quite similar when using per capita income to predict the first stage. Given the low number of coups in the dataset, multicollinearity between per capita income and taxes collected, and the relatively modest claims we make on the basis of the statistical evidence, our preference was to retain the full set of control variables in the slightly simpler set of models reported in the paper.