|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 1:** Decentralization, Bias and Knowledge, 1972 – 2010, OLS | | | | | | | | | | | | | |
| Dependent variable: | | (1) | | | (2) | | (3) | | (4) | | (5) | | |
| Expenditure Decentralization | | Coef. | Std. err. | | Coef. | Std. err. | Coef. | Std. err. | Coef. | Std. err. | Coef. | Std. err. | |
| (log) GDP | | 6.55\*\*\* | | [2.33] |  |  | -1.34 | [3.02] | -3.60 | [4.26] | -3.74 | [2.69] | |
| (log) Land Area | | 3.37\*\*\* | | [1.11] |  |  | 2.23\* | [1.21] | 0.62 | [1.40] | 2.33\*\* | [1.09] | |
| (log) Population | | 0.45 | | [1.41] |  |  | 0.20 | [1.41] | 1.52 | [1.35] | 0.13 | [1.15] | |
| Urbanization | | 0.13 | | [0.13] |  |  | 0.00 | [0.11] | 0.14 | [0.12] | 0.01 | [0.09] | |
| Democracy Dummy | | 2.04 | | [2.52] |  |  | -3.80 | [2.58] | -8.42 | [5.87] | -6.22\*\* | [2.36] | |
| Heterogeneity | |  | |  | 0.25\*\*\* | [0.08] | 0.21\*\* | [0.09] | 0.26\*\* | [0.10] | -0.11 | [0.09] | |
| Trade Openness | |  | |  | -0.10\*\*\* | [0.03] | -0.03 | [0.04] | -0.10\* | [0.05] | -0.03 | [0.03] | |
| Oil Rents | |  | |  | 0.04 | [0.13] | -0.13 | [0.13] | -0.14 | [0.18] | 0.00 | [0.12] | |
| Information Transmission | |  | |  | 0.40\*\*\* | [0.13] | 0.49\*\* | [0.20] | 0.32 | [0.21] | 0.33\* | [0.19] | |
| Missing data | |  | |  | -0.01 | [0.05] | -0.04 | [0.04] | -0.06 | [0.06] | -0.05 | [0.04] | |
| Educational Quality | |  | |  | 0.28\*\*\* | [0.08] | 0.24\*\* | [0.09] | 0.26\*\*\* | [0.09] | 0.30\*\*\* | [0.08] | |
| Ethnic Tensions | |  | |  |  |  |  |  | -1.44 | [1.45] |  |  | |
| Government Stability | |  | |  |  |  |  |  | -0.50 | [0.68] |  |  | |
| Government Fractionalization | |  | |  |  |  |  |  | 0.10 | [0.06] |  |  | |
| Migrant Share | |  | |  |  |  |  |  | 0.36\*\* | [0.17] |  |  | |
| Risk of External Conflicts | |  | |  |  |  |  |  | -2.40\*\*\* | [0.71] |  |  | |
| Corruption | |  | |  |  |  |  |  | 2.21 | [1.67] |  |  | |
| Press Freedom | |  | |  |  |  |  |  | -0.03 | [0.10] |  |  | |
| Heterogeneity\*Information Transmission | | | |  |  |  |  |  |  |  | 0.01\*\*\* | [0.00] | |
| Period Dummies | Yes | |  | | Yes |  | Yes |  | Yes |  | Yes | |  |
| Region Dummies | Yes | |  | | Yes |  | Yes |  | Yes |  | Yes | |  |
| Adj. R-Squared | 0.43 | |  | | 0.53 |  | 0.56 |  | 0.63 |  | 0.60 | |  |
| Number of Observations | 389 | |  | | 338 |  | 338 |  | 225 |  | 338 | |  |

Notes: Standard errors (clustered at the country level) in brackets. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

**Table 2:** Interaction between Heterogeneity and Information, 1972 – 2010, OLS

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Agenda setting government level:** | **Local** | | **Federal** | | | **Local** | | **Federal** | |  |
|  | Information Transmission | | | | | Information Transparency | | | | |
|  | Coef. |  | Coef. |  | P-value | Coef. |  | Coef. |  | P-value |
|  | *Federation type: Unitary or federal (Norris 2008)* | | | | | | | | | |
| Heterogeneity\*Information | 0.017\*\*\* | [0.004] | -0.002 | [0.002] | 0.000 | 0.030\*\*\* | [0.007] | 0.002 | [0.002] | 0.000 |
| Adj. R-Squared | 0.84 |  | 0.89 |  |  | 0.870 |  | 0.89 |  |  |
| Number of observations | 126 |  | 212 |  |  | 119 |  | 191 |  |  |
|  | *Classified as "federal" (Elazar 1995)* | | | | | | | | | |
| Heterogeneity\*Information | 0.008\*\*\* | [0.003] | -0.002 | [0.003] | 0.000 | 0.017\*\*\* | [0.004] | 0.006 | [0.006] | 0.132 |
| Adj. R-Squared | 0.88 |  | 0.82 |  |  | 0.88 |  | 0.80 |  |  |
| Number of observations | 191 |  | 147 |  |  | 175 |  | 135 |  |  |
|  | *Residual powers to legislate (Treisman 2008)* | | | | | | | | | |
| Heterogeneity\*Information | 0.009\*\*\* | [0.002] | -0.001 | [0.002] | 0.000 | 0.016\*\*\* | [0.005] | 0.002 | [0.004] | 0.017 |
| Adj. R-Squared | 0.72 |  | 0.85 |  |  | 0.850 |  | 0.83 |  |  |
| Number of observations | 207 |  | 131 |  |  | 190 |  | 120 |  |  |
|  | *Sub-national government authority (Keefer 2013)* | | | | | | | | | |
| Heterogeneity\*Information | 0.006\*\*\* | [0.002] | -0.012 | [0.016] | 0.000 | 0.013\*\* | [0.005] | -0.016 | [0.012] | 0.087 |
| Adj. R-Squared | 0.82 |  | 0.96 |  |  | 0.83 |  | 0.94 |  |  |
| Number of observations | 299 |  | 39 |  |  | 276 |  | 34 |  |  |
|  | *Legislature or executive locally elected (Treisman 2008)* | | | | | | | | | |
| Heterogeneity\*Information | 0.009\*\*\* | [0.002] | -0.003 | [0.003] | 0.000 | 0.017\*\*\* | [0.006] | -0.004 | [0.004] | 0.001 |
| Adj. R-Squared | 0.81 |  | 0.93 |  |  | 0.82 |  | 0.930 |  |  |
| Number of observations | 265 |  | 71 |  |  | 242 |  | 66 |  |  |

Notes: Interaction effect between Heterogeneity and an information proxy (specified in second row) for local and federal government as agenda setters. Includes initial decentralization and control variables of column 3 in Table 1 as additional regressors. Standard errors (clustered at the country level) in brackets. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01. The p-value corresponds to a Wald test for significant differences between the coefficients for federal and unitary states.



Figure 1: Choice between centralization and decentralization as a function of L and F when the federal government is the agenda setter



Figure 2: Choice between centralization and decentralization as a function of L and F when the local government is the agenda setter



ME on Fiscal Decentralization (percent of GDP)

Information Transmission

Figure 3: Marginal effect of Heterogeneity on the share of subnational government expenditure for different levels of Information Transmission (Table 1, column 5). The dashed line shows the 90%-confidence interval.



Information Transmission

ME on Fiscal Decentralization

(percent of GDP)

Figure 4: Marginal effect of Heterogeneity on the share of subnational government expenditure for different levels of Information Transmission (Table 2, row 2). The regressions are restricted to countries that Elazar (1995) defines as “local,” i.e., where the local government is the agenda setter. The dashed line shows the 90%-confidence interval.



Information Transmission

ME on Fiscal Decentralization

(percent of GDP)

Figure 5: Marginal effect of Heterogeneity on the share of subnational government expenditure for different levels of Information Transmission (Table 2, row 2). The regressions are restricted to countries that Elazar (1995) defines as “federal,” i.e., where the federal government is the agenda setter. The dashed line shows the 90%-confidence interval.

**Appendix D:** Sources and Definitions

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | **Variable** | | **Definition** | **Source** |
| **DEPENDENT VARIABLE** | Expenditure Decentralization | | Subnational expenditures (local  and state level) / expenditure by general government (all levels) | | IMF (2012) |
| **CONTROL VARIABLES** | | |  | |  |
|  | (log) GDP | | Log of GDP p.c.,  purchasing power adjusted | | Heston et al. (2012) |
|  | (log) Land Area | | Log of land area (square km) | | Treisman (2006) |
|  | (log) Population | | Log of population | | World Bank (2013) |
| Urbanization | | Urban population as % of total | | World Bank (2013) |
|  | Democracy Dummy | | Dummy that takes the value 1 if country is classified as democracy | | Cheibub et al. (2010) |
| **VARIABLES OF INTEREST** | | |  | |  |
| **Bias** |  | |  | |  |
|  | Heterogeneity | | Ethnic fractionalization | | Alesina et al. (2003) |
|  | Ethnic Tensions | | Perception of the risk of ethnic tensions | | ICRG (2013) |
|  | Government Stability | | Perception that the government is stable | | ICRG (2013) |
|  | Government Fractionalization | | Chance that two random draws  will produce legislators from two different parties | | Beck et al. (2001) |
|  | Migrant Share | | Migrants as % of total population | | World Bank (2013) |
| **Externalities** |  | |  | |  |
|  | Trade Openness | | Exports plus imports as % of GDP | | Heston et al. (2012) |
|  | Oil Rents | | Oil rents (crude oil production  value at world prices minus total production costs) as % of GDP | | World Bank (2013) |
|  | Risk of External Conflicts | | Perception of the risk of external conflict | | ICRG (2013) |
|  |  | |  | |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Appendix D: Sources and Definitions** continued | | | | | |
| **Knowledge** |  | | |  |  |
|  | Information Transmission | | | Fixed telephone lines per 100 inhabitants | International Telecommunication Union (2011) |
|  | Information Transparency Index | | | Composite global index of information transparency | Williams (2014) |
|  | Missing data | | | Share in economic policy and debt indicators for which data are reported | Hollyer et al. (2011) |
|  | Corruption | | | Perceived corruption | ICRG (2013) |
|  | Press Freedom | | | Annual survey of media independence | Freedom House (2011) |
| **Importance of local knowledge** | | | | |  |
|  | Heterogeneity | | Ethnic fractionalization | | Alesina et al. (2003) |
|  | Ethnic Tensions | | Perception of the risk of ethnic tensions | | ICRG (2013) |
|  | Migrant Share | | Migrants as % of total population | | World Bank (2013) |
| **Importance of federal knowledge** | | | | |  |
|  | Educational Quality | Tertiary school enrollment as % of the age group that officially corresponds to this level of education | | | World Bank (2013) |
|  | Trade Openness | Exports plus imports as % of GDP | | | Heston et al. (2012) |
|  | Oil Rents | Oil rents (crude oil production value at world prices minus total production costs) as % of GDP | | | World Bank (2013) |
|  | Risk of External Conflicts | Perception of the risk of external conflict | | | ICRG (2013) |

**Appendix E: Descriptive Statistics**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Observations | Mean | Standard Deviation | Min | Max |
| Exp. Decentralization | 338 | 27.5 | 15.15 | 0.61 | 63.77 |
| (log) GDP | 338 | 9.66 | 0.82 | 6.51 | 11.24 |
| (log) Land Area | 338 | 11.82 | 1.93 | 5.77 | 16.61 |
| (log) Population | 338 | 15.97 | 1.46 | 12.30 | 19.42 |
| Urbanization | 338 | 70.19 | 14.62 | 20.02 | 97.38 |
| Democracy Dummy | 338 | 0.89 | 0.31 | 0.00 | 1.00 |
| Heterogeneity | 338 | 28.8 | 21.82 | 0.20 | 87.47 |
| Trade Openness | 338 | 80.5 | 46.51 | 14.92 | 314.71 |
| Oil Rents | 338 | 1.81 | 6.84 | 0.00 | 63.98 |
| Information Transmission | 338 | 35.53 | 17.27 | 0.15 | 72.91 |
| Information Transparency Index | 310 | 68.55 | 9.19 | 28 | 85 |
| Missing data | 338 | 24.35 | 38.34 | 0.00 | 98.25 |
| Educational Quality | 338 | 39.81 | 20.18 | 1.14 | 97.69 |
| Ethnic Tensions | 279 | 1.38 | 1.14 | 0.00 | 4.92 |
| Government Stability | 279 | 8.20 | 1.58 | 3.94 | 11.42 |
| Gov. Fractionalization | 279 | 66.21 | 18.79 | 0.00 | 89.71 |
| Migrant Share | 314 | 8.63 | 8.03 | 0.13 | 48.00 |
| Risk of External Conflicts | 279 | 1.19 | 1.37 | 0.00 | 9.00 |
| Corruption | 298 | 3.97 | 1.44 | 1.00 | 6.00 |
| Press Freedom | 324 | 70.98 | 18.03 | 10.67 | 95.00 |

Notes: Descriptive statistics for all variables included in the empirical section.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix F:** Decentralization, Bias and Knowledge, 1972 – 2010, OLS, Alternative knowledge proxy | | | | | | | | | | | | | |
| Dependent variable: | | (1) | | | (2) | | (3) | | (4) | | (5) | | |
| Expenditure Decentralization | | Coef. | Std. err. | | Coef. | Std. err. | Coef. | Std. err. | Coef. | Std. err. | Coef. | Std. err. | |
| (log) GDP | | 6.55\*\*\* | | [2.33] |  |  | 6.18\* | [3.54] | -0.09 | [3.16] | 6.01\* | [3.45] | |
| (log) Land Area | | 3.37\*\*\* | | [1.11] |  |  | 2.43 | [1.74] | 0.63 | [1.88] | 2.48 | [1.70] | |
| (log) Population | | 0.45 | | [1.41] |  |  | -0.76 | [1.63] | 1.51 | [1.58] | -0.28 | [1.55] | |
| Urbanization | | 0.13 | | [0.13] |  |  | 0.08 | [0.13] | 0.24\* | [0.13] | 0.06 | [0.13] | |
| Democracy Dummy | | 2.04 | | [2.52] |  |  | -1.22 | [2.40] | -6.89 | [4.80] | -2.28 | [2.63] | |
| Heterogeneity | |  | |  | 0.20\* | [0.12] | 0.20 | [0.13] | 0.24\*\* | [0.11] | -0.68 | [0.42] | |
| Trade Openness | |  | |  | -0.08\*\* | [0.03] | -0.06 | [0.06] | -0.11 | [0.07] | -0.05 | [0.06] | |
| Oil Rents | |  | |  | 0.25 | [0.17] | -0.11 | [0.18] | 0.02 | [0.27] | -0.03 | [0.18] | |
| Information Transparency | |  | |  | 0.20 | [0.25] | 0.09 | [0.32] | -0.09 | [0.32] | -0.36 | [0.40] | |
| Missing data | |  | |  | -0.09\* | [0.05] | 0.00 | [0.05] | -0.02 | [0.06] | -0.02 | [0.05] | |
| Educational Quality | |  | |  | 0.35\*\*\* | [0.12] | 0.22 | [0.14] | 0.25\*\* | [0.12] | 0.23 | [0.14] | |
| Ethnic Tensions | |  | |  |  |  |  |  | -2.13 | [1.31] |  |  | |
| Government Stability | |  | |  |  |  |  |  | -0.18 | [0.72] |  |  | |
| Government Fractionalization | |  | |  |  |  |  |  | 0.12 | [0.09] |  |  | |
| Migrant Share | |  | |  |  |  |  |  | 0.45\*\* | [0.21] |  |  | |
| Risk of External Conflicts | |  | |  |  |  |  |  | -2.42\*\*\* | [0.76] |  |  | |
| Corruption | |  | |  |  |  |  |  | 2.73 | [1.70] |  |  | |
| Press Freedom | |  | |  |  |  |  |  | 0.07 | [0.11] |  |  | |
| Heterogeneity\* Information Transparency | | | |  |  |  |  |  |  |  | 0.01\*\*\* | [0.01] | |
| Period Dummies | Yes | |  | | Yes |  | Yes |  | Yes |  | Yes | |  |
| Region Dummies | Yes | |  | | Yes |  | Yes |  | Yes |  | Yes | |  |
| Adj. R-Squared | 0.43 | |  | | 0.54 |  | 0.51 |  | 0.62 |  | 0.53 | |  |
| Number of Observations | 387 | |  | | 321 |  | 321 |  | 222 |  | 321 | |  |

Notes: Standard errors (clustered at the country level) in brackets. \* p<0.10, \*\* p<0.05, \*\*\* p<0.01.**Appendix G: Correlations**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | (1) | | (2) | | (3) | | (4) | | (5) | | (6) | | (7) | | (8) | | (9) | | (10) | | (11) | | (12) | | (13) | | (14) | | (15) | | (16) | | (17) | | (18) | | (19) | | (20) |
| Exp. Decentralization | | (1) | | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  |
| (log) GDP | | (2) | | 0.46 | | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  |
| (log) Land Area | | (3) | | 0.36 | | -0.17 | | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  |
| (log) Population | | (4) | | 0.29 | | -0.09 | | 0.81 | | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  |
| Urbanization | | (5) | | 0.33 | | 0.76 | | -0.03 | | 0.02 | | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  |
| Democracy Dummy | | (6) | | 0.17 | | 0.53 | | -0.13 | | -0.04 | | 0.35 | | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  |
| Heterogeneity | | (7) | | -0.08 | | -0.45 | | 0.12 | | 0 | | -0.33 | | -0.3 | | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  |
| Trade Openness | | (8) | | -0.3 | | 0.14 | | -0.61 | | -0.52 | | 0.12 | | -0.05 | | 0.06 | | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  |
| Oil Rents | | (9) | | -0.1 | | 0 | | 0.05 | | 0.01 | | 0.05 | | -0.29 | | 0.22 | | 0.05 | | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  |  |
| Inf. Transmission | | (10) | | 0.5 | | 0.82 | | -0.1 | | -0.02 | | 0.63 | | 0.54 | | -0.44 | | 0.12 | | -0.15 | | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |  |  |
| Information Transparency Index | | (11) | | 0.37 | | 0.72 | | 0.06 | | 0.13 | | 0.61 | | 0.62 | | -0.34 | | 0.07 | | -0.13 | | 0.73 | | 1 | |  | |  | |  | |  | |  | |  | |  | |  |  |
| Missing data | | (12) | | -0.33 | | -0.68 | | 0.21 | | 0.14 | | -0.46 | | -0.24 | | 0.40 | | -0.02 | | 0.06 | | -0.60 | | -0.33 | | 1 | |  | |  | |  | |  | |  | |  | |  |  |
| Educational Quality | | (13) | | 0.41 | | 0.65 | | 0.13 | | 0.14 | | 0.58 | | 0.47 | | -0.33 | | 0.05 | | -0.15 | | 0.72 | | 0.70 | | -0.41 | | 1 | |  | |  | |  | |  | |  | |  |  |
| Ethnic Tensions | | (14) | | -0.05 | | -0.39 | | 0.1 | | 0.16 | | -0.4 | | -0.17 | | 0.51 | | -0.08 | | 0.07 | | -0.37 | | -0.35 | | 0.27 | | -0.28 | | 1 | |  | |  | |  | |  | |  |  |
| Government Stability | | (15) | | 0.03 | | 0.25 | | -0.1 | | -0.07 | | 0.18 | | 0.01 | | -0.1 | | 0.28 | | 0.12 | | 0.3 | | 0.37 | | -0.13 | | 0.24 | | -0.28 | | 1 | |  | |  | |  | |  |  |
| Gov. Fractionalization | | (16) | | 0.29 | | 0.39 | | -0.11 | | -0.12 | | 0.35 | | 0.48 | | -0.11 | | 0.08 | | -0.08 | | 0.38 | | 0.43 | | -0.2 | | 0.42 | | -0.16 | | 0.23 | | 1 | |  | |  | |  |  |
| Migrant Share | | (17) | | 0.13 | | 0.4 | | -0.32 | | -0.25 | | 0.48 | | 0.03 | | 0.1 | | 0.35 | | 0.3 | | 0.31 | | 0.18 | | -0.33 | | 0.19 | | -0.02 | | 0.18 | | 0.22 | | 1 | |  | |  |  |
| Risk of Ext. Conflicts | | (18) | | -0.19 | | -0.41 | | 0.09 | | 0.11 | | -0.27 | | -0.35 | | 0.25 | | -0.16 | | 0.15 | | -0.35 | | -0.50 | | 0.29 | | -0.26 | | 0.4 | | -0.24 | | -0.26 | | 0.05 | | 1 | |  |  |
| Corruption | | (19) | | 0.41 | | 0.59 | | -0.09 | | -0.15 | | 0.45 | | 0.32 | | -0.34 | | -0.03 | | -0.2 | | 0.61 | | 0.33 | | -0.64 | | 0.28 | | -0.27 | | -0.01 | | 0.22 | | 0.19 | | -0.26 | | 1 |  |
| Press Freedom | | (20) | | 0.33 | | 0.63 | | -0.09 | | -0.09 | | 0.43 | | 0.71 | | -0.34 | | -0.05 | | -0.29 | | 0.63 | | 0.65 | | -0.45 | | 0.49 | | -0.27 | | 0.03 | | 0.42 | | 0.05 | | -0.42 | | 0.53 | 1 |

Notes: Simple correlations between all variables included in the empirical section.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Appendix H:** Decentralization, Bias and Knowledge, 1972 – 2010, Random Effects | | | | | | | | | | | | | |
| Dependent variable: | | (1) | | | (2) | | (3) | | (4) | | (5) | | |
| Expenditure Decentralization | | Coef. | Std. err. | | Coef. | Std. err. | Coef. | Std. err. | Coef. | Std. err. | Coef. | Std. err. | |
| (log) GDP | | 4.48\*\* | | [1.79] |  |  | 2.81 | [1.89] | 2.23 | [2.60] | 0.99 | [2.13] | |
| (log) Land Area | | 3.36\*\*\* | | [0.97] |  |  | 3.69\*\*\* | [1.11] | 3.67\*\*\* | [1.26] | 4.32\*\*\* | [1.15] | |
| (log) Population | | 0.68 | | [1.29] |  |  | 0.04 | [1.29] | 1 | [1.69] | 0 | [1.25] | |
| Urbanization | | 0.15 | | [0.10] |  |  | 0.15\* | [0.08] | 0.20\* | [0.11] | 0.09 | [0.10] | |
| Democracy Dummy | | 2.62 | | [2.09] |  |  | 1.58 | [2.51] | -4.16 | [4.87] | 1.17 | [2.10] | |
| Heterogeneity | |  | |  | 0.12\* | [0.07] | 0.12 | [0.07] | 0.18\*\* | [0.09] | -0.2 | [0.13] | |
| Trade Openness | |  | |  | -0.05\*\* | [0.02] | -0.02 | [0.03] | -0.02 | [0.04] | -0.02 | [0.02] | |
| Oil Rents | |  | |  | -0.20\*\* | [0.09] | -0.32\*\*\* | [0.09] | -0.39\*\*\* | [0.12] | -0.27\*\* | [0.12] | |
| Information Transmission | |  | |  | 0.21\*\*\* | [0.08] | 0.13 | [0.09] | 0.13 | [0.11] | -0.13 | [0.11] | |
| Missing data | |  | |  | 0.01 | [0.11] | 0.02 | [0.11] | -0.17 | [0.25] | -0.09 | [0.12] | |
| Educational Quality | |  | |  | 0.10\* | [0.06] | 0.06 | [0.06] | 0.03 | [0.06] | 0.12\*\* | [0.06] | |
| Ethnic Tensions | |  | |  |  |  |  |  | -0.87 | [0.80] |  |  | |
| Government Stability | |  | |  |  |  |  |  | 0.14 | [0.45] |  |  | |
| Government Fractionalization | |  | |  |  |  |  |  | 0.05 | [0.07] |  |  | |
| Migrant Share | |  | |  |  |  |  |  | -0.03 | [0.38] |  |  | |
| Risk of External Conflicts | |  | |  |  |  |  |  | -0.38 | [0.63] |  |  | |
| Corruption | |  | |  |  |  |  |  | 0.8 | [0.91] |  |  | |
| Press Freedom | |  | |  |  |  |  |  | 0.09 | [0.10] |  |  | |
| Heterogeneity\*Information Transmission | | | |  |  |  |  |  |  |  | 0.01\*\*\* | [0.00] | |
| Period Dummies | Yes | |  | | Yes |  | Yes |  | Yes |  | Yes | |  |
| Region Dummies | Yes | |  | | Yes |  | Yes |  | Yes |  | Yes | |  |
| Adj. R-Squared | 0.43 | |  | | 0.53 |  | 0.56 |  | 0.63 |  | 0.60 | |  |
| Number of Observations | 387 | |  | | 338 |  | 338 |  | 225 |  | 338 | |  |

Notes: Re-estimation of table 1 using the random-effects estimator. Standard errors (clustered at the country level) in brackets.   
\* p<0.10, \*\* p<0.05, \*\*\* p<0.01.

**Appendix I: Classification of countries**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Federation type: Unitary or federal  (Norris 2008) | | | Classified as "federal" (Elazar 1995) | | | Residual powers to legislate  (Treisman 2008) | | | Sub-national government authority over taxing, spending, or legislating  (Keefer 2013) | | | | Legislature or executive locally elected  (Treisman 2008) | | |
| Country | 0 | 1 | Country | 0 | 1 | Country | 0 | 1 | Country | 0 | 1 | Country | | 0 | 1 |
| Afghanistan | X |  | Albania | X |  | Albania | X |  | Argentina |  | X | Afghanistan | | X |  |
| Albania | X |  | Argentina |  | X | Argentina |  | X | Armenia | X |  | Albania | |  | X |
| Argentina |  | X | Armenia | X |  | Armenia | X |  | Australia |  | X | Argentina | | X | X |
| Armenia | X |  | Azerbaijan | X |  | Azerbaijan |  | X | Austria |  | X | Armenia | | X | X |
| Australia |  | X | Belarus | X |  | Belarus | X |  | Bahrain | X |  | Australia | |  | X |
| Austria |  | X | Bolivia | X |  | Bolivia | X |  | Belarus | X |  | Austria | |  | X |
| Azerbaijan | X |  | Botswana | X |  | Brazil |  | X | Belgium | X | X | Azerbaijan | | X | X |
| Bahrain | X |  | Brazil |  | X | Bulgaria | X |  | Bhutan | X |  | Bahrain | | X |  |
| Barbados | X |  | Bulgaria | X |  | Canada |  | X | Botswana |  | X | Barbados | | X |  |
| Belarus | X |  | Canada |  | X | Chile | X |  | Brazil |  | X | Belarus | | X | X |
| Belgium |  | X | Chile | X |  | China | X |  | Bulgaria | X |  | Belgium | |  | X |
| Bhutan |  | X | China | X |  | Colombia | X |  | Canada |  | X | Bhutan | | X |  |
| Bolivia | X |  | Colombia | X |  | Costa Rica | X |  | Chile | X |  | Bolivia | | X |  |
| Botswana | X |  | Costa Rica | X |  | Croatia | X |  | Colombia |  | X | Botswana | |  | X |
| Brazil |  | X | Croatia | X |  | Czech Republic | X |  | Congo, Rep. | X |  | Brazil | |  | X |
| Bulgaria | X |  | Czech Republic | X |  | Egypt | X |  | Costa Rica | X |  | Bulgaria | |  | X |
| Canada |  | X | Egypt | X |  | Estonia | X |  | Cote d'Ivoire | X |  | Canada | |  | X |
| Cape Verde | X |  | Estonia | X |  | Ethiopia |  | X | Croatia | X |  | Cape Verde | |  | X |
| Chile | X |  | Ethiopia |  | X | France | X |  | Czech Republic |  | X | Chile | | X |  |
| **Appendix I: Classification of countries (continued)** | | | | | | |  |  |  |  |  |  | |  |  |
| China |  | X | France | X |  | Georgia | X |  | Dominican Republic | X |  | China | |  | X |
| Colombia |  | X | Georgia | X |  | Germany |  | X | Egypt | X | X | Colombia | |  | X |
| Congo, Rep. | X |  | Germany |  | X | Hungary | X |  | Estonia | X |  | Congo, Rep. | |  | X |
| Costa Rica | X |  | Guatemala | X |  | India |  | X | Ethiopia | X |  | Costa Rica | | X |  |
| Cote d'Ivoire | X |  | Hungary | X |  | Indonesia | X |  | Fiji |  | X | Cote d'Ivoire | |  | X |
| Croatia | X |  | India |  | X | Italy |  | X | Finland |  | X | Croatia | |  | X |
| Czech Republic | X |  | Indonesia | X |  | Kazakhstan | X |  | France | X | X | Czech Republic | |  | X |
| Denmark | X |  | Italy | X |  | Kenya | X |  | Georgia | X |  | Denmark | |  | X |
| Dominican Republic | X |  | Kazakhstan | X |  | Kyrgyz Republic | X |  | Germany |  | X | Dominican Republic | | X |  |
| Egypt | X |  | Kenya | X |  | Lithuania | X |  | Guatemala | X |  | Egypt | |  | X |
| Estonia | X |  | Kyrgyz Republic | X |  | Malaysia |  | X | Hungary | X |  | Ethiopia | |  | X |
| Ethiopia |  | X | Lithuania | X |  | Mexico |  | X | India |  | X | Fiji | |  | X |
| Fiji |  | X | Malaysia |  | X | Moldova | X |  | Italy |  | X | Finland | | X | X |
| Finland | X |  | Mexico |  | X | Peru | X |  | Kuwait | X |  | France | |  | X |
| France | X |  | Moldova | X |  | Philippines | X |  | Malaysia |  | X | Germany | |  | X |
| Georgia |  | X | Nicaragua | X |  | Poland | X |  | Mexico |  | X | Guatemala | | X |  |
| Germany |  | X | Panama | X |  | Portugal | X |  | Philippines |  | X | Hungary | | X |  |
| Guatemala | X |  | Peru | X |  | Romania | X |  | Senegal |  | X | Iceland | |  | X |
| Hungary | X |  | Philippines | X |  | Russia |  | X | Singapore | X |  | India | |  | X |
| Iceland | X |  | Poland | X |  | Senegal | X |  | Spain |  | X | Indonesia | | X | X |
| India |  | X | Portugal | X |  | Singapore | X |  | Sweden |  | X | Iran | | X | X |
| Indonesia |  | X | Romania | X |  | Slovak Republic | X |  | Switzerland |  | X | Ireland | |  | X |
| **Appendix I: Classification of countries (continued)** | | | | | | |  |  |  |  |  |  | |  |  |
| Iran | X |  | Russia |  | X | Slovenia | X |  | Trinidad and Tobago |  | X | Israel | |  | X |
| Ireland | X |  | Senegal | X |  | South Africa |  | X | United States |  | X | Italy | |  | X |
| Israel | X |  | Singapore | X |  | Spain |  | X |  |  |  | Japan | |  | X |
| Italy |  | X | Slovak Republic | X |  | Sweden | X |  |  |  |  | Jordan | | X |  |
| Jamaica | X |  | Slovenia | X |  | Thailand | X |  |  |  |  | Kazakhstan | |  | X |
| Japan |  | X | South Africa | X |  | Trinidad and Tobago | X |  |  |  |  | Korea, Rep. | | X | X |
| Jordan | X |  | Spain |  | X | Tunisia | X |  |  |  |  | Kuwait | | X |  |
| Kazakhstan | X |  | Sweden | X |  | Uganda | X |  |  |  |  | Kyrgyz Republic | |  | X |
| Kenya | X |  | Thailand | X |  | United Kingdom | X |  |  |  |  | Lesotho | | X |  |
| Korea, Rep. | X |  | Trinidad and Tobago | X |  | United States |  | X |  |  |  | Lithuania | | X |  |
| Kuwait | X |  | Tunisia | X |  | Zambia | X |  |  |  |  | Luxembourg | | X |  |
| Kyrgyz Republic | X |  | Uganda | X |  | Zimbabwe | X |  |  |  |  | Macedonia | | X |  |
| Latvia | X |  | Ukraine | X |  |  |  |  |  |  |  | Malaysia | |  | X |
| Lesotho | X |  | United Kingdom | X |  |  |  |  |  |  |  | Maldives | | X |  |
| Lithuania | X |  | United States |  | X |  |  |  |  |  |  | Malta | | X |  |
| Luxembourg | X |  | Uruguay | X |  |  |  |  |  |  |  | Mauritius | |  | X |
| Macedonia | X |  | Zambia | X |  |  |  |  |  |  |  | Mexico | |  | X |
| Malaysia |  | X | Zimbabwe | X |  |  |  |  |  |  |  | Mongolia | |  | X |
| Maldives | X |  |  |  |  |  |  |  |  |  |  | Netherlands | |  | X |
| |  | | --- | | **Appendix I: Classification of countries (continued)** | | | | | | | |  |  |  |  |  |  | |  |  |
| Malta | X |  |  |  |  |  |  |  |  |  |  | New Zealand | |  | X |
| Mauritius | X |  |  |  |  |  |  |  |  |  |  | Nicaragua | | X |  |
| Mexico |  | X |  |  |  |  |  |  |  |  |  | Norway | |  | X |
| Moldova | X |  |  |  |  |  |  |  |  |  |  | Panama | | X | X |
| Mongolia | X |  |  |  |  |  |  |  |  |  |  | Paraguay | | X |  |
| Netherlands |  | X |  |  |  |  |  |  |  |  |  | Peru | | X |  |
| New Zealand | X |  |  |  |  |  |  |  |  |  |  | Philippines | |  | X |
| Nicaragua | X |  |  |  |  |  |  |  |  |  |  | Poland | |  | X |
| Norway | X |  |  |  |  |  |  |  |  |  |  | Portugal | | X | X |
| Panama | X |  |  |  |  |  |  |  |  |  |  | Romania | |  | X |
| Paraguay | X |  |  |  |  |  |  |  |  |  |  | Senegal | |  | X |
| Peru | X |  |  |  |  |  |  |  |  |  |  | Singapore | | X |  |
| Philippines | X |  |  |  |  |  |  |  |  |  |  | Slovak Republic | | X | X |
| Poland | X |  |  |  |  |  |  |  |  |  |  | South Africa | |  | X |
| Portugal |  | X |  |  |  |  |  |  |  |  |  | Spain | |  | X |
| Romania | X |  |  |  |  |  |  |  |  |  |  | Sri Lanka | | X | X |
| Russia |  | X |  |  |  |  |  |  |  |  |  | Swaziland | | X |  |
| Senegal | X |  |  |  |  |  |  |  |  |  |  | Sweden | |  | X |
| Singapore | X |  |  |  |  |  |  |  |  |  |  | Switzerland | |  | X |
| Slovak Republic | X |  |  |  |  |  |  |  |  |  |  | Syria | | X | X |
| Slovenia | X |  |  |  |  |  |  |  |  |  |  | Tajikistan | |  | X |
| South Africa |  | X |  |  |  |  |  |  |  |  |  | Thailand | | X |  |
| Spain |  | X |  |  |  |  |  |  |  |  |  | Togo | |  | X |
| Sri Lanka | X |  |  |  |  |  |  |  |  |  |  | Trinidad & Tobago | |  | X |
| Swaziland | X |  |  |  |  |  |  |  |  |  |  | Tunisia | |  | X |
| **Appendix I: Classification of countries (continued)** | | | | | | |  |  |  |  |  |  | |  |  |
| Sweden | X |  |  |  |  |  |  |  |  |  |  | Uganda | | X |  |
| Switzerland |  | X |  |  |  |  |  |  |  |  |  | United Kingdom | |  | X |
| Syria | X |  |  |  |  |  |  |  |  |  |  | United States | |  | X |
| Tajikistan | X |  |  |  |  |  |  |  |  |  |  | Uruguay | | X | X |
| Thailand | X |  |  |  |  |  |  |  |  |  |  | Vietnam | | X |  |
| Togo | X |  |  |  |  |  |  |  |  |  |  | Yemen, Rep. | | X | X |
| Trinidad and Tobago |  | X |  |  |  |  |  |  |  |  |  | Zambia | |  | X |
| Tunisia | X |  |  |  |  |  |  |  |  |  |  | Zimbabwe | | X |  |
| Uganda | X |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| Ukraine |  | X |  |  |  |  |  |  |  |  |  |  | |  |  |
| United Kingdom |  | X |  |  |  |  |  |  |  |  |  |  | |  |  |
| United States |  | X |  |  |  |  |  |  |  |  |  |  | |  |  |
| Uruguay | X |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| Vietnam | X |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| Yemen, Rep. | X |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| Zambia | X |  |  |  |  |  |  |  |  |  |  |  | |  |  |
| Zimbabwe | X |  |  |  |  |  |  |  |  |  |  |  | |  |  |

Notes: Classification of countries as federal or unitary. Countries where both categories are filled with an “X” changed within this classification during the sample period. The estimations use the classification in the respective period. For more details please refer to the original sources as provided in the references.