Robust Determinants of Government Expenditures: a Model Averaging Approach

Kyriakos Petrou (University of Cyprus)

Introduction

- The recent global economic crisis has generated an intense debate among policy makers and academics about the size of government as a means to restore debt sustainability, long-term growth, and stability.

- Surprisingly, despite the large theoretical and empirical literature on the determinants of government size, the results are mixed. We posit that the main cause of this problem is model uncertainty arising from *theory uncertainty*. By theory uncertainty we mean that any given theory of government expenditure does not logically exclude other theories from also being relevant and therefore, there is no a priori justification for focusing on a specific subset of determinants.

- To deal with this issue we employ *Bayesian Model Averaging (BMA)*, which constructs estimates that do not depend on a particular model specification but rather use information from all candidate models. In particular, it amounts to forming a weighted average of model specific estimates where the weights are given by the posterior model probabilities. BMA has been widely applied in growth regressions and has proven to be particularly useful in identifying robust growth determinants (e.g., Brock and Durlauf (2001), Fernandez, Ley, and Steel (2001), Sala-i-Martin, X. and Doppelhofer, G. and Miller, R. (2004), Durlauf, Kourtellos, and Tan (2008), and Masanjala and Papageorgiou (2008)).

- The paper is closely related to Shelton (2007). The main differences are that (1) we use a bigger set of regressors, covering more government size hypotheses and (2) we take into account theory uncertainty using Bayesian Model Averaging.

- Our main results are:
  - i. Decentralization decreases central public goods expenditures.
  - ii. Country size (measured by land area), increases general government expenditure, while country size (measured by population) decreases both general and central government expenditures, and mainly public goods.
  - iii. Both the portion of the population over 64 years old and urbanization increase government expenditures, mainly through social protection.
  - iv. Globalization increases government expenditures, but not through the Rodrik (1998) compensate hypothesis, but through the economic and business environment that is needed due to the increased globalization.
  - v. FDI increases government size, through social protection and public goods (opposite results than the idea of government size reduction to increase competitiveness and to attract FDI)
  - vi. Countries with a presidential system tend to have smaller general and central government expenditures.
  - vii. Economic development leaves government expenditures unaffected (opposite results than Wagner's law).

Data

- Period: 1971 – 2010 (5-year averages)

- Countries: unbalanced panel of 89 countries (total general government expenditure)

- Dependent Variable: Data comes from the Government Finance Statistics. Government expenditures are classified in two ways: an Economic Classification (Compensation of employees – Use of goods and services – Social benefits) and a Functional Classification (General Public Services – Defense – Public Order and Safety – Economic Affairs – Housing and Community Amenities – Health – Recreation, Culture, and Religion – Education – Social Protection). Also government expenditures are classified according to the level of government, either General or Central government.

- Following Persson and Tabellini (1999), expenditure of public good is the sum of public order and safety, health and education expenditures.

- In every model we include a constant, time effects and regional effects.

- Regressors:
  - i. The 'Centralization Hypothesis': An increase in fiscal decentralization will lead to an increase in the size of lower-level government and to a decrease in the size of higher-level government, to less total government spending because of the high degree of competition in taxation among the different levels of government, or to an increase in all levels of government if the component of the governments collude to organize a cartel-like arrangement (Wallis and Oates (1988), Brennan and Buchanan (1980) and Grossman and West (1994)). Measured by the federal dummy.
  - ii. The 'Conflict Hypothesis': A country, which faces either an internal or an external conflict increases its government size in order to deal with those conflicts (Eterovic and Eterovic (2012)). Measured by the warfare score.
  - iii. The 'Country Size Hypothesis': When there are fixed costs and economies of scale in the supply of public goods, less populated countries may have a larger share of government in GDP. On the other hand, countries with very big territorial size may have a bigger government size because of the fixed cost in different, remote regions (Alesina and Wacziarg (1998)). Measured by the natural logarithm of the population and the natural logarithm of the country's land area in square kilometers.
  - iv. The 'Democracy Hypothesis': The "fixed" cost in building democratic institutions, the presence of many pressure groups and the existence of social and redistribution policies positively affect government size (Alesina and Wacziarg (1998)). Measured by the combined polity score.
  - v. The 'Demographic Hypothesis': The demographic characteristics of a country affect government size through the society needs (Cassette and Paty (2010) and Ferris, Park and Winer (2008)). Measured by the share of people younger than 15 years old and older than 64 years old to the working age population, the share of urban population to total population and population growth.
  - vi. The 'Fractionalization Hypothesis': Governments have a much more difficult task in achieving consensus for redistribution to the needy in a fractionalized society (Alesina et al. (2003)). Measured by the linguistic fractionalization index.
  - vii. The 'Geography and Climate Hypothesis': The geographic and climate characteristics, as well as the location of a country affect government expenditure through economic development (Gallup et al. (1999)). Measured by the percentage of a country's land area within 100km of an ice- free coast, the percentage of land area classified as tropical and subtropical and the number of neighboring states sharing a border.
  - viii. The 'Globalization Hypothesis': Globalization increases government size to compensate the losers or decrease government size to promote the competitiveness of the economy (Garrett (1995) and Schulze and Ursprung (1999)). Measured by trade openness.
  - ix. The 'Income Inequality Hypothesis': Inequality may generate demand for more redistribution and a larger government, or decrease redistribution in the present of capital market imperfections or if voting is only concerned with redistribution and ideology or expect that their children will have prospects of upward mobility (Meltzer and Richard (1981), Bénabou (1996, 2000), Roemer (1998) and Benabou and Ok (2001)). Measured by gini coefficient for gross inequality.
  - x. The 'Macroeconomic Hypothesis': The macroeconomic characteristics of a country affect government size through economic development and the society needs (Rodrik (1998) and Zakaria and Shakoor (2011)). Measured by the share of central government debt to GDP, the natural logarithm of FDI liabilities stock from and inflation.
  - xi. The 'Political Institution Hypothesis': The political institutions of a country affect government size through the political characteristics and conditions (Eterovic and Eterovic (2012), Shelton (2007) and Baraldi (2008)). Measured by the political competition index, the political rights index, the presidential system dummy and the plurality dummy.
  - xii. The 'Wagner's Law Hypothesis': Economic development increases government size as countries grow wealthier, grow more complex and increase the need for public regulatory and protective action to ensure the smooth workings of a modern, specialized economy (Shelton (2007)). Measured by the natural logarithm of GDP per capita.

Methodology - Bayesian Model Averaging (BMA)

- Model averaging integrates out the uncertainty over models by taking the weighted average of model-specific estimates, where the weights reflect the evidentiary support for each model given the data, D. The posterior distribution of the quantity of interest, Δ, is the weighted average of model-specific posterior distribution,

$$\Pr(\Delta|D) = \sum_{m=1}^{M} \Pr(\Delta|M_m, D)\Pr(M_m|\, D) \quad (1)$$

- The weights are constructed to be analogous to posterior model probabilities that arise from Bayes' theorem, where $\Pr(D|M_m)$ is the integrated likelihood of model M_m and $\Pr(M_m)$ is the prior probability that M_m is the true model,

$$\Pr(M_m|D) = \frac{\Pr(D|M_m)\Pr(M_m)}{\sum_{m=1}^{M}\Pr(D|M_m)\Pr(M_m)} \quad (2)$$

- Given the posterior model probability, the BMA estimator of β (posterior mean – PM) is the sum of the posterior means of each model, weighted by their posterior probabilities,

$$\hat{\beta}^{BMA} = \sum_{m=1}^{M} \Pr(M_m|\, D)\, \hat{\beta}_m \quad (3)$$

- The posterior variance (help to calculate posterior standard error – PSE) is the sum of the posterior variances of each model, weighted by their posterior probabilities plus a term indicates how stable the estimates are across models. The first term captures the variance of the within model estimates and the second term captures the variance of model-specific estimates across models,

$$\hat{\sigma}^{2\,BMA}(\beta) = \sum_{m=1}^{M} \Pr(M_m|\, D)\, \hat{\sigma}_m^2 + \sum_{m=1}^{M} \Pr(M_m|\, D)(\hat{\beta}_m - \hat{\beta}^{BMA})^2 \quad (4)$$

- The main tool of inference in the BMA context is the posterior inclusion probability (PIP) of each regressor. The PIP of a variable is the sum of the posterior probabilities of the models that contain the variable (for example for variable X), where M_X is collection of indices for which $m \in M_X$ implies model M_m does not restrict the parameter β_X to zero

$$\mu^{BMA}(\beta_X) = pr(\hat{\beta}_X \neq 0|D) = \sum_{m \in M_X} \Pr(M_m|\, D) \quad (5)$$

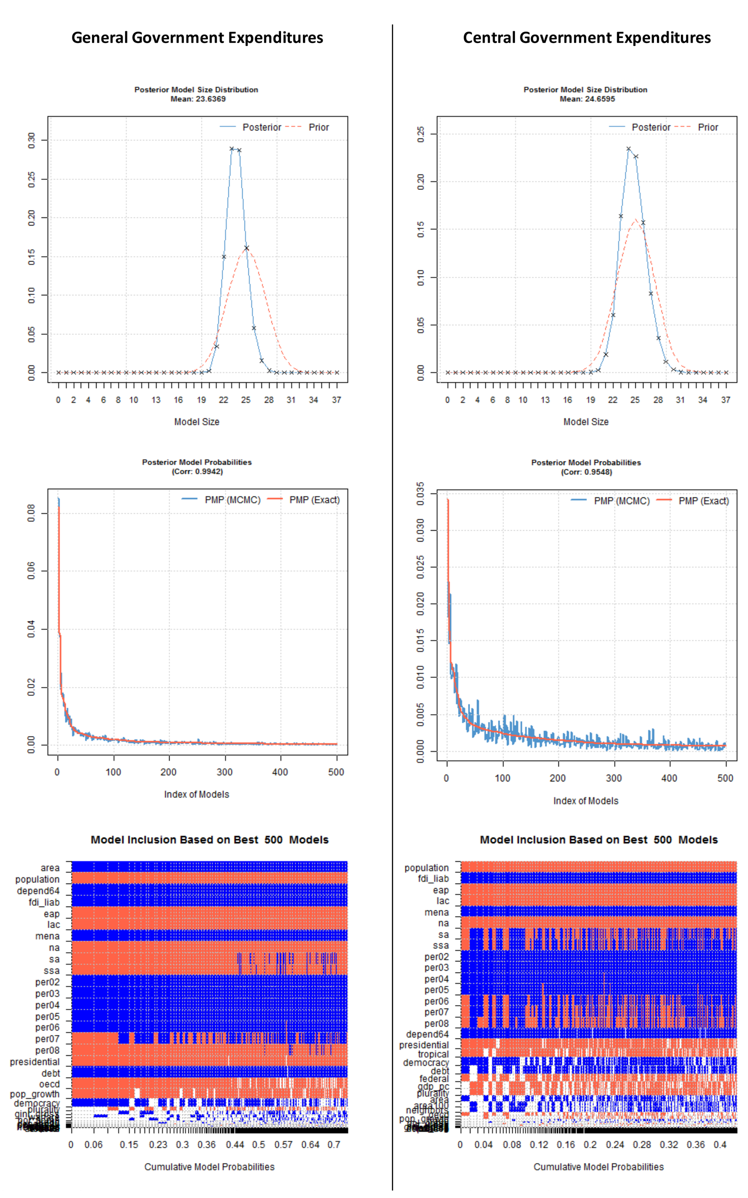
- In order to interpret the statistical significance of the coefficient we follow the Kass and Raftery (1995) rules of thumb for the posterior inclusion probability (PIP). If PIP<50% there is evidence against the effect, if 50%≤PIP<75% there is weak evidence for the effect, if 75%≤PIP<95% there is positive evidence for the effect, if 95%≤PIP<99% there is strong evidence for the effect and if PIP≥99% there is very strong evidence for the effect.

Results – General Government

Each cell: PM (PSE) {PIP}

	Total Expenditures	Compensation of employees	Use of goods and services	Social benefits	General public services	Defense	Public order and safety	Economic affairs	Hous. and commu. amenit.	Health	Recrea., culture, and relig.	Education	Social protection	Public Goods
Centralization														
Federal dummy	0.000 (0.002) {0.043}	0.000 (0.002) {0.066}	-0.001 (0.004) {0.182}	0.001 (0.003) {0.119}	0.003 (0.006) {0.308}	-0.001 (0.002) {0.193}	0.000 (0.001) {0.235}	0.001 (0.002) {0.129}	-0.001 (0.002) {0.475}	0.000 (0.001) {0.060}	0.000 (0.000) {0.064}	0.000 (0.001) {0.056}	0.000 (0.001) {0.057}	0.000 (0.001) {0.064}
Conflict														
Warfare score	0.002 (0.003) {0.302}	0.000 (0.000) {0.088}	0.001 (0.001) {0.457}	0.001 (0.002) {0.194}	0.000 (0.000) {0.062}	0.003 (0.001) {1.000}	0.001 (0.000) {0.741}	0.002 (0.001) {0.927}	0.000 (0.000) {0.064}	0.000 (0.000) {0.054}	0.000 (0.000) {0.072}	0.000 (0.000) {0.101}	0.000 (0.000) {0.065}	0.000 (0.000) {0.090}
Country size														
Land area	0.018 (0.004) {1.000}	0.008 (0.002) {0.975}	0.005 (0.002) {0.937}	0.000 (0.001) {0.066}	0.008 (0.002) {0.996}	0.000 (0.000) {0.088}	0.000 (0.000) {0.400}	0.007 (0.001) {1.000}	0.000 (0.000) {0.189}	0.000 (0.001) {0.231}	0.000 (0.000) {0.099}	0.002 (0.001) {0.687}	0.000 (0.000) {0.071}	0.003 (0.002) {0.790}
Population	-0.040 (0.006) {1.000}	-0.010 (0.002) {1.000}	-0.008 (0.002) {0.987}	-0.011 (0.004) {0.938}	-0.002 (0.003) {0.341}	0.000 (0.000) {0.085}	0.000 (0.000) {0.094}	-0.007 (0.001) {1.000}	0.000 (0.000) {0.100}	-0.008 (0.001) {1.000}	-0.002 (0.000) {1.000}	-0.007 (0.001) {1.000}	0.000 (0.001) {0.123}	-0.017 (0.002) {1.000}
Democracy														
Democracy score	0.003 (0.002) {0.656}	0.000 (0.000) {0.068}	0.000 (0.001) {0.232}	0.000 (0.000) {0.104}	0.000 (0.000) {0.068}	0.001 (0.001) {0.574}	0.000 (0.000) {0.139}	0.001 (0.001) {0.620}	0.000 (0.000) {0.366}	0.000 (0.000) {0.068}	0.000 (0.000) {0.154}	0.001 (0.000) {0.845}	0.000 (0.000) {0.092}	0.000 (0.001) {0.280}
Demographic														
Dependency share <15	0.010 (0.032) {0.132}	0.002 (0.007) {0.087}	0.004 (0.013) {0.147}	0.000 (0.007) {0.067}	0.005 (0.015) {0.160}	0.003 (0.009) {0.170}	-0.004 (0.005) {0.423}	0.000 (0.004) {0.073}	0.000 (0.002) {0.068}	0.007 (0.012) {0.327}	0.001 (0.002) {0.150}	0.006 (0.011) {0.286}	-0.005 (0.015) {0.139}	0.012 (0.022) {0.304}
Dependency share >64	0.718 (0.147) {1.000}	0.000 (0.012) {0.050}	0.140 (0.088) {0.802}	0.597 (0.078) {1.000}	0.000 (0.018) {0.066}	0.066 (0.062) {0.636}	0.002 (0.007) {0.126}	0.067 (0.051) {0.711}	0.001 (0.006) {0.083}	0.034 (0.043) {0.451}	0.002 (0.006) {0.154}	0.001 (0.008) {0.060}	0.645 (0.070) {1.000}	0.015 (0.042) {0.160}
Urbanization	0.001 (0.008) {0.046}	0.000 (0.003) {0.050}	0.004 (0.010) {0.198}	-0.002 (0.009) {0.098}	0.000 (0.004) {0.058}	0.031 (0.010) {0.972}	-0.009 (0.003) {0.984}	-0.032 (0.009) {0.990}	0.000 (0.001) {0.054}	-0.020 (0.009) {0.909}	0.000 (0.001) {0.078}	0.000 (0.002) {0.062}	0.048 (0.016) {0.966}	-0.017 (0.017) {0.569}
Population growth	-1.382 (0.724) {0.869}	0.009 (0.066) {0.063}	0.011 (0.070) {0.073}	-0.016 (0.101) {0.076}	-0.841 (0.296) {0.967}	0.008 (0.054) {0.077}	0.003 (0.019) {0.080}	-0.017 (0.068) {0.094}	-0.002 (0.016) {0.053}	-0.011 (0.057) {0.078}	-0.002 (0.010) {0.070}	-0.024 (0.083) {0.124}	-0.395 (0.404) {0.564}	-0.057 (0.173) {0.148}
Fractionalization														
Linguistic fractionalization	0.001 (0.007) {0.074}	0.000 (0.002) {0.049}	0.003 (0.006) {0.192}	-0.001 (0.004) {0.081}	0.000 (0.002) {0.058}	0.000 (0.001) {0.059}	0.000 (0.001) {0.158}	0.000 (0.002) {0.076}	0.000 (0.001) {0.079}	0.000 (0.001) {0.065}	0.000 (0.000) {0.055}	0.001 (0.003) {0.194}	0.007 (0.011) {0.342}	0.001 (0.003) {0.085}
Geography and climate														
Area within 100km of coast	0.000 (0.004) {0.051}	0.025 (0.008) {0.972}	-0.001 (0.003) {0.085}	-0.006 (0.010) {0.303}	0.024 (0.009) {0.964}	0.000 (0.002) {0.109}	-0.003 (0.002) {0.772}	-0.001 (0.002) {0.147}	0.000 (0.001) {0.073}	0.000 (0.001) {0.058}	0.000 (0.000) {0.052}	-0.004 (0.005) {0.450}	0.000 (0.001) {0.051}	-0.002 (0.004) {0.166}
Tropical and subtropical area	0.000 (0.004) {0.052}	-0.035 (0.007) {1.000}	0.000 (0.002) {0.061}	0.001 (0.004) {0.071}	0.001 (0.004) {0.099}	0.015 (0.006) {0.938}	-0.007 (0.002) {1.000}	-0.002 (0.004) {0.242}	0.000 (0.001) {0.089}	-0.004 (0.005) {0.438}	0.000 (0.000) {0.057}	0.000 (0.002) {0.082}	-0.001 (0.004) {0.084}	-0.005 (0.008) {0.293}
Number of neighboring states	0.000 (0.001) {0.063}	0.000 (0.001) {0.198}	0.000 (0.000) {0.047}	0.007 (0.002) {0.988}	0.000 (0.000) {0.087}	0.000 (0.000) {0.207}	0.000 (0.000) {0.498}	0.000 (0.000) {0.065}	0.000 (0.000) {0.239}	0.000 (0.000) {0.116}	0.000 (0.000) {0.141}	0.000 (0.000) {0.052}	0.000 (0.000) {0.090}	0.000 (0.000) {0.084}
Globalization														
Trade openness	0.005 (0.012) {0.199}	0.016 (0.006) {0.929}	0.004 (0.006) {0.384}	0.000 (0.004) {0.102}	0.007 (0.008) {0.473}	0.003 (0.004) {0.465}	0.004 (0.001) {0.996}	0.018 (0.004) {1.000}	0.004 (0.001) {0.954}	0.000 (0.001) {0.084}	-0.003 (0.001) {0.987}	0.000 (0.001) {0.086}	-0.001 (0.003) {0.131}	0.000 (0.002) {0.071}
Inequality														
Gross inequality	0.000 (0.001) {0.342}	0.001 (0.000) {0.989}	0.000 (0.000) {0.639}	0.000 (0.000) {0.085}	0.000 (0.000) {0.114}	0.000 (0.000) {0.063}	0.000 (0.000) {0.999}	0.000 (0.000) {0.337}	0.000 (0.000) {0.048}	0.000 (0.000) {0.053}	0.000 (0.000) {0.061}	0.000 (0.000) {0.577}	0.000 (0.000) {0.137}	0.000 (0.000) {0.238}
Macroeconomic														
Central government debt	0.035 (0.012) {0.959}	0.000 (0.001) {0.052}	0.009 (0.006) {0.775}	0.000 (0.002) {0.080}	0.030 (0.005) {1.000}	0.011 (0.003) {0.988}	0.001 (0.001) {0.535}	0.000 (0.001) {0.064}	-0.001 (0.002) {0.518}	0.000 (0.001) {0.097}	0.000 (0.000) {0.050}	0.000 (0.001) {0.058}	0.000 (0.001) {0.048}	0.000 (0.001) {0.057}
FDI liabilities	0.023 (0.004) {1.000}	0.000 (0.001) {0.092}	0.001 (0.002) {0.277}	0.007 (0.003) {0.888}	0.003 (0.003) {0.503}	0.000 (0.000) {0.086}	0.000 (0.000) {0.201}	0.000 (0.000) {0.055}	0.001 (0.001) {0.652}	0.006 (0.001) {1.000}	0.001 (0.000) {0.996}	0.003 (0.001) {0.961}	0.000 (0.001) {0.063}	0.009 (0.002) {1.000}
Inflation	0.000 (0.001) {0.100}	-0.001 (0.001) {0.458}	0.000 (0.000) {0.048}	0.000 (0.000) {0.083}	0.002 (0.002) {0.553}	0.000 (0.000) {0.112}	0.000 (0.000) {0.142}	0.000 (0.000) {0.146}	0.000 (0.000) {0.104}	0.000 (0.000) {0.048}	0.000 (0.000) {0.043}	-0.001 (0.001) {0.487}	0.000 (0.000) {0.070}	0.000 (0.000) {0.063}
Political institution														
Political competition index	0.002 (0.003) {0.316}	0.000 (0.001) {0.113}	-0.001 (0.002) {0.203}	0.000 (0.001) {0.085}	0.000 (0.000) {0.089}	0.000 (0.000) {0.114}	0.001 (0.000) {0.889}	0.000 (0.001) {0.207}	0.000 (0.000) {0.257}	0.000 (0.001) {0.151}	0.000 (0.000) {0.452}	0.000 (0.000) {0.143}	0.000 (0.001) {0.202}	0.000 (0.001) {0.191}
Presidential systems	-0.045 (0.014) {0.982}	-0.004 (0.006) {0.347}	-0.020 (0.005) {0.993}	0.001 (0.003) {0.093}	-0.025 (0.005) {1.000}	-0.001 (0.003) {0.214}	0.000 (0.000) {0.061}	-0.001 (0.002) {0.151}	-0.005 (0.001) {0.985}	0.001 (0.002) {0.165}	-0.003 (0.001) {1.000}	0.000 (0.001) {0.068}	0.000 (0.002) {0.085}	0.000 (0.002) {0.072}
Plurality systems	-0.009 (0.012) {0.426}	0.001 (0.003) {0.162}	0.000 (0.001) {0.060}	-0.010 (0.008) {0.714}	0.000 (0.001) {0.047}	-0.001 (0.002) {0.152}	0.000 (0.000) {0.065}	0.000 (0.001) {0.055}	0.000 (0.000) {0.051}	0.000 (0.001) {0.083}	0.000 (0.000) {0.102}	-0.001 (0.002) {0.246}	-0.003 (0.005) {0.328}	-0.001 (0.002) {0.115}
Political Rights index	-0.001 (0.003) {0.119}	0.000 (0.001) {0.092}	0.000 (0.001) {0.067}	-0.002 (0.003) {0.409}	0.000 (0.001) {0.106}	0.002 (0.002) {0.383}	0.000 (0.000) {0.129}	0.000 (0.001) {0.135}	0.000 (0.000) {0.174}	-0.003 (0.001) {0.896}	0.000 (0.000) {0.093}	0.000 (0.001) {0.107}	0.000 (0.001) {0.141}	-0.004 (0.003) {0.672}
Wagner's law														
GDP per capita	-0.001 (0.005) {0.093}	0.000 (0.001) {0.088}	0.002 (0.004) {0.302}	0.001 (0.003) {0.125}	-0.001 (0.003) {0.160}	0.000 (0.001) {0.113}	0.000 (0.000) {0.076}	0.000 (0.001) {0.072}	0.000 (0.000) {0.120}	0.000 (0.001) {0.129}	0.000 (0.000) {0.068}	0.000 (0.001) {0.095}	0.000 (0.001) {0.063}	0.000 (0.001) {0.084}

Graphical Representation



Results – Central Government

Each cell: PM (PSE) {PIP}

	Total Expenditures	Compensation of employees	Use of goods and services	Social benefits	General public services	Defense	Public order and safety	Economic affairs	Hous. and commu. amenit.	Health	Recrea., culture, and relig.	Education	Social protection	Public Goods
Centralization														
Federal dummy	-0.021 (0.017) {0.683}	-0.002 (0.004) {0.232}	-0.010 (0.006) {0.802}	0.000 (0.002) {0.062}	0.002 (0.005) {0.247}	-0.001 (0.002) {0.174}	-0.001 (0.001) {0.493}	-0.001 (0.002) {0.146}	-0.002 (0.001) {0.717}	-0.006 (0.004) {0.829}	-0.001 (0.001) {0.562}	-0.010 (0.002) {0.998}	-0.001 (0.002) {0.138}	-0.020 (0.005) {0.999}
Conflict														
Warfare score	0.000 (0.001) {0.116}	0.000 (0.000) {0.057}	0.000 (0.001) {0.131}	0.001 (0.002) {0.327}	0.000 (0.000) {0.063}	0.003 (0.001) {1.000}	0.000 (0.000) {0.332}	0.002 (0.001) {0.942}	0.000 (0.000) {0.083}	0.000 (0.000) {0.065}	0.000 (0.000) {0.782}	0.000 (0.000) {0.058}	0.000 (0.000) {0.053}	0.000 (0.000) {0.054}
Country size														
Land area	0.006 (0.006) {0.590}	0.007 (0.002) {0.988}	0.001 (0.001) {0.273}	0.000 (0.001) {0.088}	0.008 (0.002) {1.000}	0.000 (0.000) {0.096}	0.000 (0.000) {0.165}	0.005 (0.001) {1.000}	0.000 (0.000) {0.124}	-0.003 (0.001) {0.852}	0.000 (0.000) {0.774}	0.000 (0.000) {0.139}	0.000 (0.000) {0.091}	0.000 (0.001) {0.096}
Population	-0.031 (0.006) {1.000}	-0.008 (0.002) {0.986}	-0.004 (0.003) {0.706}	-0.007 (0.005) {0.756}	-0.008 (0.004) {0.833}	0.000 (0.000) {0.083}	0.000 (0.000) {0.207}	-0.006 (0.001) {1.000}	0.000 (0.000) {0.308}	-0.001 (0.002) {0.464}	0.000 (0.000) {0.334}	-0.004 (0.001) {0.980}	0.000 (0.001) {0.128}	-0.009 (0.003) {0.981}
Democracy														
Democracy score	0.003 (0.002) {0.716}	0.000 (0.001) {0.167}	0.001 (0.001) {0.349}	0.000 (0.001) {0.132}	0.000 (0.000) {0.059}	0.000 (0.001) {0.484}	0.000 (0.000) {0.101}	0.000 (0.000) {0.328}	0.000 (0.000) {0.071}	0.000 (0.000) {0.070}	0.000 (0.000) {0.240}	0.000 (0.000) {0.464}	0.000 (0.001) {0.168}	0.000 (0.001) {0.334}
Demographic														
Dependency share <15	0.004 (0.019) {0.086}	0.002 (0.007) {0.092}	0.003 (0.009) {0.121}	-0.002 (0.010) {0.083}	0.007 (0.018) {0.170}	0.003 (0.008) {0.141}	0.000 (0.001) {0.069}	0.001 (0.005) {0.091}	0.000 (0.001) {0.063}	0.000 (0.002) {0.061}	0.001 (0.001) {0.173}	0.001 (0.005) {0.108}	-0.023 (0.022) {0.587}	0.000 (0.004) {0.053}
Dependency share >64	0.498 (0.220) {0.936}	-0.020 (0.046) {0.209}	0.066 (0.072) {0.534}	0.539 (0.077) {1.000}	0.001 (0.018) {0.060}	0.057 (0.059) {0.589}	0.000 (0.003) {0.067}	0.027 (0.039) {0.388}	-0.001 (0.004) {0.087}	0.030 (0.042) {0.412}	-0.001 (0.002) {0.099}	-0.029 (0.037) {0.454}	0.593 (0.054) {1.000}	0.001 (0.016) {0.062}
Urbanization	-0.011 (0.027) {0.208}	-0.047 (0.014) {0.976}	0.001 (0.004) {0.068}	-0.003 (0.012) {0.134}	0.001 (0.006) {0.097}	0.031 (0.010) {0.972}	-0.012 (0.003) {0.996}	-0.039 (0.007) {1.000}	0.000 (0.001) {0.059}	-0.034 (0.007) {1.000}	0.000 (0.001) {0.243}	-0.003 (0.006) {0.266}	0.002 (0.007) {0.149}	-0.051 (0.012) {0.999}
Population growth	-0.389 (0.588) {0.368}	0.008 (0.058) {0.055}	0.012 (0.067) {0.071}	-0.009 (0.084) {0.065}	-0.397 (0.363) {0.635}	0.008 (0.051) {0.069}	0.001 (0.012) {0.063}	-0.018 (0.067) {0.109}	-0.001 (0.011) {0.064}	-0.001 (0.026) {0.050}	-0.007 (0.018) {0.181}	-0.005 (0.037) {0.070}	-0.032 (0.119) {0.116}	0.001 (0.051) {0.059}
Fractionalization														
Linguistic fractionalization	-0.003 (0.009) {0.112}	-0.023 (0.010) {0.919}	0.000 (0.002) {0.047}	0.000 (0.003) {0.075}	0.000 (0.002) {0.054}	0.000 (0.001) {0.049}	0.000 (0.000) {0.060}	-0.001 (0.002) {0.100}	-0.002 (0.002) {0.533}	-0.007 (0.006) {0.647}	-0.002 (0.001) {0.772}	0.000 (0.002) {0.090}	0.002 (0.006) {0.193}	-0.002 (0.006) {0.176}
Geography and climate														
Area within 100km of coast	0.022 (0.027) {0.484}	0.045 (0.007) {1.000}	-0.001 (0.004) {0.154}	-0.008 (0.012) {0.419}	0.035 (0.007) {1.000}	0.000 (0.001) {0.079}	0.000 (0.000) {0.080}	0.000 (0.001) {0.070}	0.000 (0.001) {0.104}	0.003 (0.005) {0.328}	0.000 (0.000) {0.084}	0.000 (0.001) {0.064}	0.002 (0.005) {0.234}	0.004 (0.007) {0.302}
Tropical and subtropical area	-0.027 (0.022) {0.688}	-0.040 (0.007) {1.000}	0.000 (0.002) {0.065}	0.001 (0.005) {0.099}	0.000 (0.002) {0.053}	0.015 (0.006) {0.946}	-0.007 (0.001) {1.000}	-0.006 (0.006) {0.595}	0.000 (0.001) {0.087}	-0.010 (0.006) {0.834}	0.000 (0.001) {0.269}	-0.001 (0.003) {0.224}	-0.017 (0.009) {0.874}	-0.021 (0.010) {0.907}
Number of neighboring states	0.003 (0.004) {0.440}	0.004 (0.001) {0.993}	0.000 (0.001) {0.172}	0.006 (0.002) {0.975}	0.000 (0.000) {0.060}	0.000 (0.001) {0.225}	0.000 (0.000) {0.102}	0.000 (0.000) {0.049}	0.000 (0.000) {0.190}	0.003 (0.001) {1.000}	0.000 (0.000) {0.700}	0.000 (0.000) {0.068}	0.002 (0.001) {0.895}	0.002 (0.001) {0.722}
Globalization														
Trade openness	0.008 (0.015) {0.291}	0.024 (0.005) {0.996}	0.003 (0.005) {0.309}	0.003 (0.007) {0.238}	0.002 (0.005) {0.194}	0.003 (0.004) {0.427}	0.005 (0.001) {0.999}	0.017 (0.003) {1.000}	0.004 (0.001) {1.000}	0.004 (0.005) {0.504}	0.000 (0.000) {0.083}	0.001 (0.002) {0.172}	0.000 (0.001) {0.071}	0.006 (0.007) {0.535}
Inequality														
Gross inequality	0.000 (0.000) {0.133}	0.000 (0.000) {0.168}	0.000 (0.000) {0.123}	0.000 (0.000) {0.117}	0.000 (0.000) {0.080}	0.000 (0.000) {0.047}	0.000 (0.000) {0.999}	0.000 (0.000) {0.397}	0.000 (0.000) {0.054}	0.000 (0.000) {0.142}	0.000 (0.000) {0.057}	0.000 (0.000) {0.623}	0.000 (0.000) {0.054}	0.000 (0.000) {0.152}
Macroeconomic														
Central government debt	0.027 (0.018) {0.780}	0.000 (0.001) {0.067}	0.010 (0.005) {0.879}	0.000 (0.002) {0.068}	0.025 (0.005) {1.000}	0.011 (0.003) {0.992}	0.000 (0.001) {0.194}	0.000 (0.001) {0.069}	-0.003 (0.001) {0.942}	0.001 (0.001) {0.157}	0.000 (0.000) {0.069}	0.000 (0.001) {0.057}	0.001 (0.003) {0.183}	0.000 (0.002) {0.096}
FDI liabilities	0.025 (0.006) {0.999}	0.000 (0.001) {0.066}	0.002 (0.002) {0.425}	0.003 (0.003) {0.582}	0.007 (0.004) {0.826}	0.000 (0.000) {0.071}	0.000 (0.000) {0.085}	0.000 (0.000) {0.051}	0.000 (0.000) {0.281}	0.004 (0.001) {0.986}	0.000 (0.000) {0.113}	0.001 (0.001) {0.562}	0.000 (0.001) {0.123}	0.008 (0.002) {0.991}
Inflation	0.000 (0.001) {0.080}	-0.002 (0.001) {0.788}	0.000 (0.000) {0.037}	0.000 (0.000) {0.066}	0.000 (0.001) {0.131}	0.000 (0.000) {0.088}	0.000 (0.000) {0.195}	0.001 (0.001) {0.357}	0.000 (0.000) {0.085}	0.000 (0.000) {0.057}	0.000 (0.000) {0.058}	0.000 (0.000) {0.119}	0.000 (0.000) {0.058}	0.000 (0.000) {0.054}
Political institution														
Political competition index	0.001 (0.002) {0.205}	0.002 (0.002) {0.678}	-0.001 (0.001) {0.228}	0.000 (0.001) {0.097}	0.000 (0.000) {0.062}	0.000 (0.000) {0.120}	0.001 (0.000) {0.973}	0.000 (0.000) {0.125}	0.000 (0.000) {0.067}	0.000 (0.000) {0.093}	0.000 (0.000) {0.582}	0.000 (0.001) {0.349}	0.001 (0.001) {0.603}	0.002 (0.002) {0.628}
Presidential systems	-0.027 (0.015) {0.827}	0.001 (0.003) {0.113}	-0.014 (0.006) {0.919}	0.001 (0.003) {0.098}	-0.024 (0.005) {0.999}	-0.002 (0.003) {0.261}	0.000 (0.000) {0.063}	0.000 (0.001) {0.055}	-0.004 (0.001) {0.997}	0.009 (0.003) {0.971}	-0.003 (0.001) {1.000}	0.000 (0.001) {0.085}	0.000 (0.001) {0.059}	0.002 (0.004) {0.220}
Plurality systems	-0.014 (0.013) {0.598}	0.002 (0.004) {0.339}	0.000 (0.001) {0.052}	-0.002 (0.005) {0.232}	-0.001 (0.003) {0.158}	-0.001 (0.001) {0.149}	-0.001 (0.001) {0.654}	0.000 (0.001) {0.074}	0.000 (0.000) {0.061}	0.000 (0.000) {0.050}	0.000 (0.000) {0.075}	0.000 (0.001) {0.100}	0.000 (0.001) {0.085}	0.000 (0.001) {0.074}
Political Rights index	-0.002 (0.004) {0.178}	0.001 (0.002) {0.170}	0.000 (0.001) {0.085}	-0.004 (0.004) {0.603}	0.000 (0.001) {0.108}	0.001 (0.002) {0.269}	0.000 (0.000) {0.070}	0.000 (0.001) {0.101}	0.000 (0.000) {0.070}	-0.004 (0.001) {0.975}	0.000 (0.000) {0.241}	0.000 (0.001) {0.120}	-0.001 (0.002) {0.358}	-0.001 (0.002) {0.153}
Wagner's law														
GDP per capita	-0.019 (0.017) {0.623}	-0.001 (0.002) {0.127}	0.001 (0.002) {0.172}	0.000 (0.003) {0.128}	-0.008 (0.006) {0.706}	0.000 (0.001) {0.130}	0.000 (0.001) {0.342}	0.000 (0.001) {0.069}	0.000 (0.000) {0.107}	0.000 (0.001) {0.108}	0.000 (0.000) {0.119}	0.000 (0.001) {0.098}	0.000 (0.001) {0.089}	0.000 (0.001) {0.062}