Pedro Feliú Ribeiro and Camilo López Burian, Foreign Policy Specificity: An Analysis of Ministerial Survival in Latin America, 1945–2020. *Latin American Politics and Society* vol. 65, no. 4 (winter 2023).

**Supplementary Document**

This supplementary document is divided into three parts. In the first part, we display table 3 with the description of the independent variables and their sources. In the second part, we present the multicollinearity tests of the six models in table 2. In the third part, we display the same estimated models in table 2 for finance, education and health portfolios.

**Part 1**.

Table 3. Variable Descriptions

|  |  |  |
| --- | --- | --- |
| Variable | Description | Source |
| Foreign Policy | Foreign Affairs Portfolio: 1-yes; 0-no | Authors |
| GDP/capita | Thousands of dollars per year | Pérez-Liñán and Polga-Hecimovich (2017) and World Bank |
| Economic Growth | Percentage of annual GDP growth | Pérez-Liñán and Polga-Hecimovich (2017) and World Bank |
| Demonstrations | Annual frequency of popular demonstrations against the government | Pérez-Liñán and Polga-Hecimovich (2017) |
| Legislative Powers | Legislative Powers of the President: scale from 0 to 100 | Pérez-Liñán e Polga-Hecimovich (2017); Negretto (2006). |
| Effective Number of Parties (ENP) | Scale | Laakso and Taagepera (1979) |
| Coalition | Coalition Government: 1-yes; 0-no | Authors |
|
| Autocracy | 1-yes; 0-no | Polity IV |
|
| Percent of president’s legislative seats | Percentage of legislative chairs of the President`s party | Pérez-Liñán and Polga-Hecimovich (2017) |
| Political Group of the President | 1-yes; 0-no | Authors |
| Popularity | Percentage of President Popularity (quarter) | Executive Approval Project |
| Politician | Previous Political Experience: 1-yes; 0-no | Authors |
| Technocrat | 1-yes; 0-no | Authors |

**Part 2**

The possible problems of multicollinearity in the five models are evaluated using variance inflation factors (VIFs). As a general rule of thumb, VIFs greater than 10 (ten) indicate strong multicollinearity and are likely detrimental to the model adequacy. Below we present the tables of the VIF test by model present in table 2 of the article.

Model 2

|  |  |  |
| --- | --- | --- |
| Variable | VIF | 1/VIF |
| Foreign Policy | 1.34 | 0.743661 |
| Economic Growth | 1.08 | 0.924352 |
| GDP/capita | 7.48 | 0.133660 |
| Politician | 1.50 | 0.668309 |
| Autocracy | 1.87 | 0.534989 |
| Political Group of the President | 1.88 | 0.532411 |
| Coalition | 3.19 | 0.313324 |
| Technocrat | 2.15 | 0.464876 |
| Mean VIF | 2.56 |  |

We can see that model 2 does not have very high levels of multicollinearity, even though the GDP/capita variable has a value closer to ten. Below we show the VIF results for mode 3.

Model 3

|  |  |  |
| --- | --- | --- |
| Variable | VIF | 1/VIF |
| Foreign Policy | 1.38 | 0.724325 |
| GDP/capita | 29.85 | 0.033501 |
| Economic Growth | 1.19 | 0.839816 |
| Legislative Powers | 5.41 | 0.184756 |
| Effective Number of Parties | 10.08 | 0.099245 |
| Manifestations | 1.32 | 0.758582 |
| Percent of president’s legislative seats | 10.88 | 0.091876 |
| Politician | 1.54 | 0.648707 |
| Autocracy | 2.44 | 0.409507 |
| Political Group of the President | 2.05 | 0.488498 |
| Coalition | 3.85 | 0.259752 |
| Technocrat | 2.12 | 0.471965 |
| Mean VIF | 6.01 |  |

As reported in the main article, model 3, although it does not have a very significant average VIF, the variables GDP/capita, Effective Number of Parties and Percent of president's legislative seats presented a VIF greater than 10. For this reason, in the model 4 we excluded these three variables, resulting in the VIF test below.

Model 4

|  |  |  |
| --- | --- | --- |
| Variable | VIF | 1/VIF |
| Foreign Policy | 1.28 | 0.780663 |
| Economic Growth | 1.13 | 0.886637 |
| Legislative Powers | 3.40 | 0.293786 |
| Manifestations | 1.22 | 0.816657 |
| Politician | 1.49 | 0.669510 |
| Autocracy | 1.57 | 0.636452 |
| Political Group of the President | 1.64 | 0.608449 |
| Coalition | 2.33 | 0.428715 |
| Technocrat | 1.94 | 0.515001 |
| Mean VIF | 1.78 |  |

In model 4, with the described variable exclusion, we noticed that there are no multicollinearity problems. In model 5, we also excluded the variables Effective Number of Parties, GDP/capita and the Legislative Power of the President due to a VIF greater than ten.

Model 5

|  |  |  |
| --- | --- | --- |
| Variable | VIF | 1/VIF |
| Foreign Policy | 1.28 | 0.780707 |
| Popularity | 5.71 | 0.175132 |
| Economic Growth | 1.10 | 0.905430 |
| Manifestations | 1.23 | 0.815495 |
| Percent of president’s legislative seats | 4.71 | 0.212243 |
| Politician | 1.47 | 0.678922 |
| Autocracy | 1.35 | 0.738936 |
| Political Group of the President | 2.16 | 0.462503 |
| Coalition | 2.82 | 0.354990 |
| Technocrat | 2.39 | 0.419098 |
| Mean VIF | 2.42 |  |

Model 5, also with the exclusion of three variables, does not present a multicollinearity problem. Finally, model 6, with the interaction between autocracy and foreign policy, the GDP/capita variable was excluded from the model due to presenting a VIF greater than ten. Below is the VIF test for model 6 in table 2 of the main article.

Model 6

|  |  |  |
| --- | --- | --- |
| Variable | VIF | 1/VIF |
| Foreign Policy | 1.64 | 0.608 |
| Legislative Powers | 4.38 | 0.228 |
| Economic Growth | 1.07 | 0.930 |
| Effective Number of Parties | 3.45 | 0.289 |
| Politician | 1.53 | 0.655 |
| Autocracy | 1.72 | 0.582 |
| Political Group of the President | 1.53 | 0.655 |
| Technocrat | 1.97 | 0.507 |
| Mean VIF | 2.20 |  |

**Part 3**

The following results present Cox regression models for the three domestic policy ministries as dummies variables: Finance, Education, and Health. In these models we use the same methods of estimation and adjustment used in table 2 and described in the main text. The only difference is that each one includes one of the domestic policy portfolios as a dummy variable.

Finance

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | m1 | m2 | m3 | m4 | m5 | m6 |
| Finance | 1.15 | 1.13 | 1.08 | 1.16 | 1.26 | 1.19 |
|  | (.093) | (.091) | (.098) | (.097) | (.013) | (.111) |
| Economic Growth |  | .969\*\*\* | .978\* | .956\*\*\* | .960\*\* | .969\*\* |
|  |  | (.008) | (.010) | (.008) | (0.013) | (.009) |
| GDP/capita |  | .542\*\*\* | .477\*\*\* |  |  |  |
|  |  | (.043) | (.058) |  |  |  |
| Politician |  | 1.06 | 1.07 | 1.14 | 1.62\*\* |  |
|  |  | (.093) | (.101) | (.102) | (.231) |  |
| Autocracy |  | .639\*\*\* | .467\*\*\* | .733\*\* | .604 | .607\*\*\* |
|  |  | (.067) | (.077) | (.078) | (.172) | (.083) |
| President`s Political Group |  | .806\*\* | .841\* | .750\*\*\* | .639\*\* | .806\* |
|  |  | (.063) | (.075) | (.060) | (.089) | (.067) |
| Coalition |  | 1.13 | 1.15 | 1.10 | 1.05 |  |
|  |  | (.110) | (.114) | (.113) | (.169) |  |
| Technocrat |  | .745\*\*\* | .778\*\* | .751\*\*\* | .706\*\* | .726\*\*\* |
|  |  | (.057) | (.066) | (.013) | (.091) | (.058) |
| Legislative Powers |  |  | .994\*\* | .989\*\*\* |  | .989\*\*\* |
|  |  |  | (.002) | (.001) |  | (.001) |
| Effective Number of Parties |  |  | .100\*\* |  |  | .994 |
|  |  |  | (.03) |  |  | (.023) |
| Demonstrations |  |  | .015 |  | 1.02 |  |
|  |  |  | (.02) |  | (.019) |  |
| President legislative seats |  |  | 1.00 |  | 1.01\* |  |
|  |  |  | (.003) |  | (.004) |  |
| Popularity |  |  |  |  | .994 |  |
|  |  |  |  |  | (.004) |  |
| Autocracy x Finance |  |  |  |  |  | .690 |
|  |  |  |  |  |  | (.174) |
| Observations | 1229 | 1229 | 1001 | 1120 | 443 | 1110 |
| Groups(country) | 7 | 7 | 7 | 7 | 7 | 7 |
| Failures | 763 | 763 | 622 | 716 | 272 | 669 |
| χ2 | 3.41 | 139.1\*\*\* | 153.55\*\*\* | 116.9\*\*\* | 46.11\*\*\* | 112.68\*\*\* |
| Log Likelihood | –4693.63 | –4626.08 | –3625.31 | –4288.0 | –1385.4 | –3989.7 |
| *Theta* | 0.20(0.11) | 0.17(0.10) | 0.24(0.14) | 0.20(0.11) | 0.08(0.06) | 0.22(0.12) |
| PH Assumption | 3.28 | 8.89 | 32.2\*\* |  |  |  |

Note: Coefficients with standard errors in parentheses (conditional on frailty on the five models; grouped by country). Efron Method. \*\*\* p<0.001, \*\* p<0.01, \* p<0.05.

Education

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | m1 | m2 | m3 | m4 | m5 | m6 |
| Education | 1.26\*\* | 1.19\* | 1.30\*\* | 1.21\* | 1.16 | 1.23\* |
|  | (.101) | (.101) | (.122) | (.106) | (.173) | (.120) |
| Economic Growth |  | .969\*\*\* | .978\* | .955\*\*\* | .959\*\* | .969\*\* |
|  |  | (.008) | (.010) | (.008) | (.013) | (.009) |
| GDP/capita |  | .534\*\*\* | .435\*\*\* |  |  |  |
|  |  | (.042) | (.057) |  |  |  |
| Politician |  | 1.07 | 1.09 | 1.15 | 1.59\*\* |  |
|  |  | (.094) | (.102) | (.103) | (.227) |  |
| Autocracy |  | .647\*\*\* | .459\*\*\* | .745\*\* | .611 | .566\*\*\* |
|  |  | (.068) | (.076) | (.079) | (.173) | (.079) |
| President`s Political Group |  | .791\*\* | .815\* | .735\*\*\* | .623\*\* | .795\*\* |
|  |  | (.062) | (.073) | (.059) | (.088) | (.066) |
| Coalition |  | 1.14 | 1.13 | 1.11 | 1.09 |  |
|  |  | (.112) | (.130) | (.115) | (.174) |  |
| Technocrat |  | .785\*\* | .837\* | .799\*\* | .780 | .780\*\* |
|  |  | (.062) | (.074) | (.067) | (.107) | (.066) |
| Legislative Powers |  |  | .994\*\* | .988\*\*\* |  | .989\*\*\* |
|  |  |  | (.002) | (.001) |  | (.001) |
| Effective Number of Parties |  |  | 1.11\*\* |  |  | .994 |
|  |  |  | (.038) |  |  | (.023) |
| Demonstrations |  |  | 1.01 |  | 1.02 |  |
|  |  |  | (.017) |  | (.018) |  |
| President legislative seats |  |  | 1.00\* |  | 1.01\* |  |
|  |  |  | (.003) |  | (.004) |  |
| Popularity |  |  |  |  | .993 |  |
|  |  |  |  |  | (.004) |  |
| Autocracy x Education |  |  |  |  |  | .930 |
|  |  |  |  |  |  | (.226) |
| Observations | 1229 | 1229 | 1001 | 1120 | 443 | 1110 |
| Groups(country) | 7 | 7 | 7 | 7 | 7 | 7 |
| Failures | 763 | 763 | 622 | 716 | 272 | 669 |
| χ2 | 8.25\*\* | 140.8\*\*\* | 160.04\*\*\* | 118.2\*\*\* | 46.11\*\*\* | 112.68\*\*\* |
| Log Likelihood | –4693.63 | –4626.08 | –3625.31 | –4287.3 | –1385.4 | –3989.7 |
| *Theta* | 0.20(0.11) | 0.17(0.10) | 0.25(0.15) | 0.20(0.11) | 0.08(0.06) | 0.22(0.12) |
| PH Assumption | 3.28 | 8.89 | 32.2\*\* |  |  |  |

Note: Coefficients with standard errors in parentheses (conditional on frailty on the five models; grouped by country). Efron Method. \*\*\* p<0.001, \*\* p<0.01, \* p<0.05.

Health

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | m1 | m2 | m3 | m4 | m5 | m6 |
| Health | .855 | .980 | .966 | .946 | 1.13 | 1.01 |
|  | (.075) | (.092) | (.103) | (.093) | (.167) | (.110) |
| Economic Growth |  | .969\*\*\* | .978\* | .956\*\*\* | .959\*\* | .969\*\* |
|  |  | (.008) | (.010) | (.008) | (.013) | (.009) |
| GDP/capita |  | .538\*\*\* | .445\*\*\* |  |  |  |
|  |  | (.042) | (.058) |  |  |  |
| Politician |  | 1.06 | 1.07 | 1.13 | 1.59\*\* |  |
|  |  | (.093) | (.101) | (.101) | (.227) |  |
| Autocracy |  | .645\*\*\* | .468\*\*\* | .743\*\* | .614 | .572\*\*\* |
|  |  | (.068) | (.077) | (.078) | (.174) | (.078) |
| President`s Political Group |  | .801\*\* | .838\* | .746\*\*\* | .639\*\* | .808\* |
|  |  | (.062) | (.074) | (.059) | (.089) | (.067) |
| Coalition |  | 1.15 | 1.17 | 1.12 | 1.10 |  |
|  |  | (.112) | (.132) | (.115) | (.175) |  |
| Technocrat |  | .753\*\*\* | .786\*\* | .769\*\* | .713\* | .739\*\*\* |
|  |  | (.060) | (.072) | (.065) | (.095) | (.064) |
| Legislative Powers |  |  | .994\*\* | .989\*\*\* |  | .989\*\*\* |
|  |  |  | (.002) | (.001) |  | (.001) |
| Effective Number of Parties |  |  | 1.10\*\* |  |  | .993 |
|  |  |  | (.038) |  |  | (.023) |
| Demonstrations |  |  | 1.01 | 1.01 | 1.02 |  |
|  |  |  | (.018) | (0.15) | (.018) |  |
| President legislative seats |  |  | 1.00\* |  | 1.01\* |  |
|  |  |  | (.003) |  | (.004) |  |
| Popularity |  |  |  |  | .994 |  |
|  |  |  |  |  | (.004) |  |
| Autocracy x Health |  |  |  |  |  | .844 |
|  |  |  |  |  |  | (.224) |
| Observations | 1229 | 1229 | 1001 | 1120 | 443 | 1110 |
| Groups(country) | 7 | 7 | 7 | 7 | 7 | 7 |
| Failures | 763 | 763 | 622 | 716 | 272 | 669 |
| χ2 | 3.14 | 136.1\*\*\* | 160.04\*\*\* | 113.6\*\*\* | 46.11\*\*\* | 108.05\*\*\* |
| Log Likelihood | –4693.68 | –4627.2 | –3625.31 | –4289.5 | –1385.4 | –3991.6 |
| *Theta* | 0.20(0.11) | 0.17(0.10) | 0.25(0.15) | 0.20(0.11) | 0.08(0.06) | 0.23(0.12) |
| PH Assumption | 3.28 | 8.89 | 32.2\*\* |  |  |  |

The estimated models for finance, education and health show, as expected, stability in the relevance of the independent variables addressed in the main article. The results are quite homogeneous. It is interesting to note that only the ministry of education showed significance at the 95% confidence interval, being a risk factor for ministerial survival. The portfolio dummy variables, in most models, represent a risk factor for ministerial survival. The Ministry of Health is an exception; with a hazard coefficient less than one in models 1 to 4. It is also interesting to note that all interactions terms between autocracy and a domestic portfolio were not significant and the hazard coefficient smaller than one.