**SUPPLEMENTARY MATERIAL**

**for**

**Economic freedom and academic freedom across nations**

Niclas Berggren1, and Christian Bjørnskov3,1

1Research Institute of Industrial Economics (IFN), Stockholm, Sweden, 2Faculty of Business Administration, Prague University of Economics and Business, Prague, Czechia and 3Department of Economics and Business Economics, Aarhus University, Denmark.

**Corresponding author**: Christian Bjørnskov; Email: [chbj@econ.au.dk](mailto:chbj@econ.au.dk)

**Table A1.** Factor analysis

|  |  |  |  |
| --- | --- | --- | --- |
|  | Factor 1 | Factor 2 | Uniqueness |
| Freedom of academic expression | .843 | .324 | .185 |
| Campus integrity | .845 | .373 | .147 |
| Institutional autonomy | .832 | .372 | .169 |
| Freedom of academic exchange | .918 | .327 | .052 |
| Freedom to research and teach | .915 | .339 | .047 |
| Eigenvalue | 3.796 | .604 |  |
| Variance explained | .877 | .139 |  |

**Table A2.** Main results, no single-party autocracies

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 |
| Economic freedom variable | EFW index | Size of government | Rule of law | Monetary stability | Openness to trade and investment | Regulatory freedom |
| Economic freedom | .106  (.084) | .029  (.027) | .157\*\*\*  (.051) | .015  (.031) | .033  (.039) | .097  (.059) |
| Log GDP per capita | .049  (.111) | .044  (.106) | -.037  (.092) | .046  (.115) | .056  (.119) | .040  (.111) |
| Recession | .034  (.033) | .009  (.037) | .017  (.038) | .012  (.034) | .011  (.038) | .019  (.039) |
| Log population | .284\*  (.151) | .367\*\*  (.157) | .339\*\*  (.151) | .305\*\*  (.141) | .283\*  (.168) | .247\*  (.143) |
| Military dictatorship | .084  (.621) | -.032  (.296) | -.282  (.384) | -.444  (.404) | .033  (.349) | -.594  (.541) |
| Electoral democracy | .433  (.421) | .101  (.210) | .125  (.288) | .294  (.221) | .345  (.255) | .486  (.334) |
| Failed coup | .014  (.035) | .037  (.034) | .031  (.036) | .009  (.035) | .015  (.035) | -.009  (.031) |
| Successful coup | -.095\*\*  (.044) | -.126\*\*\*  (.048) | -.091\*\*  (.059) | -.106\*\*  (.046) | -.091\*  (.049) | -.089\*  (.048) |
| Ec. free. \* military | -.059  (.101) | -.031  (.045) | .063  (.083) | .027  (.054) | -.056  (.051) | .062  (.086) |
| Ec. free. \* democracy | .032  (.066) | .019  (.029) | .029  (.059) | -.008  (.029) | -.016  (.036) | -.045  (.053) |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Period FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 822 | 882 | 895 | 821 | 818 | 827 |
| Countries | 144 | 147 | 148 | 144 | 144 | 144 |
| Within R squared | .236 | .234 | .289 | .221 | .224 | .221 |
| F statistic | 5.26 | 5.08 | 7.13 | 5.05 | 4.94 | 4.32 |
| *Effect evaluated at* |  |  |  |  |  |  |
| Military dictatorship | .049  (.090) | -.002  (.044) | .219\*\*\*  (.078) | .042  (.048) | -.023  (.041) | .159\*\*  (.076) |
| Electoral democracy | .074  (.057) | .048\*  (.029) | .187\*\*\*  (.059) | .007  (.019) | .017  (.027) | .052  (.035) |

*Notes*: \*\*\* (\*\*) [\*] denote significance at p<.01 (p<.05) [p<.10]. Numbers in parentheses are standard errors clustered at the country level.

**Table A3.** Excluding extreme observations and lagging economic freedom

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 |
| Economic freedom variable | EFW index | Size of government | Rule of law | Monetary stability | Openness to trade and investment | Regulatory freedom |
| *Excluding smallest and largest academic freedom* | | | |  |  |  |
| Military dictatorship | .057  (.080) | .043\*  (.026) | .084\*\*  (.037) | .045  (.051) | .023  (.029) | .029  (.056) |
| Civilian autocracy | .049  (.066) | .023  (.025) | .111  (.082) | .006  (.029) | -.030  (.036) | .127  (.078) |
| Electoral democracy | .070  (.053) | .025  (.026) | .165\*\*\*  (.051) | .008  (.019) | .027  (.024) | .035  (.036) |
| *Excluding smallest and largest economic freedom* | | | |  |  |  |
| Military dictatorship | .063  (.093) | .049  (033) | .048  (.058) | -.023  (.044) | -.063  (.045) | .111  (.083) |
| Civilian autocracy | .112\*  (.065) | .045  (.028) | .034  (.051) | -.001  (.037) | .049  (.033) | .068  (.065) |
| Electoral democracy | .058  (.044) | .049\*  (.029) | .201\*\*\*  (.053) | .004  (.022) | .031  (.031) | .024  (.030) |
| *Lagging economic freedom one period* | | | |  |  |  |
| Military dictatorship | -.018  (.082) | .025  (.028) | .146\*\*  (.073) | -.030  (.037) | -.032  (.039) | .034  (.058) |
| Civilian autocracy | .018  (.058) | .051\*\*  (.022) | .054  (.043) | -.006  (.021) | .002  (.031) | -.019  (.047) |
| Electoral democracy | .035  (.054) | .039\*  (.022) | .126\*\*\*  (.044) | -.001  (.018) | .006  (.022) | -.004  (.032) |

*Notes*: \*\*\* (\*\*) [\*] denote significance at p<.01 (p<.05) [p<.10]. Numbers in parentheses are standard errors clustered at the country level.

**Table A4.** Using worst indicator

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 |
| Economic freedom variable | EFW index | Size of government | Rule of law | Monetary stability | Openness to trade and investment | Regulatory freedom |
|  | *Full baseline specification included* | | | | | |
| Economic freedom | .027  (.026) | -.004  (.009) | .050\*\*\*  (.014) | .009  (.011) | -.001  (.012) | .032\*  (.018) |
| Military dictatorship | -.116  (.221) | -.079  (.083) | -.079  (.124) | -.257  (.144) | -.032  (.113) | -.267  (.212) |
| Electoral democracy | .142  (.141) | -.004  (.073) | .047  (.085) | .131  (.081) | .069  (.082) | .199\*  (.108) |
| Ec. free. \* military | .003  (.036) | -.001  (.012) | .011  (.028) | .023  (.019) | -.012  (.016) | .029  (.035) |
| Ec. free. \* democracy | -.010  (.022) | .013  (.010) | .009  (.017) | -.008  (.011) | .003  (.012) | -.020  (.017) |
|  |  |  |  |  |  |  |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Period FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 822 | 882 | 895 | 821 | 818 | 827 |
| Countries | 144 | 147 | 148 | 144 | 144 | 144 |
| Within R squared | .269 | .253 | .307 | .272 | .261 | .268 |
| F statistic | 6.56 | 5.96 | 8.12 | 6.16 | 6.39 | 5.09 |
| *Effect evaluated at* |  |  |  |  |  |  |
| Military dictatorship | .031  (.031) | -.004  (.010) | .062\*\*  (.026) | .032\*  (.017) | -.013  (.013) | .061\*  (.033) |
| Electoral democracy | .017  (.017) | .009  (.008) | .059\*\*\*  (.016) | .001  (.006) | .002  (.008) | .012  (.011) |

*Notes*: \*\*\* (\*\*) [\*] denote significance at p<.01 (p<.05) [p<.10]. Numbers in parentheses are standard errors clustered at the country level. The sample does not include single-party autocracies, such that the non-interacted results in the table refer to civilian autocracies.

**Table A5. Main results, no post-communist countries**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Dependent variable: Academic freedom | | | | | |
|  | 1 | 2 | 3 | 4 | 5 | 6 |
| Economic freedom variable | EFW index | Size of government | Rule of law | Monetary stability | Openness to trade and investment | Regulatory freedom |
| Economic freedom | .053  (.064) | .039  (.032) | .133\*\*\*  (.050) | .008  (.028) | .021  (.035) | .035  (.057) |
| Log GDP per capita | .033  (.120) | .051  (.093) | .035  (.089) | .046  (.117) | .052  (.120) | .037  (.116) |
| Recession | .001  (.034) | -.021  (.036) | -.001  (.034) | -.012  (.034) | -.009  (.038) | -.018  (.039) |
| Log population | .133  (.149) | -.006  (.155) | .079  (.132) | .073  (.147) | .231  (.154) | .062  (.146) |
| Military dictatorship | .167  (.418) | .155  (.209) | .265  (.266) | .135  (.304) | .183  (.219) | .205  (.373) |
| Civilian autocracy | -.005  (.486) | .1117  (.204) | .113  (.282) | -.144  (.359) | .090  (.298) | -.302  (.441) |
| Electoral democracy | .255  (.354) | .293  (.237) | .177  (.239) | .437\*\*  (.221) | .334\*  (.190) | .413  (.222) |
| Failed coup | .032  (.028) | .055\*\*  (.028) | .055\*\*  (.027) | .029  (.028) | .026  (.028) | .023  (.028) |
| Successful coup | -.003  (.049) | -.033  (.053) | -.002  (.047) | -.011  (.051) | .007  (.045) | -.005  (.051) |
| Ec. free. \* military | -.009  (.071) | .002  (.033) | -.028  (.059) | -.002  (.042) | -.015  (.039) | -.014  (.062) |
| Ec. free. \* civilian | -.001  (.083) | -.005  (.035) | .011  (.078) | .021  (.049) | -.031  (.053) | .055  (.070) |
| Ec. free. \* democracy | .028  (.066) | .030  (.036) | .062  (.058) | .002  (.033) | .007  (.040) | .002  (.059) |
|  |  |  |  |  |  |  |
| Country FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Period FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 920 | 995 | 1041 | 922 | 905 | 921 |
| Countries | 151 | 154 | 154 | 151 | 151 | 151 |
| Within R squared | .274 | .300 | .340 | .267 | .262 | .264 |
| F statistic | 5.43 | 6.15 | 8.43 | 5.46 | 5.46 | 4.97 |
| *Effect evaluated at* |  |  |  |  |  |  |
| Military dictatorship | .044  (.073) | .040  (.031) | .106\*\*  (.049) | .006  (.033) | .006  (.033) | .021  (.059) |
| Civilian autocracy | .053  (.073) | .034  (.033) | .145\*  (.083) | .029  (.042) | -.010  (.041) | .089  (.059) |
| Electoral democracy | .081  (.058) | .069\*\*  (.029) | .195\*\*\*  (.054) | .010  (.022) | .028  (.025) | .037  (.041) |

*Notes*: \*\*\* (\*\*) [\*] denote significance at p<.01 (p<.05) [p<.10]. Numbers in parentheses are standard errors clustered at the country level.

**Table A6. Disaggregating the rule of law**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 |
|  | First factor index | Second factor index | ‘Economic rights’ | ‘Civil and constitutional rights’ |
| Military dictatorship | .190\*  (112) | -.105  (103) | -.066\*  (.037) | .167\*\*\*  (045) |
| Civilian autocracy | .108  (.2149 | -.004  (164) | -.019  (.037) | .073  (.097) |
| Electoral democracy | .232\*  (.124) | -.005  (.089) | -.021  (.019) | .229\*\*\*  (.056) |

*Notes*: \*\*\* (\*\*) [\*] denote significance at p<.01 (p<.05) [p<.10]. Numbers in parentheses are standard errors clustered at the country level. Columns 1 and 2 are based on factor analysis (available on request), where the first factor relies heavily on the protection of property rights, judicial independence, impartial courts, and military interference. The second factor instead reflects the regulatory costs of the sale of real property, while the remaining subareas exhibit cross-factor loadings. Column 3 is the average score for the protection of property rights, the legal enforcement of contracts, and regulatory costs of the sale of real property (‘economic rights), while column 4 is the average score for judicial independence, impartial courts, military interference, integrity of the legal system, and reliability of police (‘civil and constitutional rights’).

**Table A7.** Adding lags and leads

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 |
| Economic freedom variable | EFW index | Size of government | Rule of law | Monetary stability | Openness to trade and investment | Regulatory freedom |
| *Lagged* | | | |  |  |  |
| Military dictatorship | .153\*\*\*  (.056) | .038  (.030) | .009  (.042) | .030  (.022) | .027  (.038) | -.003  (.040) |
| Civilian autocracy | .063  (.138) | .025  (.033) | .200  (.132) | -.081  (.050) | .064  (.059) | .046  (.059) |
| Electoral democracy | .038  (.032) | .021  (.017) | .037  (.026) | .015  (.012) | -.004  (.013) | .006  (.021) |
| *Beginning of period* | | | |  |  |  |
| Military dictatorship | .278\*\*  (.113) | .077  (.051) | .305\*\*\*  (.055) | .052  (.046) | .094  (.068) | .160  (.101) |
| Civilian autocracy | .144  (.104) | .020  (.054) | .505\*\*\*  (.117) | .042  (.068) | .040  (.053) | .204\*  (.112) |
| Electoral democracy | .159\*\*  (.068) | .094\*  (.056) | .319\*\*\*  (.073) | .034  (.027) | .043  (.035) | .092  (.063) |
| *End of period* | | | |  |  |  |
| Military dictatorship | .247\*\*\*  (.087) | .020  (.042) | .299\*\*\*  (.054) | .042  (.035) | .074  (.062) | .112\*\*  (.055) |
| Civilian autocracy | .270  (.178) | -.009  (.043) | .292\*\*  (.136) | -.006  (.068) | .180\*\*  (.089) | .057  (.096) |
| Electoral democracy | .128\*\*\*  (.039) | .059  (.038) | .199\*\*\*  (.057) | .023  (.015) | .045\*\*\*  (.017) | .086\*\*  (.043) |

*Notes*: \*\*\* (\*\*) [\*] denote significance at p<.01 (p<.05) [p<.10]. Numbers in parentheses are standard errors clustered at the country level. ‘Lagged’ is economic freedom observed ten years prior to academic freedom; ‘beginning of period’ is economic freedom observed five years before academic freedom; and ‘end of period’ is economic freedom observed in the same year as academic freedom.