Economic Sanctions and Government Spending Adjustments:

The Case of Disaster Preparedness

Online Appendix

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**Disaster types (from EMDAT)**

**Drought**: An extended period of unusually low precipitation that produces a shortage of water for people, animals and plants. Drought is diﬀerent from most other hazards in that it develops slowly, sometimes even over years, and its onset is generally diﬃcult to detect. Drought is not solely a physical phenomenon because its impacts can be exacerbated by human activities and water supply demands. Drought is therefore often deﬁned both conceptually and operationally. Operational deﬁnitions of drought, meaning the degree of precipitation reduction that constitutes a drought, vary by locality, climate and environmental sector.

**Earthquake**: Sudden movement of a block of the Earth’s crust along a geological fault and associated ground shaking.

**Volcanic activity**[:](http://emdat.be/search/node/%22Volcanic%20activity%22) A type of volcanic event near an opening/vent in the Earth’s surface including volcanic eruptions of lava, ash, hot vapour, gas, and pyroclastic material.

**Landslide**: Any kind of moderate to rapid soil movement incl. lahar, mudslide, debris flow. A landslide is the movement of soil or rock controlled by gravity and the speed of the movement usually ranges between slow and rapid, but not very slow. It can be superficial or deep, but the materials have to make up a mass that is a portion of the slope or the slope itself. The movement has to be downward and outward with a free face.

**Flood**: A general term for the overﬂow of water from a stream channel onto normally dry land in the ﬂoodplain (riverine ﬂooding), higher-than- normal levels along the coast and in lakes or reservoirs (coastal ﬂooding) as well as ponding of water at or near the point where the rain fell (ﬂash ﬂoods).

**Tropical storm**: A tropical storm originates over tropical or subtropical waters. It is characterised by a warm-core, non-frontal synoptic-scale cyclone with a low pressure centre, spiral rain bands and strong winds. Depending on their location, tropical cyclones are referred to as hurricanes (Atlantic, Northeast Paciﬁc), typhoons (Northwest Paciﬁc), or cyclones (South Paciﬁc and Indian Ocean).

**Sanction Types (from Threat and Imposition of Sanctions Data 4.0 Users’ Manual)**

1. **Total Economic Embargo**: The sender(s) stop the flow of all economic exchange to and from the target state.

2. **Partial Economic Embargo**: The sender(s) stop the flow of certain commodities or services to and from the target state. For example, a sender may ban all exchanges in military goods to and from a target. For a case to qualify as a partial embargo, some exchange must still be allowed while a sector’s trade must be frozen.

3. **Import Restriction**: The sender(s) refuses to allow or places a restriction on a certain good or set of goods to be imported from the target state. Import restrictions differ from partial embargoes in that import restrictions only restrict the flow of goods into the sender(s). While the sender does not restrict the flow of goods to the target, the sender may prevent target commodities from being traded in its home markets or impose tariffs or duties on target commodities.

4. **Export Restriction**: The sender(s) refuses to allow certain goods or services to be exported to the target state. Export restrictions differ from partial embargoes in that export restrictions only restrict the flow of goods to the target from the sender(s). Although the sender places no restriction on goods from the target for import, the sender does not allow a certain good or set of goods to flow out of the sender(s) firms to the target. An example of such a restriction is an export control on dual use technology.

5. **Blockade**: The sender(s) attempts to physically prevent all states from engaging in economic transactions with the target state. Such actions may be enforced physically by the sender(s) military. An alternative is for the sender to threaten any state that engages in transactions with the target with similar economic sanctions.

6. **Asset Freeze**: The sender(s) partially or completely seize all assets of the target state under the sender(s)’ jurisdiction.

7. **Termination of Foreign Aid**: The sender(s) reduces or ends foreign aid or loans if the target state does not comply with the sender(s) demands.

8. **Travel Ban**: The sender(s) ceases allowing an individual, group, or citizenry of the target country to enter the territory of the sender(s).

9. **Suspension of Economic Agreement**: The sender(s) threaten to partially or completely cancel or void previous economic arrangements or contracts between the sender(s) and the target state.

10. **Other**.

Figure A1: Russia’s Defense Spending as Share of Federal Budget (from Bloomberg.com)[[1]](#footnote-1)



Figure A2: Russia’s Defense and Social Protection Spending as Share of Total Government Expenditure

*Data source: The Federal Treasury of the Russian Federation (*[*http://roskazna.ru/ispolnenie-byudzhetov/statistika-gosudarstvennykh-finansov-rf/*](http://roskazna.ru/ispolnenie-byudzhetov/statistika-gosudarstvennykh-finansov-rf/)*)*

*Note: Disaster preparedness and protection is part of the social protection expenditure category. According to the IMF Government Finance Statistics Manual, “****7109 SOCIAL PROTECTION N.E.C. 71090 Social protection n.e.c. (CS)*** *• Administration, operation, or support of activities such as formulation, administration, coordination, and monitoring of overall social protection policies, plans, programs, and budgets; preparation and enforcement of legislation and standards for the provision of social protection; production and dissemination of general information, technical documentation, and statistics on social protection. Includes: provision of social protection in the form of cash benefits and benefits in kind to victims of fires, floods, earthquakes, and other peacetime disasters; purchase and storage of food, equipment, and other supplies for emergency use in the case of peacetime disasters; other social protection affairs and services that cannot be assigned to (7101), (7102), (7103), (7104), (7105), (7106), (7107), or (7108)” (IMF 2014: 170).[[2]](#footnote-2)*

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Table A1: Summary Statistics

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Mean | Std. Dev. | Min | Max |
|  |  |  |  |  |
| Ongoing sanctions | 0.22 | 0.41 | 0 | 1 |
| Sanction onset | 0.07 | 0.26 | 0 | 1 |
| Total embargo | 0.03 | 0.18 | 0 | 1 |
| Partial embargo | 0.06 | 0.24 | 0 | 1 |
| Import sanctions | 0.08 | 0.27 | 0 | 1 |
| Export sanctions | 0.04 | 0.21 | 0 | 1 |
| Blockade | 0.02 | 0.13 | 0 | 1 |
| Asset freeze | 0.03 | 0.18 | 0 | 1 |
| Aid cuts | 0.08 | 0.27 | 0 | 1 |
| Travel ban | 0.03 | 0.17 | 0 | 1 |
| Agreement suspension | 0.04 | 0.19 | 0 | 1 |
| ln(Number affected/#disasters) | 5.35 | 5.15 | -3.26 | 17.53 |
| ln(Number affected by droughts/# droughts) | 2.96 | 5.12 | -0.69 | 16.12 |
| ln(Number affected by floods/# floods) | 4.11 | 5.36 | -2.20 | 16.82 |
| ln(Number affected by earthquakes/# earthquakes) | 4.35 | 5.59 | -1.79 | 18.47 |
| ln(Number affected by landslides/# landslides) | 1.09 | 3.36 | -1.61 | 13.70 |
| ln(Number affected by storms/# storms) | 5.23 | 5.54 | -2.89 | 16.80 |
| ln(Number affected by volcanoes/# volcanoes) | 1.41 | 3.60 | -1.39 | 13.82 |
| ln(Damage/#disasters) | 3.40 | 5.23 | -3.64 | 17.23 |
| ln(Damage from droughts/# droughts) | 2.96 | 5.12 | -0.69 | 16.12 |
| ln(Damage from floods/# floods) | 4.11 | 5.36 | -2.20 | 16.82 |
| ln(Damage from earthquakes/# earthquakes) | 4.35 | 5.59 | -1.79 | 18.47 |
| ln(Damage from landslides/# landslides) | 1.09 | 3.36 | -1.61 | 13.70 |
| ln(Damage from storms/# storms) | 5.23 | 5.54 | -2.89 | 16.80 |
| ln(Damage from volcanoes/# volcanoes) | 1.41 | 3.60 | -1.39 | 13.82 |
| Democracy | 0.31 | 0.46 | 0 | 1 |
| ln(Trade openness) | 3.97 | 15.51 | 0 | 316.62 |
| MID | 0.36 | 0.48 | 0 | 1 |
| ln(GDPPC) | 7.39 | 1.32 | 3.87 | 10.67 |
| ln(Population) | 8.94 | 1.52 | 4.81 | 14.06 |
| CINC | 0.01 | 0.02 | 0.00 | 0.36 |
| GDP growth | 0.08 | 0.12 | -0.65 | 4.12 |
| Civil war | 0.09 | 0.28 | 0 | 1 |

Table A2: Effect of Sanction Onset on Economic Damage from Natural Disasters

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|   | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|  | All | Drought | Flood | Earthquake | Landslide | Storm | Volcano |
| *Sanction onset* | 1.32\*\* | 1.41 | 0.84\* | 1.30\* | 0.21 | 1.29\*\* | -1.55 |
|  | (0.31) | (1.04) | (0.43) | (0.73) | (0.58) | (0.48) | (1.36) |
| *Democracy* | 0.27 | 2.35\*\* | 0.04 | 0.43 | -0.01 | -0.36 | 0.75 |
|  | (0.27) | (0.63) | (0.40) | (0.60) | (0.48) | (0.51) | (1.06) |
| *Trade openness* | 0.12 | 0.24 | 0.31 | 0.33 | 0.06 | -0.11 | -0.90 |
|  | (0.17) | (0.38) | (0.26) | (0.47) | (0.37) | (0.33) | (0.99) |
| *MID* | 0.14 | -0.16 | -0.09 | -0.25 | 0.42 | 0.31 | -0.04 |
|  | (0.20) | (0.55) | (0.32) | (0.53) | (0.43) | (0.39) | (0.84) |
| *GDPPC* | 0.78\*\* | 0.87\*\* | 0.87\*\* | 0.58\*\* | 0.70\*\* | 1.37\*\* | 0.31 |
|  | (0.11) | (0.25) | (0.17) | (0.28) | (0.28) | (0.22) | (0.51) |
| *Population* | 0.34\*\* | 0.35 | 0.46\*\* | -0.33 | -0.32 | -0.18 | 0.15 |
|  | (0.13) | (0.22) | (0.18) | (0.24) | (0.25) | (0.21) | (0.31) |
| *GDP growth* | -0.26 | -2.78 | -0.55 | 7.37\*\* | -4.23 | -2.37 | 1.76 |
|  | (0.81) | (3.06) | (1.86) | (3.05) | (3.57) | (2.93) | (7.03) |
| *Civil war* | -0.43 | 0.03 | -0.65 | 0.75 | 0.15 | -0.08 | 0.61 |
|  | (0.31) | (0.74) | (0.46) | (0.69) | (0.55) | (0.68) | (1.07) |
| *CINC* | 22.30\*\* | 12.61 | 24.64\*\* | 25.59\*\* | 6.42 | 13.46 | 25.36 |
|  | (7.00) | (12.27) | (9.33) | (9.02) | (10.76) | (8.85) | (25.04) |
| Constant | -6.17\*\* | -7.03\*\* | -7.05\*\* | 1.87 | -1.07 | -4.59\*\* | -2.07 |
|   | (1.25) | (2.44) | (1.93) | (3.03) | (3.12) | (2.22) | (4.62) |
| Observations | 3007 | 382 | 1271 | 483 | 303 | 883 | 101 |

 \* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(economic damage per disaster).

Table A3: Effect of Sanction Onset on Affected People from Natural Disasters

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|   | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|  | All | Drought | Flood | Earthquake | Landslide | Storm | Volcano |
| *Sanction onset* | 1.28\*\* | 2.97\*\* | 0.71\* | 1.20\* | -0.11 | 0.40 | -3.26\*\* |
|  | (0.31) | (1.31) | (0.42) | (0.65) | (0.61) | (0.46) | (1.27) |
| *Democracy* | -0.26 | -0.46 | -1.32\*\* | -0.99\* | -0.11 | -0.10 | -0.61 |
|  | (0.29) | (0.79) | (0.41) | (0.60) | (0.47) | (0.52) | (0.99) |
| *Trade openness* | -0.27 | -0.53 | -0.29 | -1.06\*\* | -0.05 | -0.98\*\* | -2.56\*\* |
|  | (0.18) | (0.49) | (0.27) | (0.44) | (0.38) | (0.35) | (0.92) |
| *MID* | 0.27 | 0.09 | 0.20 | -0.24 | -0.01 | -0.17 | -0.48 |
|  | (0.20) | (0.69) | (0.32) | (0.48) | (0.45) | (0.38) | (0.79) |
| *GDPPC* | 0.24\*\* | -1.73\*\* | 0.31\* | 1.33\*\* | 0.53\* | 1.01\*\* | 1.61\*\* |
|  | (0.12) | (0.32) | (0.17) | (0.26) | (0.29) | (0.22) | (0.48) |
| *Population* | 0.70\*\* | 0.36 | 0.39\* | 0.30 | 0.12 | 0.22 | 0.47 |
|  | (0.16) | (0.28) | (0.20) | (0.25) | (0.24) | (0.25) | (0.28) |
| *GDP growth* | -0.12 | 0.72 | 1.73 | 7.84\*\* | -3.09 | 4.33 | -1.23 |
|  | (0.81) | (3.85) | (1.83) | (2.75) | (3.81) | (2.86) | (6.55) |
| *Civil war* | 0.77\*\* | 3.58\*\* | 0.70 | 0.62 | 0.41 | 0.32 | 0.36 |
|  | (0.32) | (0.94) | (0.46) | (0.63) | (0.57) | (0.67) | (1.00) |
| *CINC* | -32.46\*\* | -14.99 | -12.64 | -21.20\*\* | -3.73 | -21.70\*\* | -38.42\* |
|  | (8.33) | (15.83) | (10.30) | (9.62) | (10.13) | (9.85) | (23.33) |
| Constant | -2.66\* | 17.24\*\* | 1.39 | -8.00\*\* | -3.01 | -5.44\*\* | -7.84\* |
|   | (1.45) | (3.11) | (2.01) | (2.88) | (3.16) | (2.43) | (4.31) |
| Observations | 3007 | 382 | 1271 | 483 | 303 | 883 | 101 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of affected people per disaster).

Table A4: Effect of Ongoing Sanctions on Economic Damage from Natural Disasters

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|   | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 | Model 7 |
|  | All | Drought | Flood | Earthquake | Landslide | Storm | Volcano |
| *Ongoing*  | 0.88\*\* | 0.80 | 0.66\* | -0.05 | 1.26\*\* | 0.96\*\* | -1.28 |
| *sanctions* | (0.23) | (0.67) | (0.34) | (0.55) | (0.47) | (0.41) | (0.93) |
| *Democracy* | 0.28 | 2.40\*\* | 0.05 | 0.43 | 0.13 | -0.33 | 0.50 |
|  | (0.27) | (0.63) | (0.41) | (0.59) | (0.48) | (0.51) | (1.02) |
| *Trade openness* | 0.14 | 0.27 | 0.34 | 0.29 | 0.13 | -0.08 | -1.09 |
|  | (0.17) | (0.38) | (0.26) | (0.47) | (0.37) | (0.33) | (0.98) |
| *MID* | 0.08 | -0.23 | -0.15 | -0.21 | 0.36 | 0.27 | 0.19 |
|  | (0.20) | (0.55) | (0.32) | (0.53) | (0.43) | (0.39) | (0.84) |
| *GDPPC* | 0.78\*\* | 0.83\*\* | 0.86\*\* | 0.70\*\* | 0.51\* | 1.37\*\* | 0.48 |
|  | (0.11) | (0.26) | (0.17) | (0.28) | (0.28) | (0.22) | (0.51) |
| *Population* | 0.33\*\* | 0.35 | 0.45\*\* | -0.28 | -0.41\* | -0.17 | 0.12 |
|  | (0.13) | (0.22) | (0.18) | (0.24) | (0.25) | (0.21) | (0.30) |
| *GDP growth* | -0.21 | -2.49 | -0.37 | 7.28\*\* | -4.85 | -2.37 | 0.54 |
|  | (0.81) | (3.07) | (1.86) | (3.08) | (3.54) | (2.93) | (7.04) |
| *Civil war* | -0.43 | 0.00 | -0.65 | 0.83 | 0.23 | -0.04 | 0.53 |
|  | (0.31) | (0.74) | (0.46) | (0.69) | (0.54) | (0.68) | (1.06) |
| CINC | 22.73\*\* | 13.48 | 25.61\*\* | 28.24\*\* | 6.00 | 12.88 | 18.38 |
|  | (7.03) | (12.19) | (9.39) | (8.88) | (10.71) | (8.91) | (23.58) |
| Constant | -6.14\*\* | -6.95\*\* | -6.92\*\* | 0.62 | 1.06 | -4.80\*\* | -2.62 |
|   | (1.26) | (2.47) | (1.95) | (3.02) | (3.10) | (2.23) | (4.52) |
| Observations | 3009 | 383 | 1271 | 484 | 303 | 884 | 102 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(economic damage per disaster).

Table A5: Effect of Ongoing Sanctions on Affected People from Natural Disasters

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|   | Model1 | Model2 | Model3 | Model4 | Model5 | Model6 | Model7 |
|  | All | Drought | Flood | Earthquake | Landslide | Storm | Volcano |
| *Ongoing sanctions* | 0.95\*\* | -0.39 | 0.96\*\* | 0.91\* | -0.08 | 1.04\*\* | -0.47 |
|  | (0.23) | (0.86) | (0.33) | (0.50) | (0.50) | (0.40) | (0.90) |
| *Democracy* | -0.25 | -0.69 | -1.28\*\* | -0.92 | -0.11 | -0.03 | -0.53 |
|  | (0.29) | (0.81) | (0.41) | (0.59) | (0.47) | (0.52) | (0.99) |
| *Trade openness* | -0.26 | -0.58 | -0.28 | -1.08\*\* | -0.05 | -1.00\*\* | -2.84\*\* |
|  | (0.18) | (0.50) | (0.27) | (0.44) | (0.38) | (0.35) | (0.94) |
| *MID* | 0.22 | 0.28 | 0.13 | -0.31 | -0.00 | -0.19 | -0.34 |
|  | (0.21) | (0.70) | (0.32) | (0.48) | (0.46) | (0.38) | (0.81) |
| *GDPPC* | 0.24\*\* | -1.55\*\* | 0.25 | 1.34\*\* | 0.53\* | 0.91\*\* | 1.48\*\* |
|  | (0.12) | (0.33) | (0.18) | (0.26) | (0.29) | (0.22) | (0.49) |
| *Population* | 0.67\*\* | 0.44 | 0.35\* | 0.28 | 0.12 | 0.15 | 0.42 |
|  | (0.16) | (0.28) | (0.20) | (0.25) | (0.24) | (0.25) | (0.29) |
| *GDP growth* | -0.08 | -0.09 | 2.01 | 8.27\*\* | -3.06 | 4.76\* | -0.61 |
|  | (0.81) | (3.90) | (1.83) | (2.76) | (3.82) | (2.85) | (6.77) |
| *Civil war* | 0.76\*\* | 3.49\*\* | 0.69 | 0.61 | 0.41 | 0.36 | 0.25 |
|  | (0.32) | (0.95) | (0.46) | (0.63) | (0.57) | (0.67) | (1.02) |
| *CINC* | -32.44\*\* | -6.99 | -12.93 | -20.41\*\* | -3.91 | -23.38\*\* | -58.75\*\* |
|  | (8.34) | (16.51) | (10.27) | (9.53) | (10.03) | (9.82) | (22.69) |
| Constant | -2.47\* | 15.38\*\* | 1.99 | -8.11\*\* | -2.99 | -4.41\* | -6.41 |
|   | (1.46) | (3.22) | (2.02) | (2.86) | (3.17) | (2.42) | (4.35) |
| Observations | 3009 | 383 | 1271 | 484 | 303 | 884 | 102 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of affected people per disaster).

Table A6: Effect of Sanctions on Disaster Costs for Democracies and Non-Democracies

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 |
|  | Economic Damage | Affected People |
|  | (Democracies) | (Non-Dem.) | (Democracies) | (Non-Dem.) |
| *Ongoing sanctions* | 1.01\*\* | 0.65\*\* | 1.60\*\* | 0.40 |
|  | (0.36) | (0.29) | (0.31) | (0.33) |
| *Trade openness* | 0.29 | -0.17 | -0.97\*\* | -0.26 |
|  | (0.36) | (0.19) | (0.37) | (0.21) |
| *MID* | 0.27 | -0.15 | 0.77\*\* | -0.13 |
|  | (0.36) | (0.24) | (0.32) | (0.27) |
| *GDPPC* | 1.31\*\* | 0.34\*\* | 0.53\*\* | 0.17 |
|  | (0.22) | (0.13) | (0.21) | (0.15) |
| *Population* | 0.49\*\* | 0.08 | 0.49\*\* | 0.35\* |
|  | (0.21) | (0.17) | (0.24) | (0.19) |
| *GDP growth* | -3.33 | 0.17 | 2.06 | -0.14 |
|  | (3.01) | (0.79) | (2.64) | (0.88) |
| *Civil war* | 0.70 | -0.58\* | 1.48\*\* | 0.75\*\* |
|  | (0.75) | (0.34) | (0.68) | (0.38) |
| *CINC* | 15.55\* | 58.07\*\* | -46.97\*\* | 18.00 |
|  | (8.55) | (15.96) | (8.90) | (18.54) |
| Constant | -11.58\*\* | -0.63 | -3.58 | 1.37 |
|  | (2.22) | (1.66) | (2.34) | (1.89) |
| Observations | 1159 | 1850 | 1159 | 1850 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of affected people or economic damage per disaster).

Table A7: Effect of Sanctions on Disaster Costs (Controlling for G7 Countries)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 |
|  | Economic Damage | Affected People | Economic Damage | Affected People |
|  | Non-G7 countries | With G7 Dummy |
| *Ongoing sanctions* | 0.67\*\* | 0.71\*\* | 0.88\*\* | 0.94\*\* |
|  | (0.24) | (0.25) | (0.23) | (0.23) |
| *Democracy* | 0.50\* | 0.01 | 0.29 | -0.16 |
|  | (0.28) | (0.30) | (0.28) | (0.29) |
| *Trade openness* | 0.07 | -0.41\*\* | 0.14 | -0.24 |
|  | (0.17) | (0.18) | (0.17) | (0.18) |
| *MID* | -0.06 | 0.08 | 0.08 | 0.24 |
|  | (0.21) | (0.22) | (0.20) | (0.21) |
| *GDPPC* | 0.58\*\* | 0.07 | 0.78\*\* | 0.23\*\* |
|  | (0.11) | (0.12) | (0.11) | (0.12) |
| *Population* | 0.14 | 0.41\*\* | 0.33\*\* | 0.73\*\* |
|  | (0.15) | (0.17) | (0.13) | (0.16) |
| *GDP growth* | -0.14 | -0.02 | -0.21 | -0.04 |
|  | (0.80) | (0.82) | (0.81) | (0.81) |
| *Civil war* | -0.34 | 0.80\*\* | -0.43 | 0.74\*\* |
|  | (0.31) | (0.33) | (0.31) | (0.32) |
| *CINC* | 58.48\*\* | 28.96 | 23.21\*\* | -26.40\*\* |
|  | (14.82) | (17.90) | (7.43) | (8.64) |
| *G7* |  |  | -0.16 | -2.65\*\* |
|  |  |  | (0.83) | (1.12) |
| Constant | -3.02\*\* | 1.17 | -6.18\*\* | -2.89\*\* |
|  | (1.43) | (1.63) | (1.27) | (1.47) |
| Observations | 2744 | 2744 | 3009 | 3009 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of affected people or economic damage per disaster).

Table A8: Effect of Sanctions on Disaster Costs (with Time Controls)

|  |  |  |
| --- | --- | --- |
|  | Model 1 | Model 2 |
|  | Economic Damage | Affected People |
| *Ongoing sanctions* | 0.67\*\* | 0.78\*\* |
|  | (0.23) | (0.23) |
| *Democracy* | 0.19 | -0.06 |
|  | (0.27) | (0.28) |
| *Trade openness* | 0.04 | -0.52\*\* |
|  | (0.16) | (0.17) |
| *MID* | 0.03 | 0.23 |
|  | (0.20) | (0.20) |
| *GDPPC* | 0.89\*\* | -0.93\*\* |
|  | (0.16) | (0.16) |
| *Population* | 0.32\*\* | 0.15 |
|  | (0.13) | (0.14) |
| *GDP growth* | -0.15 | 0.47 |
|  | (0.81) | (0.81) |
| *Civil war* | -0.32 | 0.58\* |
|  | (0.31) | (0.31) |
| *CINC* | 21.15\*\* | -22.61\*\* |
|  | (6.98) | (7.35) |
| *t* | -0.06\*\* | 0.03\*\* |
|  | (0.01) | (0.01) |
| *t2* | 0.00\*\* | -0.00\*\* |
|  | (0.00) | (0.00) |
| *t3* | 0.00\*\* | 0.00\*\* |
|  | (0.00) | (0.00) |
| Constant | -6.93\*\* | 11.36\*\* |
|  | (1.71) | (1.81) |
| Observations | 3009 | 3009 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of affected people or economic damage per disaster).

Table A9: Effect of Sanctions on Disaster-Related Losses (Controlling for Disaster Frequency)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 |
| Dependent Variable | Damage | Affected | Damage | Affected |
|  | *Sanction onset* | *Ongoing sanction* |
| *Number of disasters* | 0.08\*\* | 0.17\*\* | 0.08\*\* | 0.18\*\* |
|  | (0.02) | (0.02) | (0.02) | (0.02) |
| *Onset* | 0.87\*\* | 0.79\*\* |  |  |
|  | (0.34) | (0.33) |  |  |
| *Ongoing sanctions* |  |  | 0.66\*\* | 0.88\*\* |
|  |  |  | (0.26) | (0.26) |
| *Democracy* | 0.16 | -0.63\* | 0.19 | -0.57\* |
|  | (0.33) | (0.33) | (0.33) | (0.33) |
| *Trade openness* | 0.20 | -0.61\*\* | 0.22 | -0.61\*\* |
|  | (0.22) | (0.23) | (0.22) | (0.23) |
| *MID* | 0.21 | 0.45\* | 0.17 | 0.41\* |
|  | (0.24) | (0.24) | (0.25) | (0.24) |
| *GDPPC* | 0.94\*\* | -0.01 | 0.92\*\* | -0.07 |
|  | (0.15) | (0.15) | (0.15) | (0.15) |
| *Population* | 0.37\*\* | 0.25 | 0.35\*\* | 0.21 |
|  | (0.16) | (0.17) | (0.16) | (0.16) |
| *GDP growth* | -0.19 | -0.83 | -0.16 | -0.76 |
|  | (0.92) | (0.90) | (0.92) | (0.90) |
| *Civil war* | -0.87\*\* | 0.29 | -0.89\*\* | 0.27 |
|  | (0.37) | (0.36) | (0.37) | (0.36) |
| *CINC* | 21.13\*\* | -30.48\*\* | 21.07\*\* | -31.09\*\* |
|  | (7.35) | (7.57) | (7.38) | (7.52) |
| Constant | -8.01\*\* | 3.51\*\* | -7.76\*\* | 4.20\*\* |
|   | (1.73) | (1.76) | (1.76) | (1.77) |
| Observations | 2065 | 2065 | 2066 | 2066 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of affected people or economic damage per disaster).

Table A10: Effect of Sanctions on Disaster-Related Losses (Controlling for Disaster Risks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 |
| Dependent Variable | Damage | Affected  | Damage | Affected  |
|  | *Sanction onset* | *Ongoing sanctions* |
| *Disaster risks* | 0.79\*\* | 0.90\*\* | 0.77\*\* | 0.88\*\* |
|  | (0.13) | (0.18) | (0.13) | (0.18) |
| *Onset* | 1.24\*\* | 1.25\*\* |  |  |
|  | (0.31) | (0.31) |  |  |
| *Ongoing sanctions* |  |  | 0.79\*\* | 0.90\*\* |
|  |  |  | (0.23) | (0.23) |
| *Democracy* | 0.17 | -0.43 | 0.17 | -0.41 |
|  | (0.27) | (0.29) | (0.27) | (0.29) |
| *Trade openness* | 0.21 | -0.22 | 0.23 | -0.20 |
|  | (0.16) | (0.19) | (0.17) | (0.19) |
| *MID* | 0.07 | 0.25 | 0.02 | 0.20 |
|  | (0.20) | (0.21) | (0.20) | (0.21) |
| *GDPPC* | 0.87\*\* | 0.26\*\* | 0.86\*\* | 0.25\*\* |
|  | (0.11) | (0.12) | (0.11) | (0.12) |
| *Population* | 0.33\*\* | 0.64\*\* | 0.32\*\* | 0.62\*\* |
|  | (0.12) | (0.15) | (0.12) | (0.15) |
| *GDP growth* | -0.39 | -0.23 | -0.35 | -0.18 |
|  | (0.81) | (0.81) | (0.81) | (0.81) |
| *Civil war* | -0.48 | 0.75\*\* | -0.48 | 0.74\*\* |
|  | (0.31) | (0.32) | (0.31) | (0.32) |
| *CINC* | 25.61\*\* | -29.17\*\* | 26.12\*\* | -29.18\*\* |
|  | (6.41) | (8.03) | (6.47) | (8.06) |
| Constant | -7.84\*\* | -3.43\*\* | -7.81\*\* | -3.33\*\* |
|  | (1.22) | (1.45) | (1.24) | (1.46) |
| Observations | 2965 | 2965 | 2966 | 2966 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of affected people or economic damage per disaster).

Table A11: Effect of Sanctions on Disaster-Related Losses (Controlling for Slow-Onset Disasters)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Model 1 | Model 2 | Model 3 | Model 4 |
| Dependent Variable | Damage | Affected | Damage | Affected |
|  | *Sanction onset* | *Ongoing sanction* |
| *Drought (dummy)* | 1.44\*\* | 3.50\*\* | 1.41\*\* | 3.48\*\* |
|  | (0.26) | (0.26) | (0.26) | (0.26) |
| *Onset* | 1.33\*\* | 1.33\*\* |  |  |
|  | (0.30) | (0.30) |  |  |
| *Ongoing sanctions* |  |  | 0.87\*\* | 0.93\*\* |
|  |  |  | (0.23) | (0.22) |
| *Democracy* | 0.28 | -0.26 | 0.30 | -0.25 |
|  | (0.27) | (0.28) | (0.27) | (0.28) |
| *Trade openness* | 0.12 | -0.36\*\* | 0.14 | -0.34\* |
|  | (0.17) | (0.17) | (0.17) | (0.18) |
| *MID* | 0.16 | 0.30 | 0.10 | 0.25 |
|  | (0.20) | (0.20) | (0.20) | (0.20) |
| *GDPPC* | 0.79\*\* | 0.21\* | 0.78\*\* | 0.20\* |
|  | (0.11) | (0.11) | (0.11) | (0.11) |
| *Population* | 0.35\*\* | 0.67\*\* | 0.34\*\* | 0.65\*\* |
|  | (0.13) | (0.14) | (0.13) | (0.15) |
| *GDP growth* | -0.16 | 0.15 | -0.12 | 0.18 |
|  | (0.80) | (0.79) | (0.80) | (0.79) |
| *Civil war* | -0.43 | 0.82\*\* | -0.43 | 0.81\*\* |
|  | (0.31) | (0.31) | (0.31) | (0.31) |
| *CINC* | 21.80\*\* | -32.47\*\* | 22.26\*\* | -32.33\*\* |
|  | (7.00) | (7.80) | (7.04) | (7.82) |
| Constant | -6.47\*\* | -2.52\* | -6.46\*\* | -2.43\* |
|   | (1.25) | (1.36) | (1.26) | (1.37) |
| Observations | 3007 | 3007 | 3009 | 3009 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of affected people or economic damage per disaster).

Table A12: Effect of Sanctions on Disaster-Related Losses (Controlling for Lagged Dependent Variable)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Model 1 | Model 2 | Model 3 | Model 4 |
| Dependent Variable | Damage | Affected | Damage | Affected |
|  | *Sanction onset* | *Ongoing sanction* |
| *Lagged DV* | 0.14\*\* | 0.16\*\* | 0.13\*\* | 0.15\*\* |
|  | (0.02) | (0.02) | (0.02) | (0.02) |
| *Onset* | 0.92\*\* | 0.92\*\* |  |  |
|  | (0.34) | (0.34) |  |  |
| *Ongoing sanctions* |  |  | 0.56\*\* | 0.79\*\* |
|  |  |  | (0.26) | (0.26) |
| *Democracy* | 0.14 | -0.68\*\* | 0.15 | -0.65\*\* |
|  | (0.32) | (0.33) | (0.32) | (0.33) |
| *Trade openness* | 0.09 | -0.65\*\* | 0.11 | -0.64\*\* |
|  | (0.21) | (0.22) | (0.21) | (0.22) |
| *MID* | 0.13 | 0.26 | 0.09 | 0.22 |
|  | (0.24) | (0.24) | (0.24) | (0.24) |
| *GDPPC* | 0.94\*\* | 0.29\*\* | 0.94\*\* | 0.26\* |
|  | (0.14) | (0.14) | (0.14) | (0.14) |
| *Population* | 0.45\*\* | 0.45\*\* | 0.45\*\* | 0.44\*\* |
|  | (0.14) | (0.16) | (0.14) | (0.16) |
| *GDP growth* | -0.19 | -0.95 | -0.17 | -0.91 |
|  | (0.92) | (0.90) | (0.92) | (0.90) |
| *Civil war* | -0.60\* | 0.58 | -0.60\* | 0.58 |
|  | (0.36) | (0.36) | (0.36) | (0.36) |
| *CINC* | 19.52\*\* | -23.32\*\* | 19.88\*\* | -23.52\*\* |
|  | (6.78) | (7.38) | (6.83) | (7.38) |
| Constant | -8.85\*\* | -1.03 | -8.96\*\* | -0.83 |
|   | (1.54) | (1.60) | (1.55) | (1.60) |
| Observations | 2065 | 2065 | 2066 | 2066 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. Lagged DV Included. DV = ln(number of affected people or economic damage per disaster).

Table A13: Effect of Disasters on Sanction Imposition

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 |
|  | OnsetAll sanctions | OnsetMultilateral sanctions | OnsetIO-backed sanctions |
| *Disaster (dummy)* | 0.17 | 0.18 | 0.38 |
|  | (0.13) | (0.26) | (0.25) |
| *Democracy* | 0.01 | -0.00 | -0.90\*\* |
|  | (0.14) | (0.29) | (0.27) |
| *Trade openness* | 0.13 | -0.05 | 0.11 |
|  | (0.09) | (0.16) | (0.16) |
| *MID* | 0.53\*\* | 0.32 | 0.30 |
|  | (0.12) | (0.23) | (0.21) |
| *GDPPC* | 0.45\*\* | 0.14 | 0.68\*\* |
|  | (0.06) | (0.11) | (0.11) |
| *Population* | 0.53\*\* | 0.39\*\* | 0.44\*\* |
|  | (0.06) | (0.11) | (0.11) |
| *GDP growth* | -1.10 | -0.09 | 0.04 |
|  | (0.71) | (1.18) | (1.00) |
| *Civil war* | 0.24 | 0.51 | 0.19 |
|  | (0.18) | (0.31) | (0.34) |
| *CINC* | 2.44 | 4.35 | 3.65 |
|  | (2.47) | (4.18) | (4.12) |
| Constant | -11.57\*\* | -9.43\*\* | -13.79\*\* |
|  | (0.67) | (1.21) | (1.26) |
| Observations | 6304 | 6304 | 6304 |

\* p<0.10, \*\* p<0.05

Mixed Effects Logit Models. DV = Sanction onset.

Table A14: Effect of Sanctions on Disaster-Related Losses (Controlling for Relative Political Reach)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Dependent Variable | Model 1 | Model 2 | Model 3 | Model 4 |
|  | Damage | Affected | Damage | Affected |
| *Relative political reach* | -3.17\*\* | 1.19 | -3.21\*\* | 1.17 |
|  | (1.09) | (1.16) | (1.10) | (1.17) |
| *Onset* | 1.35\*\* | 1.53\*\* |  |  |
|  | (0.32) | (0.32) |  |  |
| *Ongoing sanctions* |  |  | 0.79\*\* | 0.99\*\* |
|  |  |  | (0.24) | (0.24) |
| *Democracy* | 0.61\*\* | -0.23 | 0.60\*\* | -0.23 |
|  | (0.29) | (0.30) | (0.29) | (0.30) |
| *Trade openness* | 0.24 | -0.38\* | 0.24 | -0.38\* |
|  | (0.19) | (0.20) | (0.19) | (0.20) |
| *MID* | 0.15 | 0.32 | 0.10 | 0.25 |
|  | (0.21) | (0.22) | (0.22) | (0.22) |
| *GDPPC* | 0.49\*\* | -0.33\*\* | 0.51\*\* | -0.33\*\* |
|  | (0.13) | (0.13) | (0.13) | (0.13) |
| *Population* | 0.31\*\* | 0.52\*\* | 0.28\*\* | 0.49\*\* |
|  | (0.14) | (0.15) | (0.14) | (0.16) |
| *GDP growth* | -0.98 | -0.98 | -0.96 | -0.94 |
|  | (0.83) | (0.83) | (0.83) | (0.83) |
| *Civil war* | -0.63\* | 0.70\*\* | -0.63\* | 0.70\*\* |
|  | (0.33) | (0.33) | (0.33) | (0.33) |
| *CINC* | 35.99\*\* | -23.09\*\* | 38.15\*\* | -20.70\*\* |
|  | (9.42) | (10.24) | (9.47) | (10.24) |
| Constant | -0.58 | 2.48 | -0.53 | 2.64 |
|  | (1.82) | (1.91) | (1.84) | (1.93) |
| Observations | 2626 | 2626 | 2626 | 2626 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of affected people or economic damage per disaster).

Table A15: Effect of Sanctions on the Number of Homeless and Killed People from Natural Disasters

|  |  |  |
| --- | --- | --- |
|  | Homeless People | Killed People |
| *Sanction onset* | 0.84\*\* |  | 0.09 |   |
|  | (0.24) |  | (0.12) |  |
| *Ongoing sanctions* |  | 0.48\*\* |  | 0.01 |
|  |  | (0.18) |  | (0.09) |
| *Democracy* | -0.15 | -0.14 | 0.07 | 0.06 |
|  | (0.21) | (0.21) | (0.10) | (0.10) |
| *Trade openness* | -0.35\*\* | -0.34\*\* | -0.24\*\* | -0.24\*\* |
|  | (0.13) | (0.13) | (0.06) | (0.06) |
| *MID* | -0.14 | -0.17 | 0.02 | 0.03 |
|  | (0.16) | (0.16) | (0.08) | (0.08) |
| *GDPPC* | 0.33\*\* | 0.33\*\* | -0.36\*\* | -0.35\*\* |
|  | (0.08) | (0.08) | (0.04) | (0.04) |
| *Population* | 0.32\*\* | 0.32\*\* | 0.42\*\* | 0.42\*\* |
|  | (0.09) | (0.09) | (0.04) | (0.04) |
| *GDP growth* | -0.29 | -0.28 | -0.10 | -0.11 |
|  | (0.63) | (0.63) | (0.31) | (0.31) |
| *Civil war* | 0.72\*\* | 0.72\*\* | 0.16 | 0.16 |
|  | (0.24) | (0.24) | (0.12) | (0.12) |
| *CINC* | -7.69 | -7.25 | 0.58 | 0.74 |
|  | (5.18) | (5.20) | (2.46) | (2.46) |
| Constant | -3.81\*\* | -3.90\*\* | 1.73\*\* | 1.69\*\* |
|   | (0.94) | (0.95) | (0.45) | (0.45) |
| Observations | 3007 | 3009 | 3007 | 3009 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of homeless or killed people per disaster).

Table A16: Sanctions Effect on Military Spending and Education Spending as Share of GDP (Word Development Indicators Data)

|  |  |  |
| --- | --- | --- |
|  | Model 1 | Model 2 |
| Dependent variables | *Military Spending* | *Education Spending* |
|  |  |   |
| *Ongoing sanctions* | -0.00 | -0.04\*\* |
|  | (0.02) | (0.02) |
| *Democracy* | -0.17\*\* | 0.14\*\* |
|  | (0.03) | (0.03) |
| *Trade openness* | 0.05\* | 0.10\*\* |
|  | (0.02) | (0.02) |
| *MID* | -0.02 | 0.02 |
|  | (0.02) | (0.02) |
| *GDPPC* | -0.39\*\* | 0.06\*\* |
|  | (0.04) | (0.01) |
| *Population* | -0.52\*\* | -0.03 |
|  | (0.06) | (0.02) |
| *GDP growth* | 0.06 | -0.26\*\* |
|  | (0.09) | (0.08) |
| *Civil war* | 0.25\*\* | 0.03 |
|  | (0.03) | (0.03) |
| *CINC* | 15.85\*\* | 0.91 |
|  | (3.47) | (1.83) |
| Constant | 8.55\*\* | 0.95\*\* |
|  | (0.58) | (0.20) |
| Observations | 1678 | 1725 |

\* p<0.10, \*\* p<0.05

Mixed Effects Model. DV = ln(spending as share of GDP).

Table A17: Effect of Sanctions of Different Types on Costs from Natural Disasters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Model 1 | Model 2 | Model 3 | Model 4 |
| Dependent Variable | Damage | Affected | Damage | Affected |
|  | *Sanction onset* | *Ongoing sanction* |
| *Total embargo* | 0.72 | -1.32 | -0.27 | -0.81 |
|  | (1.38) | (1.39) | (0.66) | (0.68) |
| *Partial embargo* | 0.03 | -0.51 | 0.93\* | 0.01 |
|  | (0.97) | (0.97) | (0.50) | (0.51) |
| *Import restriction* | 1.51\*\* | 1.20\*\* | 1.55\*\* | 1.40\*\* |
|  | (0.38) | (0.38) | (0.30) | (0.30) |
| *Export restriction* | 1.09 | 1.84\* | 0.34 | 0.36 |
|  | (0.99) | (1.00) | (0.52) | (0.53) |
| *Blockade* | 0.87 | 2.27 | 0.49 | 0.17 |
|  | (1.88) | (1.90) | (1.03) | (1.04) |
| *Asset freeze* | -0.27 | 1.63 | -0.53 | -0.06 |
|  | (1.45) | (1.45) | (0.70) | (0.72) |
| *Aid termination* | 1.30\* | 1.37\*\* | 0.48 | 0.51 |
|  | (0.67) | (0.67) | (0.37) | (0.39) |
| *Travel ban* | 2.21 | 0.91 | -0.18 | 0.53 |
|  | (1.36) | (1.36) | (0.69) | (0.71) |
| *Agreement suspension* | -2.43\*\* | 0.65 | -0.41 | -0.12 |
|  | (1.16) | (1.17) | (0.66) | (0.68) |
| *Democracy* | 0.30 | -0.23 | 0.26 | -0.31 |
|  | (0.27) | (0.29) | (0.28) | (0.29) |
| *Trade openness* | 0.11 | -0.29 | 0.12 | -0.30\* |
|  | (0.17) | (0.18) | (0.17) | (0.18) |
| *MID* | 0.13 | 0.26 | 0.08 | 0.24 |
|  | (0.20) | (0.21) | (0.20) | (0.21) |
| *GDPPC* | 0.76\*\* | 0.24\*\* | 0.69\*\* | 0.14 |
|  | (0.11) | (0.12) | (0.11) | (0.12) |
| *Population* | 0.33\*\* | 0.70\*\* | 0.29\*\* | 0.63\*\* |
|  | (0.13) | (0.16) | (0.13) | (0.15) |
| *GDP growth* | -0.23 | -0.20 | -0.18 | -0.04 |
|  | (0.81) | (0.81) | (0.80) | (0.81) |
| *Civil war* | -0.41 | 0.77\*\* | -0.38 | 0.86\*\* |
|  | (0.31) | (0.32) | (0.31) | (0.32) |
| *CINC* | 23.63\*\* | -33.30\*\* | 22.13\*\* | -32.85\*\* |
|  | (7.03) | (8.39) | (7.18) | (8.44) |
| Constant | -5.89\*\* | -2.58\* | -5.11\*\* | -1.26 |
|   | (1.26) | (1.46) | (1.29) | (1.47) |
| Observations | 3005 | 3005 | 3009 | 3009 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of affected people or economic damage per disaster).

Table A18: Sanctions Effect on Military Spending (Target Regime Type and Ideology)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 |
|  | Right Wing | RW-Dictatorship | Nationalist |
|  |  |  |  |
| *Ongoing sanctions* | -0.03 | -0.03 | -0.04 |
|  | (0.03) | (0.03) | (0.03) |
| *Democracy* | -0.04 |  | -0.03 |
|  | (0.09) |  | (0.09) |
| *Trade openness* | 0.04 | 0.04 | 0.04 |
|  | (0.04) | (0.04) | (0.04) |
| *MID* | -0.02 | -0.02 | -0.02 |
|  | (0.03) | (0.03) | (0.03) |
| *GDPPC* | -0.44\*\* | -0.47\*\* | -0.46\*\* |
|  | (0.06) | (0.06) | (0.06) |
| *Population* | 0.16\*\* | 0.16\*\* | 0.17\*\* |
|  | (0.08) | (0.08) | (0.08) |
| *GDP growth* | -0.08 | -0.04 | -0.05 |
|  | (0.26) | (0.26) | (0.26) |
| *Civil war* | 0.00 | 0.00 | -0.01 |
|  | (0.62) | (0.64) | (0.64) |
| *CINC* | -0.81 | -0.95 | -1.01 |
|  | (3.75) | (3.80) | (3.79) |
| *Right Wing* | 0.05\* |  |  |
|  | (0.03) |  |  |
| *RW Dictatorship* |  | -0.09 |  |
|  |  | (0.11) |  |
| *Nationalist* |  |  | 0.02 |
|  |  |  | (0.06) |
| Constant | 3.22\*\* | 3.43\*\* | 3.35\*\* |
|  | (0.89) | (0.91) | (0.90) |
| Observations | 239 | 239 | 239 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(military spending as share of GDP).

Table A19: Sanctions Effect on Disaster Preparedness Spending (Target Regime Type and Ideology)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 |
|  | Right Wing | RW-Dictatorship | Nationalist |
|  |  |  |  |
| *Ongoing sanctions* | -0.18\*\* | -0.18\*\* | -0.18\*\* |
|  | (0.04) | (0.04) | (0.04) |
| *Democracy* | 0.05 |  | 0.04 |
|  | (0.09) |  | (0.09) |
| *Trade openness* | -0.02 | -0.02 | -0.02 |
|  | (0.03) | (0.03) | (0.03) |
| *MID* | 0.02 | 0.02 | 0.02 |
|  | (0.03) | (0.03) | (0.03) |
| *GDPPC* | -0.73\*\* | -0.72\*\* | -0.71\*\* |
|  | (0.13) | (0.13) | (0.13) |
| *Population* | 0.27 | 0.28\* | 0.23 |
|  | (0.17) | (0.16) | (0.16) |
| *GDP growth* | 0.28 | 0.28 | 0.27 |
|  | (0.53) | (0.53) | (0.53) |
| *CINC* | -62.39\*\* | -65.05\*\* | -63.19\*\* |
|  | (19.77) | (19.08) | (18.95) |
| *Right Wing* | -0.02 |  |  |
|  | (0.03) |  |  |
| *RW Dictatorship* |  | -0.05 |  |
|  |  | (0.09) |  |
| *Nationalist* |  |  | -0.91 |
|  |  |  | (0.64) |
| Constant | 3.59\*\* | 3.47\*\* | 3.83\*\* |
|  | (1.70) | (1.68) | (1.67) |
| Observations | 115 | 115 | 115 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(disaster preparedness spending as share of GDP).

Table A20: Effect of Sanctions and Sanction Duration on Military Spending

|  |  |  |
| --- | --- | --- |
|  | Model 1 | Model 2 |
|  | DV: Sanction dummy | DV: Sanction duration |
|  |  |  |
| *Ongoing sanctions* | -0.00 |  |
|  | (0.02) |  |
| *Sanction duration* |  | 0.01\*\* |
|  |  | (0.00) |
| *Democracy* | -0.17\*\* | -0.16\*\* |
|  | (0.03) | (0.03) |
| *Trade openness* | 0.05\* | 0.04 |
|  | (0.02) | (0.02) |
| *MID* | -0.02 | -0.02 |
|  | (0.02) | (0.02) |
| *GDPPC* | -0.39\*\* | -0.41\*\* |
|  | (0.04) | (0.04) |
| *Population* | -0.52\*\* | -0.53\*\* |
|  | (0.06) | (0.06) |
| *GDP growth* | 0.06 | 0.07 |
|  | (0.09) | (0.09) |
| *Civil war* | 0.25\*\* | 0.24\*\* |
|  | (0.03) | (0.03) |
| *CINC* | 15.85\*\* | 15.04\*\* |
|  | (3.47) | (3.49) |
| Constant | 8.55\*\* | 8.79\*\* |
|  | (0.58) | (0.58) |
| Observations | 1678 | 1678 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(military spending as share of GDP).

Table A21: Effect of Sanctions on Disaster-Related Losses (Excluding Affluent Targets)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 |
|  | Economic Damage (onset) | Affected People (onset) | Economic Damage (ongoing) | Affected People (ongoing) |
|  |  |  |  |  |
| *Sanction onset* | 1.29\*\* | 1.59\*\* |  |  |
|  | (0.40) | (0.44) |  |  |
| *Ongoing sanctions* |  |  | 0.71\*\* | 0.54\* |
|  |  |  | (0.27) | (0.29) |
| *Democracy* | -0.04 | -0.28 | -0.02 | -0.28 |
|  | (0.30) | (0.34) | (0.30) | (0.34) |
| *Trade openness* | -0.03 | -0.19 | -0.03 | -0.21 |
|  | (0.19) | (0.21) | (0.18) | (0.21) |
| *MID* | -0.06 | 0.09 | -0.11 | 0.08 |
|  | (0.22) | (0.24) | (0.22) | (0.24) |
| *GDPPC* | 0.56\*\* | 0.52\*\* | 0.56\*\* | 0.54\*\* |
|  | (0.13) | (0.15) | (0.13) | (0.15) |
| *Population* | 0.11 | 0.30\* | 0.10 | 0.28\* |
|  | (0.14) | (0.17) | (0.14) | (0.17) |
| *GDP growth* | 0.27 | -0.14 | 0.32 | -0.11 |
|  | (0.80) | (0.87) | (0.80) | (0.87) |
| *Civil war* | -0.38 | 0.84\*\* | -0.38 | 0.86\*\* |
|  | (0.31) | (0.34) | (0.31) | (0.34) |
| *CINC* | 28.39\*\* | -21.85\*\* | 29.22\*\* | -19.69\*\* |
|  | (7.48) | (9.15) | (7.45) | (9.09) |
| Constant | -2.30 | -0.51 | -2.24 | -0.51 |
|  | (1.42) | (1.64) | (1.42) | (1.64) |
| Observations | 2330 | 2330 | 2332 | 2332 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models, Excluding Affluent Countries. DV = ln(number of affected people or economic damage per disaster).

Table A22: Effect of Sanctions on Disaster-Related Losses (Controlling for Six Individual Disaster Risks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 |
|  | Economic Damage(onset) | Affected People(onset) | Economic Damage(ongoing) | Affected People(ongoing) |
| *Sanction onset* | 1.22\*\* | 1.25\*\* |  |  |
|  | (0.31) | (0.31) |  |  |
| *Ongoing sanctions* |  |  | 0.78\*\* | 0.84\*\* |
|  |  |  | (0.23) | (0.23) |
| *Democracy* | 0.17 | -0.33 | 0.19 | -0.32 |
|  | (0.27) | (0.29) | (0.27) | (0.29) |
| *Trade openness* | 0.20 | -0.28 | 0.22 | -0.26 |
|  | (0.17) | (0.18) | (0.17) | (0.18) |
| *MID* | 0.08 | 0.22 | 0.03 | 0.18 |
|  | (0.20) | (0.20) | (0.20) | (0.21) |
| *GDPPC* | 0.89\*\* | 0.35\*\* | 0.88\*\* | 0.35\*\* |
|  | (0.11) | (0.12) | (0.11) | (0.12) |
| *Population* | 0.32\*\* | 0.44\*\* | 0.32\*\* | 0.43\*\* |
|  | (0.12) | (0.15) | (0.12) | (0.15) |
| *GDP growth* | -0.36 | -0.34 | -0.31 | -0.30 |
|  | (0.81) | (0.81) | (0.81) | (0.81) |
| *Civil war* | -0.45 | 0.71\*\* | -0.45 | 0.71\*\* |
|  | (0.31) | (0.32) | (0.31) | (0.32) |
| *CINC* | 25.13\*\* | -24.65\*\* | 25.50\*\* | -24.66\*\* |
|  | (6.42) | (7.65) | (6.48) | (7.71) |
| *Storm risk* | 0.21\*\* | 0.21\*\* | 0.21\*\* | 0.21\*\* |
|  | (0.07) | (0.09) | (0.07) | (0.09) |
| *Drought risk* | 0.15\*\* | 0.57\*\* | 0.14\* | 0.55\*\* |
|  | (0.07) | (0.09) | (0.07) | (0.09) |
| *Earthquake risk* | -0.14 | -0.06 | -0.14 | -0.05 |
|  | (0.16) | (0.20) | (0.16) | (0.20) |
| *Flood risk* | 0.14\*\* | 0.21\*\* | 0.14\*\* | 0.20\*\* |
|  | (0.06) | (0.07) | (0.06) | (0.07) |
| *Landslide risk* | 0.24\* | -0.03 | 0.23\* | -0.04 |
|  | (0.14) | (0.17) | (0.14) | (0.18) |
| *Volcano risk* | 0.24 | 0.68 | 0.24 | 0.67 |
|  | (0.36) | (0.46) | (0.37) | (0.47) |
| Constant | -8.02\*\* | -3.21\*\* | -8.00\*\* | -3.19\*\* |
|  | (1.24) | (1.40) | (1.26) | (1.42) |
| Observations | 2965 | 2965 | 2967 | 2967 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of affected people or economic damage per disaster).

Table A23: Sanctions Effect on Police and Public Order Spending as Share of GDP (Using Spending Shares as DVs)

|  |  |  |
| --- | --- | --- |
|  | Model 1 | Model 2 |
|  | Police Spending | Public Order Spending |
|  |  |  |
| *Ongoing sanctions* | 0.00 | 0.02 |
|  | (0.02) | (0.02) |
| *Democracy* | 0.04 | -0.21\*\* |
|  | (0.03) | (0.08) |
| *Trade openness* | -0.05\*\* | 0.06 |
|  | (0.01) | (0.10) |
| *MID* | -0.02 | -0.04 |
|  | (0.02) | (0.02) |
| *GDPPC* | -0.26\*\* | 0.37\*\* |
|  | (0.10) | (0.10) |
| *Population* | 0.04 | 0.01 |
|  | (0.07) | (0.12) |
| *GDP growth* | -0.19 | -0.34 |
|  | (0.28) | (0.55) |
| *Civil war* | 0.00 | -0.35 |
|  | (0.00) | (0.27) |
| *CINC* | -2.84 | 5.58\* |
|  | (6.96) | (3.13) |
| Constant | 3.16\*\* | -1.82\* |
|  | (1.21) | (1.04) |
| Observations | 115 | 247 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = Spending as Share of GDP.

Table A24: Two-Stage Model of Sanctions, Disaster Preparedness Spending, and Disaster-Related Losses

|  |  |  |
| --- | --- | --- |
|  | Model 1 | Model 2 |
| **Second-Stage DVs:** | *Economic Damage* | *Affected People* |
|  |  |  |
| *Predicted DP spending (lagged)* | -0.81\*\* | -0.74\*\* |
|  | (0.32) | (0.20) |
| *Democracy* | -2.06 | -0.26 |
|  | (1.25) | (1.01) |
| *Trade openness* | 0.80\* | -0.72 |
|  | (0.47) | (0.44) |
| *MID* | 0.79 | 1.36\*\* |
|  | (0.57) | (0.44) |
| *GDPPC* | 1.07\*\* | 0.17 |
|  | (0.41) | (0.33) |
| *Population* | 2.00\*\* | 0.56 |
|  | (0.36) | (0.34) |
| *GDP growth* | -0.06 | -0.90 |
|  | (5.29) | (5.14) |
| *Civil war* | -4.25\*\* | 0.56 |
|  | (0.89) | (2.75) |
| *CINC* | -140.90\*\* | -72.33\*\* |
|  | (33.35) | (28.90) |
| Constant | -23.28\*\* | -4.21 |
|  | (4.46) | (3.07) |
| **First-Stage DV:**  | *Disaster Preparedness Spending* | *Disaster Preparedness Spending* |
|  |  |  |
| *Ongoing sanctions* | -0.18\*\* | -0.18\*\* |
|  | (0.04) | (0.04) |
| *Democracy* | 0.05 | 0.05 |
|  | (0.10) | (0.10) |
| *Trade openness* | -0.02 | -0.02 |
|  | (0.03) | (0.03) |
| *MID* | 0.02 | 0.02 |
|  | (0.03) | (0.03) |
| *GDPPC* | -0.73\*\* | -0.73\*\* |
|  | (0.13) | (0.13) |
| *Population* | 0.28\* | 0.28\* |
|  | (0.16) | (0.16) |
| *GDP growth* | 0.28 | 0.28 |
|  | (0.53) | (0.53) |
| *CINC* | -65.05\*\* | -65.05\*\* |
|  | (19.08) | (19.08) |
| Constant | 3.43\*\* | 3.43\*\* |
|  | (1.68) | (1.68) |
| Observations | 115 | 115 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models in Both Stages. 100 bootstrap replications.

Table A25: Sanctions Effect on Disaster Preparedness Spending as Share of GDP (Robustness Checks)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|  | G7 | Relative Political Reach | Disaster Frequency | Disaster Risks | Time Controls  |
|  |  |  |  |  |  |
| *Ongoing sanctions* | -0.18\*\* | -0.18\*\* | -0.18\*\* | -0.18\*\* | -0.17\*\* |
|  | (0.04) | (0.04) | (0.04) | (0.04) | (0.04) |
| *Democracy* | 0.04 | 0.09 | 0.04 | 0.05 | 0.03 |
|  | (0.10) | (0.10) | (0.09) | (0.09) | (0.12) |
| *Trade openness* | -0.02 | -0.01 | -0.02 | -0.02 | -0.02 |
|  | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) |
| *MID* | 0.02 | 0.03 | 0.02 | 0.02 | 0.02 |
|  | (0.03) | (0.03) | (0.03) | (0.03) | (0.03) |
| *GDPPC* | -0.72\*\* | -0.72\*\* | -0.71\*\* | -0.71\*\* | -0.67\*\* |
|  | (0.13) | (0.13) | (0.13) | (0.13) | (0.27) |
| *Population* | 0.31 | 0.29\* | 0.31\* | 0.31\* | 0.26 |
|  | (0.19) | (0.16) | (0.17) | (0.16) | (0.20) |
| *GDP growth* | 0.28 | 0.36 | 0.38 | 0.27 | 0.27 |
|  | (0.53) | (0.53) | (0.54) | (0.53) | (0.54) |
| *CINC* | -62.32\*\* | -68.90\*\* | -68.40\*\* | -63.19\*\* | -57.14\*\* |
|  | (21.04) | (19.14) | (19.46) | (18.97) | (24.93) |
| *G7* | -0.24 |  |  |  |  |
|  | (0.76) |  |  |  |  |
| *Relative political reach* |  | 1.11 |  |  |  |
|  |  | (0.83) |  |  |  |
| *Disaster frequency* |  |  | -0.01 |  |  |
|  |  |  | (0.01) |  |  |
| *Disaster risks* |  |  |  | -0.38 |  |
|  |  |  |  | (0.28) |  |
| *t* |  |  |  |  | 0.00 |
|  |  |  |  |  | (0.02) |
| *t2* |  |  |  |  | -0.00 |
|  |  |  |  |  | (0.00) |
| *t3* |  |  |  |  | 0.00 |
|  |  |  |  |  | (0.00) |
| Constant | 3.13 | 2.18 | 3.10\* | 3.41\*\* | 3.16 |
|  | (1.93) | (1.89) | (1.72) | (1.64) | (3.38) |
| Observations | 115 | 115 | 115 | 115 | 115 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(disaster preparedness spending as share of GDP).

Table A26: Sanctions Effect on Military Spending and Disaster Preparedness Spending as Share of GDP (Sanction Dummy Replaced with Sanction Cost)

|  |  |  |
| --- | --- | --- |
|  | Model 1 | Model 2 |
|  | Military Spending | Disaster Preparedness Spending |
|  |  |  |
| *Sanction cost* | -0.04 | -0.14\*\* |
|  | (0.03) | (0.03) |
| *Democracy* | -0.04 | -0.03 |
|  | (0.09) | (0.10) |
| *Trade openness* | 0.04 | -0.02 |
|  | (0.04) | (0.03) |
| *MID* | -0.02 | 0.02 |
|  | (0.03) | (0.03) |
| *GDPPC* | -0.47\*\* | -0.73\*\* |
|  | (0.06) | (0.13) |
| *Population* | 0.17\*\* | 0.29\* |
|  | (0.08) | (0.16) |
| *GDP growth* | -0.04 | 0.12 |
|  | (0.26) | (0.53) |
| *Civil war* | -0.03 | 0.00 |
|  | (0.64) | (0.00) |
| *CINC* | -1.19 | -68.44\*\* |
|  | (3.83) | (19.19) |
| Constant | 3.46\*\* | 3.54\*\* |
|  | (0.91) | (1.69) |
| Observations | 238 | 115 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(spending as share of GDP).

Table A27: Effect of Sanctions on Disaster-Related Losses (Sanction Dummy Replaced with Sanction Cost)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 |
|  | Economic Damage | Affected People | Economic Damage | Affected People |
|  |  |  |  |  |
| *Sanction cost (onset)* | 0.94\*\* | 0.82\*\* |  |  |
|  | (0.23) | (0.24) |  |  |
| *Sanction cost (ongoing)* |  |  | 0.46\*\* | 0.28\* |
|  |  |  | (0.14) | (0.15) |
| *Democracy* | 0.39 | -0.11 | 0.30 | -0.26 |
|  | (0.27) | (0.29) | (0.27) | (0.29) |
| *Trade openness* | 0.11 | -0.26 | 0.16 | -0.23 |
|  | (0.17) | (0.19) | (0.17) | (0.18) |
| *MID* | 0.12 | 0.26 | 0.07 | 0.24 |
|  | (0.20) | (0.21) | (0.20) | (0.21) |
| *GDPPC* | 0.79\*\* | 0.27\*\* | 0.82\*\* | 0.31\*\* |
|  | (0.11) | (0.12) | (0.11) | (0.12) |
| *Population* | 0.36\*\* | 0.73\*\* | 0.36\*\* | 0.72\*\* |
|  | (0.12) | (0.16) | (0.13) | (0.16) |
| *GDP growth* | -0.19 | -0.06 | -0.25 | -0.16 |
|  | (0.81) | (0.81) | (0.81) | (0.81) |
| *Civil war* | -0.43 | 0.77\*\* | -0.44 | 0.77\*\* |
|  | (0.31) | (0.32) | (0.31) | (0.32) |
| *CINC* | 22.55\*\* | -31.95\*\* | 23.84\*\* | -30.28\*\* |
|  | (6.99) | (8.38) | (7.03) | (8.39) |
| Constant | -6.43\*\* | -3.12\*\* | -6.66\*\* | -3.32\*\* |
|  | (1.24) | (1.45) | (1.24) | (1.45) |
| Observations | 3005 | 3005 | 3008 | 3008 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(number of affected people or economic damage per disaster).

Table A28: Sanctions Effect on Military Spending and Disaster Preparedness Spending as Share of GDP (Fixed Effects Models)

|  |  |  |
| --- | --- | --- |
|  | Model 1 | Model 2 |
|  | Military Spending | Disaster Preparedness Spending  |
|  |  |  |
| *Ongoing sanctions* | -0.06 | -0.18\*\* |
|  | (0.04) | (0.04) |
| *Democracy* | -0.00 | 0.01 |
|  | (0.10) | (0.12) |
| *Trade openness* | 0.03 | -0.04 |
|  | (0.04) | (0.04) |
| *MID* | -0.02 | 0.02 |
|  | (0.03) | (0.03) |
| *GDPPC* | -0.62\*\* | -0.66\*\* |
|  | (0.11) | (0.19) |
| *Population* | 0.67 | -0.83 |
|  | (0.42) | (1.70) |
| *GDP growth* | 0.10 | 0.11 |
|  | (0.30) | (0.58) |
| *CINC* | -6.52 | -67.21\*\* |
|  | (5.48) | (22.95) |
| Constant | 0.38 | 13.13 |
|  | (3.29) | (14.15) |
| Observations | 239 | 115 |

\* p<0.10, \*\* p<0.05

Fixed Effects Models. DV = ln(spending as share of GDP).

Table A29: Effect of Sanctions on Disaster-Related Losses (Fixed Effects Models)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 | Model 4 |
|  | Economic Damage | Affected People | Economic Damage | Affected People  |
|  |  |  |  |  |
| *Sanction onset* | 1.12\*\* | 1.09\*\* |  |  |
|  | (0.31) | (0.31) |  |  |
| *Ongoing sanctions* |  |  | 1.00\*\* | 0.83\*\* |
|  |  |  | (0.24) | (0.24) |
| *Democracy* | 0.05 | 0.09 | 0.04 | 0.09 |
|  | (0.32) | (0.32) | (0.32) | (0.32) |
| *Trade openness* | 0.27 | 0.39\* | 0.28 | 0.38\* |
|  | (0.23) | (0.23) | (0.23) | (0.23) |
| *MID* | 0.12 | 0.29 | 0.06 | 0.26 |
|  | (0.21) | (0.21) | (0.21) | (0.21) |
| *GDPPC* | 1.63\*\* | 0.43\*\* | 1.67\*\* | 0.48\*\* |
|  | (0.20) | (0.20) | (0.20) | (0.20) |
| *Population* | -2.70\*\* | 1.27\*\* | -2.97\*\* | 1.03\* |
|  | (0.58) | (0.58) | (0.58) | (0.58) |
| *GDP growth* | -0.76 | -0.10 | -0.73 | -0.09 |
|  | (0.82) | (0.82) | (0.82) | (0.82) |
| *Civil war* | -0.35 | 0.49 | -0.35 | 0.50 |
|  | (0.33) | (0.33) | (0.33) | (0.33) |
| *CINC* | 14.60 | -32.13\*\* | 13.09 | -33.35\*\* |
|  | (11.08) | (11.08) | (11.07) | (11.08) |
| Constant | 16.83\*\* | -9.94\*\* | 18.94\*\* | -8.07\* |
|  | (4.49) | (4.49) | (4.51) | (4.51) |
| Observations | 3005 | 3005 | 3009 | 3009 |

\* p<0.10, \*\* p<0.05

Fixed Effects Models. DV = ln(number of affected people or economic damage per disaster).

Table A30: Sanctions Effect on Disaster Preparedness Spending as Share of GDP (with Dynamic Effects)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Model 1 | Model 2 | Model 3 |
|  | (sanction duration) | (cubic polynomial) | (year F.E.) |
|  |  |  |  |
| *Ongoing sanctions* |  | -0.18\*\* | -0.08\*\* |
|  |  | (0.04) | (0.04) |
| *Sanction duration* | -0.03\*\* |  |  |
|  | (0.01) |  |  |
| *Democracy* | 0.07 | 0.18 | 0.08 |
|  | (0.10) | (0.14) | (0.08) |
| *Trade openness* | -0.02 | -0.03 | -0.04 |
|  | (0.04) | (0.04) | (0.03) |
| *MID* | 0.03 | 0.01 | -0.03 |
|  | (0.03) | (0.03) | (0.03) |
| *GDPPC* | -0.63\*\* | -0.60\*\* | -1.31\*\* |
|  | (0.13) | (0.27) | (0.26) |
| *Population* | 0.38\*\* | 0.28 | 0.14 |
|  | (0.17) | (0.20) | (0.18) |
| *GDP growth* | 0.25 | 0.02 | -0.04 |
|  | (0.54) | (0.55) | (0.53) |
| *CINC* | -87.26\*\* | -55.98\*\* | -32.96\* |
|  | (19.73) | (25.23) | (19.01) |
| *t* |  | -0.04 |  |
|  |  | (0.03) |  |
| *t2* |  | 0.00 |  |
|  |  | (0.00) |  |
| *t3* |  | -0.00 |  |
|  |  | (0.00) |  |
| *Time since last disaster* |  | -0.01 |  |
|  |  | (0.01) |  |
| Constant | 1.78 | 2.46 | 10.46\*\* |
|  | (1.71) | (3.43) | (3.00) |
| Observations | 115 | 108 | 115 |

\* p<0.10, \*\* p<0.05

Mixed Effects Models. DV = ln(disaster preparedness spending as share of GDP).

In Model 3, year fixed effects are included but not reported in the table.

1. “The Secret Money Behind Vladimir Putin’s War Machine” (June 2, 2015). Bloomberg. <http://www.bloomberg.com/news/articles/2015-06-02/putin-s-secret-budget-hides-shift-toward-war-economy> [↑](#footnote-ref-1)
2. https://www.imf.org/external/np/sta/gfsm/ [↑](#footnote-ref-2)