**Online Appendix.**

**Political Leaders, Economic Hardship, and Redistribution in Democracies: Impact of Political Leaders on Welfare Policy**

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**A.1. Coding Scheme of Leaders’ Occupations and Family Material Background**

We follow the Goemans, Gleditsch, and Chiozza (2009) definition of the top executive in a given country year, whether it is the president, the prime minister, or the general secretary to identify the head of state.

1. Leader’s occupations

- We code the most recent leader’s occupation before taking office (or the longest-held), if they had multiple occupations before entering the political arena. For example, Kim Dae-jung, the 15th president of South Korea, worked for a shipping company as a clerk, its owner, an activist, and an owner of a newspaper company before entering politics. During most of those periods, he owned a shipping company. Therefore, we code his occupational background as a businessman.

(1) *Military*: Military officer

(2) *Lawyer*: Judge, Lawyer, Magistrate, Prosecutor, Solicitor

(3) *Blue-collar*: Blue-collar worker, Trade union official

- We code a leader who worked for a trade union as a blue-collar worker.

(4) *Businessman*: Businessman, Company manager, Entrepreneur

- Figure A1 illustrates how political leaders' occupational backgrounds have changed over time. The most common occupational background is lawyer, which constitutes 24.4% of our sample; the proportion of leaders with a legal occupational background decreased from 34.6% in 1985 to 12.9% in 2011. The least common occupation is military (2.9%).

Figure A1. Leaders’ Occupational Backgrounds over Time

 

Note: This figure shows the proportion of political leaders that previously worked as lawyers, military officers, businessmen, and blue-collar workers in democratic countries between 1980 and 2011.

2. Family Material Background[[1]](#footnote-1)

(1) Poor family (*Economic Hardship*): Agricultural worker, Auto worker, Boilermaker, Carpenter, Copper miner, Factory worker, Poor farmer, Labor worker, Low caste family, Mechanic, Peasant, Transport worker, Union leader, Working class

- If the recorded information states that a leader was born to a poor family, we code him or her as coming from a poor family.

- We do not code all famers into the poor family background. We categorize only poor farmers and peasants into the poor family background. Among leaders’ parents, some farmers were recorded as rich families or land owners. In addition, farmers in less developed countries are very common occupations and are not related to the poverty level.

- Some data sources specifically record political leaders’ families’ material background in their youth. For example, the *Encyclopedia Britannica* identifies Alejandro Toledo, the former president of Peru, as “the son of impoverished Quechuan farmers” and notes that Viktor Yanukovych, the former president of Ukraine, “was born to a poor family in the industrial Donets Basin”. Another example is Gerhard Schröder, Chancellor of Germany from 1998 to 2005. His father was a soldier, but killed in the World War II. Following his personal website, he grew up in poverty.

(2) Wealthy family (*Affluent*): Aristocrat, Businessman, Manufacturer, Entrepreneur, Noble Family, Planter.

- We coded a leader’s parent as a businessman only if he or she was a manager or in an executive position. We did not code him or her as businessman if he or she was a worker or clerk.

- We consider the size of the firm. If a political leader’s father owned relatively the small size of company or store, we do not code them into this category.

- If the recorded information states that a leader was born to a rich or a wealthy family, we code him or her as coming from a wealthy family.

- If the father had two or more occupations, we code all of them. If a leader lost their father at an early age, we code the mother’s occupation. Like our original dataset, the dataset created by Ellis, Horowitz, and Stam (2015, hereafter the LEAD dataset) also contains information about political leaders’ occupations and their fathers’ occupational backgrounds. However, the LEAD dataset does not focus on the *level of poverty* in political leaders’ childhoods. For example, wealthy farmers and poor farmers are both coded as farmers. Furthermore, the data does not consider whether a political leader lost his or her father during childhood. As mentioned above, according to his personal website, former German Prime Minister Gerhard Schröder’s father was killed in World War II when he was an infant and his family suffered from poverty in his youth (see Table A.1). The LEAD dataset does not capture this information; it simply codes his father was a soldier. While this is true, we need to compare the impact of material backgrounds on leaders’ social protection spending. We thus construct our own dataset for this purpose.

**A.2. Comparison between Our Data and that of Ellis, Horowitz and Stam (2015)**

Table A1. Comparison between Our Data and that of Ellis, Horowitz and Stam (2015)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Leader's name | Country | Year | Our data | Horowitz's data | Explanation | Source |
| César Gaviria | Colombia | 1990 | Middle Class | Missing | He was "born to a middle-class family…" | <https://www.nytimes.com/1990/05/29/world/man-in-the-news-cesar-gaviria-trujillo-colombian-on-the-spot.html> |
| Gonzalo Sanchez de Lozada | Bolivia | 1993 | Diplomat and Political Exile | General | His father was "a diplomat who was exiled from the country in the 1930s for ideas that were in opposition of the government." | <http://articles.chicagotribune.com/1994-06-16/sports/9406160054_1_marco-antonio-etcheverry-lozada-gonzalo-sanchez> |
| Ricardo Lagos Escobar | Chile | 2000 | Middle-Class Family | Farmer | He was "born to a middle-class family" and his father was a small landowner. | <https://www.nytimes.com/2000/01/18/world/man-ricardo-lagos-escobar-chilean-socialist-clinton-blair-mold.html> |
| Albert Reynolds | Ireland | 1992 | Coach Builder | Missing | "Albert Reynolds was born on 3 November 1932 in Rooskey, County Roscommon, where his father worked as a coach builder." | <https://www.bbc.co.uk/news/world-europe-27140625> |
| Otto Stich | Switzerland | 1988 | Mechanic | Missing | He is a son of Friedrich Otto, mechanic and communal councilor. | <http://www.hls-dhs-dss.ch/textes/f/F3083.php> |
| Gerhard Schröder | Germany | 1998 | Agricultural Worker | Military | "His father, a German soldier in the Wehrmacht, was killed in Romania in the Second World War while Gerhard was still an infant. He, his sister, and their three half-siblings grew up in poverty." | <http://gerhard-schroeder.de/en/biography/> |
| Fred Sinowatz | Austria | 1983 | Factory Worker | Government | "Sinowatz's parents were working class, Catholic and part of the small Croat minority." | <https://www.independent.co.uk/news/obituaries/fred-sinowatz-reluctant-chancellor-of-austria-922512.html> |
| Gyula Horn | Hungary | 1994 | Transport Worker | Civil Servant | "Horn was born into a working-class family in Budapest. His father was killed by the Gestapo during the German occupation of Hungary in 1944, so Horn had to work from an early age." | <https://www.theguardian.com/world/2013/jul/08/gyula-horn> |
| Yitzhak Shamir | Israel | 1983 | Affluent | Leatherwork | "Yitzhak Yezernitsky was born in Ruzinoy, Poland, on Oct. 15, 1915, to a relatively affluent family, most of which was later wiped out in the Holocaust. (His birth name was sometimes spelled Jazernicki.)" | <https://www.washingtonpost.com/local/obituaries/yitzhak-shamir-former-israeli-prime-minister-dies-at-96/2012/06/30/gJQA1s68DW_story.html?utm_term=.881cbae29d13> |
| Shimon Peres | Israel | 1984 | Merchant | Missing | "He was born Shimon Persky on Aug. 16, 1923, to a merchant family in the small village of Vishniewa, Poland. " | <https://www.nytimes.com/2016/09/28/world/middleeast/shimon-peres-dies-israel.html> |

**A.3. Descriptive Statistics**

Table A2. Descriptive Statistics

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Variable | Obs | Mean | Std. Dev. | Min | Max | Source |
| Social Protection(% Total Expenditure) | 1,264 | 24.201 | 15.391 | 0 | 57.55 | SPEED Database (IFPRI, 2015) |
| Economic Hardship | 1,264 | 0.178 | 0.383 | 0 | 1 | Authors |
| Affleunt | 1,264 | 0.132 | 0.339 | 0 | 1 | Authors |
| Political Constraints | 1,264 | 0.429 | 0.131 | 0 | 0.718 | POLCON Dataset (Henisz, 2017) |
| Lawyer | 1,264 | 0.244 | 0.429 | 0 | 1 | Authors |
| Military | 1,264 | 0.029 | 0.169 | 0 | 1 | Authors |
| Business | 1,264 | 0.079 | 0.270 | 0 | 1 | Authors |
| Blue-collar | 1,264 | 0.040 | 0.195 | 0 | 1 | Authors |
| GDP growth | 1,264 | 3.345 | 3.336 | -14.814 | 19.450 | World Bank |
| Log(GDPpc) | 1,264 | 8.903 | 1.413 | 5.187 | 11.647 | World Bank |
| Trade | 1,264 | 75.009 | 42.306 | 12.346 | 343.562 | World Bank |
| Dependency | 1,264 | 56.274 | 12.636 | 37.367 | 98.957 | World Bank |
| Left | 1,264 | 0.349 | 0.477 | 0 | 1 | DPI 2017(Cruz et al., 2018) |
| Polity2 | 1,264 | 8.876 | 1.611 | 2 | 10 | Polity IV(Marshall et al., 2014) |
| Log(Mean District Magnitude) | 1,264 | 1.671 | 1.331 | -0.105 | 6.109 | DPI 2017(Cruz et al., 2018) |
| Age | 1,264 | 57.778 | 9.301 | 35 | 83 | Archigos(Goemans et al., 2009) |
| Female | 1,264 | 0.093 | 0.290 | 0 | 1 | Archigos(Goemans et al., 2009) |
| College | 1,264 | 0.896 | 0.305 | 0 | 1 | Authors |
| Wartime Experience | 1,264 | 0.312 | 0.463 | 0 | 1 | Sarkees and Wayman, 2010 |
| Youth Growth | 966 | 1.435 | 1.313 | -4.732 | 6.101 | Maddison Project(Bolt et al., 2018) |
| Disposable Gini | 787 | 34.633 | 10.464 | 19.5 | 69.4 | UNU-WIDER, 2017 |
| Social Protection (% GDP) | 1,275 | 9.406 | 8.389 | 0 | 44.39 | SPEED Database (IFPRI, 2015) |

**A.4. List of Countries**

Table A3. List of Countries

|  |  |  |  |
| --- | --- | --- | --- |
| **Country** | **Years** | **Country** | **Years** |
| Albania | 1994 – 1995, 1997 – 1998, 2002 – 2010  | Kenya | 2002 – 2011  |
| Argentina | 1984 – 2009  | Korea, Rep. | 1988 – 2011  |
| Australia | 1980 – 2006 | Latvia | 1998 – 1999, 2007 – 2009  |
| Austria | 1980 – 2007  | Liberia | 2006 – 2011  |
| Bangladesh | 1991 – 2000  | Lithuania | 1996 – 2011  |
| Belgium | 1980 – 2009 | Luxembourg | 1980 – 2011 |
| Bolivia | 1997 – 2007  | Malawi | 2004 – 2011  |
| Botswana | 1980 – 2011 | Mauritius | 1980 – 2011  |
| Brazil | 1989 – 2011  | Mexico | 2000 – 2007  |
| Bulgaria | 2001 – 2009  | Moldova | 2008 – 2009 |
| Canada | 1980 – 2009 | Mongolia | 2009 – 2011  |
| Chile | 1990 – 2011  | Nepal | 2009 – 2011  |
| Colombia | 1991 – 2011 | Netherlands | 1980 – 2011 |
| Costa Rica | 1982 – 2011  | New Zealand | 1980 – 2011 |
| Croatia | 2000 – 2011  | Norway | 1980 – 1985, 1989 – 1995, 1997 – 2011  |
| Cyprus | 1986 – 2008 | Pakistan | 1988 – 1996, 2008 – 2011  |
| Czech Republic | 1993 – 2011  | Panama | 1999 – 2007  |
| Denmark | 1980 – 2011 | Papua New Guinea | 1980 – 1985, 1994 – 1997, 2002 – 2005 |
| Dominican Republic | 1982 – 1986, 1996 – 2000, 2004 – 2007  | Peru | 2003 – 2011  |
| Ecuador | 2003 – 2010  | Philippines | 1986 – 2011  |
| El Salvador | 1984 – 2009  | Poland | 1993 – 1995, 2005 – 2011  |
| Fiji | 1980 – 1986  | Portugal | 1989 – 2011  |
| Finland | 1980 – 2011 | Slovak Republic | 1995 – 2010  |
| Gambia | 1980 – 1990  | Slovenia | 1996 – 2008  |
| Georgia | 2004 – 2006  | South Africa | 1994 – 2011  |
| Germany | 1991 – 2011  | Spain | 1993 – 2011  |
| Ghana | 1997 – 2007  | Sri Lanka | 1991 – 2009  |
| Greece | 1980 – 2011 | Sweden | 1980 – 2011 |
| Guatemala | 1986 – 1993, 2000 – 2008  | Switzerland | 1981 – 1982, 1985 – 2011  |
| Hungary | 1992 – 2011  | Thailand | 1998 – 2005  |
| India | 1980 – 2007 | Trinidad and Tobago | 1980 – 1981, 1986 – 1991  |
| Indonesia | 1999 – 2007  | Turkey | 1995, 1999 – 2001, 2003 – 2011  |
| Ireland | 1981 – 2011 | Ukraine | 1998 – 2011  |
| Israel | 1980 – 2011 | United Kingdom | 1980 – 2011 |
| Italy | 1980 – 1992, 1993 – 2011 | United States | 1980 – 2011 |
| Jamaica | 1990 – 2011  | Uruguay | 1990 – 1995, 2000 – 2007  |
| Japan | 1980 – 2011 | Venezuela | 1998 – 2004 |

**A.5. Average Score of Political Constraints**

Table A4. Average Score of Political Constraints by Country

|  |  |  |  |
| --- | --- | --- | --- |
| Country | PoliticalConstraints | Country | PoliticalConstraints |
| Ecuador | 0.071 | Costa Rica | 0.413 |
| Liberia | 0.087 | Bangladesh | 0.421 |
| Georgia | 0.191 | Hungary | 0.428 |
| Botswana | 0.213 | Albania | 0.429 |
| Gambia | 0.213 | Argentina | 0.430 |
| Malawi | 0.221 | South Africa | 0.431 |
| Brazil | 0.258 | Canada | 0.435 |
| Panama | 0.277 | Ireland | 0.445 |
| Colombia | 0.293 | Germany | 0.445 |
| Indonesia | 0.305 | Spain | 0.454 |
| Sri Lanka | 0.315 | Nepal | 0.457 |
| Ghana | 0.317 | Switzerland | 0.462 |
| Philippines | 0.318 | Bulgaria | 0.469 |
| Fiji | 0.329 | Italy | 0.472 |
| Mauritius | 0.329 | Austria | 0.481 |
| Mongolia | 0.333 | Thailand | 0.481 |
| Venezuela | 0.335 | Czech Republic | 0.483 |
| Mexico | 0.348 | Poland | 0.485 |
| Jamaica | 0.353 | India | 0.485 |
| Trinidad and Tobago | 0.357 | Sweden | 0.491 |
| Dominican Republic | 0.364 | Croatia | 0.495 |
| United Kingdom | 0.365 | Luxembourg | 0.497 |
| El Salvador | 0.370 | Australia | 0.500 |
| Greece | 0.374 | Norway | 0.504 |
| Cyprus | 0.381 | Peru | 0.506 |
| Moldova | 0.382 | Lithuania | 0.513 |
| Chile | 0.391 | Papua New Guinea | 0.528 |
| New Zealand | 0.391 | Slovak Republic | 0.533 |
| Portugal | 0.392 | Denmark | 0.534 |
| Turkey | 0.395 | Israel | 0.535 |
| Uruguay | 0.400 | Finland | 0.538 |
| United States | 0.402 | Japan | 0.544 |
| Guatemala | 0.403 | Slovenia | 0.546 |
| Pakistan | 0.405 | Bolivia | 0.560 |
| Kenya | 0.406 | Latvia | 0.569 |
| Ukraine | 0.410 | Netherlands | 0.590 |
| Korea, Rep | 0.413 | Belgium | 0.701 |

**A.6. Robustness Check for the Effects of Economic Hardship on Social Protection Expenditures**

Table A5. Model Including Both Democratic and Autocratic Countries

|  |  |
| --- | --- |
|   | Social Protection(% Total Expenditures) |
|   | (A1) | (A2) |
| Economic Hardship | 1.158\*\*\* | 2.770\*\*\* |
|  | (0.442) | (0.939) |
| Affluent | -0.550 | -3.131\*\* |
|  | (0.475) | (1.233) |
| Political Constraints | -2.531\* | -2.129 |
|  | (1.501) | (1.770) |
| Economic Hardship × Constraints |  | -3.569\* |
|  | (1.936) |
| Affluent × Constraints |  | 5.960\*\* |
|  | (2.601) |
| Lawyer | 0.088 | 0.133 |
|  | (0.354) | (0.354) |
| Military | -1.631\*\*\* | -1.595\*\*\* |
|  | (0.608) | (0.606) |
| Business | -0.244 | -0.284 |
|  | (0.607) | (0.610) |
| Blue Collar | -0.740 | -0.589 |
|  | (1.022) | (1.020) |
| GDP Growth | 0.026 | 0.027 |
|  | (0.038) | (0.037) |
| GDPpc (Logged) | 2.047\*\*\* | 2.052\*\*\* |
|  | (0.641) | (0.641) |
| Trade | -0.007 | -0.008 |
|  | (0.007) | (0.007) |
| Dependency | -0.026 | -0.024 |
|  | (0.024) | (0.026) |
| Left | 0.926\*\* | 0.966\*\*\* |
|  | (0.372) | (0.373) |
| Polity2 | 0.056 | 0.067 |
|  | (0.072) | (0.072) |
| Mean District Magnitude (Logged) | 0.274 | 0.245 |
| (0.253) | (0.255) |
| Constant | 29.226\*\*\* | 28.711\*\*\* |
|  | (6.496) | (6.471) |
| N | 1,725 | 1,725 |
| Countries | 105 | 104 |
| R-sq | 0.908 | 0.908 |

Note: All models are estimates with OLS regression and panel-corrected standard errors shown in parentheses. All models estimate the level of social protection spending. Country and year fixed effects are included. \* p<0.1, \*\* p<0.05, \*\*\* p<0.01

Table A6. Model Specifications without Control Variables

|  |  |
| --- | --- |
|   | Social Protection(% Total Expenditures) |
|  | (A3) | (A4) |
| Economic Hardship | 1.261\*\*\* | 4.698\*\*\* |
|  | (0.450) | (1.185)  |
| Affluent | -0.099 | -2.778  |
|  | (0.455) | (1.758)  |
| Political Constraints | -5.025\*\* | -5.348\*\*  |
|  | (2.177) | (2.361)  |
| Economic Hardship× Political Constraints  |  | -7.147\*\*\* |
|  | (2.571)  |
| Affluent  |  | 5.939\*  |
| × Political Constraints |  | (3.530)  |
| Constant | 48.438\*\*\* | 48.514\*\*\* |
|  | (1.216) | (1.276)  |
| N | 1264 | 1264  |
| Countries | 74 | 74 |
| R-sq | 0.912 | 0.913  |

Note: All models are estimates with OLS regression and panel-corrected standard errors shown in parentheses. All models estimate the level of social protection spending. Country and year fixed effects are included. \* p<0.1, \*\* p<0.05, \*\*\* p<0.01

Table A7. Model Including Only Economic Hardship

|  |  |
| --- | --- |
|   | Social Protection(% Total Expenditures) |
|   | (A5) | (A6) |
| Economic Hardship | 1.395\*\*\* | 5.855\*\*\* |
|  | (0.447) | (1.466) |
| Political Constraints | -4.855\*\* | -4.435\*\* |
|  | (2.185) | (2.191) |
| Economic Hardship × Constraints |  | -9.271\*\*\* |
|  | (3.105) |
| Lawyer | 0.027 | 0.116 |
|  | (0.371) | (0.374) |
| Military | -0.532 | -0.141 |
|  | (0.675) | (0.692) |
| Business | 0.144 | 0.162 |
|  | (0.607) | (0.605) |
| Blue Collar | -0.536 | -0.345 |
|  | (1.077) | (1.082) |
| GDP Growth | 0.049 | 0.044 |
|  | (0.060) | (0.060) |
| GDPpc (Logged) | 1.883\*\* | 1.838\*\* |
|  | (0.921) | (0.917) |
| Trade | -0.019\*\* | -0.020\*\* |
|  | (0.009) | (0.009) |
| Dependency | 0.008 | -0.024 |
|  | (0.033) | (0.036) |
| Left | 0.423 | 0.404 |
|  | (0.374) | (0.372) |
| Polity2 | 0.132 | 0.197 |
|  | (0.206) | (0.211) |
| Mean District Magnitude (Logged) | 0.542 | 0.495 |
| (0.360) | (0.365) |
| Constant | 28.632\*\*\* | 29.890\*\*\* |
|  | (9.874) | (9.845) |
| N | 1264 | 1264 |
| Countries | 74 | 74 |
| R-sq | 0.913 | 0.914 |

Note: All models are estimates with OLS regression and panel-corrected standard errors shown in parentheses. All models estimate the level of social protection spending. Country and year fixed effects are included. \* p<0.1, \*\* p<0.05, \*\*\* p<0.01

Table A8. Estimations Addressing Endogeneity Problems

|  |  |  |  |
| --- | --- | --- | --- |
|   | Omitting the 191 cases that experienced a decrease in social protection | Omitting the 314 cases that experienced a recession  | Omitting the 79 cases that substantively increased inequality |
|   | (A7) | (A8) | (A9) | (A10) | (A11) | (A12) |
| Economic Hardship | 1.629\*\*\* | 7.913\*\*\* | 1.587\*\*\* | 3.848\*\* | 1.586\*\*\* | 4.351\*\*\* |
|  | (0.525) | (1.769) | (0.566) | (1.665) | (0.496) | (1.420) |
| Affluent | -0.094 | -3.719\* | -0.098 | -0.168 | 0.009 | -1.178 |
|  | (0.614) | (2.204) | (0.570) | (2.187) | (0.518) | (1.671) |
| Political Constraints | -7.135\*\*\* | -7.546\*\*\* | -3.405 | -3.264 | -3.676\*\* | -3.781\* |
|  | (1.993) | (2.217) | (2.357) | (2.528) | (1.859) | (2.005) |
| Economic Hardship × Constraints |  | -13.601\*\*\* |  | -4.779 |  | -5.733\* |
|  | (4.013) |  | (3.655) |  | (2.967) |
| Affluent × Constraints |  | 8.398\* |  | 0.195 |  | 2.724 |
|  | (4.490) |  | (4.542) |  | (3.482) |
| Lawyer | -0.746\* | -0.642 | 0.322 | 0.425 | 0.346 | 0.434 |
|  | (0.395) | (0.391) | (0.464) | (0.473) | (0.395) | (0.399) |
| Military | 0.190 | 0.860 | -0.488 | -0.285 | -0.362 | -0.089 |
|  | (0.790) | (0.821) | (0.685) | (0.705) | (0.668) | (0.687) |
| Business | -0.666 | -0.580 | 1.112 | 1.205 | 0.752 | 0.747 |
|  | (0.725) | (0.721) | (0.781) | (0.787) | (0.601) | (0.601) |
| Blue Collar | -3.437\*\* | -2.702\* | -0.967 | -0.956 | -0.695 | -0.472 |
|  | (1.474) | (1.427) | (1.383) | (1.386) | (0.891) | (0.906) |
| GDP Growth | 0.055 | 0.046 | -0.019 | -0.021 | 0.044 | 0.041 |
|  | (0.065) | (0.065) | (0.069) | (0.069) | (0.059) | (0.059) |
| GDPpc (Logged) | 2.336\*\* | 2.242\*\* | 4.484\*\*\* | 4.426\*\*\* | 1.631\* | 1.637\* |
|  | (0.961) | (0.949) | (1.196) | (1.197) | (0.882) | (0.880) |
| Trade | -0.034\*\*\* | -0.037\*\*\* | -0.007 | -0.008 | -0.020\*\* | -0.021\*\* |
|  | (0.010) | (0.010) | (0.010) | (0.010) | (0.009) | (0.009) |
| Dependency | 0.086\*\* | 0.047 | 0.035 | 0.008 | 0.042 | 0.021 |
|  | (0.035) | (0.038) | (0.041) | (0.049) | (0.031) | (0.035) |
| Left | 0.841\*\* | 0.846\*\* | -0.114 | -0.143 | 0.135 | 0.126 |
|  | (0.409) | (0.405) | (0.457) | (0.456) | (0.397) | (0.396) |
| Polity2 | 0.516\*\* | 0.602\*\* | -0.265 | -0.234 | 0.134 | 0.161 |
|  | (0.228) | (0.240) | (0.209) | (0.217) | (0.199) | (0.204) |
| Mean District Magnitude (Logged) | 0.934\*\* | 0.919\*\* | 0.617 | 0.623 | 0.527 | 0.496 |
| (0.436) | (0.441) | (0.568) | (0.570) | (0.369) | (0.373) |
| Constant | 17.296\* | 19.499\* | 4.858 | 6.380 | 28.607\*\*\* | 29.417\*\*\* |
|  | (10.484) | (10.391) | (12.457) | (12.497) | (9.307) | (9.318) |
| N | 1,073 | 1073 | 950 | 950 | 1,185 | 1,185 |
| Countries | 72 | 72 | 72 | 72 | 74 | 74 |
| R-sq | 0.920 | 0.921 | 0.917 | 0.917 | 0.919 | 0.920 |

Note: All models are estimates with OLS regression and panel-corrected standard errors shown in parentheses. All models estimate the level of social protection spending. Country and year fixed effects are included. \* p<0.1, \*\* p<0.05, \*\*\* p<0.01

Table A9. Model Excluding Left Partisanship and Blue-collar Occupational Background

|  |  |  |
| --- | --- | --- |
|   | Left PartisanshipExcluded | Blue-collarExcluded |
|   | (A13) | (A14) | (A15) | (A16) |
| Economic Hardship | 0.479 | 5.259\*\*\* | 1.618\*\*\* | 3.538\*\* |
|  | (0.719) | (1.890) | (0.493) | (1.414) |
| Affluent | -0.773 | -2.312 | -0.594 | -3.197\* |
|  | (0.521) | (1.724) | (0.554) | (1.804) |
| Political Constraints | -6.875\*\*\* | -6.788\*\*\* | -6.536\*\*\* | -7.184\*\*\* |
|  | (2.119) | (2.417) | (1.750) | (1.953) |
| Economic Hardship × Constraints |  | -9.930\*\* |  | -4.075 |
|  | (4.031) |  | (3.117) |
| Affluent × Constraints |  | 3.438 |  | 5.960\* |
|  | (3.641) |  | (3.604) |
| Lawyer | -0.316 | -0.168 | 0.023 | 0.090 |
|  | (0.516) | (0.517) | (0.382) | (0.380) |
| Military | -0.708 | -0.431 | -0.658 | -0.429 |
|  | (0.748) | (0.748) | (0.687) | (0.703) |
| Business | 1.398\*\* | 1.419\*\* | 0.314 | 0.310 |
|  | (0.668) | (0.672) | (0.667) | (0.665) |
| Blue Collar | -4.598\*\*\* | -4.696\*\*\* |  |  |
|  | (1.440) | (1.452) |  |  |
| GDP Growth | -0.012 | -0.019 | 0.043 | 0.042 |
|  | (0.069) | (0.069) | (0.060) | (0.060) |
| GDPpc (Logged) | 2.348\*\* | 2.171\*\* | 1.878\*\* | 1.889\*\* |
|  | (1.017) | (1.004) | (0.926) | (0.922) |
| Trade | -0.020\* | -0.022\*\* | -0.021\*\* | -0.022\*\* |
|  | (0.011) | (0.010) | (0.009) | (0.009) |
| Dependency | 0.036 | -0.012 | 0.027 | 0.015 |
|  | (0.032) | (0.038) | (0.033) | (0.035) |
| Left |  |  | 0.400 | 0.403 |
|  |  |  | (0.380) | (0.381) |
| Polity2 | 0.585\*\* | 0.598\*\* | -0.023 | -0.017 |
|  | (0.262) | (0.265) | (0.198) | (0.204) |
| Mean District Magnitude (Logged) | 0.893\*\* | 0.818\* | 0.700\* | 0.683\* |
| (0.420) | (0.430) | (0.371) | (0.373) |
| Constant | 17.519 | 21.695\*\* | 29.812\*\*\* | 30.488\*\*\* |
|  | (10.965) | (10.835) | (9.991) | (9.990) |
| N | 823 | 823 | 1214 | 1214 |
| Countries | 71 | 71 | 74 | 74 |
| R-sq | 0.926 | 0.926 | 0.917 | 0.917 |

Note: All models are estimates with OLS regression and panel-corrected standard errors shown in parentheses. All models estimate the level of social protection spending. Country and year fixed effects are included. \* p<0.1, \*\* p<0.05, \*\*\* p<0.01

Table A10. Different Model Specifications

|  |  |  |  |
| --- | --- | --- | --- |
|   | Polity2 ≥ 6 | LDV Added | Social Protection(% GDP) |
|   | (A17) | (A18) | (A19) | (A20) | (A21) | (A22) |
| LDV |  |  | 0.754\*\*\* | 0.754\*\*\* |  |  |
|  |  |  | (0.028) | (0.028) |  |  |
| Economic Hardship | 1.137\*\* | 6.200\*\*\* | 0.398 | 1.970\*\* | 0.697\*\* | 5.131\*\*\* |
|  | (0.462) | (1.751) | (0.288) | (0.814) | (0.289) | (0.854) |
| Affluent | -0.387 | -3.044\* | -0.224 | 0.274 | 0.419 | -0.076 |
|  | (0.527) | (1.828) | (0.276) | (0.893) | (0.265) | (0.605) |
| Political Constraints | -3.466 | -3.652 | -1.320 | -1.039 | -2.737\*\*\* | -2.431\*\*\* |
|  | (2.208) | (2.403) | (1.136) | (1.247) | (0.683) | (0.719) |
| Economic Hardship × Political Constraints |  | -10.316\*\*\* |  | -3.287\*\* |  | -9.219\*\*\* |
|  | (3.657) |  | (1.590) |  | (1.726) |
| Affluent × Political Constraints |  | 6.109 |  | -1.129 |  | 1.139 |
|  | (3.764) |  | (1.889) |  | (1.268) |
| Lawyer | 0.345 | 0.461 | 0.192 | 0.218 | 0.176 | 0.267 |
|  | (0.391) | (0.392) | (0.201) | (0.203) | (0.184) | (0.185) |
| Military | -1.042 | -0.680 | 0.041 | 0.174 | 0.086 | 0.530\* |
|  | (0.734) | (0.735) | (0.450) | (0.458) | (0.272) | (0.313) |
| Business | 0.355 | 0.352 | 0.307 | 0.320 | 0.021 | 0.013 |
|  | (0.619) | (0.617) | (0.344) | (0.344) | (0.277) | (0.273) |
| Blue-collar | -0.528 | -0.170 | 0.121 | 0.140 | -0.605 | -0.387 |
|  | (1.108) | (1.113) | (0.419) | (0.429) | (0.408) | (0.379) |
| GDP Growth | 0.005 | 0.002 | -0.010 | -0.012 | -0.059\*\*\* | -0.067\*\*\* |
|  | (0.058) | (0.057) | (0.038) | (0.037) | (0.021) | (0.021) |
| GDPpc (Logged) | 2.181\*\* | 2.064\* | 0.670 | 0.657 | 0.103 | 0.073 |
|  | (1.068) | (1.064) | (0.546) | (0.546) | (0.348) | (0.342) |
| Trade | -0.023\*\* | -0.025\*\*\* | -0.008 | -0.008 | -0.004 | -0.005 |
|  | (0.009) | (0.009) | (0.005) | (0.005) | (0.004) | (0.004) |
| Dependency | 0.002 | -0.037 | -0.002 | -0.013 | -0.041\*\* | -0.071\*\*\* |
|  | (0.036) | (0.041) | (0.018) | (0.020) | (0.016) | (0.019) |
| Left | 0.430 | 0.464 | -0.006 | -0.016 | 0.631\*\*\* | 0.624\*\*\* |
|  | (0.382) | (0.382) | (0.214) | (0.214) | (0.201) | (0.198) |
| Polity2 | 0.147 | 0.170 | -0.010 | 0.018 | 0.377\*\*\* | 0.441\*\*\* |
|  | (0.315) | (0.325) | (0.118) | (0.121) | (0.081) | (0.086) |
| Mean District Magnitude (Logged) | 0.506 | 0.431 | -0.021 | -0.038 | 0.724\*\*\* | 0.675\*\*\* |
| (0.361) | (0.369) | (0.195) | (0.196) | (0.149) | (0.149) |
| Constant | 25.484\*\* | 28.490\*\* | 6.104 | 6.474 | 8.920\*\* | 10.032\*\*\* |
|  | (11.833) | (11.831) | (5.876) | (5.906) | (3.700) | (3.674) |
| N | 1,248 | 1,248 | 1,252 | 1,252 | 1,275 | 1,275 |
| Countries | 78 | 78 | 74 | 74 | 75 | 75 |
| R-sq | 0.909 | 0.910 | 0.969 | 0.969 | 0.930 | 0.932 |

Note: All models are estimates with OLS regression and panel-corrected standard errors shown in parentheses. All models estimate the level of social protection spending. Country and year fixed effects are included. \* p<0.1, \*\* p<0.05, \*\*\* p<0.01

Table A11. Error Correction Model

|  |  |
| --- | --- |
|   | ECM |
|   | (A23) | (A24) |
| LDV | -0.243\*\*\* | -0.243\*\*\* |
|  | (0.027) | (0.027) |
| Economic Hardship | 0.447 | 2.203\*\*\* |
|  | (0.291) | (0.829) |
| Affluent | -0.207 | 0.382 |
|  | (0.279) | (0.902) |
| Political Constraints  | -2.243\* | -1.915 |
|  | (1.252) | (1.357) |
| Economic Hardship  |  | -3.670\*\* |
| × Political Constraints |  | (1.613) |
| Affluent  |  | -1.335 |
| × Political Constraints |  | (1.910) |
| Lawyer | 0.153 | 0.181 |
|  | (0.202) | (0.204) |
| Military | -0.017 | 0.129 |
|  | (0.453) | (0.460) |
| Business | 0.255 | 0.269 |
|  | (0.346) | (0.346) |
| Blue-collar | 0.094 | 0.112 |
|  | (0.432) | (0.441) |
| GDP Growth | -0.067 | -0.073 |
|  | (0.049) | (0.049) |
| GDPpc (Logged) | 0.666 | 0.631 |
|  | (0.577) | (0.579) |
| Trade | -0.008 | -0.008 |
|  | (0.005) | (0.005) |
| Dependency | -0.003 | -0.017 |
|  | (0.018) | (0.020) |
| Left | 0.087 | 0.082 |
|  | (0.238) | (0.238) |
| Polity2 | -0.080 | -0.048 |
|  | (0.128) | (0.130) |
| Mean District Magnitude (Logged) | 0.002 | -0.014 |
|  | (0.193) | (0.194) |
| ∆ Political Constraints | -1.989 | -1.972 |
|  | (1.346) | (1.347) |
| ∆ GDP Growth | -0.068\* | -0.073\* |
|  | (0.040) | (0.040) |
| ∆ Log(GDPpc) | 1.148 | 1.147 |
|  | (1.140) | (1.138) |
| ∆ Trade | -0.002 | -0.002 |
|  | (0.012) | (0.012) |
| ∆ Dependency | -0.129 | -0.131 |
|  | (0.165) | (0.167) |
| ∆ Left | 0.344 | 0.362 |
|  | (0.316) | (0.315) |
| ∆ Polity2 | -0.252 | -0.250 |
|  | (0.261) | (0.261) |
| ∆ Log (District Magnitude) | 0.300 | 0.325 |
|  | (0.484) | (0.486) |
| Constant | 7.212 | 7.836 |
|  | (6.151) | (6.197) |
| N | 1,249 | 1,249 |
| Countries | 74 | 74 |
| R-sq | 0.228 | 0.230 |

Note: All models are estimates with OLS regression and panel-corrected standard errors shown in parentheses. Country and year fixed effects are included. \* p<0.1, \*\* p<0.05, \*\*\* p<0.01

Table A12. Models Excluding Cases with Extremely Low and High Political Constraints

|  |  |  |
| --- | --- | --- |
|   | 5th Percentile | 10th Percentile |
|   | (A25) | (A26) | (A27) | (A28) |
| Economic Hardship | 1.288\*\* | 8.966\*\*\* | 1.313\*\*\* | 8.587\*\*\* |
|  | (0.505) | (2.197) | (0.484) | (2.726) |
| Affluent | -0.629 | -2.247 | -0.493 | -1.730 |
|  | (0.540) | (2.125) | (0.516) | (2.176) |
| Political Constraints  | -11.956\*\*\* | -11.892\*\*\* | -10.583\*\*\* | -10.285\*\*\* |
|  | (2.132) | (2.416) | (2.703) | (3.030) |
| Economic Hardship  |  | -16.610\*\*\* |  | -15.653\*\*\* |
| × Political Constraints |  | (4.790) |  | (5.701) |
| Affluent  |  | 3.921 |  | 2.900 |
| × Political Constraints |  | (4.337) |  | (4.542) |
| Lawyer | -0.059 | -0.093 | 0.093 | 0.033 |
|  | (0.389) | (0.391) | (0.397) | (0.403) |
| Military | -0.316 | 0.155 | -1.016 | -0.569 |
|  | (0.816) | (0.830) | (0.873) | (0.898) |
| Business | 0.432 | 0.500 | 1.509\*\* | 1.489\*\* |
|  | (0.687) | (0.683) | (0.624) | (0.624) |
| Blue-collar | -2.469\*\*\* | -1.887\*\* | -1.032 | -0.704 |
|  | (0.943) | (0.906) | (0.830) | (0.832) |
| GDP Growth | 0.069 | 0.052 | 0.139\*\* | 0.133\*\* |
|  | (0.061) | (0.061) | (0.058) | (0.058) |
| GDPpc (Logged) | 2.344\*\* | 2.424\*\*\* | 2.540\*\*\* | 2.696\*\*\* |
|  | (0.913) | (0.902) | (0.962) | (0.957) |
| Trade | -0.021\* | -0.024\*\* | -0.026\*\* | -0.027\*\* |
|  | (0.011) | (0.011) | (0.011) | (0.011) |
| Dependency | 0.052 | 0.017 | 0.056 | 0.041 |
|  | (0.035) | (0.037) | (0.035) | (0.036) |
| Left | 0.069 | 0.110 | -0.146 | -0.087 |
|  | (0.382) | (0.382) | (0.368) | (0.368) |
| Polity2 | 0.098 | 0.172 | 0.100 | 0.137 |
|  | (0.207) | (0.210) | (0.205) | (0.204) |
| Mean District Magnitude (Logged) | 0.551 | 0.515 | 0.446 | 0.422 |
|  | (0.433) | (0.437) | (0.434) | (0.436) |
| Constant | 24.508\*\* | 24.730\*\* | 21.514\*\* | 20.255\* |
|  | (10.025) | (9.896) | (10.477) | (10.397) |
| N | 1134 | 1134 | 1025 | 1025 |
| Countries | 71 | 71 | 70 | 70 |
| R-sq | 0.919 | 0.920 | 0.932 | 0.932 |

Note: All models are estimates with OLS regression and panel-corrected standard errors shown in parentheses. All models estimate the level of social protection spending. I include observations only with the length of the electoral cycle between 5th and 95th percentiles (Models A25 and A26), 10th and 90th percentiles (Models A27 and A28). Country and year fixed effects are included. \* p<0.1, \*\* p<0.05, \*\*\* p<0.01

**A.7. Marginal Effect Plots**

Figure A2. Marginal Effect Plot based on Coefficient Estimates in Model 4 (Added Leader-level Factors)



Note: This plot is generated using coefficient estimates from Model 4 of Table 2. This figure shows the marginal effect of economic hardship on levels of social protection spending by changes in political constraints. Dashed lines indicate 95% confidence intervals.

Figure A3. Marginal Effect Plot based on Coefficient Estimates in Model 6 (Disposable Gini)



Note: This plot is generated using coefficient estimates from Model 6 of Table 2. This figure shows the marginal effect of economic hardship on levels of social protection spending by changes in political constraints. Dashed lines indicate 95% confidence intervals.

Figure A4. Marginal Effect Plot based on Coefficient Estimates in Model 8 (Leader Level Analysis)



Note: This plot is generated using coefficient estimates from Model 8 of Table 2. This figure shows the marginal effect of economic hardship on levels of social protection spending by changes in political constraints. Dashed lines indicate 95% confidence intervals.

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1. We justify this classification by comparing the annual mean wages of different occupations in the United States, which were $27,810 for workers in farming, fishing, and forestry occupations in 2016 and $118,020 for management occupations (Bureau of Labor Statistics (March 31, 2017). May 2016 US National Occupational Employment and Wage Estimates. Retrieved March 8, 2018, from https://www.bls.gov/oes/2016/may/oes\_nat.htm.) [↑](#footnote-ref-1)