**APPENDIX: INDICATORS USED TO CONSTRUCT DISCRIMINATION INDEXES**

The 29 indicators used to construct our discrimination measures are provided below. The full discrimination measure used in Table 2 is an additive index that includes values for all 29 indicators. Below are the indicators used to construct the measure of discrimination targeting minority religious institutions and clergy used in Table 3 and the measure of other forms of discrimination against religious minorities in Table 4, respectively (prefixes used to identify each indicator in the Religion and State-Minorities dataset are also provided):

**Discrimination against Minority Religious Institutions and Clergy (Table 3)**

MM03: Restrictions on building, leasing, repairing and/or maintaining places of worship. MM04: Restrictions on access to existing places of worship.

MM06: Restrictions on formal religious organizations. MM07: Restrictions on the running of religious schools and/or religious education in general.

MM17: Restrictions on the ordination of and/or access to clergy.

MM25: Requirement for minority religions (as opposed to all religions) to register in order to be legal or receive special tax status.

MM27: Restricted access of minority clergy to hospitals, jails, military bases, and other places a chaplain may be needed in comparison to chaplains of the majority religion.

**Discrimination against All Members of Religious Minorities, Excluding Religious Institutions and Clergy (Table 4)**

MM01: Restrictions on public observance of religious services, festivals and/or holidays, including the Sabbath.

MM02: Restrictions on the private observance of religious services, festivals and/or holidays, including the Sabbath.

MM05: Forced observance of religious laws of another group

MM08: Restrictions on the ability to make and/or obtain materials necessary for religious rites, customs, and/or ceremonies.

MM09: Mandatory education in the majority religion.

MM10: Arrest, continued detention, or severe official harassment of religious figures, officials, and/or members of religious parties for activities other than proselytizing.

MM11: State surveillance of minority religious activities not placed on the activities of the majority.

MM12: Restrictions on the ability to write, publish, or disseminate religious publications.

MM13: Restrictions on the ability to import religious publications.

MM14: Restrictions on access to religious publications for personal use.

MM15: Restrictions on the observance of religious laws concerning personal status, including marriage, divorce, and burial.

MM16: Restrictions on the wearing of religious symbols or clothing. This includes the presence or absence of facial hair.

MM18: Restrictions on conversion to minority religions.

MM19: Forced renunciation of faith by recent converts to minority religions.

MM20: Forced conversions of people who were never members of the majority religion.

MM21: Efforts or campaigns to convert members of minority religions to the majority religion which fall short of using force.

MM22: Restrictions on proselytizing by permanent residents of state to members of the majority religion.

MM23: Restrictions on proselytizing by permanent residents of state to members of minority religions.

MM26: Custody of children granted to members of majority group solely or in part on the basis of religious affiliation or beliefs.

MM28: There is a legal provision or policy of declaring some minority religions dangerous or extremist sects.

MM29: Anti-religious propaganda in official or semi-official government publications.

MM30: Restrictions on other types of observance of religious law.

**NOTES ON CHOICE OF ESTIMATOR**

The mixed-effects mixed-distribution model we use in this analysis is warranted for two major reasons. First, the nested structure of our data requires multilevel modeling (Bryk and Raudenbush 1992). Because multiple religious minority groups come from the same country (an average of 3.1 minority groups per country), single-level regression models would likely yield biased estimates due to non-independent errors (Rabe-Hesketh and Skrondal 2008, 51). Second, mixed-distribution models are helpful due to the large number of minority religious groups that scored zero on our measures of discrimination. Our coding found no reported discrimination and assigned a value of 0 for 38% of the 477 groups we analyzed received. For the index measuring discrimination aimed at their clergy and formal institutions 52% received a score of zero and for the final index of discrimination 55% received a zero. This creates two large populations in our data: those groups that face some level of discrimination by the state and those that do not.

Similar to the single-level two-part model described by Duan et al. (1984, 286), the mixed-effects mixed-distribution model differs from the commonly-used Heckman (1979) selection model in that calculating the correlation of the two equations' error terms at the minority level is not necessary or relevant for model estimation or interpretation. Moreover, we argue that the selection process implied in use of the Heckman model is not applicable to governments' decisions to discriminate against minority groups. A key assumption of the Heckman model is that certain cases in the sample have an unobserved value on the dependent variable due to the influence of additional criteria not assumed to influence otherwise positive values on that variable (e.g., earning zero wages can be explained by accounting for whether or not people participated in the labor market) (Heckman 1979, 153). We do not assume that a selection mechanism operates in the present case; rather, we expect the relationships we propose to be present in both equations. In addition, our approach is superior to methods such as zero-inflated Poisson or negative binomial regression in this instance, since our dependent variables capture differences in the severity of discrimination faced by minority groups rather than a count of the discriminatory policies they face (which the Poisson and negative binomial models assume).

**NOTES ON ROBUSTNESS OF ANALYSIS**

To assess the robustness of our findings, we also estimated identical models using data from the years 2003 and 2005, the two most recent years in which data on the government favoritism and social restrictions indexes are available from the Association of Religion Data Archives’ collection prior to 2008. All significant effects for measures testing our four propositions in 2008 were significant for at least one and usually both prior years of data.

**REPLICATING RESULTS USING 2005 AND 2003 DATA**

The tables below replicate the six models reported in Tables 2–4 using data from 2005 and 2003. Overall, the replications show little change. The relationships are slightly weaker for religious favoritism in model 5, but the final conclusions remain unchanged.

**REFERENCES**

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**Table 1.** Modeling discrimination against religious minorities, 2005

**Model One-A Model Two-A**

**Presence of Level of Presence of Level of**

**Discrimination Discrimination Discrimination Discrimination**

**Traits of Country**

Judicial independence (de facto) -4.251\* -1.566\*\*\* -4.173\* -1.438\*\*\*

(1.776) (0.461) (1.835) (0.500)

Free and fair elections -0.613 -0.427\* -0.750 -0.490\*

(0.640) (0.195) (0.651) (0.192)

Government effectiveness -0.325 0.275 -0.387 0.227

(0.664) (0.168) (0.676) (0.177)

Current or former Communist state 0.612 0.450\*\* 0.844 0.517\*\*

(0.636) (0.170) (0.663) (0.180)

Regime durability 0.176 0.025 0.155 0.021

(square-root transformed) (0.149) (0.039) (0.150) (0.039)

Social restrictions index 0.073 0.099\*\* 0.128 0.109\*\*\*

(0.107) (0.033) (0.108) (0.033)

Religious favoritism index 0.335\*\* 0.079\*

(0.134) (0.040)

Official state religion 1.092 0.266

(0.830) (0.177)

Religious homogeneity index 4.291\*\* 0.445 4.962\*\* 0.518

(1.571) (0.364) (1.640) (0.373)

National population (logged) 0.346 0.056 0.373† 0.064

(0.216) (0.056) (0.220) (0.057)

Per capita GDP (logged) 0.706† 0.082 0.897\* 0.125

(0.377) (0.091) (0.387) (0.089)

**Traits of Minority**

Group belongs to different religious 1.542† 0.321 1.541† 0.324

tradition than national majority (0.883) (0.204) (0.897) (0.206)

Minority group size (as percentage of -0.020 -0.001 -0.020 -0.001

national population) (0.028) (0.008) (0.028) (0.008)

**Minority group (Reference = Christian)**

Muslim -0.157 -0.319\* -0.158 -0.315

(0.790) (0.202) (0.810) (0.204)

Animist -1.385 -0.497† -1.346 -0.493†

(1.044) (0.280) (1.047) (0.282)

Other -1.813† -0.317-1.813† -0.322

(0.950) (0.230) (0.971) (0.234)

Intercept -11.001 -0.625 -11.625\* -0.803

Standard deviation (country) 2.507 0.701 2.570 0.710

Standard deviation (residual) 1 0.524 1 0.523

\*\*\**p* < 0.001; \*\**p* < 0.01; \**p* < 0.05; †*p* < 0.10. Results from equations estimating presence of discrimination provided as probit coefficients, and results from equations estimating log-transformed level of discrimination provided as OLS regression coefficients. Standard errors provided in parentheses. *N* (Minorities) = 477 in 155 countries.

**Table 2.**  Modeling discrimination against minority religious institutions and clergy, 2005

**Model Three-A Model Four-A**

**Presence of Level of Presence of Level of**

**Discrimination Discrimination Discrimination Discrimination**

**Traits of Country**

Judicial independence (de facto) -3.182\* -0.535 -3.190\* -0.423

(1.417) (0.332) (1.608) (0.361)

Free and fair elections -0.449 -0.157 -0.579 -0.221

(0.575) (0.145) (0.606) (0.143)

Government effectiveness -0.418 0.022 -0.447 -0.024

(0.551) (0.118) (0.586) (0.126)

Current or former Communist state 1.327\* 0.480\*\*\* 1.461\* 0.527\*\*\*

(0.558) (0.123) (0.593) (0.129)

Regime durability 0.160 0.039 0.150 0.034

(square-root transformed) (0.124) (0.027) (0.134) (0.027)

Social restrictions index -0.001 0.040† 0.030 0.045\*

(0.091) (0.022) (0.093) (0.022)

Religious favoritism index 0.201† 0.052†

(0.109) (0.028)

Official state religion 0.410 0.177

(0.728) (0.149)

Religious homogeneity index 5.109\*\*\* 0.203 5.589\*\*\* 0.252

(1.448) (0.271) (1.591) (0.280)

National population (logged) 0.289 0.029 0.308 0.037

(0.180) (0.040) (0.191) (0.041)

Per capita GDP (logged) 0.897\*\* 0.074 1.021\*\* 0.112†

(0.325) (0.067) (0.334) (0.065)

**Traits of Minority**

Group belongs to different religious 1.274† 0.027 1.263† 0.027

tradition than national majority (0.674) (0.142) (0.700) (0.144)

Minority group size (as percentage of -0.006 -0.005 -0.006 -0.005

national population) (0.024) (0.006) (0.025) (0.006)

**Minority group (Reference = Christian)**

Muslim -0.673 -0.135 -0.654 -0.130

(0.614) (0.145) (0.633) (0.146)

Animist -1.437† -0.225 -1.415 -0.220

(0.850) (0.213) (0.871) (0.214)

Other -1.282† -0.131-1.263-0.136

(0.744) (0.160) (0.789) (0.164)

Intercept -12.980\*\*\* -0.719 -13.476\*\*\* -0.922

Standard deviation (country) 2.123 0.449 2.083 0.451

Standard deviation (residual) 1 0.369 1 0.370

\*\*\**p* < 0.001; \*\**p* < 0.01; \**p* < 0.05; †*p* < 0.10. Results from equations estimating presence of discrimination provided as probit coefficients, and results from equations estimating log-transformed level of discrimination provided as OLS regression coefficients. Standard errors provided in parentheses. *N* (Minorities) = 477 in 155 countries.

**Table 3.** Modeling discrimination against all members of religious minorities, 2005 (excludes discrimination targeted at institutions and clergy)

**Model Five-A Model Six-A**

**Presence of Level of Presence of Level of**

**Discrimination Discrimination Discrimination Discrimination**

**Traits of Country**

Judicial independence (de facto) -3.821\*\* -2.057\*\*\* -3.796\*\* -2.151\*\*\*

(1.392) (0.449) (1.451) (0.515)

Free and fair elections -0.381 -0.750\*\*\* -0.482 -0.783\*\*\*

(0.524) (0.202) (0.526) (0.198)

Government effectiveness 0.736 0.259 0.700 0.276

(0.523) (0.174) (0.532) (0.184)

Current or former Communist state 0.412 0.233 0.510 0.211

(0.497) (0.168) (0.515) (0.184)

Regime durability 0.023 0.006 0.015 0.003

(square root transformed) (0.116) (0.037) (0.116) (0.037)

Social restrictions index 0.261\*\* 0.051 0.294\*\* 0.058

(0.092) (0.036) (0.093) (0.036)

Religious favoritism index 0.198† 0.026

(0.107) (0.043)

Official state religion 0.456 -0.044

(0.634) (0.239)

Religious homogeneity index 1.767† 0.287 2.025† 0.367

(1.040) (0.352) (1.065) (0.372)

National population (logged) 0.218 0.104\* 0.234 0.101†

(0.166) (0.052) (0.167) (0.053)

Per capita GDP (logged) 0.068 0.075 0.174 0.094

(0.267) (0.090) (0.264) (0.088)

**Traits of Minority**

Group belongs to different religious 1.336\* 0.200 1.344\* 0.204

tradition than national majority (0.644) (0.204) (0.647) (0.205)

Minority group size (as percentage of 0.003 -0.009 0.003 -0.008

national population) (0.022) (0.009) (0.022) (0.009)

**Minority group (Reference = Christian)**

Muslim -0.187 -0.262 -0.182 -0.261

(0.585) (0.195) (0.589) (0.196)

Animist -1.360† -0.408 -1.341† -0.408

(0.816) (0.307) (0.811) (0.308)

Other -1.260† -0.305-1.270† -0.303

(0.718) (0.217) (0.726) (0.220)

Intercept -4.802 0.034 -5.046 0.062

Standard deviation (country) 2.001 0.555 2.024 0.560

Standard deviation (residual) 1 0.533 1 0.532

\*\*\**p* < 0.001; \*\**p* < 0.01; \**p* < 0.05; †*p* < 0.10. Results from equations estimating presence of discrimination provided as probit coefficients, and results from equations estimating log-transformed level of discrimination provided as OLS regression coefficients. Standard errors provided in parentheses. *N* (Minorities) = 477 in 155 countries.

**Table 4.** Modeling discrimination against religious minorities, 2003

**Model One-B Model Two-B**

**Presence of Level of Presence of Level of**

**Discrimination Discrimination Discrimination Discrimination**

**Traits of Country**

Judicial independence (de facto) -4.911\* -0.950\*\*\* -4.747\*\* -0.778

(1.715) (0.457) (1.757) (0.480)

Free and fair elections -0.556 -0.163 -0.269 -0.157

(0.606) (0.176) (0.611) (0.177)

Government effectiveness -0.165 -0.026 -0.318 -0.094

(0.638) (0.168) (0.650) (0.173)

Current or former Communist state 0.644 0.581\*\*\* 0.786 0.654\*\*\*

(0.557) (0.154) (0.583) (0.160)

Regime durability 0.285 0.040 0.203 0.026

(square-root transformed) (0.145) (0.035) (0.143) (0.035)

Social restrictions index 0.031 0.164\*\*\* 0.135 0.177\*\*\*

(0.096) (0.027) (0.094) (0.027)

Religious favoritism index 0.351\*\* 0.086\*

(0.111) (0.030)

Official state religion 1.398† 0.430\*

(0.781) (0.189)

Religious homogeneity index 2.853\* -0.088 3.470\*\* -0.041

(1.266) (0.328) (1.343) (0.339)

National population (logged) 0.365† 0.031 0.432\* 0.059

(0.188) (0.047) (0.196) (0.048)

Per capita GDP (logged) 0.602† 0.134 0.836\* 0.181\*

(0.335) (0.084) (0.350) (0.082)

**Traits of Minority**

Group belongs to different religious 1.317† 0.382\* 1.326† 0.371\*

tradition than national majority (0.768) (0.182) (0.799) (0.183)

Minority group size (as percentage of -0.025 -0.003 -0.024 -0.003

national population) (0.024) (0.008) (0.025) (0.008)

**Minority group (Reference = Christian)**

Muslim 0.036 -0.367\* 0.026 -0.359\*

(0.684) (0.180) (0.716) (0.181)

Animist -1.293 -0.511\* -1.236 -0.501\*

(0.908) (0.253) (0.932) (0.254)

Other -1.672\* -0.351† -1.666† -0.355†

(0.832) (0.206) (0.863) (0.208)

Intercept -9.252\* -1.253 -10.848\*\* -1.645†

Standard deviation (country) 2.195 0.613 2.304 0.621

Standard deviation (residual) 1 0.484 1 0.486

\*\*\**p* < 0.001; \*\**p* < 0.01; \**p* < 0.05; †*p* < 0.10. Results from equations estimating presence of discrimination provided as probit coefficients, and results from equations estimating log-transformed level of discrimination provided as OLS regression coefficients. Standard errors provided in parentheses. *N* (Minorities) = 474 in 153 countries.

**Table 5.** Modeling discrimination against minority religious institutions and clergy, 2003

**Model Three-B Model Four-B**

**Presence of Level of Presence of Level of**

**Discrimination Discrimination Discrimination Discrimination**

**Traits of Country**

Judicial independence (de facto) -3.185\* -0.289 -3.099† -0.303

(1.414) (0.359) (1.714) (0.388)

Free and fair elections -0.558 -0.055 -0.264 -0.036

(0.568) (0.140) (0.610) (0.144)

Government effectiveness -0.758 -0.143 -0.876 -0.162

(0.568) (0.128) (0.651) (0.137)

Current or former Communist state 1.411\*\* 0.583\*\*\* 1.538\*\* 0.620\*\*\*

(0.529) (0.121) (0.579) (0.129)

Regime durability 0.243\* 0.050† 0.174 0.039

(square-root transformed) (0.123) (0.026) (0.132) (0.027)

Social restrictions index -0.075 0.063\*\* 0.027 0.077\*\*\*

(0.086) (0.020) (0.087) (0.021)

Religious favoritism index 0.383\*\*\* 0.071\*\*

(0.106) (0.025)

Official state religion 1.252† 0.218

(0.729) (0.147)

Religious homogeneity index 2.790\* -0.077 3.568\*\*\* 0.073

(1.131) (0.267) (1.286) (0.275)

National population (logged) 0.296† 0.024 0.388\* 0.043

(0.160) (0.037) (0.180) (0.038)

Per capita GDP (logged) 0.876\*\* 0.142\* 1.098\*\*\* 0.184\*\*

(0.304) (0.064) (0.334) (0.065)

**Traits of Minority**

Group belongs to different religious 1.295\* 0.041 1.289† 0.032

tradition than national majority (0.660) (0.138) (0.714) (0.142)

Minority group size (as percentage of -0.017 -0.007 -0.016 -0.007

national population) (0.022) (0.006) (0.024) (0.006)

**Minority group (Reference = Christian)**

Muslim -0.784 -0.129 -0.770 -0.120

(0.609) (0.141) (0.660) (0.145)

Animist -1.718\* -0.177 -1.655† -0.174

(0.838) (0.205) (0.889) (0.210)

Other -1.524\* -0.130-1.510† -0.126

(0.751) (0.156) (0.837) (0.163)

Intercept -12.169\*\*\* -1.528\* -13.814\*\*\* -1.802\*

Standard deviation (country) 1.981 0.431 2.080 0.444

Standard deviation (residual) 1 0.366 1 0.367

\*\*\**p* < 0.001; \*\**p* < 0.01; \**p* < 0.05; †*p* < 0.10. Results from equations estimating presence of discrimination provided as probit coefficients, and results from equations estimating log-transformed level of discrimination provided as OLS regression coefficients. Standard errors provided in parentheses. *N* (Minorities) = 474 in 153 countries.

**Table 6.** Modeling discrimination against all members of religious minorities, 2003 (excludes discrimination targeted at institutions and clergy)

**Model Five-B Model Six-B**

**Presence of Level of Presence of Level of**

**Discrimination Discrimination Discrimination Discrimination**

**Traits of Country**

Judicial independence (de facto) -4.116\*\* -1.185\*\* -3.769\*\* -1.179\*

(1.419) (0.457) (1.436) (0.493)

Free and fair elections -0.121 -0.361\* -0.077 -0.369\*

(0.493) (0.178) (0.488) (0.178)

Government effectiveness 0.826 -0.202 0.726 -0.213

(0.540) (0.187) (0.542) (0.191)

Current or former Communist state 0.678 0.306† 0.779† 0.309†

(0.450) (0.157) (0.459) (0.169)

Regime durability 0.023 0.051 0.002 0.049

(square root transformed) (0.109) (0.035) (0.108) (0.035)

Social restrictions index 0.310\*\*\* 0.140\*\*\* 0.322\*\*\* 0.147\*\*\*

(0.086) (0.031) (0.083) (0.032)

Religious favoritism index 0.084 0.024

(0.083) (0.029)

Official state religion 0.749 0.049

(0.594) (0.220)

Religious homogeneity index 0.696 -0.181 0.606 -0.157

(0.952) (0.321) (0.959) (0.338)

National population (logged) 0.272† 0.066 0.301\* 0.071

(0.149) (0.044) (0.150) (0.045)

Per capita GDP (logged) 0.089 0.173\* 0.132 0.186\*

(0.255) (0.079) (0.250) (0.078)

**Traits of Minority**

Group belongs to different religious 0.985† 0.334† 0.993† 0.332†

tradition than national majority (0.573) (0.181) (0.577) (.182)

Minority group size (as percentage of -0.004 -0.008 -0.003 -0.008

national population) (0.020) (0.007) (0.020) (0.007)

**Minority group (Reference = Christian)**

Muslim -0.046 -0.284 -0.059 -0.281

(0.535) (0.179) (0.539) (0.176)

Animist -1.169 -0.425 -1.154 -0.427

(0.746) (0.273) (0.745) (0.273)

Other -1.059 -0.337† -1.077-0.337†

(0.651) (0.195) (0.658) (0.197)

Intercept -4.202 -1.253 -4.645† -1.313

Standard deviation (country) 1.781 0.472 1.780 0.474

Standard deviation (residual) 1 0.499 1 0.499

\*\*\**p* < 0.001; \*\**p* < 0.01; \**p* < 0.05; †*p* < 0.10. Results from equations estimating presence of discrimination provided as probit coefficients, and results from equations estimating log-transformed level of discrimination provided as OLS regression coefficients. Standard errors provided in parentheses. *N* (Minorities) = 474 in 153 countries.