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ISLAM AND DEMOCRACY*

Abstract

Several recent studies have reached opposite conclusions about whether Muslim countries are less democratic than non-Muslim countries. In this essay I show that in all but very poor countries, Islam is associated with fewer political rights. The various statistical experiments presented in this study also show that the results of others analysts depend primarily upon the countries in the sample and secondarily on the specification of the explanatory variables.

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Strong opinions abound about the relationship between Islam and democracy. Originally, writers on the topic focused on particular case studies which, by their nature, did not cover the entire Islamic world. With the availability of more data, some have tried to examine this issue using data for many countries in their samples and employing statistical techniques suitable for these cross-country comparisons. In recent years, four such conflicting empirical analyses of this issue have appeared.

Using standard regression techniques, Michael Ross (2001) and M. Steven Fish (2002) show in a cross-country analysis that Muslim countries have significantly lower scores on indices of democracy than non-Muslim countries. Daniela Donno and Bruce Russett (2004) present two sets of regressions, the main set yielding a similar conclusion, while another set taking cross-sections at different points in time shows mixed results. In contrast, Alfred Stepan and Graeme B. Robertson (2003) use a different statistical technique and show that in the developing world, differences in the level of democracy in Muslim and non-Muslim countries are not significantly different.

The purpose of this note is to explore whether these conflicting results are due to differences in the statistical techniques, the explanatory variables chosen, or the sample of countries that are selected. The weight of the evidence presented below suggests that in general, Islam is associated with fewer political rights.

My analysis has two steps. I first discuss some statistical issues, what variables should be included in the statistical analysis, and how they should be specified. Then I present a set of regressions which roughly replicate the major results of the four authors cited above, and reconcile the different results.

A. Statistical Methods

1. The Variable to Be Explained

The four studies under examination use two definitions of political democracy, namely the "political rights" variable of Freedom House (2006) and the "democracy" variable of the Polity IV dataset of Monte Marshall and Keith Jaggers (2006). Since both variables yield the same general conclusions in the above-cited studies, this study uses only the former variable since the Freedom House data set includes more countries. The seven point scale used by Freedom House is reversed for greater clarity so that it runs from one (very few political rights) to seven (very high political rights). Statistical experiments using Freedom House's "civil liberties" variable yielded the same general conclusions and, therefore, are not reported below.

2. The Model

Specification of the regression to explore the determinants of democracy plays a certain role in the statistical outcome of the issue under examination. Nevertheless, it is not the key explanation for the different results.

Ross (2001), Fish (2002), and Donno/Russett (2004) employ an ordinary least-squares (OLS) regression as their major statistical tool to test their hypothesis that Muslim countries are less democratic than other countries. Although Stepan/Robertson (2003) use another statistical approach to test their hypothesis that Muslim countries have the same degree of democracy as other countries, several of my OLS regressions following their sample and specification of explanatory variables (discussed in more detail below) also yield the same conclusion as the first

three. In brief, Stepan/Robertson's choice of technique is not the cause of their differences with the other investigators.

In addition to an OLS regression I also calculated weighted (by the logarithm of the population) regressions and obtained roughly the same general results. To keep the discussion short, I do not report these results. I also ran tests for heteroskedasticity and robustness of the regression approach, but they did not indicate anything amiss with the OLS approach.[1]

Several of the above-cited studies bring a time factor into the analysis in sophisticated ways since the degree of democracy has varied in most countries from year to year. Nevertheless, the same general conclusions about the impact of Islam of the various studies can be reached by calculating a cross-section regression for 2000, but measuring the degree of political rights as an average from 1990 through 2001.[2] I also recalculated the regressions using the percentage of Muslims in the population and the per capita GDP in 1970 to determine whether it is previous values of these two variables that determine the results, but this did not change the major conclusions. To highlight the major points of difference between the four studies in the simplest possible way, I present only my results using this averaging technique.

3. The Explanatory Variables

[1] It must be noted that serious problems of multicollinearity between the various explanatory variables also did not arise. With the exception of a correlation between the Arab dummy and the percentage of Muslims in the population and, for the richer nations, between the raw material export variable and the Muslim variable, the coefficients of determination between any two of the variables for all seven samples were less than 0.20 .

[2] I also calculated the regressions using an average of political rights variable over a five year period and obtained the same general results.

Although the regression studies under review all included a variable indicating the per capita GDP, I found it peculiar that several entered this variable in a linear fashion. Among the OECD countries, for instance, political rights are roughly at the same high level, even though in many cases these states have very different levels of per capita GDP. Following Donno/Russett and Ross, it seems more likely that the logarithm of per capita GDP would better describe the relationship between political rights and democracy; and a simple OLS regression between political rights and these two forms of the per capita GDP variable shows that the logarithmic formulation has a higher degree of explanatory power. I have, therefore, used this specification of per capita GDP in all of my regressions. Further, I distinguish between "very poor", "poor", and "richer" countries depending on whether in 2000 they had a per capita GDP less than 15 percent, less than 25 percent, and greater than 25 percent that of the U.S. in the same year.

With the exception of Lebanon, all states with an Arab culture are predominantly Muslim; but the reverse is not true. Because of the considerable cultural differences between the Arab and non-Arab Muslim states, some of the studies have chosen to distinguish them with the use of a dummy variable indicating if they have an Arab culture, and I follow this example. Nevertheless, as I show below, running the regressions with just the non-Arab countries yields the same general conclusion as the regressions with the dummy variable indicating an Arab culture.

Ross (2001) has a useful discussion about "rentier states," where the profits and rents from raw material exploitation form an important part of total property income. He argues that such rentier states are also less democratic and, in his regressions, includes a variable indicating exports of oil and also of metals and ores. I have included a single variable covering both types of exports as a percentage of total exports, averaging the results for twelve years. I also

experimented with a squared version of this variable to take non-linearities into account, but obtained roughly the same results.

Donno/Russett (2004) argue that war leads to an erosion of political rights and, for this reason, I have included in the regressions a variable indicating the sum of the fraction of years from 1990 through 2002 that a country was at war. Similarly they make the reasonable claim that former and present communist countries have less political rights and I have included dummy variables for both historical factors.

Finally, some analysts seem to believe that the country's population has an impact on democracy, and so I have included the logarithm of the population as another explanatory variable. As expected, in most cases this variable does not turns out to have much impact on the results.

Certain variables are not included in the regressions, and this matter deserves brief comment. Like others, I hypothesized that greater ethnic heterogeneity would be associated with less democratic rights, but in preliminary calculations the regression coefficients were not statistically significant and the variable was dropped in the final calculations. Other than a variable for Arab culture, I did not include any regional variables because the causal link between these variables and the democratic rights variable is unclear. By simply isolating countries which we know to have greater or fewer political rights biases the results. Some studies included variables indicating the size of government expenditures and taxes, but this raises the question of whether fewer political rights are a cause or effect of larger governments, other factors held constant. Only a multi-equation regression model can answer this question, but if larger governments are an effect of fewer democratic rights, this biases the results of a single equation model. Others have included a neighborhood variable, but this variable seemed dubious

since certain exceptions come immediately to mind. For instance, the political system of democratic Costa Rica does not seem greatly influenced by its less democratic neighbors, Nicaragua and Panama; nor do the political rights in Mexico seem greatly influenced by those in the U.S.[3] In so far as neighboring countries generally feature many of the same socio-economic-historic factors, the neighborhood variable appears to capture the impact of these common factors in the country under examination and, therefore, appear redundant. One study includes a variable indicating the democratic rights in a previous period, but including such a lagged variable means that the regression shows the changes in democratic rights, not their absolute value. A number of the studies cited above have included variables whose calculated coefficients were not statistically significant; therefore, I did not add them to my regressions.

4. The Sample

The sample includes 162 states, of which 39 have a Muslim majority.[4] Specification of the "Islam variable," however, differs in the four studies. I have chosen to use the percentage of Muslims in the population as my specification, rather than a dummy variable indicating whether more than a specified fraction of a state's population is Muslim, because the latter approach loses

[3] Some Latin American political sociologists argue that closeness to the U.S> may have weakened Mexican democracy; but I leave this matter for specialists.

[4] Barrett, Kurian, and Johnson (2001) report 41 states with a Muslim majority, but my sample does not include Palestine or the Cocos Islands. The CIA Factbook , which appears a less reliable source, reports another eight such states, and my sample includes all of these but Eritrea. I use, however, the Barrett et al. data which, in all but one case, estimate the percentage of Muslims in these countries as over 40 percent. Availability of data was my primary criterion for selecting the states in the sample. The data on relative Sunni/Shia populations seemed to uncertain to be useable.

some useful information. Nevertheless, in most - but not all - cases, both specifications yield roughly the same general conclusions about the impact of Islam on political rights as with the continuous variable. Use of the dummy variable, however, considerably reduces the degree of explanatory power of the regressions (measured by the R^2).

B. The Results and Interpretations

The regressions presented below suggest that in all but very poor countries, Islam appears to have a negative impact on political rights. The conflicting conclusions drawn by various investigators about the relationship between Islam and democracy depend primarily on the sample of states chosen and secondarily on how the equations and variables are specified.

Table 1 about here.

Table 1 presents the major regression results and, for this discussion, the most relevant results are the calculated coefficients of the Muslim variable, the first variable in the table. The key statistic is the t-test (in parentheses) to determine whether the calculated coefficient is statistically significant.[5] The major result is that in all but regression no. 4, the greater the share

[5] Examination of the regression residuals in some of these regressions shows greater prediction errors in countries with lower per capita GDPs. Although this indicates a possible problem of heteroskedasticity, a Cook-Weisberg test suggested that this problem was not serious. Thus, the t-tests in the table appear unbiased.

In some of the studies under review, it is difficult to know which of two hypotheses are being tested. If we are trying to determine whether Muslim countries are significantly <u>different</u> in their degree of political rights than non-Muslim nations, then the crucial level of the t-statistic at a 95 percent level of confidence for a sample of 120 is 1.980 (a two-tailed test); if we are testing whether Muslim countries have a significantly <u>lower</u> degree of political rights than non-Muslim nations, then the crucial level of the t-statistic for the same sample size is 1.658 (a one-tailed test). For a 99 percent level of confidence for the same sample size, the crucial levels of the t-statistic are respectively 2.617 and 2.358 . Given the values of the t-tests in the table, however, it made no difference to our conclusions which test was being used.

Table 1: The Impact of Islam

Dependent variable: political rights

	1 All	2 All richer	3 All poor	4 All very poor	5 All non-Arab	6 Richer non-Arab	7 Poor non-Arab
% of Muslims	-1.241 (-2.97) [-0.21]	-5.866 (-3.70) [-0.89]	-0.957 (-2.06) [-0.20]	-0.810 (-1.46) [-0.18]	-1.260 (-2.93) [0.17]	-6.072 (-3.68) [-0.47]	-0.982 (-2.00) [-0.17]
Arab culture (0-1 variable)	-1.317 (-3.03) [-0.21]	0.709 (0.49) [0.13]	-1.027 (-1.97) [-0.19]	-0.865 (-1.38) [-0.18]	---	---	---
Former communist (0-1 variable)	-0.140 (-0.54) [-0.03]	0.014 (0.04) [0.00]	-0.293 (-0.85) [-0.06]	-0.311 (-0.70) [-0.07]	-0.149 (-0.58) [0.03]	-0.004 (-0.01) [0.00]	-0.308 (-0.87) [0.07]
Communist (0-1 variable)	-3.545 (-5.74) [-0.27]	---	-3.249 (-4.77) [-0.36]	-3.063 (-4.16) [-0.41]	-3.457 (-5.59) [-0.30]	---	-3.252 (-4.64) [-0.39]
Log per capita GDP	0.828 (9.18) [0.46]	0.624 (2.30) [0.17]	0.679 (3.86) [0.29]	0.428 (1.73) [0.17]	0.904 (9.57) [0.54]	0.618 (2.23) [0.31]	0.740 (3.94) [0.33]
Log population	-0.045 (-0.87) [0.04]	0.037 (0.64) [0.04]	-0.122 (-1.62) [-0.13]	-0.106 (-1.01) [-0.11]	-0.056 (-1.04) [-0.06]	0.036 (0.60) [0.07]	-0.120 (-1.50) [-0.13]
Raw material export as % of total exports	-1.633 (-4.30) [-0.22]	-0.687 (-0.81) [0.10]	-1.284 (-2.79) [-0.21]	-1.154 (-2.06) [-0.20]	-1.439 (-3.32) [-0.18]	-0.964 (-1.09) [-0,13]	-1.369 (-2.63) [-0.22]
Years at war, 1990-2002	-0.095 (-1.79) [-0.09]	0.016 (0.22) [0.01]	-0.106 (-1.56) [-0.12]	-0.121 (-1.53) [-0.16]	-0.083 (-1.39) [0.07]	0.005 (0.07) [0.01]	-0.090 (-1.09) [-0.09]
Constant	7.830 (9.56)	6.570 (7.03)	8.438 (7.12)	7.298 (4.13)	8.101 (9.61)	6.630 (6.85)	8.577 (6.90)
# observations	162	56	106	82	144	50	94
Adj. R square	0.6638	0.7866	0.4642	0.3143	0.6246	0.3019	0.4224

Notes:

These are OLS regressions. A t-test of the statistical significance of the calculated coefficients is given in the parentheses. The numbers in the square brackets indicate the change in the political rights variable (measured in terms of its standard deviation) which occurs when the different variables are increased by one standard deviation of their value.

Measured in terms of the per capita GDP of the USA in 2000, “rich countries” include all those with a per capita GDP greater than 25 percent; “poor countries,” less than 25 percent; and :very poor countries,” less than 15 percent that of the USA.

A description of the variables and their sources are presented in the Appendix.

of Muslims in the population, the lower the political rights in the country, other factors held constant.

The single exception to this generalization is with a sample of “very poor” states, i.e., having a per capita GDP in 2000 less than 15 percent that of the USA, which show no significant difference between Muslim and non-Muslim states; this was also the result of Stepan/Robertson (2003). This result makes intuitive sense, because political rights are quite low in most very poor states, so that Islam does not have much room to have a downward impact.

In various experiments using a broader sample of “poor states” (i.e., with a per capita GDP less than 25 percent that of the USA) I was also able to obtain the Stepan/Robertson result for both all poor and all non-Arab poor states by using a dummy variable indicating half or more of the population was Muslim, using a straight per capita GDP variable (rather than its log), and including no other explanatory variables, so specification problem do play a certain role in explaining why their results are different from those of others.

My major conclusion is that Islam has a negative impact on political rights except in very poor states, other explanatory factors held constant. But other results also deserve attention. In Table 1 I have included in square brackets the sensitivity of the political rights variable (in terms of its standard deviation) to change in the various coefficients, all specified in terms of their standard deviations. In most, but not all equations, changes in the per capita GDP variable appears to have the greatest impact, e.g., in equation 1, one standard deviation change in the log of per capita GDP leads to a 0.46 standard deviation change in the political rights variable. From equation to equation, however, these sensitivity measures for the same variable vary considerably. This phenomenon suggests a considerable sensitivity of the results to the composition of the sample. Even though my sample of states is large and contained all states for

which data were available, I also noticed that in narrowing the sample of states to just those with better quality data, the coefficients of the various experiments changed considerably, even though my major conclusions about the impact of Islam remained the same.

Certain specification problems might still remain. For instance, more robust results might also be achieved by a more sophisticated, multi-equation model, but this seems doubtful[6]. Nevertheless, even though my major conclusion that Islam is associated with fewer political rights except in very poor countries appears solid, a small grain of skepticism is still warranted.

It might also be added that although Islam appears to have a considerable impact on the polity, it seems to have relatively little impact on the economy (Pryor, 2007). This suggests that the impact of Islam on society is not all-embracing, but rather appears important only in selective sectors. For instance, in the social field, regressions similar to those presented in this study show that Islam has no significant impact on the murder rate, or on the rate of child immunization, or on certain particular environment indicators.

This essay has not attempted to explain why Islamic states score lower on the democracy scale than other states in similar circumstances, for a wide number of conflicting reasons can be given. Of course, those states adopting a theocratic government will always be less democratic than similar states, given the nature of theocracy; but few states have a theocratic government. Nevertheless, whether the democracy deficit in other Islamic states will continue in the future can, perhaps, only be resolved by a detailed analysis of the special features of each state. If

[6] The experiment mentioned above of using 1970 data for the percent of Muslims in the population and the per capita GDP suggests that endogeneity between these two variables and political rights is not serious.

Turkey continues along its current path, then it may demonstrate that the link between a democracy deficit and Islam has not been preordained to last forever.

APPENDIX

1. Political rights and civil liberties. These two series are drawn from data from Freedom House (2006) and represent an average from 1990 to 2002. I have reversed the series so that 1 is the lowest rating and 7 is the highest. The definitions of the steps of the scales are given in Freedom House (2004): 714-18.

2. Percentage of Muslims in the population: The estimates for 2000 come from Barrett, Kurian, and Johnson (2001), but with one major change. For Indonesia I have added three-fourths of the members of the "new religions" to the Muslim population since strong elements of Islam are present in this religion. With the exception of about ten cases, these data are roughly similar to those presented in the CIA Factbook, but the Barrett, Kurian and Johnson study appears to be based on a much more thorough examination of the available sources. Of course, it is difficult to determine the number of adherents, since the religious organizations may exaggerate the number of their adherents and, moreover, in some countries people may find it convenient to declare themselves as members of a religious majority, even when they are not.

4. Per capita GDP: The per capita GDP are in "international dollars" in 2000 and come from the World Bank (2006).

5. Population. These data for 2000 come from the World Bank (2006).

6. Raw material exports as a share of total exports: This series is the sum of fuel exports and ores and metal exports; it comes from the World Bank (2006). I have averaged these ratios from 1990 through 2001, omitting one day border clashes or conflicts with no fatalities.

7. Ethnic and other types of population heterogeneity. These data cover different dates from 1990 to 2002 and come from Alesina, Devleeschauwer, Easterly, Kurlat, and Wacziarg (2003). These data are far superior to the Soviet ethno-linguistic heterogeneity data. The

measure of heterogeneity is: 1 minus a Herfindahl index of the share of various ethnic groups in the population.

8. Arab: These are members of the Arab Union and are reported by Donno and Russett (2004).

9. War years: Data on conflicts from 1990 through 2001 come from Ghosn, Palmer, and Bremer (2006). I have eliminated conflicts without casualties as well as one day border skirmishes.

10. Former communist. This includes all countries with a former communist government lasting more than two decades.

11. Communist governments: These include China, Cuba, Laos, and Vietnam.

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