Working Paper Series

Explaining Middle Eastern Authoritarianism

Marcus Noland

Marcus Noland, senior fellow, has been associated with the Institute since 1985. He was a senior economist at the Council of Economic Advisers in the Executive Office of the President of the United States and has held research or teaching positions at the Johns Hopkins University, the University of Southern California, Tokyo University, Saitama University, the University of Ghana, the Korea Development Institute, and the East-West Center. He won the 2000–2001 Ohira Masayoshi Award for his book *Avoiding the Apocalypse: The Future of the Two Koreas*. He is also the author of *Korea after Kim Jong-il* (2004) and coauthor of *Industrial Policy in an Era of Globalization: Lessons From Asia* (2003), *No More Bashing: Building a New Japan-United States Economic Relationship* (2001), *Global Economic Effects of the Asian Currency Devaluations* (1998), *Reconcilable Differences? United States-Japan Economic Conflict* with C. Fred Bergsten (1993), and *Japan in the World Economy* with Bela Balassa (1988).

Abstract

Arab political regimes are both unusually undemocratic and unusually stable. A series of statistical models are nested to parse competing explanations. The democratic deficit is comprehensible in terms of modernization, British colonial history, neighborhood effects, reliance on taxes, ethnic homogeneity, and the Arab population share, with the last determinant subject to multiple interpretations. Hypotheses that did not receive robust support include the presence of oil rents, conflict with Israel or other neighbors, or the influence of Islam. The odds on liberalizing transitions occurring are low but rising, and alternative interpretations of the Arab population share variable are important in this regard.

Keywords: political development, democratization, Middle East, Arab, Islam

Long-lived undemocratic political regimes are relatively ubiquitous in the Arab world.[1] According to the Polity IV Project scoring, no other developing or predominately non-OECD region experienced fewer regime changes on average for the period 1960–2000 than did the Arab Middle East (figure 1).[2] On average, these countries experienced 1.4 regime changes so defined during this period. Algeria and Syria were the least stable countries, with three regime changes each, while Egypt, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia, and the United Arab Emirates experienced no regime changes during this period.

Not only are these regimes enduring, as a group, they are highly undemocratic (figure 2). In 2000 all received negative assessments on the polity ratings that range from 10 (most democratic) to –10 (least democratic), based inter alia on the relative competitiveness of executive recruitment, constraints on the chief executive, and competitiveness of political participation. Individual country scores ranged from –2 in the cases of Jordan and Yemen, to –10, the absolute minimum, in the cases of Qatar and Saudi Arabia.[3] There is modest evidence of liberalization in the data—five countries exhibit notable increases in democratization scores over the sample period, two exhibit declines, and the scores for the remainder are unchanged or exhibit fluctuations without any obvious trend.[4] This combination of authoritarianism and stability is indeed unique.

There is a large academic literature examining the region's democratic deficit from a variety of epistemological perspectives. Yet large *n* statistical analyses of the determinants of democracy sometimes dismiss the Arab experience as sui generis (e.g., Przeworski et al. 2000), while regionally oriented research tends to focus on particular explanations in relative isolation, such as the role of oil and/or rents (e.g., Ross 2001, Herb 2005) or the impact of Islam (e.g., Fish 2002). The latter approach, while informative, cannot be definitive because it cannot adequately weigh competing explanations. This is a real problem for this literature because if two sets of explanatory variables are correlated (for example, the presence of oil and the Muslim population share), then regressions that include one and exclude the other will

---

[1] For the purposes of this paper the Arab Middle East is defined as Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, the United Arab Emirates, and Yemen. Operationally, a number of the countries are effectively excluded from the subsequent regression analysis due to extensive missing data. This definition excludes some non-Arab states that are sometimes included in the Middle East North Africa (MENA) region, particularly Iran, Israel, and Turkey. These three, while not part of the Arab world, are included in the overall sample used in the statistical analyses reported in appendix table A1.

[2] "Regime change" is defined in the Polity IV dataset as a minimum three-point change in the polity score (in either direction), denoting "a substantive, normative change in political authority considered sufficient to present greater opportunities for regime opponents to challenge the noninstitutionalized authority of the polity"(Marshall and Jaggers 2004, 27). It goes without saying that this definition of regime change" is considerably more modest than that used in popular parlance. See Przeworski et al. (2000, chapter 1) for discussion.

[3] For the record, in addition to Qatar and Saudi Arabia, seven other countries scored –10 at some point between 1960 and 2000: Bahrain, Haiti, Iran, Jordan, Kuwait, Oman, and Swaziland. Qatar and Saudi Arabia alone scored –10 for the entire sample period.

[4] Using Freedom House data, Bellin (2004, table 1) finds little evidence of systematic trends (though Lakoff 2004 argues that there is a trend—and that it is in the undemocratic direction). Herb (2005) argues that the Freedom House measures are superior to the Polity IV scores used here. Przeworski et al. (2000) and others argue that there are no systematic differences in results obtained on the basis of the two datasets.

erroneously attribute the statistical influence of the omitted variables to the included variables, rendering the statistical inferences derived from them invalid. The only way to parse these competing explanations is to specify a general model and test the nested hypotheses.

In this paper a large number of hypotheses are nested within a series of cross-country statistical models. Methodologically these models are very good at discriminating among hypotheses relating to underlying structural prerequisites for democracy or factors associated with political liberalization. Caveat emptor: they are not very useful for examining hypotheses involving "democratization as a contingent choice of regime and opposition actors that can occur in a variety of socioeconomic and cultural conditions" (Posusney 2004, 128).

DETERMINANTS OF DEMOCRACY

There is a large body of literature on the determinants of democracy and a number of relatively uncontroversial hypotheses—such as the importance of national identity and "modernization," as manifested in economic and/or educational attainment—as precursors for the establishment of stable, democratic polities going back to Lipset (1959) and Rustow (1970). Subsequent arguments about democratic waves (Huntington 1984, 1993) or regional spillover "neighborhood" effects (Solingen 1998, Gleditsch 2002) have generally been substantiated empirically, and one could think of these as forming the core of a statistical model of democratic attainment across countries and over time. Beyond these relatively uncontroversial notions there are a much larger group of contested hypotheses. After this "core" model is estimated, "structural" hypotheses involving historical origins, external relations, and the structure of the economy are examined, followed by "internal" or cultural explanations. The hypotheses receiving statistical support are then synthesized and their quantitative relevance assessed.

Structural Hypotheses

Operationally a model of Polity IV scores was specified as a function of national identity proxied by ethnic fractionalization (its inverse); "modernization" represented by log real per capita income, log literacy, and log urbanization; the average world level of democracy; and the average level of democracy of bordering countries (the neighborhood variable). Each indicator is lagged by one year and reported in the first column of table 1.[5] The sample is 85 countries listed in appendix table A.1, accounting for

---

[5] A list of other variables tried, but in the interests of brevity not necessarily reported in the results, includes GDP per capita, a dummy for OECD membership, literacy rate, educational attainment measured in terms of years of schooling, life expectancy, telephones and televisions per 1,000 people, college enrollment, population density, urbanization, growth rate of the urban population, international trade openness, a tropical climate dummy, latitude, area, agricultural employment as a share of the labor force, the literacy gender gap, the sex ratio, ethnolinguistic fractionalization, neighborhood and world polity scores, general conflict and Israel conflict dummies, colonial history dummies, legal origin dummies, legal transplant dummies, Hofstede and McClelland cultural indicators, religious affiliation and Arab ethnic population shares, Muslim and Arab population majority dummies, regional dummies including an Arabian peninsula dummy, tax revenue as a share of government revenue, government

roughly 80 percent of world population and 90 percent of world output for the period 1970–2000.[6] In the subsequent analysis it was found that the three modernization proxies were highly collinear. In response, a principal components aggregate (PCA, labeled "modernization") was formed, with nearly identical weights on the three components (GDP per capita 0.34; literacy 0.33; urbanization 0.33).

The regression is estimated using a random-effects estimator that controls for individual time-series and cross-sectional error components in the panel (Hsiao 1986). As might be expected, the level of democracy in a particular country is strongly correlated with its ethnic homogeneity, its level of modernization, and the levels of democracy in the world and among its immediate neighbors.

A second common set of explanations about democratic performance involves the historical origins of a country's political institutions. Lipset et al. (1993), for example, has argued that democracy is associated with British colonial rule, though the empirical support for this proposition is mixed (cf. Barro 1999, Przeworski et al. 2000, Fish 2002).[7] In regression 1.2, dummy variables for colonial rule are added to the specification.[8] The coefficient on the British colonial dummy is positive and significant, indicating that British colonial origins are indeed associated with democracy.[9]

---

consumption, rents as a share of government revenue, grants as a share of government revenue, aid as a share of government revenue, a fuel exporter dummy, fuel exports as a share of GDP, an OPEC membership dummy, military expenditure as a share of GDP, and military personnel as a share of the labor force. An appendix with variable definitions and data sources is available from the author upon request.

[6] A number of previous studies have used larger cross-sectional samples. Our sample is constrained by data availability in light of the large number of explanatory variables that will be used in the subsequent analysis. We do not regard this as particularly problematic—the omitted countries are typically either very small, very poor, or both, and the quality of data in some of these cases is highly questionable. Given the quality of the underlying data, we do not believe that maximizing sample size by using extrapolations and other ad hoc methods to fill in missing observations per Herb (2005) is warranted. Roughly 85 countries accounting for 80 percent of the world's population ought to be a large enough sample from which to draw statistical inferences. In one concession to this sample issue, literacy is used as a measure of human capital rather than alternative measures of educational attainment because the literacy data are more widely available than schooling data needed to calculate other indicators.

[7] However, it should be noted that both Barro and Fish, who do not obtain any positive impact of British colonialism, estimate regressions with lagged dependent variables that are estimated with coefficients of approximately 1.0—in effect they are estimating regressions on democratic change or democratization, not the level of democracy. This issue is addressed directly in the succeeding section.

[8] Some previous researchers included other regional specific dummy variables, such as a Middle East North Africa (MENA) dummy or an Arabian peninsular dummy. The regional dummies are significant if included in regressions 2.1 or 2.2 but fall out later in the analysis when underlying structural factors are taken into account. Ross (2001) also includes a dummy for OECD membership. However, it is not clear that this dummy is truly exogenous—given the origins of the OECD, it is arguable that democracy, or at least a certain degree of political openness, was an implicit prerequisite for admission.

[9] Acemoglu, Robinson, and Johnson (2001) argue that the degree of success in transferring metropole institutions to colonies was essentially a political investment decision driven by the presence of colonial settler populations that were significantly constrained in some locales by tropical diseases and other environmental influences. Unfortunately, their instrument for institutional development, settler death rates, is available for only a limited number of countries, and more easily available, though crude proxies, such as tropical climate or latitude, were not significant in this application. Other characteristics distinguishing the historical origins of contemporary polities, such as origins of their legal systems, were generally insignificant once colonial origins were taken into account.

It has been frequently argued that the existence of large rents that can be captured by the state impedes democracy. In the Middle East, oil production is the dominant, though not exclusive, source of such rents.[10] Multiple channels for antidemocratic effects of rents have been identified. First, the existence of rents may absolve governments from taxation and, as a consequence, relieve pressure for accountability through what might be called the "accountability effect" (Ross 2001). A straightforward indicator would be the tax share of government revenue. Second, rents may furnish governments with revenues for patronage and again relieve discontent or undercut the formation of social groups independent of the state.[11] Government consumption as a share of national income could be a rough proxy for this. A third channel for rents to impede democracy would be by financially enabling the development and maintenance of institutions of internal repression.

Table 2 reports six rent-related regressions. In regression 2.1, tax revenue as a share of government revenue is added to the basic model. Its coefficient is significant and positive as expected—democracy is associated with a higher tax component of state revenue. In regression 2.2, government consumption as a share of GDP is added to the basic model, and its coefficient is positive and statistically insignificant. If the "patronage effect" hypothesis were correct, one would expect this coefficient to be negative. This result points to a more general concern with these regressions: While colonial origins are exogenous, and any causal relationship, if it exists, runs from colonial origins to current politics, the direction of causality is less clear with respect to government spending. It could be that democracies have large public sectors because the masses support government spending as a mechanism for redistributing income. This is less of an issue in regression 2.1 since it is the tax share of revenues, not the overall level of taxation or revenues, which is the explanatory variable.

The next three columns of table 2 report specifications using alternative measures of rent. In regression 2.3, following Birdsall and Subramanian (2004), a dummy variable for countries in which fuel exports account for more than 30 percent of export revenues is added to the basic model and estimated with the expected negative coefficient.[12] In regression 2.5, a broader measure of rents (defined as entrepreneurial and property income) as a share of government revenue are added to the core specification and estimated with the expected negative sign.[13] In the final column, aid (another source

---

[10] For general descriptions of the rentier state phenomenon, see Beblawi (1990), Luciani (1990, 1995), Anderson (2001), and Lust-Okar (2004).

[11] As Anderson (2001, 56) observes, "the public sector accounts for over half the labor force: government employment is a form of social security" in the region.

[12] Ross (2001) argues that this approach mistakenly implies that the adverse effect of oil rents only takes effect beyond a certain threshold and that a continuous variable is preferred. In regression 2.4, fuel and mineral revenues as a share of total export revenues is added to the regression per Ross. The coefficient is statistically insignificant, and for the remainder of the paper the Birdsall-Subramanian formulation is used.

[13] Some analysts (e.g., Herb 2005) argue that this is a disadvantage insofar as included state-owned enterprise income is not really rent and excluded oil taxes really are. If what one is concerned about, per Anderson (2001), is the state's capacity to channel patronage, however, then the broader measure that includes state-owned enterprises is really to be preferred.

of rent) was added to the specification and estimated with a positive coefficient. If the rents impede democracy, then one would expect this coefficient to be negative. However, it could be the case that the causality runs the other direction—a higher level of democracy induces more assistance, such as in the case of the Millennium Challenge Account (which admittedly did not exist during this sample period). Then the coefficient would be positive as obtained—and the aid variable would not be an exogenous regressor.

The third way rents affect democracy is through the "repression effect."[14] Ideally one would want data on internal security services, though in reality the distinction between the internal and external security services may be more theoretical than real. And the region is highly militarized: Arab states accounted for 9 of the top 20 countries ranked either by military expenditures as a share of GDP or soldiers per 1,000 persons (US Department of State 2002). The first two columns of table 3 add military expenditure as a share of national income and military personnel as a share of the labor force. The coefficient on the military expenditure is insignificant, but the coefficient on the population share under arms is negative—greater militarization is associated with less democracy, though again, the direction of causality is debatable.

A related explanation might be called the "wag the dog" hypothesis—governments use internal and external conflict to enable undemocratic rule.[15] This argument is most often made with respect to the Arab-Israeli conflict, but one could think of it in more general terms, encompassing other conflicts, such as Morocco's fight with the Polisario or Libya's incursions into Chad. In regression 3.3, a general conflict dummy variable is added, set equal to unity if a country was involved in an internal or external conflict resulting in 1,000 or more battlefield deaths in that year. It is estimated with the expected negative coefficient. In regression 3.4, an Israel conflict dummy was added, set equal to unity for Egypt, Jordan, and Syria from 1967 until they normalized relations with Israel.[16] This coefficient is insignificant, though almost three times larger than the general conflict coefficient.[17]

---

[14] Bellin (2004, 143), for example, writes, "The will and capacity of the state's coercive apparatus to suppress democratic initiative have extinguished the possibility of transition. Herein lies the region's true exceptionalism."

[15] Cause (1995, 286) is typical: "Wars tend to concentrate power in the hands of the executive, a power most leaders are loath to give up. Wars make it easier to stigmatize as treasonous, and then suppress, opposition forces. War preparation leads to greater state control over the economy, limiting the power and autonomy of private sector economic actors who might press for democratic reform. War preparation requires building coercive apparatus that then can be used internally. . . ." Bellin writes, "Besides providing rhetorical legitimization for coercive regimes, persistent conflict has rationalized the prolonged states of emergency that stifle civil liberties in many MENA countries" (p. 157). With respect to the Arab-Israeli conflict, Anderson (2001, 56) observes: "It may be no coincidence that the prospects for democracy seem to increase in direct proportion to the distance of a country from the Arab-Israeli and Persian Gulf arenas."

[16] Cause (1995, 287) observes "the tentative opening of the Egyptian political system in the late 1970s occurred *after* Egypt had opted out of the Arab-Israeli conflict" (emphasis in the original).

[17] However, this is the only case in which disaggregating the PCA makes a qualitative difference. If per capita income, literacy, and urbanization are entered separately, then the Israel conflict variable is statistically significant with a coefficient more than three times the size of the general conflict coefficient.

CULTURAL EXPLANATIONS

The hypotheses examined thus far might be regarded as being "structural" in nature. Another class of explanations might be thought of as internal to society or cultural in nature. Huntington (1984), for example, argued that the prevalence of certain values and beliefs made some societies more compatible with democracies than others, citing McClelland's (1961) attempt to measure the "need to achieve" based on an analysis of third- and fourth-grade school readers for a sample of countries in 1950. Perhaps a sample significantly limited by data availability.

Huntington (1996) subsequently argued that the cultural origins of the democratic West lay in its globally distinct emphasis on individualism, invoking the work of Hofstede (1983, 2001).[18] Indeed, one of Hofstede's variables is statistically correlated with democracy, though not the one that Huntington identified. As shown in regression 4.2, it is power-distance, the measure of comfort with hierarchy, which is negatively correlated with democracy, not the degree of cultural individualism as measured in Hofstede's scores.[19] In regression 4.3, the need to achieve and power-distance culture measures are entered jointly and both retain their statistical significance, though strangely the world democracy average (representing the "democratic wave" effect) turns negative in this truncated sample.

More controversial as a determinant of democracy is the general role of religion and the specific role of Islam. Huntington (1984, 1996), for example, argues that specific religious or cultural traditions are good or bad for democracy.[20] Islam, he argues, is bad, a view supported in the writings of scholars such as Kedourie (1992, 1)—"Democracy is alien to the mind-set of Islam"—and Voight (2005)—and the statistical analyses of Barro (1999) and Fish (2002, 4), who argues that his analysis provides "strong support for the hypothesis that Muslim countries are democratic underachievers."

---

[18] According to Hofstede, statistical analysis of the responses to two rounds of survey questionnaires administered to 88,000 IBM employees over 1967–73 suggested that they could be characterized along four dimensions: a power-distance index ("the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is unequally distributed"); an uncertainty-avoidance index ("the extent to which the members of a culture feel threatened by uncertain or unknown situations"); an individualism-collectivism dimension ("individualism stands for a society in which the ties between individuals are loose. . . collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups. . . ."); and a masculine-feminine dimension ("masculinity stands for a society in which social gender roles are clearly distinct . . . femininity stands for a society in which social gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life"). It is fair to say that this research is controversial. See McSweeney (2002) for a critique.

[19] Ironically, in earlier an work Huntington identified comfort with hierarchy as an antidemocratic cultural attribute: "A political culture that highly values hierarchical relationships and extreme deference to authority presumably is less fertile ground for democracy than one that does not" (Huntington 1984, 209).

[20] For example, he writes, "Confucianism and Buddhism have been conductive to authoritarian rule…Islam has not been hospitable to democracy….The one Islamic country that sustained even intermittent democracy after World War II was Turkey, which had, under Mustafa Kemal, explicitly rejected its Islamic tradition and defined itself as a secular republic. The one Arab country that sustained democracy, albeit of a consociational variety, for any time was Lebanon, 40 to 50 percent of whose population was Christian and whose democratic institutions collapsed when the Moslem majority asserted itself in the 1970s" (Huntington 1984 p.208).

The statistical evidence on this point is ambiguous, turning on the definition of the comparator group. In the first column of table 5, the population shares ascribing to major world religions are added to the core model. The coefficients on the Hindu, Buddhist, Jewish, and Protestant Christian population shares are all positive and significant.[21] The coefficient on the Muslim share is insignificant· However, these coefficients are all significantly greater or less than zero relative to the omitted group. If the definition of the omitted group changes, then so will the estimated coefficients. In regression 5.2, only the Muslim population share is included and is estimated with a statistically significant negative coefficient—i.e. if Muslims are compared to all non-Muslims (regression 5.2), then they appear distinct. However, if Muslims are compared with a group consisting of agnostics, atheists, animists, Confucians, Shintoists, Bahais, Rastafarians et al., then they are not.[22]

Islam, like other religions, is open-ended, subject to interpretation, and widely varying in practice across both the dimensions of time and distance. The topic of this paper is Arab political regimes, and the category "Muslim" may be too broad to be analytically meaningful (cf. Zubaida 1995). Specifically, in non-Arab Muslim societies, pre-Islamic local traditions or the influences of non-Muslim groups, such as the Chinese in Southeast Asia or the French in West Africa, may attenuate the impact of Middle Eastern traditions. To investigate this possibility, the Muslim population share of each country was weighted by dividing by the distance between the national capital and Mecca (i.e., the weighted Muslim share declines with distance) and is reported in regression 5.4. The greater statistical significance of the estimated coefficient of the distance-weighted Muslim population share in comparison to the unweighted Muslim population share suggests that there may be something to this notion.

To push this further and explore whether the influence of Islam is being conflated with Arab culture, the ethnic Arab population share was added to the model (regression 5.5) and is estimated with a negative coefficient almost twice as large as the Muslim population share coefficient in regression 5.2.[23] In regression 5.6, the two variables are entered jointly, and the Muslim population share variable loses its statistical significance—it would appear that the category "Arab," not "Muslim," is driving these results. Zogby's finding that the Arab ethnicity is the primary self-identification category in most Arab countries lends some plausibility to this conclusion.[24]

---

[21] Huntington (1996, 70) observes that among non-Western societies only Hindu civilization shared the West's distinct separation of religion and politics that "contributed immeasurably to the development of freedom in the West." He did not speculate as to whether the same cultural attribute might not have the same political impact in a non-Western society.

[22] Fish (2002) argues that what is important is not the Muslim share, but whether Muslims are a majority. In regression 5.3, the Muslim share is replaced with a Muslim majority dummy. The results are virtually identical, and the choice between the two makes no difference in the subsequent analysis, so the Muslim share specification is retained.

[23] The regressions were also estimated with an Arab majority dummy replacing the Arab ethnic share variable. This distinction had no appreciable impact on the results.

[24] This result would also be consistent with the argument of Stepan and Robertson (2004) that the Arab countries display increasing political distinctiveness within the broader Muslim community. Among the 19 Muslim-majority former British colonies, the 8 non-Arab countries all joined the Commonwealth, while none of the 9 Arab countries did. This is particularly intriguing in light of former British colonial status being among the most robust correlates with democracy. With respect to more recent be-

Many Muslims and many Arabs live in oil-exporting countries, and it is important to model the potential relationships among these variables carefully; otherwise one runs the risk of misattributing the influence of one variable to the other.[25] In the final three columns of table 5, the oil exporter variable is entered in combination with the Muslim and Arab population share variables. When the Muslim population share and oil exporter variables are entered jointly (regression 5.7), both are significant. When the Arab population share is entered jointly with the oil exporter dummy, the coefficient on the oil exporter variable becomes insignificant (regression 5.8). When all three are entered together (regression 5.9), only the coefficient on the Arab ethnic share is statistically significant.

The message emerging from table 5 is that it is Arab ethnicity, not adherence to Islam or the exportation of oil that matters. However, this is simply a statistical relationship—it does not indicate what the channel for this effect is. Some scholars, such as Sharabi (1988), have argued that elements of Arab culture are authoritarian, which would lend an essentialist causal interpretation to this result.

Alternatively, Stepan and Robertson (2004) argue that for whatever reason, Arab elites have chosen an increasingly distinct and undemocratic political path. This view would seem to be contradicted, however, by polling data in which Arabs list "civil rights" as their primary political concern (Zogby 2002) and data from the World Values Survey and other sources indicate that large majorities of Arabs are supportive of democracy (Tessler and Gao 2005). It could be that the interests of the governing elites and the man on the street diverge, and that the Arab population share is acting as a proxy for an omitted variable, such as expenditures on internal security services, which reflect particular historical circumstances and political choices and are not intrinsic characteristics of Arab culture per se. This could possibly be related to the relatively common occurrence of governments based at least partly on narrow subethnic or tribal allegiances.[26] Or it could also be the case that in a deep sense this result is in a statistical sense correct, and really a historical artifact: It is correctly capturing a particular historical moment in a geographically defined region, but that moment is itself transitory, and the identifier Arab has little long-run explanatory power.

Fish (2002) makes the intriguing argument that the negative influence of Islam on democracy is due to the subjugation of women, which he implies is an innate aspect of Islam, citing Mernissi (1987), Sharabi (1988), the UN Development Program's *Arab Human Development Report* (2002), and other sources. And indeed, historically, the status of Arab women has been unenviable, though over the sample period considered here (1970–2000), gains in female educational attainment and health status have been impressive (World Bank 2004). Yet the two notions are separable: The link between democracy and the

---

behavior, Stepan and Robertson document the very different behavior of the Arab and non-Arab Muslim-majority countries with respect to the use of international technical assistance in holding elections and foreign election monitors.

[25] For example, Fish (2002, tables 2 through 5), after appearing to establish that OPEC membership is a robust negative correlate with democracy, inexplicably drops the OPEC variable when analyzing the influence Islam and the status of women have on democracy (Fish 2002, table 10). This is practically a textbook example of probable omitted variable bias.

[26] Unfortunately, the ethnolinguistic data does report identity at a sufficiently fine level of disaggregation to test this rigorously.

status of women may hold whether it is related to Islam or not. One can accept one part of the argument without necessarily buying into the other.

Fish uses four indicators to measure the status of women: the difference in male and female literacy rates, the sex ratio (the number of males per 100 females), the percentage of high-ranking positions in executive branch agencies occupied by women, and finally a composite gender empowerment index constructed by the UN Development Program. Unfortunately, time-series data permitting the construction of a reasonable panel are only available for the first two measures. Another possible indicator of the status of women would be the female share of the labor force. One could imagine that this would signal the economic status of women and, by extension, their ability to place demands on the political system.

In regressions 6.1, 6.2, and 6.3 (table 6), the literacy gap, sex ratio, and female labor participation variables are added to a specification of the core model augmented by the Muslim share, Arab share, and fuel exporter variables. The literacy gap is estimated with a positive and statistically significant coefficient. However, this estimate is fragile, and is strongly influenced by the inclusion of four South Asian countries—India, Nepal, Pakistan, and Sri Lanka—all of which combine high literacy gaps with at least some periods of high democratic polity scores during the sample period.[27] In regression 6.2, the sex ratio is estimated with the expected negative coefficient, and in regression 6.3, the coefficient on female labor force share is statistically insignificant. Taken together these results do not strongly support the hypothesis linking democracy to the status of women. Yet even if one focuses on regression 6.2, with regard to Fish's argument about Islam and the status of women, the significance of the sex ratio and the insignificance of the Muslim population share could be interpreted two ways. One possibility would be to argue that if Islam impedes democracy through the subjugation of women, it is the only channel through which it does so—Islam has no explanatory power beyond this. Alternatively one could interpret this result as indicating that the devaluation of women (for whatever reason) is negatively associated with democracy, and Islam is irrelevant in this regard. At the same time, the significant coefficient on the Arab population share variable reinforces the impression that previous analysis may have conflated the influence of Islam with something more properly attributed to Arab political cultures.

ASSESSMENT

These six tables suggest a rich and complex set of possible determinants of democracy. Table 7 reports a set of regressions derived from the preceding analysis. Modernization, ethnolinguistic fractionalization, the average neighborhood polity score, the average world polity score, the Arab ethnicity population share, British colonial history, and the share of taxes in state revenues are robust correlates with democracy. Conditional on these variables, the Muslim population share, the oil exporter dummy, the

---

[27] If two South Asia countries are excluded from the sample, the coefficient on the literacy gap usually becomes insignificant; if all four South Asian countries are excluded, the estimated coefficient reverses signs, though this estimated coefficient is statistically insignificant.

military personnel population share, the general conflict dummy, and the Israel conflict dummy are not correlated with democracy. The sex ratio is marginally significant in regression 7.7.[28] These regressions explain more than half of the total sample variation (R^2 [overall]) and roughly two-thirds of cross-sectional variation (R^2 [between]) when the temporal variation in the data is suppressed.

In table 8, the coefficients from regression 7.7 are used to calculate the impact on the democracy scores of a one standard deviation change in each of the explanatory variables. The biggest single impact is of British colonial history—a positive value of this dummy variable is worth more than three points, which in the Polity IV definition would amount to a regime change if a change of this magnitude occurred in three years or less.[29] The next three largest effects come from modernization, regional spillover effects, and the Arab ethnic share. The neighborhood effect is much more important than the impact of worldwide democracy waves—the influence of a one standard deviation change in the regional average has four times the impact of a similar magnitude change in the worldwide average. The effect of modernization and ethnic fragmentation is larger than the effect of rents as represented by the tax revenue share variable. Table 9 reports the actual and predicted country democracy scores derived from regression 7.1 for the terminal year of 2000. In only two cases, Morocco (–2.1) and Jordan (2.0), do the actual and predicted values differ by 2.0 or more in absolute value.[30]

LIBERALIZING TRANSITIONS

To model the likelihood of liberalizing transitions, the Polity IV definition of regime change is redefined as a three-point or more *positive* (though not necessarily irreversible) change in the score over a period of three years or less.[31] Examples of such liberalizing episodes in the sample would include Spain's transition from the Franco regime to parliamentary democracy in 1975, the 1985 end of military rule in Brazil, South Korea's transition to civilian government in 1987, the 1989–90 collapse of the Ceauşescu regime and the beginning of democracy in Romania, and South Africa's post-apartheid transition, during 1992–94. In the Arab world, examples would include political reforms initiated in Tunisia in 1987[32] and

---

[28] The power distance variable is also marginally significant in a smaller, data-constrained sample.

[29] In other contexts, some have argued that the British colonial effect is derived from the inclusion of small Caribbean island democracies. This argument is not applicable in the current setting—those small island democracies are not in the sample.

[30] In the case of Morocco, its apparent democratic underachievement is driven by the neighborhood effect—because of the Spanish enclaves of Ceuta and Melilla, Morocco technically borders Spain, which is used in the calculation of Morocco's neighborhood effect. If these Spanish enclaves were excised, as some Moroccans might wish, then the value of Morocco's neighborhood variable, and consequently its fitted democracy score, would fall, in fact bringing Morocco almost precisely to the regression line. Jordan is a relative democratic overachiever. It has a smaller non-Arab minority than the other countries in table 9, and as a consequence predicted negative impact of Arab ethnicity is relatively large, which pulls down the predicted democracy score.

[31] See Carothers (2002) for a thoughtful critique of the assumptions underlying the democratic transition literature. For expositional convenience, "liberalizing" and "democratizing" will be used interchangeably in this paper, keeping in mind Carothers's admonition that the two are not identical.

[32] In Tunisia, president-for-life Habib Bourguiba was declared medically unfit and, following the relevant provisions of the

in Algeria[33] and Jordan in 1989.[34] Per Carothers, the relatively tentative (and possibly reversible) process of liberalization in the Arab countries may be more typical of the worldwide experience in political development over the past generation than the more well-known and decisive breakthroughs cited previously.

One way of thinking about the apparent stability of the region's authoritarian political regimes is to ask, what is the probability of a liberalizing transition at any given point of time? In this formulation, the unit of analysis is the national polity, the subject of analysis is a binary variable of whether or not this polity experienced political change in this period, and the subject of investigation are the forces that would give rise to political change. In statistical terms such an approach is known as a proportional hazard (PH) or duration model; operationally one would construct a panel dataset defined by a set of i countries for t years. This approach facilitates modeling a rich set of regime dynamics: for example, allowing the probability of the hazard (political change) occurring at a particular time to depend on the number or recentness of prior hazards.[35] The estimated coefficients represent the impact of a covariate on the "hazard of failure."[36]

The next task is to identify the set of variables to be used as explanators of liberalizing regime changes. There is a large body of work on theories of political change and its determinants. Some of these theories are more amenable to modeling than others (in particular, theories that focus on country or regime characteristics as opposed to those that emphasize a country's relation to the world system), and even among explanations centering on internal characteristics, there are issues of data availability, at least at the cross-national level.[37]

---

constitution, replaced by the then recently appointed prime minister general, Zine El-Abidine Ben Ali, who initiated widespread political and economic reforms, including legalizing previously banned political parties, releasing roughly 100 Islamist political prisoners, and pardoning more than 8,000 detainees. However, in the words of one observer, "By the early 1990s, Ben Ali was practicing the full Bourguiba, cult and all" (Henry 2004, 12). The Constitution was revised to excise the office of president-for-life, but this did not prevent Ben Ali from being reelected for the third time in 1999 with 100 percent of the vote and in 2002 pushing through a constitutional amendment permitting an unlimited number of consecutive terms in office. In October 2004 he was reelected with 94 percent of the vote.

[33] The constitutional changes in Algeria, which involved a reduction in the dominance of the National Liberation Front and the introduction of multiparty elections, were subsequently reversed. Another move toward more representative government began in 1995, following a period marked by extraconstitutional government and widespread political violence. In recent years there has been continued political liberalization, though the armed forces maintain a dominant role in politics.

[34] In Jordan, the period 1989–92 witnessed the lifting of martial law restrictions on political activity, the integration of previously excluded groups into the political process, and the first national elections in 22 years, in the context of monarchical rule.

[35] For informative introductions to these (and related) models, see Box-Steffensmeier and Jones (1997), Bennett (1999), van den Berg (2000), and Box-Steffensmeier and Zorn (2001). See Gasiorowski (1995) for an application to political regime stability.

[36] In this application all of the models have been estimated in the form of Weibull functions, which impose monotonicity on the relationship between the regime variable and the right-hand-side covariates. Weibull models permit monotonic duration dependence of a positive (i.e., the hazard rate increases over time), negative (the hazard rate decreases over time), or constant (the hazard rate is time invariant) form. In the regressions in table 10, the coefficient on the Weibull function is estimated to be significantly greater than one, which indicates that the impact of the covariate on the hazard increases over time.

[37] For example, many commentators emphasize the role of worsening income or wealth distribution or perceptions of relative deprivation on political motivation (e.g., Gurr 1970). However, historical, cross-country comparable, income distribution data are not

As a starting point, the variables employed in the previous section to predict the level of democracy were used to model its advent. Appended to this list were other variables such as prior history of liberalizing transitions, population density, the growth rate of urbanization, country size, international trade openness, dependency on trade taxes, and inflation, which in previous studies had been found to be statistically associated with the likelihood of political regime change.

In table 10, six of these models are reported. The estimated coefficients have been transformed into the form of an accelerated failure time model, so that the coefficients represent the impact on the expected waiting time for a liberalizing breakthrough. The results indicate that the cumulative number of a country's prior liberalizing transitions, the world level of democracy, and the growth rate of GDP per capita are robustly correlated with the likelihood of a democratic transition; literacy is also positively correlated, though less robustly. The first two variables could be thought of as environmental or trend variables: The more a country has liberalized in the past, the less likely it is to experience further liberalization as it encounters a kind of democratic asymptote, while the greater the worldwide level of the democracy, the greater encouragement of, and shorter waiting time for a liberalizing breakthrough in any particular country.

The other three variables relate more directly to country performance or characteristics. Conditional on the other variables, the more rapid the growth of per capita income growth, the longer the waiting time for transition—i.e., in the short-run economic performance buys a certain degree of popular acquiescence, though in the long-run rising incomes auger against authoritarian rule.[38] Surprisingly, the degree of international trade openness is also associated with longer waiting times for liberalizing breakthroughs, though some might point to the history of East Asia, where countries democratized at relatively high levels of per capita income after adopting an outward-oriented development model. Conversely, conditional on the other variables, the higher the rate of literacy, the shorter the waiting time for a democratic transition. It would be erroneous to conclude from these results that as a policy matter one should oppose economic growth or support closure to trade as a means of encouraging democratization. Both are desirable in and of themselves, and, in the long run, prosperity contributes to expectations of political liberalization. However, in the short run, these forces may act as a kind of safety valve for discontent. Status as a fuel exporter also contributes to longer waiting times, but this result is not robust to the inclusion of any of the other additional regressors reported in table 10, though these additional regressions are not reported for the sake of brevity.

---

widely available, and data on wealth distribution or subjective appraisals of relative deprivation even less so, and what research does exist on this fragmentary data does not yield robust conclusions. See Perotti (1996) and Przeworski et al. (2000) and sources cited therein.

[38] Obversely, economic crises can be destabilizing for authoritarian regimes a la Haggard and Kaufman (1995). This effect could be particularly salient for the oil exporters, which experience substantial volatility in income growth associated with swings in the price of oil.

As an illustration, the expected likelihood of a liberalizing transition for eight large Arab countries derived from regression 10.1 is plotted in figure 3.[39] Several things can be observed. First, the likelihood of a liberalizing transition in these countries was quite low at the beginning of the sample period and generally increased about 5 percent in any given year for the group as a whole. However, this increase has not been monotonic. For several countries there was a noticeable spike in the probability of a liberalizing breakthrough in 1989 or 1990, which was during a worldwide democracy wave, a period in which Algeria and Jordan experienced liberalizing regime changes according to the Polity IV scoring. The spike for Morocco came later, primarily a product of world conditions together with poor economic performance in Morocco during the early 1990s. In both cases the likelihood of a breakthrough in a particular year peaked at more than 20 percent, a substantial likelihood, though well under a 50 percent probability. Morocco, which did not experience transition, adhered to the prediction of the model, whereas in some sense Jordan beat the odds.

In regression 10.2, in which the share of trade taxes in government revenue is added to the core specification, the imposition of trade taxes is associated with a shorter waiting time until a democratic transition. In some previous research, trade taxes have been shown to be associated with political instability—imposing trade taxes and delinking from the world economy encourages lawlessness in forms such as smuggling and underinvoicing, and contributes to the de-legitimization of the political regime. (Though it could be argued that causality runs in the other direction: Weak regimes rely on trade taxes because they are relatively easy to collect.)

Some commentators have argued that Islam may confer additional legitimacy to Arab political regimes despite their questionable ability to deliver material progress or political liberty.[40] In regression 10.3, the religious affiliation shares are added to the core regression specification. The Catholic population share is associated with shorter times to democratic transitions, though this result is not robust to the inclusion of trade taxes or other regressors to the specification (not reported). Neither the Muslim population share (regression 10.3) nor Muslim majority status (regression 10.4) appear to affect transition waiting times. Contemporary Muslims do not appear to be particularly quiescent.

However, in regression 10.5, paralleling the previously obtained results, the Arab population share is associated with significantly longer waiting times for liberalizing transitions. Again, one can think of multiple interpretations of this statistical result: that it reflects some essential characteristic of Arab culture or that the Arab population share variable is acting as a proxy for omitted variables, such as expenditure on internal security forces or uniquely undemocratic elite attitudes. This result is reproduced in regression 10.6 where trade taxes are added to the specification.

---

[39] For a number of the Arab countries the time-series data is fragmentary, and while these countries were included in the underlying regression sample, the time-series graphs for these countries are not particularly illuminating.

[40] This argument is sometimes couched in terms of an Islamic juridic tradition of quietism, though in fairness, scholars who have documented these cultural antecedents (e.g., Lewis 1993, Crone 2004) have done so in the context of 11th century jurisprudence, not contemporary political culture, and have acknowledged the existence of activist traditions as well. Others have been less circumspect (e.g., Huntington 1984).

But the Arab population share changes only slowly—in this application it amounts essentially to a fixed effect that reduces the probability of liberalization but does not have much of an impact on changes in its likelihood from year to year. (The same could be said for the religious affiliation variables.) This point is illustrated in figure 4 for Egypt, the largest Arab country. Figure 4 plots the likelihood of a democratizing regime change derived from each of the six models reported in table 10. The plot associated with regressions 10.5 and 10.6 lie below the others while exhibiting the same pattern of year-to-year variation. In this sense the difference of the two interpretations of the Arab population share variable is potentially important. If it is the case that Arabs are unusually quiescent, then the plots of regressions 10.5 and 10.6 may provide a credible indication of the level and evolution of the likelihood of a liberalizing breakthrough. However, if the Arab population share is really a proxy for some unobservable, especially one that may exhibit more temporal variation than the Arab ethnic population share, then these plots may be a misleading indicator of the changes in the hazard rates.

CONCLUSIONS

This paper has used a series of statistical models to examine the determinants of democracy and liberalizing regime changes with a focus on the countries of the Middle East and North Africa region. The models suggest that the Arab world's ongoing democratic deficit is comprehensible in terms of underlying structural factors: The most important determinants of democracy are a British colonial history, lack of modernization, the democratic status of neighboring countries, taxes as a share of government revenue, ethnic homogeneity, and the Arab ethnic population share. In a considerably truncated sample, some cultural attributes are also significant, and the male-female sex ratio was often statistically significant, though other proxies for the status of women were not.

The region is self-evidently underendowed with respect to the first three attributes and arguably the fourth, but it is the interpretation of the Arab ethnic population share that is problematic. It could point to some essential antidemocratic aspect of Arab culture, though the small existing body of survey evidence does not appear to bear this out, or it could be that in the statistical analysis the Arab population share is simply a proxy for some unobservable, such as investment in institutions of internal repression that may not be culturally determined but rather reflects the preferences of the governing elite. It could also be the case that while the statistical result is correct—holding the other regressors constant, the Arab ethnic share is negatively correlated with democracy—this is simply capturing a particular historical moment in the Middle East and that in the long run, "Arab-ness" will lose its explanatory power.

It is also worth noting hypotheses that did not receive robust support in this analysis, namely that the region's lack of democracy is related to the presence of oil rents, conflict with Israel or other neighbors, or Islam. The last result, that the Muslim population share is not a robust explanator of democratic status, parallels the finding of Noland (2005) that Islamic religious affiliation is unrelated to economic performance.

With respect to the likelihood of liberalizing political transitions, the models indicate that the odds on these occurring in any given year are generally low but rising, as relatively poor economic performance combined with increasing levels of education erode popular acquiescence to authoritarian governance. In this respect, the distinction between the interpretation of the Arab ethnic share as an intrinsic cultural marker and as a proxy for some unobservable factor is important—if the former is correct, then one would expect the likelihood of regime change to rise only gradually over time, whereas if it is the latter, the probabilities may exhibit much greater temporal variability. Yet another possibility is that these results are driven by the relatively common occurrence of governments based at least partly on narrow subethnic or tribal allegiances, which could generate complex transitional paths.

The results reported in this paper suggest that regimes throughout the region are likely to come under increasing pressure over time as increasing education and prosperity generate populations increasingly dissatisfied with authoritarian rule, though there is an implicit tension between the long and short run: Higher levels of development are associated with democracy, but in the short run, growth may limit pressures for political change. It is also the case that developments both within the region and elsewhere—in Eastern Europe and Central Asia, for example—may contribute to demonstration effects or waves. That said, specific democratizing episodes in Iraq, Lebanon, and Palestine during 2005— collectively labeled "the Arab Spring"—each have strongly idiosyncratic elements. Nevertheless, the advent of pan-Arab media such as the television stations al-Jazeera and al-Arabiya, may be contributing to a more genuinely pan-Arab cultural space in which developments in one country have a more immediate and profound influence on outcomes elsewhere within the region.

REFERENCES

Acemoglu, Daron, James A. Robinson, and Simon Johnson. 2001. The Colonial Origins of Comparative Development. *American Economic Review* 91, no. 5: 1369–1401.

Anderson, Lisa. 2001. Arab Democracy: Dismal Prospects. *World Policy Journal* (Fall): 53–60.

Barrett, David B., George T. Kurian, and Todd M. Johnson. 2001. *World Christian Encyclopedia*, 2d ed. New York: Oxford University Press.

Barro, Robert J. 1999. Determinants of Democracy. *Journal of Political Economy* 107, no. 6, pt. 2: S157–183.

Beblawi, Hazem. 1990. The Rentier State in the Arab World. In *The Arab State*, ed. Giacomo Luciani. Berkeley: University of California Press.

Bellin, Eva. 2004. The Robustness of Authoritarianism in the Middle East. *Comparative Politics* 36, no. 2: 139–58.

Bennett, D. Scott. 1999. Parametric Models, Duration Dependence, and Time-Varying Data Revisited. *American Journal of Political Science* 43, no.1: 256–70.

Birdsall, Nancy, and Arvind Subramanian. 2004. Saving Iraq from Its Oil. *Foreign Affairs* 83, no. 4: 77–89.

Box-Steffensmeier, Janet M., and Bradford S. Jones. 1997. Time Is of the Essence: Event History Models in Political Science. *American Journal of Political Science* 41, no. 4: 1414–61.

Box-Steffensmeier, Janet M., and Christopher J. W. Zorn. 2001. Duration Models in Political Science. *American Journal of Political Science* 45, no. 4: 972–88.

Carothers, Thomas. 2002. The End of the Transition Paradigm. *Journal of Democracy* 13, no. 1: 5–21.

Cause, F. Gregory III. 1995. Regional Influences on Experiments in Political Liberalization in the Arab World. In *Political Liberalization and Democratization in the Arab World, Volume 1: Theoretical Perspectives*, ed. Rex Brynen, Bahgat Korany, and Paul Noble. Boulder: Lynne Rienner.

Crone, Patricia. 2004. *God's Rule: Islam and Government*. New York: Columbia University Press.

Fish, M. Steven. 2002. Islam and Authoritarianism. *World Politics* 55 (October): 4–37.

Gasiorowski, Mark J. 1995. Economic Crisis and Political Regime Change: An Event History Analysis. *American Political Science Review* 89, no. 4: 882–97.

Gleditsch, Kristian Skrede. 2002. *All International Politics Is Local: The Diffusion of Conflict, Integration, and Democratization*. Ann Arbor: University of Michigan Press.

Gurr, Ted. 1970. *Why Men Rebel*. Princeton: Princeton University Press.

Haggard, Stephan, and Robert R. Kaufman. 1995. *The Political Economy of Democratic Transitions*. Princeton: Princeton University Press.

Henry, Clement. 2004. Tunisia's Rogue Ben Ali Regime. Paper presented at the conference Winning the Prize for Repression: The Real Rogue States, Kennedy School of Government, Harvard University, Cambridge, MA, October 14–16.

Herb, Michael. 2005. No Representation Without Taxation? Rents, Development, and Democracy. *Comparative Politics* 37, no. 3.

Hofstede, Geert. 1983. *Cultures and Organizations*. New York: McGraw Hill.

Hofstede, Geert. 2001. *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*, 2d ed. Thousand Oaks, CA: Sage Publications.

Hsiao, Cheng. 1986. *Analysis of Panel Data*. Cambridge: Cambridge University Press.

Huntington, Samuel P. 1984. Will More Countries Become Democratic? *Political Science Quarterly* 99, no. 2: 193–218.

Huntington, Samuel P. 1993. *The Third Wave: Democratization in the Late Twentieth Century*. Norman: University of Oklahoma Press.

Huntington, Samuel P. 1996. *Clash of Civilizations and the Remaking of World Order*. New York: Simon and Schuster.

Kedourie, Elie. 1992. *Democracy and Arab Political Culture*. Washington: Washington Institute for Near East Policy.

Lakoff, Sanford. 2004. The Reality of Muslim Exceptionalism. *Journal of Democracy* 15, no. 4: 132–39.

Lewis, Bernard. 1993. *Islam and the West*. New York: Oxford University Press.

Lipset, Seymour Martin. 1959. Some Social Requisites of Democracy: Economic Development and Political Legitimacy. *American Political Science Review* 53, no. 1: 69–105.

Lipset, Seymour Martin, Kyoung-Ryung Seong, and John Charles Torres. 1993. A Comparative Analysis of the Social Requisites of Democracy. *International Social Science Journal* 45 (May): 155–75.

Luciani, Giacomo. 1990. Allocation vs. Production States: A Theoretical Framework. In, *The Arab State*, ed. Giacomo Luciani. Berkeley: University of California Press.

Luciani, Giacomo. 1995. Resources, Revenue, and Authoritarianism in the Arab World: Beyond the Rentier State? In *Political Liberalization and Democratization in the Arab World, Volume 1: Theoretical Perspectives,* ed. Rex Brynen, Bahgat Korany, and Paul Noble. Boulder: Lynne Rienner.

Lust-Okar, Ellen. 2004. Divided They Rule: The Management and Manipulation of Political Opposition. *Comparative Politics* 36, no. 2: 159–80.

Marshall, Monty, and Keith Jaggers. 2004. Polity IV Project. Center for International Development and Conflict Management, University of Maryland. Downloaded from www.cidcm.umd.edu/inscr/polity/ (accessed December 1, 2004).

McClelland, David C. 1961. *The Achieving Society*. New York: The Free Press.

McSweeney, Brendan. 2002. Hofstede's Model of National Cultural Differences and Their Consequences: A Triumph of Faith—A Failure of Analysis. *Human Relations* 55, no.1: 89–118.

Mernissi, Fatima. 1987. *Beyond the Veil* (revised edition). Cambridge: Schenkman.

Noland, Marcus. 2005. Religion and Economic Performance. *World Development* 33, no. 8: 1215–32.

Perotti, Roberto. 1996. Growth, Income Distribution, and Democracy. *Journal of Economic Growth* 1: 149–87.

Pew Global Attitudes Project. 2003. *Views of a Changing World*. Washington: Pew Research Center for the People and the Press. June.

Posusney, Marsha Pripstein. 2004. Enduring Authoritarianism: Middle East Lessons for Comparative Theory. *Comparative Politics* 36, no. 2: 127–38.

Przeworski, Adam, Michael E. Alvarez, José Antonio Cheibub, and Fernando Limongi. 2000. *Democracy and Development*. Cambridge: Cambridge University Press.

Ross, Michael L. 2001. Does Oil Hinder Democracy? *World Politics* 53 (April): 325–61.

Rustow, Dankwart A. 1970. Transitions to Democracy: Toward a Dynamic Model. *Comparative Politics* 2, no. 3: 337–63.

Sharabi, Hisham. 1988. *Neopatriarchy: A Theory of Distorted Change in Arab Society*. New York: Oxford University Press.

Solingen, Etel. 1998. *Regional Orders at Century's Dawn*. Princeton: Princeton University Press.

Stepan, Alfred. 2001. *Arguing Comparative Politics*. Oxford: Oxford University Press.

Stepan, Alfred, and Graeme Robertson. 2004. Arab, Not Muslim, Exceptionalism. *Journal of Democracy* 15, no. 4: 140–46.

Strand, Havard, Lars Wilhelmsen, and Nils Petter Gleditsch. 2002. *Armed Conflict Dataset Codebook*, version 1.1. Oslo: International Peace Research Institute.

Tessler, Mark. 2002. Islam and Democracy in the Middle East: The Impact of Religious Orientations on Attitudes Toward Democracy in Four Arab Countries. *Comparative Politics* 34, no. 3: 337–54.

Tessler, Mark. 2003. Arab and Muslim Political Attitudes: Stereotypes and Evidence from Survey Research. *International Studies Perspectives* 4: 175–80.

Tessler, Mark, and Eleanor Gao. 2005. Gauging Arab Support for Democracy. *Journal of Democracy* 16, no. 3: 83–97.

UNDP (UN Development Program). 2002. *Arab Human Development Report*. New York.

US Department of State. 2002. *World Military Expenditures and Arms Transfers 1999–2000*. Washington: US Government Printing Office.

World Bank. 2004. *Gender and Development in the Middle East and North Africa*. Washington: World Bank.

Van den Berg, Gerard J. 2000. Duration Models: Specification, Identification, and Multiple Durations. In *Handbook of Econometrics*, volume 5, ed. J. J. Heckman and E. E. Leamer. Amsterdam: North Holland.

Voight, Stefan. 2005. Islam and the Institutions of a Free Society. *Independent Review* 10, no. 1: 59–82.

Zogby, James. 2002. *What Arabs Think: Values, Beliefs, and Concerns*. Utica, NY: Zogby International and The Arab Thought Foundation.

Zubaida, Sami. 1995. Is There a Muslim Society? Ernest Gellner's Sociology of Islam. *Economy and Society* 2: 151–88.

Figure 1 Average number of regime changes, 1960–2000
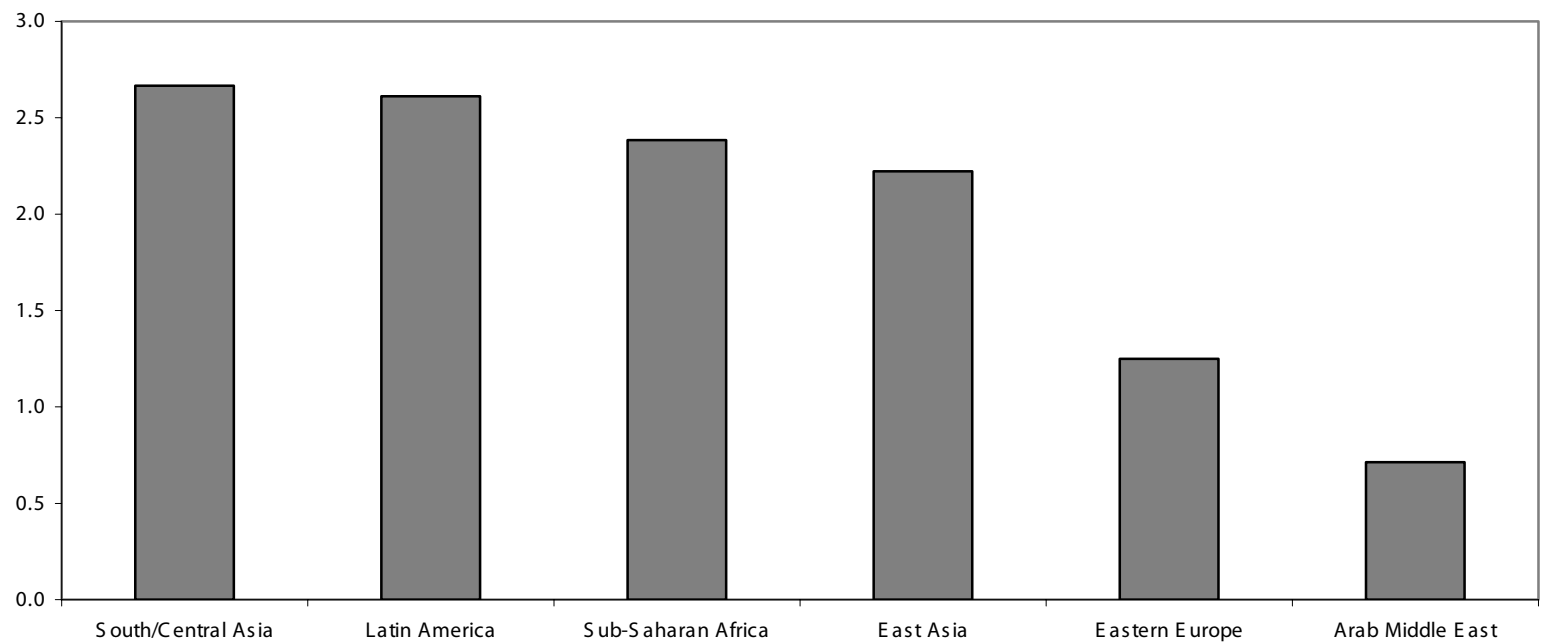
Figure 2   Average Polity score, 2000
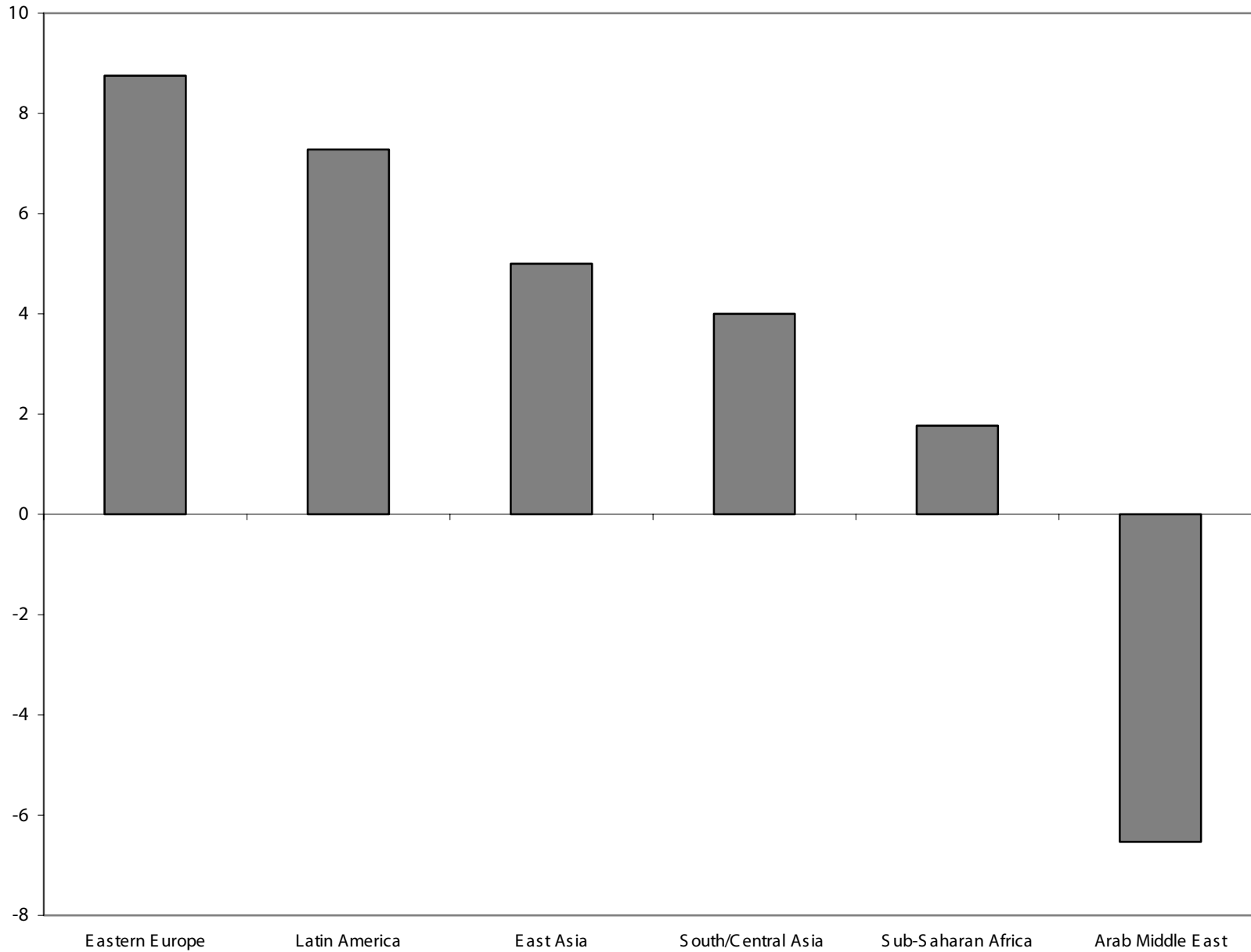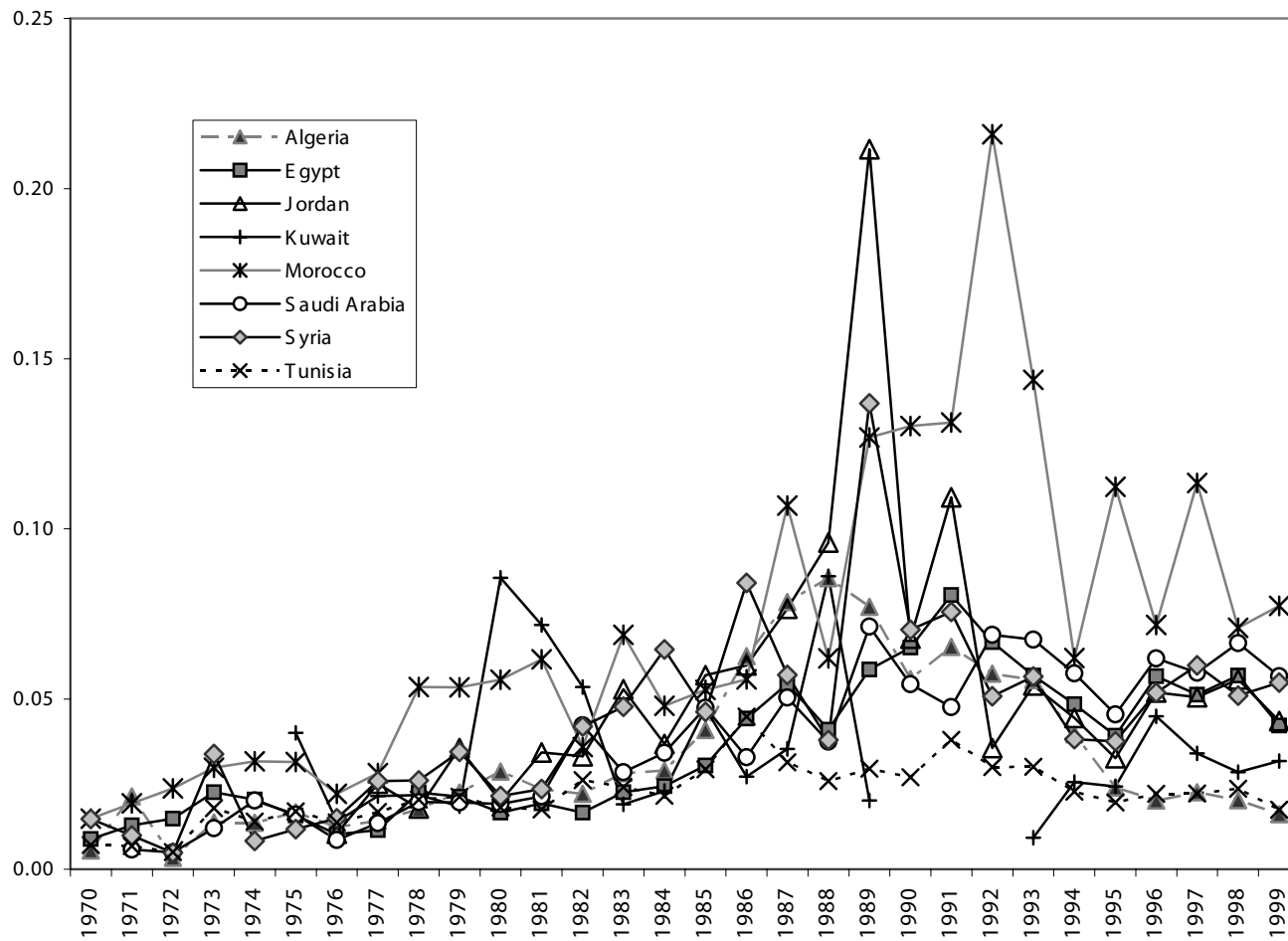
Figure 3   Likelihood of experiencing a liberalizing transition, 1970–99

Note: Derived from regression 10.1.

Figure 4   Likelihood of experiencing a democratizing transition in Egypt, 1970–99
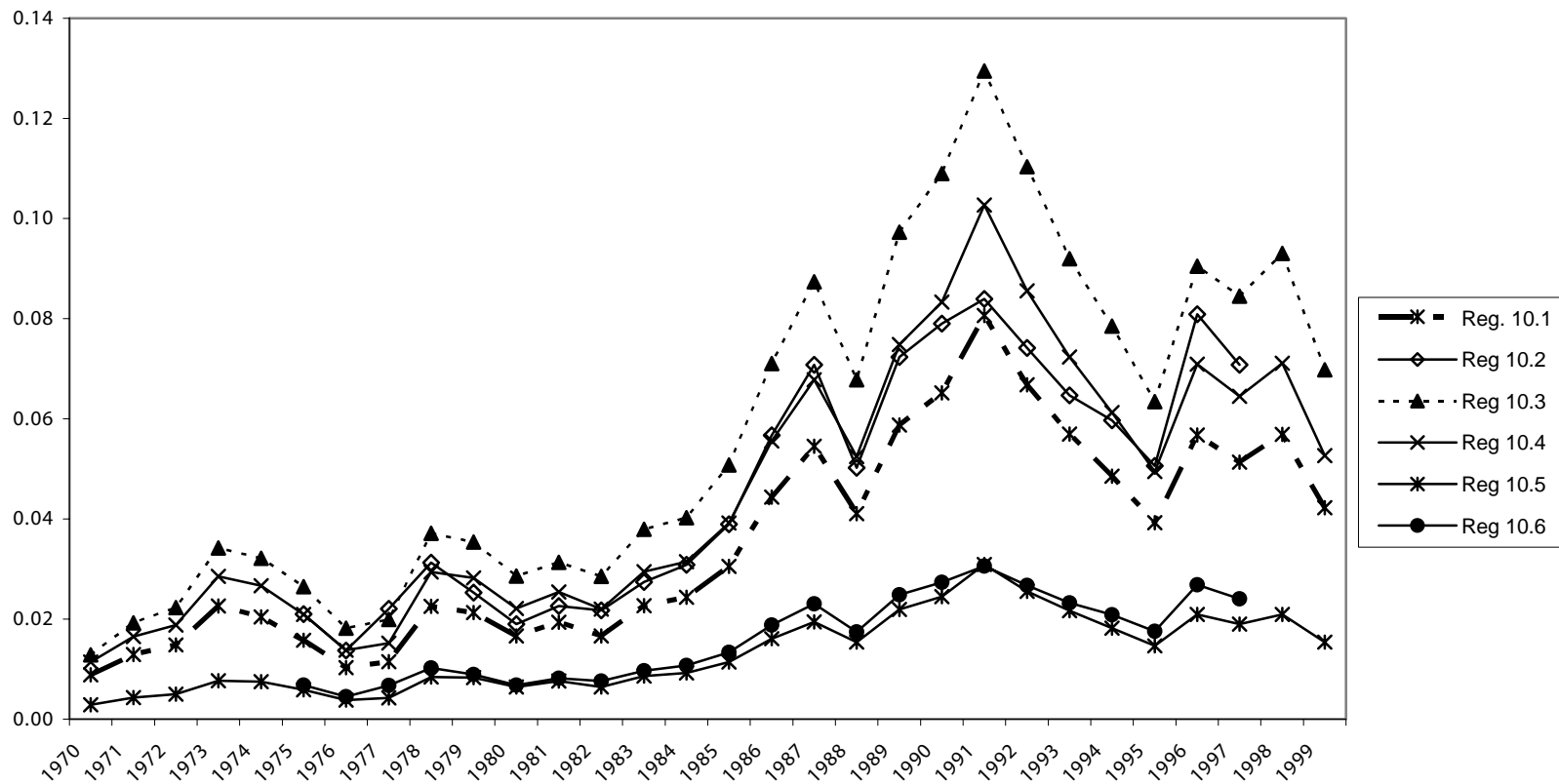
Source: Author's calculations.

Table 1

Variable	1.1 Polity 2 score at t+1	1.2 Polity 2 score at t+1
Modernization	1.38	1.34
	(6.86)[a]	(6.40)[a]
Ethno-linguistic fractionalization	-5.47	-5.47
	(-4.14)[a]	(-3.98)[a]
Neighborhood Polity score	0.42	0.42
	(15.42)[a]	(15.44)[a]
World Polity score	0.37	0.38
	(6.04)[a]	(6.05)[a]
British colonial dummy		2.42
		(1.81)[c]
French colonial dummy		-0.94
		(-0.62)
Spanish colonial dummy		0.08
		-0.05
Portuguese colonial dummy		-2.48
		(-0.85)
German colonial dummy		1.60
		(0.58)
Constant	4.00	3.56
	(5.32)[a]	(3.67)[a]
Observations	2326	2326
Number of countries	85	85
Smallest years per country	1	1
Average years per country	27.4	27.4
R^2 (overall)	0.42	0.46
R^2 (within)	0.35	0.35
R^2 (between)	0.42	0.46

Note: [a] indicates significance at the 1 percent level; [b] at 5 percent; [c] at 10 percent.

Table 2

	2.1	2.2	2.3	2.4	2.5	2.6
	Polity 2 score at t+1	Polity 2 score at t+1	Polity 2 score at t+1	Polity 2 score at t+1	Polity 2score at t+1	Polity 2 Score at t+1
Modernization	1.47	1.38	1.38	1.83	1.91	1.59
	(6.44)[a]	(6.67)[a]	(6.99)[a]	(8.08)[a]	(8.18)[a]	(7.73)[a]
Ethno-linguistic fractionalization	-3.75	-5.31	-4.95	-3.68	-2.80	-5.66
	(-2.8)[a]	(-4.09)[a]	(-3.88)[a]	(-2.69)[a]	(-2.05)[b]	(-4.26)[a]
Neighborhood Polity score	0.34	0.38	0.41	0.37	0.37	0.34
	(11.51)[a]	(13.04)[a]	(14.95)[a]	(12.01)[a]	(12.16)[a]	(12.09)[a]
World Polity score	0.24	0.36	0.39	0.26	0.25	0.34
	(3.64)[a]	(5.83)[a]	(6.35)[a]	(3.84)[a]	(3.77)[a]	(5.42)[a]
Tax revenue	0.05					
	(5.35)[a]					
Government consumption		0.01				
		(0.54)				
Fuel exporter			-4.91			
			(-4.24)[a]			
Fuel exports (share of GDP)				-0.03		
				(-1.46)		
Rents					-0.04	
					(-3.24)[a]	
Aid per capita						0.01
						(2.56)[b]
Constant	0.93	3.90	4.72	3.85	3.61	4.14
	(1.01)[a]	(4.87)[a]	(6.36)[a]	(5.07)[a]	(4.71)[a]	(5.45)[a]
Observations	1839	2237	2322	1896	1805	2254
Number of countries	82	85	85	81	81	85
Smallest years per country	1	1	1	1	1	1
Average years per country	22.4	26.3	27.30	23.4	22.3	26.50
R^2 (overall)	0.47	0.43	0.48	0.42	0.45	0.43
R^2 (within)	0.29	0.31	0.35	0.32	0.31	0.31
R^2 (between)	0.53	0.43	0.55	0.48	0.45	0.41

Note: [a] indicates significance at the 1 percent level; [b] at 5 percent; [c] at 10 percent.

Table 3

Variable	3.1 Polity 2 score at t+1	3.2 Polity 2 score at t+1	3.3 Polity 2 score at t+1	3.4 Polity 2 score at t+1	3.5 Polity 2 score at t+1
Modernization	2.02	2.20	1.37	1.37	1.36
	(6.25)[a]	(6.77)[a]	(6.80)[a]	(6.85)[a]	(6.80)[a]
Ethno-linguistic fractionalization	-0.71	-0.24	-5.56	-5.25	-5.33
	(-0.39)	(-0.13)	(-4.20)[a]	(-4.06)[a]	(-4.10)[a]
Neighborhood Polity score	0.21	0.17	0.42	0.43	0.43
	(5.43)[a]	(4.04)[a]	(15.45)[a]	(15.58)[a]	(15.61)[a]
World Polity score	0.22	0.09	0.37	0.37	0.36
	(3.16)[a]	(1.09)	(6.01)[a]	(5.94)[a]	(5.91)[a]
Military expenditure	0.003				
	(0.19)				
Military personnel		-0.18			
		(-1.95)[c]			
General conflict dummy			-0.55		-0.53
			(-1.83)c		(-1.78)[c]
Israel conflict dummy				-1.66	-1.61
				(-1.63)	(-1.58)
Constant	2.70	3.03	4.08	3.96	4.03
	(2.87)[a]	(3.12)[a]	(5.40)[a]	(5.42)[a]	(5.50)[a]
Observations	948	887	2326	2326	2326
Number of countries	84	85	85	85	85
Smallest years per country	1	1	1	1	1
Average years per country	11.3	10.4	27.4	27.4	27.4
R^2 (overall)	0.39	0.37	0.42	0.44	0.44
R^2 (within)	0.14	0.09	0.35	0.35	0.35
R^2 (between)	0.38	0.35	0.42	0.44	0.44

Note: [a] indicates significance at the 1 percent level; [b] at 5 percent; [c] at 10 percent.

Table 4

Variable	4.1 Polity 2 score at t+1	4.2 Polity 2 score at t+1	4.3 Polity 2 score at t+1
Modernization	1.74	1.95	2.21
	$(5.01)^a$	$(7.56)^a$	$(6.37)^a$
Ethno-linguistic fractionalization	-3.35	-2.96	-0.18
	(-1.57)	$(-2.01)b$	(-0.09)
Neighborhood Polity score	0.67	0.34	0.53
	$(18.96)^a$	$(10.47)^a$	$(14.54)^a$
World Polity score	-0.12	0.10	-0.22
	(-1.43)	(1.44)	$(-2.73)^a$
Achievement	2.17		2.21
	$(1.87)^c$		$(2.03)^b$
Power-distance		-0.13	-0.08
		$(-3.80)^a$	$(-2.07)^b$
Uncertainty-avoidance		-0.01	
		(-0.25)	
Individualism-collectivism		-0.03	
		(-0.99)	
Masculine-feminine		0.03	
		(0.94)	
Constant	-1.32	10.88	1.66
	(-0.53)	(2.87)a	(0.56)
Observations	1,084	1,637	1,005
Number of countries	37	60	34
Smallest years per country	15	1	15
Average years per country	29.3	27.3	29.6
R^2 (overall)	0.43	0.49	0.50
R^2 (within)	0.43	0.27	0.35
R^2 (between)	0.42	0.54	0.55

Note: [a] indicates significance at the 1 percent level; [b] at 5 percent; [c] at 10 percent.

Table 5

Variable	5.1 Polity 2 score at t+1	5.2 Polity 2 score at t+1	5.3 Polity 2 score at t+1	5.4 Polity 2 score at t+1	5.5 Polity 2 score at t+1	5.6 Polity 2 score at t+1	5.7 Polity 2 score at t+1	5.8 Polity 2 score at t+1	5.9 Polity 2 score at t+1
Modernization	1.26	1.26	1.27	1.33	1.31	1.31	1.29	1.32	1.33
	(6.13)[a]	(6.28)[a]	(6.37)[a]	(6.73)[a]	(6.72)a	(6.62)[a]	(6.51)[a]	(6.80)[a]	(6.73)[a]
Ethno-linguistic fractionalization	-4.88	-5.11	-4.84	-5.60	-6.11	-6.13	-4.85	-5.79	-5.87
	(-3.85)[a]	(-3.99)[a]	(-3.78)[a]	(-4.40)[a]	(-4.82)a	(-4.72)[a]	(-3.85)[a]	(-4.55)[a]	(-4.52)[a]
Neighborhood Polity score	0.40	0.40	0.41	0.40	0.40	0.40	0.40	0.40	0.40
	(14.51)[a]	(14.70)[a]	(14.90)[a]	(14.55)[a]	(14.65)a	(14.61)[a]	(14.59)[a]	(14.56)[a]	(14.54)[a]
World Polity score	0.42	0.42	0.41	0.41	0.42	0.42	0.42	0.42	0.41
	(6.70)[a]	(6.76)[a]	(6.65)[a]	(6.72)[a]	(6.81)a	(6.74)[a]	(6.72)[a]	(6.81)[a]	(6.70)a
Hindu share	0.13								
	(3.04)[a]								
Buddhist share	0.09								
	(2.09)[b]								
Jewish share	0.11								
	(2.18)[b]								
Catholic share	0.03								
	(1.09)								
Orthodox share	0.03								
	(0.82)								
Protestant share	0.06								
	(2.22)[b]								
Muslim share	-0.02	-0.06				0.00	-0.04		0.00
	(-0.62)	(-4.34)[a]				(0.00)	(-2.59)[a]		(0.22)
Muslim majority			-4.74						
			(-4.15)[a]						
Muslim share (distance - weighted)				-60.06					
				(-5.05)[a]					
Arab share					-0.10	-0.10		-0.09	-0.09
					(-5.79)[a]	(-3.63)[a]		(-4.09)[a]	(-3.12)[a]
Fuel exporter							-3.13	-1.86	-1.90

(table continues next page)

Table 5 *(continued)*

Variable	5.1 Polity 2 score at t+1	5.2 Polity 2 score at t+1	5.3 Polity 2 score at t+1	5.4 Polity 2 score at t+1	5.5 Polity 2 Score at t+1	5.6 Polity 2 score at t+1	5.7 Polity 2 score at t+1	5.8 Polity 2 score at t+1	5.9 Polity 2 score at t+1
Constant	1.43	5.15	4.89	5.17	5.38	5.39	5.22	5.42	5.41
	(0.67)	(6.64)[a]	(6.45)[a]	(6.83)[a]	(7.20)a	(7.11)a	(6.88)a	(7.31)[a]	(7.19)[a]
Observations	2,324	2,326	2,326	2,326	2,326	2,326	2,322	2,322	2,322
Number of countries	83	85	85	85	85	85	85	85	85
Smallest years per country	1	1	1	1	1	1	1	1	1
Average years per country	28	27.4	27.4	27.4	27.4	27.4	27.3	27.3	27.3
R^2 (overall)	0.55	0.49	0.49	0.49	0.52	0.52	0.50	0.52	0.52
R^2 (within)	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
R^2 (between)	0.63	0.55	0.54	0.57	0.59	0.59	0.58	0.61	0.61

Note: [a] indicates significance at the 1 percent level; [b] at 5 percent; [c] at 10 percent.

Table 6

Variable	6.1 Polity 2 score at t+1	6.2 Polity 2 score at t+1	6.3 Polity 2 score at t+1
Modernization	1.62	1.39	1.34
	(7.32)[a]	(6.97)[a]	(6.75)[a]
Ethno-linguistic fractionalization	-5.99	-5.62	-5.72
	(-4.50)[a]	(-4.34)[a]	(-4.33)[a]
Neighborhood Polity score	0.39	0.40	0.40
	(14.03)[a]	(14.46)[a]	(14.55)[a]
World Polity score	0.34	0.40	0.43
	(5.40)[a]	(6.44)[a]	(6.47)[a]
Literacy gender gap	0.08		
	(2.48)b		
Sex ratio		-0.07	
		(-1.79)[c]	
Muslim share	0.00	0.01	0.00
	(0.13)	(0.55)	(0.19)
Arab share	-0.12	-0.09	-0.09
	(-3.70)[a]	(-3.05)[a]	(-3.16)[a]
Fuel exporter	-1.56	-1.61	-2.02
	(-1.00)	(-1.19)	(-1.47)
Female share of labor force			-0.02
			(-0.70)
Constant	5.03	12.50	6.15
	(6.22)[a]	(3.09)[a]	(4.73)[a]
Observations	2197	2322	2322
Constant	75	85	85
Smallest years per country	14	1	1
Average years per country	29.3	27.3	27.3
R^2 (overall)	0.53	0.52	0.53
R^2 (within)	0.33	0.35	0.35
R^2 (between)	0.61	0.63	0.61

Note: [a] indicates significance at the 1 percent level; [b] at 5 percent; [c] at 10 percent.

Table 7

Variable	7.1 Polity 2 score at t+1	7.2 Polity 2 score at t+1	7.3 Polity 2 score at t+1	7.4 Polity 2 score at t+1	7.5 Polity 2 score at t+1	7.6 Polity 2 score at t+1	7.7 Polity 2 score at t+1
Modernization	1.37	1.38	1.70	1.37	1.37	1.35	1.42
	$(6.25)^a$	$(6.29)^a$	$(5.27)^a$	$(6.21)^a$	$(6.21)^a$	$(6.04)^a$	$(6.59)^a$
Ethno-linguistic fractionalization	-5.28	-5.13	-4.59	-5.24	-5.26	-5.16	-4.75
	$(-4.00)^a$	$(-3.85)^a$	$(-2.56)^a$	$(-3.95)^a$	$(-3.97)^a$	$(-3.82)^a$	$(-3.62)^a$
Neighborhood Polity score	0.32	0.32	0.06	0.33	0.33	0.32	0.32
	$(11.01)^a$	$(10.96)^a$	(1.48)	$(11.05)^a$	$(11.04)^a$	$(10.93)^a$	$(10.99)^a$
World Polity score	0.29	0.29	0.14	0.29	0.28	0.29	0.28
	$(4.50)^a$	$(4.48)^a$	$(1.69)^c$	$(4.44)^{)a}$	$(4.42)^a$	$(4.52)^a$	$(4.33)^a$
Arab share	-0.10	-0.09	-0.13	-0.09	-0.09	-0.09	-0.08
	$(-4.97)a$	$(-3.81)^a$	$(-6.87)^a$	$(-4.90)a$	$(-4.65)^a$	$(-2.91)^a$	$(-4.40)^a$
British colonial dummy	3.32	3.24	1.75	3.31	3.33	3.31	3.67
	$(3.18)^a$	$(3.10)^a$	$(1.73)^c$	$(3.16)^a$	$(3.17)^a$	$(3.16)^a$	$(3.64)^a$
Tax revenue	0.04	0.04	0.01	0.05	0.04	0.04	0.04
	$(4.69)^a$	$(4.68)^a$	(1.11)	$(4.75)^a$	$(4.64)^a$	$(4.69)^a$	$(4.52)^a$
Fuel exporter		-1.04					
		(-0.75)					
Military personnel			-0.07				
			(-0.78)				
General conflict dummy				-0.41			
				(-1.29)			
Israel conflict dummy					-0.98		
					(-0.90)		
Muslim share						-0.01	
						(-0.48)	
Sex ratio							-0.09
							$(-1.65)^c$
Constant	1.94	1.98	5.63	1.91	1.94	1.99	11.05
	$(2.06)^b$	$(2.10)^b$	$(5.03)^a$	$(2.02)^b$	$(2.05)^b$	$(2.10)^b$	$(1.96)^b$
Observations	1839	1835	718	1839	1839	1839	1839
Number of countries	82	82	76	82	82	82	82
Smallest years per country	1	1	1	1	1	1	1
Average years per country	22.4	22.4	9.4	22.4	22.4	22.4	22.4
R^2 (overall)	0.57	0.57	0.55	0.57	0.57	0.57	0.58
R^2 (within)	0.30	0.30	0.07	0.30	0.30	0.30	0.29
R^2 (between)	0.66	0.66	0.64	0.66	0.66	0.66	0.68

Note: [a] indicates significance at the 1 percent level; [b] at 5 percent; [c] at 10 percent.

Table 8 Impact on the Polity score of a one standard deviation change in the explanatory variables

Moderationization	2.1
Ethno-linguistic fractionalization	-1.3
Neighborhood Polity score	2.0
World Polity score	0.5
Arab share (in percent)	-1.9
British colonial dummy*	3.7
Tax revenue (share of current government revenue, in percent)	0.8
Sex ratio	-0.5

Note: Reported value for the British colonial dummy is the change in the polity score corresponding to a change in the dummy rather than a one standard deviation change.

Table 9   Actual versus predicted Polity score, 2000

	Actual	Predicted	Actual-predicted
Algeria	-3	-2.4	-0.6
Bahrain[b]	-9	-7.1	-1.9
Egypt[a]	-3	-2.7	-0.3
Jordan	-2	-4.0	2.0
Kuwait	-7	-8.3	1.3
Morocco	-6	-3.9	-2.1
Oman[b]	-9	n.a.	n.a.
Qatar	-10	-8.2	-0.8
Saudi Arabia	-10	n.a.	n.a.
Syria	-7	-5.8	-1.2
Tunisia	-3	-2.4	-0.6
Yemen	-2	-2.5	0.5

a. Data for 1998.   b. Data for 1997.

Note: Fitted values generated from regression 7.7. Prediction for Saudi Arabia and Qatarnot available (n.a.) due to missing data on tax revenue.

Table 10

Variable	10.1 Polity 2 score at t+1	10.2 Polity 2 score at t+1	10.3 Polity 2 score at t+1	10.4 Polity 2 score at t+1	10.5 Polity 2 score at t+1	10.6 Polity 2 score at t+1
Number of liberalizing transitions	0.34 (2.84)[a]	0.33 (2.67)[a]	0.38 (3.60)[a]	0.35 (2.98)[a]	0.39 (3.49)[a]	0.33 (3.00)[a]
Growth of GDP per capita	0.03 (2.14)[b]	0.03 (1.66)[c]	0.03 (1.76)[c]	0.03 (2.04)b	0.03 (2.04)[b]	0.03 (1.57)
Literacy rate	-0.01 (1.76)[c]	-0.01 (2.22)[b]	0.00 (0.31)	0.00 (1.60)	0.00 (1.51)	-0.01 (1.61)
Openness	0.42 (3.31)a	0.55 (3.92)[a]	0.39 (2.65)[a]	0.38 (2.71)[a]	0.33 (2.52)[b]	0.43 (3.13)[a]
World democratization	-3.87 (2.05)[b]	-3.25 (1.81)[c]	-3.78 (2.08)[b]	-3.90 (2.03)[b]	-3.77 (2.02)[b]	-3.12 (1.83)[c]
Fuel exporter	0.42 (1.77)[c]					
Trade taxes		-0.01 (2.49)[b]				-0.01 (1.87)[c]
Hindu share			0.00 (0.44)			
Buddhist share			-0.01 (1.20)			
Jewish share			0.06 (0.56)			
Catholic share			-0.01 (1.80)[c]			
Orthodox share			-0.01 (1.59)			
Protestant share			0.00 (0.69)			
Muslim share			0.00 (0.33)			
Muslim majority				0.29 (1.34)		
Arab share					0.01 (2.61)[a]	0.01 (2.06)[b]
Constant	1.89 (3.37)[a]	2.03 (3.28)[a]	2.21 (3.41)[a]	1.97 (3.42)[a]	2.11 (3.63)[a]	2.14 (3.35)[a]
Observations	1292	911	1294	1295	1295	911
Countries	59.00	55.00	58.00	59.00	59.00	55.00
Regime changes	72.00	54.00	72.00	72.00	72.00	54.00
P (shape parameter)	1.50	1.60	1.57	1.49	1.53	1.67
Ho (constant duration dependence)	0	0	0	0	0	0

Note: [a] indicates significance at the 1 percent level; [b] at 5 percent; [c] at 10 percent.

Table A.1 Countries in the regression samples

Algeria[a]	Egypt[a]	Kuwait[a]	Romania
Argentina[a,b]	El Salvador[a]	Luxembourg	Saudi Arabia[a]
Australia[a,b]	Finland[a,b]	Madagascar	Singapore[a]
Austria[a,b]	France[a,b]	Malaysia[a]	South Africa[a,b]
Bahrain[a]	Gabon	Mali	Spain[a,b]
Belgium[a,b]	Ghana[a]	Mexico[a,b]	Sri Lanka
Benin	Greece[a,b]	Morocco[a,b]	Sweden[a,b]
Bolivia	Guatemala[a]	Nepal	Switzerland[a,b]
Brazil[a,b]	Guinea	Netherlands[a,b]	Syria[a,b]
Bulgaria[b]	Haiti	New Zealand[a,b]	Taiwan, China[a]
Burkina Faso	Hungary[b]	Nicaragua	Thailand[a]
Burundi	Iceland	Nigeria	Togo
Cameroon	India[a,b]	Norway[a,b]	Tunisia[a,b]
Canada[a,b]	Indonesia[a]	Oman[a]	Turkey[a,b]
Chile[a,b]	Iran.[a,b]	Pakistan[a,b]	United Kingdom[a,b]
China[a]	Ireland[a,b]	Panama[a]	United States[a,b]
Colombia[a]	Israel[a,b]	Paraguay	Uruguay[a,b]
Costa Rica[a]	Italy[a,b]	Peru[a]	Venezuela[a]
Cote d'Ivoire	Jamaica[a]	Philippines[a]	Yemen[a]
Cyprus	Japan[a,b]	Poland[b]	
Demark[a,b]	Jordan[a]	Portugal[a,b]	
Dominican Republic	Korea.[a]	Qatar[a]	

Note: All countries are in the 85-country sample. [a] indicates the countries belonging to the subsample used in regression 4.1; [b] indicates the countries belonging to the subsample used in regression 4.2.