Violence in the Middle East and North Africa

An Econometric Forecast on Conflict in the MENA Region

MAY 23, 2016
Global Impact Strategies uses predictive analytics and decision science to help solve the world’s most challenging problems.

We deliver forecasts with accuracy and speed by combining advanced mathematical and economic modeling with expertise in game theory and political science.

Visit gistrat.com to learn more.

Contributors
Amir Bagherpour, PhD, Chief Political Scientist
Shaun Donaldson, Senior Analyst
Matthew Scharpnick, Creative Partner
Alaina Johnson, Visual Designer
Benjamin Marcus, Copy Editor
Summary

The Middle East and North Africa (MENA) is one of the most conflict-prone regions in the world. This is of global concern for several reasons:

(a) the growth and endurance of extremist groups such as ISIS and Al Qaeda;

(b) the humanitarian catastrophe created by violence, with millions of refugees, displaced families, and migration crises destabilizing neighbor countries and Europe;

(c) economic reliance on access to thirty percent of the world’s crude oil production and forty percent of the world’s conventional gas reserves; and

(d) growth in religion-related hostilities between members of the Abrahamic religions—Christianity, Islam, and Judaism—that as a whole represent fifty-five percent of the world’s population (3.8 billion people).

To understand the factors driving conflict and instability, giStrat applied econometric modeling to analyze data across a thirty-five-year period (1980-2014) for eighteen countries in MENA. We evaluated several economic, social, political, and demographic factors cited by scholars as key drivers of conflict. We then forecasted and ranked relative risk for intrastate conflict, country by country.

Our analysis shows the key factors driving intrastate conflict in the Middle East and North Africa are political repression, transitioning unconsolidated governments, religious fractionalization, adverse economic growth under high unemployment, and growing but dispersed populations. Below are some of our findings on the most significant factors driving instability and violent conflict.

Political Repression Significantly Contributes to Intrastate Conflict

The most significant factor contributing to the outbreak of intrastate conflict in MENA is the use of political repression. Politically repressive actions include detainment, torture, political killing, and forced disappearances of opponents of a regime. These are common practices by the majority of conflict-prone countries in MENA, increasing conditions for political and social grievances.

Transitioning Governments More Likely to Experience Intrastate Violence

A state with a transitioning government that is neither fully democratic nor fully autocratic is significantly more likely to experience intrastate violence. Transitioning governments are defined as anocracies, regimes that feature an inherent quality of political instability and ineffectiveness. These unconsolidated governments are typically comprised of divided elites and violent challengers threatening the legitimacy of the current social order. These characteristics make anocracies ten times more likely to experience intrastate conflict compared to democracies, and twice as likely as autocracies.² When faced with political repression, populations seek reform or regime change but tend to experience a greater likelihood of civil conflict when undergoing transition. Historical examples include the insurgency in Iran led by the Mujahedin-e-Khalq (MEK) following the 1979 Islamic Revolution, the overthrow of Muslim Brotherhood-supported President Mohamed Morsi by the military in Egypt in 2013 and the ensuing insurgency in the Sinai, the current civil war in Libya resulting from the removal of dictator Muammar Qaddafi, the rise of Al Qaeda and ISIS in Syria following the popular uprising against President Bashar al Assad, and the ongoing civil war in Iraq.

Religious Fractionalization More Significant than Ethnic Diversity in Driving Conflict

Our findings indicate that religious fractionalization is a significant indicator for the onset of a conflict, while ethnic diversity alone is not a major factor. This suggests that the religious dimensions of conflict in the Middle East and North Africa require far greater focus than differences in ethno-linguistic characteristics of a population. This finding is particularly critical for populations lacking a dominant religious majority such as Lebanon or Yemen, even as Sunni-Shia competition will remain an ongoing source of conflict in the region.

Unequal Economic Growth and Income Inequality Exacerbate Grievances of Marginalized Groups

Many studies suggest that economic growth reduces the risk of intrastate conflict.³ However, we show that economic growth has inversely contributed to the onset of conflict in MENA because growth has occurred in a non-inclusive, non-equitable manner. Greater income inequality and higher concentrations of wealth magnify the grievances of more marginalized populations and increase the conditions for conflict. These conditions are best exemplified by the cases of Syria, Egypt, and Libya at

---

the onset of their respective uprisings in 2011. For a number of years, these economies were growing but with little or no benefit for middle class and poorer communities. This ultimately contributed to the Arab uprisings, which remain unresolved.

More Difficult to Provide Security in Countries with Dispersed Populations

Countries with low population density are more likely to experience conflict than states with geographically concentrated populations. A state must spend more money to provide services and security for dispersed populations. When a state is already inefficient in providing these basic requirements, its ability to manage the needs of the population is further constrained, thereby contributing to an increased likelihood of violent conflict. Two examples of this phenomenon are the 2011 uprising against Bashar al-Assad in Syria initiated in the southern town of Daraa and the ongoing Houthi rebellion originating from the sparsely populated northern region of Yemen. In both cases, the uprisings began in rural areas where government presence was not as concentrated and then spread to urban areas.

Large Growing Populations

Relatively large growing populations heighten the likelihood of conflict by increasing the number of potential violent interactions among citizens. Larger populations also require more robust state security and service mechanisms which can further strain resources, particularly for ineffective or transitioning governments. A large and growing population is a strong statistical predictor for estimating conflict risk. However, factoring population size into risk models can affect the analyses of countries with relatively small populations. For example, Bahrain is as an outlier in this instability forecast due its small population estimated at 1.3 million people.

Assessing Rising Instability and Conflict Conditions

giStrat developed a conflict risk index, combining the types and number of destabilizing events occurring in the present day with socio-economic and structural conditions that can accelerate instability and violence. Syria, Iraq, Egypt, Libya, and Yemen ranked highest on our conflict risk index.

1. Syria
Score: 95
By evaluating a combination of the socio-economic factors and the breadth of destabilizing activity occurring in the country, we assess that this conflict will continue for at least the next two to three years. The country has now entered its fifth year of civil war as the ruling minority Alawi family of Bashar al-Assad now struggles to control less than 80% of the country’s territory. Syria is now fragmented into numerous localized areas with dozens of armed groups competing for control of territory. Assessing Syria in terms of structural factors alone, the country ranks exceptionally high based on the Assad regime’s repressive actions, religious fractionalization, and highly dispersed populations.

2. Iraq
Score: 93
Similar to Syria, the structural indicators and the breadth of violence currently plaguing the country indicate that conflict will persist for many years to come. The country has experienced over thirty years of ongoing conflict and possesses almost all of the significant socio-economic factors associated with a destabilized state. Iraq has a high degree of ethnic and religious large religious fractionalization, consisting of Kurds in the north, Sunnis in the west, and Shia in the south, all of whom are at odds with each other and are acting as de-facto independent territories. The Shia government in Baghdad continues to repress Sunni populations, a major factor that led to the rise of ISIS in western Iraq. Meanwhile, ISIS continues to target the Shia in Baghdad and also represses its own Sunni populations through coercion, murder, and torture. It is unlikely that a long-term campaign to eradicate ISIS will alleviate the fundamental grievances that led to the group’s establishment unless the underlying structural determinants are addressed. This includes reducing politically repressive tactics deployed by the government in Baghdad, changing discriminatory laws that target religious and ethnic rivals, and providing services and security for minority populations dispersed across the country.

3. Egypt
Score: 89
Based on our forecast, we predict that conflict in Egypt will worsen in the next one to two years, mainly due to two ongoing insurgencies: one led by pro-Muslim Brotherhood groups across the country and another led by ISIS-inspired Islamists in the Sinai. Following the deposition of President Hosni Mubarak and the later coup overthrowing Muslim Brotherhood-supported President Mohamed Morsi, Egypt
transitioned in 2014 to a quasi-military-run government with the popular election of President Abdel Sisi. Egypt’s position on this risk index is explained in part by the country’s large, diverse population, coupled with repressive authoritarian rule.

4. Libya
Score: 80
With a vacuum of power left in the wake of dictator Muammar Gaddafi’s overthrow in 2011, and popular rejection of the provisional General National Congress in early 2014, Libya has descended into civil war. Competing armed factions from Misrata, Benghazi, and Tripoli have failed to reach a compromise for establishing a unity government. In the wake of this dysfunction, ISIS has seized territory in the Mediterranean city of Sirte. Although U.S. airstrikes have limited the ability to expand beyond Sirte, ISIS-affiliated armed groups will continue to take advantage of the political disorder during this transition. Libya’s high level of instability and conflict risk is attributable to the country’s inability to form a central consolidated government and tribal fractionalization among competing Sunni factions.

4. Yemen
Score: 80
Tied with Libya, Yemen also ranks fourth in overall conflict risk but is ranked first in structural risk in MENA. The country’s dispersed rural population, religiously fractionalized demographics, and unconsolidated but repressive government contribute to an extremely volatile mix of conditions that fuel violent conflict. Yemen is currently in a state of a civil war as the Shia-offshoot Houthi population continues to ally itself with former President Abdullah Saleh in opposing a Saudi-backed post-Arab Spring regime loyal to President Abd Rabbuh Mansur Hadi. In addition to this civil war, Yemen’s failed government served as an ideal sanctuary for Al Qaeda and is now home to a rising ISIS presence.

5. Tunisia
Score: 75
Since the overthrow of dictator Zine El Abidine Ben Ali in early 2011, Tunisia has proven a relatively rare success story in the post-Arab Spring Middle East and North Africa. However, given prevailing underlying structural risks that include a dispersed population and robust GDP per capita growth coupled with high unemployment, our analysis shows that Tunisia is at high risk for instability and conflict.
Figure 1. MENA Instability and Conflict Risk Model Index Score by Predictor Variable

Risk was evaluated in the index by weighing the structural risk score against event-based risk using 2015 annual conflict-related fatalities data normalized by quantile. For each of the specific structural risk factors, analysts rank-ordered the eighteen countries and separated them into quartiles. For example, a country in the fourth quantile for any factor (e.g. unemployment) was marked as “lowest” risk vis-à-vis that indicator.

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Aggregate Risk</th>
<th>Structural Risk</th>
<th>Event-based Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Structural + Event-based</td>
<td>projections based on identified factors</td>
<td>2015 conflict-related fatalities by quantile</td>
</tr>
<tr>
<td>1</td>
<td>Syria</td>
<td>95</td>
<td>89</td>
</tr>
<tr>
<td>2</td>
<td>Iraq</td>
<td>93</td>
<td>85</td>
</tr>
<tr>
<td>3</td>
<td>Egypt</td>
<td>89</td>
<td>97</td>
</tr>
<tr>
<td>4</td>
<td>Libya</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>5</td>
<td>Yemen</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>6</td>
<td>Tunisia</td>
<td>75</td>
<td>89</td>
</tr>
<tr>
<td>7</td>
<td>Algeria</td>
<td>60</td>
<td>79</td>
</tr>
<tr>
<td>8</td>
<td>Israel</td>
<td>56</td>
<td>72</td>
</tr>
<tr>
<td>9</td>
<td>Lebanon</td>
<td>53</td>
<td>86</td>
</tr>
<tr>
<td>10</td>
<td>Saudi Arabia</td>
<td>44</td>
<td>87</td>
</tr>
<tr>
<td>11</td>
<td>Jordan</td>
<td>43</td>
<td>86</td>
</tr>
<tr>
<td>12</td>
<td>Iran</td>
<td>41</td>
<td>62</td>
</tr>
<tr>
<td>13</td>
<td>Oman</td>
<td>34</td>
<td>67</td>
</tr>
<tr>
<td>14</td>
<td>Morocco</td>
<td>30</td>
<td>59</td>
</tr>
<tr>
<td>15</td>
<td>Qatar</td>
<td>29</td>
<td>58</td>
</tr>
<tr>
<td>16</td>
<td>U.A.E.</td>
<td>27</td>
<td>53</td>
</tr>
<tr>
<td>17</td>
<td>Kuwait</td>
<td>23</td>
<td>46</td>
</tr>
<tr>
<td>18</td>
<td>Bahrain*</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Bahrain is as an outlier due its small population estimated at 1.3 million people.
Note: Bahrain is an outlier in the statistical risk model for two reasons: it has a relatively small population estimated at 1.3 million people, and it had no reported conflict deaths in 2015 despite an uprising in 2011.

Other Notable Factors from Peer Review Literature

The notion that socio-economic and political grievances cause conflict—with extreme grievances igniting civil wars—matches our intuitive understanding of the world. But grievances are just one of many factors that create the conditions for violence.⁴ It is necessary to identify the structural factors of conflict and the conditions that magnify the intensity of grievances. Despite many quantitative studies on conflict, the empirical factors recognized as indicators for the onset of conflict are relatively few.⁵ Below are the scientifically recognized factors empirically related to the onset of escalating violence with a high to medium degree of consensus in the field of conflict studies.⁶

---

6. Ibid.
Motive and Opportunity: Social and Religious Fractionalization

The scholarship of Paul Collier and Anke Hoeffler (2004) proposes that the factors that lead to civil war are analogous to those that lead to murder: motive and opportunity.⁷ In their “opportunity” model of civil war, the authors identify a list of potential catalysts that include social fractionalization, primary commodity export reliance, low male secondary schooling, geographic dispersion, GDP growth, GDP per capita, and mountainous terrain, among other factors. Moreover, in what is referred to as their “grievance” model, the authors identify additional factors that include population size, ethnic and religious fractionalization, ethnic dominance, level of democracy, duration of peace, and inequality. Conversely, Fearon and Laitin (2001) contend it is not the ethnic or religious characteristics of states that favor insurgency but rather the structural conditions.⁸ Fearon and Laitin define these conditions to include poverty and slow growth, which favor rebel recruitment, and weak states with large populations and overall rough terrain. Fearon (2005) argues that the presence of oil is a significant determinant of civil war risk for two reasons: the state apparatus behind oil producing nations is generally weak given the general level of per capita income across such states, and the presence of oil resources incentivizes territorial control.⁹

Weak Transitioning Governments

There is a high degree of consensus among researchers that extreme democracy and extreme autocracy both reduce the risk of civil war.¹⁰ However, the extent of inclusivity affects the level of risk. As democracies become more inclusive, the risk of ethnic civil war decreases. When autocracies become more inclusive, the risk of civil war rises.¹¹ Transitioning governments that are neither fully democratic nor consolidated autocracies are defined as anocracies—regimes that feature an inherent quality of political instability and ineffectiveness. Unconsolidated governments are typically comprised of divided elites and violent challengers threatening the legitimacy of the current social order. These characteristics make anocracies ten times more likely to experience intrastate conflict compared to democracies, and twice as likely as autocracies.

Commodity Exporting Economies and Inequality

giStrat’s analysis shows that countries with a large proportion of commodity exports—especially oil—coupled with weak governments increase the likelihood of conflict through three mechanisms. First, revenue from the exports motivates groups excluded from the profits or benefits to take up arms. Groups are often excluded because of ethno-linguistic differences from the ruling group. However,
the issue extends beyond ethnic rivalries to religious fractionalization and is particularly applicable to countries with fragile governments that are either incapable or unwilling to distribute equitably the revenue from natural resource extraction. Second, the presence of natural resources incentivizes rebellion by increasing the potentially lucrative payoffs for challengers who want to profit from sales of natural resource. Third, oil in particular can enhance inequality through an indirect mechanism referred to as “Dutch Disease,” in which revenues from a natural resource strengthen a nation’s currency relative to other nations, making the country’s other exports more expensive. This leads to a manufacturing sector loss.

**Conclusion**

Supported by a body of theory-driven empirical studies, giStrat’s indices rigorously assess the likelihood of destabilizing political violence and forecast the potential outbreak of intrastate conflict. Our findings demonstrate clearly that among other factors, intrastate conflict is intrinsically linked to democratic development, demography, and religious fractionalization, either validating previous studies or raising additional questions with respect to their regional implications for MENA. giStrat’s risk indexing model contextualizes the drivers of conflict at the regional level. Empirical observations refine our understanding of intrastate conflict and political instability across the Middle East and North Africa. Further study will help provide policymakers and peacebuilders an adaptive lens to anticipate violent conflict, develop strategies, and prioritize resources for conflict and crisis mitigation in the region.
# APPENDIX: Time-Series Fixed-Effects Logit Regression Results

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>ODDS RATIOS AND SIGNIFICANCE LEVELS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Repression</td>
<td>12.0305 (4.85762)***</td>
</tr>
<tr>
<td>Religious Fractionalization</td>
<td>1.4384 (0.15524)***</td>
</tr>
<tr>
<td>Level of Democracy (Polity IV Score)</td>
<td>1.3328 (0.10172)***</td>
</tr>
<tr>
<td>Ethnic Fractionalization</td>
<td>0.3489 (0.11236)***</td>
</tr>
<tr>
<td>Population Density</td>
<td>0.94324 (0.01295)***</td>
</tr>
<tr>
<td>Population Growth (Log Population)</td>
<td>98.668 (170.842)***</td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>0.7848 (0.06516)***</td>
</tr>
<tr>
<td>Economic Growth (GDP/Capita Growth)</td>
<td>1.036 (0.01848)*</td>
</tr>
<tr>
<td>Level of Development (GDP/Capita)</td>
<td>0.9995 (0.00027)</td>
</tr>
<tr>
<td>Oil Rents</td>
<td>0.95957 (0.02474)</td>
</tr>
<tr>
<td>Forest Coverage</td>
<td>0.3465 (0.25242)</td>
</tr>
<tr>
<td>N Log Likelihood</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>-82.5956</td>
</tr>
</tbody>
</table>

**Note:** Odds ratios are shown with standard errors in parentheses. Odds ratios less than one indicate a negative direction of effect. *Indicates statistical significance at the 95% confidence level. **Indicates statistical significance at the 99% confidence level. ***Indicates statistical significance at the 99.9% confidence level.
Bibliography


