



**Policy Brief**

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**Deteriorating economic condition and the emergence of social instability**

By Charles Harry

**Executive Summary**

Political protests and civil conflicts are episodic in nature, often stemming from localized conditions. Most quantitative research on these problems, however, has used large, country-level data sets that can shed little light on the evolving dynamics of protest, revolt, and rebellion. Researchers' inability to agree about the relative importance of different economic, political, and social factors has led to calls for additional data collection at sufficient granularity to capture localized conditions prior to and during outbreaks of civil conflict. Collecting high-quality data on local conditions at frequent intervals in countries at high risk for civil violence would be difficult, expensive, and dangerous. The first step in understanding the local dynamics of political protest and civil violence must be conceptual exploration that illustrates the potential utility of high-resolution data collection and helps identify the types of data and relationships that could be most useful for subsequent analysis.

This brief demonstrates how an agent-based modeling approach could allow researchers to explore the effects of changes to individual economic conditions on social stability, especially how deteriorating economic conditions and differing degrees of economic inequality in a community impact the size, frequency, and onset of civil protest. While previous studies using country-level data have not found that economic inequality has a significant effect on civil violence, the agent-based modeling approach suggests that inequality can have significant effects, but that the magnitude and direction of these effects depend on local conditions. The analysis on which this brief is based also highlights the delicate balance between implementing economic reforms (e.g. fuel subsidy reform) to generate long-term growth and minimizing social instability that can ensue in the short-run due to deteriorating economic conditions of the most vulnerable.

## **Introduction**

The size and magnitude of recent mass protests and social instability in Brazil, Turkey, and much of the Arab world have largely surprised leaders. Yet significant research on the possibility of such phenomenon has been ongoing for decades. Recent work has explicitly explored socio-economic, geographic, and demographic variables deemed important determinants of civil conflict. Chief among this work's findings are that income and economic growth can dampen outbreaks of civil instability. While some of these findings have been accepted into the orthodoxy of civil conflict research, these variables have been largely interpreted as proxies for central state weakness or as a way to understand would-be rebel groups' incentives for looting. This approach helps to explain civil conflicts in Sierra Leone or in the drug-producing regions of Columbia, yet it is less successful in explaining the origins and evolution of political protest found in the Arab Spring, where individual actions led to protests that grew in size and intensity.

Understanding the full range of possible determinants of civil conflict remains an open research question, despite the considerable efforts over the past decade. Empirical modeling in particular has been used to draw stronger conclusions between human behavior and its underlying causes. Yet, researchers have struggled to use mathematical or statistical models based on insufficient data sets to tease out the interactions between multiple variables. They have empirically tested and validated some determinants, yet failed to reach consensus on others. The field currently lacks a coherent and evolutionary approach to individual economic condition and the outbreak of civil violence. Researchers have attempted to develop a "greed" theory that eschews individualized grievance factors and focuses on the potential benefits derived to would-be rebels to explain the outbreak of conflict. Yet this theory fails to account for how protest evolves into revolt and finally rebellion. In addition, alternate interpretations of greed variables have been found to contradict the theory's main tenets and to provide evidence for a grievance theory of economic determination of civil conflict.

The lack of local-level data also severely limits researchers' abilities to test current propositions or to form new theory on localized civil conflict. Because the collection of data at a sufficient granularity can be both inherently dangerous and resource intensive, the research on which this brief is based used agent based modeling to explore how local dynamics could contribute to emergent civil instability in order to help identify key data useful for future empirical testing.

## **Approach & Findings**

Agent Based Models (ABM) attempt to "grow" emergent phenomenon by observing behavior through simple interactions amongst individual agents. Utilized by physical and social scientists to understand complex interactions, ABMs provide useful insight into how group behaviors emerge, enabling researchers to understand how simple behavior informs complex system dynamics and to test policy interventions that might alter those outcomes. The model developed

for examining the effect of local conditions on civil conflict incorporated variables such as individual perceptions of government legitimacy, individual hardship, the presence of security services, and individual risk tolerance.

Based on repeated runs of this model, several key findings emerged:

- Deteriorating economic condition is correlated with higher magnitude protests;
- Deteriorating economic condition is associated with greater frequency of protest;
- In systems with higher levels of well-being among citizens, higher variance increases magnitude and frequency of protest; however in systems with lower levels of well-being higher variance lowers magnitude and frequency of protest;
- Increasing levels of economically disenfranchised citizens are associated with higher instability;
- Deteriorating economic conditions over time lead to punctuated protest followed by the outbreak of revolt;
- Deteriorating economic conditions over time are associated with higher magnitude and frequency of protest; and
- Higher inequality leads to *earlier* punctuated protest as the general level of economic conditions degrades.

## **Policy Implications: Subsidy Reform**

International organizations and central authorities expend a great deal of effort to understand the complexities of underperforming economies, develop reasonable action plans, and manage the process of economic reform. The objective of these organizations and their government partners is generally to boost national income through the efficient expenditure of limited resources on the most productive assets.<sup>1</sup> A common part of their strategy is to reform subsidy programs to help foster faster growth, with the goal of increasing incomes for citizens.<sup>2</sup> Such reforms often call for the removal of state support of common household staples such as cooking gas or bread, which would allow government to spend its money elsewhere. The hope is that a state's economy grows as its government allocates resources more efficiently. While these efforts are often well intentioned and could address larger structural problems in an economy, they largely ignore possible short-run social stability concerns, including:

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<sup>1</sup> See International Monetary Fund Press Release, "IMF Calls for Global Reform of Energy Subsidies: Sees Major Gains for Economic Growth and the Environment," Press Release No. 13/93, March 27, 2013, available at <http://www.imf.org/external/np/sec/pr/2013/pr1393.htm>.

<sup>2</sup> Ibid.

### **(1) Cuts to price support for key household goods can trigger protest**

The removal of state subsidies on high-demand, inelastic goods, such as cooking fuel, reduces household income as individuals are unable to find substitute goods. While wealthy or middle class households are unlikely to suffer significantly under this type of reform, low-income households might find it more difficult to survive. If stretched enough, an individual or group might see no alternative but to voice their discontent. As economic conditions worsen for individuals, the policies aimed at improving the lives of citizens in the long-run could actually trigger social instability. A notable example includes the 2012 violent protests against fuel subsidy reform in Jordan.<sup>3</sup>

### **(2) Uneven economic growth can generate social stability**

International organizations encourage subsidy reform to stimulate economic growth that benefits a society as a whole by diverting scarce resources into more efficient enterprises. Economic orthodoxy notes that the reallocation of resources can affect citizens who are reliant on particular services or price supports, but holds that the long-term benefits outweigh the short-run costs. While ample evidence shows that economic growth improves the aggregated value of goods and services in an economy over the long run, the variance of that growth amongst the populace in the short run can have a tangible effect on social stability. If the growth in the value of goods and services benefits only a few, while a larger proportion of the populace is worse off, a policy that aimed to improve conditions in a country could undermine civil society and reduce the legitimacy of governing institutions.

### **(3) Economic reform needs to liberalize economies in a targeted manner**

Efforts to reduce government spending in unproductive sectors need to be balanced with sufficient protections for those in a society who are most vulnerable to the reduction of services eliminated under reforms. Recent experiences in fuel subsidy reform in Nigeria, Indonesia, and Jordan along with ongoing austerity protests in Greece and Spain highlight the volatile nature between deteriorating economic condition and social instability. Governments should craft policies that remove broadly implemented supports and replace them with means-tested alternatives that reduce the sizable burdens placed on central governments while preserving benefits to the most disaffected.

This brief has described a different way of understanding the emergence and evolution of political protest. By using an agent-based model approach, the level, distribution, and rate of change of utility affect the onset, frequency, and magnitude of political protest in an economic and political system. This approach is markedly different from analyses that have used case

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<sup>3</sup> Jodi Rudoren, "Riots Erupt Across Jordan Over Gas Prices," *New York Times*, November 13, 2012, available at <http://www.nytimes.com/2012/11/14/world/middleeast/jordan-faces-protests-after-gas-price-proposal.html?pagewanted=all>.

studies or statistical models to draw correlations between socio-economic variables and the onset of civil war. While these efforts have identified some correlation between economic and political variables and the increased probability of civil violence, they explain little about how protests form and evolve due to changing economic conditions.

The protests, revolts, and revolutions of the Arab spring serve as a reminder of the importance of understanding the underlying causes of social instability. Seemingly isolated acts of desperation can have profound geo-political consequences. Addressing these issues requires a deep understanding of the determinants and evolution of conflict so that reasonable policies can be put in place to address grievances before social instability manifests itself and moves beyond control. By addressing the underlying concerns of people yearning for a better life, a government in turn helps to maintain its own.

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## **About the Author**

Charles Harry completed this dissertation while he was a graduate fellow at the Center for International Security Studies at Maryland (CISSM). Dr. Harry has worked in leadership positions in the U.S. government, including at the Departments of Defense and Treasury, for over 13 years. He has served overseas and is regularly sought out for his expertise in Middle Eastern and international economic affairs. This policy brief is drawn from the author's dissertation, *The Effect of Economic Condition on Civil Unrest: New Insights from Agent Based Modeling*, (University of Maryland, May 2013).