

Examining the Geospatial Aspects of Civil Unrest

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Overview

Sections:

1. Goals and Objectives
2. Background
3. Methodology and Anticipated Outcomes
4. Project Timelines
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Goals and Objectives

Explore geospatial aspects of potential unrest indicators:

- Operationalize insurgency preconditions identified by Seth G. Jones
- Test use Jones' preconditions at the city level against "Urban Flashpoints" score card (measure of unrest)
- Explore, compare, and contrast the geospatial aspects of Jones' and "Urban Flashpoints" measure
- Examine the efficacy of scaling-down Jones' indicators from the national to the state and local levels

Background

Waging Insurgent Warfare: Lessons from the Vietcong to the Islamic State

Seth G. Jones

- Intended to provide policy makers with a practical new perspective on insurgencies in order to inform pre-insurgency decision making and fill gaps in the current understanding of how insurgencies start, are conducted, and how they end.

Examines four essential questions:

- “[W]hat factors contribute to the rise of an insurgence?”
- “[W]hat are the key components involved I conducting an insurgency?”
- “[W]hat factors contribute to the end of an insurgency?”
- “[W]hat do answers to these questions mean for the conduct of counterinsurgency warfare?”

Background

Waging Insurgent Warfare: Lessons from the Vietcong to the Islamic State

Seth G. Jones

Local Grievances:

- The issues insurgent leaders use to construct an effective narrative which inspires members of the public to join and remain loyal to an insurgency

Weak Governance:

- Jones generalizes governance as “the set of institutions by which authority is exercised.”
- Aspects of governance include the formation and implementation of public policy, the establishment and enforcement of laws and the maintenance of public order, and the provision of public services.
- Countries with weak governance are more prone to insurgency.

Greed:

- Jones states “prospective insurgents are more likely to start an insurgency if they have access to resources that can help finance a rebellion – such as oil, diamonds, or drugs.”
- Jones discussed greed in the context of “feasibility” arguing the availability of lootable resources, resources that can be sold to fund insurgent activities, increase the likelihood of insurgency.

Background

“Identifying Urban Flashpoints: A Delphi-Derived Model for Scoring Cities’ Vulnerability to Large-Scale Unrest”

Russel W. Glenn, Beth Grill, Megan P. McKernan, Christopher Paul, Barbra Raymond, Matthew Stafford and Horacio R. Trujillo

- Developed by the authors as a Delphi-derived method to help policy makers assess and identify cities vulnerability to unrest.
- Measure is meant to indicate potential ideological, economic, military, political, and demographic factors that may individually spark unrest and cumulatively indicate a cities vulnerability to unrest.
- Describes unrest as “involving people engaged in a range of activities in defiance of and / or in resistance to established authority, convention, and / or government”.
- Describes large-scale unrest as “consequential at the national or supranational level.”

Methodology

Overview

- Identify and refine Jones' preconditions
- Using identified data sources, assess the United States for preconditions using preconditions as written by Jones
- Adjust Jones' preconditions to assess US states and identified US cities using Jones' preconditions
- Compare and contrast the assessments of the United States using Jones' original and adjusted preconditions.
- Compare and contrast the assessment of a subset of US cities using adjusted Jones' preconditions with the assessment of that subset of US Cities using potential indicators of large-scale urban unrest using the indicators identified in the *Flashpoints* model for scoring cities' vulnerability to large-scale unrest.
- Explore the geospatial implications of the application of these two assessment methods for identifying pre-insurgent or potential unrest indicators.

Methodology

Jones – National Indicators

Local Grievance	Detail
Low Per Capita Income	"conditions for an insurgency are more propitious in countries with a low per capita income" (Jones, 22)
Low Economic Growth Rates	"low-income and low-growth rates in poor countries ... may indicate a lack of economic opportunity , making it easier for insurgents to recruit fighters." (Jones, 20)
Ethnic Polarization	"insurgents may be more successful in starting an insurgency in polarized countries where there is a dominant ethnic group associated with one side (like the government) and a large minority that is unified and associated with another side (like the rebels)." (Jones, 23)
Religious Polarization	"a country faces a higher risk of insurgency when it has a majority religious group and a well-organized minority group." (Jones, 23)

Jones as Written
Local Grievances
Low Per Capita Income
Low Economic Growth Rate
Ethnic Dominance
Religious Dominance
Weak Governance
Greed

Greed	Detail
Financial Resources	"Prospective insurgents are more likely to start an insurgency if they have access to resources that can help finance rebellion – such as oil, diamonds, or [illegal] drugs." (Jones, 30)
Financial Resources: Oil	Specifically identified
Financial Resources: Diamonds	Specifically identified
Financial Resources: Coal	Supplemental
Financial Resources: Natural Gas	Supplemental
Financial Resources: Drugs	Specifically identified

Methodology

Jones – National Indicators

Local Grievance	Measure	Map?
Low Per Capita Income	Rank US per capita income against per capita income of other nations. Below MEDIAN meets conditions.	National Binary - yes or no for entire country
Low Economic Growth Rates	Rank US growth rate economic against economic growth rate of other nations. Below MEDIAN meets conditions.	National Binary - yes or no for entire country
Ethnic Polarization	Ethnicity in the US is frequently equated with race. Measure will be positive if a majority of 40% or more and a minority of 20% or more are present. Measure will examine presence / absence of majority - minority polarization and not measure association / affiliation.	National Binary - yes or no for entire country
Religious Polarization	Measure will be positive if a majority of 40% or more and a minority of 20% or more are present. A measure "not religious" will be assessed as a "religious group". Measure will examine presence / absence of majority - minority polarization and not measure of organization.	National Binary - yes or no for entire country

Greed	Measure	Mappable
Financial Resources	Various	Identify local / regional presence of absence of resource
Financial Resources: Oil	Presence of oil fields or oil production infrastructure.	Identify local / regional presence of absence of resource
Financial Resources: Diamonds	Presence of diamond mines or diamond fields.	Identify local / regional presence of absence of resource
Financial Resources: Coal	Presence of coal mines or coal fields.	Identify local / regional presence of absence of resource
Financial Resources: Natural Gas	Presence of natural gas fields.	Identify local / regional presence of absence of resource
Financial Resources: Drugs	Assessed at the National Level	

Methodology

Jones – National Indicators

Jones as Written
Local Grievances
Low Per Capita Income
Low Economic Growth Rate
Ethnic Dominance
Religious Dominance
Weak Governance
Greed

Weak Governance	Detail
Corruption	
National Government: Petty or Grand Corruption: Public Perception	Briefly discussed
National Government: Petty or Grand Corruption: International Ranking	Briefly discussed
Public Power Exercised for Private / Personnel Gain / Interests: Public Perception	Briefly discussed
Public Power Exercised for Private / Personnel Gain / Interests: International Ranking	Briefly discussed
Policy	
Quality Policy Formation: Public Perception	Briefly discussed
Quality Policy Formation: International Ranking	Briefly discussed
Credibility of Government's Commitment to Policy: Perception	Briefly discussed
Credibility of Government's Commitment to Policy: International Ranking	Briefly discussed
Public Services	
Quality of Public Services: Public Perception	Briefly discussed
Quality of Public Services: International Rankings	Briefly discussed

Methodology

Jones – National Indicators

Jones as Written
Local Grievances
Low Per Capita Income
Low Economic Growth Rate
Ethnic Dominance
Religious Dominance
Weak Governance
Greed

Weak Governance	Detail
Enforcement	
National Security Forces: Establish law and order	Briefly discussed
National Security Forces: Corrupt	Briefly discussed
National Security Forces: Popular legitimacy	Briefly discussed
National Security Forces: Poorly funded	Briefly discussed
National Security Forces: Poorly equipped	Briefly discussed
National Security Forces: Politically divided	Briefly discussed
Police: Popular confidence in police	Briefly discussed, emphasized local importance
Police: Corrupt	Briefly discussed, emphasized local importance
Police: Popular legitimacy	Briefly discussed, emphasized local importance
Police: Poorly funded	Briefly discussed, emphasized local importance
Police: Poorly equipped	Briefly discussed, emphasized local importance
Terrain (Remote)	
Presence of Jungles	Briefly discussed
Presence of Swamps	Briefly discussed
Mountainous (50% or mores)	Specifically identified
Mountainous (less than 50%)	Specifically identified

Methodology

Jones – National Indicators

Weak Governance	Measure	Mappable
Corruption		
National Government: Petty or Grand Corruption: Public Perception	Public poll indicating satisfaction with national level policy and / or legislature. Less than 50% positive meets condition.	National Binary - yes or no for entire country
National Government: Petty or Grand Corruption: International Ranking	International ranking of government corruption. Below MEDIAN meets conditions.	National Binary - yes or no for entire country
Public Power Exercised for Private / Personnel Gain / Interests: Public Perception	Public poll indicating satisfaction with national legislative policies. Less than 50% positive meets condition.	National Binary - yes or no for entire country
Public Power Exercised for Private / Personnel Gain / Interests: International Ranking	International ranking of government responsiveness / representativeness. Below MEDIAN meets conditions.	National Binary - yes or no for entire country
Policy		
Quality Policy Formation: Public Perception	Public poll indicating satisfaction with national level policy and / or legislature. Less than 50% positive meets condition.	National Binary - yes or no for entire country
Credibility of Government's Commitment to Policy: Perception	Public poll indicating satisfaction with national legislative policies. Less than 50% positive meets condition.	National Binary - yes or no for entire country
Public Services		
Quality of Public Services: Public Preception	Public poll indicating satisfaction with public services and / or infrastructure. Less than 50% positive meets condition.	National Binary - yes or no for entire country
Quality of Public Services: International Rankings	International ranking of public services and / or infrastructure. Below MEDIAN meets conditions.	National Binary - yes or no for entire country

Methodology

Jones – National Indicators

Weak Governance	Measure	Mappable
Enforcement		
National Security Forces: Establish law and order	Public poll indicating belief in capability. Less than 50% positive meets condition.	National Binary - yes or no for entire country
National Security Forces: Corrupt	Public poll indicating belief in corruption. Less than 50% positive meets condition.	National Binary - yes or no for entire country
National Security Forces: Popular legitimacy	Public poll indicating belief in legitimacy. Less than 50% positive meets condition.	National Binary - yes or no for entire country
National Security Forces: Poorly funded	Public poll identifying oppinions about funding. Less than 50% positive meets condition.	National Binary - yes or no for entire country
National Security Forces: Poorly equipped	Public poll identifying oppiions on equipping. Less than 50% positive meets condition.	National Binary - yes or no for entire country
National Security Forces: Politically divided	Public poll indicating belief in unity of command and control. Less than 50% positive meets condition.	National Binary - yes or no for entire country
Police: Popular confidence in police	Public poll identifying oppinions about confidence. Less than 50% positive meets condition.	National Binary - yes or no for entire country
Police: Corrupt	Public poll indicating belief in corruption. Less than 50% positive meets condition.	National Binary - yes or no for entire country
Police: Popular legitimacy	Public poll indicating belief in legitimacy. Less than 50% positive meets condition.	National Binary - yes or no for entire country
Police: Poorly funded	Public poll identifying oppinions about funding. Less than 50% positive meets condition.	National Binary - yes or no for entire country
Police: Poorly equipped	Public poll identifying oppiions on equipping. Less than 50% positive meets condition.	National Binary - yes or no for entire country

Methodology

Jones – National Indicators

Weak Governance Terrain (Remote)	Measure	Mappable
Presence of Jungles	N/A - indicate % of country	Yes - indicate regions
Presence of Swamps	N/A - indicate % of country	Yes - indicate regions
Mountainous (50% or more)	USGS % measure. If 50% more, meets condition	Yes - indicate regions
Mountainous (less than 50%)	USGS % measure. If 50% more, meets condition	Yes - indicate regions

Methodology

Jones – National Indicators: Potential Data Sources (Examples)

Category: Local Grievance

Precondition: Low Per Capita Income

Potential Source: World Bank Data Bank: World Development Indicators

URL:

<http://databank.worldbank.org/data/home.aspx>

Description: “DataBank is an analysis and visualization tool that contains collections of time series data on a variety of topics.”

“World Development Indicators (WDI) is the primary World Bank collection of development indicators, compiled from officially recognized international sources. It presents the most current and accurate global development data available, and includes national, regional and global estimates.”

Series Name	Country Name	2016
GDP per capita (current US\$)	Luxembourg	100738.6842
GDP per capita (current US\$)	Switzerland	79887.51824
GDP per capita (current US\$)	Macao SAR, China	74017.18471
GDP per capita (current US\$)	Norway	70867.94061
GDP per capita (current US\$)	Ireland	64175.43772
GDP per capita (current US\$)	Iceland	60529.92676
GDP per capita (current US\$)	Qatar	59324.33877
GDP per capita (current US\$)	United States	57638.15909
GDP per capita (current US\$)	Denmark	53578.75657
GDP per capita (current US\$)	Singapore	52962.49157
GDP per capita (current US\$)	Sweden	51844.76126
GDP per capita (current US\$)	Australia	49755.31548
GDP per capita (current US\$)	San Marino	47908.56141
GDP per capita (current US\$)	Netherlands	45637.88675
GDP per capita (current US\$)	Austria	44757.6349
GDP per capita (current US\$)	Hong Kong SAR, China	43740.99288
GDP per capita (current US\$)	Finland	43433.03222
GDP per capita (current US\$)	Canada	42348.94546
GDP per capita (current US\$)	Germany	42161.31966
GDP per capita (current US\$)	Belgium	41271.48215

Methodology

Jones – State Indicators: Potential Data Sources (Examples)

Category: Local Grievance

Precondition: Low Per Capita Income

Potential Source: Bureau of Economic Analysis, US Department of Commerce

URL: <https://www.bea.gov/itable/>

Description: “BEA's interactive data application is the one stop shop for accessing BEA data on the fly. The interactive application makes it easier to access and use our statistics by providing a common look and feel for users accessing national, international, regional or industry statistics. The application makes the data easier to print, save and export.”

State	2016
Alabama	37402
Alaska	63317
Arizona	38985
Arkansas	36524
California	59117
Colorado	52567
Connecticut	63636
Delaware	64054
District of Columbia	160643
Far West	57398
Florida	39506
Georgia	45140
Great Lakes	48431
Hawaii	51819
Idaho	36056
Illinois	54404
Indiana	45977
Iowa	51912
Kansas	46217
Kentucky	38950

Methodology

Jones – Cites Indicators: Potential Data Sources (Examples)

Category: Local Grievance

Precondition: Low Per Capita Income

Potential Source: Bureau of Economic Analysis, US Department of Commerce

URL: <https://www.bea.gov/itable/>

Description: “BEA's interactive data application is the one stop shop for accessing BEA data on the fly. The interactive application makes it easier to access and use our statistics by providing a common look and feel for users accessing national, international, regional or industry statistics. The application makes the data easier to print, save and export.”

Per Capita Real GDP by Metropolitan Statistical Area	
Metropolitan Statistical Area	2016
Midland, TX	175837
San Jose-Sunnyvale-Santa Clara, CA	119695
Bridgeport-Stamford-Norwalk, CT	93231
San Francisco-Oakland-Hayward, CA	86830
Boston-Cambridge-Newton, MA-NH	77502
Seattle-Tacoma-Bellevue, WA	77273
Trenton, NJ	73415
Washington-Arlington-Alexandria, DC-VA-MD-WV	73270
New York-Newark-Jersey City, NY-NJ-PA	70758
Des Moines-West Des Moines, IA	69121
Durham-Chapel Hill, NC	68586
Elkhart-Goshen, IN	67868
Boulder, CO	67265
Los Angeles-Long Beach-Anaheim, CA	66477
Hartford-West Hartford-East Hartford, CT	66279
Houston-The Woodlands-Sugar Land, TX	65332
Lake Charles, LA	65218
Dallas-Fort Worth-Arlington, TX	65154
Casper, WY	65037
Madison, WI	64767

Methodology

Jones – Indicators: Potential Data Sources (Examples)

National

Low Per Capita Income

- World Bank DataBank

Ethnic Polarization

- US Census American FactFinder

Religious Polarization

- Pew Research Center, Religion and Public Life

Corruption

- GAN Business Anti-Corruption Portal

Infrastructure

- American Council for an Energy-Efficient Economy Policy Database

States

Low Per Capita Income

- US Department of Commerce Bureau of Economic Analysis

Ethnic Polarization

- US Census American FactFinder

Religious Polarization

- US Religion Census 1952 to 2010

Corruption

- GAN Business Anti-Corruption Portal

Infrastructure

- American Council for an Energy-Efficient Economy Policy Database

Cities

Low Per Capita Income

- US Department of Commerce Bureau of Economic Analysis

Ethnic Polarization

- US Census American FactFinder

Religious Polarization

- US Religion Census 1952 to 2010

Corruption

- GAN Business Anti-Corruption Portal

Infrastructure

- American Council for an Energy-Efficient Economy Policy Database

Methodology

Urban Flashpoints Score Card – Cities Subset

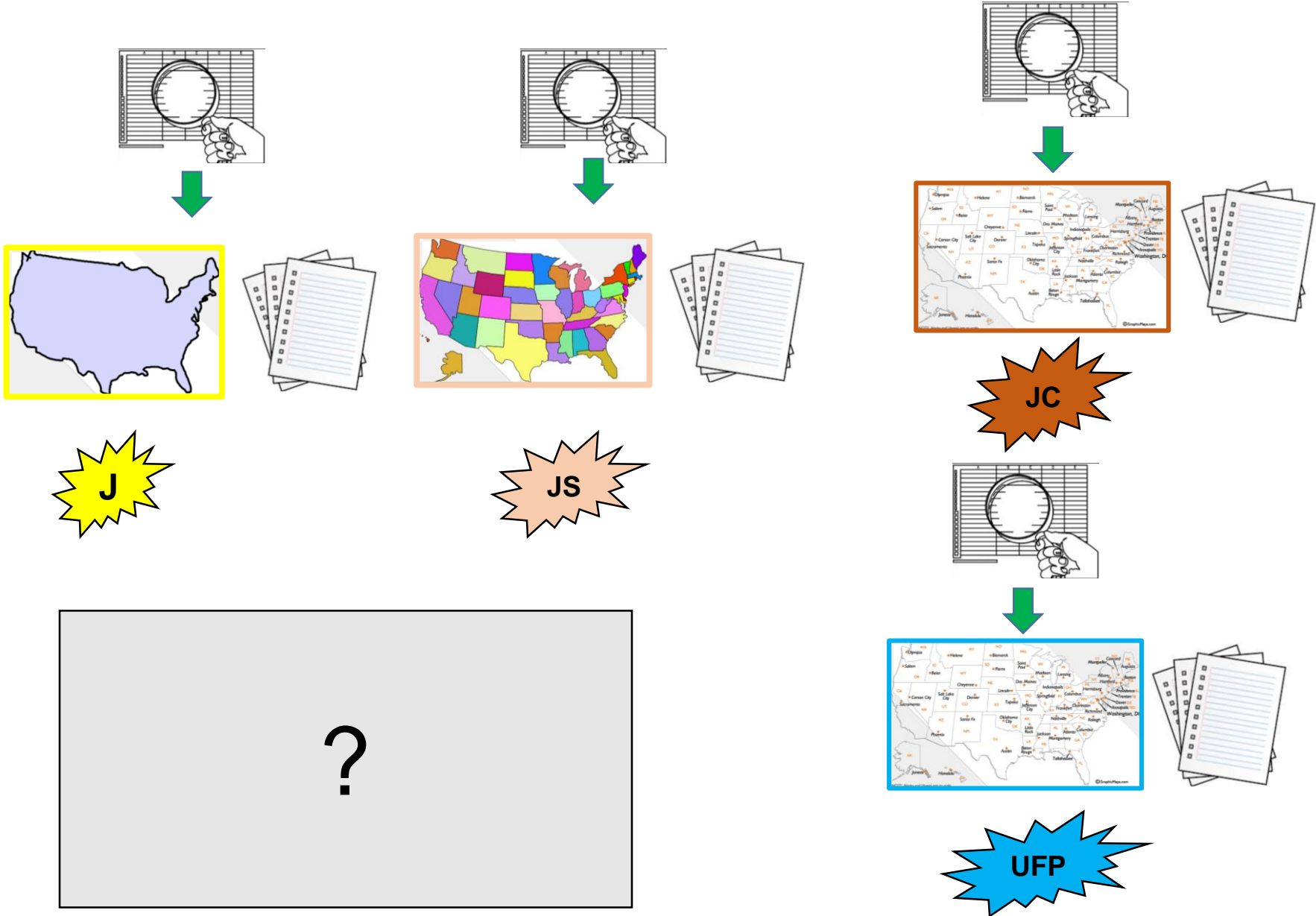
Urban Flashpoints Score Card	
Ideological	Weight
City is part of a contested homeland or “indivisible territory”	3
Inter-ethnic or inter-(other identity) civic associations [RETARDANT]	-4
Religious and/or ethnic groups making competing claims	3
Discrimination/inequality on religious or ethnic lines	4
Religious diversity (Religious minorities total more than 10%)	0
Religious extremism	3
Economic	
Negative or very low GDP growth	1
High unemployment	5
Sharp economic reversal/J-curve	3
Widespread poverty/slums	3
Recent development economics/economic reforms/austerity measures	3
Significant unmet expectations regarding opportunities	3
Poor infrastructure	1
Dependence on primary commodity exports	0
Military	
Recent history of civil war	4
Existing rebel/terrorist/insurgent groups	4
High availability of weapons	5
Tradition of effective civilian control of military [RETARDANT]	-1
Presence of foreign troops ([RETARDANT] in this city)	-1
Presence of foreign troops (stimulant in this city)	1

Methodology

Urban Flashpoints Score Card – Cities Subset

Urban Flashpoints Score Card	
Political	
Mature democracy [RETARDANT]	-2
Transitional or partial democracy	2
History of repression	1
Strong state: Control over the sovereign territory of the country? [RETARDANT]	-2
Recent history of unrest	3
Existing secessionist/autonomist movement	2
Government perceived as legitimate [RETARDANT]	-2
Regionalism, rentierism, or other group favoritism	2
Political stability (WBGI) <-1	3
Government Effectiveness (WBGI) < -1	3
Voice and Accountability (WBGI) <-1	1
Rule of Law (WBGI) <-1 2	2
Deficient formalized property rights	1
Demographics	
Youth bulge (25%+ of pop aged 15–24)	4
High infant mortality (> 50 per 1000)	0
High HIV rate (>10% of adult population)	0
Houses significant refugees or internally displaced persons	2
Rapid population growth (> 3.5 % per year)	0
Ethnic “dominance” (largest ethnic group 50–80% of pop)	2
Ethnic diversity (no ethnic group more than 50%)	1
Change in ethnic balance	2
Geographic	
Bad neighborhood (neighboring country war or civil war in last 5 years)	2
Oil or other “lootable” commodities/wealth	1
Prone to natural disasters	0
Declining fresh water or food per capita	1

Geospatial Exploration of Outcomes



Anticipated Results

- Anticipated outcomes for Jones as written: Based on Jones' preconditions as written, no or few preconditions will be identified in the United States.
- Anticipated outcomes for Jones-based assessment of states: Based on Jones' preconditions applied to the individual states, some preconditions will be identified.
- Anticipated outcomes for Jones-based assessment of Cities (most populous in each state): Based on Jones' preconditions applied to cities, some preconditions will be identified.
- Anticipated outcome for comparison and contest of Jones as written and Jones-based assessment of state and cities: Assessment of Jones' criterion at the state and city level will identify potential regions of unrest within the United States not identified by assessment of the United States at the national level. State and city level assessments may indicate regions of unrest within the United States.
- Anticipated outcome for assessment of cities subset using *Flashpoints*' score card: Score card assessment will confirm outcomes Jones-based city assessments. Cities assessed using the Urban Flashpoints Scorecard will demonstrate a greater number of potential unrest indicators regardless of presence of Jones' preconditions.
- Anticipated outcome of review of assessments with an eye to geospatial aspects: The comparison of Jones-based assessments of states and cities will indicate a greater prevalence of preconditions than implied by the national level assessment. *Flashpoints* score card assessments will provide depth to Jones-based cities assessments. Mapping and analysis of preconditions will suggest regional clusters of preconditions suggesting regions of potential unrest within the United States.

Project Timeline

- Summer 2018: Preliminary Research
 - Identify potential data sources
 - Review data sources
 - Select final data sources
 - Refine / finalize assessment methodology
- Fall 2018: (596B) Final Research and Assessment
 - Using finalized methodology assess data
 - Explore results for possible geospatial implications
 - Final write-up

Project Timeline

- Fall 2018 / Winter 2019: Presentation

Possible presentation venues:

- International Association of Law Enforcement Analysts Regional Quarterly
- National Fusion Center Association Conference 2018 / 2019

Questions
Comments
Concern