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Exploring the Correlates of Economic Growth and Inequality in Conflict Affected Environments

Fault Lines and Routes of Recovery

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3/21/2014

For Creative Associates International

Development experts have long debated the relationship between state fragility and economic decline. Some stress the importance of macroeconomic growth for recovery in conflict affected environments; others argue that more complex factors are at work, including inequality, political legitimacy, and group grievance. Using three different approaches, this paper examines the relationship between a range of socio-economic variables and conflict risk to suggest ways that policy makers may better mitigate conflict and promote recovery. The research suggests some surprising hypotheses regarding fault lines and routes of recovery in fragile states and recommends further avenues of research and policy strategies.

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economically productive investments. It takes an average of 14 years to restore pre-war economic growth trajectories in countries that experienced civil war.”⁴

This challenge provides the context for this study. Initially, we focused solely on economic indicators and conflict risk to see what patterns, if any, could be found that would alert policy makers to impending economic decline or promising recovery. Selecting a group of 91 states which confront the threat of conflict risk as our sample, we first tested for correlations between the two economic indicators in the FSI– “Uneven Economic Development” and “Poverty and Economic Decline” –and compared them to the total FSI country scores which measure conflict risk.⁵ However, we concluded that, absent other variables, the selection of just two factors contained a bias. It presumed that these were the most important variables accounting for fragility when other variables may be equally or more important. Moreover, economic factors often act in tandem with other factors, such as political legitimacy or group grievance, and they cannot be isolated in a realistic way.

Thus, we decided to apply a broader brush to the analysis, employing three different approaches. First, we tested for correlations between eight prominent FSI socio-economic and political indicators and conflict risk (as measured by FSI country total scores) for 91 countries over the period 2006 to 2012, inclusive. The goal was to see which were the most important or influential indicators (See Appendix A for the FSI list). The second phase used data from 66 statistical sources to assess factors selected to measure the five Peacebuilding and Statebuilding Goals (Extreme Poverty, State Legitimacy and Justice, Security, Economic Foundations, and Revenue and Services) developed by the “New Deal for Engagement in Fragile States,” a network represented by the g7+ group of 19 countries. We added population growth to this cluster to widen the net. The goal here was to check the first set of findings from FSI data against other data and indicators to see if there were additional insights or contradictory findings based on different measures. Third, we selected six countries in the sample which had histories of reversing course. That is, they showed evidence of either improving after some years of decline, or showed evidence of declining after some years of improvement, over the span of seven years. The goal here was to see which indicators, if any, might be responsible for that change.

Thus, by triangulating the data and using a variety of data sources, we feel reasonably confident of the findings, though they should be further tested in other contexts. We recognize that different indicators and measures, as well as other data and timeframes, may yield different observations and hypotheses. In Section II, we provide a summary of our major

⁴ Ibid, p.2.

⁵ The Failed States Index (FSI) is produced by The Fund for Peace. It is an annual ranking of 179 nations based on their levels of stability and the pressures they face. Using comprehensive social science methodology, data from three primary sources (content analysis of public documents, statistics and subject matter expertise) are triangulated and subjected to critical review to obtain final scores. Millions of documents are analyzed every year with highly specialized search parameters. Scores are apportioned for every country based on twelve key political, social and economic indicators and over 100 sub-indicators.

findings, in Section III we offer a comment on insights from the field, and in Section IV, we supply a detailed description of our methodology and statistical results, with relevant appendices.

Section II: Major Findings

1. **The central Importance of state legitimacy.** The most important finding from the FSI research is the centrality of state legitimacy⁶ as a measure of fragility. A statistically significant increase in the state legitimacy indicator (which measures the loss of legitimacy) was correlated with the largest increase in the total FSI score (indicating a heightened risk of conflict). This correlation was larger than any of the other indicators measured. Every increase in the state legitimacy factor produced an increase in the FSI score 71.3 percent as large.

This means that state legitimacy can serve as a reliable leading indicator or early warning factor, perhaps even a “driver of the drivers,” pulling other indicators in whichever direction it moves. If there is one “canary in the coalmine” factor that analysts should look for in anticipating conflict, a change in the state’s legitimacy is probably the one to watch most closely.

In rank order of influence in affecting fragility, the FSI indicators were:

- **State Legitimacy**
- **Demographic Pressures (which include natural disasters)**
- **Uneven Economic Development (inequality)**
- **Security Apparatus (fragmented security forces)**
- **Human Rights and the Rule of Law**
- **Public Services**
- **Group Grievance**
- **Poverty and Economic Decline (as measured by macroeconomic performance)**

Interestingly, the last indicator—poverty and economic decline—which is measured by national macroeconomic statistics was correlated with the smallest increase in the total FSI score, suggesting that a worsening of macro-economic conditions has the lowest long-term effect of the eight indicators on conflict risk measured over the seven year period.

⁶ The lack of state legitimacy is a product of widespread corruption, the unconstitutional or forceful removal of a regime, the imposition of a government that lacks genuine support of its citizens, and/or a lack of representativeness in government, all of which undermine the social contract. In some cases, failure to deliver public services also erodes political legitimacy.

2. **Gender inequality, conflict and stability seen in a new light.** When we turned to analyzing the New Deal indicators, we found that gender equality—a central goal of development and a moral imperative—was actually much more than that. Our research suggests that gender equality is not only important because women are among the most vulnerable populations living in extreme poverty, but because women in extreme poverty are closely associated with conflict risk.

In this study, gender inequality was closely correlated with conflict risk, suggesting that it is an important conflict driver in itself, even more significantly correlated with state instability than income inequality across the entire population. If this finding holds true in other research, it means that economic development policies should strive for gender equality not only to relieve extreme poverty and achieve equity on ethical grounds, but also to stabilize states.

More research is needed to explain the correlation, and to compare the potency of gender inequality with other discriminatory categories, such as regional, ethnic, or racial inequalities. It is notable that, in this study, labor force participation data did not support the proposition on gender inequality. However, that may be explained by the difficulty of collecting reliable and accurate measures of labor force participation in the countries under study, and by the fact that women tend to predominate in the informal economy, which is often omitted from statistical data.

3. **Two key economic indicators –macroeconomic performance and inequality– have a differential impact on conflict risk over different time spans.** Based on FSI and New Deal data, we also found that macroeconomic policies seem to have less of an impact on promoting long-term stability than usually thought. For example, statistically, there was no correlation between two key economic inputs—foreign direct investment as a percent of GDP and annual GDP growth—and total FSI scores. This suggests that while economic growth and investment may be important for development, they are not as critical for promoting political stability. This would help explain the fact middle income and rapidly growing economies often remain fragile states despite impressive growth and improving foreign investment. Indeed, USAID reported that “today, fragility is almost evenly divided between middle-income (MICs) and low-income countries (LICs).”⁷ Inequality appears to be a more influential long-term contributor to instability overall, ranking as the third most important factor of the eight FSI indicators.

The case studies seemed to confirm this assessment as well. In three countries (Yemen, Iran and the Democratic Republic of the Congo or DRC), there was an improvement in the uneven economic development indicator, albeit a small one. Further research is

⁷ USAID, op. cit., p.3.

needed on this, but it suggests that, despite the significant correlation between inequality and the FSI scores in the first phase of research, inequality is perhaps not as useful an indicator of near-term worsening of fragility as it is a structural driver of conflict. In all three of these countries, besides a sudden worsening of the state legitimacy factor, group grievance and macroeconomic decline accounted for most of the sudden downturn from 2007–2012, after an earlier improvement. This and other data support the conventional wisdom that it is easier for a country to fall apart due to the neglect of one or a few factors, but much harder to recover, especially if one is relying on a single indicator. Good macroeconomic performance, in other words, is unlikely to turn a fragile country around if state legitimacy and other factors do not also improve.

4. **Extreme poverty may not only be a consequence of state fragility, but a conflict driver itself.** This is an unappreciated dimension of state fragility. While the development community has targeted the elimination of extreme poverty as an economic goal, the emphasis in political stabilization strategies has largely targeted urban populations, especially unemployed youth and the middle-class, which are often sources of public protest and political mobilization. Extreme poverty can exist in both urban and rural sectors, but the “poorest of the poor” are usually deemed to be politically docile. Relatively little emphasis has therefore been placed on the role of the poorest populations in heightening conflict risk. Moreover, given the salience of gender inequality found in this research, more study is needed to examine the overlap between gender inequality and extreme poverty to determine if we are largely looking at the same population or parallel sets of disadvantaged people.

Supporting this notion, the research also showed that certain data, taken together, may be considered a proxy cluster for measuring extreme poverty—population growth, percentage income held by the bottom ten percent, expected years of schooling, and density of physicians in a population. This cluster was correlated with increased instability, suggesting that extreme poverty may not just be a feature of fragile states, but an active driver of conflict within them.

5. **A possible fault line for detecting decline. We found that, collectively, the loss of state legitimacy, growing group grievance, and poor macroeconomic performance are correlated with a high risk of conflict.** Based on this research, they appear to be leading early warning indicators of impending instability.
6. **A possible route of recovery. We found that six factors constituted a pathway for recovery: improved state legitimacy, better public services, decreased demographic pressures, reduced inequality, good macroeconomic growth, and respect for human rights.** Note the presence of both economic indicators in this profile, even though, as

indicated earlier, they are likely to have different impacts over time. In fact, looking at the long term, progress in both macroeconomic performance and economic inclusiveness will be needed for sustainable development and sustainable peace.

7. **More research needs to be done on the rate of change in these indicators.** The rate of decline or recovery may be an equal or more important determinant of the magnitude of conflict risk and of the likelihood of recovery than a fixed threshold or standard of statistical performance. While one may posit that the seven year timeframe is not long enough to form general findings on this issue, USAID pointed out that Nepal is just one of eight countries which succeeded in halving extreme poverty within seven years. Between 2003 and 2011, its extreme poverty rate fell from 53 percent to 24.8 percent.⁸ Nonetheless, longer timeframes would be valuable. They would not only yield more information, but would allow more testing of key questions, such as whether there are any consistent indicators among the eight countries that have made substantial progress that explain their success, and whether that set of variables holds in other countries over different time periods. The same applies to patterns of decline. “State brittleness” may be a function of the rate of decline, not just the result of reaching a fixed threshold of high conflict risk. Slow economic decline may precipitate a “slow burn” of unrest, but not necessarily one that leads to widespread violence as compared to a sudden, unexpected downturn, which would be difficult to manage. Similarly, gradual economic recovery may have a more lasting effect on stability than a rapid economic boom which, like all bubbles, is capable of bursting quickly.

Section III: Insights from the Field

The insights and hypotheses generated by this statistical research should stimulate new thinking within the development community about the centrality of state fragility in eliminating extreme poverty. But innovative approaches come not only from statistical research. They come from the field as well. Indeed, social scientists have pointed out that the data still are not totally reliable, the measures not universally accepted, and the application of research findings is far from complete. However, combined with field experience from a variety of sectors, which seem to be converging in their concerns and orientations, we may obtain a much deeper understanding of the roots of extreme poverty, the links with state fragility and the pathways to recovery.

For this to occur, the shift of focus to state fragility must also involve a shift in operations, specifically, more coordination between the development community and other major players who operate on the same terrain, namely, the private sector, the military and civil society.

⁸ USAID, op. cit., p 5.

Considerable literature exists on the role of these sectors in promoting free markets, human security and institutional capacity.⁹ However, much of it—like the literature on development—has been stove-piped, i.e., written for those within the sector, without much interaction from others. That is now beginning to change, at least conceptually.

USAID, the World Bank and other donor agencies not only have stressed the linkages between fragility and extreme poverty, but between these factors and armed conflict. The 2011 World Bank Development Report, for example, noted that countries that experienced major violence from 1891 to 2005 had a poverty rate 21 percent higher than countries that had experienced no violence.¹⁰ Yet, despite armed conflict being prevalent in fragile states, the military is rarely consulted by development experts in framing their strategies.

Turning to the private sector, a report from the Clingendael Institute commended the “in-vogue conflict-sensitive private sector approach to business and peace,” but noted that such initiatives will depend upon more than the companies alone.¹¹ Harnessing private sector resources and insights “will also hinge on the commitment of the international development community to systematically engage with the private sector to jointly build up a sound business case for conflict-sensitivity and to supplement the wealth of existing guidelines with practical support and concrete entry points for cross-sector cooperation.”¹² Indeed, it seems illogical to focus on making markets work, for instance, a central objective of economic development, without engaging the private sector directly as partners.

The U.S. military is similarly taking stock of its own record in addressing the problem of fragile societies. A recent publication issued by the U.S. Peacekeeping and Stability Operations Institute (PKSOI) emphasized that Stability and Reconstruction (S&R) operations will be an important strategic objective for the U.S. Army in the future, not by injecting troops into large-scale, long-term direct engagements, but by building local capacity, another objective of economic development. Yet, the record of U.S. military efforts in S&R operations is mixed, with the shortfall, the report argues, being mainly intellectual. “The U.S. military, and to some extent the broader U.S. government, doesn’t enunciate in official doctrine the centrality and causes of political instability in fragile states, and consequently S&R operations are planned and executed devoid of political development efforts.”¹³ The report argues that political stability is often

⁹ An excellent comprehensive analysis is contained in Daron Acemoglu and James A. Robinson, *Why Nations Fail: The Origins of Power, Prosperity, and Poverty* (New York: Crown Publishers: 2012)

¹⁰ World Development Report 2011: Conflict, Security and Development (Washington DC: World Bank, 2011).

¹¹ Anette Hoffman, “From ‘business as usual’ to ‘business for peace’? Unpacking the conflict-sensitivity narrative,” CRU Policy Brief, No. 28, February 2014.

¹² *Ibid*, p.1. An innovative initiative that conforms to this recommended approach is the Niger Delta Partnership Initiative (NDPI) in Nigeria, which was launched by the Chevron Corporation, with the support of USAID and other donors. In addition to stressing the improvement of livelihoods based on traditional free market activities, NDPI has created a peacebuilding initiative with a wide network of citizen participation. For details, go to www.ndpifoundation.org. (Disclosure: the author serves on the Board of the NDPI Foundation.)

¹³ Bruce Farrell, “Avoiding Praetorian Societies: Focusing U.S. Strategy on Political Development,” (PKSOI, March 2014), p. vii.

treated as a by-product of economic development, social development, and governance capacity, a major policy oversight because it equates governance with politics. Whether one agrees with this view or not, the important message here is that the U.S. military is also keen to promote political legitimacy, stable institutions, open markets, and the rule of law.

The final, but no less important sector, is civil society. International human rights and humanitarian organizations tend to be closest to the people who are impacted by violence and fragility. Often non-governmental organizations are the first to appear and the last to withdraw from internal conflicts. They tend to have better access and more credibility with local populations than governments, corporations, and militaries. Local civil society, though no substitute for a competent functioning state, is also vital for legitimizing the state, a requirement, as our research has found, for building stability.

The time seems ripe for all sectors that operate in fragile zones to coordinate better, exchanging ideas about what drives fragility, reinforcing common goals, shaping comprehensive strategies and allocating resources to anticipate fault lines and promote recovery. This is especially true in a time of austerity and budget cuts.

What follows, therefore should be relevant to any major sector that is engaged in fragile states. A detailed explanation of the methodology and statistical results are contained in the following section. The assessments are tentative and preliminary, but they point to some fresh insights which need to be further tested by more statistical research and by experienced hands who work in the field.

Section IV: Methodology and Statistical Results

Overview

This study began with a literature search on exiting approaches to fragility, poverty and economic assistance. The most current thinking on the issue in government circles was the USAID paper, entitled “Ending Extreme Poverty in Fragile Contexts: Getting to Zero: A USAID discussion series,” released January 28, 2014. That paper provides the conceptual framework for this project.

Our research consisted of three separate approaches: two sets of regression analyses of different data, and some case studies. Each phase of the regression analyses used different independent variables, but both used the total country scores from the Failed States Index (FSI), produced by the Fund for Peace (FFP), as the dependent variables for measuring conflict risk in a sample of 91 countries. Country selection was based on the intensity of conflict risk: if countries had a score of 70 or above (out of a possible total FSI score of 120) in 2012, it was included in the study. A score of seventy or higher is the threshold which the FFP uses to assign risk ratings from “warning” to “alert.” Although there are other data sources on conflict, the FSI provided the best single source for this study as it contains both quantitative and qualitative

variables, has a common scale of comparison, and—having been produced for several years—allows trend line analysis. The data spanned seven years, from 2006 through 2012, inclusive.

The first phase of the research looked at eight of the FSI's 12 indicators as they relate to the total FSI scores to determine which one, or group, appeared to have the most significant impact on instability.¹⁴ Details of the specific components of the FSI are contained in Appendix A. (Four FSI indicators were excluded: refugees and IDPs, human flight and brain drain, factionalized elites, and external intervention. This omission was done for reasons of brevity. Refugees, IDPS and migration data were included in the second phase of the research.)

The second phase of regression analysis was more complex. We wanted to drill down deeper to identify more specific sub-indicators that would be useful to policy makers. We decided to use multiple data sources to measure clusters of variables contained in the "New Deal for Engagement in Fragile States," which grew out of the International Dialogue on Peacebuilding and State-building meeting at the 4th High Level Forum on Aid Effectiveness in 2011 in Busan, South Korea. The "Dialogue" is comprised of the g7+ group of 19 fragile and conflict-affected countries, development partners, and international organizations. Focusing on self-designed recovery strategies by fragile states themselves, the New Deal lists five main goals for recovery: (1) legitimate politics, (2) security, (3) justice, (4) economic foundations, and (5) revenue and services. While there are many different approaches to address fragility, the New Deal currently has the widest recognition and international support.¹⁵ Therefore, the second round of regression analysis was based on 66 different statistical sources categorized around the five New Deal goals. The data were drawn from a variety of institutional sources, including the World Bank Development Indicators and the United Nations Millennium Development Goals statistics, a list of which is provided in Appendix B.

A third round of analysis was conducted on six selected case studies, three of which evidenced the most improved record, and three of which evidenced the greatest decline, based on the total FSI scores over the considered time period. The objective here was to analyze patterns of change to see if there were consistent indicators of decline and/or recovery. In the following section, the findings of all three approaches are presented, with the most significant results highlighted.

Findings

Failed State Index (FSI) Indicators

¹⁴ As indicated earlier, the two economic indicators were run separately and compared to the total FSI scores but it was concluded that, absent other indicators, these results would be biased, based on a presumption that they were more important than other indicators. Thus, we decided to widen the net and use eight of the FSI socio-economic and political indicators to obtain a broader and more meaningful analysis.

¹⁵ See, for example, Daron Acemoglu and James A. Robinson, *Why Nations Fail: The Origins of Power, Prosperity and Poverty* (New York: Crown Publishers, 2012).

The first regression analyses focused on eight of the 12 FSI indicators as independent variables to determine which were most correlated with state instability and fragility in the 91 country sample. The eight indicators which were used were the following:

- FSI 1: Demographic Pressures
- FSI 3: Group Grievance
- FSI 5: Uneven Economic Development
- FSI 6: Poverty and Economic Decline
- FSI 7: State Legitimacy
- FSI 8: Public Services
- FSI 9: Human Rights and the Rule of Law
- FSI 10: Security Apparatus

Each of these indicators was treated as a single independent variable in a regression analysis that was run against the total FSI score for each country as the dependent variable. The coefficients of the independent variables from these regressions were then compared to determine which of the indicators was most significant in its correlation with the total FSI score. This comparison found that:

The state legitimacy indicator had the largest coefficient, showing that the loss of state legitimacy was correlated with the largest increase in the total FSI score of any of the included indicators.

The coefficient of 7.13 means that every increase in the state legitimacy indicator produced a 71.3 percent increase in the FSI score, a very large percentage. On the other hand, the comparison found that over the seven year period covered in the research:

The poverty and economic decline indicator (which refers to macroeconomic performance) had the smallest coefficient, only 62 percent as large as the coefficient of the state legitimacy indicator. This indicates that a worsening of macro-economic conditions was correlated with the smallest increase in the total FSI score of any of the included indicators.

The eight indicators, listed in order of the magnitude of their influence on the FSI score, with their corresponding coefficients are as follows:

1. FSI 7: State Legitimacy: 7.13
2. FSI 1: Demographic Pressures: 6.81¹⁶
3. FSI 5: Uneven Economic Development: 6.58
4. FSI 10: Security Apparatus: 6.29
5. FSI 9: Human Rights and the Rule of Law: 5.93
6. FSI 8: Public Services: 5.72

¹⁶ Note that demographic pressures include natural disasters, the impact of which can severely skew the data in favor of sharp downturns in several of the indicators.

7. FSI 3: Group Grievance: 5.18
8. FSI 6: Poverty and Economic Decline: 4.42

New Deal Indicators

The second phase of regression analysis included 66 individual statistics selected to measure the five goals of the New Deal framework. Each was treated as single independent variable that was run against the total FSI score as the dependent variable. Unlike the first group of FSI indicators, these are quantitative statistics from various sources. Thus, they are not on a common scale and are not subject to as rigorous a comparison across all the indicators. Nonetheless, there are some significant observations that can be made concerning the results.

The first method of finding results from this data is to examine the p-value, or probability, of the individual regressions. Commonly accepted practice is that an independent variable is considered to be statistically significant if the p-value is less than 0.05, which means that there is less than a five percent chance that the independent and dependent variables are uncorrelated, and that any results are not merely due to the vagaries of the sample data. Thus, any results with a p-value greater than 0.05 are considered to be statistically insignificant. *In other words, the greater the p-value, the higher the insignificance.* The results of the regressions of most of the 66 statistics that were examined had tiny p-values, often on the order of less than 0.001. Yet valuable insights can be drawn from statistics which do not have significant (less than 0.05) p-values.

One factor which does not have a significantly low p-value is the income share of the top 10 percent of the population, one of the statistics in the inequality cluster with a p-value of 0.06. While this is very close to the threshold,

It is notable that most of the statistics within the income inequality cluster have larger p-values than those concerned solely with gender inequality, suggesting that the latter is more significantly correlated with state instability than is income inequality across the entire population. This surprising finding suggests that gender inequality, besides being a development target and a human rights issue, may also be a more important factor correlated with state fragility than income inequality generally.

The exception to this finding is the difference between men and women in the labor force participation rate, which has a p-value of 0.059, just above the significant level. The discrepancy, however, is most likely not a contradiction as an omission, accounted for by the difficulty of collecting reliable and accurate measures of labor force participation in the countries under consideration, and by the fact that large populations of women are active in informal economies that are not always captured in labor surveys.

The most interesting observation that arose from an analysis of the regression p-values concerns the macroeconomic statistics. Four of the eight measures in this group, a full 50 percent, had p-values above the 0.05 threshold. Furthermore, unlike those in the

inequality group, the macroeconomic statistics which were above the threshold were not merely slightly above it, but instead had p-values substantially larger than 0.05, indicating that macroeconomic policies have less of an impact on promoting long term stability than is usually thought.

Of the four with p-values above 0.05, the one with the smallest p-value was central government debt as a percentage of GDP, which had a p-value of approximately 0.31, indicating that there is a 31 percent probability that central government debt and total FSI score are uncorrelated. Total unemployment as a percent of the labor force had an extraordinarily high p-value, 0.90, but the difficulty in collecting reliable and accurate statistics on the labor force, as discussed above, may account for this result.

Another important economic finding is that foreign direct investment as a percent of GDP and annual GDP growth both had extraordinarily high p-values, 0.91 and 0.85, respectively. Contrary to conventional thinking, these results indicate that, statistically, there is no significant correlation between these two variables and total FSI scores. This suggests that, while economic growth and investment may be important for development, they may not be as important as is commonly thought for long-term state instability and fragility. This is consistent with the fact that some middle-income and rapidly-growing countries remain highly fragile, despite good macroeconomic performance.

The final group of indicators with p-values above the 0.05 threshold was in the demographic cluster, which was added to the New Deal data. Youth unemployment rate – for both sexes, for women, and for men – was above the threshold by a significant margin (0.96, 0.39, and 0.64, respectively), a counter-intuitive finding. However, the difficulty of collecting reliable and accurate unemployment and labor force data may, again, be an explanation for this result. Similarly, net migration as a percentage of population had a p-value well above the threshold, at 0.495, indicating that there is a significant probability that it is not correlated to the total FSI score. Finally, the number of refugees as a percent of the total population had a p-value, 0.14, above the threshold.

The number of internally displaced people (IDPs) as a percent of the total population had a p-value of 0.00000009, well below the statistically significant threshold. Yet, youth unemployment, net migration and refugees, which did not appear to be statistically correlated with conflict, are all generally considered destabilizing as well. The results presented here underscore the importance of future research that can reconcile the discrepancies between the statistical results and experience on the ground.

As the statistics used in this phase of the study are not all on a common scale, it is difficult to make rigorous comparisons among them. Nonetheless, some limited comparison between coefficients can be made, keeping in mind the caveat that such analysis is only meaningful at a very preliminary level as a direction for future avenues of deeper examination. Such a comparison must necessarily be made between the absolute value of coefficients too, as

some coefficients will be negative and some positive to account for the fact that some statistical indicators are correlated with increased instability and some are correlated with decreased instability. As such, when the magnitude of a coefficient is mentioned below, it refers to the absolute value of that coefficient. Furthermore, any statistic with a p-value that does not fall under the statistically significant threshold of 0.05 is not included in the comparison. To be clear, we are not looking for the indicators with the lowest values here, but rather those with highest values within the important group identified as significant. We compared 15 indicators which had the highest values, meaning the most influential indicators, of 55 which had a p-value less than 0.05.

This comparison gives some expected results. For example, the statistic on conflict deaths per capita has the largest magnitude coefficient, unsurprisingly making a substantial contribution to increased instability. The other five security indicators also make an appearance in the top 15 indicators. The presence of some other factors is less obvious, however. For example,

The statistic with the second largest coefficient is the number of IDPs as a percentage of the population.¹⁷ The third largest is the gender parity index in primary level enrollment. While there is certainly an abundance of literature on the role played by educating girls in economic development, there is less on gender educational disparity as a correlate of conflict and instability.

Other statistics indicate the correlation between repression and state fragility, with the Political Terror Index with the fourth largest coefficient and Freedom House's Civil Rights and Political Liberties scores present in the top 15. However, it should be remembered that correlation does not imply causation, and this result does nothing to indicate whether repression causes instability or vice versa, or whether they have some other relationship.

To round out the top 15, we also found that:

Increased population growth is significantly correlated to increased instability, as is the percentage of income held by the bottom ten percent of the population, the expected years of schooling, and the density of physicians in a population. This cluster may be seen as a set of proxy indicators of extreme poverty. As such, that would mean that extreme poverty could be a driver of instability, another area of research which merits further study.

Case Studies

Finally, an in-depth examination of a small number of selected countries was conducted to get a better understanding of changing patterns of decline and recovery in fragile states. In order to better understand leading indicators of change, we decided to highlight the countries

¹⁷ Another subject for further research is explaining the different impacts of IDPs versus refugees. Perhaps the explanation is simply one of geography: displaced persons within the borders of an unstable state create more pressure on that state than people who flee and cross borders, creating pressures on neighboring states instead.

showing a substantial change in one direction, either declining or improving, from 2007 through 2012, while in 2006 to 2007 they were moving in the opposite direction, and vice versa).¹⁸ These requirements ensured that the analysis was able to include the beginning of the significant change, the better to understand how countries commence and continue substantial change in instability and fragility. Given these requirements, a total of six countries were examined, three for each direction. Yemen, Iran, and the Democratic Republic of the Congo (DRC) significantly declined over the described time frame, while Moldova, Belarus, and Turkmenistan significantly improved.

The difficulty, of course, with such small sample sizes is that it is hard to reach general assessments with confidence. Nonetheless, some initial observations can be made that can be useful to guide further study.

Perhaps the most striking result from the examination of the history of Yemen, Iran, and the DRC is the behavior of the state legitimacy indicator. Confirming the results of the earlier analyses, all three countries saw the legitimacy indicator improve from 2006 to 2007, while all three also saw that indicator worsen substantially from 2007 to 2012, a result which suggests that a sudden and sustained change in direction in the state legitimacy indicator is a leading indicator of worsening instability and fragility, and that more attention should focus on the pace, as well as the direction, of change.

Another interesting result is that all three countries saw an improvement in the uneven economic development indicator from 2007 to 2011. Although it was a relatively small improvement, it suggests that, despite the significant correlation between inequality and the FSI score found in earlier sections, inequality may not be as useful an indicator of near-term worsening in fragility as it is a long-term or structural driver of conflict.

Other, less robust, but potentially influential indicators include the group grievance and the poverty and economic decline indicators. Each of these indicators worsened in both Yemen and Iran even as those countries' total FSI score was improving from 2006 to 2007, before worsening along with the rest of the score from 2007-2012. While this trend did not hold for the DRC, as the indicators improved in 2006-2007 before subsequently worsening, the DRC is something of an outlier, as it saw improvements in 11 of the 12 FSI indicators in 2006-2007.

Thus, if the pattern in Yemen, Iran and the DRC is shown to hold in other countries, we may hypothesize that the following indicators together form a fault line: if a country fails to improve its state legitimacy, group grievance, and macroeconomic performance, even as its total FSI score improves, then it may be vulnerable to a sudden reversal.

¹⁸ The years refer to FSI reports, which rely on data from the previous year. Thus, the FSI 2006-2007 period is chronologically 2005-2006, and FSI 2007-2012 actually is 2006-2011. In order not to introduce confusion in the data, we kept the FSI years so they are consistent throughout the study.

The pattern of behavior for Moldova, Belarus, and Turkmenistan was structurally different in significant ways from that of Yemen, Iran, and the DRC. The most interesting, albeit perplexing, finding is that none of the 12 indicators in 2006-2007 demonstrated consistent behavior against the grain (i.e., improving while the total FSI score worsened) for at least two of the countries. While this is problematic for identifying leading indicators, it is consistent with the notion that it is easier for a country to fall apart due to the neglect of one or a few aspects (i.e., state legitimacy, group grievance, or macroeconomics) than it is for a country to recover due to an emphasis on any single indicator. For example, good performance on macroeconomic policies is unlikely, in itself, to be a sufficient driver of recovery to turn a country around. Nigeria is illustrative of this proposition.





There are useful observations, however, that can be made about how these countries improved from FSI 2007 to FSI 2012. The most prominent one is the role of Public Services, which improved by a substantial amount across all three countries over the relevant time period, suggesting that substantial and sustained investment in public services, including literacy, infrastructure, education and policing, is important to ensure sustained improvement in a state's stability. Other indicators that showed the same behavior, albeit to a lesser degree, were demographic pressures, uneven economic development, macroeconomic growth, and human rights.

These observations suggest that an improvement in state legitimacy, sustained and equitable economic growth, combined with the provision of public services, an improvement in human rights and favorable demographic conditions, may be the most promising route of recovery in a state's stability. If this list seems longer than the one for the worsening of instability, that simply supports the notion that a state can fail relatively easily, driven by a few explosive factors converging over a short period of time, while recovery requires a broad-based, long-term and consistent strategy of political, social and economic progress.



Appendix A: The Failed State Index (FSI) Indicators

The Failed States Index is based on the twelve primary social, economic and political indicators developed by The Fund for Peace:

Social Indicators

 <p>Demographic Pressures DP</p> <p>Pressures on the population such as disease and natural disasters make it difficult for the government to protect its citizens or demonstrate a lack of capacity or will.</p> <p><i>Includes pressures and measures related to:</i></p> <ul style="list-style-type: none"> • Natural Disasters • Disease • Environment • Pollution • Food Scarcity • Malnutrition • Water Scarcity • Population Growth • Youth Bulge • Mortality 	 <p>Refugees and IDPs REF</p> <p>Pressures associated with population displacement. This strains public services and has the potential to pose a security threat.</p> <p><i>Includes pressures and measures related to:</i></p> <ul style="list-style-type: none"> • Displacement • Refugee Camps • IDP Camps • Disease related to Displacement • Refugees per capita • IDPs per capita • Absorption capacity
 <p>Group Grievance GG</p> <p>When tension and violence exists between groups, the state's ability to provide security is undermined and fear and further violence may ensue.</p> <p><i>Includes pressures and measures related to:</i></p> <ul style="list-style-type: none"> • Discrimination • Powerlessness • Ethnic Violence • Communal Violence • Sectarian Violence • Religious Violence 	 <p>Human Flight and Brain Drain HF</p> <p>When there is little opportunity, people migrate, leaving a vacuum of human capital. Those with resources also often leave before, or just as, conflict erupts.</p> <p><i>Includes pressures and measures related to:</i></p> <ul style="list-style-type: none"> • Migration per capita • Human Capital • Emigration of Educated Population

Economic Indicators

 <p>Uneven Economic Development UED</p> <p>When there are ethnic, religious, or regional disparities, the governed tend to be uneven in their commitment to the social contract.</p> <p><i>Includes pressures and measures related to:</i></p> <ul style="list-style-type: none"> • GINI Coefficient • Income Share of Highest 10% • Income Share of Lowest 10% • Urban-Rural Service Distribution • Access to Improved Services • Slum Population 	 <p>Poverty and Economic Decline ECO</p> <p>Poverty and economic decline strain the ability of the state to provide for its citizens if they cannot provide for themselves and can create friction between the "haves" and the "have nots".</p> <p><i>Includes pressures and measures related to:</i></p> <ul style="list-style-type: none"> • Economic Deficit • Government Debt • Unemployment • Youth Employment • Purchasing Power • GDP per capita • GDP Growth • Inflation
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Political and Military Indicators

 <p>State Legitimacy SL</p> <p>Corruption and a lack of representativeness in the government directly undermine the social contract. <i>Includes pressures and measures related to:</i></p> <ul style="list-style-type: none"> • Corruption • Government Effectiveness • Political Participation • Electoral Process • Level of Democracy • Illicit Economy • Drug Trade • Protests and Demonstrations • Power Struggles 	 <p>Public Services PS</p> <p>The provision of health, education, and sanitation services, among others, are key roles of the state. <i>Includes pressures and measures related to:</i></p> <ul style="list-style-type: none"> • Policing • Criminality • Education Provision • Literacy • Water & Sanitation • Infrastructure • Quality Healthcare • Telephony • Internet Access • Energy Reliability • Roads
 <p>Human Rights and Rule of Law HR</p> <p>When human rights are violated or unevenly protected, the state is failing in its ultimate responsibility. <i>Includes pressures and measures related to:</i></p> <ul style="list-style-type: none"> • Press Freedom • Civil Liberties • Political Freedoms • Human Trafficking • Political Prisoners • Incarceration • Religious Persecution • Torture • Executions 	 <p>Security Apparatus SEC</p> <p>The security apparatus should have a monopoly on the use of legitimate force. The social contract is weakened where this is affected by competing groups. <i>Includes pressures and measures related to:</i></p> <ul style="list-style-type: none"> • Internal Conflict • Small Arms Proliferation • Riots and Protests • Fatalities from Conflict • Military Coups • Rebel Activity • Militancy • Bombings • Political Prisoners
 <p>Factionalized Elites FE</p> <p>When local and national leaders engage in deadlock and brinkmanship for political gain, this undermines the social contract. <i>Includes pressures and measures related to:</i></p> <ul style="list-style-type: none"> • Power Struggles • Defectors • Flawed Elections • Political Competition 	 <p>External Intervention EXT</p> <p>When the state fails to meet its international or domestic obligations, external actors may intervene to provide services or to manipulate internal affairs. <i>Includes pressures and measures related to:</i></p> <ul style="list-style-type: none"> • Foreign Assistance • Presence of Peacekeepers • Presence of UN Missions • Foreign Military Intervention • Sanctions • Credit Rating

Appendix B: New Deal Goals, Indicators and Data Sources

Extreme Poverty

Indicator	Source
Depth of the food deficit (kilocalories per person per day)	World Bank Development Indicators
Population undernourished, percentage	UN MDG Statistics
Children under 5 moderately or severely underweight, percentage	UN MDG Statistics
Malnutrition percentage, height for age (% of children under 5)	World Bank Development Indicators
Malnutrition percentage, weight for age (% of children under 5)	World Bank Development Indicators
Life expectancy at birth, female (years)	World Bank Development Indicators
Life expectancy at birth, male (years)	World Bank Development Indicators
Life expectancy at birth, total (years)	World Bank Development Indicators
Mortality rate, under-5 (per 1,000 live births)	World Bank Development Indicators
Literacy 15-24 year-olds, both sexes	UN MDG Statistics
Literacy 15-24 year-olds, men	UN MDG Statistics
Literacy 15-24 year-olds, women	UN MDG Statistics
Primary completion rate, both sexes	UN MDG Statistics
Primary completion rate, men	UN MDG Statistics
Primary completion rate, women	UN MDG Statistics
Energy use (kg of oil equivalent per capita)	World Bank Development Indicators

Inequality

Indicator	Source
Income share held by highest 10%	World Bank Development Indicators
Income share held by highest 20%	World Bank Development Indicators
Income share held by lowest 10%	World Bank Development Indicators
Income share held by lowest 20%	World Bank Development Indicators
Quintile ratio (highest 20% to lowest 20%)	World Bank Development Indicators
Decile dispersion ratio (highest 10% to lowest 10%)	World Bank Development Indicators
Poverty gap at \$1.25 a day (PPP) (%)	World Bank Development Indicators
Poverty gap at \$2.00 a day (PPP) (%)	World Bank Development Indicators
Gender parity index in primary level enrollment	UN MDG Statistics
Life expectancy at birth, male-female	World Bank Development Indicators
Literacy 15-24 year-olds, male-female	World Bank Development Indicators
Primary completion rate, male-female	World Bank Development Indicators
Labor Force Participation Rate, male-female ratio	UN Human Development Report

State Legitimacy & Justice

Indicator	Source
Corruption Perceptions Index	Transparency International
Freedom of the Press	Freedom House
Civil Liberties	Freedom House
Political Rights	Freedom House
Political Terror Scale	UNC/ASU
Competitiveness of Participation	Polity IV
Democracy/Autocracy Scale	Polity IV

Security

Indicator	Source
Conflict deaths per capita	Uppsala UCDP
Number of attempted coups, last 5 years	Global Instances of Coups from 1950 to 2010: A New Dataset
Major Episodes of Political Violence	Polity IV
Number of rebel combatants or activists	Political Instability Task Force State Failure Problem Set
Annual number of fatalities related to fighting	Political Instability Task Force State Failure Problem Set
Portion of country affected by fighting	Political Instability Task Force State Failure Problem Set

Macroeconomic Performance

Indicator	Source
Foreign direct investment, net inflows (% of GDP)	World Bank Development Indicators
Foreign direct investment, net inflows (BoP, current US\$)	World Bank Development Indicators
Cash surplus/deficit (% of GDP)	World Bank Development Indicators
GDP Growth (annual %)	World Bank Development Indicators
GDP per capita (current US\$)	World Bank Development Indicators
Inflation, consumer prices (annual %)	World Bank Development Indicators
Unemployment, total (% of labor force)	World Bank Development Indicators
Central government debt (% of GDP)	World Bank Development Indicators

Revenue and Services

Indicator	Source
Tax Revenue (% of GDP)	World Bank Development Indicators
Access to electricity (% of GDP)	World Bank Development Indicators
Proportion of the population using improved drinking water sources, total	UN MDG Statistics
Proportion of the population using improved sanitation facilities, total	UN MDG Statistics
Total net enrollment ratio in primary education	UN MDG Statistics
Health expenditure per capita, PPP	World Bank Development Indicators
Mortality rate, infant (per 1,000 live births)	World Bank Development Indicators
Physicians (per 1,000 people)	World Bank Development Indicators
Expected Years of Schooling	UN Human Development Report

Demographic Pressures (Added by Author)

Indicator	Source
Population growth (annual %)	World Bank Development Indicators
Youth unemployment rate, aged 15-24, both sexes	UN MDG Statistics
Youth unemployment rate, aged 15-24, women	UN MDG Statistics
Youth unemployment rate, aged 15-24, men	UN MDG Statistics
Net migration (% of population)	World Bank Development Indicators
Internally displaced persons (% of population)	World Bank Development Indicators
Refugees by country of asylum (% of population)	World Bank Development Indicators

Appendix C: Countries in Sample

1. Afghanistan
2. Algeria
3. Angola
4. Armenia
5. Azerbaijan
6. Bangladesh
7. Belarus
8. Benin
9. Bhutan
10. Bolivia
11. Bosnia
12. Burkina Faso
13. Burundi
14. Cambodia
15. Cameroon
16. CAR
17. Chad
18. China
19. Colombia
20. Cote d'Ivoire
21. Cuba
22. Congo, D.R.
23. Dominican Republic
24. Ecuador
25. Egypt
26. El Salvador
27. Equatorial Guinea
28. Eritrea
29. Ethiopia
30. Gabon
31. Gambia
32. Georgia
33. Guatemala
34. Guinea
35. Guinea-Bissau
36. Haiti
37. Honduras
38. India
39. Indonesia
40. Iran
41. Iraq
42. Israel/West Bank
43. Jordan
44. Kenya
45. Kyrgyzstan
46. Laos
47. Lebanon
48. Liberia
49. Libya
50. Malawi
51. Mali
52. Mauritania
53. Mexico
54. Moldova
55. Morocco
56. Mozambique
57. Myanmar
58. Namibia
59. Nepal
60. Nicaragua
61. Niger
62. Nigeria
63. North Korea
64. Pakistan
65. Papua New Guinea
66. Paraguay
67. Peru
68. Philippines
69. Russia
70. Rwanda
71. Saudi Arabia
72. Senegal
73. Sierra Leone
74. Somalia
75. Sri Lanka
76. Sudan
77. Syria
78. Tajikistan
79. Tanzania
80. Thailand
81. Togo
82. Tunisia
83. Turkey
84. Turkmenistan
85. Uganda
86. Uzbekistan
87. Venezuela
88. Vietnam
89. Yemen
90. Zambia
91. Zimbabwe

Appendix D: Statistical Results for New Deal Indicators

Extreme Poverty

Indicator	R Squared	P-Value	Coefficient
Depth of the food deficit (kilocalories per person per day)	0.203644517	2.71E-30	0.036924544
Population undernourished, percentage	0.117387349	2.42E-13	0.255504317
Children under 5 moderately or severely underweight, percentage	0.158890529	1.47E-05	0.402281298
Malnutrition percentage, height for age (% of children under 5)	0.171985963	6.03E-06	0.346911291
Malnutrition percentage, weight for age (% of children under 5)	0.159120371	1.45E-05	0.391523847
Life expectancy at birth, female (years)	0.24028354	2.39E-34	-0.535436068
Life expectancy at birth, male (years)	0.235463783	1.35E-33	-0.620196684
Life expectancy at birth, total (years)	0.241362688	1.62E-34	-0.583892476
Mortality rate, under-5 (per 1,000 live births)	0.270462478	1.99587E-45	0.11986706
Literacy 15-24 year-olds, both sexes	0.1100269	7.06E-05	-0.205135442
Literacy 15-24 year-olds, men	0.106037631	9.73E-05	-0.244431249
Literacy 15-24 year-olds, women	0.113502718	5.33E-05	-0.17521558
Primary completion rate, both sexes	0.18841334	5.66E-18	-0.190707895
Primary completion rate, men	0.143087552	3.26E-13	-0.185413415
Primary completion rate, women	0.220705828	2.14E-20	-0.185731822
Energy use (kg of oil equivalent per capita)	0.062349771	1.5E-07	-0.002357435

Inequality

Indicator	R Squared	P-Value	Coefficient
Income share held by highest 10%	0.024594218	0.061416	-0.212764739
Income share held by highest 20%	0.032901388	0.030154	-0.235450347
Income share held by lowest 10%	0.078561931	0.000697	2.468408997
Income share held by lowest 20%	0.067953601	0.001664	1.158415808
Quintile ratio (highest 20% to lowest 20%)	0.040438387	0.016028	-0.280433937
Decile dispersion ratio (highest 10% to lowest 10%)	0.030941188	0.035604	-0.068107694
Poverty gap at \$1.25 a day (PPP) (%)	0.143806418	3.53E-06	0.338993872
Poverty gap at \$2.00 a day (PPP) (%)	0.211491419	5.92E-09	0.269998049
Gender parity index in primary level enrollment	0.299526861	8.22E-35	-63.13148579
Life expectancy at birth, male-female	0.082656889	7.51E-12	1.196149388
Literacy 15-24 year-olds, male-female	0.075546422	0.001922	0.362409208
Primary completion rate, male-female	0.258438932	6.1E-24	0.619567197
Labor Force Participation Rate, male-female ratio	0.006541756	0.058934	3.653195196
FSI Indicator 3: Group Grievance	0.474864904	7.04E-91	5.177829462
FSI Indicator 5: Uneven Economic Development	0.271373137	1.34E-45	6.58111349

State Legitimacy & Justice

Indicator	R Squared	P-Value	Coefficient
Corruption Perceptions Index	0.049730404	1.8E-08	-0.879734756
Freedom of the Press	0.069844616	1.22E-11	0.1646142
Civil Liberties	0.197862715	2.81E-32	3.526394659
Political Rights	0.098265309	5.44E-16	2.004134229
Political Terror Scale	0.253927586	2.54E-42	6.308943952
Competitiveness of Participation	0.007116423	0.039181	-0.711265129
Democracy/Autocracy	0.01522211	0.002508	-0.215291899
FSI Indicator 7: State Legitimacy	0.557155912	2E-114	7.129592607
FSI Indicator 9: Human Rights and Rule of Law	0.458886964	9.72E-87	5.930805293

Security

Indicator	R Squared	P-Value	Coefficient
Conflict deaths per capita	0.048060421	2.27E-08	45029.49481
Number of attempted coups, last 5 years	0.0071266	0.03315	3.828544497
Major episodes of political violence	0.156422531	2.78E-25	2.579915431
Number of rebel combatants or activists	0.117979244	4.46E-19	3.018904326
Annual number of fatalities related to fighting	0.140908567	9.5358E-23	4.586830653
Portion of country affected by fighting	0.139674954	1.51E-22	3.856083069
FSI Indicator 10: Security Apparatus	0.612961776	5.2E-133	6.287740374

Macroeconomic Performance

Indicator	R Squared	P-Value	Coefficient
Foreign direct investment, net inflows (% of GDP)	1.98472E-05	0.913139	0.007144183
Foreign direct investment, net inflows (BoP, current US\$)	0.018983847	0.000546	-6.68715E-11
Cash surplus/deficit (% of GDP)	0.029111148	0.003681	-0.344879355
GDP Growth (annual %)	6.23204E-05	0.846099	-0.017819339
GDP per capita (current US\$)	0.116815189	3.96E-18	-0.000814438
Inflation, consumer prices (annual %)	0.019645945	0.000751	0.047185649
Unemployment, total (% of labor force)	6.02968E-05	0.900452	0.009800709
Central government debt (% of GDP)	0.009178655	0.306291	-0.037299593
FSI Indicator 6: Poverty and Economic Decline	0.378390278	1.42E-67	4.421837454

Revenue and Services

Indicator	R Squared	P-Value	Coefficient
Tax Revenue (% of GDP)	0.157124547	1.29E-12	-0.618196068
Access to electricity (% of pop)	0.229211389	1.86E-08	-0.16309515
Proportion of the population using improved drinking water sources, total	0.196441413	3.42E-26	-0.272004195
Proportion of the population using improved sanitation facilities, total	0.16735114	3.38E-22	-0.149083207
Total net enrollment ratio in primary education	0.160431895	4.5E-15	-0.23762529
Health expenditure per capita, PPP	0.129682586	1.4E-17	-0.011371979
Mortality rate, infant (per 1,000 live births)	0.289064892	5.3E-49	0.207007916
Physicians (per 1,000 people)	0.091609382	4.45E-05	-2.033309768
Expected Years of Schooling	0.305899953	6.93E-51	-2.146324047
FSI Indicator 8: Public Services	0.476795053	2.18E-91	5.723558869

Demographics (Added by author)

Indicator	R Squared	P-Value	Coefficient
Population growth (annual %)	0.085595238	5.11E-14	3.232200344
Youth unemployment rate, aged 15-24, both sexes	2.19979E-05	0.956944	-0.002639935
Youth unemployment rate, aged 15-24, women	0.005831823	0.391576	0.031599863
Youth unemployment rate, aged 15-24, men	0.001736896	0.640436	-0.02547149
Net Migration (% of pop)	0.002654956	0.494571	-27.60601067
IDPs (% of pop)	0.147773	9.9E-09	117.1251
Refugees (% of pop)	0.004285191	0.140259	-15.47334543
FSI 1: Demographic Pressures	0.506530068	1.8E-99	6.810007546

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