Exploring a Link between Globalization and Political Instability: An Empirical Study

by

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TABLE OF CONTENTS

I. Abstract

The purpose of this paper is to investigate a link between political instability and globalization. Using a time-series panel data set involving about 100 countries, we will empirically investigate a correlation on those two dimensions from 1980-2004. Sample political instability variables include assassinations, coups, and regime changes. A sample globalization variable is net foreign direct investment into a country.

The overall results are as follows. General conflict indicators such as the conflict index or grouped indicators of public unrest and government meltdowns were significant and had a negative impact on FDI/GDP, Openness, and GDP/Person. The actual violent acts themselves, a more specific indication, were only telling in a few cases, and for the most part the results of the tests using these variables were inconclusive.

II. Background

The tragic events of 9/11/01 sparked the curiosity of economists across the world: can isolated terrorist acts really affect the economy on a global scale? Especially poignant are words from the terrorists themselves. Take, for example, excerpts from a speech broadcasted by Osama Bin Laden, the mastermind behind the 9/11 attacks: "Every dollar of al-Qaida defeated a million dollars by the permission of Allah, besides the loss of a huge number of jobs… it all shows that the real loser is you… It is the American people and their economy." [i] While it's impossible to get behind the real motives of terrorists, it is unarguable that they are proud of the cataclysmic results their attacks had on the American economy.

Past studies have investigated the supposed effects of violent acts on economies. For the most part, though, the studies focused on the stock market, or they used indices of political instability or they

focused on terrorist risks generally, as we will see in the following paragraphs. I plan to differentiate this paper by investigating *specific acts* of violence, such as assassinations and coups, versus *specific measures* of globalization, such as Foreign Direct Investment (FDI) and openness. This area is of particular interest to me because of the ongoing debate about whether or not globalization is "good;" I feel that if this paper shows that political instability and violence lends to a loss of stature in the global marketplace, it can add fuel to the argument that countries ought to try to reduce political instability rather than promote it through corruption or other means.

As mentioned, several studies have already been conducted that investigate the effect of terrorist acts. One of them is Abadie and Gardeazabal (2007), a study that finds that "higher levels of terrorist risks are associated with lower levels of net foreign direct investment positions, even after controlling for other types of country risks."[ii] Another similar paper is by Chesney and Reshetar (2007). This paper found that "Around two thirds of the terrorist attacks considered lead to significant a negative impact on at least one stock market under consideration."[iii] Both of these studies provide a background for more investigation into the question of the impact of violence on economies by analyzing the effects of the most violent of acts: terrorist acts.

Beyond the dismal lens of terrorism lies an even broader ramification: that political instability within a country (not necessarily by terrorists) can have disastrous effects on that country's economy. Globerman and Shapiro (2002) investigates this thread. They measure legal systems, legislation, and regulation versus foreign direct investment from the United States. They found, using statistical analyses, that "countries that fail to achieve a minimum threshold of effective governance are unlikely to receive any U.S. FDI."[iv] In sum, correlations between globalization and political instability have been found in other studies.

In many past studies, though, indices are used as the main measures of governance and political stability. For example, one index might judge a country on its political volatility ranking while a corollary index might judge a country on its corruption index; the two can be seen as going hand in hand. Globerman and Shapiro make the same critique: "[the] indices are so highly correlated that it is very difficult to use them in an equation."[v] In one of their studies, for example, they use a "governance index" to help predict FDI inflows. This index is composed of the following: "government effectiveness, political instability, rule of law, graft and corruption, voice and accountability, regulatory burden." Sometimes these indices try to capture many, somewhat vaguely defined, variables.

In general, the issue is not that these studies that use these indices are flawed in any way, it's that the studies don't go to the root cause: the actual, specific violent acts that make these countries unstable. It is nice to know that a country is labeled as having poor governance, but it would be even nicer to know the effect that an assassination or mass riots have on the country's appeal to investors. This is one issue that led me to want to investigate the effect of these specific acts on globalization.

In this study we, plan to differentiate among different types of specific occurrences of political instability rather than focusing on an overall index. I utilize a comprehensive database on political instability from the Cross-National Time-Series Data Archive which provides data over time on measures such as assassinations or coups. This dataset was created for SUNY Binghamton's Center for Comparative Research by Arthur Banks and it contains, among many other variables, political instability variables for all countries over the past century.

The basic macro core data over time, such as net foreign direct investment into a country, is obtained from the Economist Intelligence Unit Country Data archive. Since all of the data already exists and is in manageable form, we simply combine these two databases to create new spreadsheets that

allow us to analyze the specific effect of political instability occurrences (like assassinations and coups) on specific measures of globalization, like openness and FDI.

We estimate this relationship between the acts of political instability and their effect on globalization with a set of "panel data." Our goal is to test the effect of these acts on a country's economy.

In the following study, we will explore the possible correlation between these political instability acts and globalization in dozens of country around the world. Using regression analyses, we will learn together that indices do indeed have telling power; the "conflict index" created by Databanks has immense predictive power on openness and FDI. By breaking down the violent acts into different general categories, we also learn that certain types of violent acts do indeed have predictive power on a country's globalization indicators. Finally, we learn that there are some cases in which specific acts of political instability can negatively affect a country's economy and their stance in the global marketplace.

III. Hypotheses

The main intent of the paper is to investigate a link between specific instances of political instability in a country and that country's performance in the global economy. The three main response variables (globalization indicators) are FDI as a percentage of GDP, GDP / Person, and Openness (Imports + Exports, as a percentage of GDP). The predictors are the political instability variables, such as coups, assassinations, revolutions, guerilla warfare, and so forth. We will also use political instability as a response variable to see if the effects work in reverse.

The main hypothesis is as follows:

Hypothesis 1: A country laden with politically uproarious acts will lose stature in the global marketplace and thus receive fewer investments from abroad.

This hypothesis is tested in other studies, such as the Globerman and Shapiro study listed above. I expect that, on the whole, a general conflict indicator like the conflict index will be a solid predictor of openness and FDI; this is my stance because countries overrun with conflict are likely unable to compete in the global economy and also because other countries will likely divert their funds from a country being overrun in conflict. I also suspect that the conflict indicators will show that a country overrun in conflict will struggle with regards to development (measured by GDP / person).

Hypothesis 2:
There are certain acts that are more detrimental to a country than other acts.

Certain of these acts are more newsworthy and noteworthy than others. For example, an assassination of a major government official is likely to be more important to an investor than a simple constitutional change. As for specific indicators of violence and their effect, I presume that the more news-worthy variables, such as guerilla warfare, assassinations, coups, and revolutions, will have more of an effect than other variables like strikes and riots with regards to their stance in the global economy (FDI and openness). On the other hand, I anticipate that a country's development (GDP / person) will be greatly affected by political instability variables like strikes and riots, where the workforce is generally speaking out against their government as opposed to the more news-worthy variables.

Hypothesis 3:
These politically instable acts take time to "sink in," to reach the news and investors abroad, lending to a time-delay in the effects (if there are any).

As with most econometrics variables, the effects are not seen immediately. Indeed the time-delay must be taken into account when running regressions or looking for correlations. Thus, the data should be created in panel data form as the software for panel data takes into account these time delays.

Hypothesis 4:
Countries that become more globalized become less politically instable.

A paragon argument of the pro-globalization debate is that globalization brings democracy. For example, one research paper suggests "the existence of positive relationships running *both ways* between globalization and democracy."[vi] Thus, it is important to test the results in reverse: more globalization leads to less conflict.

In sum, we must be careful in drawing conclusions if this hypothesis is met via regressions and correlation analyses. For example, as with any regression, it is not our job to say that politically unstable act A directly caused decrease in foreign direct investment B. However, we can get a general idea for how these variables interact and whether or not it merits further investigations.

IV. Global Study Data

In this section, I discuss the data used in the global study. I arranged *all* of the relevant data for *every* country over all relevant time periods into one master spreadsheet and analyzed the effects on a macro level. I call this the "global study" because I am aggregating and pooling hundreds of data points for dozens of countries around the world into one regression study. The end-product is a set of "panel data." Panel data can be analyzed through typical regression framework A typical regressions look as follows:

$$Y_{it} = \alpha + \beta X_{it} + \gamma Z_{it}$$

Y: Response variable (ie: FDI / GDP, Openness, or GDP / Person) for country i at time t.
X: Value of the predictor, often a political instability variable like assassinations, coups, revolutions, etc. Some equations have more than one predictor, as seen later in the study.
Z: Value of the dummy variable, often either 0 or 1. Some equations have more than one dummy variable, like development indicator or period, while other equations do not use dummies.

Political Instability Data

Arthur Banks' "Cross-National Time-Series Data Archive." is a longitudinal data set for roughly 250 independent states from 1819 to the present. From this data set, I extracted the following variables for 1970-2004:

Assassinations, Guerilla, Strikes, Crises, Purges, Riots, Revolution, Demonstration, Conflict Index, Coups, Constitutional Changes, Cabinet Changes.

See **Exhibit A** for complete variable definitions.

Macro Data

The country macro data comes mostly from the Economist Intelligence Unit's Country Data online acquisition program. The original source of the EIU data is the International Monetary Fund's International Financial Statistics.

The data lines extracted from the EIU are the FDI, GDP, exports and imports as a percentage of GDP, and population estimates. See **Exhibit B** for a full list. All in all, the EIU provided everything from minimal to complete data for 149 countries from 1980-2007. See **Exhibit C** for a full list of the country's and their data availability.

Since the data, for the most part, is not being created or majorly manipulated, we will go with what we have and stick to the countries that have available political instability data and available globalization data from 1980-2004 (2004 because it is the end of the seventh 5-year period).

As for the periods, we decided to break down the 35 years into seven five-year periods. There are a few reasons for this. First is that doing it on a year-to-year level for hundreds of countries would result in such a large data-set that small movements might not be noticed. Second is that the effects of these politically instable acts might take a few years to sink in. Finally, and most importantly, the economic

data only goes back to 1980. Therefore, having two periods date back from 1970-1979 would prove useful in case we want to check a time-delay in occurrences.

a. Data Constraints

The units used in the EIU database often vary from country to country. For example, the nominal GDP for Azerbaijan is listed in *millions* of US Dollars whereas the nominal GDP for Albania is listed in *billions* of US Dollars. Data were checked to make the units consistent.

There are many instances of countries that simply do not have occurrences of some of the political instability variables. There are countries that have them once, but then not again. This could be a good thing in that it might be easier to detect a change if a country that has them sporadically happens to experience a change in the globalization numbers. Or, it could result in the opposite: countries laden with political instability might not be sensitive to a minor increase or decrease in these occurrences.

Further, it is difficult at this juncture to presume how the frequency of each occurrence will affect the outcome. For example, is there a difference between a country experiencing one assassination in a year or twelve assassinations in a year? Is the one occurrence enough to raise the flags of investors? We can get around this by having a dummy variable for an occurrence, whether that occurrence is twelve assassinations or one.

b. Data Setup

Correlation of Political Instability Variables and Creation of New Variables

After running some preliminary regressions, we found that the several of the variables were correlated with each other. Because of this, we condensed some of them into groupings or omitted them

when running the regressions. Please see **Exhibit D** for an in-depth look into this process. To summarize it here, we created the following variables, in bold:

Public displays (Riots, demonstrations, strikes). One third of the time, they are occurring with each other. It seems almost intuitive that if the people will riot, they will demonstrate. Strikes are another form of public dismay. Indeed the highest correlation found was between riots and demonstrations.

Government transformations (Crises, cabinet changes, constitutional changes). These also seem to go hand in hand. They each signify significant changes in the government, be it a complete meltdown or a drastic change in the public officials or policy governing the country.

Forced government transformation (Coups, revolution, purges). Again, the occurrence of these variables goes hand in hand. They are all moderately correlative and indicate a violent way of excavating the present government. Preliminary regression results show that these types of violent variables could potentially lead to a disrupting of FDI or GDP.

National headliners (Assassination and guerilla warfare). The occurrence of an assassination or guerilla warfare is likely to get national attention. Preliminary regression results show that these types of violent variables could potentially lead to a disrupting of FDI or GDP, and these two occur with each other 1/3rd of the time.

The hope is that condensing these variables will rid the equations of correlation that would otherwise skew our results. The new correlation matrix is as follows, in **Figure A**:

Figure A:

	Public Demonstration	Government Transformation	ForcedGovernmentTransformation
Government Transformation	0.255*		
Forced Government	0.268*	0.295*	
Violence	0.354*	0.254*	0.487*

* Indicates significance at the p < .01 level
** Indicates significance at the p < .05 level

Forced Government and Violence seem to correlate the most because guerilla and assassination were moderately correlative to purges and coups.

Creation of Development Dummies

Using the World Bank's list of economies[vii], we extracted a development indicator for each country. This dataset categorizes countries from low-income to high-income. The thought is that this variable might need to be held constant because it is likely correlated with the economic variables. A variable for development indicator (from the World Bank, as mentioned) was used, coded as follows:

Development0: Low income Development1: Lower-middle income

Development2: Upper-middle income Development3: High income, non-OECD

Development4: High income, OECD member

Creation of Period Dummies

The time-periods were broken down as follows:

Period 0: 1970-1974. Period .5: 1975-1979. Period 1: 1980-1984.

Period 2: 1985-1989. Period 3: 1990-1994. Period 4: 1995-1999.

Period 5: 2000-2004.

Creation of Region Dummies:

A variable for geographical region was also added. The variable is coded as follows:

Region 0: North America. Region 1: South America. Region 2: Europe.

Region 3: Africa. Region 4: Asia. Region 5: Australia

Region 6: Middle East.

c. Descriptive Statistics

Political Instability, by Year

I created a new database for the complete / near complete countries and broke it down by year and by country (as opposed to by period). The results of the first descriptive statistics test are in **Exhibit E.** As you can see, the results are skewed by an abundance of non-occurrences. Indeed the mode and 75th percentile for all occurrences (but cabinet changes) throughout the 5032 lines reported is zero. This is replicated in graphs on the following page of the exhibit.

The rarity of an occurrence is something worth expanding on. Most of the variables occurred between 5-15% of the observations. Only cabinet changes and demonstrations happened much more drastically, with 35% and 22% of observations having either a cabinet change or a demonstration. We have to keep this in context, though. These observations all mostly come from the same countries. For example, even though 10% of observations have an assassination, it is not true to say that there is a 10% chance that any given year Angola will have an assassination; Angola had no assassinations. These statistics are just an indicator of their frequency but are not transposable to other countries.

"A lot" or "a few" of the Instability Occurrences

Using the graphs of the occurrences of each variable, we created a new dummy variable for the occurrence of the political instability acts. These breakdowns are as follows, in **Figure B**:

Figure B:

	"A few"	**"A lot"**
Assassinations	Less than 2	2 or greater
Guerilla	Less than 2	2 or greater
Strikes	Less than 4	4 or greater
Crises	Less than 2	2 or greater
Purges	Less than 2	2 or greater
Riots	Less than 6	6 or greater
Revolution	Less than 4	4 or greater

Demonstration	Less than 6	6 or greater
Coups		Greater than 0
Constitutional Changes	Less than 2	2 or greater
Cabinet Changes	Less than 4	4 or greater

Conflict Index, by Year

I also decided to investigate if there were certain years that were more politically instable across the globe. I created several charts and I've included what I think is the one that best captures the trend in **Figure C.**

Figure C:

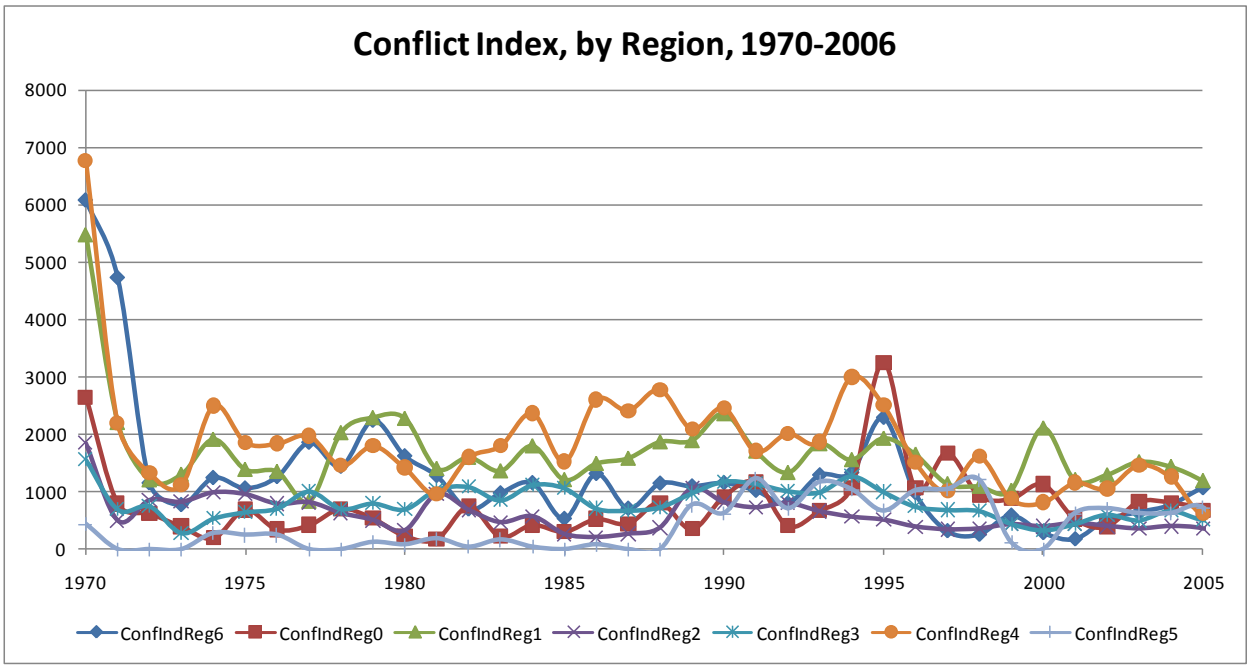
This graph shows the sum of all of the conflict indices throughout the years, which is a weighted sum of all of the other occurrences. The key trends are: a particularly violent 1970, including the highest occurrence of guerrilla warfare and crises; a lull quickly thereafter and a stabilization into the 1980s; a slight peak in 1989 and 1990 that arises again in the mid-90's, likely due to the end of the cold war and the fall of Germany; and finally another lull well into the 2000's. More research could be done here to investigate these global trends. This is also concurrent with the trend noticed in the by-region and by-development breakdowns (discussed next).

Conflict Index, by Region

I also broke down the database by region by period to see if there was any discernable pattern. The data print out is too long to justify pasting it as an exhibit. On almost all counts region 1 - South America – is the most politically instable. Not far behind is region 4 – Asia. Surprisingly, Africa was only highest on one count: constitutional changes.

To capture the trend on a global level, I graphed conflict index through the years, broken down by region. This is reproduced in **Figure D.**

Figure D:



Region 0: North America. Region 1: South America. Region 2: Europe.
Region 3: Africa. Region 4: Asia. Region 5: Australia
Region 6: Middle East.

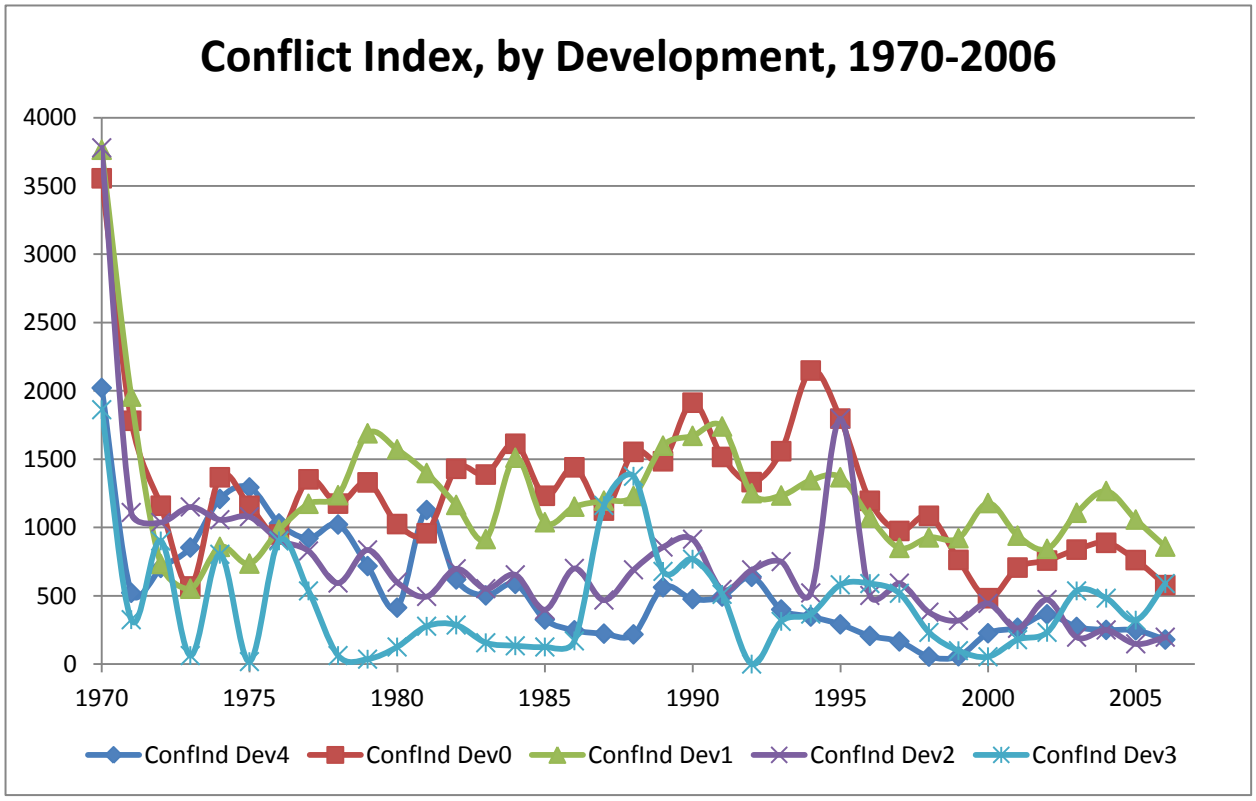
As you can see, some regions simply have "more" political instability than others. I also noticed the trend noted before, at least in the more unstable countries: the peak in 1970, the lull in the following years, another crest in the late 80s to mid 90s, and another lull thereafter. However, we see a drastic rise

in the Middle East from the mid 1990s to 2006, a good indication of the wars and subsequent political upheaval that is going on there.

Conflict Index, by Development

Along the same lines as the previous set, I broke down the variables by development region, reproduced in **Figure E**.

Figure E:



Development 0: Low income
Development 1: Lower-middle income
Development 2: Upper-middle income
Development 3: High-income, non-OECD
Development 4: High-income, OECD

As expected, we see that the development indicator is a good indicator of conflict index. The lowest-developed countries are more conflicted, with very few exceptions. The highly developed countries also have a low average conflict index.

As such, there are more occurrences of the particularly violent variables in the least-developed countries. For example, the two lowest rungs have the most assassinations, revolutions, coups, and guerilla warfare occurrences.

A Micro-Look: Country Ranks

It's also interesting to see where these countries rank relative to each other with regards to the various variables. To see how the countries fare on the different variables, see **Exhibit F.** Some of the results are very revealing. For example, Argentina is in the top 10 for assassinations, guerilla warfare, strikes, crises, coups, and purges. This gives us a good indication of how relatively violent each country is on the various dimensions.

A different look is given in **Figure F.**

Figure F:

	P0 (1970-74)	P.5 (1975-79)	P1 (1980-84)	P2 (1985-89)	P3 (1990-94)	P4 (1995-99)	P5(2000-04)
1	US	ARGENTINA	ETHIOPIA	INDIA	PHILIPPINES	CAMBODIA	COLOMBIA
2	ARGENTINA	PORTUGAL	SPAIN	PHILIPPINES	INDIA	MEXICO	MEXICO
3	JORDAN	ETHIOPIA	TURKEY	EL SALVADOR	ISRAEL	TURKEY	INDONESIA
4	BRAZIL	SPAIN	IRAN	LEBANON	SO AFRICA	INDIA	PERU
5	BOLIVIA	ITALY	SO AFRICA	SO AFRICA	MYANMAR	PERU	SRI LANKA
6	PAKISTAN	PHILIPPINES	EL SALVADOR	MYANMAR	KOREA REP	IRAQ	SUDAN
7	INDIA	UK	LATVIA	SUDAN	COLOMBIA	GUATEMALA	BURUNDI
8	GREECE	INDIA	ECUADOR	PAKISTAN	PERU	BURUNDI	HAITI
9	ITALY	OMAN	ITALY	ETHIOPIA	SRI LANKA	ALGERIA	GEORGIA
10	LAOS	LEBANON	CAMBODIA	CHAD	GUATEMALA	TAJIKISTAN	RUSSIAN FED

(Countries that appear more than once were designated a color)

Here we see the rankings by conflict index and by period. Most of the countries appear on the list more than once. It's also interesting to see how the countries rise and fall with the years. For example, India is ranked 7th and 8th in periods 0 and .5 respectively, then it falls off the chart, then climbs back to the number one spot for period 1 and stays in the top four until period 4. The main takeaway is the consistency of the countries appearing in the list; those who are highly conflicted are likely to be highly conflicted in various time periods.

V. Methodology

In order to simplify regression estimates with a panel data set, we use software designed to take the country and time effects at the same time[1]. This software works by taking into account the lag effect of the panel data and accounting for the in future periods.

Several regression specifications were estimated for each dependent variable. The first specification (series #1) consists of regressions with just measures of political instability. They are as follows:

Regression Series #1

$FDI/GDP_{it} = \alpha + \beta X_{it}$
$Openness_{it} = \alpha + \beta X_{it}$
$GDP/Person_{it} = \alpha + \beta X_{it}$
$Conflict_{it} = \alpha + \beta X_{it}$

X: Measure of political instability variable, such as assassinations, coups, revolutions, etc. Some equations have more than one predictor, as seen later in the study.

[1] I would like to specifically thank Professor Jeffrey Simonoff for his preliminary help with panel data, and Professor William Greene for his advice and guidance on dealing with panel data and using his amazing software. This paper would not be nearly where it is without their help. You can find information about Limdep and NLOGIT, two powerful econometric packages, here: http://www.limdep.com/

In this series of regressions, the variables are being tested "alone" – in other words, period and development indicators are not held constant, nor are anything else. I will list the various iterations of the predictors after I run through the series of regressions. Here is an example equation:

$FDI / GDP_{it} = 1.48\% - .00263\% * Conflict\ Index_{it}$

So, in general, a 100 point increase in Conflict Index in country *i* and time period *t* would mean a .0263% decrease in FDI / GDP.

Regression Series #2

$FDI/GDP_{it} = \alpha + \beta X_{it} + \gamma Period_t + \delta Development_d$
$Openness_{it} = \alpha + \beta X_{it} + \gamma Period_t + \delta Development_d$
$GDP/Person_{it} = \alpha + \beta X_{it} + \gamma Period_t + \delta Development_d$
$Conflict_{it} = \alpha + \beta X_{it} + \gamma Period_t + \delta Development_d$

X: Measure of political instability variable, such as assassinations, coups, revolutions, etc. Some equations have more than one predictor, as seen later in the study.

$Period_t$: A representation of the period; there are 7 different period dummy variables, and their values are either 0 or 1

$Development_d$: A representation of the development indicator; there are 4 different development levels, and their values are either 0 or 1

For regression series #2, we are holding period and development constant. I condensed the period and development dummy ranges for ease of reading; there are 4 period dummies and 4 development dummies[2]. Here is an actual representation of one of the regressions:

$FDI/GDP_{it} = 2.71\% - .0014\% * Conflict\ Index_{it} – 1.22\% * Period1 – 1.22\% * Period2 - .88\% * Period3 - .04\% * Period4 – 1.28\% * Development0 – 1.06\% * Development1 - .58\% * Development2 + .70\% * Development3$

[2] There are only five periods with economic data since that data set only goes back to 1980. Thus, there are four period dummies.

Let's say UAE (Development level 3) has a 425 point conflict index in period 4:

FDI/GDP = 2.71% - .0014%*(Conflict Index = 425) - 1.22%*(Period1=0) – 1.22%*(Period2=0) - .88%*(Period3=0) - .04%*(Period4=1) - 1.28%*(Development0=0) – 1.06%*(Development1=0) - .58%*(Development2=0) + .70%*(Development3=1)

FDI/GDP = 2.71% - .0014%*425 - .04%*1 + .70%*1

FDI/GDP = 2.71% - .595% - .04% + .70% = 2.775%

As we will see, holding the development level and period constant will be important for the majority of the regressions.

Regression Series #3

$FDI/GDP_{it} = \alpha + \beta X_{it} + \gamma Period_t + \varepsilon Openness_{it} + \zeta GDP/Person_{it}$
$Openness_{it} = \alpha + \beta X_{it} + \gamma Period_t + \zeta GDP/Person_{it}$
$GDP/Person_{it} = \alpha + \beta X_{it} + \gamma Period_t + \varepsilon Openness_{it}$
$Conflict_{it} = \alpha + \beta X_{it} + \gamma Period_t + \varepsilon Openness_{it}$

X: Measure of political instability variable, such as assassinations, coups, revolutions, etc. Some equations have more than one predictor, as seen later in the study.

$Period_t$: A representation of the period; there are 7 different period dummy variables, and their values are either 0 or 1

$Openness_{it}$: Openness for country *i* in time period *t*

$GDP/Person_{it}$: GDP / Person for country *i* in time period *t*

For this regression, we still hold period constant, but we add holding openness and / or GDP / Person constant. We thought that these variables might have some predictive value and thus holding them constant could narrow down the effect of the political instability variables. Here is a sample equation:

$GDP/PERSON_{it} = \alpha + \beta X_{it} + \gamma Period_t + \varepsilon Openness_{it}$

$GDP/PERSON_{it}$ = \$11,312 – \$1.47*Conflict $Index_{it}$ – \$6,635*Period1 – \$5,128*Period2 - \$3,341*Period3 - \$1,684*Period4 + \$23*$Openness_{it}$

Let's say Italy has a 500 point conflict index in period 4:

GDP/PERSON = \$11,312 – \$1.47*(Conflict Index=500) – \$6,635*(Period1=0) – \$5,128*(Period2=0) - \$3,341*(Period3=0) - \$1,684*(Period4=1) + \$23*(Openness=47.8)

GDP/Person = \$11,312 - \$1.47*500 - \$1,684*1 + \$23*47.8

GDP/Person = \$11,312 – \$735 - \$1,685 + \$1,099 = \$9,991

We'll see that in some cases, holding these things like openness or GDP / Person constant can overpower the equation, showing how strong the relationship between conflict and these indicators might be.

The predictors were as follows:

The following predictor variables were tested individually (ie: each regression had only one predictor):

- Conflict Index
- Conflict Index > 1,000
- Public Demonstration
- Government Transformation
- Forced Government Transformation
- National Headliners

A sample of this style of regression, where only one predictor is used, is:

$GDP/PERSON_{it}$ = \$11,312 – \$1.47*Conflict $Index_{it}$ – \$6,635*Period1 – \$5,128*Period2 - \$3,341*Period3 - \$1,684*Period4 + \$23*$Openness_{it}$

The following predictor variables were grouped into the same regression (ie: each regression had several variables used as predictors):

- Public Demonstration, Government Transformation, Forced Government Transformation, National Headliners
- Binary occurrence of political instability variables (Whether or not any of the following occurred: Assassination, guerilla, strikes, crises, purges, riots, revolutions, coups, cabinet changes, constitutional changes)
- Either "A lot" or "a few" of the political instability variables (see Figure C above for breakdown).

Here is a sample of this style of regression, where the predictors are grouped:

$GDP/PERSON_{it}$ = \$13,055 - \$1,593*PublicDemonstration - \$1,553*GovernmentTransformation - \$4,950*ForcedGovernment + \$150.79*Violence - \$5,379*Period1 - \$5,379*Period2 - \$3,400*Period3 - \$1,555*Period4 + \$19*Openness

In any one period, a country might, for example, only have an occurrence of public demonstration and violence, so those values would equal 1 while government transformation and forced government would equal 0.

As mentioned, the output for these equations is similar to those of any other regression, even though the data is setup as panel data. We will be analyzing the F values and the y-intercepts of the whole equation, the coefficients of each predictor, and the p-values of the F-Value, the Y-Intercept, and the coefficients. As always, the lower the p-value, the more statistically significant the equation or coefficient is. P-values less than .01 are ideal, but we will also indicate p-values less than .05.

VI. Interpreting the Results

It seems to be most appropriate to break down the results by the response variable, as shown above with the different equations. It is also important to note that the F-statistic for every regression run was significant ($p<.01$), so it would be redundant to mention this each time. Also, for all regressions, * denotes significance at the $p<.01$ level and ** denotes significance at the $p<.05$ level.

Response: Openness

The following six "X" predictor variables were run in individual regressions, with openness as the response, for a total of 18 regressions. Read the chart on the next page as follows: $Openness_{it} = \alpha + \beta X_{it}$. Openness is important to address first because of the effect it has on the other regressions.

Response: Openness		Regression #1 Running X Alone			Regression #2 Holding Development and Period Dummies Constant			Regression #3 Holding Period and GDP/Person Constant		
	X	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation
Individual regressions with individual measures of conflict or political instability:	Conflict Index	87.197*	-0.0112*	43.61*	80.835*	-0.0100*	15.89*	80.860*	-0.0094*	8.72*
	Openness = 87.197 - .0112*Conflict Index									
	Conflict >1000	86.674*	-33.3580*	41.42*	80.514*	-29.032*	15.37*	80.344*	-27.500*	8.27*
	PublicDemonstr	94.306*	-33.064*	51.17*	89.721*	-28.363*	16.52*	86.972*	-29.573*	10.58*
	Gov'tTrans.	93.153*	-24.410*	23.98*	89.418*	-17.933*	12.68*	85.282*	-21.873*	6.98*
	ForcedGov't	82.616*	-24.350*	17.79*	79.109*	-18.890*	12.30*	75.391*	-17.600*	5.37*
	Violence	84.085*	-27.920*	25.60*	80.599*	-24.120*	13.61*	74.662*	-22.940*	6.72*

Conflict Index: On the whole, openness reacts to the predictors as you'd expect. For example, a 500-point increase in the **conflict index** (which occurs fairly often in the data-set) means a 5.6-point drop in openness. Further, if the country has a **conflict index greater than 1,000,** you can expect openness to drop by a whopping 33.4 points. As you throw in the development and period dummies and even along with GDP / person, the effect gets muddled but the predictors are still significant.

General Dummies: To get more specific than the conflict index, we can next look to the new dummies created: **public demonstration, government transformation, forced government transformation, and national headliners**. Each one of these variables was significant, even with the period and development dummies along with holding GDP / person constant. The effects ranged from a drop of -24.3 points (if there was only a forced government transformation) to a drop of -33.064 (if there was a public demonstration). With the dummies thrown in, the forced government transformation only effects openness by 17.6 points and public demonstration only by 29.6 points. In sum, all of these variables are significant and negative.

Now we arrive at the grouping of various predictor variables. The following three groups of "X" variables were run as separate regressions (separated by the bold line), for a total of 9 regressions. Read the following chart as such: $Openness_{it} = \alpha + \beta X_{it}$.

Response: Openness		Regression #1 Running X Alone			Regression #2 Holding Development and Period Dummies Constant			Regression #3 Holding Period and GDP/Person Constant		
	X	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation
Regression with four political instability indicators:	PublicDemonstr	106.665*	-25.850*	20.15*	96.701*	-23.290*	14.57*	99.379*	-24.080*	9.34*
	Gov'tTrans.		-17.190*			-13.380*			-16.440*	
	ForcedGov't		-7.230			-5.720			-4.200	
	Violence		-13.460**			-13.940**			-12.290**	
	Openness = 106.665 - 25.85*Public - 17.19*Gov't - 7.230*Forced - 13.460*Violence									
Regression with simple binary occurrence of all of the political instability indicators (simply an occurrence or not)	Assassination	101.709*	-8.746	7.06*	91.851*	-8.490	9.59*	94.000*	-6.280	5.24*
	Guerilla		-11.582			-15.572*			-11.114	
	Strikes		-12.477			-12.113			-12.755	
	Crises		-0.844			-1.412			-2.674	
	Purges		-8.767			-10.182			-9.377	
	Riots		-16.666*			-15.691*			-15.311*	
	Revolutions		-6.192			-3.643			-4.226	
	Coups		-5.069			6.541			-0.823	
	ConstitutionalC		-5.318			4.680			8.788	
	CabinetChg		-18.217*			-15.060*			-18.285	
Regression with all of the individual conflict indicators, broken down by relative occurrence ("a few" and "a lot")	"A few":	120.199*		4.30*	104.685*		6.62*	107.366*		4.10*
	Assassinations		-15.761**			-18.389*			-15.485**	
	Guerilla		-5.691			-9.298			-3.771	
	Strkes		-1.192			-1.633			-2.156	
	Crises		0.989			2.635			-0.721	
	Purges		-7.193			-2.560			-3.374	
	Riots		-16.824*			-15.283*			-15.012*	
	Revolutions		1.572			5.272			4.469	
	Constitutional		9.905			13.653**			12.035	
	Cabinet		-19.641*			-17.178**			-26.598*	
	"A Lot":									
	Assassinations		-9.150			-11.284			-9.347	
	Guerilla		-17.591**			-22.874*			-15.645	
	Strikes		-10.573			-8.858			-11.410	
	Crises		-1.844			-2.587			-3.786	
	Purges		-11.262			-13.403			-5.214	
	Riots		-23.807*			-20.532**			-22.451**	
	Revolutions		-6.838			-0.957			-3.044	
	Coups		-11.963			-2.343			-13.391	
	Constitutional		11.193			12.445			16.477	
	Cabinet		-32.562*			-19.998**			-27.877*	

General Dummies: When using all of these new grouped dummies in the same equation, we just see that the effects are a bit muddled. **Public demonstration** still has the most negative effect at about 24 points while **forced government transformation** is the least negative, at about 5.7 points. In sum,

these variables, all signs of political instability, seem to be having the effect you would expect on trade openness. Thus, we can move forward to the specific acts of instability.

Individual Occurrences: I am going to skip the simple binary occurrence of the variable since the "a lot" or "a few" breakdown seems to capture the depth of each variable. When looking at the **amount of the occurrences** (either "a few" or "a lot"), we see that there is definitely some telling information in the variables. For a few cases, "a few" of the occurrences have a negligible effect – either slightly negative or slightly positive – which is what you would expect. However, the "bigger" variables (**assassinations, guerilla warfare, riots,** and massive **cabinet changes**) have bigger effects, all greatly impacting openness.

When looking at "a lot" of these occurrences, we see the effects magnify greatly. These are the types of events that would effect the economy and get international attention: numerous **riots**, country-wide **strikes**, etc. Thus, the effects are larger than only "a few" of the occurrences happening. What is also interesting is the positive effect of **constitutional changes** (for both "a few" and "a lot"), especially when accounting for the development and period dummies and GDP / Person. Perhaps this is indicative of democracy at work: making constitutional changes works in favor of democracy and improves your stance internationally.

What's great about the openness variable is the consistency of the results. Even when throwing in the dummies and holding in GDP / Person constant, the variables retain their sign and their strength. Thus, I think it is safe to say that these variables *do indeed* have an effect on openness. In fact, the results seem so overwhelming that they seem to be skewing our results in the other tests. When adding openness to the other equations, the other tests are losing their significance. It is important to keep this mind as we will address this mathematically later.

Conclusions: What does this all mean? There are two possibilities. First is that countries laden with these acts are so generally disastrous that they do not have anything to trade out or any money to pay for imports. The second is that other countries are taking these acts into account when making their trade decisions.

This can work in a few ways. First, countries could generally boycott other countries because of their political status. Take, for example, what is happening in China right now and prior to the Olympics. Much of the world is essentially "boycotting" the Olympics because of the atrocities (guerilla warfare, strikes) going on there. Chances are this will effect China's stance in world trade, even if their products are so cheap. Second, importers or exporters might second guess working with respective exporters or importers if they believe there is corruption involved. For example, why sign contracts to buy supplies from Guatemala if they have a history of strikes? Or why work with someone who might have ties to a political regime known for assassinations and guerilla warfare?

While it is hard to really get behind these motives without getting into the minds of traders, one thing is clear: political instability seems to have a negative effect on openness.

Finally, we must be careful with these results. The individual occurrences are not all statistically significant nor are they all negative. Thus it might be safer to say that there are a few variables (such as riots or cabinet changes) that seem to have a significant and negative effect on openness, but that it is inconclusive for other variables.

Response: FDI as a Percentage of GDP

The following six "X" predictor variables were run in individual regressions, with openness as the response, for a total of 18 regressions. Read it as follows: $FDI/GDP_{it} = \alpha + \beta X_{it}$

Response: FDI as a % of GDP (Results in %)		Regression #1 Running X Alone			Regression #2 Holding Development and Period Dummies Constant			Regression #3 Holding Period, Openness, and GDP/Person Constant		
	X	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation
Individual regressions with individual measures of conflict or political instability:	Conflict Index	1.482*	-0.002632*	16.26*	2.712*	-0.00141**	13.51*	-0.505**	0.000795	49.61*
	EX: FDI/GDP = 1.482 - .002632*Conflict Index									
	Conflict >1000	1.441*	-0.67*	12.46*	2.701*	-0.3	13.20*	-.562**	0.35**	50.26*
	PublicDemonstr	1.648*	-0.75*	18.80*	2.872*	-0.5*	14.25*	-4.67**	0.11	49.27*
	Gov'tTrans.	1.803*	-0.86*	22.59*	3.043*	-0.6*	14.63*	-.142	-0.29	50.03*
	ForcedGov't	1.376*	-0.57*	7.65*	2.685*	-0.02	12.80*	-.528**	0.37**	50.25*
	Violence	1.384*	-0.55*	7.62*	2.700*	-0.023	13.02*	-.456**	0.24	49.65*

Conflict Index: FDI as a Percentage of GDP, on the whole, reacts well to the predictors and in the fashion we'd expect. A 100 point increase in **conflict index** would result in a .263% drop in FDI as a percentage of GDP. Further, if the country is especially conflicted (**Conflict > 1,000)**, you can expect it to have a .67% drop in FDI as a percentage of GDP. These effects remain consistent even as you throw in the period and development dummies, but the effect is muddled as you throw in openness, which is something we can now address with regards to this variable.

The issue of openness is an interesting one because it seems to reverse the trends that we see before that variable is thrown into the equation. We can try to flush this out mathematically.

We saw before that:

Openness = Imports as a percentage of GDP + Exports as a percentage of GDP

But can be influenced by conflict index:

$Openness_{it} = \alpha + \beta X_{it}$

$$Openness_{it} = \alpha - .0112*Conflict\ Index_{it}$$

Or with the period dummies and GDP / Person thrown in:

$$Openness_{it} = \alpha + \beta_1 X_{it} + \gamma Period_t + \delta Development_d$$
$$Openness_{it} = \alpha - .0094*Conflict\ Index_{it} + \gamma Period_t + \delta Development_d$$

Now we see that:

$$FDI/GDP_{it} = \alpha + \beta X_{it}$$
$$FDI/GDP_{it} = \alpha - .0000263*Conflict\ Index^3$$

Or with the period dummies, openness and GDP / Person thrown in:

$$FDI/GDP_{it} = \alpha + \beta_2 X_{it} + \gamma Period_t + \varepsilon Openness_{it} + \zeta GDP/Person_{it}$$
$$FDI/GDP_{it} = \alpha + .000008*Conflict\ Index + .018*Openness + \zeta GDP/Person_{it} + \gamma Period_t$$

To see if the effect of openness is overpowering the equation – we can test the derivatives. Here is the equation:

$$dFDI/GDP / dOpenness = \beta_2 + \beta_1 * \varepsilon$$

$$\beta_2 = .000008$$

$$\beta_1 = -.0094$$

$$\varepsilon = .018$$

$$dFDI/GDP / dOpenness = .000008 + -.0094*.018 = .000008 - .0001692 = -.0001612$$

Since the result is negative, we can see that the effect of conflict index on openness is stronger than the effect on FDI / GDP and thus it is overpowering the equation. That is why we see a change in the sign in the third column of the exhibit for this variable. This is something to keep in mind as we go through the regressions for this variable; we will ignore the third column of these results as holding openness constant seems to overpower the regression.

[3] Remember that FDI / GDP is in percentage form – for ease of use, I converted the numbers in the Exhibit to percentages but the actual values are in decimal form.

General Dummies: Without the period and development dummies, all of these new dummies have negative effects on FDI / GDP, with **government transformation** is the most influential and **forced government transformation** being the least influential. With the period and development dummies in place, the effects of each dummy are muddled. These results are counter-intuitive. Why would a voluntary **government transformation** be more effectual than a **forced government transformation**? The difference is small – about .3% - but the effect is still there, even as we group all the variables into the same regression.

Now we arrive at the grouping of various predictor variables. The following groups of "X" variables were run as separate regressions (separated by the bold line), for a total of 9 regressions. Read the chart on the next page as follows: $FDI/GDP_{it} = \alpha + \beta X_{it}$

Response: FDI as a % of GDP (Results in %)		Regression #1 Running X Alone			Regression #2 Holding Development and Period Dummies Constant			Regression #3 Holding Period, Openness, and GDP/Person Constant		
	X	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation
Regression with four political instability indicators:	PublicDemonstr	2.103*	-0.57*	9.80*	3.197*	-0.46*	11.92*	-.344	0.08	35.88*
	Gov'tTrans.		-0.72*			-0.56*			-0.34**	
	ForcedGov't		-0.15			-0.25			0.35	
	Violence		-0.19			-0.14			0.11	
	FDI/GDP = 2.103% - .57*Public - .72*Gov't - .15*Forced - .19*Violence									
Regression with simple binary occurrence of all of the political instability indicators (simply an occurrence or not)	Assassination	1.977*	-0.13	3.76*	3.127*	-0.27	7.89*	-.348	-0.08	22.19*
	Guerilla		-0.38			-0.05			0.09	
	Strikes		-0.12			-0.08			0.17	
	Crises		-0.02			-0.41			-0.17	
	Purges		-0.39			-0.06			-0.05	
	Riots		-0.49			-0.23			0.12	
	Revolutions		0.07			0.21			0.36	
	Coups		-0.23			0.34			0.311	
	ConstitutionalC		0.12			0.37			-0.07	
	CabinetChg		-0.71			-0.52*			-0.29	
Regression with all of the individual conflict indicators, broken down by relative occurrence ("a few" and "a lot")	"A few":	2.377*		2.58*	3.470*		5.51*	-.449		14.43*
	Assassinations		-0.21			-0.29			0.16	
	Guerilla		-0.35			-0.24			-0.09	
	Strkes		-0.34			-0.42			-0.37**	
	Crises		0.32			0.17			0.28	
	Purges		-0.23			0.16			0.23	
	Riots		-0.37			-0.23			0.01	
	Revolutions		-0.22			0.18			0.07	
	Constitutional		-0.28			0.22			-0.21	
	Cabinet		-0.61			-0.51			-0.02	
	"A Lot":									
	Assassinations		-0.05			-0.29			-0.06	
	Guerilla		-0.37			-0.16			0.16	
	Strikes		-0.22			-0.21			-0.001	
	Crises		0.18			-0.26			0.04	
	Purges		-0.22			-0.02			0.34	
	Riots		-0.31			-0.11			0.37	
	Revolutions		-0.05			0.31			0.35	
	Coups		-0.26			0.22			0.35	
	Constitutional		-0.28			0.15			-0.13	
	Cabinet		-0.011*			-0.51			-0.37	

General Dummies: When grouping these new dummies together, we see that the significance of each variable drops and only **public demonstration** and **government transformations** retain it. All of

the variables are negative, though, and the effect can be strong – upwards of .6% for an occurrence of a government transformation.

Individual Occurrences: All of the variables and their binary occurrence or non-occurrence has a negative effect on FDI / GDP, with the exception of **constitutional change** (which, keep in mind, was also positive for openness) and a small positive effect for **revolutions**. The effects are moderate when running them without the development and period dummies, with the exception of **cabinet change** (which has a -.71% effect on FDI / GDP) and riots (which has a -.49% effect). With the development and period dummies, they become even more moderate – and **coups** switches to have a positive effect. It's important to note that only one variable has significance here: Cabinet Changes, which was also significant for openness.

When breaking the variables down into "a few" or "a lot," the picture is largely the same. Without the development and period dummies, crises (both a few and a lot) is the only variable to have a positive effect. Cabinet change is also again the most negative variable, with "a lot" of those meaning a drop as large as 1.1% in FDI / GDP. With the development and period dummies thrown in, "a lot" of **revolutions, coups, and constitutional changes** all remain positive (much like above) and "a few" **crises, purges, revolutions and constitutional changes** are also positive.

There are a few things that are striking to me here. First is that, much like openness, we see that **cabinet change** has the most negative effect (it even retains this negative effect when including openness). I am truly puzzled as to why. Perhaps the news of a new government is more alarming to investors than violence. Second, I am surprised about the moderate difference some of these variables have in FDI / GDP. For example, I would not expect "a lot" of **purges** to only have a -.02% change on FDI / GDP. The more violent variables do not have as large of an effect as I would have presumed.

Finally, it is safe to say that these results seem inconclusive because of the lack of significance and, in some cases, the switching of signs.

Conclusions: These conclusions run a corollary to what we found above for openness. A country less open is likely to receive less FDI; and we found strong correlations of these variables with openness, so much so that they might be "overpowering" the effects on FDI. We see that a high conflict index results in less FDI / GDP. We see that specific acts (be it the **aggregation of a government transformation**) or individually (**cabinet changes**) can have an effect on FDI / GDP.

The question now is why do these events effect FDI / GDP, specifically the ones we found as more influential? I am still a bit surprised that certain events like **assassinations** and **guerilla warfare** don't have a larger effect. I am also surprised that a massive cabinet change would have such a large effect. Perhaps foreign investors react more so to the acts of the government (**cabinet changes, government transformation** dummy variable as substantial variables) and not so much to the acts of the people (**guerilla warfare, assassinations,** and more as not so substantial). Perhaps they see an opportunity when the people are struggling and see a closed door when the government is transforming.

Finally, much as when analyzing the effect of the specific acts on openness, we must be careful when drawing conclusions. It seems as if drawing conclusions from their effect ton FDI / GDP would be risky. The signs are switching around and, on the whole, they are not significant.

Response: GDP / Person

The following six "X" predictor variables were run in individual regressions, with openness as the response, for a total of 18 regressions. Read it as follows: $GDP/Person_{it} = \alpha + \beta X_{it}$.

Response: GDP / Person		Regression #1 Running X Alone			Regression #2 Holding Development and Period Dummies Constant			Regression #3 Holding Period and Openness Constant		
	X	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation
Individual regressions with individual measures of conflict or political instability:	Conflict Index	10020.52*	-1.7326*	35.98*	23599.90*	-0.327**	160.31*	11312.44*	-1.471*	13.88*
	GDP/Pers = 10020.52 - 1.7326 *Conflict Index									
	Conflict >1000	10094.72*	-5676.90*	41.74*	23609.93*	-1279.13*	161.69*	11350.41*	-4761.76*	14.50*
	PublicDemonstr	10400.48*	-3721.78*	20.59*	24011.74*	-1281.40*	162.59*	11169.42*	-2504.10*	11.06*
	Gov'tTrans.	10673.67*	-3411.79*	15.44*	24129.29*	-999.32**	160.49*	11184.21*	-2290.86**	10.68*
	ForcedGov't	9946.18*	-6428.83*	47.09*	23537.60*	-765.50	159.21*	10915.94*	-5445.810*	15.33*
	Violence	9418.34*	-3873.29*	16.95*	23597.70*	-922.96	159.89*	10072.14*	-2462.12**	10.64*

The interesting phenomenon for this variable is that it is not overpowered by the openness variable. Indeed, it is highly correlated with the development dummies (development and GDP go hand in hand) so the most telling column might be the third column: period dummies and openness.

Conflict Index: The economy of a country seems to be directly correlated with the conflict index. A **conflict index** of say, 500, can result in a GDP / person loss of $866 / person (or $735 / person with the period dummies and openness held constant). A **conflict index greater than a thousand** can have dramatic effects, or a loss of upwards of $5,000 / person even holding period and openness constant. It is clear that the aggregation of these variables (especially ones directly affecting output and production, like strikes or riots) can affect the economy at large.

General Dummies: The general dummies are also telling. When running each variable separately, **a forced government transformation** has the most drastic effects: an average of about $6,000 per person lost when this is the case. The other three variables average about $3,600 per person

without holding period and openness constant or about $2,300 per person when holding them constant. In all cases, these variables have a drastic effect.

Now we arrive at the grouping of various predictor variables. The following groups of "X" variables were run as separate regressions (separated by the bold line), for a total of 9 regressions. Read the chart on the next page as follows: $GDP/Person_{it} = \alpha + \beta X_{it}$

Response: GDP / Person		Regression #1 Running X Alone			Regression #2 Holding Development and Period Dummies Constant			Regression #3 Holding Period and Openness Constant		
	X	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation
Regression with four political instability indicators:	PublicDemonstr	12230.34*	-2176.51*	60.12*	24427.36*	-1058.48**	122.77*	13054.89*	-1593.180	11.12*
	Gov'tTrans.		-1989.1**			-799.45			-1553.73	
	ForcedGov't		-5043.92*			-167.90			-4950.77*	
	Violence		-564.77			-465.29			150.72	
	GDP/Person = 12230.34 - 2176.51*Public - 1989.1*Gov't - 5043.92*Forced - 564.77*Violence									
Regression with simple binary occurrence of all of the political instability indicators (simply an occurrence or not)	Assassination	11806.89*	-80.06	6.94*	24287.56*	-855.73	83.35*	12566.88*	-540.32	6.87*
	Guerilla		-998.93			1207.38			711.03	
	Strikes		4.21			-389.41			685.62	
	Crises		1837.97			-1439.32**			1118.86	
	Purges		-2772.23			629.11			-1745.22	
	Riots		-3119.55*			-665.48			-2482.76*	
	Revolutions		-3734.77*			-1003.66			-4400.23*	
	Coups		-1061.57			1982.49			80.209	
	ConstitutionalC		-2826.25			422.51			-3286.68	
	CabinetChg		-2051.04**			-333.52			-1550.492	
Regression with all of the individual conflict indicators, broken down by relative occurrence ("a few" and "a lot")	"A few":	13757.82*		6.99*	25759.33*		56.32*	14828.24*		6.97*
	Assassinations		-2100.47			-1131.55			-2672.67**	
	Guerilla		-1473.12			-1045.43			-605.81	
	Strkes		587.52			-447.58			812.79	
	Crises		2114.03**			-630.68			2687.87**	
	Purges		-2644.05			260.98			-2033.06	
	Riots		-1992.88**			-407.86			-1514.78	
	Revolutions		-5058.23*			-391.01			-5126.02*	
	Constitutional		-3023.76			860.79			-2709.30*	
	Cabinet		-1755.79			-1261.77			-1878.93	
	"A Lot":									
	Assassinations		-81.38			-1042.09			-772.44	
	Guerilla		-158.08			626.30			1538.20	
	Strikes		92.50			-359.03			1000.59	
	Crises		3160.40*			-1455.27*			2700.64**	
	Purges		-1704.50			299.97			-201.39	
	Riots		-2584.19			1.455			-2356.12	
	Revolutions		-6256.46*			-863.48			-7204.42*	
	Coups		-606.96			1834.39			318.96	
	Constitutional		-3023.76			893.91			-1881.67	
	Cabinet		-3669.27**			900.55			-3329.72**	

General Dummies: When clumping these new dummies together into the same regression, the effects get muddled a bit. **Forced government transformation** still has large effects, averaging about $5,000 / person with and without holding period and openness constant. The other three variables lose much of their force without holding them constant and, with holding them constant, the **violence** variable actually becomes positive (albeit very insignificant). On the other hand, **public demonstration and government transformation** remain negative and are close to significant.

Individual Occurrences: The binary occurrence of these variables is only telling for a few cases. Without holding the period and openness constant, all but **crises** and **strikes** are negative (with strikes being barely positive). **Revolutions and riots** have the greatest effect, both above $3,100 / person. While holding period and openness constant, **guerilla warfare, strikes, crises, and coups** all have positive effects on FDI / GDP. **Revolution** actually becomes more negative at about a $4,400 loss to GDP / person.

When looking at the occurrences on the "a few" or "a lot," we simply see the amplification of the effects shown above. Without holding the period and openness constant, all but strikes and crises have a negative effect for the "a few" variables. For the "a lot" variables, strikes and crises are again positive but also magnified. Some of the variables are negligible: **assassinations, strikes, and guerilla warfare**. When holding period and openness constant, the effects are amplified for some variables and muddled for others in the "a few" category. In the "a lot" category, more variables become positive: **guerilla, strikes, crises, and coups**. All in all, **revolution, cabinet changes, constitutional changes, assassinations, riots and purges** all have negative effects, although these effects often get muddled with the other variables held constant.

Conclusions: The effects are what you'd expect. The occurrence of some of these variables would have a direct result on GDP. For example, if the masses are out **rioti**ng, of course the economy is

going to be on the rocks. Or if the government is the subject of a **revolution,** chances are it will be difficult to run an economy. For the most part, I am not surprised that GDP correlates directly with conflict index or the grouped dummies we created.

But there are a few variables whose results are contrary to what we would assume. For example, when people are **striking**, why would GDP / person go up (when holding period and openness constant)? Or if people are taking to the streets and resorting to **guerilla warfare**, why would the GDP rise? Both of these variables are not significant, but the results still stand. I am honestly puzzled and do not have a definite answer to why GDP / person reacts to these variables in this way.

And much like the other two response variables, the individual variables, on the whole, are insignificant. We must be careful drawing conclusions from them.

Response: Conflict Index

The following two "X" predictor variables were run in individual regressions, with openness as the response, for a total of five regressions. Read it as follows: $Conflict_{it} = \alpha + \beta X_{it}$

Response: Conflict Index	Regression #1 Running X Alone			Regression #2 Holding Development and Period Dummies Constant			Regression #3 Holding Period and Openness Constant		
X	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation	Intercept	Coef. For X	F-Stat for Equation
OPENNESS	1505.85*	-7.955*	43.61*	811.90*	-7.830*	10.34*			
Ex: Conflict Index = 1505.85 - 7.955*Openness									
GDP / PERSON	1281.27*	-0.043*	35.98*	901.77*	-0.031**	5.87*	1624.33*	-0.036*	11.60*

Openness: **Openness** is significantly correlated with conflict index. Each extra point of openness is almost an eight point drop in conflict index, even holding development and period constant. One could argue that being more open to trade and investment means bettering the economy and incentivizes people to not fuel political instability.

GDP / Person: **GDP / Person** is also significantly correlated with conflict index, even holding development, period, and openness constant. On average, a thousand dollar increase in GDP / Person means a thirty point drop in conflict index. This might not seem like a lot, but we do see that economic development is related to conflict.

Conclusions: While it is tough to conclude about specific acts of political instability from these regressions, it is safe to say that economic development and openness seem to have a negative impact on conflict (which would be positive in the holistic sense – less conflict). This could be for many reasons. Political instability often comes about because of economic conditions. If the economy is getting better (GDP / Person is rising), there is less of a need to flare up. Further, as people start benefiting from trade (more openness) and the prosperity and ideas it brings, they might be more likely to act humanely.

VII. Hypotheses and Conclusions

Hypothesis 1: A country laden with politically uproarious acts will lose stature in the global marketplace and thus receive fewer investments from abroad.

Several of the variables seem to have an effect on investments from abroad, specifically with regards to FDI per capita and openness. For FDI per capita, we have seen that, more generally, conflict index, public demonstrations, government transformations (forced or not) and national headliners all have negative effects. More specifically, all of the violent acts except for revolutions and constitutional changes had negative effects. When accounting for the relative occurrence of these variables, only crises (both "A few" and "a lot") had positive effects.

We see a similar trend for openness. All of the general variables have negative effects on openness. Specifically, only constitutional changes have positive effects. When accounting for relativity,

"a few" crises, revolutions, and constitutional changes are positive, and "a lot" of constitutional changes are positive, with all else having a negative effect.

On the whole, then, we see clear indications that these acts correlate with negative effects on both openness and FDI per capita.

Hypothesis 2:
There are certain acts that are more detrimental to a country than other acts.

This is most certainly the case, albeit sometimes the results are surprising. For example, public demonstrations seem to have the most impact on openness, whereas government transformation has the most effect on FDI / GDP and forced government transformation has the biggest effect on GDP / person. It would be redundant to go through all of the answers, but we definitely saw this to be the case on almost all of the regressions involving more than one act. For the most part, though, this did not seem to be the case; the individual predictors do not seem to be too telling.

Hypothesis 3:
These politically instable acts take time to "sink in," to reach the news and investors abroad, lending to a time-delay in the effects (if there are any).

This also seems to be the case. The software we used takes the time-delay into account. It makes sense that the effects are not seen right away (within the same period) but rather in the subsequent periods.

Hypothesis 4:
Countries that become more globalized become less politically instable.

This was tested in the conflict index regression. It does appear that openness and increased GDP / person can reduce conflict index. Whether the globalization is a cause or the reduced conflict index is a corollary effect is up to future studies to decide.

VIII. Future Research

There is great potential for future research using this data. One plan we originally had was to embark on a country-by-country study to see the specific effects on a micro level. This is something that could yield interesting results as investors plan to put their money into one country over another.

Another study might be to measure all of these variables with the indices used in other studies, such as measures of governance or corruption. Perhaps that will yield a correlation between specific acts of political instability and worse governance or more corruption.

In sum, we have found a few indicators that could help investors tailor their investment decisions. We have also found new indicators that might need to be accounted for in future studies analyzing the effect of political instability on globalization. For example, a future study trying to analyze the effect of a variable on a country's globalization stance should include some measure of conflict, such as the conflict index. Further research could refine these indicators even further.

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Exhibit A:

Political Instability Variables and Definitions

Variable	Definition
Assassinations	Any politically motivated murder or attempted murder of a high government official or politician.
Guerilla	Any armed activity, sabotage, or bombings carried on by independent bands of citizens or irregular forces and aimed at the overthrow of the present regime.
Strikes	Any strike of 1,000 or more industrial or service workers that involves more than one employer and that is aimed at national government policies or authority.
Crises	Any rapidly developing situation that threatens to bring the downfall of the present regime - excluding situations of revolt aimed at such overthrow.
Purges	Any systematic elimination by jailing or execution of political opposition within the ranks of the regime or the opposition.
Riots	Any violent demonstration or clash of more than 100 citizens involving the use of physical force.
Revolution	Any illegal or forced change in the top government elite, any attempt at such a change, or any successful or unsuccessful armed rebellion whose aim is independence from the central government.
Demonstration	Any peaceful public gathering of at least 100 people for the primary purpose of displaying or voicing their opposition to government policies or authority, excluding demonstrations of a distinctly anti-foreign nature.
Conflict Index	Weighted conflict measures, the specific weights being variable. As of October 2007 the values entered were: Assassinations (25), Strikes (20), Guerrilla Warfare (100), Government Crises (20), Purges (20), Riots (25), Revolutions (150), and Anti-Government Demonstrations (10).
Coups	The number of extraconstitutional or forced changes in the top government elite and/or its effective control of the nation's power structure in a given year. The term "coup" includes, but is not exhausted by, the term "successful revolution".
Constitutional Changes	The number of basic alterations in a state's constitutional structure, the extreme case being the adoption of a new constitution that significantly alters the prerogatives of the various branches of government. Examples of the latter might be the substitution of presidential for parliamentary government or the replacement of monarchical by republican rule. Constitutional amendments which do not have significant impact on the political system are not counted.
Cabinet Changes	The number of time in a year that a new premier is named and/or 50% of the cabinet posts is assumed by new ministers.

Source: Banks, Arthur. Cross-National Time-Series Data Archive. Found online at http://www.databanks.sitehosting.net. Copyright 2007, Arthur Banks.[viii]

Exhibit B:

Globalization Variables and Definitions

Variable	Definition
FDI Avg.	Net flows of direct investment capital by non-residents into the country averaged over the five-year period.
GDP (Real #) Avg.	Gross domestic product (GDP) at constant 19XX market prices.
GDP (Nom US$) Avg.	Gross domestic product (GDP) at constant market prices, rebased to 2005 constant prices and translated into US$ using the LCU:$ exchange rate in 2005.
GDP (PPP Nom) Avg.	Gross domestic product (GDP) at constant market prices, rebased to 2005 constant prices and translated into US$ using the LCU:$ PPP exchange rate in 2005.
FDI % GDP Avg.	FDI / GDP Figure x 100, averaged over the five year period.
Pop. Avg.	Mid-year population estimate, averaged over the period.
Exports Avg.	Exports of goods and services at constant market prices as a percentage of GDP, averaged over the five-year period.
Imports Avg.	Imports of goods and services at constant market prices as a percentage of GDP, averaged over the five-year period.
Openness Avg.	Imports / GDP + Exports / GDP, averaged over the five-year time period.
GDP per capita	GDP / Population
Development	Either low-income, lower-middle income, upper-middle income, high-income (non-OECD), high-income (OECD)

Source: Economist Intelligence Unit. Country Data. Found online at http://www.eiu.com. February, 2008.[ix]

For this study, we used:
GDP Nominal US$ as the GDP indicator
Variables as averaged over their five-year time period.
The key response variables were FDI / GDP, GDP / Person, and Openness (Exports / GDP + Imports / GDP).

Exhibit C:

Country List and Data Availability

Full Data	Jordan	Zimbabwe	Peru	Czechos'kia	Niger
Algeria	Korea Rep	Us	Qatar	Dahomey	Palastin Aa
Argentina	Kuwait	Burkna Faso	Romania	Djibouti	Palau
Australia	Lesotho	Uruguay	Russian Fed	Dominica	Saint Lucia
Austria	Libya	Venezuela	Rwanda	Timor-Leste	San Marino
Bahrain	Luxembourg	Zambia	Sao Tome/Pr	Abyssinia	Senegambia
Belgium	Madagascar		Slovenia	Eth'pia Pdr	Sierra Leo
Bolivia	Malawi	Incomplete	Syria	Baden	Solomon Is
Botswana	Malaysia	Albania	Tajikistan	Bavaria	Somalia
Brazil	Mauritius	Angola	Tanzania	Hanover	Somaliland
Myanmar	Mexico	Armenia	Turkey	Hesse, El	So Yemen
Cameroon	Morocco	Hungary	Turkmenstan	Hesse, Gd	Yemen Pdr
Canada	Mozambique	Azerbaijan	Uganda	Mecklenburg	St Kitt/Nev
Sri Lanka	Netherlands	Belarus	Ukraine	Prussia	St Vincent
Chad	New Zealand	Belize	Uzbekistan	Saxony	Suriname
Chile	Nigeria	Bosnia-Herz	Vietnam	Wurttemberg	Tanganyika
China Pr	Oman	Bulgaria	Yemen	German Dr	Zanzibar
Taiwan	Pakistan	Burundi	Serbia	German Fr	Siam
Colombia	Bangladesh	Cambodia		Grenada	Transkei
Congo	Panama	C Verde Is		Guinea-B'au	Otto Emp
Cyprus	Papua New G	Costa Rica		Persia	Tuvalu
Benin	Paraguay	Cuba	No Data	Modena	Ussr
Denmark	Philippines	Croatia	Afghanistan	Papal St	Uar
Domin Rep	Poland	Czech Rep	Andorra	Parma	Rhodesia
El Salvador	Portugal	Slovak Rep	Antigua	Sardinia	Tonga
Finland	Sa'u Arabia	Ecuador	Nauru	Tuscany	Fiji
France	Senegal	Ethiopia	Aust Empire	Two Sicil's	Upper Volta
Gabon	Seychelles	Equa Guinea	Aust-Hung	Ivory Coast	Vanuatu
Gambia	Singapore	Estonia	Bhutan	Kiribati	Vatican Cs
Germany	So Africa	Eritrea	Bahamas	Korea	Venda
Ghana	Spain	Georgia	Barbados	Korea Pr	Vietnam Dr
Greece	Sudan	Guinea	Bophutswana	Liberia	Vietnam Rep
Guatemala	Swaziland	Iraq	Brunei	Liechtstein	West Samoa
Guyana	Norway	Kazakhstan	Burma	Malagasy R	Samoa
Haiti	Sweden	Kenya	Khmer Rep	Fed Malaya	Yemen Ar
Honduras	Switzerland	Kyrgyzstan	Kampuchea	Maldive Is	Yemen Rep
Iceland	Tanzania	Laos	Cen Afr Rep	Mali	Yugoslavia
India	Thailand	Latvia	Ceylon	Marshall Is	Serbia/Mont
Indonesia	Togo	Lebanon	China Rep	Mauritania	Montenegro
Iran	Trinidad	Lithuania	Ciskei	Micronesia	Niger
Israel	Tunisia	Macedonia	Comoro Is	Monaco	
Italy	Ua Emirates	Malta	Anjouan	Mongolia	
Cote D'ivor	Egypt	Moldova	Zaire	Nepal	
Jamaica	Uk	Namibia	Cyprus Grk	Neth Antils	
Japan	Ireland	Nicaragua	Cyprus Turk	Aruba	

Myanmar includes Burma (1970-1989).
Congo DR includes Congo (1971-1996).
Ethiopia includes Ethiopia PDR (1987-1994) and Ethiopia FDR (1996-2006)
Germany includes Germany DR and FR (1970-1989)
Cambodia includes Kampuchea (1975-1989)
Czech Rep includes Czechoslovakia (1970-1992)
Vietnam includes Vietnam DR and REP (1970-1975)

Exhibit D:

Correlation Matrices for the Political Instability Variables

	Assinat	Guerilla	Strikes	Crises	Purges	Riots	Revo.	Demo.	Coups	Contl
Guerilla	0.34*									
Strikes	0.248*	0.25*								
Crises	0.26*	0.342*	0.361*							
Purges	0.065**	0.411*	0.059	0.225*						
Riots	0.205*	0.27*	0.393*	0.231*	0.095*					
Revo.	0.313*	0.488*	0.13*	0.209*	0.13*	0.074**				
Demo.	0.252*	0.187*	0.363*	0.241*	0.096*	0.765*	0.153*			
Coups	0.078**	0.171*	0.135*	0.228*	0.142*	0.049	0.36*	0.018		
Contl	0.095*	0.124*	0.073**	0.165*	0.128*	0.048	0.279*	0.083*	0.438*	
Cabinet	0.21*	0.22*	0.242*	0.471*	0.094*	0.184*	0.326*	0.226*	0.378*	0.372*

Green shading - .3 < x < .4
Yellow shading - .4 < x < .5
Red shading – x > .6

Variables defined in Exhibit A
* Indicates significance at the p < .01 level
** Indicates significance at the p < .05 level

This was run for 150 countries spanning seven 5-year periods for a total of 1,050 lines.

Exhibit E:

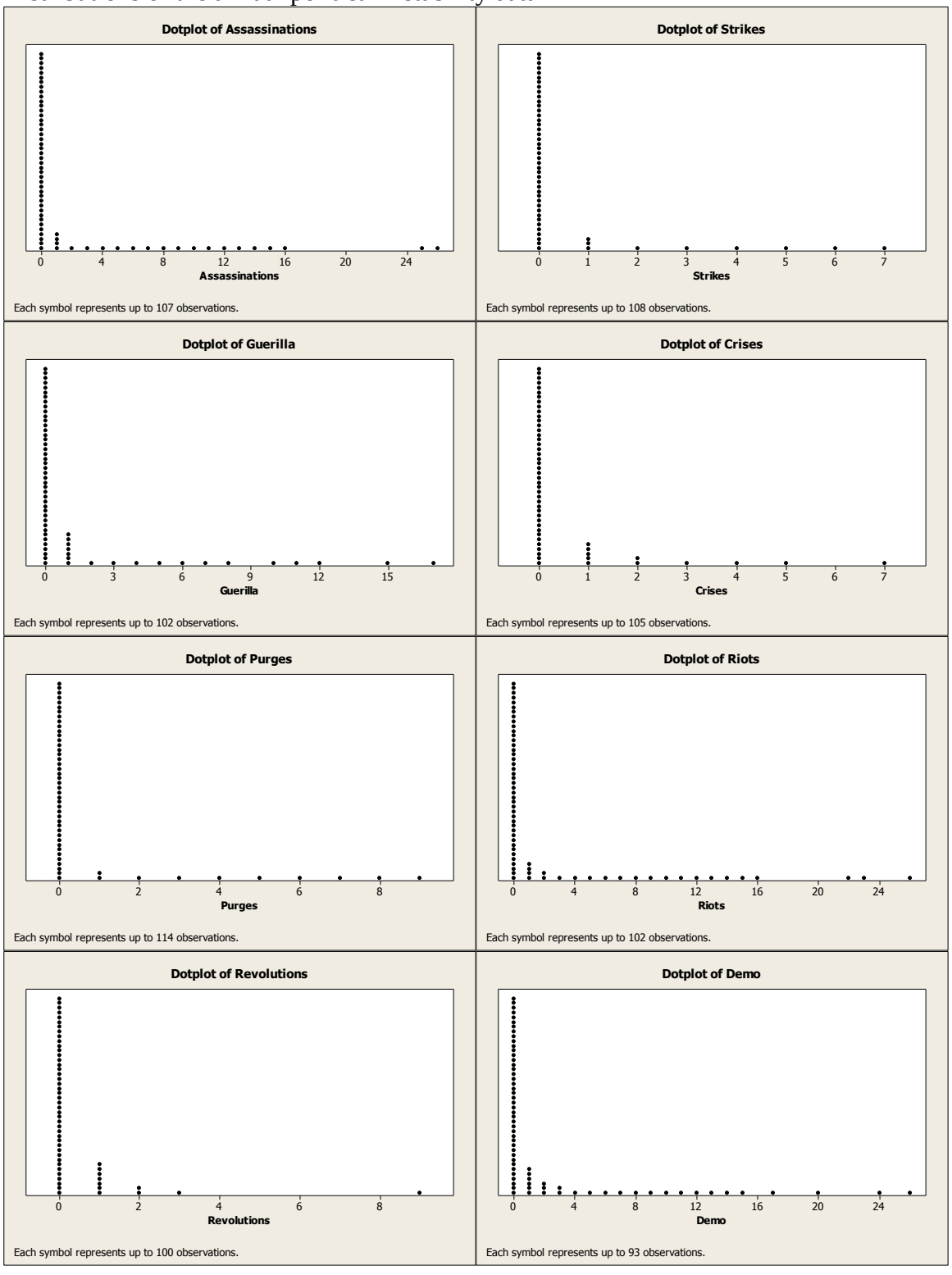
Descriptive statistics for annual observations of the political instability data

Variable	Count	N	Mean	StDev	Relative Frequency
Assassinations	5032	4996	0.2452	1.1561	10.67%
Strikes	5032	4996	0.14492	0.54269	9.32%
Guerilla	5032	4996	0.1952	0.6736	14.49%
Crises	5032	4996	0.16533	0.50847	12.32%
Purges	5032	4996	0.07126	0.43118	4.41%
Riots	5032	4996	0.3811	1.4628	14.88%
Revolutions	5032	4996	0.19456	0.52921	15.84%
Demo	5032	4997	0.6004	1.694	22.32%
ConflictIndex	5032	4995	975	1961.9	46.34%
Coups	5032	4558	0.02216	0.15017	1.97%
CabinetChange	5032	4545	0.43366	0.57993	35.75%
ContlChange	5032	4915	0.08911	0.29683	8.45%

Variable	Q1	Median	Q3	Maximum	Mode	N for Mode
Assassinations	0	0	0	26	0	4459
Strikes	0	0	0	7	0	4527
Guerilla	0	0	0	17	0	4267
Crises	0	0	0	7	0	4376
Purges	0	0	0	9	0	4774
Riots	0	0	0	26	0	4247
Revolutions	0	0	0	9	0	4199
Demo	0	0	0	26	0	3874
ConflictIndex	0	0	1250	26187	0	2663
Coups	0	0	0	2	0	4459
CabinetChange	0	0	1	4	0	2746
ContlChange	0	0	0	4	0	4490

Keep in mind this is broken down annually as opposed to by period.

Distributions of the annual political instability data



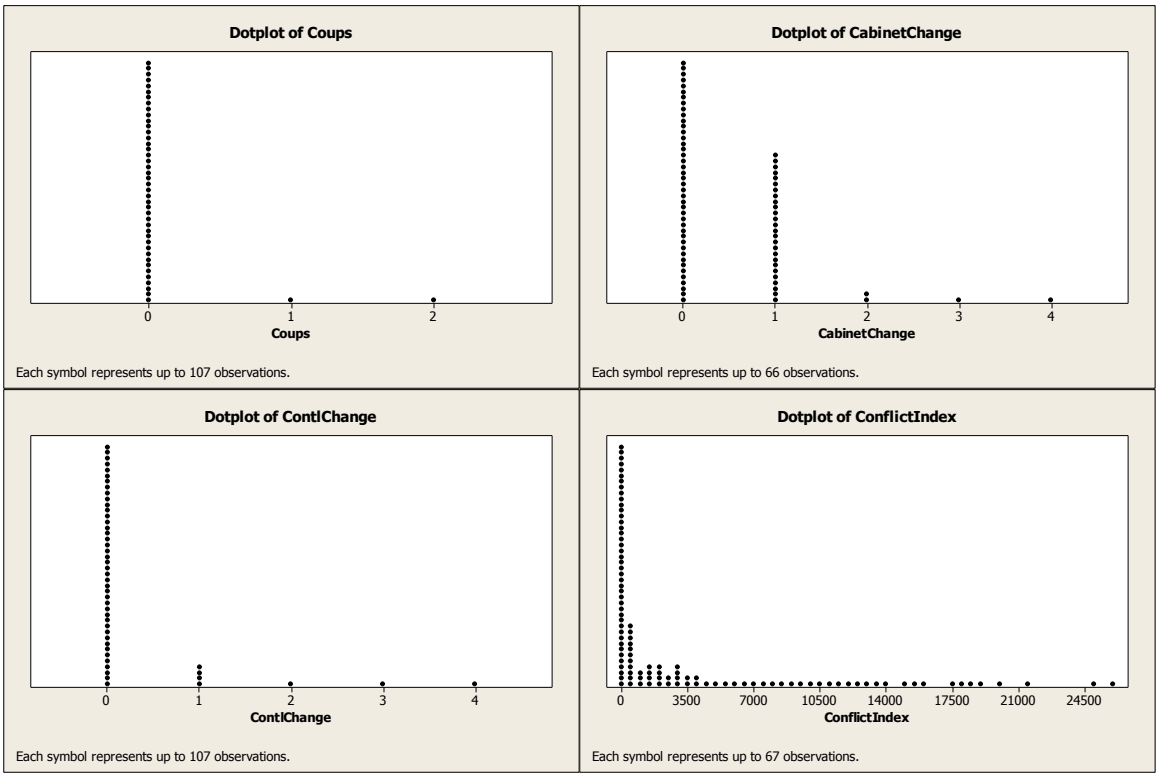

Dotplot of Coups
0
1
2
Coups
Each symbol represents up to 107 observations.
Dotplot of CabinetChange
0
1
2
3
4
CabinetChange
Each symbol represents up to 66 observations.
Dotplot of ContlChange
0
1
2
3
4
ContlChange
Each symbol represents up to 107 observations.
Dotplot of ConflictIndex
0
3500
7000
10500
14000
17500
21000
24500
ConflictIndex
Each symbol represents up to 67 observations.

Exhibit F:

Ranks of the different variables from 1970-2006.

	Assassination	Strike	Guerr	Crises	Purge	Riot	Revo	Demo	Coup	Contl Chng	Cab changes
1	Guatemala	Argentina	India	Italy	Brazil	India	Philippines	Us	Bolivia	Burundi	Comoro Is
2	Colombia	Bolivia	Colombia	Argentina	China Pr	So Africa	Sudan	Korea Rep	Sudan	Comoro Is	Bolivia
3	El Salvador	India	Philippines	Turkey	Greece	Us	Cambodia	India	Burundi	Thailand	Italy
4	Argentina	Bangladesh	Khmer Rep	Bolivia	Korea Rep	Pakistan	Cambodia	So Africa	Uganda	Sudan	Korea Rep
5	Spain	Italy	Lebanon	Lebanon	Czechos'kia	Korea Rep	Chad	Spain	Thailand	Nigeria	Jordan
6	Haiti	France	Guatemala	Israel	Pakistan	Uk	Iraq	China Pr	Comoro Is	Chad	Japan
7	Italy	Ecuador	Jordan	Peru	Iraq	Israel	Angola	Pakistan	Haiti	Liberia	Thailand
8	India	Spain	Sudan	India	Bolivia	China Pr	Sri Lanka	Israel	Nigeria	Cen Afr Rep	Chad
9	Philippines	Peru	Argentina	Pakistan	Uganda	Spain	Peru	Philippines	Bangladesh	Cen Afr Rep	Turkey
10	Mexico	Israel	Sri Lanka	Thailand	Argentina	Italy	Burundi	Poland	Argentina	Lesotho	Cen Afr Rep
11	Turkey	Uruguay	Angola	Spain	Philippines	Argentina	Comoro Is	France	Peru	Bangladesh	Cen Afr Rep
12	Comoro Is	So Africa	Peru	Portugal	Chile	Indonesia	Bolivia	Chile	Pakistan	Pakistan	Pakistan
13	Iran	Domin Rep	Brazil	Belgium	Germany	Turkey	Mexico	Argentina	Georgia	Algeria	Peru
14	Honduras	Greece	Ethiopia	Liberia	Ethiopia	France	Colombia	Indonesia	Chad	Congo	Haiti
15	Peru	Poland	Uk	Colombia	So Africa	Nigeria	Liberia	Iran	Liberia	Equa Guinea	Greece
16	Lebanon	Chile	Thailand	Uruguay	Poland	Chile	Uganda	Uk	Ecuador	Zaire	Lebanon
17	Algeria	Haiti	Chad	Venezuela	Haiti	Bangladesh	Turkey	Mexico	Honduras	Ecuador	Nigeria
18	Chile	Lebanon	Burma	Russian Fed	Peru	Iran	Nigeria	Bolivia	Burkna Faso	Ghana	Zaire
19	Pakistan	Pakistan	Laos	Guatemala	Indonesia	Philippines	Myanmar	Haiti	Cen Afr Rep	Bosnia-Herz	Portugal
20	Sri Lanka	Uk	Spain	Canada	Bangladesh	Mexico	Mozambique	Venezuela	Cen Afr Rep	Albania	Argentina
21	Egypt	Panama	El Salvador	Poland	Cambodia	Sri Lanka	Guatemala	Italy	Lesotho	Haiti	Colombia
22	Brazil	Bulgaria	Malaysia	Chile	Cambodia	Poland	El Salvador	Bangladesh	Ghana	Fiji	Bangladesh
23	So Africa	Colombia	Nicaragua	Haiti	Spain	Haiti	Georgia	Russian Fed	Fiji	Guatemala	Poland
24	Bangladesh	Brazil	Iraq	Japan	Portugal	Bolivia	Lebanon	Czechos'kia	Guatemala	Swaziland	India
25	France	Nigeria	Greece	Ecuador	Kenya	Kenya	Ethiopia	Peru	Kampuchea	Nicaragua	Burundi
26	Russian Fed	Nicaragua	Pakistan	Panama	Iran	Venezuela	India	Brazil	Yemen Ar	Panama	Sudan
27	Ethiopia	El Salvador	Mexico	Netherlands	Burma	Albania	Uk	Domin Rep	Dahomey	Paraguay	Togo
28	Nicaragua	Guatemala	Turkey	Brazil	Guatemala	Domin Rep	Argentina	Guatemala	Rwanda	Gambia	PapuaNew G
29	Burundi	Venezuela	Kampuchea	Khmer Rep	Sudan	Japan	Haiti	Japan	Swaziland	Angola	France
30	Uk	Sri Lanka	Mozambique	Ireland	Bulgaria	Jamaica	Nicaragua	Ecuador	Qatar	Zimbabwe	Venezuela
31	Yemen Ar	Honduras	Bolivia	Sri Lanka	Egypt	Egypt	Papua NewG	El Salvador	Khmer Rep	Zambia	Albania
32	Israel	Paraguay	Italy	Greece	Eth'pia Pdr	Colombia	Kampuchea	Nicaragua	Ethiopia	Uganda	Libya
33	Uganda	Portugal	Israel	Indonesia	Cuba	Brazil	Rwanda	Albania	Eth'pia Pdr	Argentina	Morocco
34	Greece	Iran	Myanmar	Comoro Is	Taiwan	Malaysia	Indonesia	Turkey	Myanmar	Georgia	Tunisia
35	Us	Burundi	Indonesia	Bangladesh	Turkey	Germany	Cote D'ivor	Panama	Turkey	Kampuchea	Finland
36	Bolivia	Zimbabwe	Portugal	Kenya	Thailand	Peru	Cen Afr Rep	Portugal	Congo Dr	Dahomey	Sao Tome/Pr
37	Zimbabwe	Albania	Cambodia	China Pr	Liberia	Portugal	Cen Afr Rep	Paraguay	Congo Dr	Congo Dr	Panama
38	Domin Rep	Canada	Cambodia	Uk	Uruguay	Madagascar	Algeria	Myanmar	El Salvador	Congo Dr	Zambia
39	Jamaica	Belgium	So Africa	Iraq	Comoro Is	Sudan	Ecuador	Colombia	Iraq	Greece	Israel
40	Tajikistan	Australia	Chile	Kampuchea	Kampuchea	Czechos'kia	Tajikistan	Madagascar	Tajikistan	Syria	Algeria
41	Venezuela	Costa Rica	Uganda	Burundi	Burundi	Uruguay	Thailand	Taiwan	Nicaragua	Togo	Congo
42	Panama	Mexico	Uruguay	Madagascar	Laos	Romania	Congo Dr	Honduras	Chile	Seychelles	Ecuador
43	Guyana	Philippines	Eth'pia Pdr	Ukraine	Syria	Algeria	Congo Dr	Uruguay	Greece	Senegal	Ghana
44	Uruguay	Comoro Is	Cyprus	Finland	Yemen Ar	Zaire	Eth'pia Pdr	Germany	Cote D'ivor	Benin	Guatemala
45	Syria	Ethiopia	Iran	Philippines	Paraguay	Zimbabwe	Zaire	Sri Lanka	Azerbaijan	Philippines	Uganda

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