

DOES A COUNTRY'S INFLATION RATE INFLUENCE THE  
POSSIBILITY OF ITS INVOLVEMENT IN A FOREIGN POLICY CRISIS?

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By

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ABSTRACT

This thesis examined the correlation between a country's inflation rate and its possibility of its involvement in a foreign policy crisis. The study was based on four assumptions: inflation made people unhappy; unhappy people pressured the government to act; the government tried to divert popular attention by the use of external force because it was much easier than fixing the inflation itself. The hypothesis proposed that higher domestic inflation would lead government to adopt more violent crisis management technique and to become more aggressive in its foreign policy. The analysis consisted of two models: In model A, the dependent variable was a binary indicator of whether the country adopted violent or non-violent crisis management technique; in model B, the dependent variable used Stockholm International Peace Research Institute military expenditure data as a proxy for the level of aggressiveness in a country's foreign policy. The study found a statistically significant relationship between inflation and crisis management techniques ( $p < 0.05$ ) in Model A and a statistically significant relationship between inflation and military expenditure ( $p < 0.10$ ) in Model B. However, the low R squared value in Model A and little substantial significance in Model B indicated that more research needed to be performed.

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## INTRODUCTION

### **Conflict hotspots in the global financial crisis**

Since the global financial meltdown in 2008 and the European sovereign debt crisis in 2010, the world has become increasingly turbulent not just in economic terms but also in terms of increasing regional conflicts. For example, Libya, Syria and North Korea have been conflict hotspots.

In addition, in recent years, global power structure has changed dramatically. China's rise has induced mixed feelings and attitudes from the rest of the world: fear and uncertainty, about whether to see China as an opportunity or a competitor. The most notable signal is the fast increase in China's military expenditure. Since 2010, China's military expenditure has increased by more than 10% annually; in 2011, China's defense budget reached 670 billion Yuan (about 106 billion USD). Even though China's military spending was only 30% of Asian countries' total military spending in 2011 and only 14.3% of US military spending that year, it still attracted widespread attention and concern ("China's military expenditure," 2012). Meanwhile, China is also experiencing increasing levels of inequality and inflation. In 2010, the country's richest 10% earned 65 times the income of the poorest 10%; and in August 2010, food prices sky rocketed and increased by 7.5% (Wu, 2010, p.21). Social conflict in China is also on the rise. Through May to August 2010, there were labor strike waves that affected 73 enterprises and involved some 70,000 workers (Wu, 2010, p.24).

Those events have motivated the author of this study to examine closely the question of whether a link between domestic economic performance and engagement in foreign conflicts existed. In this case, conflict is not defined necessarily as military, but also includes verbal,

economic and diplomatic conflicts between countries. Leeds and Davis have pointed out,

“Evidence suggests that dramatic international events result in increased domestic support for leaders...leaders may have incentives to risk the escalation of international tensions and behave belligerently at time when they feel politically vulnerable at home and could benefit from increased support” (Leeds and Davis, 1997, p.818).

The purpose of this thesis is to determine whether this proposition is supported by empirical evidence.

### **Explore an option for conflict prevention**

High inflation implies higher costs of living for households. If a country’s inflation rate rises faster than its average nominal wage rate, people residing in that country will probably be very unhappy because their standard of living will be eroded (Frey & Stutzer, 2002).

Consequently, public support for the government will decrease and public pressure will force the leaders to act.

The government could face a choice between measures to curb inflation or to divert domestic attention by engaging in foreign policy crises. A common external enemy would foster domestic support for the leader. This was what happened in the case of the Weimar republic; domestic hyperinflation lead to the rise of a strong government that later initiated World War II. Of course, the outbreak of World War II was due to a series of complicated causes and hyperinflation in the Weimar republic was only one of them. One cannot simply derive a causal relationship and generalize it to other cases. Nonetheless, the Weimar example demonstrates the potential risk associated with hyperinflation.

This thesis will look at how moderate inflation increases the probability of leaders engaging in foreign policy crises, using country-level regression while controlling for important factors. Before going into the theoretical framework, however, the thesis will first examine previous research on the topic. Controlling inflation has always been a top priority for many countries' central banks. If the relationship between inflation and crisis management is significant, this thesis will provide further support for strictly controlling inflation. If the relationship is not significant, the study will still give guidance on finding possible ways of conflict prevention.

## LITERATURE REVIEW

The literature on inflation and conflict is not well integrated. In order to examine it in a logical order, the first thing is to look at implicit assumptions underlying the hypothesis made in this thesis.

The first assumption is that inflation makes public unhappy and is more likely to generate political controversies than unemployment. The reason to single out the comparison between inflation and unemployment is that leaders usually face a Phillips Curve (an economic model concerning the trade-off between inflation and unemployment) and have to choose between inflation and unemployment. The second assumption is that public discontent can create certain pressure that will force leaders into action. The third assumption is that leaders see using external force as a way to divert domestic attention that is easier than tackling the actual problem. The literature has provided either positive or negative evidence on all of the assumptions as explained below.

### **The link between inflation and flagging support for leaders**

Other things equal, relatively high inflation is a sensitive topic that is negatively perceived by the public. However, the reactions of publics are not the same across the world. Rather, the public perception of inflation is influenced by the host country's unique historical and social context. Shiller in "Why do people dislike inflation" (1997) discussed in detail how people view inflation differently in different countries, and how that perception might influence government policies. Generally, a majority of people in the countries surveyed – US, Germany and Brazil – completely disagreed with the statement "It makes no sense to pay attention to the development of the inflation rate, because a pretty accurate inflation correction in my income is

to be expected anyway” (Shiller, 1997. p. 33). This finding clearly expressed the deep distrust among the public towards government efforts to adjust nominal wages when inflation is rampant.

Another popular perception of inflation is that people tend to think political chaos is a result of domestic inflation, rather than the other way around; 74% of US citizens, 77% of German citizens, and 41% of Brazilian citizens fully agree with the statement: “If inflation in a country rises out of control it can lead to economic and political chaos” (Shiller, 1997, pp.42-43). On the other hand, only 25% of all US citizens, 39% of all German citizens and 21% of all Brazilian citizens agree with the statement “Political instability in a country will likely have a very high inflation rate as a consequence” (Shiller, 1997. p. 43). This further proves that publics perceive inflation as the cause of chaos.

Even though the perception among the public is that inflation will leads to political chaos, the relationship between inflation and political chaos is best described as an indirect link. In order to understand the link, the author needs to incorporate human feeling into this study’s theoretical framework. Here the literature suggests that inflation indeed makes people feel unhappy by making them feel unequal first. Frey and Stutzer (2002) note that introducing human feelings into economic analysis has always been controversial. Therefore, their study abandon the assumption that human are rational utility maximizers. Rather, they agreed that human had subjective utilities that cannot be compared across individuals. Their paper explores the link between income and happiness, inflation and happiness and unemployment and happiness, and finds that absolute income does not determine an individual’s happiness; rather, perceived relative wealth determines an individual’s happiness. The authors argue against the hypothesis in this thesis that inflation makes people unhappy. If inflation indeed reduces people’s real income, they contend that would be a *collective impoverishment*. Therefore, when one compared oneself

with ones neighbors; one would feel the same disparity regardless of the inflation rate. Consequently, one's utility, which increases when one becomes relatively better off than ones neighbor, does not change during inflation. Frey and Stutzer's study supports the claim that inequality makes people unhappy, not something like inflation that affects people more or less equally (Frey and Stutzer, 2002).

However, Frey and Stutzer did not see the whole picture. Hill and Butler's study of the Weimar Republic concludes that inflation tends to make society more unequal. "In general, the people who hold tangible property will gain from an inflation, while those who hold money will lose" (Hill and Butler, 1977, p.305). In general, rich people own real estate and poor people usually hold cash, so inflation hurts poor people more than rich people. Kane and Morisset argue that inflation is a regressive tax rather than a flat one. Similarly, as the price level increases, they say rich people can transfer their income into assets that keep value, but "the poorest agents can only resort to changing their consumption pattern" (Kane and Morisset, 1993, p. 8). Since poor people account for a significant share of total population, in a democratic society or a society in which public support is important to the leaders, inflation will place significant pressure on the leaders.

### **The link between political support and the use of external force**

Anecdotal evidence suggest that domestic inflation will push leaders to engage in aggressive foreign conflicts in order to divert domestic attention. Hill's study note the coexistence of hyperinflation and unemployment before Hitler's rise: "during the accelerating hyperinflation of 1923, employment rates dropped drastically to 90.1 percent in September, 80.9 percent in October, and 76.6 percent in November." (Hill and Butler, 1977, p.301). However,

this anecdotal evidence has little relevance to other parts of the world because in the contemporary world very few countries are experiencing hyperinflation and a near-failed state. Nonetheless, this experience credits the Nazi government and makes people more susceptible to Nazi manipulation. The hypothesis here is that even mild inflation (below 10%) will lead to aggressive foreign policy behaviors, which do not necessarily have to be violent or military.

Besides the qualitative studies, other studies have tried to quantitatively analyze the relationship between domestic misery and leaders' choices to use external force to divert attention and secure political support. This literature generally talks about a *diversionary theory of conflict*. The empirical evidence in the literature is mixed.

“The diversionary theory of war posits that external conflict tends to redirect attention from problems such as a faltering economy and toward external enemies by using force short of war” (DeRouen, 1995, p.674). Literature in the *diversionary theory* mostly focuses on data from the U.S. and generally agrees that there is a vicious cycle between force and approval. When the economy performs poorly, the president's approval rates fall. Then the president seeks external aggression and the approval rates climb back. One question here is why the president does not focus on tackling the domestic economy, which might generate higher support than diversionary action. DeRouen raises this point in asking why, if there is a direct link between economic performance and presidential support, and a direct link between presidential support and use of external force, it can be assumed that there is an indirect link between economic performance and use of external force (DeRouen, 1995). His study finds that the relationship between economy and presidential support rate and the relationship between presidential support rate and use of external force are statistically significant. However, he does not find significant results between economy and use of external force.

### **The indirect link between inflation and leaders' uses of external force**

Morgan and Bickers (1992) are among those who support the diversionary theory of conflict. Again, their data is entirely focused on the U.S. They find that “low levels of partisan approval are significantly related to shorter time lags until the United States engages in aggressive actions. Higher levels of aggregate approval are associated with longer time lags” (Morgan and Bickers, 1992, p.45). They also provide controls for situational variables, such as if the state is in a war or in a peaceful environment by including an interaction term between partisan approval and war. They find that when the country is at war, an aggressive action is estimated to be imminent when partisan approval is near the low end of the observed range. When partisan approval is at the high end of the observed spectrum, the estimated time to the next aggressive incident is approximately one and one third years. However, during peaceful times, the predicted length of time to the next incident increases with partisan approval, “but the relationship is shallower than in periods of war, because even at higher levels of approval the length of time to the next incident is relatively brief” (Morgan and Bickers, 1992, p.47). This evidence further support the view that while leaders' decisions to engage in foreign conflicts are affected by a number of factors, domestic economic performance and public support are two of the most important ones. The security situation and international context are also important factors.

### **The linkage tested in authoritarian states**

Very few studies examine the relationship between domestic economic performance and leaders' probability of engaging in international conflict in authoritarian states, because the major assumption underlying the hypothesis is that public pressure matters. However, it is a

popular misconception that popular opinion does not matter in an authoritarian state. Recently, for example, under public pressure China's leadership has gradually loosened their control on freedom of expression by allowing netizens to express their political views on Weibo (China's version of twitter). In both authoritarian and democratic states, leaderships all face pressure from publics. The difference is that in democratic societies voters can vote their leaders out of office, while in authoritarian states, people can violently force their leaders out of the office. The latter case would be even more daunting.

### **The linkage tested when nations act strategically**

Many studies view the interaction between domestic economic performance and foreign aggression as a closed system. However, the international system is an open system in which actors are dependent on each other. In a cross-national analysis, Leeds and Davis find there is no significant relationship between domestic politics and use of external force. They explain the reason for this non-significance as strategic action between state actors, which is not controlled in the regression. For example, if state A had long-standing rivalry with state B. State A may deliberately avoid engaging in conflict with state B if state A sees that state B is experiencing difficulties in domestic politics. In addition, change in the international power structure will also affect the conflict engagement mechanism, which is hard to account for in quantitative analysis. (Leeds and Davis, 1997).

### **This study in the context of the literature**

In the literature, no study has ever used panel data across the world to test the diversionary theory of conflict. In Model B of this study, 15 years of panel data from 149

countries will be used to assess whether the diversionary theory of conflict, which originated from the U.S., can be extended to other regions of the world. The use of defense spending as a proxy for foreign policy aggressiveness is an innovation in this study. On the other hand, the dependent variable in Model A is a binary variable that indicates whether the crisis management technique adopted by the country is violent or non-violent. This choice of this dependent variable is also unseen in the previous studies. Model A provides a good opportunity to assess how inflation directly affects foreign policy aggressiveness when leaders face threats of foreign crises. The results of this study will complement the results from previous studies, and they will also allow researchers to look at the diversionary theory of conflict from a fresh perspective.

## **THEORETICAL FRAMEWORK**

The underlying assumption of the model in the thesis is that people dislike inflation; leaders are concerned about public discontent and engaging in foreign policy crisis shores up immediate support faster than tackling the economic problem itself. In order to operationalize the abstract concepts discussed here, this thesis will use military spending as an indicator for a country's tendency to engage in foreign policy conflict. Even though most conflicts examined here are not military, the military power acts as deterrence power that determines the expected results of foreign policy conflicts. The independent variable will be inflation measures and the regression will control for unemployment.

## CONCEPTUAL MODEL

### Independent Variables

**Name: Inflation (Brecher and Wilkenfeld, 2007)**

**Code: INFLAT**

INFLAT measures the four-year lag value compared to the crisis outbreak value, if the country's inflation significantly increased, decreased or stays normal in the four years period leading up to the crisis. This variable is very suitable to be the independent variable because it allows time period for domestic political pressure to accumulate and force the government to employ some international means. A country's inflation was coded as follows:

- (1) Significant increase during relevant period preceding the crisis
- (2) Normal increases or decreases during relevant period preceding the crisis
- (3) Significant decrease during relevant period preceding the crisis
- (4) Newly-independent state

Table 1

*Summary statistics of INFLAT*

INFLATION	Freq.	Percent	Cum.
SIGNIFICANT INCR	119	17.68	17.68
NORMAL	372	55.27	72.96
SIGNIFICANT DECR	17	2.53	75.48
NEWLY INDEP-EXILE	14	2.08	77.56
MD	146	21.69	99.26
Coding pending - see processing note	5	0.74	100.00
Total	673	100.00	

Four indicator variables based on the preceding information were created as follows:

INFLATINC, significant inflation increase in the four years period leading up to the crisis, is coded as 1; 0 if otherwise.

INFLATDEC, significant inflation decrease in the four years period leading up to the crisis, is coded as 1; 0 if otherwise.

INFLATNOR, inflation rate stays the normal in the four years period leading up to the crisis, is coded as 1; 0 if otherwise.

INFLATMD, the value of inflation is missing, code pending or if the state is newly independent, is coded as 1; 0 if otherwise.

**Name: Average inflation measured in CPI index (IMF, 2011)**

**Code: INFAVEIND**

INFAVEIND is taken from World Economic Outlook dataset and it is in fact the consumer price index (CPI) in averages for the year, not end-of-period data. CPI measures average changes in the prices of goods and services that households consume. According to the Bureau of Labor Statistics, CPI is defined as “a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services” (“Consumer price index,” 2012). A price index is typically assigned a value of 100 in some reference period and the values of the index for other periods of time are intended to indicate the average proportionate, or percentage, change in prices from this price reference period. Price indices can also be used to measure differences in price levels between different cities, regions or

countries at the same point in time. In WEO, the base year is chosen at 1990 and INFAVEIND for all countries in this year is 100.

Table 2

*Summary statistics of INFAVEIND*

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. sum INFAVEIND, detail
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Inflation, average consumer prices, index				
	Percentiles	Smallest		
1%	22.988	.144		
5%	50.313	1.035		
10%	67.172	2.197	Obs	2195
25%	85.925	2.256	Sum of Wgt.	2195
50%	102.425		Mean	316.264
		Largest	Std. Dev.	1918.005
75%	141.875	26116.1		
90%	242.425	27839.15	Variance	3678742
95%	532.886	30698.8	Skewness	12.44666
99%	2184.291	30724.85	Kurtosis	163.5726

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## Dependent Variables

**Name: Violence severity of the crisis management technique adopted by a country (Brecher and Wilkenfeld, 2007)**

**Code: SEVVIO**

SEVVIO is taken from International Crisis and Behavior dataset 2 (ICB2). For those crisis actors that employ violence as a primary crisis management technique, this variable indicates the intensity of that violence; the violence was coded as follows:

- (1) No violence
- (2) Minor clashes
- (3) Serious clashes
- (4) Full-scale war

Table 3

### *Summary statistics of SEVVIO*

SEVERITY OF VIOLENCE	Freq.	Percent	Cum.
NO VIOLENCE AS CMT	303	45.02	45.02
MINOR CLASHES	81	12.04	57.06
SERIOUS CLASHES	172	25.56	82.62
FULL SCALE WAR	112	16.64	99.26
Coding pending - see processing note	5	0.74	100.00
Total	673	100.00	

In order to run probability models that require binary dependent variable, the author of this study creates a new variable coded SEVVIOVIO. An actor is coded 1 when the actor uses serious clashes and engage in full-scale war (combined 3 and 4 of the original variable) and the

actor is coded 0 if it only employs minor clashes or non-violence as crisis management technique (combined 1 and 2 of the original variable).

**Name: Military spending in constant 2009 US dollars (SIPRI, 2011)**

**Code: MILSPE**

Military spending is a continuous variable that measures defense spending of 51 African nations, 27 North and South America and Caribbean countries, 34 Asia and Oceania countries, 46 European and Eastern European countries and 15 Middle Eastern countries. In total, MILSPE covers 173 countries over 22 years (1988-2010). However, in order to match the availability of State Fragility Index, this study truncates MILSPE data to 15 years, which spans from 1995 to 2009. Where possible, SIPRI military expenditure includes all current and capital expenditure on the following items:

“The armed forces, including peace keeping forces, defense ministries and other government agencies engaged in defense projects, paramilitary forces when judged to be trained, equipped and available for military operations...and also includes military space activities such as personnel...military and civil retirement pensions of military personnel, social services for personnel and their families, operations and maintenance, procurement, military research and development, military construction and military aid” (“Military expenditure,” 2011).

The items that are not included in the dataset are: civil defense, current expenditure for previous military activities, veterans’ benefits, demobilization and conversion of arms production facilities destruction of weapons.

## **Control Variables**

**Name: Unemployment rate during four years preceding the crisis (Brecher and Wilkenfeld, 2007)**

**Code: UNEMP**

The variable indicates the level of unemployment during the four year prior to the outbreak of the crisis. The unemployment values are coded as follows:

Values

- (1) Significant increase during relevant period preceding the crisis
- (2) Normal increase or decrease during relevant period preceding the crisis
- (3) Significant decrease during relevant period preceding the crisis
- (4) Newly-independent state

However, the author did not include UNEMP in the regression. Rather, four binary variables were created each representing the category of UNEMP 1 to 4. The reason for doing this is because unemployment is not just an ordinary control variable. Due to the literature interest in the relationship between inflation and unemployment, the author considers displaying the coefficients of different statuses of unemployment is in the interest of many researchers. So, those binary variables are coded as following:

**Name: Significant increase in unemployment rate during four years preceding the crisis (Brecher and Wilkenfeld, 2007)**

**Code: UNEMPINC**

UNEMPINC equals 1 when the country experiences significant increase in unemployment rate during four years prior to the outbreak of crisis. UNEMPINC equals 0 in all other cases.

**Name: Significant decrease in unemployment rate during four years preceding the crisis (Brecher and Wilkenfeld, 2007)**

**Code: UNEMPDEC**

UNEMPDEC equals 1 when the country experiences significant decrease in unemployment rate during four years prior to the outbreak of crisis. UNEMPDEC equals 0 in all other cases.

**Name: Missing data in unemployment rate during four years preceding the crisis (Brecher and Wilkenfeld, 2007)**

**Code: UNEMPMD**

UNEMPMD equals 1 when the country has missing data or is newly independent. UNEMPMD equals 0 if the country has no data.

**Name: Normal increase in unemployment rate during four years preceding the crisis (Brecher and Wilkenfeld, 2007)**

**Code: UNEMPNOR**

UNEMPNOR equals 1 when the country experiences normal unemployment rate during four years prior to the outbreak of crisis. UNEMPNOR equals 0 in all other cases.

**Name: Age of state (Brecher and Wilkenfeld, 2007)**

**Code: AGE**

Age is a categorical variable that assign each country a number. If a country is coded 1, it means the country is independent/established in the time period before 1648. Similarly, if a country is

coded 2, it means the country is independent/established in the time period between 1648 and 1814. Age of the country was coded as follows:

(1) Pre-1648

(2) 1648-1814

(3) 1815-1918

(4) 1919-1945

(5) Post World War II - 1957

(6) 1958-1966

(7) Post-1966

It is important to include the age of the country in the regression because it controls for the different phase of a country's development. Generally, newly independent countries are more likely to experience political and economic instability. It is necessary to control for the difference phases of a nation's development.

**Name: Contents of crisis outcome (Brecher and Wilkenfeld, 2007)**

**Code: OUTCOME**

This variable deals with the outcome of crisis termination that is perceived by the actor. Therefore, the dataset records different perceptions by various actions involved in the same crisis. For example, the U.S. and South Korea view the Korean War in 1950 as *victory*, but China viewed the Korean War as *stalemate*. The coding is as follows:

(1) Victory - achievement of basic goal(s); the crisis actor defeated a threatening adversary by counter-threats.

(2) Compromise - partial achievement of basic goal(s).

(3) Stalemate - no effect on basic goal(s); no clear outcome to the crisis; no change in the situation.

(4) Defeat - non-achievement of basic goal(s); the crisis actor yielded or surrendered when an adversary threatened basic values.

(5) Other

It is important to include the perception of outcome by each crisis actor in the regression equation. It controls for the same type of crisis that is faced by nation actors, and whether leaders will adopt violent crisis management technique when facing domestic inflation.

**Name: Number of actors involved in a crisis (Brecher and Wilkenfeld, 2007)**

**Code: NOACTR**

The variable indicates how many states that were perceived by the crisis actor to be involved in the crisis, including the crisis actor itself. In the case when the actor did not perceive the involvement of another state, but objective evidence supported the involvement of the state, the NOACTR took that into account as well.

It is important to include this in the regression equation because the size of an international conflict implies different level of confrontation, and consequently, the management techniques will be used differently. Therefore, controlling for the size of the conflict in terms of number of actors is very important in determining the partial effect of inflation on leaders' decision to adopt violent measures.

**Name: Distance of crisis actor from location of crisis (Brecher and Wilkenfeld, 2007)**

**Code: CRACTLOC**

CRACTLOC is an indicator variable that shows the distance between the crisis location and the actor nation. The variable is coded as following:

- (1) Home territory
- (2) Sub-region
- (3) Same continent
- (4) Elsewhere (Such as the Korean War I Crisis of 1950, for the United States, took place "elsewhere").

The distance of a country to the crisis location is a proxy to measuring whether a country invaded other country or forced to react when facing threats within its borders. It is important to include CRACTLOC as a control variable because countries that invade other countries and countries that are forced to react when threatened are in completely different situations. This way, the effect of inflation on leaders' decision will be separated out.

**Name: Territorial size of crisis actor (Brecher and Wilkenfeld, 2007)**

**Code: TERRIT**

The territorial size of the crisis actor, including its colonies, is coded as follows:

- (1) Up to 50,000 square miles
- (2) 50,000 to 500,000 square miles
- (3) Over 500,000 square miles

It is important to include the size of the country as a control variable in the regression because big countries and small countries usually tend to face different sources of threats. By including TERRIT as a control variable, the regression will separate out the partial effect of inflation on leaders' decisions to adopt violent conflict management techniques.

**Name: Political regime of crisis actor (Brecher and Wilkenfeld, 2007)**

**Code: REGIME**

This variable distinguishes between authoritarian and democratic regimes, as well as between civil and military regimes, at the time of the crisis. Criteria for identifying democratic regimes are: competitive elections; pluralist representation in the legislature; several autonomous centers of authority in the political system; competitive parties; and a free press. Coding judgments were made in terms of actual practices, rather than constitutional or other formal legal provisions, since the formal constitutional structure gives no guidance as to how a regime works.

It is important to include this variable into the regression. The reason is that different types of government face different political constraints and decision-making mechanisms. Therefore, it is essential to control for the effect of institutional difference on leaders' decisions of adopting aggressive foreign policies while analyzing how inflation influence the decisions.

**Name: State fragility index (Marshall and Cole, 2011)**

**Code: SFI**

The State Fragility Index is a composite index that expresses the domestic stability of a nation.

State Fragility Index = Effectiveness Score + Legitimacy Score (25 points in total)

It is important to include state fragility index because analytic control for the influence of domestic situation on leaders decisions of adopting aggressive foreign policies needs to occur. Even though inflation is part of the domestic situation, other factors affecting domestic situation need to be filtered out.

**Name: Government legitimacy (Marshall and Cole, 2011)**

**Code: Legit**

Legitimacy score is made of four indicators.

Legitimacy Score = Security Legitimacy + Political Legitimacy + Economic Legitimacy + Social Legitimacy (12 points in total)

The domestic situation can be divided into two aspects, legitimacy and effectiveness. The reason to replace SFI and use Legit as the control is to see which aspect is a better control variable. The criterion for better control variable is that it will produce more statistically significant result.

**Name: Government effectiveness (Marshall and Cole, 2011)**

**Code: Effect**

Effectiveness score is made of four indicators.

Effectiveness Score = Security Effectiveness + Political Effectiveness + Economic Effectiveness + Social Effectiveness (13 points in total)

**Name: Political legitimacy (Marshall and Cole, 2011)**

**Code: Polleg**

Political Legitimacy (Polleg) Score is an index number that is calculated based on following indices: Factionalism (Polity IV, *parcomp* value 3 = 1); Ethnic Group Political Discrimination against 5% or more of the population (Discrimination: *POLDIS* values 2, 3, 4 = 1); Political Salience of Elite Ethnicity (Elite Leadership Characteristics: *ELETH* values 1 or 2 = 1); and Polity Fragmentation (Polity IV, *fragment* value greater than 0 = 1). To these indicators,

Exclusionary Ideology of Ruling Elite (Elite Leadership Characteristics: *ELITI* value 1 = 1) is added. Political Legitimacy Score is calculated by adding these five indicators.

It is important to include political legitimacy in the regression equation because political legitimacy is a good proxy for measuring the stability of domestic political environment. This way, the effect of inflation on leaders' decisions to adopt violent measures is separated from the influence of domestic political instability on leaders' decisions.

**Name: Security legitimacy (Marshall and Cole, 2011)**

**Code: Secleg**

Security Legitimacy (Secleg) Score is a measure of state repression, and consists of several indicators from U.S. State Department and Amnesty International reports; each indicator is coded on a five-point scale, from 1: *no repression* to 5: *systemic, collective repression*.

It is important to include security legitimacy in the regression equation because domestic security environment needs to be controlled. This way, the influence of inflation on leaders' decisions of adopting aggressive foreign policy will be separated from the influence of worsening domestic security situation on the leaders' policy decisions.

**Name: Social legitimacy (Marshall and Cole, 2011)**

**Code: Socleg**

Social Legitimacy (Socleg) Score: This indicator is based on the infant mortality rate (number of deaths of infants under one year of age from a cohort of 1,000 live births), with values converted to a four-point fragility scale based on the upper cut-points of the lower three quintiles of the infant mortality rates in the baseline year, 2004. These scores are then adjusted

according to ranking comparisons between the country's income level (GDP per capita) and human capital development (HDI).

It is important to include social legitimacy in the regression because social development level needs to be controlled. Then the effect of inflation on leaders' decisions of adopting aggressive foreign policies will be separated from the influence of various levels of social development on leaders' decisions.

**Name: Economic legitimacy (Marshall and Cole, 2011)**

**Code: Ecoleg**

Economic Legitimacy (Ecoleg) Score measures the share of export trade in manufactured Goods. (UN Development Programme, Structure of Trade, 2010, and World Bank, World Development Indicators (WDI), 2010). Merchandise exports include two classes of products: manufactured goods and primary commodities; low percentage of manufactured goods indicates a high reliance on primary commodities for foreign exchange.

It is important to include this indicator as a control in the regression. The higher the score, the more the country is dependent on exporting manufactured goods. Controlling for the country's dependence on international trade will separate out the effect of inflation on leaders' decisions to adopt aggressive policies toward foreign nations.

**Name: Current account balance in US dollars (IMF, 2011)**

**Code: CABUSD**

Current account is defined as all transactions other than those in financial and capital items. Current account is a component of a country's balance of payments, which is a system of

recording a country's transaction with the rest of the world in goods, services, and financial assets.

It is important to include current account balance as a control variable in the regression because CABUSD is a proxy for measures of a country's dependence on international trade. The more the country is dependent on international trade, the less likely the country is going to divert its domestic attention by the use of external force. Controlling for the country's dependence on international trade will separate out the effect of inflation on leaders' decisions to adopt aggressive policies toward foreign nations.

**Name: Gross domestic product in current prices US dollars (IMF, 2011)**

**Code: GDPCURPUSD**

Values are based upon GDP in national currency converted to U.S. dollars using market exchange rates (yearly average). Expenditure-based GDP is total final expenditures at purchasers' prices (including the foreign owned business value of exports of goods and services), less the foreign owned business value of imports of goods and services.

Different GDP levels make countries face different opportunities and threats. Controlling for GDP is indirectly controlling for a lot of country factors that are associated with a country's economic status. This way, the regression can separate out the effect of inflation on leaders' decisions to adopt aggressive foreign policy.

**Name: Gross domestic product per capita current prices US dollars (IMF, 2011)**

**Code: GDPCAPUSD**

GDP is expressed in current U.S. dollars per person. Data are derived by first converting GDP in national currency to U.S. dollars and then dividing it by total population.

Different from the total GDP, GDP per capita is a more accurate measure for a country's living standard. Since the hypothesis assumes that publics will pressure the government into action when inflation is high, it is necessary to control for GDP per capita because publics with different level of income are generally behaving differently. For a richer nation with higher GDP per capita, the public may be more rational and have higher education, think more independently and make more thoughtful judgments. For a country with lower levels of GDP per capita, the public may not be as highly educated and as independently thinking. Therefore, by controlling for GDP per capita, the regression will indirectly control for a few factors that influence public behavior.

**Name: Oil exports US dollars (IMF, 2011)**

**Code: OEX**

The oil export control variable is expressed as the price per unit of quantity of oil exports multiplied by the number of quantity units.

Oil is the most important commodity and it has become one of the main sources of conflicts since World War II. Large shares of major oil exporting countries' government revenues are from oil exports. Those countries have much larger room to maneuver their fiscal policy. Therefore, the leaders from oil exporting countries may face different pressures and threats when domestic inflation is high. Controlling for this factor will control for the national specific differences and separate out the effect of inflation on leaders' decisions to use external force.

**Name: Oil imports US dollars (IMF, 2011)**

**Code: OIX**

The oil import control variable is expressed as the price per unit of quantity of oil imports multiplied by the number of quantity units.

Oil is the most important commodity and it has become one of the main sources of conflicts since World War II. How much a country is dependent on oil from foreign nations will likely shape a country's foreign policy. Therefore, it is important to control for this factor in the regression.

**Name: Unemployment rate, percentage of total labor force (IMF, 2011)**

**Code: UNEMP**

As defined by the International Labor Organization, unemployed workers are those who are currently not working but are willing and able to work for pay, currently available to work, and have actively searched for work.

Unemployment rate is important to include as a control variable due to the generally held perception that higher inflation usually lead to lower unemployment. Sometimes, the public may be happier with a low rate of unemployment and thus tolerate the high rate of inflation. It will blur the results of the regression if unemployment rate is not controlled.

## Model A

In the thesis two separate regression models will be analyzed. The first model, referred to as Model A, involves only the ICB2 dataset. Model A is a cross-sectional regression of an indicator that measures the degree of violence as a crisis management technique on the lagged inflation indicator and a few other controls. The standard error will be clustered at crisis level (CRISNO). There are in total 445 crises and 673 lines of observation in the truncated dataset that spans from 1950 to 2004.

Model A has four versions: one is a multivariate regression; one is a linear probability model; one is a probit model and one is a logit model. They all have the same independent and control variables. The only difference is that the probability models (linear probability, probit and logit) use a binary dependent variable, SEVVIOVIO, instead of SEVVIO.

$$SEVVIO = \beta_0 + \beta_1 INFLATINC + \beta_2 INFLATDEC + \beta_3 INFLATMD + \beta_4 UNEMPINC + \beta_5 UNEMPDEC + \beta_6 UNEMPMD + \beta_7 AGE + \beta_8 OUTCOM + \beta_9 NOACTR + \beta_{10} CRACTLOC + \beta_{11} TERRIT + \beta_{12} REGIME + u$$

## Model B

Model B has seven versions and uses a country year fixed effects regression for 149 countries and span from year 1995 to 2009. It uses military expenditure in constant (2009) US dollars as the dependent variable and average index of inflation as the independent variable. Share of GDP and percentage change of inflation index are not used because their units are not consistent. The control variables include current account balance in US dollars, GDP per capita and total GDP in current price US dollars, oil imports and exports in US dollars and unemployment rate as percentage of total labor force.

Model B1:

$$F.MILSPE = \beta_0 + \beta_1 INFAVEIND + \beta_2 CABUSD + \beta_3 GDPCURPUSD + \beta_4 GDPCAPUSD + \beta_5 OEX + \beta_6 OIM + \beta_7 UNEMP + \beta_8 sfi + u$$

In the Results section, a discussion of the SFI variable's failure to control for domestic component of military spending is presented. SFI should be replaced with another variable that better controls for domestic component of military spending. Since SFI is the summation across two broad indicators, Effect and Legit, SFI was replaced first with Effect and then replaced with Legit. In the regression results containing Legit the coefficient on INFAVEIND is more statistically significant (p-value = 0.063) than in the regression results containing Effect (p value = 0.084). Effect and Legit are each composed of four index numbers, which measures the effectiveness and legitimacy of social, political, economic and security respectively. The Effect

indicator was eliminated from the analysis and the four Legit indexes were analyzed: social legitimacy (Socleg), security legitimacy (Secleg), economic legitimacy (Ecoleg) and political legitimacy (Polleg). The regression results indicated that only the Polleg index as the control variable had the highest statistical significance on the coefficient of INFAVEIND.

Model B2:

$$F.MILSPE = \beta_0 + \beta_1 INFAVEIND + \beta_2 CABUSD + \beta_3 GDPCURPUSD + \beta_4 GDPCAPUSD + \beta_5 OEX + \beta_6 OIM + \beta_7 UNEMP + \beta_8 eff\ ec + u$$

Model B3:

$$F.MILSPE = \beta_0 + \beta_1 INFAVEIND + \beta_2 CABUSD + \beta_3 GDPCURPUSD + \beta_4 GDPCAPUSD + \beta_5 OEX + \beta_6 OIM + \beta_7 UNEMP + \beta_8 legit + u$$

Model B4:

$$F.MILSPE = \beta_0 + \beta_1 INFAVEIND + \beta_2 CABUSD + \beta_3 GDPCURPUSD + \beta_4 GDPCAPUSD + \beta_5 OEX + \beta_6 OIM + \beta_7 UNEMP + \beta_8 sec\ leg + u$$

Model B5:

$$F.MILSPE = \beta_0 + \beta_1 INFAVEIND + \beta_2 CABUSD + \beta_3 GDPCURPUSD + \beta_4 GDPCAPUSD + \beta_5 OEX + \beta_6 OIM + \beta_7 UNEMP + \beta_8 socleg + u$$

Model B6:

$$F.MILSPE = \beta_0 + \beta_1 INFAVEIND + \beta_2 CABUSD + \beta_3 GDPCURPUSD + \beta_4 GDPCAPUSD + \beta_5 OEX + \beta_6 OIM + \beta_7 UNEMP + \beta_8 ecoleg + u$$

Model B7:

$$F.MILSPE = \beta_0 + \beta_1 INFAVEIND + \beta_2 CABUSD + \beta_3 GDPCURPUSD + \beta_4 GDPCAPUSD + \beta_5 OEX + \beta_6 OIM + \beta_7 UNEMP + \beta_8 polleg + u$$

## DATA SOURCES

### **International Crisis Behavior Dataset 2 (Brecher and Wilkenfeld, 2007)**

International Crisis Behavior project is a research effort aimed at investigating 20th-century interstate crises and the crisis management techniques of states under externally generated stress. The unit of observation for Part 1 is the international crisis. The unit of observation for Part 2 is the crisis actors involved. In all, the data cover 445 international crises involving 979 state actors between 1918 and 2004. Both parts include non-numeric data. Since the research unit is country, ICB2 is more relevant and is going to be used here. In ICB2, there are 80 variables in total and they cover the time, duration, perception of cause, crisis management techniques, geographical location, international political environment, regime type, ethnic composition and economic variables. Since the dataset already contains the identified dependent, independent and control variables, there is no need to merge outside variables into this already quite comprehensive database.

The coding structure of ICB is crisis level. Each crisis is assigned a unique number (CRISNO), for example, as in Korean War in 1950, CRISNO is coded 132. However, there are four entries share the same CRISNO 132. Those four entries are four actors involved in the crisis: U.S., China, South Korea and Taiwan. Each state/country is assigned a unique country ID (CRACID), for example, U.S. is coded as 2 and China is coded as 710. Similarly, the rest of the variables all refer to the unique actor's situation in a crisis and reflect the actor's own perspective of the crisis. For example, the OUTCOME variable for South Korea and U.S. is coded as *victory* but for China it is coded as *stalemate* in the 1950 Korean crisis, which reflects how four actors perceive the outcome of the crisis differently.

The variables that will be used in the regression analysis are: degree of violence used in crisis management technique; status of a country's inflation and unemployment rate four years prior leading up to the outbreak of a crisis; age; territory size; regime type of country; the distance from the outbreak location of crisis to the country; the perceived outcome and number of actors in the crisis.

### **Stockholm International Peace Research Institute Military Expenditure Data (SIPRI, 2011)**

The SIPRI Military Expenditure Database consistent of panel year data on the military spending of 171 countries since 1988. The expenditures are measured in three units: local currency at current prices 1988-2010; US dollars at constant (2009) prices and exchange rates 1988-2010 and as a percentage share of the country's GDP between 1988 and 2009.

Except for the fact that the local currency is shown in financial years, other two measures are both represented in calendar years. "SIPRI military expenditure data is based on open sources only, including a SIPRI questionnaire which is sent out annually to all countries included in the database" (SIPRI, 2011).

SIPRI defines military expenditure should include defense ministry and defense project spending, peacekeeping, armed and paramilitary forces spending, personnel cost and maintenance, procurement cost and military aid to other countries. The variables used in regression analysis will be military spending as percentage of GDP, military spending as in constant (2009) US dollars and exchange rates.

### **International Monetary Fund World Economic Outlook Dataset (IMF, 2011)**

World Economic Outlook (WEO) dataset records 45 panel year economic indicators for 184 economies between 1980 and 2016 (estimated). The 45 indicators can be divided into four categories: GDP, Inflation, Government revenue and Current account balance. The important variables that will be used in regression analysis include current account balance in US dollars, GDP per capita current and total GDP current price in US dollars, oil imports and exports in US dollars, average inflation measured by consumer price index and unemployment as percentage of total labor force. Before carrying out the regression, some outlier observations are also deleted, such as hyperinflation in Angola, Brazil, Belarus, Moldova, Ukraine and Venezuela. The hypothesis proposes that moderately inflation will pressure the leaders to divert domestic attention by use of external force. Under moderate inflation, domestic economic and institutional structures and mechanism are still intact and functioning. However, hyperinflation generally leads to a complete chaos of the economic system and therefore these data points do not fit into the research question and were eliminated.

### **State Fragility Index (Marshall and Cole, 2011)**

The state fragility index is composed of eight measures on four aspects of a state: political effectiveness and legitimacy, economic effectiveness and legitimacy, security effectiveness and legitimacy and social effectiveness and legitimacy. The index span between 1995 and 2010 and covers 163 countries that have populations greater than 500,000 in 2010. SFI is actually the arithmetic summation of two components: effective score and legitimacy score. Similarly, effectiveness score is calculated by summing up three aspects: security, political and

economic effectiveness. Same calculation applies to legitimate score. Therefore, SFI is actually the sum of six measures: effectiveness and legitimacy on three aspects.

Since it is a composite index, the composition and each component of the composition will be put into the regression equation individually in order to separate out which aspect results in the most statistically significant coefficient of independent variable. The results will be further interpreted and analyzed.

## RESULTS

Table 4 and Table 5 on the next two pages present the estimated coefficient of the independent and control variables from Model A (1 through 4) and Model B (1 through 7). Each column in the table represents the estimated coefficients from each model. The number in the parenthesis below an estimated coefficient is the p-value (referred to as p-val in the table) of the coefficient. The asterisks next to the estimated coefficient represent the level of statistical significance. One asterisk means that the coefficient is statistically significant at 10% level, two asterisks mean that the coefficient is statistically significant at 5% level and three asterisks mean that the coefficient is statistically significant at 1% level. Number of observations used in each model is shown at the bottom of the table. Underneath the number of observations is the R squared value and pseudo R squared value. For probit and logit models, R squared value cannot be calculated and therefore another similar indicator, the pseudo R squared, is shown. R squared and pseudo R squared represent how much of the variation in the dependent variable is explained by the regression equation. Generally, the higher the R square value, the more effective the regression is at explaining and predicting the dependent variable.

Table 4

*Estimated coefficients of model A 1 through A 4*

EQUATION	VARIABLES	(1) SEVVIO	(2) SEVVIOVIO	(3) SEVVIOVIO	(4) SEVVIOVIO
	1.INFLATINC	0.279** (0.0430)	0.116** (0.0500)	0.307** (0.0441)	0.490** (0.0478)
	INFLATDEC	0.262 (0.357)	0.209* (0.0922)	0.554* (0.0864)	0.866* (0.0984)
	INFLATMD	0.243* (0.0870)	0.0893 (0.145)	0.236 (0.130)	0.374 (0.139)
	UNEMPINC	-0.166 (0.252)	-0.0540 (0.391)	-0.154 (0.371)	-0.237 (0.397)
	UNEMPDEC	-0.0433 (0.875)	0.0334 (0.758)	0.0947 (0.730)	0.146 (0.751)
	UNEMPMD	0.145 (0.303)	0.0567 (0.368)	0.151 (0.353)	0.233 (0.381)
	AGE	0.0182 (0.584)	0.00316 (0.797)	0.00704 (0.827)	0.00725 (0.890)
	OUTCOM	0.0360 (0.364)	-0.00115 (0.946)	-0.00572 (0.895)	-0.00467 (0.949)
	NOACTR	0.0368** (0.0188)	0.0124** (0.0306)	0.0300** (0.0373)	0.0646** (0.0404)
	CRACKLOC	0.000961 (0.988)	-0.0328 (0.144)	-0.0869 (0.140)	-0.164 (0.100)
	TERRIT	0.0396 (0.451)	0.0273 (0.256)	0.0698 (0.268)	0.123 (0.230)
	REGIME	0.0204 (0.633)	-0.0131 (0.444)	-0.0348 (0.438)	-0.0608 (0.419)
	Constant	1.467*** (5.24e-10)	0.293*** (6.73e-08)	-0.510*** (0.000420)	-0.883*** (0.000335)
	Observations	668	673	673	673
	R-squared	0.071	0.057		
	Pseudo R-squared			0.0427	0.0458

Note: \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 5

*Estimated coefficients of Model B 1 through Model B 7*

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	F.MILSPE						
INFAVEIND	0.609*	0.582*	0.635*	0.579*	0.579*	0.582*	0.683*
	(0.0723)	(0.0839)	(0.0625)	(0.0857)	(0.0857)	(0.0838)	(0.0537)
CABUSD	-93.49***	-93.77***	-93.75***	-93.60***	-93.96***	-93.87***	-93.89***
	(0)	(0)	(0)	(0)	(0)	(0)	(0)
GDPCURPUS D	23.46***	23.40***	23.41***	23.39***	23.38***	23.39***	23.42***
	(0)	(0)	(0)	(0)	(0)	(0)	(0)
GDPCAPUS D	-0.421***	-0.411***	-0.419***	-0.410***	-0.414***	-0.410***	-0.415***
	(0)	(0)	(0)	(0)	(0)	(0)	(0)
OEX	94.43***	94.09***	94.95***	94.34***	94.52***	93.83***	95.16***
	(1.66e-09)	(1.89e-09)	(1.40e-09)	(1.74e-09)	(1.77e-09)	(2.35e-09)	(1.35e-09)
OIM	175.9***	177.9***	176.3***	177.5***	177.9***	178.3***	177.1***
	(0)	(0)	(0)	(0)	(0)	(0)	(0)
UNEMP	156.9*	156.6*	167.3*	158.5*	160.6*	157.5*	169.5*
	(0.0894)	(0.0927)	(0.0714)	(0.0863)	(0.0831)	(0.0884)	(0.0689)
sfi	160.9						
	(0.460)						
effect		40.19					
		(0.903)					
legit			328.1				
			(0.315)				
secleg				263.8			
				(0.637)			
socleg					271.9		
					(0.730)		
ecoleg						163.4	
						(0.829)	
polleg							565.7
							(0.356)
Constant	4,129**	5,021***	4,030**	4,902***	4,989***	5,052***	4,338***
	(0.0293)	(0.00195)	(0.0186)	(0.000488)	(0.000309)	(0.000231)	(0.00578)
Observations	1,004	1,004	1,004	1,004	1,004	1,004	1,004
R-squared	0.834	0.834	0.834	0.834	0.834	0.834	0.834
Number of num_country	82	82	82	82	82	82	82

Note: \*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

## CONCLUSION AND POLICY IMPLICATIONS

In Model A, the coefficients on INFLATINC, a binary variable that indicates whether the country experienced significant increase in inflation four years prior to the crisis, are statistically significant at 5% level throughout multivariate, linear probability, probit and logit regressions. In the multivariate regression, a country that experiences significant inflation four years prior to the crisis will on average move up 0.279 unit of crisis severity (SEVVIO is categorical variable) while controlling for the relevant variables in the regression. In the linear probability regression, a country that experiences significant inflation four years prior to the crisis will be on average 11.6 percentage points more likely to employ a violent crisis management technique (SEVVIOVIO is the binary variable indicating employment of violent or non-violent techniques) while controlling for the relevant variables in the regression.

Since the coefficients cannot be interpreted directly from the probit and logit models, Tables 3 and 4 provide the predicted probabilities for whether the country will employ violent or non-violent crisis management techniques while holding other control variables at their means. Readers Note: *Margin* in the tables below means the predicted probability of the dependent binary variable

Table 6

*Predicted probability for Model A Probit regression*

	Margin	Delta-method Std. Err.	z	P> z	[95% Conf. Interval]
INFLATINC					
0	.3957264	.0300615	13.16	0.000	.3368069 .4546458
1	.5169443	.054768	9.44	0.000	.409601 .6242876

The predicted probabilities of employing violent crisis management technique for both types of countries (INFLATINC = 1 and 0) are statistically significant at 1% level. The probability of employing a violent crisis management technique for a country that experiences a significant increase in inflation four years prior to the crisis is 51.7 percentage points while holding other control variables at their means. The probability of employing a violent crisis management technique for a country that did not experience significant increase in inflation four years prior to the crisis is 39.6 percentage points while holding other control variables at their means. Therefore, countries that have experience significant inflation are 12.1 (51.7 – 39.6 = 12.1) percentage points more likely to adopt a violent crisis management technique than countries that have not experienced significant increase in inflation.

Table 7

*Predicted probability for Model A Logit regression*

	Delta-method					
	Margin	Std. Err.	z	P> z	[95% Conf. Interval]	
INFLATINC						
0	.3971281	.0309788	12.82	0.000	.3364108	.4578455
1	.5181893	.0558138	9.28	0.000	.4087962	.6275824

The predicted probabilities of employing violent crisis management technique for both types of countries (INFLATINC = 1 and 0) are statistically significant at 1% level. The probability of employing a violent crisis management technique for a country that experiences a significant increase in inflation four years prior to the crisis is 51.8 percentage points while holding other control variables at their means. The probability of employing a violent crisis

management technique for a country that did not experience significant increase in inflation four years prior to the crisis is 39.7 percentage points while holding other control variables at their means. Therefore, countries that have experience significant inflation are 12.1 ( $51.8 - 39.7 = 12.1$ ) percentage points more likely to adopt a violent crisis management technique than countries that have not experienced significant increase in inflation. The predicted probabilities from logit regression are exactly the same as the predicted probabilities of previous probit regression.

However, the R-squared figures are quite low. They are 0.071 and 0.057 in the multivariate and linear probability regressions and 0.0427 and 0.0458 in probit and logit regressions. That means more than 90% of the variance in the dependent variable SEVVIO (or SEVVIOVIO in probit and logit case) is not explained by the model. This is mainly due to the small sample size, which is below 700 observations, and small number of observations available in the independent variable, which has only about 119 observations. In addition to the small sample size, the dataset is not a panel dataset, which means the regression cannot control for country and year fixed effects. Even though more research is needed to improve the R squared, this study is still helpful in at predicating the likelihood of leaders' decisions of the use of external force when faced with domestic inflation.

In Model B, the coefficients on the independent variable INFAVEIND, average inflation index, are all statistically significant at 10% level from B1 to B7. The R-squared values of these seven regressions are all quite high: above 80%. This means that more than 80% of the variation in the dependent variable, military spending in constant US dollars, is explained by the regression equation. This is mainly due to the high level of statistical significance (above 1% level) of all other controlling variables except for state fragility index (SFI) and its components.

Even though SFI and its components (Effect, Legit, Polleg, Socleg, Secleg and Ecoleg) are not statistically significant themselves, their inclusion in the equation is essential. As a reminder, the hypothesis predicts domestic inflation will increase a country's foreign policy aggressiveness, which can be measured by how much a country spends on military weapons, which might be intended for international usage. Just a side point, some weapons such as guns and tanks could be used for both domestic and international events. However, jet fighters, missiles, military satellites, submarines and aircraft carriers have significant international implications. Since the SIPRI military expenditure data does not break down numbers between spending on weapons aimed at domestic purposes and spending on weapons aimed international purposes, it is hard to control for how much of a country's defense budget is actually spent on domestic purposes. Fortunately, including SFI into the model is equivalent to indirectly controlling for domestic military spending. The reason is that more fragile states usually spend more on suppressing domestic uprisings, and vice versa.

The statistical significance of the coefficient on INFAVEIND of B7 is higher (p-val = 0.0537) than the statistical significance of the coefficients on INFAVEINDs in the rest of the Models B1 through B6. The only difference across Model B1 to B7 is the control variable concerning SFI and its components. In Model B1, SFI is used as a control. In B2, SFI's component, Effect, replaces SFI in B1. In B3, SFI's component, Legit, replaces Effect in B2. The author finds that the coefficient of INFAVEIND (p-val = 0.0625) in B3 is more statistically significant than in B2 (p-val = 0.0839). Therefore, the author deduces that legitimacy is a better proxy for how much a country spends on domestic military objectives. Consequently, in model B4 though B7, the author tried to use the four components of the Legit indicator (Polleg, Socleg,

Ecoleg and Secleg) separately as the control and finds that Polleg produces the highest statistical significance for INFAVEIND in B7 (p-val = 0.0537).

In this case, one point increase in the country's average inflation index will make the country's military spending in constant US dollars increase by 0.683 million while controlling for other variables in the regression. This is not a substantial amount of money for a country's defense system. For example, an F-15 fighter costs 105 million USD and Hawk trainer/fighter costs 21 million USD ("Caat facts and figures" 2003). Nonetheless, one point increase in INFAVEIND is actually very small, too. As Table 2 shows, the INDAVEIND of the 25<sup>th</sup> percentile of the dataset is 85.93 and the 75<sup>th</sup> percentile is 141.88. Therefore, one point increase in the index is a very minimal change in the actual inflation rate. A more substantial change would be 10 points increase in INFAVEIND. That would lead to 6.83 ( $0.683 * 10 = 6.83$ ) million USD increase in military spending while holding other variables in the regression constant. Even though 6.83 million USD may still not be a big number that will substantially change a country's defense budget, it can still buy 13,600 AK 47s ("Caat facts and," 2003).

In conclusion, the results of the study are marginally significant at 10% level and support the hypothesis that inflation may lead to government leaders' use of external force to divert domestic attention. The results hold across different regime types. It provides evidence that political leaders constantly face domestic pressure, no matter if the country is democratic or authoritarian and diverting attention is a popular move because it is much easier than tackling the actual problem. This study provides additional reasons for strictly controlling domestic inflation. Whether the results are substantially significant depends on the context. For a small country, 6.83 million USD increase in defense budget is a lot but it may seem nothing for a big country. More research is needed to complement the low R squared in model A. Even though model B

has high R squared, it can still be improved. More research could be done in choosing a better variable that separates out military spending between domestic and international purposes. Or even, more research could focus on picking a better proxy, if there exists one in the future, for foreign policy aggressive than the one (military spending) used in model B.

## APPENDIX

### Technical Notes

From Model A, there is no need to add further variables. But the dataset is truncated from 1950 to 2004. The reason being that any crisis happened before World War Two is managed differently. WWII is a watershed for state systems, international relations and so on.

For Model B, the dataset is combined from WEO, SIRPI and SFI. The actual steps of combination is explicated here:

1. Transfer original WEO excel into STATA. Drop all the variables except the ones I am interested in.
2. Reshape the dataset so that the first vertical column has country names and the second vertical column has years, and each of the rest vertical columns represent a single variable.
3. Transfer military spending data in constant (2009) US dollars from excel to stata. Reshape the military spending data in constant (2009) US dollars in the same way described above.
4. Transfer military spending data in constant (2009) US dollars from excel to stata. Reshape the military spending data in constant (2009) US dollars in the same way described above.
5. Merge 1:1 military spending data with WEO data; sort the unmerged observations and rename certain country names to make them conform.
6. Transfer SFI into stata and truncate the data from 1995 to 2009.
7. Merge 1:1 SFI with the previously merged dataset and sort the unmerged observations and rename certain country names to make them conform.

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