'THOU SHALT NOT KILL'

A DEMOCIDE STUDY

by

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A THESIS

submitted in partial fulfillment of the requirements for the degree

MASTER OF ARTS

Department of Economics

College of Arts and Sciences

KANSAS STATE UNIVERSITY

Manhattan, Kansas

2008

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2008

Abstract

This Master Thesis analyzes the factors that influence the occurrence of democide. The study focuses on a set of fifty three developing countries from 1960 to 2001. The dependent variable is democide and independent variables include: democide, International Monetary Fund (IMF) credits, consumer price index (CPI), gross domestic product (GDP) per capita, Gini index, military expenditures as a percentage of GDP, incidence of intrastate conflict, and democracy.

An important limitation of the current literature has been the shortage of studies using yearly democide dataset. Even fewer of those studies strive to incorporate the actual number of people killed; instead they use democide as a dummy variable in their models. This study aims to fill this gap. The objective of this thesis is to answer an important question of whether the economic and social factors such as gross domestic product, IMF credits, income inequality, inflation, conflict history, and democracy play an important role in influencing murders by governments in the less developed and developing countries.

The results when using democide as a dummy variable are consistent with the previous studies showing that conflict history and GDP per capita increase the likelihood of democides. This study also reveals that an increase in IMF funding last year can potentially lead to an increase in democide this year. Controlling for democracy does not have a significant effect on the regressions. The history of conflict remains statistically significant at one percent significance level in both fixed and random effect models using democide variable as an actual number of people killed regardless whether democracy variable is included or not. Military

expenditures as a percentage of GDP also appear to be statistically significant at ten percent level.

Even when IMF variable is replaced by IMF as a percentage of GDP and GDP per capita variable is replaced by a squared GDP, the history of conflict variables remain consistently statistically significant at one percent significance level in logit, probit, fixed, and random effect models.

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Acknowledgements

It is difficult to overstate my gratitude to my major professor, Dr. E. Wayne Nafziger. His enthusiasm, inspiration, sound advice, and untiring support helped me to complete my thesis and made this research experience enjoyable.

I am delighted to acknowledge Dr. Emizet Kisangani for his tremendous support, constructive criticism, and many suggestions that led to a significant improvement in my research.

I am also thankful to Dr. Patrick Gormely for the support, readiness to help, and valuable ideas.

Furthermore, my thanks continue to my friends, colleagues, and fellow students in Manhattan who never hesitated to help whenever I needed them.

Finally, I would like to thank those closest to me, whose presence helped me to complete my graduate work. My dear parents, thank you for your absolute confidence in me and your immense support. My sister and brother, thanks for cheerful "Skype" brakes in between writing. Most of all, my husband Ruben and my seventeen-month-old son Arthur, thank you for your love, patience, and understanding.

Needless to say that I take the full responsibility for the mistakes made in the following pages.

Dedication

To the millions whose lives have been shattered by democide

1. Introduction

1.1   The Evil Nature of the Humankind

A single death is a tragedy; a million deaths is a statistic. (Joseph Stalin)[1]

Although Stalin's words sound cold and cruel, they seem to cut into the very flesh of the truth. Wars, intrastate conflicts, terrorist attacks, natural disasters, and epidemics take lives of hundreds, thousands, or even millions of people. The names of the people killed, however, remain just a number in a dusty history record book.

In the 20th century alone, there were 36 million people killed in wars, compared to the striking 119 million mass killing casualties (democide) (Rummel, 1986). Other literature sources show a larger war death total of 53 million (Sarkees, 2003). Nevertheless, world democide statistics more than doubles the number of the total war casualties in the twentieth century.

To compare, the population in Mexico currently is around 108 million. Had the same magnitude of the monstrosities happened in Mexico alone as it did in the world throughout the 20th century, the whole nation would have been ultimately swept away from the face of the earth. Why do some governments whose primary purpose is to protect people sometimes choose to massively kill their own citizens? Can a significant pattern be seen revealing a likelihood of specific countries to kill their own people? What are the economic and political factors that play a key role in determining this likelihood?

Numerous studies attempted to estimate the effects of various political and economic factors on democide occurrences. The findings also vary dramatically based on estimation

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[1] http://www.quotedb.com/quotes/3356

techniques, approaches, dataset, time and country span. While some researchers see the recent decline in mass killings as a tribute to the world-wide democratization (Easterly, Gatti, and Kurlat, 2005, Rummel, 2007), others argue that it is due to a historic increase in productivity (Scully, 1997). Yet others suggest that property rights might be responsible for these democide reductions (Banaian, 2001).

An important limitation of the current literature has been the shortage of studies using yearly democide dataset. Even fewer of those studies strive to incorporate the actual number of people killed; instead they use democide as a dummy variable in their models. This study aims to fill this gap. The objective of this thesis is to answer the important question of whether the economic and social factors such as gross domestic product, International Monetary Fund (IMF) credits, income inequality, inflation, conflict history, and democracy play an important role in influencing murders by governments in the less developed and developing countries. This study incorporates both democide as a dummy variable and democide as the actual number of people killed employing annual data for fifty three developing and less-developed countries from 1960 to 2001.

Human lives at stake place a high value on democide research. Despite the fact that democide was deadlier than all of the 20th century wars combined, the democide phenomenon has been under-studied. This type of research on social and economic factors might potentially help to spot the feasible conditions for democide, empower international organizations, and world leaders to prepare for active involvement and, thus, save lives.

The rest of the paper is organized as follows. Section 2 presents prior literature. Section 3 discusses the model states the hypotheses, and provides descriptive statistics. Section 4 presents

regression results. Research challenges are presented in Section 5. Section 6 contains concluding remarks.

2. Literature Review

2.1 Democide: What Is It?

Exploring the shortcomings of the existing terms in the current literature, Rudolph J. Rummel introduced "democide" to describe the intentional government killing of unarmed person or people. According to Rummel, different from genocide, democide is restricted to *intentional killing*, and does not extend to attempts to eliminate cultures, or races by means other than killing people. In addition, democide includes the killing component of all of the following: genocide, politicide, mass murder, massacre, and terror, "and also what they exclude, as long as such killing is a purposive act, policy, process, or institution of government" (Rummel, 2007)[2].

This term, invented and described in detail by Rummel, has been chosen to be used for the purpose of this Master Thesis due to its capability to depict a wider scope and give a better insight on the diversity in intentional government murder of unarmed individuals. (Please see Appendix A for details.)

2.2 Prior research

There is a big pool of literature on democide, genocide, politicide, state killings, and other very closely related issues. The studies attempt to estimate the effects of different political and economic factors on democide occurrences. The research findings also differ significantly based on estimation techniques, approaches, dataset, time and country span.

Here are just a few researchers mentioned whose contributions in the overall democide research have to be recognized. Rummel's democide research is the largest in scope. His study

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[2] http://www.hawaii.edu/powerkills/DBG.CHAP2.HTM

covers a period from 1900 to 1987. Rummel's (2007) findings imply that regime type matters and democracy is the most important factor decreasing the likelihood of democide.

Barbara Harff and Ted Robert Gurr are two other researchers who made a strong impact on overall democide studies. Harff and Gurr (1988) focus on politicide as an indicator of mass killing compared to Rummel, who uses a different term – "democide". Their study covers incidents from 1943 to 2001. Harff and Gurr estimate the total deaths from political violence including genocide and politicide.

Valentino is another researcher whose involvement in genocide/democide studies can not be overlooked. In a comparative case research study Valentino (2004) uses Harff's dataset. The author disagrees with Rummel saying that the regime type is not important. In spite, he suggests that the major democide driver is the motive for mass killing (Valentino, 2004) and subdivides it into two major categories for motives: dispossessive mass killing, and coercive mass killing. Despite his strong argument for Rummel on the regime type differentiation, Valentino, just like Rummel, includes communism regime in his division of major categories of killing.

Krain is another scholar, whose cross-sectional time-series study of mass murder is based on Harff's dataset from 1940 to 1980 (Krain, 1997). On the contrary to Valentino, Krain agrees with the major Rummel's statement that democides are more likely to occur under dictatorships. However, he insists that civil war predicts mass killings even better.

Another interesting research study by Wayman and Tago (2005), builds up on Harff's (2003) data set of state failures. It uses the large-N data analysis, and is designed to focus on explaining politicide in a nation-year unit of analysis, over the 1949-1987 period (Wayman and Tago, 2005). This study aims to disclose the possible reasons for the difference in findings of the major studies analyzing the mass murder by government. Using two different datasets (Gurr and

Harff's politicide data and Rummel's democide data) and creating nation-year units, they find that depending on the dataset used, regime effects are either significant or insignificant.

Wayman and Tago (2005) raise comparability problem issues in the existing democide literature saying that having a different unit of analysis (different time period, different statistics, etc.) impact the studies and make them extremely difficult to compare. To illustrate, Rummel stresses the regime importance, Harff focuses on internal war and regime collapse, Valentino, Huth and Balch-Lindsay center their attention on cases of civil war. In addition, reviewing the democide statistics, Wayman and Tago observe that Rummel's statistics is two to ten times higher compared to Harff's, suggesting that this phenomenon alone potentially might be a serious influencing factor leading to different results (e.g. autocracy significance in democide prediction and insignificance in politicide predictions). Similarly to Valentino and Krain, Wayman and Tago find that despite the dataset used, internal conflicts always remain significant and are the most important predictors of democide.

Gerald Scully (1997) is yet another scholar whose democide studies are being often cited. According to Scully (1997), there is a strong relationship between democide and economic growth rates; thus, a one-percent increase in real per capita GDP leads to a 1.4-percent decrease in democides. In other words, an overall decrease in the world-wide mass killing occurrences can be explained by a historical increase in productivity.

Scully's research provoked a new line of ideas and inspired other researchers to take a different direction. Banaian (2001, p.5) while criticizing Scully's approach for misleading assumptions, "that all countries are equally democidal or that none of the other factors that cause variations in the rates of democide would be correlated with real GDP levels", shows in his own research that democides potentially could lead to the reduced growth rates. "There is both a

direct effect through the lowering of population (which, with declining marginal product should increase the level of per capita GDP) and an indirect effect by lowering the incentives to save and invest (reducing per capita GDP)" (Banaian, 2001, p. 3). The study shows that, in fact, the indirect effect dominates. Banaian (2001) also argues that relationships between democide and power, and between democide and growth, have disregarded an important factor that have an impact on all the three of them: democide, power, as well as growth. Banaian suggests that private property rights might as well be a better predictor for democides than democracy.

W. Easterly, R. Gatti, and S. Kurlat (2005) develop a unique dataset for their cross-sectional time-series research study that covers one of the largest time periods (1987-1998) and includes 163 episodes of mass killings in 71 countries. They analyze the relationship of mass killings and democracy. Their findings are somewhat similar to Rummel's, saying that democides are more likely to occur in intermediate levels of income, and less likely at very high levels of democracy. Portraying economic development as a two-edged sword, Easterly, Gatti, and Kurlat (2005) suggest that while economic development increases the value of human life by promoting education, group tolerance, and enhances labor productivity, simultaneously it also boosts technological development making a mass murder cheap. Researchers argue that democracy can play a protective role guarding from the negative effects of economic development. The authors further hypothesize that a world-wide democratization is the reason for a decrease in government directed massacre episodes (Easterly, Gatti, and Kurlat, 2005).

Kisangani and Nafziger's (2007) study "The Political Economy of State Terror" is the closest in its nature to my thesis. The authors use democide as a dependent variable and their independent variables are: mineral exports/GDP, military expenditures/GDP, real GDP growth, real per capita GDP, and population density. Their study results suggest that poor economic

performance (both level and growth of income) as well as mineral exports increase the probability of democides. However, only mineral exports remain statistically significant when the regime type is controlled for. The study is based on a cross-sectional analysis of 39 countries from 1960 to 2002. Democide dataset is obtained from Stanton (2006) and the data for independent variables is resourced from the World Bank (2004) (Kisangani and Nafziger, 2007).

To summarize, interestingly enough, while the distinct similarities from study to study can be found, there is no unanimous consensus on the primary driving force for democide. While some researchers see the recent reduction in mass killings as a tribute to the world-wide democratization (Easterly, Gatti, and Kurlat, 2005, Rummel, 2007), others argue that it is due to a historic increase in productivity (Scully, 1997). Yet others suggest that there might as well be the property rights responsible for these democide reductions (Banaian, 2001).

2.3 Datasets

Quite a few original democide/politicide/genocide datasets have been developed (e.g. Rummel, Harff, Stanton, Marshal and Gurr, etc.). However, since the individual democide data collection is a time-consuming process, it is not uncommon for the scholars to share their data with others. Wayman and Tago (2005) argue that the similarities and differences in the study results might also depend on whether the same or different datasets are being used. They extend their argument hypothesizing that researchers who collect their own unique democide data might be doing so with a preexisting bias. Wayman and Tago (2005) suggest that subconsciously Rummel might have collected democracy argument supporting data, while Harff might have seeded the conflict history supporting data in her dataset. Almost unanimously the researchers agree that the better democide data is vitally needed to draw better conclusions.

Rummel has dedicated his life exploring democide and mass murder by government. He has developed a detailed and complex dataset portraying numerous countries that committed democides extending from 1900 to 1987. Rummel's contribution in the overall democide analysis is extremely valuable and should not be underestimated as his work made many other research projects possible. However, even his data set is repeatedly criticized in the researchers' community. Tomislav Dulic, from Uppsala University in Sweden, is especially harsh in pointing out Rummel's data flaws. Even though, he hardly provides any alternative solutions, he is very persuasive disclosing a need to develop a better dataset to be able to draw better conclusions. According to Dulic, the estimates used by Rummel (related to Yugoslavia before and after the break-up in particular) were neither authoritative nor credible. Despite the fact that currently there are very few reliable sources, Dulic argues: "the lack of data can never be used as an alibi, and sometimes we have to accept that basic research has not yet been conducted" (Dulic, 2004). Moreover, he criticizes Rummel for allowing too big variations between high and low figures differing by hundreds or even thousands of percent. Finally, he suggests that insufficient language skills and the use of the literature available in a single language (English) create another potential problem in Rummel's research – subjectivity or even bias. Dulic suggests that the usage of multilingual sources as well as the knowledge of historiography either personally acquired or outsourced by collaborating with native and worldwide experts could have been beneficial (Dulic, 2004). Other original democide/politicide/genocide authors are also criticized on the similar grounds.

2.4   What Triggers Democide and How to Suppress It?

There are numerous real life examples involving both sole individuals and groups in the non-democratic countries revealing their supreme powerlessness and deprivation of the mere

right of protection. In case of dictatorships it is rather common to see an attempt to secure power displaying ultimate coercion as a result of which numerous peaceful civilians are being killed. For example, in East Timor, Rwanda, Burundi, Cambodia, India, and Indonesia only the military and the police have the right to bear arms. Although the "actual voting showed that more than 70 percent of East Timorese wanted independence from Indonesia, why were they the ones getting killed? Answer: because they had no guns/(and, therefore, no power!)/, while the Indonesians armed the opponents of independence and then stood by encouraging the murder of hundreds of independence activists" (Kates, 2003, p. 307).

Another horrific example of mass slaughter by totalitarian regime is the Khmer Rouge in Cambodia which brutally murdered one of the highest percentages of single county population. Cambodian genocide of 1975-1979, accounts for approximately 1.7 million deaths total (21% of the overall country's population). According to Banaian (2001, p. 3), "democide occurred at the rate of over 8% of the population per year" in Cambodia.

Rummel states that democide is most likely to occur in such regimes where the concentration of power is maximal, saying that "democratic freedom is an engine of national and individual wealth and prosperity". He assures that "power kills; absolute power kills absolutely" (Rummel, 1995, p. 25), in other words, "the more democratic a nation, the less its democide" (Rummel, 2007)[3].

Plourde (2004), however, challenges Rummel's statement providing Shimmin's observation published in the *Peace Magazine*. It states: "it is colonialism, genocide, slavery, and mercantilism that made today's democracies powerful in the first place" (Plourde, 2004)[4]. Shimmin explains that even the most democratic nations habitually take undemocratic routes on

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[3] http://www.hawaii.edu/powerkills/
[4] http://gseweb.harvard.edu/~t656_web/peace/Articles_Spring_2004/Plourde_Shawn_Democide.htm

the international stage. "Western democracies, and their corporate partners, are the richest nations in the planet due to political instability and violent conflict abroad" (Plourde, 2004)[5]. In other words, world democracies benefit from the Third World and its struggles. Rummel counter-argues that most democracies (over one hundred total) are:

1) Non-western;

2) Have not exploited foreign people and resources;

3) Do not have large militaries.

Despite this, it is obvious that even the strongest world's democracies sometimes close their eyes upon undemocratic or even totalitarian regimes not only oppressing, but also brutally slaughtering their own citizens. Massive killings of Indians, in U.S. and Canada, Native Tasmanians, and the Great Bengal Famine of 1943 (2.5 million people starved to death) also show the ignorance of the democratic nations towards the inhumane acts towards the civilians (Plourde, 2004). Even president Clinton was resistant to call Rwandan extermination of Tutsis' by its true name – "genocide", while the monstrosities were still taking place.

Plourde also points out another drawback in Rummel's study - the ignorance of utopian thinking. He explains: "every regime that attempted to create a *perfect* society eventually went down the path to democide" (Plourde, 2004)[6].

Rummel's ultimate solution building democracies to reduce democide occurrences can be a very long and difficult process. Stanton proposes a processual stage model to spot and prevent genocide in its early stage. According to Stanton, there are eight stages of genocide: 1) classification (us vs. them), 2) symbolization, 3) dehumanization, 4) organization (hate groups),

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[5] http://gseweb.harvard.edu/~t656_web/peace/Articles_Spring_2004/Plourde_Shawn_Democide.htm
[6] http://gseweb.harvard.edu/~t656_web/peace/Articles_Spring_2004/Plourde_Shawn_Democide.htm

5) polarization, 6) preparation (identification, expropriation, concentration, transportation), 7) extermination, and 8) denial. Stanton's model, if taken seriously, could potentially be a very beneficial tool in the hands of policy-makers empowering them to recognize early warnings and take proactive measures to prevent genocide (Stanton, 2005).

Stanton also offers a four-step process to lessen democide occurrences in the short-run:

1) Implementation of an independent early warning system to prevent democides by the United Nations Security Council;

2) The whole world intervention to prevent violence;

3) Creation of a fast professional volunteer force by the UN;

4) Development of a strong International Criminal Court supported by all member countries, including the U.S. (Plourde, 2004).

Shimmin adds a few other suggestions that might be beneficial reducing the number of democides:

1) Banning the international arms trade and

2) Outlawing economic policies that globally perpetuate economic exploitation (e.g. least costly labor outsourcing) (Plourde, 2004).

If taken into consideration seriously by the powerful international organizations, as well as nations all over the world, all of the above are valuable ideas directed towards generating a powerful apparatus for preventing democide occurrences.

3. The Model

This study uses panel data from fifty three countries over the period of 1960-2001 to estimate the following regression:[7]

$$D_{it} = \alpha_i + \beta X_{it-1} + \varepsilon_{it} \tag{1}$$

Where i is country index ($i = 1,....,53$), t is time index ($t=1,….,42$), X is a vector of eight independent variables, and ε is unobserved error term. The dependent variable is democide. The independent variables are: democide in previous year (dummy), IMF funding, consumer price index (CPI), gross domestic product (GDP) per capita, Gini index, military expenditures as a percentage of GDP, incidence of intrastate conflict, and polity.

3.1 Variable Description and Sources

This study uses a unique dataset and controls for the democracy level to test whether the results from previous studies hold, and democracy leads to less democide (Rummel, 2007, Kisangani and Nafziger, 2007).

The choice of independent variables in this research project is based on findings of prior research as well as hypothetical assumptions. (Please see Appendix A.)

3.2 Main Hypotheses

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[7] The dataset includes the following countries: Afghanistan, Algeria, Angola, Argentina, Bangladesh, Botswana, Brazil, Burma, Burundi, Cambodia, Central African Republic, Chad, Chile, China, Colombia, Congo, Cuba, Egypt, El Salvador, Ethiopia, Guatemala, India, Indonesia, Iran, Iraq, Israel, Kenya, Laos, Lebanon, Liberia, Madagascar, Mali, Morocco, Mexico, Nepal, Nicaragua, Nigeria, Pakistan, Paraguay, Philippines, Russia, Rwanda, Sierra Leone, Somalia, South Africa, Sri Lanka, Sudan, Syria, Togo, Turkey, Uganda, Venezuela, and Zimbabwe.

3.2.1 Conflict History

Empirical studies by Rummel (2007), Fein (1993) and Harff (1998) find that countries that have a history of conflict are more likely to commit democides. Auvinen and Nafziger (2002) while analyzing factors contributing to complex humanitarian emergencies (CHE) also find that countries with a history of conflict, such as Colombia, Burundi, and Rwanda, are more likely to have new conflict components of CHEs compared to other more peaceful countries (Auvinen and Nafziger, 1999). An intrastate conflict just like war provides a suitable environment, as well as a cover-up, for democide, concealing the monstrosities and, thus, preventing or at least delaying international intervention.

Genocide occurrences overlapping with civil war were happening in Sudan, Cambodia, Iraq, Rwanda and other countries.

Therefore my next hypothesis is as follows:

Hypothesis: Countries that have a history of conflicts in the past are more likely to have democides.

3.2.2 IMF Credits

Empirical studies by Rummel (2007), Fein (1993) and Harff (1998) find that countries that have a history of conflict are more likely to commit democides. Auvinen and Nafziger (2002) while analyzing factors contributing to complex humanitarian emergencies (CHE) also find that countries with a history of conflict, such as Colombia, Burundi, and Rwanda, are more likely to have new conflict components of CHEs compared to other more peaceful countries (Auvinen and Nafziger, 1999). An intrastate conflict just like war provides a suitable environment, as well as a cover-up, for democide, concealing the monstrosities and, thus, preventing or at least delaying international intervention.

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Therefore my next hypothesis is as follows:

Hypothesis: Countries that have a history of conflicts in the past are more likely to have democides.

3.2.3 GDP per Capita

Prior literature's findings on the relationship between GDP and democide are ambiguous. While some researchers find a linear negative relationship between democide and GDP per capita (Scully, 1997), others argue that there is an inverted U-shape relationship (Easterly, Gatti, and Kurlat, 2005). The majority of the studies find a negative relationship between democide and GDP per capita, showing that a higher GDP per capita reduces the likelihood for democide occurrences. This leads to the following hypothesis:

Hypothesis: The higher the living standards are in a country, the less likely the government is to involve in state killings.

3.2.4 Inflation

High inflation rates are common for less developed economies where the central bank is not independent from the government. To finance their expenditure programs these governments usually abuse their power and highly rely on central bank credits that result in high inflation rates. High inflation signals the presence of a strong centralized power. Thus, countries with high inflation rates are more likely to have governments that are used to abuse their power and are more likely to get involved in state killings.

Hypothesis: The higher the level of inflation, the more likely the democide.

3.2.5 Income Inequality

According to the cross-sectional study conducted by Alesina and Perotti (1996), which includes seventy one less developed and developing countries over the period 1960-1985, an increase in income inequality triggers an increase in sociopolitical instability resulting in domestic violence spurts, coups, mass murder, etc.

Auvinen and Nafziger (1999) also find that stagnation and income inequality contribute to humanitarian emergencies. Since democides and humanitarian emergencies frequently seem to have similarities in the environment that they occur in, could it be so that democides are also affected by the fluctuations in income inequality?

According to Toussaint, while a small part of the population grew richer, the majority of Rwandans lived below the threshold of absolute poverty. In 1982, ten percent of the wealthiest population controlled 20 percent of rural revenue. In 1992, their control grew to 41 percent and in 1994 just before the democide, it was already 51 percent. The gap between rich and poor was enormous. According to World Bank, astonishing estimate of 85 to 95 percent of Rwandans lived below the absolute poverty in 1996.

Hypothesis: Higher income inequality is likely to increase democides.

3.2.6 Military Expenditures

Auvinen and Nafziger (1999) state that, "Military resources are used to support authoritarian political structures, which are susceptible to violent and destructive forms of conflict". A number of existing studies include variables portraying military centrality and find these variables to be significant in affecting democide occurrences. A high military spending to GDP ratio has been chosen as a measure of military centrality for this study. In less developed

countries, a substantially large military spending commonly means a support of authoritarian structures and increases the probability of democides.

Historic evidence also proves that military spending proportionally increases before the democides. In South Africa, Chile, Cambodia, Rwanda and many other democide-exhibiting countries, military expenditures reached new heights just before the democide. For example in Rwanda, throughout a short period of time (1990-1992) military spending almost tripled and kept growing till the very eve of the tragic democide of unimaginable proportions of 1994.
This leads to the following hypothesis:

Hypothesis: Military spending is likely to increase democides.

3.2.7 Democracy

Prior research suggests that there is a positive relation between autocracy and democide. Fein (1993), Krain (1997), Harff (1998, 2003), and Valentino (2004) show that autocratic regimes commit genocides more often. In addition, Fein and Harff show that prior genocide in the same polity as well as country's autocracy level have a significant effect on state killings. Smith also agrees that "monopolization of power" has been the most frequent cause for genocide (Smith, 1999a).

According to Kisangani and Nafziger, "Democides are more likely to occur in societies where the state is weak and venal, and thus subject to extensive rent seeking, and omnipresent policy to obtain private benefit from public action and resources" (Kisangani and Nafziger, 2007). Rummel also shows that "democracy is the method of nonviolence" (Rummel, 2007).

Hypothesis: The more democratic a country is, the less likely it is to subject itself to democides.

The variable definitions and data sources are given in Appendix A.

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3.3 Descriptive Statistics

The descriptive statistics are provided in the table 3.1.

Table 3.1 Descriptive Statistics

Variable	Mean	Std. Dev.	Min	Max
Democide (number of people killed)	8,341	111,687.8	0	3,309,091
Democide (dummy)	0.22	0.42	0	1
IMF Funding (millions of dollars)	251.42	961.44	0	13,732
Incidents of Intrastate Violence (dummy)	0.37	0.48	0	1
CPI	54.93	398.27	-0.9	10,205
GDP per capita (thousands U.S. dollars)	1,519.5	2,351.52	56.5	18,363
Gini Index	44.49	10.37	28.9	63.4
Military Expenditures (% of GDP)	3.70	5.27	0.4	102.9
Polity (democracy indicator)	-1.88	6.37	-10	10

In my data the maximum number of people killed in democide was in Cambodia (3,309,091) in 1976. Russia was the recipient of the largest IMF funding of 13,732 millions U.S. dollars, during its financial crisis in 1998. The highest CPI was recorded in Nicaragua due to political economy of transition in 1988 and the lowest for Argentina in 2000. Israel had the highest GDP per capita in 2000 (18,363 thousands U.S. dollars), while Liberia had the lowest per capita income in 1995 (56.5) because of the Civil War that started in 1990. The highest income inequality, measured by Gini Index, was for Brazil (63.4), while the smallest was for Rwanda (28.9). In 1990 Nicaragua had incurred the largest military expenditures as a percentage of GDP of 102.9%; whereas Mexico annually spent only 0.4% of GDP on military expenditures each year from 1989 to 1991. Afghanistan (1960-1963), Iran (1960-1978), and Nepal (1960-1961) were the least democratic countries in the sample; whereas Israel was the most democratic during the years 1960-1966 and 1999-2001. Democide as an actual number of people killed has the largest standard deviation.

4. The Regression Results

I ran two sets of regressions to estimate the effects of independent variables on democide. In set one, the democide is taken as a dummy variable, and in set two the actual number of people killed is used. The existing research shows that massacres might cause "economic disruptions and drops of income" (Easterly et. al, 2005) suggesting that a reverse causality might create problems in such regressions (Banaian, 2001). Therefore, not only GDP per capita might influence democide, but democide might affect GDP per capita. We can not rule out the possible similar causality problem with other independent variables and the dependent variable. To avoid these problems, lagged independent variables are used instead of their contemporaneous values.

Multicolinearity is a rather common problem in this type of regressions. It needs to be routinely examined in each model. If present, it will produce results that lead to erroneous inferences with our hypothesis tests. To check for the multicolinearity the variance inflation factors (VIFs) were examined. The VIF could range from 1.0 to infinity. VIFs greater than 10.0 generally indicate severe multicolinearity. Tolerance (measured by 1/VIF) ranges from 0.0 to 1.0 (1.0 shows the absence of multicolinearity). In all of my regressions VIF was very close to 1.0, showing that there is no evident multicolinearity.

The correlation has also been tested. A correlation value can only range from -1 to +1, with 0 indicating no linear association and ±1 being a perfect linear association. The correlation value near zero, however, does not necessarily mean that there is no association between the variables whatsoever, but rather that there is no linear association. The correlation value for the regressions showed values close to zero indicating a non-existing or very weak existing linear correlation between the variables.

The results from xtlogit and xtprobit estimation of regression (1) where the dependent variable is a dummy are reported in Table 4.1.[8] The column one and three report the results where polity independent variable is omitted from the regression.

Table 4.1 Democide Dummy Dependent Variable: xtlogit and xtprobit Models

Variables	Xtlogit		Xtprobit	
Intercept	-2.627619* (1.605078)	-2.520797 (1.597734)	-1.136228 (.7687743)	-1.090496 (.770344)
Democide$_{t-1}$ (dummy)	1.011273*** (.1791857)	1.022394*** (.1796351)	.6742058*** (.1003894)	.6753911*** (.1004272)
IMF Funding$_{t-1}$	.1454579*** (.0506872)	.1398707*** (.0510339)	.0968121*** (.0257841)	.0910991*** (.0264905)
Incidence of Intrastate Conflict$_{t-1}$	.6610169*** (.1818079)	.6522507*** (.1812793)	.3524944*** (.0954808)	.3467714*** (.0956777)
CPI$_{t-1}$	.0001125 (.0003269)	.0001046 (.0003257)	.0000776 (.0001886)	.0000704 (.0001883)
GDP per Capita$_{t-1}$	.2226559** (.0894661)	.2080544*** (.090818)	.131654*** (.0449067)	.1219162*** (.046087)
GINI Index$_{t-1}$	-.3321312 (.4573212)	-.3267325 (.4536868)	-.314377 (.2214613)	-.3014415 (.2219334)
Military Expenditures as % of GDP$_{t-1}$	-.0453135 (.1046313)	-.0398773 (.1049108)	-.0448948 (.0571408)	-.0408951 (.0572868)
Polity$_{t-1}$		.0091505 (.0124599)		.0064661 (.0069105)
Log Likelihood	-500.69762	-500.42472	-501.85613	-501.41076
Chi square	80.89	82.50	126.98	127.83
N	1016	1016	1016	1016

*, **, ***, stand for p<0.10, p<0.05, and p<0.01 one tailed test. Standard errors are in parentheses.
Note: The following variables have been logged: IMF Funding$_{t-1}$, GDP per Capita$_{t-1}$, GINI Index $_{t-1}$, Military Expenditures per Capita $_{t-1}$.

Four of the eight independent variables included in the regressions were statistically significant in both xtlogit and xtprobit models. Democide in the previous year, IMF funding in the previous year, and incidence of intrastate conflict in the previous year were consistently significant at one percent significance level regardless whether polity variable was included or

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[8] The xtlogit and xtprobit estimation have been used since the presence of the dummy dependent variable means that the OLS estimation rule does not give a linear unbiased estimator.

not. GDP per capita also was statistically significant at one percent significance level in xtprobit regressions and xtlogit regression with polity. In xtlogit without polity the GDP per capita significance level dropped only slightly. Therefore, the results suggest that inclusion of polity, a democracy control variable, did not have a significant effect on these regressions. Polity was not statistically significant either.

The variable coefficients for democide in the previous year, IMF funding in the previous year, and incidence of intrastate conflict in the previous year have expected signs. The GDP per capita has a positive sign, implying that an increase in GDP per capita would increase the likelihood for democides. It contradicts Scully's findings whose study results show that an increase in per capita GDP leads to a decrease in democides. (Scully, 1997) However, it is common to other findings in literature presented by Kisangani and Nafziger (2007) and Easterly, Gatti, and Kurlat (2005) that portray economic development as a two-edged sword. On one hand, economic development increases the value of human life by promoting education and group tolerance while simultaneously enhancing labor productivity. On the other hand, it also boosts technological development making a mass murder less expensive.

The findings related to the history of conflict (democide in the previous year and incidence of intrastate conflict in the previous year) are also similar to extant research. Harff, Krain, Valentino, and Wayman and Tago research show that the history of conflict has a strong impact on democide occurrences.

Table 4.2 reports the fixed effect and random effect regression results where the dependent variable is the actual number of people killed by the government.

Table 4.2 Democide (actual number killed) Dependent Variable: Fixed and Random Effect Models

Variables	Fixed Effect		Random Effect	
Intercept	1.921413 (2.663463)	1.895851 (2.662934)	1.643324 (1.233718)	1.680384 (1.238008)
Democide$_{t-1}$ (dummy)	.7338966*** (.1711816)	.7479564*** (.1715419)	1.014879*** (.1646161)	1.01615*** (.1647191)
IMF Funding$_{t-1}$	-.0837667	-.093944	.0160112	.0121128

	(.0608692)	(.061442)	(.0416786)	(.0429142)
Incidence of Intrastate Conflict $_{t-1}$	1.032947*** (.2039153)	1.02166*** (.2040847)	.9880428*** (.1573785)	.9836475*** (.1578606)
CPI$_{t-1}$	.0002522 (.0003458)	.0002406 (.0003459)	.0002926 (.0003285)	.0002878 (.0003289)
GDP per Capita$_{t-1}$	.0877088 (.1646942)	.0917451 (.1646905)	.0623075 (.0730165)	.0562175 (.074749)
GINI Index$_{t-1}$	-.4021357 (.6774598)	-.3883252 (.6774012)	-.4105295 (.3465996)	-.4040841 (.3471523)
Military Expenditures as % of GDP$_{t-1}$	-.1246124 (.1003723)	-.1093714 (.1011479)	-.1572465* (.0933106)	-.1547549* (.0935753)
Politiy$_{t-1}$		.0166755 (.0138807)		.0043552 (.011341)
R square	0.0536	0.0550	0.0501	0.0507
Chi square for Hausman test (without Polity)	36.43			
Chi square for Hausman test (with Polity)	47.06			
N	1016	1016	1016	1016

*, **, ***, stand for p<0.10, p<0.05, and p<0.01 one tailed test. Standard errors are in parentheses.

Note: The following variables have been logged: Dependent Variable, IMF Funding$_{t-1}$, GDP per Capita$_{t-1}$, GINI Index $_{t-1}$, Military expenditures as a percentage of GDP$_{t-1}$.

In both fixed and random effect models, the democide in the previous year and incidence of intrastate conflict in the previous year were consistently statistically significant at one percent significance level regardless whether polity variable was included or not. The positive signs are also expected. The Housman test suggests that the null hypothesis (Null hypothesis: coefficients estimated by random effects estimator are the same as those estimated by the fixed effects) can not be rejected, therefore, it is safe to use the results from more efficient random effect regression. In addition, random effect model suggests that military expenditures as a percentage of GDP in the previous year are significant at ten percent level. Surprisingly, the sign for military expenditures is negative, suggesting that the higher military expenditures are associated with the smaller number of state killings by the government. Just like GDP per capita, military centrality might also have a double nature. On one hand, high military expenditures might signal the

presence of a powerful government that is able to protect its citizens. On the other hand, however, this exclusive authority that is assured by deadly weapon possession might increase the likelihood that the government might abuse their power and direct it towards its own citizens whenever it inclines. The regression results are inconsistent with the hypothesis that military spending is likely to increase democides.

Table 4.3 Democide Dummy Dependent Variable: xtlogit and xtprobit Models*

Variables	Xtlogit		Xtprobit	
Intercept	-3.413804 (2.06414)	-3.313487 (2.020123)	-1.941859 (1.18184)	-1.888657 (1.154459)
Democide$_{t-1}$ (dummy)	1.060304*** (.1808239)	1.089673*** (.182283)	.6341677*** (.1070505)	.6514244*** (.1079672)
IMF Funding/GDP$_{t-1}$	-.0227949 (.0537375)	-.0299402 (.053459)	-.013347 (.0309251)	-.0178744 (.0307232)
Incidence of Intrastate Conflict$_{t-1}$	.7448151*** (.1985831)	.7124159*** (.1970605)	.427729*** (.1142331)	.4082043*** (.1135732)
CPI$_{t-1}$	.0001187 (.0003401)	.0001042 (.0003367)	.0000644 (.0002052)	.000055 (.0002034)
GDP Squared$_{t-1}$	.0183207 (.0578731)	.0081426 (.0559288)	.0114443 (.032756)	.0052116 (.0318098)
GINI Index$_{t-1}$	.2363565 (.5242229)	.2155934 (.511511)	.1207952 (.2987459)	.1091111 (.2912216)
Military Expenditures as % of GDP$_{t-1}$	-.0543263 (.1040994)	-.0433757 (.1044081)	-.0403296 (-.0403296)	-.0332894 (.0594785)
Polity$_{t-1}$		.0199873 (.014066)		.0118709 (.0081873)
Log Likelihood	-498.59081	-497.54619	-498.32782	-497.25943
Chi square	57.60	60.66	59.14	62.41
N	1014	1014	1014	1014

*, **, ***, stand for $p<0.10$, $p<0.05$, and $p<0.01$ one tailed test. Standard errors are in parentheses.

Note: The following variables have been logged: IMF Funding$_{t-1}$, GDP per Capita$_{t-1}$, GINI Index $_{t-1}$, Military Expenditures per Capita $_{t-1}$.

When IMF variable is replaced by IMF as a percentage of GDP and GDP per capita variable is replaced by a squared GDP under the assumption of the potential existence of non-

linear relationship between democide and gross domestic product, only two independent variables remain statistically significant in both xtlogit and xtprobit models. Both democide in the previous year and incidence of intrastate conflict in the previous year are consistently significant at one percent significance level regardless whether polity variable is included or not. Therefore, the results in this test also suggest that inclusion of polity, a democracy control variable, does not have a significant effect on these regressions. Here, just like in the previous tests, polity is also not statistically significant. (Table 4.3)

The variable coefficients for democide in the previous year and incidence of intrastate conflict in the previous year have expected positive signs.

Just like in the previous set of regressions, the findings related to the history of conflict (democide in the previous year and incidence of intrastate conflict in the previous year) are also similar to extant research. Harff, Krain, Valentino, and Wayman and Tago research show that the history of conflict has a strong impact on democide occurrences. (Table 4.3)

Table 4.4 Democide (actual number killed) Dependent Variable: Fixed and Random Effect Models*

Variables	Fixed Effect		Random Effect	
Intercept	.0814357	-.0558984	.7610861	.7539456
	(2.517211)	(2.519663)	(1.458761)	(1.457875)
Democide$_{t-1}$ (dummy)	.8379131***	.8506484***	1.133899***	1.128206***
	(.1666966)	(.1670407)	(.1584292)	(.1583779)
IMF Funding/GDP$_{t-1}$	-.0572531	-.0642451	-.0297126	-.0352588
	(.053747)	(.0540845)	(.0436705)	(.0438012)
Incidence of Intrastate Conflict$_{t-1}$	.9894135***	.9780927***	.9033359***	.8836439***
	(.1986191)	(.1988332)	(.152175)	(.1526512)
CPI$_{t-1}$	.0000941	.0000791	.0002449	.0002155
	(.0003408)	(.000341)	(.0003219)	(.0003223)
GDP Squared$_{t-1}$	-.0804678	-.0840013	-.0116655	-.0271316
	(.0777693)	(.077818)	(.0368908)	(.0382925)
GINI Index$_{t-1}$	.0944031	.110977	-.1874038	-.154953
	(.6372368)	(.6372982)	(.3382043)	(.3386934)
Military Expenditures as % of GDP$_{t-1}$	-.0546774	-.042837	-.0940022	-.0822244
	(.0963269)	(.0968655)	(.0893224)	(.0896148)
Politiy$_{t-1}$		.0154458		.0161088
		(.0134973)		(.0107767)

R square	0.0916	0.0953	0.0995	0.1015
Chi square for Hausman test (without Polity)	38.00			
Chi square for Hausman test (with Polity)	40.64			
N	1014	1014	1014	1014

*, **, ***, stand for p<0.10, p<0.05, and p<0.01 one tailed test. Standard errors are in parentheses.
Note: The following variables have been logged: IMF Funding$_{t-1}$, GDP per Capita$_{t-1}$, GINI Index $_{t-1}$, Military Expenditures per Capita$_{t-1}$.

Table 4.4 reports the fixed effect and random effect regression results where the dependent variable is the actual number of people killed by the government.   Here also IMF variable is replaced by IMF as a percentage of GDP and GDP per capita variable is replaced by a squared GDP.

Just like in the table 4.2, here also the results of both fixed and random effect models, portray democide in the previous year and incidence of intrastate conflict in the previous year as consistently statistically significant at one percent significance level, regardless whether polity variable is included or not. Both democide in the previous year and incidence of intrastate conflict in the previous year have expected positive signs.

5.   Research Challenges

The lack of freedom of speech and free press in most of the less developed countries create several potential challenges for the researchers. First and foremost, the reliability of the democide data is very shady. Totalitarian and undemocratic regimes in the less developed or even developing countries might be inclined to report misleadingly reduced death totals, or even try to conceal such events as a whole. Therefore, choosing the most reliable sources and avoiding the biases is of a crucial importance since the data itself are already noisy. Reliance on multiple sources and comparative statistics, however, helps to build a more reliable dataset. This study not only relies on both Facts on File reported statistics and Marshall and Gurr's (Marshall and Gurr, 2005) data, but also considers Rummel's personal democide data (Rummel, 2007), as well as Gregory Stanton (Stanton, 2006) and Barbara Harff's (Harff, 2004) death statistics. The biggest challenge was to convert the period based, often segmented (e.g. only politicide, or only genocide) data to a cross-sectional time-series. Here comparison was very handy. Facts on File (FOF) sometimes provided a range, instead of a single number. That created another challenge. The strategy was to rely on the objectivity of the small numbers and to question the large ones. In other words, in case of single to double figure death total numbers, the average seemed as an optimal solution; whereas, choosing the high-end death total seemed more appropriate for the three and above figure totals. Moreover, the preference was given to Marshall and Gurr period statistics (if any), where M&G death totals were distributed according to FOF proportions.

Missing data was another challenge. Researchers are struggling with poor LDC statistics for decades. This study was not an exception. Amelia, the software program by Harvard

Professor Gary King, specifically developed to assist researchers in filling in the missing values, appeared as a versatile solution (King, 2007). However, even with Amelia's help, certain countries with super poor data had to be eliminated.

Yugoslavia, before and after the breakup, originally was also included in the dataset. However, as the war and democide were taking place simultaneously, it made it very difficult to differentiate war and democide casualties as well. Major Dulic's critique for Rummel was also regarding the misleading Yugoslavia democide statistics. Therefore, Yugoslavia phenomenon was perceived as an Achilles' heel. Although, democides in former Yugoslavia undoubtedly happened, the data is so highly debatable and unreliable, that not to include it into the dataset seemed to be a better alternative.

6. Concluding Remarks

This study builds on existing literature on democide using a yearly data for fifty three developing and less-developed countries from 1960 to 2001 and tests whether economic and social factors such as gross domestic product, IMF funding, income inequality, inflation, conflict history and democracy play an important role in influencing democide occurrences. The study results using the democide as a dummy variable in both probit and logit regressions are consistent with the prior literature and suggest that conflict history, and GDP per capita are statistically significant. In addition, this study also reveals that an increase in IMF funding in the previous year can potentially lead to an increase in democides. In contrast to several previous studies, however, controlling for democracy including a polity variable to the model does not have a significant effect on my regressions. Polity is not statistically significant either.

The history of conflict remains statistically significant at one percent significance level in both fixed and random effect models using democide variable as an actual number of people killed regardless whether polity variable is included or not. Military expenditures also appeared to be statistically significant at ten percent level. Unexpectedly, the sign for military expenditures is negative, suggesting that the higher military expenditures are associated with the smaller number of state killings by the government.

Even when IMF variable is replaced by IMF as a percentage of GDP and GDP per capita variable is replaced by a squared GDP under the assumption of the potential existence of non-linear relationship between democide and gross domestic product, democide in the previous

year and incidence of intrastate conflict in the previous year are consistently significant at one percent significance level in logit, probit, fixed, and random effect models.

The results of this study suggest a strong need for further research to determine the effects of various social and economic factors on democide. Given the vital importance of the topic and the nature of democide itself, the area of this research should be prioritized and encouraged by the international organizations. The contribution to saving lives is a reward in itself. Therefore, the world economists, international organizations, as well as countries all over the world should unite in the fight against these crimes against humanity (such as democide) and come up with the ultimate solutions to detect the warning signals, take proactive measures, and in case of democide occurrences, provide reliable casualty statistics, and bring the guilty to justice.

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Appendix A - Definitions and Sources of the Variables

Democide

The actual democide values are taken from Facts on File (FOF). The mean is chosen for small ranges. For large numbers, however, the data is taken from Gurr, (Marshall and Gurr, 2005) and proportioned according to the percentage from FOF. The rationale for such a decision is based on an assumption that small numbers of people killed are more likely to be true as it is less difficult for the governments to conceal it entirely. While the truth about the larger death total is more likely to resurface, and therefore, the higher value in the range is more likely to be true. I do not claim that this FOF data is more accurate than any other existing democide data. I am hopeful, however, that by being random it is unbiased and able to provide another perspective for the democide research.

The term democide including the data of democide collected from FOF in this study has been used in compliance with the definition provided by Rummel (2007):

> "*Democide* is any actions by government:
>
> (1) designed to kill or cause the death of people
> (1.1) because of their religion, race, language, ethnicity, national origin, class, politics, speech, actions construed as opposing the government or wrecking social policy, or by virtue of their relationship to such people;
> (1.2) in order to fulfill a quota or requisition system;
> (1.3) in furtherance of a system of forced labor or enslavement;
> (1.4) by massacre;
> (1.5) through imposition of lethal living conditions;
> (1.6) by directly targeting noncombatants during a war or violent conflict.
>
> (2) that cause death by virtue of an intentionally or knowingly reckless and depraved disregard for life (which constitutes *practical* intentionality), as in

(2.1) deadly prison, concentration camp, forced labor, prisoner of war, or recruit camp conditions;

(2.2) killing medical or scientific experiments on humans;

(2.3) torture or beatings;

(2.4) encouraged or condoned murder, or rape, looting, and pillage during which people are killed;

(2.5) a famine or epidemic during which government authorities withhold aid, or knowingly act in a way to make it more deadly;

(2.6) forced deportations and expulsions causing deaths.

(3) with the following qualifications and clarifications:

(a) "government" includes de facto governance, as by the Communist Party of the People's Republic of China; or by a rebel or warlord army over a region and population it has conquered, as by the brief rule of Moslem Turks (East Turkistan Republic) over part of Sinkiang Province (1944-1946);

(b) "actions by governments" comprise official or authoritative actions by government officials, including the police, military, or secret service; or such non-governmental actions (e.g., by brigands, press-gangs, or secret societies) receiving government approval, aid, or acceptance;

(c) clause 1.1 includes, for example, directly targeting noncombatants during a war or violent conflict out of hatred or revenge, or to depopulate an enemy region or terrorize or force the population into urging surrender; this would involve, among other actions, indiscriminate urban bombing or shelling, or blockades that cause mass starvation;

(d) "relationship to such people" (clause 1.1) includes their relatives, colleagues, co-workers, teachers, or students;

(e) "massacre" (clause 1.4) includes the mass killing of prisoners of war or of captured rebels;

(f) "quota" system (clause 1.3) includes randomly selecting people for execution in order to meet a quota; or arresting people according to a quota, some of whom are then executed;

(g) "requisition" system (clause 1.3) includes taking from peasants or farmers all their food and produce, leaving them to starve to death;

(h) and excluding from the definition:

(h.1) execution for what are internationally considered capital crimes, such as murder, rape, spying, treason, and the like, so long as evidence does not exist that such allegations were invented by the government in order to execute the accused;

(h.2) actions taken against armed civilians during mob action or a riot (e.g., killing people with weapons in their hands is not democide);

(h.3) the death of noncombatants killed during attacks on military targets so long as the primary target is military (e.g., during bombing enemy logistics)".

IMF Funding is the funding provided by International Monetary Fund with intentions to foster economic growth and high levels of employment by providing temporary financial assistance to countries to help ease balance of payments adjustment. IMF is measured in millions of U.S. dollars. The data for IMF funding was obtained from IMF CD-ROM, 2005.

Incidence of Intrastate Conflict, a dummy variable, coded 1 in all country years with at least one active conflict (UCDP/PRIO, 2006)

Inflation is measured by Consumer Price Index (CPI) which is a measure of the average change in prices over time in a fixed market basket of goods and services typically purchased by consumers. CPI is measured as an annual percentage change in price level. The data for CPI was sourced from WB CD-ROM, 2006.

Gross Domestic Product (per capita) is the market value of all final goods and services produced within a country in a given period of time equal to total consumer, investment and government spending, plus the value of exports, minus the value of imports divided by the number of country's population. GDP per capita is often used as an indicator of standard of living in an economy. It is real GDP measured in 2000 constant US dollars. The data was obtained from WB CD-ROM, 2006.

Income Inequality is measured by Gini Index which measures the extent to which the distribution of income (or in some cases consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. A Gini index is a score between zero and one. The score of zero implies perfect equality while a score of one implies perfect inequality. Source: WB CD-ROM, 2006.

Military Expenditures as a percentage of GDP

The data for the military expenditures as a percentage of GDP was gathered from the World Bank WB CD-ROM, 2006.

Democracy is measured by the polity variable – which ranges from -10 to 10 (-10 = high autocracy; 10 = high democracy). Combined polity score is computed by subtracting AUTOC

from DEMOC; normal range polity scores are imputed for coded "-77" and "-88" special polity conditions, polities coded "-66" on the POLITY variable are left blank.

Data source: (CIDCM, 2007).