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When Words Are Worse Than Bullets: a Study of Corruption as an Unintended Consequence of Threats of Sanctions

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WHEN WORDS ARE WORSE THAN BULLETS: A STUDY OF CORRUPTION AS
AN UNINTENDED CONSEQUENCE OF THREATS OF SANCTIONS

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Arts

By

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I HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER MY SUPERVISION BY <u>Aleksei Balanov</u> ENTITLED <u>When Words are Worse Than Bullets: A Study of Corruption as an Unintended Consequence of Threats of Sanctions</u> BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF <u>Master of Arts</u>

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ABSTRACT

Balanov, Aleksei. M.A. Department of Political Science, Wright State University, 2017. When Words are Worse Than Bullets: A Study of Corruption as an Unintended Consequence of Threats of Sanctions.

This research contributes to the debates on the efficacy of economic sanctions as a tool of international diplomacy. It focuses on corruption, one of the potential unintended consequences of sanctions. Using multiple regression on a custom cross-sectional time series dataset of more than a thousand observations, this research finds the correlation between threats of sanctions and level of corruption statistically significant. The model suggests each new round of threats translates into a 1.25% increase in corruption for relatively clean states and a 5% increase for already corrupt states. The resulting policy implications are examined in this thesis.

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I. INTRODUCTION

The resolution of World War II defined the global political agenda for many years to come. With only a short break after World War I, World War II involved 30 countries and took the lives of up to 85 million people, nearly erasing Eastern Europe from the face of the Earth. Undoubtedly, humanity could not afford another turn of this vicious circle.

The desire to avoid a repeat crystallized in the establishment of the United Nations, an international institution promoting peace and security. Being a member means tolerating armed conflicts only in self-defense or by a consensus decision. This proved to be successful: seven decades under the banner of the United Nations made inter-state wars close to unthinkable. However, this does not mean all conflicts are solved and all disputes are settled. Modern politicians embrace the same old principles and pursue the same old goals – it is their policy toolbox that has changed.

Within this toolbox, a salient place is occupied by sanctions. Whenever countries feel the need to threaten other countries, chances are the threats will be of economic and diplomatic measures. Unlike wars, sanctions allow extending political demands and "punishing" for non-compliance without the use of military. Instead of brute force, they rely on economic power; instead of causing deaths, they overwhelm annual budgets; instead of bayoneting to obey, they create political pressures. It is a centuries-old principle of inducing fear to coerce an outcome, but in its modern, "civilized" iteration. It

is no surprise that in the United Nations era, sanctions have significantly increased in popularity.

The natural question of efficacy, however, remains a subject of academic debates. Some scholars argue that sanctions may be an answer to certain challenges of the modern world. They point out the well-known successful cases and emphasize the fact that sanctions helped resolve otherwise desperate diplomatic conundrums (Baldwin, 1985; Nossal, 1989; Rogers, 1996; Kaempfer & Lowenberg, 1992; von Soest & Wahman, 2014; etc.). Others concentrate on the history of fiascos, which, depending on the definitions and methods of measurement, can significantly outnumber the successes (Pape, 1997; Bapat, Morgan, & Kobayashi, 2014). Scholars warn against hasty decision-making as sanctions convey economic, diplomatic and social risks.

Disagreements between "sanctions optimists" and "sanctions pessimists" helped create a rather rich picture of the subject. Today, the academic world has sufficient knowledge to help policy makers improve the odds of success. In their comprehensive dataset, Bapat, Morgan, and Kobayashi (2014) list over 50 variables that throughout the years have been argued to affect the outcomes of sanctions: relations between the sender and the target, "smart" design, democratic development, participation of international institutions, involvement of third-parties, and many more.

At the same time, whether sanctions work (or how to make them work better), is not the only debate we should be having. Sanctions deal with delicate economic and social matters. To reach their goals, they must trigger an elaborate chain of interdependent events: between imposing and lifting sanctions (successfully or unsuccessfully), there is a myriad of reactions, interpretations, and decisions to be made

by individuals, interest groups and elites. We cannot assume that the best outcome of this complicated process is a compliance with the demands while the worst is a simple removal of sanctions without political gains, and the goal is to predict where in between the two a particular case will end.

Things can go wrong at many levels, actors can react in unpredicted ways, which can lead to tangible unintended consequences. Most would be negligible, but some may turn out significant. Studying and consequently including this into the decision-making should become an important part of the mentioned debates.

The world of possible unintended consequences is vast – where does one begin? Several researchers (Heine-Ellison, 2001; Andreas, 2005; Radu, Sabau, Sendroiu, & Pete, 2015; Kamali, Mashayekh, & Jandaghi, 2016) suggest that the economic nature of sanctions coincides with the economic side of corruption, putting the latter at the vanguard of investigation.

What is corruption? A "disease, a cancer" (Amundsen, 1999), a "first-line threat" (Radu, Sabau, Sendroiu, & Pete, 2015), "one of the greatest challenges of the contemporary world" (Transparency International) – even in tactful scholarly circles, corruption has earned some colorful metaphors. Naturally, not everything about it is black and white: not all shady deals destroy economies and not every bribe is of bad intentions – after all, corruption is just another type of social interaction and therefore a part of life. However, the prevailing view on it is negative: there is no place for corruption in the 21st century.

In its most basic terms, corruption includes five universally recognizable socio-economic practices: bribery, embezzlement, fraud, extortion, and favoritism. Each can

assume an infinite number of forms and variations depending on local cultures and legal systems.

Briberies involve sharing resources in exchange for favors. They are commonly known as kickbacks, pay-offs or grease money: an actor pays for a favorable decision that otherwise would have been disadvantageous. The essence of the action is to "win" an otherwise lost cause.

Embezzlement is misappropriation of resources gathered for public needs: an official responsible for a hunger program takes food home instead of sending off to soup kitchens. Consensual dispossession is what differs it from a simple theft: there is a gap, in which a resource is already not private, but has not yet been converted into a public service. An embezzler takes advantage of the gap.

Fraud involves deceptive persuasion to share resources: "governments importing toxic and atomic waste from Western countries, presidents who have printed large amounts of national bank notes to pay civil servants and military men, and state or parastatal institutions that have persuaded private firms to give them loans, assistance and services that will never be paid back" (Amundsen, 1999, p. 12). Once again, consensual dispossession is what distinguishes it from a simple criminal activity, but in this case due to purposeful misinformation.

Extortion is extraction of resources by coercion: an actor uses coercive powers to pressure or threaten a party to share resources. This is most common in the form of "protection," "security money," or blackmail. Again, sharing of resources is by consent, which, in this case, is induced by the sense of insecurity. The worst forms of extortion use state coercive powers.

Favoritism is an extreme form of bias in redistribution of powers and resources. It involves granting offices or benefits to friends and relatives regardless of skills and expertise.

All the listed have one important thing in common: the beholder's sense of unfairness. It originates from the understanding that should the said practices not be involved, the competitive situations would have been resolved differently, in a more meritocratic manner. In other words, corruption is recognized in cases where the basic principles of competition were artificially distorted, essentially converting losers into winners and vice versa.

It is important to understand, however, that corruption is a product of free market just as much as it is a threat to it. It is not uncommon for corruption itself to form a market of its own. Some countries are notorious for competitive bribery and government positions bidding. The situation sometimes evolves into an environment where a simple payment for a political favor is not enough – a businessman must be diverse, inventive, and elaborate in his attempts to court a state official. This led some researchers to argue that just like the state restricts capitalism to take care of the poor, corruption can serve as an equalizer in certain types of economies (Dzhumashev, 2014).

The rest of its effects and costs on politics, economies, and societies, however, are strictly negative. It has been found to cap growth (Mauro, 1995; Mo, 2001; Tanzi & Davoodi, 2002), dampen investment, domestic (Brunetti, Kisunko, & Weder, 1998; Campos, Lien, & Pradhan, 1999; Mauro, 1996) as well as foreign (Abed & Davoodi, 2002; Wei, 2000), reduce productivity (Lambsdorff, 2003), misbalance inflation (Al-Marhubi, 2000), catalyze "grey" sectors of the economy (Friedman, Johnson, Kaufmann,

& Zoido-Lobaton, 2000; Johnson, Kaufmann, & Shleifer, 1997; Schneider, Buehn, & Montenegro, 2010), and decrease spending on social projects (Mauro, 1998) mostly hurting the poor (Justesen & Bjornskov, 2014). On the entrepreneur level, corruption can adversely affect innovation (Lau, Yang, Zhang, and Leung, 2015) and small to medium firms' performance (Van Vu, Tran, Van Nguyen, and Lim, 2016). Zelekha and Sharabi (2012) systemize the known consequences as follows:

- Distortions in the allocation of resources in the economy

- Increased uncertainty in decision making

- Degradation of the legal mechanisms

- Loss of leadership

- Reduced marginal productivity

- Increased inequality in the distribution of income

- Effect on the small business sector

The list does not end with domestic affairs. Anderson and Stansfield (Anderson & Stansfield, 2005) show how the UN-sanctioned international embargo against Ba'athist Iraq helped create corruption schemes of dramatic proportions: "the black market was, by some distance, the most dynamic sector of the Iraqi economy" (p. 98). Eventually, the situation progressed to a state in which the very survival of the regime depended on illegal trade with neighbors. With the introduction of the Oil-for-Food Program, not necessarily by design, but due to economic and social compensative mechanisms, one highly corrupt country dragged into its shady business a whole body of other beneficiaries from Libya, India, Indonesia, Myanmar, Russia, Egypt, France, Canada,

Brazil, and more. Evidently, from a certain point of severity, domestic corruption can affect international affairs, making already complicated cases worse.

This makes corruption an important topic of interest and a crucial object of study. The 30 years of scholarly debates have uncovered a lot in regards to why and how it is bad. However, scholars have only begun to understand its sources and whether it can be linked to external factors. Logically, economic sanctions with their economy-damaging nature could have an effect (Kamali, Mashayekh, & Jandaghi, 2016). At the same time, sanctions do not have to be applied to reach their political goals (Morgan, Bapat, & Kobayashi, 2014); threatening sanctions, just like threatening a war, sometimes is enough for the target to be subdued. Could threats of sanctions be enough to affect targets' corruption?

II. ANALYTICAL CHALLENGES OF STUDYING CORRUPTION IN THE CONTEXT OF EXTERNAL ECONOMIC PRESSURES

Corruption is a broad and complex topic. Even within a single country, the way society understands and tolerates corruption can radically differ. As Peters and Welch (1978) point out, "what may be 'corrupt' to one citizen, scholar, or public official is 'just politics' to another, or 'indiscretion' to a third" (p. 974). So, when it comes to cross-country comparisons, defining the problem can be more challenging than solving it.

An example of this is Russian "administrative resource," which describes the state-driven capabilities of regional bureaucrats to pressure political opponents. It took no less than a book (Wilson, 2005) to introduce it to the West. The challenge was within the strikingly similar practice in Western democracies called lobbying, which is generally perceived as legal and healthy. It took an effort to describe how a legitimate career path in one part of the world is criminal in the other.

There are other examples: "guanxi" and grey areas between public and private in China (Johnston, 1997), "neopopulist" leaders with support bases built by mass media in Latin America (Weyland, 1998), "wasta" in the Middle Eastern societies (Barnett, Yandle, & Naufal, 2011), grey economies in transitional post-Soviet states (Johnson, Kaufman, & Shleifer, 1997), "legal" corruption in G7 members (Kaufmann & Vicente, Legal Corruption, 2005), etc. How could one study something this diverse?

Over the years, scholars have come up with two ways to approach corruption in its variety. One is through frameworks. It first appeared as a way to coordinate research: many well-known early publications (cf. Rundquist et al., 1977; Scoble, 1973; Gardiner 1970, Berg et al., 1976) focused on interrelated topics, but in terms of methodology and policy implications were very disjointed from each other. To address this, Peters & Welch (1978) suggested systemizing the available knowledge by aspects of legality, public interest, and public opinion.

They wanted to illustrate how a more systematic outlook can help advance research and provided their own framework as an example. The idea was to define corruption "by its four components: the donor, the favor, the public official and the payoff" (p. 974). All four could be separately conceptualized and identified allowing for better selection and comparisons. Slight variations of this framework are used to this day.

Another approach is modular. It stems from a widespread definition, which throughout the years has had a life of its own. It first appeared as "behavior which deviates from the formal duties of a public role because of private-regarding pecuniary or status gains; or violates rules against the exercise of certain types of private-regarding influence" (Nye, 1967). After a few iterations, it got distilled down to "abuse of public power and influence for private ends" (Waterbury, 1973) and "illegitimate use of public power to benefit a private interest" (Morris, 1991). From that point, researchers started using it as a basis for filling in options to fit their agendas. For example, Neild (2002) added more precision: "the breaking by public persons, for the sake of private financial or political gain, of the rules of conduct in public affairs prevailing in a society in the period under consideration". Transparency International included a perceptional edge: "abuse of

entrusted power for private gain." Senior (2006) tried to reach beyond the private sector: "covertly gives a favour to a corruptee or to a nominee to influence action(s) that benefit the corruptor or a nominee, and for which the corruptee has authority."

Within this approach, studies that strive for higher case coverage stay with the basic version and are typically criticized for a rather generic and westernized approach. Indeed, Russian administrative resource is not exactly about private gains and Chinese grey economy is not driven by state powers. However, this is an inevitable trade-off for those who choose to use statistics, which has become a popular trend in the recent years.

The 30 years of scholarly debates did not clear up the field's basic concepts. Earlier works tend to be overcomplicated with details (Peters & Welch, 1978); recent ones breeze through, if not avoid clear definitions (Senior, 2006). There seems to be a common assumption that readers are aware of the early debates and would rather agree on a widespread generic. This is a problem as well as a solution (Senior, 2006; Choi, 2007; Kalantari, 2010). Perhaps, there is no better way to assess the situation than to call it a pursuit of the Holy Grail: "endless, exhausting and ultimately futile" – since "corruption, like beauty, is in the eye of the beholder" (Williams, 1976).

Pragmatically speaking, it may be for the best. Modern studies on corruption benefit from this lack of uncontested definitions. Instead of concentrating on a handful of well-defined cases, researchers take big data on corruption and juxtapose it against even bigger economic data. It does not lead to as deep of an understanding of underlying mechanisms, but the resulting implications are real-world policy recommendations, applicable in the West as well as in the East. It is important to understand, however, that the knowledge generated this way has limits. What we are looking for are causes of

corruption, but what we are finding are "factors that increase the possibility of its occurrence" (Kalantari, 2010).

As basic concepts remain contested, so do many theories, which lose or gain significance with slightly different definitions. Serra (2006) mentions how La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997, 1999) highlight legal system and religious affiliation as explanations for corruption – while Adser`a, Boix and Payne (2000) find the same variables insignificant compared to government accountability, supported by Brunetti and Weder's (2001) idea of free press in a democratic environment. Ades and Di Tella (1999) claims openness to foreign trade an important factor, which is confirmed by Leide and Weidmann (1999), but Treisman (2000) finds trade to be insignificant if controlled for development and uninterrupted democracy. Persson, Tabellini and Trebbi (2003) illustrate how electoral rules can curb corruption through accountability – but Adser`a, Boix and Payne (2003) counter the notion with their statistically insignificant control proportional representation. The idea that decentralization affects rent-seeking and thus decreases corruption also has been confirmed by Fisman & Gatti (2000) and later contested by Treisman (2000) in his all-inclusive study.

A big share of the literature revolves around a notorious correlation between corruption and economic underdevelopment, which implies rich countries are usually clean while poor countries are corrupt. This correlation is sometimes referred to as "some correlation" (Serra, 2006), sometimes as "strong and unambiguous" (Amundsen, 1999, p. 15). It has been touched on by numerous academic and mass media publications, yet there is still no consensus on what causes what and how.

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This insight, however, serves as a good starting point. The assumption is that corruption and economic underdevelopment are related through the realm of politics. If so, one needs to consider all three, decompose into variables and trace the ones linked to each other. Such an outlook calls for rational choice and structure paradigms with mid- to high-N case selection.

Within this outlook, research revolves around competition, information, and control. A recurring argument, for example, is that corruption is an inherent trait of a rentier state. That is, corruption is generated by the lack of competition, which can be a result of poor control (Laffont & N'Guessan, 2001) and reverse incentives (Svensson, 1999). All of these are common in the states relying heavily on narrow sources of revenue that can be redistributed by elites for political gains (Ades & Di Tella, 1999), hence rentier states.

Another idea is that macroeconomic factors can affect corruption. This is intriguing since the macro-economy can be controlled to an extent by governments, which implies simple and effective remedy recommendations. However, direct causal links have not been found so far. A very promising work suggested not inflation itself, but a high inflation variability creates a thriving environment for corruption (Braun & Di Tella, 2004). However, by high inflation variability this research meant the one typical for the third world countries, who are simply not able to control it. Consequently, the policy recommendation that follows logically from this – that governments manage inflation – is irrelevant for most of them.

Among political factors, a lot revolves around what makes a political system balanced, mature and more democratic. As such, Rajeev and Nelson (1998) showed that

merely the size of the public sector along with its structure of expenses can be enough to explain an accompanying corruption. The same can be said about over-accumulation of discretionary powers (Johnson, Kaufmann, & Zoido-Lobaton, 1998). Johnston (1997) demonstrates how a misalignment between the political and economic sides of a reform, when one outruns the other, can trigger corruption. If not reforms, or political actions in general, then the environment in which they have been taken can be responsible for the increased corruption. Poorly designed anti-corruption efforts aimed at that, which is not significant in a particular case, are inefficient at best and are likely to discredit the mere concept of war against corruption, ruining the chances of success (Quah, 1999). If the elites are not ready, "stringent and unwelcomed organizational changes may generate significant pockets of resistance among the rank and file" (Fleming & Lafferty, 2000, p. 163). Industrial politics themselves can also cause some extra corruption (Ades & Di Tella, 1997).

Another commonly held assumption is that corruption is negatively correlated with the level of democracy (Friedrich, 1993). Democratic institutions increase control and competition and therefore reduce corruption. However, this also may be a case of misinterpretation. In the modern world, most of the democratic countries turn out to also be a part of the rich West (another notorious insight), which, as discussed above, negatively correlates with corruption. Johnston & Hao (1995) discuss how this may be a self-fulfilling prophecy, nonetheless admiring the corruption-deterring mechanisms built into democracies. A different angle is offered by Weyland (1998), who agrees that democracies themselves may be inherently clean, but democratization could be inherently corrupt, which can be illustrated with Latin American "neopolulist" leaders. The latest

take on this belongs to Serra (2006), who confirmed Treisman's (2000) theory that not democratic development itself, but a prolonged exposure to democracy (50 years) creates a cleaner environment.

In fact, the second insight has inspired an entire branch of research of its own. The driving assumption implies that among the many historical, religious, ethnic, gender, and other features, there are ones that can predetermine whether a country is destined to be corrupt. Unlike structural and rational choice paradigms, this cultural approach focuses on practice rather than concepts.

An interesting revelation within this approach is how westernized it really is. It was not always clear that what in the West has been defined as the remains of a medieval, economy-restricting practice, in the East can still be "socially embedded in 'logics' of negotiation, gift-giving, solidarity, predatory authority and redistributive accumulation" (de Sardan, 1999) and essentially be a part of the cultural code. Understanding this "may explain the contrast between Africa and Europe, and the differences between the catholic Western European countries with a 'Latin' culture and the Nordic, protestant countries" (Amundsen, 1999).

In fact, the differences in how corruption is perceived in various parts of the world and if it is at all recognized as corruption, could be among the main suspects. In his comprehensive survey, Heidenheimer gathered evidence from available works of economic, cultural, and even linguistic perspectives to come to an intriguing conclusion that corruption, at least in certain Asian and African countries, could be merely a "result of globalization, the spread of democracy, and major scandals and reform initiatives" (Heidenheimer, 1978). Surely, there is a certain element of time context and bias to the

argument – but more recent works (Johnson, Kaufman, & Shleifer, 1997) show that at least partially the argument holds even when using modern, more sophisticated, research methods.

Recent works have been more inclusive and less grounded in paradigms. Treisman (2000) successfully tested a combination of rather unsystematic factors – the Protestant tradition, a history of British rule, a developed economy, high imports, a federal state, and long exposure to democracy – to affect corruption. Serra (2006) has re-evaluated his findings based on the Leamer Extreme-Bounds Analysis (1978, 1983, 1985) as modified by Levine and Renelt (1992), revealing five variables to be statistically significant: "richness" of a country, prolonged exposure to democracy, Protestant history, political stability, and, most intriguingly, the lack of colonial heritage.

The overwhelming majority of the research to date focuses on within-country factors. If a country can be called a harmonized system, the focus is on its internal design, and the variance in corruption is explained with variance in configurations of system-forming factors: better public control, higher competition, less incentives for rent-seeking, lack of cultural predispositions, etc. Very few attempts were made to look at external stimuli, even though economy, one of the intuitively involved factors, clearly can be affected if not manipulated from the outside.

One such external stimulus is international trade openness or international exposure. Although contested (Serra, 2006), the idea that it affects corruption is still of an interest. Its biggest critique, the fact that the variable representing trade in the original research was found insignificant when controlling for development and uninterrupted

democracy, is indeed prominent and has been replicated (Beesley, 2014), but does not dismiss the idea completely.

There may be something more of an economic nature that can trigger corruption-inducing mechanisms. Evidence suggests that international economic variables can affect corruption by triggering institutional changes (Wei, 2000), reducing or increasing opportunities for rent-seeking behavior for decision-makers (Krueger, 1974; Gatti, 2001), influencing the logic of bargaining for businesses as well as state officials (Reinnika & Svensson, 2003; Shleifer & Vishny, 2004), altering the level of competition, and solidifying norms on corruption in general (Sandholz & Gray, 2003).

This research attempts yet another approach. It seeks to link rising level of corruption to threats of sanctions. It argues that just signaling the upcoming economic difficulties may be enough to trigger certain social defense mechanisms within the target state. Among these mechanisms are the ones that intensify the struggle for resources between domestic interest groups in a context of potential economic scarcity, which eventually leads to corruption.

The function of the threats is to signal upcoming economic hardships in a pursuit of political concessions: the signals must reach domestic elites and incentivize them to put pressure on policy makers. However, there is no guarantee the elites will interpret and react to signaling in a predicted way.

Threatened by a looming economic scarcity, some may indeed seek relief in an attempt to change state policies. This may prevent harm to the economy, keep the growth rate stable, and retain the status quo between the groups of interest and their according shares of the "economic pie." Others, however, may find it easier to secure their shares of

the potentially shrinking "economic pie" through increased competition for the still available resources. This reaction may seem more justifiable to the actors since it can provide faster and better results, but since it involves reallocation of resources, it may lead to fiercer tensions.

By nature, economic sanctions seek to induce behavioral changes through harming economies. Their effects – impact on investment and growth (Mauro, 1995; Tanzi and Davoodi, 1997; Campos et al., 1999), inflation (Al-Marhubi, 2000), trade (Lambsdorff, 1998; Anderson and Marcouiller, 1999), bureaucratic efficiency (Rose-Ackerman, 1997), entrepreneurial activity (Murphy, Shleifer, & Vishny, 1990), redistribution of wealth (Kurer, 1993) – are intuitive, well-known, widely advertised and theoretically confirmed. It is also known that sanctions by themselves are only a part of the bigger picture – threats of sanctions may achieve political goals without any real embargo impositions (Clifton, Bapat, & Krustev, 2009).

A signal of an upcoming round of sanctions can be read as a looming reduction of the amount of wealth potentially accessible to domestic elites or an entire nation. In such a situation, any rational actor will reach three obvious calculations. First – that he does not wish to experience a reduction in available economic resources, and should do anything to minimize or avert it. Second – that any potential profits should be converted into actual ones as soon as possible as they may become unavailable due to sanctions. Third – that everybody else is reaching similar conclusions and getting ready to fight for their share of "economic pie." Therefore, the degree of the competition, bureaucratic as well as entrepreneurial, is bound to increase.

Eventually, the situation may spiral into "any means necessary," drawing in political figures, state enterprises and bureaucratic institutions accompanied by their access to state powers. Thus, the country is left with an increased level of corruption even if sanctions themselves were not imposed or did not do much harm. In a worst case scenario, threats or sanctions not only fail to induce desired political changes, but result in a country with higher levels of corruption, complicating the case both domestically and in the international arena.

Several authors have previously tried to link sanctions and corruption, but none have considered threats. Comparing targeted and comprehensive sanctions, Heine-Ellison (2001) discusses the possibility of unintended consequences that can include corruption in the targeted country. Similarly, categorizing potential aftereffects, Andreas (2005) warns that sanctions may result in a "symbiosis" between criminals and politicians, effectively leading to corruption that stays even after sanctions are gone. A collective of authors (Radu, Sabau, Sendroiu, & Pete, 2015) recently analyzed the effect of "coercive diplomacy" on corruption using the MIMIC model to measure the volume of "unofficial economy" in a country. A different collective (Kamali, Mashayekh, & Jandaghi, 2016) recently tested if sanctions adversely affect corruption in a cross-country comparison manner.

Considering a bigger picture, sanctions continue to inspire some dynamic scholarly debates. Throughout the years, the prevailing views on the subject have been swinging between skepticism and optimism. The commonly reported success rates, which vary from 4% (Pape, 1997) to 37% (Bapat, Morgan, & Kobayashi, 2014) depending on the definitions and methods of measurement, are not universally accepted.

The entire body of scholarship can be divided into three time periods or "waves" (Pape, 1997). The first wave addresses the question of efficacy, typically with in-depth analyses of low- to mid-N studies identifying and evaluating underlying mechanisms. As such, Johan Galtung studied the case of Rhodesia comparing a state to "an organism with certain self-maintaining potential" that reacts to outside stimuli, sanctions being one of them (Galtung, 1967, p. 409); Hoffman (1967) followed with a dichotomous comparison of Rhodesia and Italy; Baer analyzed the Italian-Ethiopian War concluding that as an external signal, sanctions "were used by the Italian government … to consolidate Mussolini's personal rule" (Baer, 1973, p. 178). Others evaluated sanctions as an alternative to wars: Wallensteen (1968) highlighted the significance of self-preserving mechanisms concluding that sanctions "have many of the same disadvantages as military action, due to their tendency to increase internal cohesion" (p. 265). Citing the case of Israel, Losman (1979) introduced the concept of split outcomes – a case of sanctions can be successful economically, but unsuccessful politically. Doxey assessed the case of UN sanctions against South Africa using her own framework and concluded that "the deterrent and coercive force of sanctions was weak on almost every count" (Doxey, 1972, p. 547).

The second wave starts around mid-1980s and goes on until mid-1990s. It is characterized by a shift towards the large-N with higher generalizability and a newfound optimism about the sanctions' efficacy. In many aspects, it was a reaction to advancements in methodology and available data. As such, one of the most cited works of the research field belongs to this wave: the first comprehensive dataset that included all known cases from 1914 to 1990 (Hufbauer, Jeffrey, & Elliott, 1990). Through

broadening the universe of cases, authors reinvented the debate confirming the success

rates as high as 34%. Rogers explained this sudden reinvention: "successes are widely

unreported, while their failures are exaggerated by those with an interest in either

avoiding their use, or in using their instruments" (Rogers, 1996). In addition, the topic of

signaling was further developed into the notion that sanctions "send signals to target

states and allies achieving goals more important than direct behavioral changes"

(Baldwin, 1985), which later was compared to punishing children for bad behavior,

calling it a "distinct irrational expressive element" (Nossal, 1989) of the international

process. Another important development was the notion that even without severe

damage, sanctions may produce significant policy outcomes through social mechanisms,

such as domestic pressure (Kaempfer & Lowenberg , 1992). Years later, this inspired

comprehensive theories linking types of regime (Allen, 2008) or political institutions

(Lektzian & Souva, 2007) with the outcomes of sanctions.

The third wave, beginning in the late 90s, is characterized by the return to

skepticism and the search for more detailed determinants of outcomes. The tone was set

by Pape's (1997) work, where he criticized the main dataset of the time (Hufbauer,

Jeffrey, & Elliott, 1990) and corroborated only 5 successful outcomes out of 115. This

once again reanimated the efficacy debates starting with Elliott defending the "limited

utility" of sanctions (Elliott, 1998), a critique by Drury who called field-accepted

correlations statistically insignificant (Drury, 1998), more critique by Pape stressing the

possibility of unintended human costs and damage to senders of sanctions (1998) and a

contribution by Drezner (1999), who, by re-evaluating available data, came up with an

inherent flaw in the logic of sanctions: they are likely to be placed on adversaries, but

because they are adversaries, target states will not concede, thus making it a vicious circle. After this, scholars refocused the debate from whether or not sanctions work to what makes sanctions work: historical relations between the target and the sender of the sanctions (Allen, 2005), economic wealth and political stability (Jing, Kaempfer, & Lowenberg, 2003), multilateral cooperation and the influence of international organizations (Bapat & Morgan, 2009), balance of power between the sender, the target and the allies (McLean & Whang, 2010), etc. This increased the demand for quality data was fulfilled by two reissues of Hufbauer's dataset (2007, 2009) and TIES (Clifton, Bapat, & Krustev, 2009).

As mentioned before, modern studies typically do not focus on whether sanctions are successful or unsuccessful, instead exploring what is around the subject. This research fits into the trend of not only discussing what non-economic effects could be caused by sanctions, but also bringing corruption into the picture, thus adding one more variable to the library of factors tested against the modern comprehensive datasets of cases of sanctions.

III. METHODOLOGY

Formally stated, the hypothesis to be tested is:

threats of economic sanctions increase corruption levels in target states.

Due to a short-sighted misinterpretation of the threats, certain domestic elites may find it more rational to maximize their shares of the potentially dwindling economy rather than pressure political leaders to seek for a diplomatic solution. In the context of looming economic scarcity, the resulting political competition is bound to be fierce, and will force the involved actors to use any means necessary, including corrupt schemes and methods.

Method

There are three potential approaches to testing if threats of sanctions, in fact, lead to increased corruption. One is to select a number of cases and perform a process-tracing analysis, deep enough to identify the causal chain. The cases for such analysis need to be illustrative as well as transparent, with wide availability of sources and numerical data. This is rarely true for sanctions, which are typically followed by some sort of an informational blockade or targeted at regimes with a bad governing and press freedom records. Even basic indices, such as GDP, are not available for sanctioned Iraq, Iran, or Cuba. At the same time, such sanctions are of the most interest.

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Another approach is to compare corruption before, during and after sanctions: the difference would indicate a causal link. Such comparisons can be performed on a low to medium number of observations and can be based on qualitative or quantitative evidence. The data does not have to be as detailed, and a higher coverage compensates for selection bias. The downside is the possibility of equifinality when accounting for a potential lag, especially with unstandardized qualitative evidence: after sanctions are lifted, corruption will not stop immediately while chosen indicators, such as news reports, will not necessarily be instantly available.

The third approach is to compare corruption in sanctioned countries to corruption in countries that are not sanctioned or sanctioned differently. Per modern research standards, this approach requires a vigorous case selection based on a set of control variables, with typically a low to medium number of observations. MDS or MSS designs (George & Bennett, 2005) are used to identify the causal relationship. This approach is far from perfect when applied to studying sanctions or corruption. It can suffer from a variety of biases and may be unavailable for certain countries due to scarce data.

A reasonable compromise between the available options is statistical analysis. Modern statistical methods can analyze data over time and across sections simultaneously, combining two of the mentioned approaches into one. The data behind such an analysis does not have to be excessively detailed – instead, it must be uniform across time and across sections. Relaxed requirements allow for maximized case inclusion, potentially close to a complete coverage. The wide case selection deters selection bias, and uniformity can somewhat compensate for data imperfections.

The method to be used is multiple regression, a variation of regression analysis for estimating relationships among several variables. Though the hypothesis implies just one independent variable and one dependent variable, it will be tested against a set of control variables for robustness. Due to how multiple regression is calculated, control variables must be considered a mathematical part of the model as well as a theoretical part. This means that even though isolated arguments can be made based on individual tests, any sort of policy implications or forecasts based on a statistically confirmed model should account for statistically confirmed control variables as well.

An important assumption to be made is that data will never be flawless. No matter the effort, something subjective, misinterpreted or mistaken could bias the numbers. This is especially the case for large, comprehensive datasets, assembled over the course of many years by a rotating collective of authors. The same applies to data gathering and reconfiguring. This is a problem, but it is not fatal. Modern software is able to account for less than perfect data. Instead of a complete failure, imperfections result in lower correlation coefficients. The roots of the imperfections need to be identified, potentially with further research – but if the relationship is statistically significant, the hypothesis behind must be reckoned with. At the same time, one should not expect very high T-values and R-squared when studying politics and human behavior. In comparison to economic publications, where R-squared above 0.7 along with triple the threshold for statistical significance are common, just the statistical significance is enough for social sciences.

One could argue, for example, purely economic sanctions, such as the ones by WTO, are not likely to have a tangible effect on corruption and should be excluded from

the research. The same applies to outliers, such as the US being the most sanctioned state

by numbers, yet incomparable to North Korea or Cuba qualitatively. The model will react

to distortions and report lower coefficients. However, should the correlation stand

significant with contentious cases, outliers, and imperfect data, at the very least one could

argue there is some validity to the hypothesis.

Data for The Independent Variable

The independent variable is formulated as "threats of economic sanctions,"

defined as threats of actions to limit or end economic relations with a country in an effort

to persuade that country to change its policies, based on the works by Bapat, Morgan &

Kobayashi (2009, 2014).

Conceptually, a threat is a derivative of sanctions. The two exist together and can

be measured in a similar fashion: through official documents, politicians' statements, and

news articles. The resulting evidence is objective and directly linked to the concept. Data

gathering techniques are debatable: documents can be overlooked, politicians

misinterpreted, and news articles faked. However, over the years, most of these are

corrected through peer review within the scholarly circles.

The two widespread sources of data gathered in this manner are the Peterson

Institute for International Economics (Hufbauer, Schott, Elliott, & Oegg, 2008) and

Threats and Imposition of Sanctions project (Morgan, Bapat, & Kobayashi, 2014). Both

have a reputation of industry standards and have been updated several times since the

original issues. The former lists 170 cases, 1914 to 2002, with some extra coverage till

2006. It mostly focuses on success measures, with only secondary attention to associated

factors. The latter lists 1412 cases of economic sanctions, 1945 to 2005 with limited

coverage till 2009, and specifically focuses on identifying threats, which are coded as

separate entities. The higher number of cases includes politically inspired sanctions as

well as strictly economic ones since both fit the definition and may be preceded or

followed with threats. TIES will be used as the source of data for this research.

The dataset separately lists sanctions and threats of sanctions. Combining them,

the authors code the possibility of the two being synchronized or desynchronized in real-

life scenarios. Typically, sanctions are imposed shortly after an extended threat and lifted

along with it. However, some threats achieve political goals without sanctions; others

remain officially extended for years, never followed by sanctions; and certain types of

sanctions (WTO) are imposed and lifted without extending threats.

The data is presented as a list of cases. Each case is accompanied by an extensive

number of variables, including start and end dates, sender, target, involved institutions,

issues, anticipated and actual costs, type, final outcome, and many more. In the following

extract, the sender Japan has sanctioned the target state US without issuing any threats for

a year over trade practices (13).

Table 1. An example of TIES data.

startyear	endyear	sender1	targetstate1	threat	imposition	Issue
2003	2004	Japan	USA	0	1	13

Data for The Dependent Variable

The dependent variable is formulated as "corruption" and defined as abuse of

entrusted power for private gain, based on a widespread understanding of the

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phenomenon. Due to its nature, corruption is hard to measure and therefore linking "corruption the concept" with "corruption the variable" is an inevitable compromise.

One option is to use an estimate based on a mathematical calculation, such as the volume of unofficial economy based on the MIMIC model (Radu, Sabau, Sendroiu, & Pete, 2015). It is possible to approximate the volume of the official economy judging by the tax revenues and then compare it to the total volume of the economy based on traceable bank transactions and printed banknotes: the difference will represent the "grey" economy. However, "grey" does not automatically mean corrupt, and supporting one's research with an estimation, based on other estimations that were also estimated, does not add credibility. From a certain point, there is no good way to interpret the numbers.

The other option is to use proxies. Proxies measure phenomena relevant to the concept, but not the concept itself. For corruption, it can imply uncovered scandals with government officials, investigated briberies, respondents' experiences, etc. This is a great way to capture and represent perceptions and local specifics as well. Whether the resulting scores are fair and valid across countries is debatable, but studies have confirmed at a minimum the usability of such approaches for scientific research (Wilhelm, 2002).

The choice of cross-country, over-time proxies for corruption is limited. The renowned "Corruption Perception Index" by Transparency International and a lesser known "Control of Corruption" from Worldwide Governance Indicators by the World Bank both combine survey data from various sources into comparable scores on an annual basis.

The Corruption Perception Index has been used as a source of data on corruption for years. Journalists praise it for being digestible and concise, scholars like it for the wide coverage and consistency. The CPI gives each observed country an annual score on a scale of 0 to 10 for the years 1995 through 2012 and 0 to 100 afterwards. The score is an estimate of 13 surveys and assessments from 12 different institutions: clean countries score high while corrupt ones score low.[1] To appear in the rating, a country must be assessed by at least three sources. Evidently, this is not always the case, and the data does not 100% conform across time: a country can be unrepresented in the rating for a year or two.

Even though CPI has been reviewed in scholarly circles (Wilhelm, 2002) with positive results, it remains a target for strong criticism (Cobham, 2013), mainly for the choice of methodology. The original aim of the project was to rank countries relevant to each other. Before 2012, individual scores were a byproduct of the corresponding ranks. This means that additions and exclusions of countries or underlying sources would affect individual scores of the remaining countries. In other words, a country may have received a +0.01 not because it became less corrupt, but because some other country was not in the rating. This is well explained in pre-2012 publications by Transparency International's in-house scholar:

> "Year-to-year comparisons of a country's score may not only result
>
> from a changing perception of a country's performance, but also from a

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[1] The African Development Bank, the Bertelsmann Foundation, the Economist Intelligence Unit, Freedom House, Global Insight, International Institute for Management Development, Political and Economic Risk Consultacy, Political Risk Services, the World Economic Forum, the World Bank and the World Justice Project.

changing sample and methodology. If the composition of sources

reporting on a country changes the country's score may change. Such a

change would then not relate to an actual improvement or deterioration

but rather to small differences between sources in arriving at a final

score" (Lambsdorff, 2008)

The authors nonetheless recommend using their data for over time comparisons, if caution is exercised. They explain that approximation techniques they use somewhat compensate for differences in sources, and fluctuations of the sample size are close to negligible. In the year 2008, for example, the number of countries remained unchanged as Puerto Rico entered the rating while Grenada dropped out (Lambsdorff, 2008). They also measure the potential effect of methodology on the scores and offer a threshold of 0.3: "the considerable decline in scores of at least 0.3 does not result from technical factors – actual changes in perceptions are responsible for the drop in the score" (Lambsdorff, 2008, p. 4).

In 2012, Transparency International attempted to address the problem with a substantial change in methodology. It made pre-2012 scores incompatible with post-2012 scores, which is emphasized by a different post-2012 scale.

An alternative to CPI is World Governance Indicators by the World Bank. The project covers 200 countries, measuring six dimensions of governance: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. All six measures are aggregate indicators of many underlying variables drawn from surveys and existing data sources.

Control of corruption captures "perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests" (Kaufmann, Kraay, & Mastruzzi, 2010, p. 4). The index rates countries annually on a scale of -2.5 to 2.5, where -2.5 is very corrupt and 2.5 very clean. Similar to the CPI, it reflects perceptions of survey respondents from public, private, and NGO experts worldwide. The authors use an Unobserved Component Model, which accounts for the assumption that a social phenomenon like corruption cannot be physically measured and can only be approximated from the scores of given indicators.

The Control of Corruption measure also suffers from the unguaranteed availability of underlying sources. The situation has been gradually improving throughout the years, and recent scores are based on 5 to 10 sources, but the first half of 2000s is plagued by uncertainty. The model used by the authors returns not the scores, but arrays of the possible values, from which the means are calculated and reported as the final values. Therefore, the corresponding standard errors and confidence intervals are also provided. The authors warn that about a third of the entire dataset (including Control of Law and others) may be unreliable. A closer look at the data confirms this as some of the values exceed the scale of -2.5 to 2.5. However, the scores are advertised as comparable over time as well as across countries in a bigger picture manner.[2]

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[2] WGI FAQ: "For approximately two-thirds of all possible pairwise country comparisons on the WGI, margins of error reflecting 90% confidence intervals do not overlap, indicating statistically significant differences. Looking at changes over time over long periods such as a decade, typically around 8 percent of countries covered will show a significant improvement or decline in the WGI measures. However, many small changes over shorter periods, or small differences between countries with similar ranks on the WGI, are not significant and should not be overinterpreted."

The data lists countries' scores on a time scale of years, providing the standard error values, the number of used sources, the ranking relative to other countries and confidence interval specifications.

Table 2. An example of WGI data.

	1996	1996	1996	1996	1996	1996	1998	1998	1998	1998	1998	1998
country/territory	estimate	stderr	numsrc	rank	lower	upper	estimate	stderr	numsrc	rank	lower	upper
afghanistan	-1.85	0.56	1.00	0.49	0.00	17.48	-1.84	0.51	1.00	0.49	0.00	14.08
albania	-1.09	0.47	2.00	11.71	0.49	43.20	-1.01	0.28	4.00	13.66	2.43	35.44

Control Variables

As previously mentioned, control variables play an important part in statistical analysis. They serve two purposes. First, competing for significance, they represent a benchmark to which the potential correlation between main variables is compared. Second, they help structure the data if the correlation between main variables is expected to be subtle. For example, one might discover that the demand for ice cream correlates with phases of the Moon. If regressed in isolation, it may appear so, even though it is not scientifically correct. Adding control variables, such as season, will reduce the correlation coefficient for Moon phases, showing that time of the year may be a more important factor. And outside temperature as another control variable will additionally structure the data, potentially rendering Moon phases insignificant.

The first control variable for this research is not inspired by any particular research, but its shadow follows many, if not most, relevant studies. It is formulated as "Rule of Law" and defined as the quality of contract enforcement, property rights, the police, and the courts based on the works by Kaufmann, Kraay and Mastruzzi (2010). As argued by many, corruption may be a result of a less than perfect political system, the key

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structural element of which is laws. All other components, such as proper salaries or political accountability, can complement the law system, but not replace it. Not only does the absence of working laws create incentives for corrupt behavior, but it also makes any anti-corruption efforts useless as most of them will come as reforms and can only be as efficient as the basic laws of a country.

The data for "Rule of Law" is sourced from the WGI project by the World Bank. The data comes as an approximation of multiple surveys, expert assessments and document studies and is uniform across time as well as across countries. The coverage is almost identical to that of one of the dependent variables, which means less excluded cases during data transformation.

The second control variable is formulated as "Voice and Accountability" and defined as the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media based on Kaufmann, Kraay and Mastruzzi (2010). It is inspired by the bulk of research that argues public control plays the key role in deterring corruption. The theories mentioned in Chapter II share a common understanding that holding high-level politicians and low-level state officials accountable for actions is very important. It can be achieved through a free press and general freedom to speak one's mind. The data for the "voice and accountability" variable is also taken from the WGI, due to the same benefits of a wide coverage and homogeneity.

The third control variable is formulated as "Rentier State" and represents the capacity of the government to benefit from redistribution of wealth earned by extraction of natural resources. Theoretically (Leite & Weidmann, 1999), the concept of rentier

states is not necessarily limited to economies dependent on resource extraction. During the Spanish Price Revolution, Spain functioned as a rentier state even though the gold was imported from the New World, not extracted domestically. The looming "Bitcoin Revolution," if it ever happens, may create rentier states as well, even though Bitcoin mining is not real mining at all. "Petrocracies" are just the most common example today, therefore the most straightforward way to measure this variable is to account for percentages of GDP generated by natural resource exports. The data for this variable is taken from the World Bank, and represents percentage of oil rents, natural gas rents, coal rents, mineral rents, and forest rents in a country's annual GDP.

The fourth control is "Imports" and it accounts for international trade in which a country is involved. Trade is a common component or requisite in theories explaining corruption or forecasting its consequences. Its most recent reiteration belongs to Serra (2006), who confirmed the causal power. Additionally, international trade is a part of economic development, which, as previously mentioned, is often found to negatively correlate with corruption. This makes up a hard test for the independent variable in question, which must stand the test against a control well-known to highly correlate with the dependent variable. The source for this variable is World Bank data on import percentage of a country's GDP.

The fifth control variable is related to Serra's (2006) verdict that higher parliamentary representation of women reduces corruption. In a broader context, higher representation is a sign of a more developed democracy. The latter is often argued to deter corruption due to various accountability mechanisms and emphasis on checks and balances, but the actual measures of democratic development are very arbitrary. Various

options exist, but by far the "Percentage of Women in Parliament" is most intriguing. The source of data for the variable is World Bank.

The sixth control variable is another measure of democratic development, Polity IV. While the percentage of women in parliament captures a very specific angle of democratic development, Polity IV is a more generalized measure. Even though Serra (2006) could not definitively confirm this variable, many previous works stress out its importance. The data for this variable is taken from the Polity project.

Data reconfiguration

The data used in this research is supplied by a variety of sources and presented in a variety of formats. To become comparable over time as well as across sections, it needs to be transformed to a harmonized layout. The one most suitable for the purposes in question is referred to as cross-sectional time series or panel data, which implies a number of subjects observed at several points in time. From now on, cases of sanctions or threats are split into multiple observations that capture the state of variables before, during and after sanctions or threats.

A crucial requirement for statistical analysis is homogeneity of all participating data. This means that the software will simply ignore observations with less than 100% of variables present and imperfect uniformity. This is a challenge since most datasets, including the ones used here, have coding errors and blank spots due to various methodological difficulties. Data on corruption is commonly unavailable for years 1996 to 2000 for non-western countries, economic data can be missing in certain years even for

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European countries and intricate information, such as percentage of women in parliament, may not be accumulated.

The following example of Afghanistan represents a common situation with data. CPI values are missing for the years 1998 through 2004 and 2006, "Corruption Control," "Voice and Accountability," and "Rule of Law" are missing for years 1999 and 2001, Imports are missing 1999 through 2001, "Women in Parliament" counter skips half of the values, "Natural Resource Rents" does not have years 1998 to 2000, and "Polity IV" has not been assessed at all.

Table 3. An example of a typical country data block with many missing values.

Country	Year	Threats	CPI	WGI	Voice	Law	Imports	Women	Rents	Polity
Afghanistan	1998	0		-1.8362645	-2.03916836	-1.738658				
Afghanistan	1999	0								
Afghanistan	2000	0		-1.9137625	-1.97951841	-1.769708				
Afghanistan	2001	0							5.2212432	
Afghanistan	2002	0		-1.4264005	-1.57130158	-1.771932	65.287704		4.80527447	
Afghanistan	2003	1		-1.5468522	-1.28107846	-1.671077	94.3441702		3.33785576	
Afghanistan	2004	0		-1.4243098	-1.24791002	-1.710013	87.1393244		2.00452304	
Afghanistan	2005	0	2.50	-1.4591824	-1.17805731	-1.72003	77.467145	27.3	1.7376353	
Afghanistan	2006	0		-1.4229853	-1.19007576	-1.951647	74.0850568	27.3	2.32329753	
Afghanistan	2007	0	1.80	-1.5853521	-1.12143588	-1.920528	58.3500468	27.7	1.93400868	
Afghanistan	2008	0	1.50	-1.6410213	-1.23575115	-1.943695	55.0725456	27.7	2.4811511	
Afghanistan	2009	0	1.30	-1.5150826	-1.46062744	-1.907672	42.1992285	27.3	1.64183433	
Afghanistan	2010	0	1.40	-1.6264788	-1.48184919	-1.901546	44.9434783	27.7	2.37293444	
Afghanistan	2011	0	1.52	-1.5497882	-1.40481281	-1.938522	44.1939481	27.7	2.25270335	

There are two solutions for this problem. One is to preemptively exclude observations: years or countries that frequently lack the needed values. This is problematic because many important cases, such as Iran or Iraq, are among the countries on which consistent data is not available. On the other hand, the countries with good coverage tend to be clean and not sanctioned.

The other option is to estimate the missing values. This method is useful for series of observations where all but one or two values are present, and discarding the entire

series (13 observations, 104 values) will hurt the model more than estimating the missing

elements (2 values).

In the following example, Belarus is measured to be 4.1 corrupt in 2000 and 4.8

corrupt in 2002 on the CPI scale. The missing value for 2001 is unlikely to be something

as extreme as 1 or 10, it is much more likely to be somewhere between 4.1 and 4.8. As a

compromise, it is acceptable to approximate the two and use their mean 4.45 to fill in the

blank spot. Since this is an approximation, it will not mislead the model. The same

applies to "Corruption Control" missing values: the year 1999 can be filled in with a

mean of 1998 (-0.6330635) and 2000 (-0.5031862) and 2001 can be filled in with the

mean of 2000 (-0.5031862) and 2002 (-0.7791886). This way, an entire block of data

(over 100 values) for Belarus does not have to be excluded from the working dataset.

Otherwise, the software would have reported unharmonized data and refused to calculate

the model with Belarus in the data.

Table 4. Estimation of missing variables.

| | | Missing Values | | *Estimated Values* | |
		CPI	Corruption Control	CPI	Corruption Control
Belarus	1998	3.90	-0.6330635	3.90	-0.6330635
Belarus	1999	3.40		3.40	*-0.5681248*
Belarus	2000	4.10	-0.5031862	4.10	-0.5031862
Belarus	2001			*4.45*	*-0.6411874*
Belarus	2002	4.80	-0.7791886	4.80	-0.7791886

However, it can only be done to certain cases with before and after- values. In the

following example, Sri Lanka is missing four values for "CPI" and "Women in

Parliaments." For the latter, values can be estimated as previously explained. However,

for "CPI," this is not the case. Even though all values for the years 2002 and later are

present, there is nothing to base an estimation for years before 2002. Therefore, either the

entire block of data for Sri Lanka has to be dismissed, or all observations for years 1998, 1999, 2000, and 2001 have to be dismissed.

Table 5. Unacceptable estimation of missing variables.

| | | Missing Values | | Estimated Values | |
		CPI	Women in Parliaments	CPI	Women in Parliaments
Sri Lanka	1998		5.3		5.3
Sri Lanka	1999		4.9		4.9
Sri Lanka	2000				4.65
Sri Lanka	2001				4.65
Sri Lanka	2002	3.70	4.4	3.70	4.4

For this research, a reasonable balance between the two options has been exercised. Several early years had to be discarded due to overly pronounced problems with sources for the main dependent variable (missing observations, high standard error) as well as frequent blank spots for control variables. Some countries, such as Afghanistan, were discarded due to wide unavailability of data for the dependent and control variables. At the same time, a few values were estimated, but never more than two in a row. This is forced, but nonetheless a compromise: there is no tangible alternative, and the remaining data, in the end, still makes up over 1000 observations (x9 variables = over 9000 values to feed the software). This is sufficient to claim high generalizability of the results.

The unit of time was chosen as a year. The time scale was set 1999 through 2011. Even though earlier years are available in WGI and CPI, they provide less countries, which would result in discarding more country blocks in exchange for gaining a few years. TIES list all threats and sanctions as cases. A country can be involved in several unrelated cases with different senders at a single point in time. Some cases of sanctions

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can last for decades while some were initiated and never officially settled. To account for this, a new dataset was assembled. Each country that per TIES received at least one threat, was put on a time scale from 1945 (earliest in TIES) to 2011 with year as a unit of time and an active threats counter. This counter would receive a +1 each year a country was threatened and -1 when a threat was lifted. If a country was under multiple threats in one year, the counter would receive as many +1 as there were threats declared.

The resulting dataset was juxtaposed to WGI and CPI to match countries. Non-matches were discarded while every match received a matrix of values illustrating under how many threats each country was for every year 1999 to 2011. Then, each of the matrices received a set of corresponding control variables.

Table 6. An example of the transformed data.

Country	Year	Active Threats	WGI	CPI
Argentina	1999	0	-0.2611078	3
Argentina	2000	0	-0.3380573	3.5
Argentina	2001	1	-0.4259716	3.5
Argentina	2002	1	-0.5138859	2.8
Argentina	2003	2	-0.5224265	2.5
Argentina	2004	2	-0.4540041	2.5
Argentina	2005	2	-0.4291738	2.8
Argentina	2006	2	-0.3726146	2.9
Argentina	2007	2	-0.3746215	2.9
Argentina	2008	0	-0.4738485	2.9
Argentina	2009	0	-0.5028509	2.9
Argentina	2010	0	-0.4126481	2.9
Argentina	2011	0	-0.4020743	3

The biggest limitation of the chosen strategy is unavailability of data. Among the many cases of economic sanctions, one could differentiate light, medium and severe ones. The latter are the most interesting since the damage to the economy is most

apparent to domestic elites, hence the threats must have caused more political havoc. According to the theory, sanctions against Iran, Iraq, Cuba, and South Africa would show the biggest impact on corruption – however, including these into this research is impossible due to unavailable measurements. Therefore the research ends up accounting for light and medium sanctions and threats that by definition are not supposed to cause much damage to the targets. This plays against the model: it will reduce the impact of the "Threats" variable, and the likelihood of statistical significance. However, should the model reach statistical significance regardless of this limitation, one might argue that the real impact might be even higher than the calculated one.

IV. RESULTS

The resulting dataset contains 83 subjects, each observed 13 times, totaling at 1067 observations. Each of the regions of the world – Africa, East Asia, Europe, Central Asia, Latin America, Middle East, North Africa, and South Asia – is represented by at least one country. Included are observations of up to four threats per country over the observed period, among which are ones that have pre-existing threats, ones that receive new threats and ones that have no threats at all.

Only 16 values had to be filled in for the main dependent variable "CPI," which is about 1% of all its values. 166 values had to be estimated for the secondary independent variable "Control of Corruption," which is roughly 15% of all its values. Throughout the entire dataset, a total of 545 values out of 8536 had to be estimated or manually edited in, which composes 6% of all used data. Most, but not all missing values received a mean of their closest neighboring values. Some of the numbers were researched and thoughtfully typed in using the original coding. For example, the missing values on the percentage of seats occupied by women in representative institutions were taken from the official documents where available.

Two identical statistical models were programmed: one for the CPI-sourced dependent variable and one for the WGI-sourced dependent variable. Both compare the

relationships between one independent variable and six control variables competing for

correlation significance to the dependent variable:

Corruption (CPI or WGI) ~ Active Threats + Rule of Law + Voice and Accountability + Rents % of GDP + Imports % of GDP + % of Women in Parliaments + Polity IV

Table 7. Comparing results of the two statistical models.

Variable	Statistical Significance (>|1.9| is significant)	
	CPI	WGI
Active Threats	-2.9762	0.8276
Rule of Law	16.6912	20.6197
Voice and Accountability	8.0458	13.266
Rents	0.2426	1.4109
Imports	3.2065	1.1261
Women in parliaments	0.0525	2.2847
Polity IV	-3.6148	-6.0162

The CPI-based model summary (Appendix A) reports a highly significant

correlation for the two main variables confirming that threats of sanctions result in lower

Transparency International scores for potential target states. The WGI-based model

summary (Appendix B) reports a positive correlation between threats and WGI scores,

but the relationship is not statistically significant. In other words, the hypothesis is

confirmed with one source for the dependent variable and not confirmed by the other.

This calls for further investigation.

There are two possible reasons a correlation can be statistically insignificant: a

bad hypothesis or a bad data. The former can be tested by running the model with a

different source for one of the variables to see if the T-value improves. The latter can be

investigated by taking a closer look at the data, which may be distorted by outlying cases,

coding errors or unfit methodology.

In case of these research results, there are two possible scenarios: there is either a valid hypothesis with good CPI and bad WGI data – or a wrongful hypothesis with bad CPI and good WGI data. If so, confirming the first scenario implies examination of WGI values for flaws and verifying CPI results.

Table 8. Explaining the contrary outcomes of the two used models.

	Hypothesis	CPI data	WGI data
Scenario 1	Confirmed, +	Good, +	Bad, -
Scenario 2	Unconfirmed, -	Bad, -	Good, +

In regards to WGI, there are three factors that most likely distort the model: a rather high percentage of filled-in values, an approximation-based methodology, and the presence of two exceptionally highly correlated control variables. Each of them by itself is not likely to cause problems, but altogether in one dataset is enough to affect the results.

First, as previously mentioned, about 15% of all values for control of corruption had to be approximated, or, in other words, estimated to make possible the comparison between the sources for the dependent variable. It is a common practice, which usually does not throw off any calculations since the model deals with approximations anyway. However, at a certain threshold, too many of such fill-ins start to affect results. This threshold varies for different sample sizes, so there is no way to be sure – but it might be the case for this research.

Second, WGI authors highly emphasize that the mathematical model used to calculate their data does not give precise final scores, instead it gives the averages of the arrays of possible final scores. This is why they provide standard errors and confidence

interval values along with the scores. It does not mean that the values are not usable for research – on the contrary, the authors aim at the scholarly audience. It does mean, however, that for certain situations the provided precision may be not enough.

Third, two of the six control variables – "Rule of Law" and "Voice and accountability" – are drawn from the same source as "Control of Corruption." The authors of WGI are not very explicit about it, but there is a chance that some of the underlying sources may have been used to calculate not one, but two or three of the mentioned variables. After all, conceptually the three are related, and the scarceness of the early years had to be somehow compensated. Perhaps, this is why "Rule of Law" and "Voice and Accountability" so highly correlate with "Control of Corruption": ten and six times the threshold for statistical significance. Such a correlation could easily overwhelm the subtle relationship with active threats: the correlation may still be there, just not seen through the highly correlated controls.

The CPI data is neither free from flaws, but seems more reliable than "Control Of Corruption." Only 1% of the used values were manually filled in, and the assembly methodology implies hard numbers for scores, not arrays of possible values. The same methodology, however, received some criticism, as mentioned before, mostly over its time comparability issues. Should this be the case, this research contains means of protection against such issues. The utilized model uses a cross-sectional time-series analysis, meaning comparisons are made not only across years, but also across countries. In fact, the dataset features 13 time observations compared to 83 cross-sectional observations. This makes up only 13% of all comparisons. The most variance is drawn across sections rather than time. The precise dependence on time over sectional

comparisons is hard to calculate as it varies by the sample sizes, but it is safe to assume

that even if CPI data is completely incomparable over time, which is most likely not the

case, the model heavily relies on cross-sectional comparisons and therefore remains

valid.

As an additional validation measure, 13 strictly cross-sectional model runs were

performed to mitigate the effect of over-time comparisons. The working dataset was split

in 13 to isolate each of the years 1999 through 2011.

Table 9. A by-year statistical significance test.

Year	T-Value	Statistical Significance
1998	-0.071857	
1999	0.280366	
2000	0.006083	
2001	-0.215021	
2002	-0.204011	
2003	-0.117898	
2005	-0.143485	
2006	-0.215181	
2007	-0.409134	*
2008	-0.0734133	
2009	0.038212	
2010	-0.6161649	*
2011	-0.421794	

Ten out of thirteen runs report negative estimated effect for the independent

variable with 8 having an impact more than 0.1, meaning that strictly cross-sectional

results are not much different from combined cross-sectional and over time results. This

proves that the original T-value (Appendix A) is a valid result.

Out of the ten, some are statistically significant with higher impact (above 0.1),

some not. This is due to a dramatically smaller data (87 compared to 1067) and by itself

does not mean anything as statistical significance is a product of the sample size.

With all the evidence considered, the most likely explanation of the research results is Scenario 1: WGI data is compromised by a variety of factors while CPI data is correct and confirms the hypothesis. It is worth noting that this entire situation, where two similar datasets, both grounded in a perceptional edge of the phenomenon, turn out to be so different from each other, deserves separate research. However, it falls out of the scope of this study.

An interesting situation is observed with the control variables, four of which show statistical significance: "Rule of Law," "Voice and Accountability," "Imports," and "Polity IV."

Keeping in mind that the first two potentially correlate with each other due to methodology, the reported significance levels are very high: 8 times the threshold for "Rule of Law" and 4 times the threshold for "Voice and Accountability" with both correlations positive. This is a conceptually expected result: different forms and measures of accountability are mentioned in many studies as a remedy for corruption, and a strong law system acts as a deterrent for any sort of malicious activity, including corrupt behavior. However, the significance is so strong that it potentially reduces significances of other variables. The fact that the main independent variable active threats is nonetheless reported as significant testifies that the relationship is robust.

Another implication of such a strong correlation is that "Rule of Law" and "Voice and Accountability" potentially act as a structuring element of the model. Essentially, the rest of the variables can be interpreted with regards to these two variables. For example, if two countries have a similar legal system and are roughly equal in regards to civil society development, the differences in the amount of international trade will determine

their corruption levels. This kind of argumentation, of course, is rather arbitrary, but nonetheless important to note, as one of the other control variables may be dramatically affected by this effect.

"Polity IV," a measure of democratic development and the associated government accountability, was expected to show a positive correlation: the more democratic a country is, the higher it stands in TI's ratings with lower corruption. In a surprising contrast, it shows the exact opposite as a part of the model, with a high statistical significance: the more democratic a country is, the lower its TI's standing. In a vacuum, this could be a worthy discovery and a dead end for this research. However, as discussed above, it should be interpreted with regards to other, potentially stronger, variables of the model.

First, its impact on the model is low: -0.034. This is smaller than that of the main independent variable, which was never expected to be large. Second, a separate run of the model just with "CPI" and "Polity IV" returns a more orthodox picture, with a significant positive correlation: the more democratic a country is, the higher its TI rating:

```
Polity  0.0207624  0.0091332  2.2733  0.02321  *
```

This is exactly the case of "structuring" variables discussed above. It does not mean that by itself, democratic development causes corruption. It means that with every other significant variable equal – "Rule of Law," "Voice and Accountability" and "Imports" – a higher "Polity IV" rating will result in a slightly lower TI's score and potentially a more corrupt country. It makes logical sense too: autocracies like Russia often fake democratic development for reputational reasons and newly democratized states are still struggling with their institutional system. The democratic rating may go

slightly up or down, but it would not mean much as the country is not really a proper democracy and still produces corruption. In fact, this is mentioned in several publications with the latest one offering a more correct measure in that regard: prolonged exposure to democracy (Serra, 2006).

The fourth significant control variable behaves in a more orthodox way with a minor positive impact on the model of 0.006. Confirming the expectations, more international trade results in a lower TI rating meaning lower corruption.

Together with the main independent variable, the four significant control variables form the final equation that can be used to estimate the impact of threats of sanctions on a given country:

$$Corruption = 4.14 - 0.09(threats) - 0.03(Polity\ IV) + 1.22(Law) + 0.72(Voice) + 0.01(Imports)$$

Essentially, this implies that with everything else equal, any additional threat of sanctions will decrease a country's corruption score roughly by 0.1 point.

For example, the most recent information on Russia in the dataset dates 2011. It states that the country did not have any active threats and had -0.74 "Rule of Law," -0.87 "Voice and Accountability," 20.1 "Imports," 13.6% "Women in Parliament," and "Polity IV" rating of 4. This results in 2.42 projected corruption. Should a threat be issued, it would raise the projection to 2.53. Many related threats are issued by different countries or by the US and the EU separately – these cases are coded in TIES as multiple threats. So, when four years later the US and EU threatened and imposed sanctions on Russia in regards to the Crimea (year 2014) incident, the score was projected to drop by ~0.2. Unfortunately, post-2012 CPI scores are not comparable to the ones used in this research.

However, the post-2012 score lineup for Russia can be argued to potentially confirm the predicted trend:

Table 10. Modern CPI scores for Russia.

Year	2016	2015	2014	2013	2012
CPI Score	29	29	27	28	28

In a broader context, 0.1 may not seem like a lot, but it is the most common variation pattern in the CPI data. It is very rare for a country's score to jump by 20, 10 or even 2 points. Corruption has its social roots, which cannot be rapidly fixed. A country can, however, launch an anti-corruption initiative that will gradually increase its standing. For Russia, 2015 was plagued by corruption scandals, especially after the Panama Files revelation. In the end, many government officials have lost jobs or were put into jail, which may have positively influenced the later score.

Since the coding utilized in this research is no longer used by its authors and will never be updated, a more tangible way of thinking is advised: percentage increases. To convert score increases to percentage increases, one should consider the "before" score and an actual increase. A rather clean country would have a score of 8 and a minimum decrease of 0.1: converting into percentage, 0.1:8 x 100% = 1.25%. For a rather corrupt country, with a score of 2, a similar 0.1 decrease will mean 0.1:2 x 100% = 5%.

V. CONCLUSIONS

Using multiple regression on a custom cross-sectional time series dataset of more than a thousand observations, this research found the correlation between the main independent variable "Threats of Sanctions" and the main dependent variable "Level of Corruption" statistically significant. This leads to a conclusion that signaling forthcoming efforts to limit or end economic relations with a country to persuade a change in its policies is likely to increase the level of corruption in the said country. The model suggests a 0.1 Corruption Perception Score (older version) decrease for each new round of threats, which translates into a minimum of 1.25% increase in corruption for relatively clean countries and a 5% increase in corruption for more corrupt counties.

The hypothesis is tested against six control variables based on previously confirmed theories. The data for the dependent variable is taken from two separate sources covering all options available at the moment, and no data tailoring techniques are used to highlight the results. Such an open approach expectedly led to several methodological challenges which are discussed in the corresponding section. After an investigation, each of the challenges was found to have no significant effect on the research. Nonetheless, the hypothesis in question should be accepted with regards to the utilized methodology.

Since the biggest caveat of all statistically-inclined studies is the quality of data, further research is advised should the new versions of the used datasets be published. Transparency International has been using their new methodology, less affected by the "ranking" problem, since 2012 – there are now 6 more years of better quality data. The same applies to World Bank's WGI project. However, the TIES project remains in its 2014 state and does not cover the years 2010 and later.

Like a disease, corruption starts in exposed tissue of a "social organism," hides its symptoms to maximize the infection, and attacks at the moment of utmost weakness. Small amounts of it come and go in any regime or economy not causing severe consequences kept at bay by laws, leadership, and civic consciousness. However, an ill-considered political maneuver, a hasty reform, a careless external influence, or a lack of modernization can overwhelm the system and allow corruption to break institutional barriers spreading throughout the society. If neglected, this may turn lethal: what started as a rather ordinary protest against a corrupt government in the seemingly healthy nation of Ukraine in 2014, quickly spiraled out of control and ended with a sovereignty crisis, a loss of territories, and a civil war that is yet to be resolved.

In a small number of outlying cases, corruption can be seen from an optimistic angle: as a social defense mechanism. It can bring some relief to overregulated markets, serve as a social equalizer in abusive authoritarian regimes, and even act as a globalization vessel. In the Soviet Union, not only did corruption allow some flow of consumer goods and services to otherwise desperate regions, but it also sustained a large black market, which served as eloquent evidence that economic laws, as laws of physics,

work regardless of ideologies and political will. Arguably, this helped in the later transformation from a state-controlled economy to a capitalistic economy.

In all other cases, however, corruption conveys nothing but inefficiency and disorder. It has been shown to limit economic growth (Mauro, 1995; Mo, 2001; Tanzi & Davoodi, 2002), reduce investment activity (Brunetti, Kisunko, & Weder, 1998; Campos, Lien, & Pradhan, 1999; Mauro, 1996), cap productivity (Lambsdorff, 2003), misbalance economic systems (Al-Marhubi, 2000; Friedman, Johnson, Kaufmann, & Zoido-Lobaton, 2000; Johnson, Kaufmann, & Shleifer, 1997; Schneider, Buehn, & Montenegro, 2010), discourage innovation (Lau, Yang, Zhang, and Leung, 2015), and distort social spending (Mauro, 1998).

Countries plagued by corruption are notorious for high economic disparity, abusive power structure, and a low cost of human life (Zelekha & Sharabi, 2012). They are also known for frequent attempts to address these issues with no tangible success. This is no surprise. Past a certain threshold, corruption, much like cancer, can integrate itself into the regime structure. Once it becomes a part of the system, it can help the system sustain and replicate itself. The tradeoff, however, is that the infection will progress. With each new cycle, there will be more corruption and less institutions solidifying the system – until the country is governed by blood ties, personal favors, and propaganda champions. This is what happened to the Ba'athist Iraq, which was transformed from an overly pragmatic secular regime before the Gulf War into a hybrid twist at a personalist theocracy before the Iraq campaign of 2003 (Anderson & Stansfield, 2005).

As discussed in the Chapter II, many of the said countries often find themselves in the middle of various international scandals and, consequently, on the receiving end of economic sanctions. The reasons why this happens, whether the recipients of sanctions deserve them, and the extent to which corruption may affect international relations falls out of the scope of this research. One can notice, however, that many of the countries that have been threatened with economic sanctions throughout the last few decades – Iran, Iraq, Libya, Syria, Lebanon, South Sudan, North Korea, Belarus, Russia, Cuba, etc. – also happened to have a low standing in the common anti-corruption ratings.

Policy makers often prefer economic sanctions to other policy options for the "softer," more humane reputation. This is especially the case when the alternatives involve any sort of military actions: not going to war is always better than going to war. Formulated like this, the rationale certainly seems correct – but it may be an elusive oversimplification. A textbook axiom of diplomacy and negotiation states that if it seems there is no better third option, a good diplomat must invent one (Fisher & Ury, 1991; Lebow, 1996). Perhaps, we will never know the real thought process behind the famous sanction rounds, but it just may be as simple as choosing the easiest policy with the best PR – no thought of humanity involved.

At the same time, the deeper the scientific community looks into the concept of economic sanctions, the more apparent it becomes that the unintended consequences of the subject are very much tangible and must be included in decision-making. Since the first serious efforts to study the subject back in the 90s, it has been known that while harming economies, sanctions affect regular citizens perhaps more than the political leadership. The recent efforts by Kamali, Mashayekh, and Jandaghi (2016) showed that

imposed economic sanctions may worsen corruption in the target states, which also affects citizens first and foremost. My research has shown that even threats of economic sanctions may have a substantial negative effect on corruption.

With this in mind, making a decision to threaten or impose sanctions on a state is not just about an economic scarcity in an effort to reach or not reach political goals. It is about putting the citizens of the said country through a number of complications, of which higher corruption is just one of the challenges. Political goals may be reached or forgotten, but corruption will stay to poison people's lives for a very long time. Additionally, for certain already corrupt systems, this increase may put an end to the already slow-paced anti-corruption efforts, reversing past reforms and making things worse.

Does it mean that sanctions must be out of the question? No, but greater care and analysis should be employed in their implementation. Just like scientists are able to better predict the success rates of sanctions judging by involved factors, the unintended consequences should also become predictable and controllable.

APPENDIX A. MODEL SUMMARY, CPI DATA

```
    plm(formula = cpi ~ tactive + law + voice + rent + import + women
 + polity, data = balanovFULL, model = "random", index = c("country", "
year"))

    Effects:
                  var std.dev share
    idiosyncratic 0.1272  0.3566 0.223
    individual    0.4435  0.6659 0.777
    theta  :
      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
     0.8472  0.8531  0.8531  0.8530  0.8531  0.8531

    Residuals :
        Min.  1st Qu.   Median    Mean 3rd Qu.     Max.
    -1.36000 -0.23800  0.00859  0.00001  0.24700  1.96000

    Coefficients :
                  Estimate  Std. Error t-value  Pr(>|t|)
    (Intercept)  4.17990905  0.11731599 35.6295 < 2.2e-16 ***
    tactive     -0.08776389  0.02948846 -2.9762 0.0029848 **
    law          1.22264033  0.07325063 16.6912 < 2.2e-16 ***
    voice        0.71332105  0.08865725  8.0458 2.287e-15 ***
    rent         0.00063025  0.00259776  0.2426 0.8083534
    import       0.00586271  0.00182840  3.2065 0.0013841 **
    women        0.00015429  0.00293730  0.0525 0.9581175
    polity      -0.03527762  0.00975916 -3.6148 0.0003147 ***
    ---
    Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

    Total Sum of Squares:    265.06
    Residual Sum of Squares: 148.85
    R-Squared:       0.43841
    Adj. R-Squared: 0.43469
    F-statistic: 117.879 on 7 and 1057 DF, p-value: < 2.22e-16
```

APPENDIX B. MODEL SUMMARY, WGI DATA

```
plm(formula = corruption ~ tactive + law + voice + rent + import
+ women + polity, data = balanovFULL, model = "random", index = c("coun
try", "year"))

Effects:
                 var std.dev share
idiosyncratic 0.01996 0.14129 0.265
individual    0.05533 0.23522 0.735
theta  :
   Min. 1st Qu.  Median   Mean 3rd Qu.   Max.
 0.8291  0.8357  0.8357  0.8356  0.8357  0.8357

Residuals :
    Min.  1st Qu.   Median    Mean  3rd Qu.    Max.
-0.56400 -0.09250 -0.00168  0.00001  0.10000  0.57400

Coefficients :
              Estimate  Std. Error t-value  Pr(>|t|)
(Intercept)  0.03446457 0.04370587  0.7886   0.43055
tactive      0.00958361 0.01157931  0.8276   0.40806
law          0.57676203 0.02797139 20.6197 < 2.2e-16 ***
voice        0.45689292 0.03444102 13.2660 < 2.2e-16 ***
rent         0.00142098 0.00100712  1.4109   0.15856
import       0.00079337 0.00070450  1.1261   0.26036
women        0.00259916 0.00113762  2.2847   0.02253 *
polity      -0.02276696 0.00378427 -6.0162 2.458e-09 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Total Sum of Squares:    58.849
Residual Sum of Squares: 23.009
R-Squared:       0.60901
Adj. R-Squared: 0.60642
F-statistic: 235.2 on 7 and 1057 DF, p-value: < 2.22e-16
```

APPENDIX C. CROSS-SECTIONAL TESTS

The year 2000

```
    lm(formula = cpi ~ tactive + rent + women + polity + law + voice
+
        import + brit, data = balanov2000)

    Residuals:
         Min      1Q    Median      3Q       Max
    -1.90296 -0.60615 -0.00554  0.52558   1.66440

    Coefficients:
                  Estimate Std. Error t value Pr(>|t|)
    (Intercept)   3.655218   0.442453   8.261 4.55e-12 ***
    tactive       0.280366   0.263294   1.065 0.290457
    rent         -0.003815   0.009370  -0.407 0.685079
    women         0.053896   0.013290   4.055 0.000124 ***
    polity       -0.046716   0.046512  -1.004 0.318507
    law           1.675751   0.313107   5.352 9.61e-07 ***
    voice         0.345495   0.506694   0.682 0.497485
    import        0.001189   0.005842   0.204 0.839252
    brit         -0.007640   0.228001  -0.034 0.973360
    ---
    Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

    Residual standard error: 0.8508 on 73 degrees of freedom
    Multiple R-squared:  0.8795,    Adjusted R-squared:  0.8663
    F-statistic: 66.62 on 8 and 73 DF,  p-value: < 2.2e-16
```

The year 2005

```
    lm(formula = cpi ~ tactive + rent + women + polity + law + voice
+
        import + brit, data = balanov2005)

    Residuals:
         Min      1Q    Median      3Q       Max
    -1.81546 -0.57080  0.07477  0.45779   2.23484

    Coefficients:
                  Estimate Std. Error t value Pr(>|t|)
    (Intercept)   4.473264   0.457155   9.785 6.38e-15 ***
    tactive      -0.143485   0.211281  -0.679    0.499
    rent          0.005629   0.007223   0.779    0.438
    women         0.015081   0.010963   1.376    0.173
    polity       -0.036034   0.045978  -0.784    0.436
```

```
law            2.049533   0.296983    6.901 1.59e-09 ***
voice          0.284988   0.460202    0.619    0.538
import        -0.009525   0.005648   -1.686    0.096 .
brit          -0.047098   0.215710   -0.218    0.828
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.8144 on 73 degrees of freedom
Multiple R-squared:  0.8913,    Adjusted R-squared:  0.8794
F-statistic: 74.82 on 8 and 73 DF,  p-value: < 2.2e-16
```

The year 2010

```
lm(formula = cpi ~ tactive + rent + women + polity + law + voice
+
    import + brit, data = balanov2010)

Residuals:
    Min      1Q    Median      3Q      Max
-1.85299 -0.40795 -0.01584  0.36469  1.89159

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept)  3.7218829  0.4144124   8.981 2.02e-13 ***
tactive     -0.6161649  0.3634288  -1.695   0.0943 .
rent         0.0159726  0.0119257   1.339   0.1846
women        0.0165340  0.0089899   1.839   0.0700 .
polity      -0.0013430  0.0361151  -0.037   0.9704
law          1.8841085  0.1878785  10.028 2.26e-15 ***
voice        0.2505408  0.3151582   0.795   0.4292
import      -0.0001667  0.0045594  -0.037   0.9709
brit         0.1557598  0.1801965   0.864   0.3902
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.6834 on 73 degrees of freedom
Multiple R-squared:  0.9164,    Adjusted R-squared:  0.9073
F-statistic: 100.1 on 8 and 73 DF,  p-value: < 2.2e-16
```

APPENDIX D. AN EXAMPLE OF THE USED DATA

Country	Year	Threats	CPI	WGI	Voice	Law	Imports	Women	Rents	Polity
Botswana	1999	0	6.1	0.685998	0.684688	0.557219	43.73181	12.75	0.321932	8
Botswana	2000	0	6	0.666208	0.644338	0.530072	40.09292	17	1.306048	8
Botswana	2001	0	6	0.636107	0.64786	0.516139	38.86746	17	0.410022	8
Botswana	2002	1	6.4	0.606006	0.651381	0.502207	39.67835	17	0.372326	8
Botswana	2003	1	5.7	1.249669	0.691375	0.668233	37.00718	17	1.486268	8
Botswana	2004	0	6	0.879439	0.7264	0.635065	41.38404	11.1	3.372387	8
Botswana	2005	0	5.9	1.139363	0.574184	0.603252	35.5818	11.1	3.794392	8
Botswana	2006	0	5.6	0.91353	0.488446	0.581072	34.08012	11.1	7.980872	8
Botswana	2007	0	5.4	0.95375	0.480852	0.615701	40.58856	11.1	9.335123	8
Botswana	2008	0	5.8	0.996397	0.484717	0.663688	51.04194	11.1	6.562389	8
Botswana	2009	0	5.6	0.921875	0.421427	0.65415	51.88509	7.9	11.61408	8
Botswana	2010	0	5.8	1.003046	0.442224	0.666599	51.2643	7.9	4.608759	8
Botswana	2011	0	6.08	0.978981	0.396829	0.660973	52.46402	7.9	3.996135	8
Brazil	1999	2	4.1	0.009087	0.162806	-0.30344	11.41728	5.7	3.190335	8
Brazil	2000	1	3.9	0.016784	0.152321	-0.30056	12.45166	5.7	3.536007	8
Brazil	2001	0	4	0.013821	0.270919	-0.30188	14.56463	6.8	3.827598	8
Brazil	2002	0	4	0.010858	0.389518	-0.30319	13.38774	6.2	4.820669	8
Brazil	2003	0	3.9	0.100637	0.388666	-0.40038	12.95962	8.6	5.408382	8
Brazil	2004	0	3.9	0.048646	0.374534	-0.3923	13.13247	8.6	5.374185	8
Brazil	2005	1	3.7	-0.17166	0.445051	-0.49124	11.84299	8.6	6.3381	8
Brazil	2006	1	3.3	-0.13588	0.444468	-0.41742	11.66735	8.8	6.5669	8
Brazil	2007	1	3.5	-0.11887	0.48451	-0.43566	11.96491	9	7.254887	8
Brazil	2008	1	3.5	-0.02482	0.515287	-0.36469	13.7236	9	7.909064	8
Brazil	2009	1	3.7	-0.12223	0.485682	-0.21689	11.25462	8.8	4.582327	8
Brazil	2010	1	3.7	6.46E-05	0.534234	-0.00123	11.7792	8.6	5.994677	8
Brazil	2011	0	3.77	0.149356	0.474238	-0.00277	12.24316	8.6	6.177798	8
Bulgaria	1999	0	3.3	-0.22597	0.388696	-0.2969	47.789	10.8	1.486131	8
Bulgaria	2000	0	3.5	-0.21346	0.410531	-0.22985	41.83553	10.8	1.576104	8
Bulgaria	2001	0	3.9	-0.2046	0.447624	-0.1627	44.35047	26.2	1.178486	9
Bulgaria	2002	0	4	-0.19574	0.484716	-0.09554	41.73043	26.2	1.033479	9
Bulgaria	2003	0	3.9	-0.07107	0.511635	-0.19443	44.74551	26.2	1.005669	9
Bulgaria	2004	0	4.1	0.098728	0.543205	-0.12716	52.2336	26.3	1.489302	9
Bulgaria	2005	0	4	0.058662	0.573733	-0.15934	57.27596	22.1	1.798932	9
Bulgaria	2006	0	4	-0.10077	0.552744	-0.13943	64.21033	22.1	2.827915	9
Bulgaria	2007	0	4.1	-0.23441	0.677658	-0.10569	70.64818	21.7	2.278525	9
Bulgaria	2008	0	3.6	-0.30322	0.556534	-0.15945	71.96636	21.7	2.330555	9
Bulgaria	2009	0	3.8	-0.2472	0.555683	-0.07355	50.70778	20.8	1.42651	9
Bulgaria	2010	0	3.6	-0.20695	0.524036	-0.10391	56.46038	20.8	2.158527	9
Bulgaria	2011	0	3.33	-0.22469	0.439416	-0.13722	61.35904	20.8	2.980837	9
Canada	1999	3	9.2	2.234577	1.606647	1.701885	38.31676	20.6	2.173209	10
Canada	2000	1	9.2	2.230593	1.591968	1.67699	38.62026	20.6	4.934375	10
Canada	2001	1	8.9	2.170328	1.558434	1.668739	36.37012	20.6	4.220941	10
Canada	2002	1	9	2.110062	1.5249	1.660488	35.69829	20.6	3.752474	10
Canada	2003	1	8.7	2.040142	1.526452	1.703007	33.0156	20.6	4.651266	10
Canada	2004	0	8.5	1.854109	1.675237	1.704943	32.8926	21.1	5.231334	10
Canada	2005	0	8.4	1.862308	1.495699	1.660869	32.91473	21.1	6.961839	10
Canada	2006	0	8.5	1.959607	1.442604	1.792571	32.65184	20.8	7.289658	10
Canada	2007	0	8.7	1.986761	1.403001	1.791605	32.03888	21.3	7.309141	10
Canada	2008	0	8.7	1.990844	1.434279	1.799132	32.6011	22.1	9.129771	10
Canada	2009	0	8.7	2.083347	1.428473	1.805836	29.9125	22.1	4.260511	10
Canada	2010	0	8.9	2.096699	1.375627	1.809824	30.98877	22.1	5.025616	10
Canada	2011	0	8.67	1.999401	1.405911	1.743252	31.764	24.8	6.152117	10
Chile	1999	0	6.9	1.452781	0.67572	1.181105	27.32577	10.8	6.843796	8
Chile	2000	0	7.4	1.544587	0.829944	1.258155	28.57805	10.8	8.313613	9
Chile	2001	0	7.5	1.549254	0.942834	1.278592	30.5423	10.8	7.96643	9
Chile	2002	0	7.5	1.553922	1.055723	1.299029	30.39377	12.5	8.131393	9
Chile	2003	0	7.4	1.295729	0.982944	1.237252	31.20012	12.5	8.984974	9
Chile	2004	0	7.4	1.372828	1.162198	1.308246	30.40366	12.5	13.26716	9
Chile	2005	0	7.3	1.451734	1.243549	1.271399	31.58502	15	14.57577	9
Chile	2006	0	7.3	1.429865	1.074864	1.229806	29.51092	15	22.73883	10
Chile	2007	0	7	1.343457	1.095527	1.233711	31.96091	15	23.03942	10
Chile	2008	0	6.9	1.327686	0.997636	1.270772	39.5347	15	21.57221	10
Chile	2009	0	6.7	1.351683	1.008315	1.273902	29.59754	14.2	16.20838	10
Chile	2010	0	7.2	1.485575	1.094331	1.322361	31.66942	14.2	19.18681	10
Chile	2011	0	7.21	1.52284	1.072692	1.356121	34.89658	14.2	19.80626	10

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