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GOVERNMENT RESPECT FOR HUMAN RIGHTS AND THEIR RELATION TO SHADOW
ECONOMIC ACTIVITY

by

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ABSTRACT

Shadow economic activity can have detrimental effects on many aspects of a society including trust in government policies, quality of public institutions, government revenues, and economic growth. Empirical studies have generally employed a rational actor approach and focused on economic factors. Most studies in this literature claim that when individuals do not receive the right economic stimuli from the government, it damages the relationship between individuals and the state and citizens opt to move into the shadow economy. A small but growing body of research, however, suggests that certain political factors can also lead to shadow economic activity because of a breakdown in the relationship between individuals and the state. Building on this growing body of research, this study investigates how governments' repression of human rights can play an important role in the growth of shadow economic activities. The empirical literature on human rights offer three main groups of human rights: Survival Rights (physical integrity), Women's Economic Rights, and Civil Liberties (i.e. freedom of speech). This study expects a similar pattern for all sectors of human rights, that when they are abused, citizens will react to those abuses by moving into the shadow economy because of the breakdown in the citizen-state relationship. Several multiple regression analyses are conducted for 150 countries from the years 1999 to 2011 to investigate if these different types of human rights had an impact on the levels of shadow economic activity. Results indicate that while Survival Rights and Women's Economic Rights have no statistically significant impact on the size of the shadow economy, the respect or abuse of citizens' Civil Liberties are statistically significant after the introduction of control variables. A possible reason for the difference in

these findings might be that while the fear of reprisal of Survival Rights can work to deter shadow economic activity, repression of Civil Liberties may not create enough fear to deter it. Future research is necessary in this area to expand our knowledge on the political determinants of the size of the shadow economy as well as the creation of policies to combat its growth.

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LIST OF ACRONYMS & ABBREVIATIONS

CIRI – Cingranelli and Richards Human Rights Data Project

MIMIC – Multiple Indicators Multiple Causes

DYMIMIC – Dynamic Multiple Indicators Multiple Causes

OECD – Organization for Economic Cooperation and Development

UDHR – Universal Declaration of Human Rights

IRS – Internal Revenue Service

GDP – Gross Domestic Product

GNP – Gross National Product

PPP – Purchasing Power Parity

ILO – International Labor Organization

IMF – International Monetary Fund

WDI – World Development Indicators

LGBT – Lesbian Gay Bisexual and Transgender

CHAPTER ONE: INTRODUCTION

Much scholarly research has been done to better understand the size, scope, and causes of the shadow economy, also known as the informal, underground, subterranean, clandestine, and hidden economy (Gerxhani, 2004) throughout the world. Many causes have been advocated as explanatory reasoning for shadow economic activity, including citizen's tax morale, overly complicated tax systems, over regulation, enforcement of tax policy or lack thereof, and the quality of public institutions. The most common school of thought regarding why people move into the shadow economy comes from the Neoclassical perspective, which argues for a 'rational actor' approach that states that individuals will engage in shadow economic activity when the payoff is greater than the cost of being caught, and that the reasoning for moving into the shadow economy tend to be the result of purely economic factors in response to policies put forth by the state (Williams and Kayaoglu, 2016; Enste, 2009; Schneider, 2005; Schneider and Enste, 2000). As stated, these explanations tend to focus on purely economic concerns rather than giving a more holistic approach to the problem of shadow economic activity, which this paper attempts to do. While still arguing for a rational actor approach, rather than focusing on only economic policies, this paper puts forth the argument that political factors, in particular a citizen or firm's reaction to their rights not being respected by the government, gives a more robust understanding into why people move into the shadow economy.

Currently there are three main perspectives trying to explain why shadow economic activity occurs, the Neoclassical perspective, the Modernization perspective, and the Political Economy perspective, of which all three will be discussed in more detail below. While all three

perspectives do put forth convincing arguments as to why shadow economic activity occurs, I

believe all three are missing a vital component in not looking at the role a government's respect

or abuse for human rights plays into citizen's decisions to move into the shadow economy.

CHAPTER TWO: LITERATURE REVIEW

2.1 The Shadow Economy

The shadow economy, also commonly known as the informal, underground, subterranean, clandestine, and hidden economy, often encompasses many different actions and individuals. Gerxhani (2004) states that the idea of studying shadow economies, or the informal sector in general, first appeared around the 1970s where it was initially observed in Third-World countries, followed shortly after by an increased interest in developed countries. There is myriad of reasons as to why understanding shadow economic activity and its relationship to society and the economy in general are worth studying, both from an economic and political science perspective. Having a high shadow economy can lead to many detrimental effects throughout society, including a reduction in state revenues, which can therefore lead to a reduction in the quality and quantity of public goods and services (Schneider, 2005). Shadow economies are also said to "promote inefficient use of scarce resources, encourages adoption of low-return technology and small-scale productions, distorts investment, and aggravates income inequality" (Elbahnasawy et al., 2016). In a study of Latin American countries, it was previously found that a 1 percentage point increase of GDP in shadow economic activity resulted in a decrease in the official growth rate of real GDP by 1.22 percentage points (Loayza, 1996). Ihrig and Moe (2004) note that in some developing countries, the shadow economy is a significant aspect of these economies, employing up to 60 percent of the workforce and producing nearly 40 percent of GDP. The large size of the shadow economy was also discovered in an earlier study by Schneider and Enste (2000) in which they discovered that the shadow economy of Nigeria, Egypt, and Thailand consisted of nearly 75 percent of the size of the officially recorded GDP.

These large percentages are not limited to developing and transition economies either, as in the same study, Schneider and Este (2000) found that OECD countries such as Greece and Italy had shadow economies that measured almost 33 percent as large as the officially measured Gross National Product. Given the scope and size of the impact generated by shadow economies, understanding the determinants of shadow economic activity so as to enact policies to help combat these effects becomes essential to good governance and to help build or maintain a healthy economy. According to Schneider (2005), not only does an increase in the size of the shadow economy lead to a reduction in state revenues, but that it can also lead to an increase in taxes on individuals and firms in the official sector, leading to a greater incentive for those to move into the shadow economy as a way to dodge the higher tax rates.

Shadow economic activity can also undermine legal economic activity and create less tax revenue for the government, which can also affect the types of policies, especially economic policies, that the government develops as it sends incorrect macroeconomic information to policy makers (Schneider and Enste, 2000; Mara 2011). Increased shadow economic activity can also undermine the legitimacy of governmental rule and increase corruption. If government institutions fall low enough, or if the public does not support the government and therefore refuses to pay their taxes, the lack of income can greatly deteriorate the quality of life of those in the country, even helping to increase black-market activity such as slavery or prostitution.

Researchers looking to study the shadow economy often run into the issue of trying to identify and define just what the shadow economy is. Williams (2015) states that the most regularly used definition is the one adopted in 2002 by the Organization for Economic Cooperation and Development (OECD) where it defines the shadow economic activity as:

"… all legal production activities that are deliberately concealed from public authorities for the following kinds of reasons: to avoid payment of income, value added or other taxes; to avoid payment of social security contributions; to avoid having to meet certain legal standards such as minimum wages, maximum hours, safety or health standards, etc." (OECD, 2002)

Schneider adds one more criterion for defining shadow economic activity stating that it is also to "avoid complying with certain administrative procedures, such as completing statistical questionnaires or other administrative forms." (Schneider, 2005)

Separating the shadow economy from other illegal activity is also a point to be further developed in order to have a proper understanding of what exactly is being tested and what is meant by the term "shadow economy". The term "black market" often refers to criminal activities while "shadow", "underground", or "informal" economy tends to include "all economic activities that would generally be taxable were they reported to the tax authorities" (Schneider, 2005). The following table developed by Schneider helps to illustrate the differences between informal work and criminal work:

Table 1. A Taxonomy of Types of Underground Economic Activities

Type of Activity	Monetary transactions		Non-Monetary transactions	
Illegal activities	Trade with stolen goods; drug dealing and manufacturing; prostitution; gambling; smuggling; fraud; etc.		Barter of drugs; stolen goods, smuggling, etc. Produce or growing drugs for own use. Theft for own use.	
	Tax evasion	Tax avoidance	Tax evasion	Tax avoidance
Legal Activities	Unreported income from self-employment; Wages, salaries and assets from unreported work related to legal services and goods	Employee discounts, fringe benefits	Barter of legal services and goods	All do-it-yourself work and neighbor help

Illegal activity often includes tax evasion or undocumented work, which are skewed more towards the label of informal economy rather than illicit activity, which tends to include activities such as drug and human trafficking, or illegal weapons sales, which are often referenced as black-market activity. While both types of illegal activities technically fall under the shadow economy, for the purpose of this paper, only non-criminal activities will be used in the data, therefore leaving out any "black market" activity.

2.2 Theoretical Approaches to Shadow Economic Activity

To date, three schools of thought have been developed as an answer to why shadow economic activity occurs. These three perspectives include the Neoclassical school of thought, the Modernization school of thought, and the Political Economy school of thought. All three of these approaches try to explain shadow economic activity in their own way and tend to fall on

different sides of the spectrum when it comes to government's role in enabling or combating

shadow economic activity. All three schools will be covered below, but we will start out with the

most well know and well-established perspective on shadow economic activity, which is that

from the Neoclassical perspective.

2.2.1 Neoclassical Perspective on Shadow Economic Activity

The oldest and most established school of thought regarding shadow economic activity

falls under the title of the Neoclassical perspective, which argues for a 'rational economic actor'

approach, insisting that participation in shadow economic activity is a choice by individuals and

firms due to high or complicated tax systems, public sector corruption, obtrusive state

interference in markets such as labor and product regulations, poor public institutions, social

security contribution burdens, tax morale, as well as the decline of civic virtue (Schneider and

Enste, 2000; Schnieder, 2005; Ihrig and Moe, 2004; Gerxhani, 2004; Enste, 2010). Neoclassical

theorists also posit that informal workers voluntarily work in the shadow economy to avoid many

of the cost and burdens set forth by the government, such as maximum working hours, and

minimum wages, on top of the aforementioned causes (Schneider and Enste, 2000). When

looking at governance in weaker economies and developing nations, many Neoclassical theorists

argue that a country's tendency to over-regulate, combined with an inability to enforce

regulations already in existence, becomes one of the main drivers to shadow economic activity

(Gerxhani, 2004). Schneider (2005) mentions that this over-regulation leads to a significantly

higher incidence of bribery, on top of the higher taxes on the official economy, as well as a large

discretionary framework of regulations, thus increasing the size of the shadow economy. Ihrig

and Moe (2004) argue that a developing country can improve its standard of living by not only

decreasing tax rates, but by increasing enforcement of existing regulations and increasing penalties on those caught in the informal economy. Furthermore, Ihrig and Moe (2004) argue that when international organizations, such as the World Bank, sends resources to help developing nations collect taxes, such as mobile tax units, these actions prove ineffectual and have a minimum effect on reducing employment in the shadow economy. Expanding on the rational actor and free choice theory argued by many Neoclassical theorists, at least in developed countries, motives to participate in the shadow economy combine both economic and non-economic factors. On top of the economic factors mentioned above such as government regulations and high tax burdens, non-economic factors put forth include greater flexibility and work satisfaction, increased leisure time, as well as a more complete use of professional qualifications (Gerxhani, 2004). Gerxhani (2004) brings up an interesting motive to individual's decision to move into the shadow economy under the "free choice" aspect, which is that because of a combination of a lack of information and a lack of trust in the way tax dollars are spent, individuals are more likely to move into the shadow economy as they feel that the government no longer supports the population in its spending of tax income, therefore allowing the move into the shadow economy to be taken much more easily. Somewhat surprisingly, there have been studies by Neoclassical theorists that report positives garnered from work in the shadow economy as well.

While Schneider (2005) makes the argument that countries with better rule of law, often financed by tax revenues, have smaller shadow economies, he also finds evidence that shadow economies can have positive effects for the official economy, stating that almost 2/3rds of income earned in the shadow economy is spent in the official sector when looking at the Austrian

shadow economy (Schneider and Enste, 2000). Furthermore, many Neoclassical theorists argue that the underground economy is actually desirable as it responds to economic demands, especially regarding those of urban services and small-scale manufacturing. The general viewpoint regarding this type of shadow economic activity is that it creates an entrepreneurial spirit which can lead to greater competition and higher efficiency, as well as stronger limits on government activities by creating markets, increasing financial resources, and transferring institutions necessary for growth (Schneider, 2005). Evidence for this argument is backed up empirically with a statistically significant negative relationship between shadow economies and economic growth in developing and low-income countries, and statistically significant positive relationships between shadow economic activity and official economic growth in industrialized countries, stating that:

"If the shadow economy in industrialized countries increases by 1 percentage point of GDP, official growth increases by 7.7 percent; in contrast, for developing countries, an increase of the shadow economy by 1 percentage point of official GDP is associated with a decrease in the official growth rate by 4.9 percent" (Schneider, 2005).

This somewhat paradoxical finding is explained by Neoclassical theorists by stating that in high-income countries, people who are overburdened by taxes and regulations are stimulating the official economy from income made in the shadow economy; while in low-income countries, a large shadow economy diminishes taxable income, thereby harming public infrastructure and public services, such as an effective judicial system, therefore leading to lower growth (Schneider, 2005). Furthermore, Pfau-Effinger (2003) develops this theory by claiming that the shadow economy can offer solutions that the welfare and labor market cannot fix on its own.

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2.2.2 Modernization Perspective on Shadow Economic Activity

While the Neoclassical perspective on shadow economic activity tends to be the school of thought most associated with research on shadow economies, other schools of thought have formed as a response to the increased interest in shadow economic research. The Modernization perspective is one such school of thought that challenges the Neoclassical view on shadow economic activity, insisting that shadow economies are slowly disappearing as modernization occurs, and that shadow economies are a remnant of a pre-modern era (Williams, 2015). Under this view, the shadow economy is something that is relegated to the fringes of modern society, representing ideas such as traditionalism and under-development, while modern formal economies represent development and advancement (La Porta and Schleifer, 2008). Standing in contrast to Neoclassical theorist's views of those who move into the shadow economy (to avoid taxes, government regulations, etc.) La Porta and Schleifer (2014) state that the main difference between those who work in the formal sector versus those who work in the shadow economy are that those in the formal sector tend to be more educated and more productive, raising capital, and dealing with government taxes and regulations, while those in the shadow economy tend to be uneducated and unproductive, running small businesses that produce low-quality products for low-income customers. While many Neoclassical theorists argue for the government to lower registration cost (e.g. taxes and regulations) to enable those in the shadow economy to transfer into the formal economy, Modernization theorists argue that production of those in the shadow economy is too low for them to enjoy any sort of success in the formal economy, and that many in the shadow economy never transition into the formal economy (La Porta and Schleifer, 2014). On top of having low productivity, La Porta and Schleifer (2008, 2014) argue that firms in the

shadow economy add only 15 percent of value per employee versus formal firms, as well as employing much less workers, averaging only 4 workers in shadow economic firms versus an average of 126 workers by those firms in the formal economy; as well as having lower wages than both small and large formal firms, equaling roughly one-half of small formal firms and less than one-third of large formal firms. On top of the lower productivity and smaller size of those in the shadow economy, Modernization theorists argue that government regulation is not the reason why those in the shadow economy do not move to the formal economy, as Neoclassical theorists would argue, but instead fail to move because of a plethora of other reasons including lack of finances. In fact, La Porta and Schleifer (2014), citing data from the World Bank Enterprise Survey, argue that government regulations, corruption, and the legal system are worried about by only 10 percent of entrepreneurs in both the formal sector and shadow economy. Regarding access to finances, Modernization theorists argue that many of those in the shadow economy lack basic knowledge of business practices, including being unaware that slow-selling inventory was a form of capital (La Porta and Schleifer, 2014). While discounting the views of Neoclassical theorists, Modernization theorists find evidence for what is considered a duel view of informality, which views those in the shadow economy, and those in the formal sector as wholly different from one another, producing products with different forms of labor, as well as serving different customers.

As mentioned previously, Modernization theorists tend to discount the Neoclassical perspective that government interference is the main cause for shadow economic activity, rather positing that shadow economic activity, while much more prevalent in poorer societies, eventually shrinks because of modernization and growth in the formal economy, especially with

regards to the education of entrepreneurs in society. La Porta and Schleifer (2014) state that uneducated entrepreneurs, in both the formal sector and in the shadow economy, run small and inefficient companies, while educated entrepreneurs and managers tend to run larger, more efficient firms; these efficient and large firms create and expand their modern businesses to an extent that those companies working in the shadow economy simply cannot compete, thus causing shadow economic activity to die out.

2.2.3 Political Economy Perspective on Shadow Economic Activity

The last major school of thought is that belonging to the Political Economy perspective, which stands as the most stark contrast to the Neoclassical school of thought in that while Neoclassical thinkers argue for less government intervention in the economy, the Political Economy perspective argues that the shadow economy is the result of too little, rather than too much, government intervention in labor and welfare arrangements (Williams, 2015). Both Neoclassical and Political Economy perspectives reject the Modernization school of thought that shadow economies mostly occur in backward societies and that shadow economic activity will eventually die out as an economy becomes more advanced, putting forth studies showing shadow economic activity in more advanced, industrialized societies (Williams, 2017). Political Economist argue that in an era of global capitalism, deregulation, and post-Fordist transformation, the shadow economy is a direct result to practices such as downsizing, sub-contracting, and outsourcing, marginalizing many in society. Slavnic (2010) states that from World War II until the 1970s, the dominant type of accumulation was that of Fordism, which involved both mass production and mass consumption secured by the welfare state, which provided basic conditions for wealth accumulation while also protection for different classes

through collective bargaining and welfare rights. In a post-Fordist society, individuals often are left without full employment, instead working part-time, project employment, or other kinds of temporary employment. The state endorses open economics, often preferring economic policy over social policy, thus replacing the old values of equality, security, and collective emancipation with individualism, natural inequality, and performance in the market (Slavnic, 2010). Work in the shadow economy therefore is done out of a need for survival as a result of being left behind or marginalized by the actions of deregulation and privatization, leading to work that work tends to be unregulated, insecure, and low paying, but nonetheless is needed in the absences of an alternative means to attain a livelihood. Those in the Political Economy school of thought argue instead for greater welfare provisions, such as social protections, social transfers, and labor market interventions to help protect those who are vulnerable, thus eliminating the need for them to move into the shadow economy.

The Political Economy school of thought does seem to share one feature with Neoclassical schools of thought on the idea of shadow economic activity, being that, although the reasons may be different for moving into the shadow economy, this is still done as a choice by those who are in the shadow economy, rather than the modernization perspective which tends to make the argument that shadow economic activity is done so as an almost subconscious decision by uneducated individuals in low-income societies and that those in shadow economic work will eventually die out because of the modernization of the economy. While Neoclassical theorists and Political Economy theorists will say this choice is forced upon them, either through too much regulation and taxes, or through marginalization, nonetheless the idea of a person making the rational decision to move into the shadow economy is still present in both of these

schools of thought. This distinction is important for this paper as a rational actor approach will be assumed as well, but instead of reacting to too much, or too little government intervention in the economic sphere, those who move into the shadow economy will do so because of a lack of trust and faith in their government vis-à-vis that government's promotion or abuse of their rights.

2.3 Why Human Rights Matters with Regard to the Shadow Economy

Human rights encompass many different aspects but are all connected to individual level rights. Human rights can be defined as the "basic rights grounded in the dignity of each human being, whether their foundational basis comes from human nature, human reason, or a divinely sanctioned spirit" (Coleman, 2004). There are personal rights which protect the individual, for example, the right to life, and protections against discrimination as well as legal rights which are rights related to legal protections, such as due process, fair public trials, and protection from arbitrary arrest. Civil rights and liberties can be defined such as freedoms regarding religion, economic participation, freedom of movement, freedom of thought, women's rights, as well as political rights such as taking part in elections and government participation (Coleman 2004). More detail about these rights and what they entail will be discussed in the data section of the paper, but this list gives an introductory understanding of the definition that this paper is taking regarding civil rights. When understanding rights, the role of the state must also be examined as states are often the ones responsible for the protection of their citizen's rights, and often times is the main entity respecting or abusing citizens' rights.

While originally looked at as a solely domestic issue, recently the concept of human rights has moved from the domestic level into the international sphere and is looked at as a responsibility of which all governments should protect. Increased participation in this idea can be

best seen with the implementation of the Universal Declaration of Human Rights by the United Nations, which as of this writing, has 192 states that have signed the declaration.

Human rights as they are understood today, developed in the 18th century with writers and thinkers such as John Locke, John Stuart Mills, and Thomas Paine, who developed the understanding of natural rights in the 17th and 18th centuries and focused on what, as John Locke described, was "Life, Liberty, and Property". As John Locke famously spoke about the rights to "Life, Liberty, and Property", I believe that it was intentional he chose to list the right to life first, as this is the most basic, fundamental right. In modern western political ideology, it is the state's role to protect the physical integrity of their citizens and when they fail to do this, individuals will not be able to have their other rights protected. Furthermore, if state authority is the perpetrator of these basic rights violations, attaining some of the other rights, such as freedom of speech, or women's social, economic, or political rights, would inevitably be lower on the list of state priorities given the state's inconsideration for the physical integrity of their citizens. These rights would be solidified in such documents as the United States' "Bill of Rights" and the French "Declaration of the Rights of Man and of the Citizen". This understanding of rights helped to form the western view of rights and the international understanding, solidified in the Universal Declaration of Human Rights (UDHR). With the development of the Universal Declaration of Human Rights (UDHR) in 1948, the United Nations has been a dynamic force in the incorporation and inclusion of human rights internationally. The Universal Declaration of Human Rights was a continuation of human rights development in general, as well as a response to the massive human rights violations that occurred before and during World War II. The UDHR contains 30 articles, each describing rights and the protection

thereof, covering many different types of rights including political, civil, personal, legal, and economic rights. The UN has worked with both individual states and Non-Governmental Organizations (NGOs) to promote and protect individuals' rights, including the development of, and campaigns to, incorporate these rights internationally.

The understanding that these rights are inalienable is important when looking at human rights violations and as well as respect for these rights, and the relationship to shadow economic activity. Human Rights helps both individuals and society develop through social, political, economic, and personal rights. If an individual is not allowed to work because of race, sex, or any other form of discrimination from the government or other groups, that individual may choose to work in the shadow economy to survive. Although not studied empirically in this paper, an aspect of the shadow economy does involve criminal activity, which often leads to rights being violated when this criminal activity occurs, such as the right to life or liberty. This can be seen with individuals being sold into slavery, those forced to become sex workers, stolen property, organ trading, and violence towards individuals caused by gangs, militias, and criminal entities.

Unfortunately, many times states may also be the ones who are violating the rights of their citizens, either directly or indirectly through their policy decisions. Many Neoclassical economists point to corruption in government as reasons for shadow economic activity with studies showing that corruption levels are highly correlated to larger shadow economies (Wilhelm, 2002) as well as government corruption and rights violations (Bohara et al., 2008) having possible correlation.

While Neoclassical, Modernization, and Political Economist have all proposed theories as to why they believe shadow economic activity occurs in different societies, there is yet to be a definitive answer or school of thought as to the determinants of shadow economic activity. Neoclassical and Political Economy schools of thought argue for a rational actor approach to different stimuli or lack thereof often put forth by the government, be it too much regulation and taxes, or not enough government intervention in the economic and social spheres. While these theories have given insight into why shadow economies occur, it is my belief that they are missing an important causal variable for why individuals choose to move to into the shadow economy, specifically the abuse of their rights. Political economist (Williams, 2017; Williams, 2015; Slavnic, 2010; Williams and Round, 2010) often cite marginalized groups, including women, as choosing to move to the shadow economy, but often this is based solely on how the state has not treated these groups regarding economic concerns, safety nets, and deregulation, rather than actions the state might have taken against these groups. Similarly, Neoclassical theorists argue that individuals and firms choose to move into the shadow economy because of actions taken by the state, citing common causal variables such as overregulation, high taxes, government corruption, and high social welfare cost. As stated, both of these schools of thought are under the assumption that because of certain stimuli individuals receive from the state, either too much intervention, or not enough intervention, these individuals will choose to move into the shadow economy.

As complex as humans are, it is shortsighted to assume that individuals make the decision to move into the shadow economy based solely off economic stimuli and that other factors play into their decision to leave the formal economy and work in the shadow economy. Neoclassical

theorists (Schneider, 2005; Enste, 2010) look at the variable of tax morale, which is the attitude in which citizens and firms want to pay taxes in a given society. In short, this can be boiled down to a citizen's faith in their government that they will spend their tax money wisely. Furthermore, Political Economy theorists (Williams and Round, 2010; Williams, 2015; Williams, 2017; Slavnic, 2010) argue that those marginalized in society that have chosen to move into the shadow economy also feel abandoned by their governments as these governments have moved from a Fordist regime to a post-Fordist, economically focused regime. Both of these theories are attempting to explain citizen reaction to the state and state economic policy, versus citizens moving into the shadow economy because of the stimuli received from other citizens. The idea of looking into non-economic factors has gained traction as of late, even with the likes of Political Economy theorists such as Colin Williams putting forth the idea of a social actor approach, in which those who move into the shadow economy are doing so based off of low tax morale as well as other relationships between individuals and the state (Williams and Kayaoglu, 2016). The political aspect of shadow economic activity was further explored by Elbahnasawy et al. (2016) as they looked into the question of what aspects in a political environment lead to policies that foster development of the shadow economy. Looking at political instability and the effect it has on the shadow economy, they conclude that "the political environment is an important determinant of the informal (shadow) economy" (Elbahnasawy et al., 2016). This political component cannot be understated as both Neoclassical and Political Economy theories are based off the idea that it is the citizens relationship and trust in their government's actions which ultimately lead to them choosing to move into the shadow economy. Understanding the need to further explore the possibility of non-economic factors leading citizens and firms into the

shadow economy, I propose a better understanding of shadow economic activity can be explained based off the relationship of citizens, their rights, and the state. I hypothesize that states who repress the rights of their citizens will see a larger shadow economy than those states who do not. To test this, I will use three models with data garnered from the Cingranelli and Richards (CIRI) Human Rights dataset in which rights are broken down into three distinct categories. These categories consist of Physical Integrity Rights – which for this study will be categorized as Survival Rights, Empowerment Rights – which for this study will be categorized as Civil Liberties, and Women's Economic Rights. Because of the three models put forth, there will be the need for multiple, rather than a single hypothesis on the shadow economy and its relationship with human rights, as there is a possibility that one form of human rights may have a stronger or weaker relationship to shadow economic activity over another version of rights. Therefore, I propose the following hypotheses:

H1: As Survival Rights decline or are abused, there will be an increase in the size of the shadow economy as a percent to Gross Domestic Product. Conversely, if Survival Rights are respected, the size of the shadow economy as a percent to Gross Domestic Product will decrease.

H2: As Women's Economic Rights are abused, there will be an increase in the size of the shadow economy as a percent to Gross Domestic Product. Conversely, as Women's Economic Rights are respected, the size of the shadow economy will decrease as a percent of Gross Domestic Product.

H3: As Civil Liberties decline or are abused, there will be an increase in the size of the shadow economy as a percent to Gross Domestic Product. Conversely, if Civil Liberties are respected, the size of the shadow economy as a percent to Gross Domestic Product will decrease.

The different methods of determining the size of the shadow economy, as well as a more detailed description of the variables to be tested will be covered in the corresponding Data and Methods sections below.

CHAPTER THREE: METHODS FOR MEASURING THE SHADOW ECONOMY

Measuring shadow economic activity is inherently difficult as it is by nature, hidden from view. Researchers trying to measure the shadow economy have two main approaches they can utilize, the direct and indirect approach, with different subcategories within each method.

3.1 The Direct Approach

Direct approaches are often micro samples that utilize either surveys or samples with voluntary replies, tax auditing, or other compliance methods (Schneider and Enste, 2000). Surveys of this type were used by Political Economists Williams and Kayaoglu (2016) when looking at the shadow economy and tax morale in the European Union. Pooling data from the 2007 and 2013 Eurobarometer Surveys, Williams and Kayaoglu reported evidence from 41,689 face-to-face interviews across 27-member states of the European Union (the authors chose to exclude Croatia from the analysis). As the authors state, the surveys:

"…interviewed adults aged 15 years and older in the national language based on a multi-stage random (probability) sampling methodology, with the number of interviews varying from 500 in smaller countries to 1,500 in larger nations. The methodology ensures that on the issues of gender, age, region and locality size, each country as well as each level of sample is representative in proportion to its population size." (Williams and Kayaoglu, 2016).

As noted by Schneider and Enste (2000) the advantage of this type of method comes from the detailed information that can be gained about the structure of the shadow economy, or in the case of Williams and Kayaoglu, respondents' attitudes towards tax morale. While the

questions used by Williams and Kayaoglu were aimed at the idea of tax morale, which is the willingness to pay into the tax system, having high or low tax morale is not expressive of committing an illegal act such as working in the shadow economy, but rather enlightened the researchers on the attitudes towards paying into the tax system by the individuals. As Schneider and Enste (2000) notes, surveys such as this type are sensitive to the way in which they are formulated, with results greatly depending on the respondent's willingness to cooperate. While the results in the pooled Eurobarometer tests can be assumed to be accurate as there was not a chance for criminality to come to light, those who have committed fraudulent behavior are thought to be less likely to confess to said behavior in these types of direct surveys, thus making it difficult to estimate the size of the shadow economy.

Another form of the direct approach is to look at the discrepancy between income declared for tax purposes versus checks against undeclared taxable income such as fiscal auditing programs. This type of measurement has been used in multiple countries including in the United States by the IRS. The shortfalls of this type of measurement is the unintended bias that can occur from the sample size when performing tax audits. As Schneider and Enste (2000) point out, a general selection of taxpayers for audit, based on properties of submitted returns limits the sample size and more than likely is not a truly random sample of the whole population and could hold a possible compliance-based bias. Secondly, estimates of the shadow economy based from tax audits will only show the income in which the tax authorities had discovered, which is likely to only be a fraction of the true hidden shadow economy. As mentioned earlier, the benefit of the direct approach is the amount of detail they can uncover on a micro scale about the shadow economy, yet shortfalls such as only capturing a fraction of all shadow economic

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activity, and an inability to provide estimates on the growth and development of the shadow economy, relegates this type of method to only being able to provide, at most, lower bound estimates of the shadow economy.

3.2 Indirect Approaches

The second method in estimating the size of the shadow economy is known as the indirect approach, also called an indicator approach. The indirect approach encompasses macroeconomic indicators to determine the size of the shadow economy, as well as its development over time. As noted by Restrepo-Echavarria (2015), the indirect approach tries to use an indicator of the [shadow] economy as a proxy for its size or growth. There are six different forms of the indirect approach to analyzing the shadow economy, each using a variety of variables and methods such as national expenditure and income statistics, labor force statistics, currency demand, electricity consumption, and the model method. The different methods will be discussed further below.

3.2.1 National Expenditure and Income Statistics

Under the National Expenditure Approach, discrepancies are sought between the income measure of Gross National Product and the expenditure measure of Gross National Product, and if a gap is found to be present between the expenditure and the income measures, that gap can be used as an indicator to the size of the shadow economy. This approach has been used by different researchers to determine the size of the shadow economies in countries such as Great Britain, Germany, the United States, Korea, Taiwan, Italy, Spain, Russia, and Hungary. Schneider and Enste (2000) assume that national account statisticians who perform these types of measurements will want to minimize the account discrepancies found when running this type of data and

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suggest that anyone attempting to utilize this method to attempt to get a hold of the initial discrepancy rather than the published discrepancy as to minimize interference. While admitting that this type of method would be good if utilized properly and if all components were measured without error, Schneider and Enste (2000) conclude that more often than not, that is not the case and the estimates of the size of the shadow economy are therefore questionable as the discrepancy in the national statistics will reflect the errors and omissions of those who are generating the reports.

3.2.2 Official and Actual Labor Force Statistics

Another version of the indirect approach tries to find a discrepancy between the official and actual labor force, with the assumption that a decline in labor force participation in the official economy could be an indicator to increased shadow economic activity. This approach has to assume that the total labor force is constant, with all else being equal, but as Schneider and Enste (2000) point out, the differences in the rate of participation can have multiple causes, not just the growth of the shadow economy, as well as the possibility that people can work in both the official economy, and the shadow economy, therefore leaving this to be a flawed approach to estimating the size of the shadow economy.

3.2.3 Transactions Approach and Gross National Product

Researchers utilizing the transactions approach assume a constant relation over time between the volume of transactions and official Gross National Product, as well as the inherent assumption of the velocity of money's relationship between total transactions and total nominal Gross National Product. To calculate the shadow economy, researchers must subtract official Gross National Product from nominal (official and unofficial) Gross National Product utilizing

the quantity equation of MV = pT, where M = money, V = velocity, p = prices, and T = total transactions. This method also has its shortcomings, as illustrated by Schneider and Enste (2000) where it is pointed out that under this method, there has to be an assumption of a base year where no shadow economic activity takes place, which is highly unlikely, as well as the problem with obtaining reliable figures for the total amount of transactions, giving special regard to cash transactions and the durability of bank notes. It is also pointed out that under this method, it must be assumed that all variations between total transactions and officially measured GNP is due to shadow economic activity; which requires a considerable amount of data to eliminate the possibility of transactions from legal cross payments. Ultimately, while this approach is an attractive option, the required data needed to create reliable shadow economic activity estimations are so difficult obtain, its application could lead to unreliable results.

3.2.4 Currency Demand Approach

One of the most common methods for determining the size of the shadow economy is known as the currency demand approach. The currency demand approach is an indirect method of measuring shadow economic activity that assumes dealings in the shadow economy are performed utilizing cash transactions, so as to conceal the transaction from state authorities. Under this approach, it is argued that an increase in shadow economic activity will increase the demand for currency, and to isolate said currency demand, researchers use an econometric equation to estimate this demand over time while controlling for factors such as income, interest rates, direct and indirect tax burdens, government regulations, and tax system complexity. Once the econometric equation is worked through with whichever control variables the researcher chooses to employ, the excessive increase in currency that cannot be explained by the control

variables is attributed to Neoclassical notions of causal mechanisms of shadow economic activity such as rising tax burdens; researchers then compare currency demands when taxes and regulations are at their lowest and highest values over a given period of time (Schneider and Enste, 2000). To calculate the size of the shadow economy compared to official Gross Domestic Product, those employing the currency demand approach must assume the same income velocity for currency in the shadow economy as for money in the official economy. While the currency demand approach is very popular and has been applied to many OECD countries in the past, there are five common objections to this method as summarized by Schneider and Enste (2000):

1: Not all shadow economic transactions are paid in cash. This critique comes from previous direct approaches to shadow economic activity where researchers in Norway estimated that roughly 80 percent of all shadow economic activity was in fact paid in cash, but the other 20 percent was undertaken via different forms of transactions, including barter, therefore leading to the possibility that the size of the shadow economy was larger than previous estimates suggested.

2: The main factor in many currency demand approaches for shadow economic activity is that of the tax burden of a particular country. In these studies, many researchers leave out other possible causes for shadow economic activity, including regulation impacts, tax morale, and tax payers' attitudes towards the state, mostly because reliable country level data for these variables are not available. Because many Neoclassical theorists believe that these other variables are likely to have an effect on the shadow economy, the chances of having a larger shadow economy than what is reported is possible.

3: Another criticism of the currency demand approach is that with regards to the United States, "increases in currency demand deposits are due largely to a slowdown in demand deposits, rather than to an increase in currency" (Schneider and Enste, 2000) caused by shadow economic activity. Furthermore, the U.S. dollar is an international currency and is held in cash abroad, which can mislead researchers if they fail to control for U.S. dollars.

4: The currency demand approach makes the assumption that the velocity of money is the same in both the official economy as well as in the shadow economy; this assumption has drawn criticism from researchers based on the argument that there is already a large amount of uncertainty regarding the velocity of money in official economies, and that trying to estimate the velocity of money in the shadow economy is extremely difficult. Being forced to assume that money has equal velocity in both the official economy and the shadow economy therefore irks some who feel this is an unquantifiable assumption.

5: Lastly, one of the biggest flaws regarding the currency demand approach is the assumption that there is zero shadow economic activity in a base year. Relaxing this assumption would create the need to make upward adjustments to previously completed studies as the size of the shadow economy is more than likely to be underestimated.

3.2.5 Electricity Consumption Method

Under the Electricity Consumption Method, also known as The Physical Input Method, researchers argue that the best way to measure overall economic activity (both official and unofficial activity) is to measure electricity consumption, pegging it as the single best physical indicator to overall economic activity. Previous studies have empirically shown throughout the

world that economic activity and electricity consumption tend to be highly correlated, with electricity/GDP elasticity close to one (Schneider and Enste, 2000). This approach, championed by Kaufmann and Kaliberda (1996), creates a proxy measurement for the overall economy and subtracts that measurement from official GDP estimates, deriving an estimate of unofficial GDP. Here, the difference between official GDP growth, and growth of electricity consumption is attributed to shadow economic activity. This method also faces certain criticisms, specifically that:

1: Not all shadow economic activity requires electricity consumption; other forms of energy are often available such as gas, coal, oil, or renewable energy, therefore using only electricity consumption as an indicator causes parts of the shadow economy to not be recorded.

2: The progress in the efficiency in electricity has increased overtime, therefore possibly giving unreliable estimates when looking at time-series data

3: There is the possibility of large differences in the consumption of electricity and GDP across different countries throughout time. This can be seen especially in developing and transition countries that will have markedly different electricity consumption to GDP ratios as they progress.

3.2.6 The Model Approach

Finally, the model approach is the last indirect method used to estimate the size of the shadow economy, and the one that will be utilized in this paper. What separates the model approach from the previously described approaches is that the aforementioned approaches consider only a single indicator for all shadow economic activity effect, regardless of the fact

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that the effects of the shadow economy tend to show up concurrently in multiple markets, including labor, money, and production markets. When looking at monetary approach studies, many consider a single causal variable as the determinant of the size of the shadow economy, that of the tax burden. Contrary to the idea of a single cause for shadow economic activity, the model approach considers both multiple causes, and multiple effects, of the shadow economy (Schneider and Enste, 2000). Practitioners of the model approach often use what is called a MIMIC model, or sometimes a DYMIMIC model, which stands for Multiple Indicators Multiple Causes, or Dynamic Multiple Indicators Multiple Causes respectively. Use of the MIMIC model helps to confirm the effect or influence of different causal variables on a single variable, in this case that variable being the shadow economy. The MIMIC model is based on a statistical theory of unobserved variables in which a "factor-analytic approach is used to measure the hidden economy as an unobserved variable over time" (Schneider and Enste, 2000). These models consist of two parts, the measurement model and the structural equations model, whereas the measurement model links the unobserved variables to observed indicators and the structural equations model specifies causal relationship from the unobserved variables. In this case, the unobserved variable is the size of the shadow economy, but it is assumed by this method to be influenced by multiple indicators that can be observed. Indicators in the MIMIC model that hint to a possible change in the size of the shadow economy include: 1) Monetary indicators - with the idea being increased shadow economic activity will show because of the necessary increase in monetary transactions. 2) Labor market indicators - whereas increased labor participation in the shadow economy will result in decreased labor participation in the official economy. 3) Economic growth – this indicator assumes that as shadow economic activity increases,

production in the official economy will have a depressing effect because of certain inputs, such as labor, move out of the official economy and into the shadow economy.

While causal and control variables for shadow economic activity tend to vary depending on which school of thought the researcher generally subscribes to, the MIMIC model is often employed by Neoclassical researchers (Schneider and Enste, 2000; Schneider, 2005; Enste, 2010; Medina and Schneider, 2017) and therefore tends to use variables such as GDP per capita, Unemployment Rate, Fiscal Freedom, Government Stability, Corruption indices, as well as Trade Openness and the Size of Government. All of these commonly used variables will be controlled for in this experiment to determine if the above hypotheses show statistical significance. A visual example of a MIMIC model is shown below, courtesy Medina and Schneider (2017):
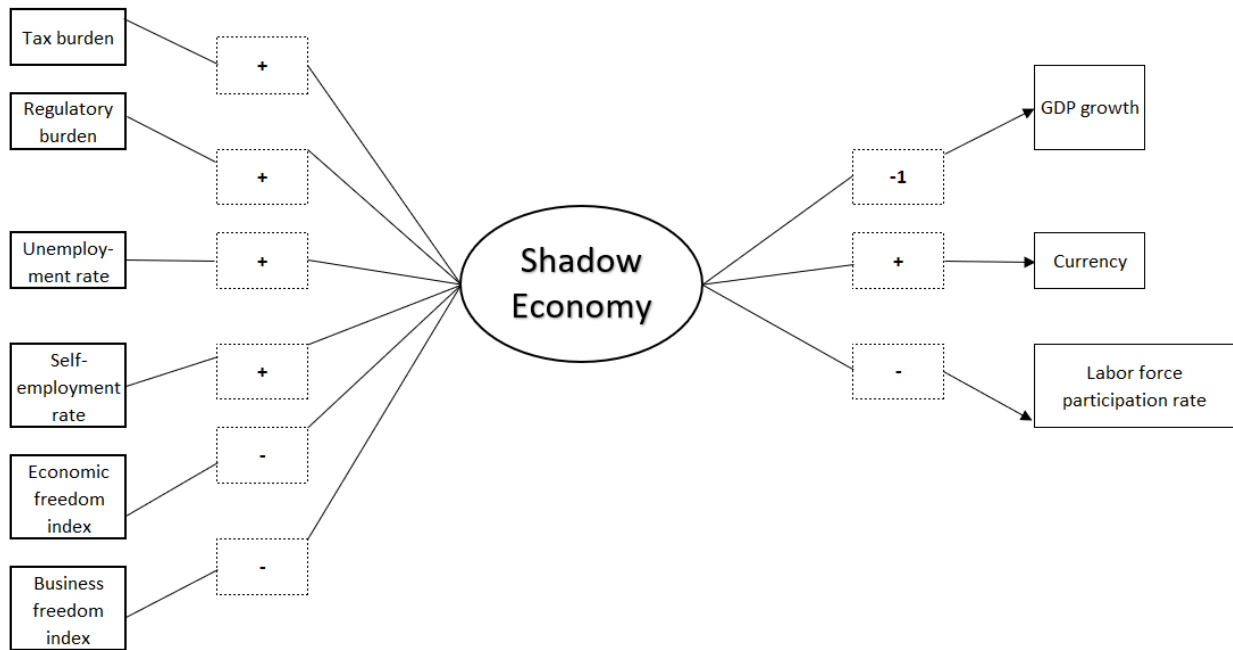
Figure 1. MIMIC Model Illustrating Shadow Economic Activity

The MIMIC model and dataset used by Schneider was chosen for this experiment because of not only the large amount of countries included and the wide range of years offered, but because Schneider tends to update the data rather frequently with new estimates coming out as recently as 2017 (Medina and Schneider, 2017). The following table is a recap of the mostly Neoclassical causes for shadow economic activity, as well as their theoretical reasoning.

Table 2. Possible Causes of Shadow Economic Activity

Cause	Theoretical Reasoning
Tax and Social Security Contribution Burdens	The larger the difference between total labor cost and after-tax earnings, the greater the incentive to move into the shadow economy to escape social security and tax payments
Quality of Institutions	Argued as a greater cause of shadow economic activity, the efficient and discretionary application of tax code and regulations can play a crucial role in movement into the shadow economy
Regulations	Labor market regulations and trade barriers reduce freedom of choice for individual, as well as leading to increased labor cost, thus providing incentive for shadow economic activity
Tax Morale	If a society has a more positive outlook on paying of taxes, this will reduce the probability of people moving into the shadow economy
Public Sector Services	Reduced state revenues from shadow economic activity may lead to increased taxes in the official economy, even though public services suffer because of the decrease in revenue, leading to more of an incentive for shadow economic activity
Deterrence	While empirical evidence suggest that fines and punishment do not have a negative effect on shadow economic activity, the perceived risk of detection does
Official Economy Development	The official economy is considered a key factor in shadow economic activity. The higher unemployment goes, or the lower GDP growth goes, the higher incentive to work in the shadow economy
Self-employment	The higher the rate of self-employment, the higher the chances shadow economic activity can occur, all things being equal

CHAPTER FOUR: DATA

The dependent variable to be tested is the size of the shadow economy, measured using Friedrich Schneider's MIMIC based model from the years 1999 to 2011. The Schneider dataset specifically displays shadow economic activity as a percent to a country's Gross Domestic Product (GDP), giving insight into how large the shadow economy is relative to a country's formal economy.

There are 150 countries in the study with data for the years 1999 to 2011, thus possibly giving over 1,800 country-year observations for the quantitative analysis portion of the study. This paper will use multiple regression analysis to determine the effect, if any, the independent variable in each model has on the dependent variable, which as mentioned, is the measure of the shadow economy as a percent to GDP. Common control variables found throughout the literature, as well as those used by Schneider on multiple occasions are pulled from multiple sources depending on availability. While some of the previous control variables cannot be used given the sample size in this paper (for example, the European Values Survey on Tax Morale would create many missing values for every country within the sample sizes outside of Europe) many of the control variables used in the literature are pulled from international institutions such as the World Bank, IMF, and the OECD. Schneider and Buehn (2013) opted to use many variables from the World Bank's World Development Indicators dataset for their study on the Shadow Economy in OECD countries. Control variables in this paper will also incorporate data from the same dataset, with figures updated as recently as September 2018. These control variables include: Tax Revenue (% of GDP), Unemployment Rate (% of total labor force,

national estimate), Self-employment rate (% of total employment, modeled ILO estimate), GDP per capita, Purchasing Power Parity (constant 2011 international $), GDP per capita growth (annual %), Labor force participation rate (% of total population ages 15-64), as well as General government final consumption expenditure (% of GDP). Most of these control variables are assumed in the Neoclassical school of thought as main contributors to the size of the shadow economy and thus government policies regarding these variables are often critiqued in Neoclassical remedies for shadow economic activity (see Schneider and Buehn, 2013; Enste 2010).

One inherent problem with such a large sample size of countries throughout the economic spectrum such as the one used in this study, is the potentially large variation in Gross Domestic Product per capita, Purchasing Power Parity. To get a better view of the large variation in GDP per capita across the world, a simple Stata test for normalcy was completed using the Histogram method to check for any skewness within the GDP per capita, PPP data. The following graph represents the default findings under the original GDP per capita, PPP data within the dataset.
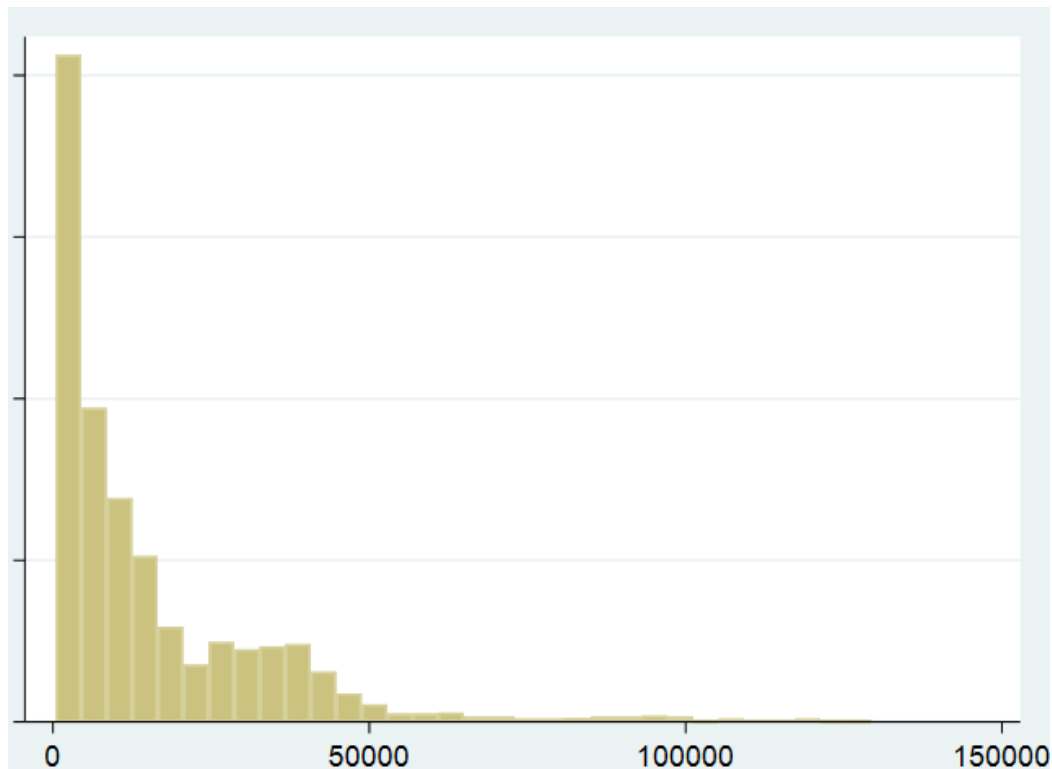
Figure 2. Default GDP per capita, PPP Normalcy Test

The default GDP per capita, PPP variable shows an obvious leftwards skew towards the lower end of the spectrum, thus possibly giving inaccurate results. Countries such as Haiti, which had a GDP per capita of $1,661 in 2002, pale in comparison to some of the more developed nations in this study, such as the United States ($46,366) the United Kingdom ($34,669), or France ($35,440) and are even much lower than some of the developing nations, such as Brazil ($11,559). In order to achieve normalcy within the variable, the log of GDP per capita was taken to correct this, the result of the normalcy test within the new variable, Log of GDP per capita, can be seen below.
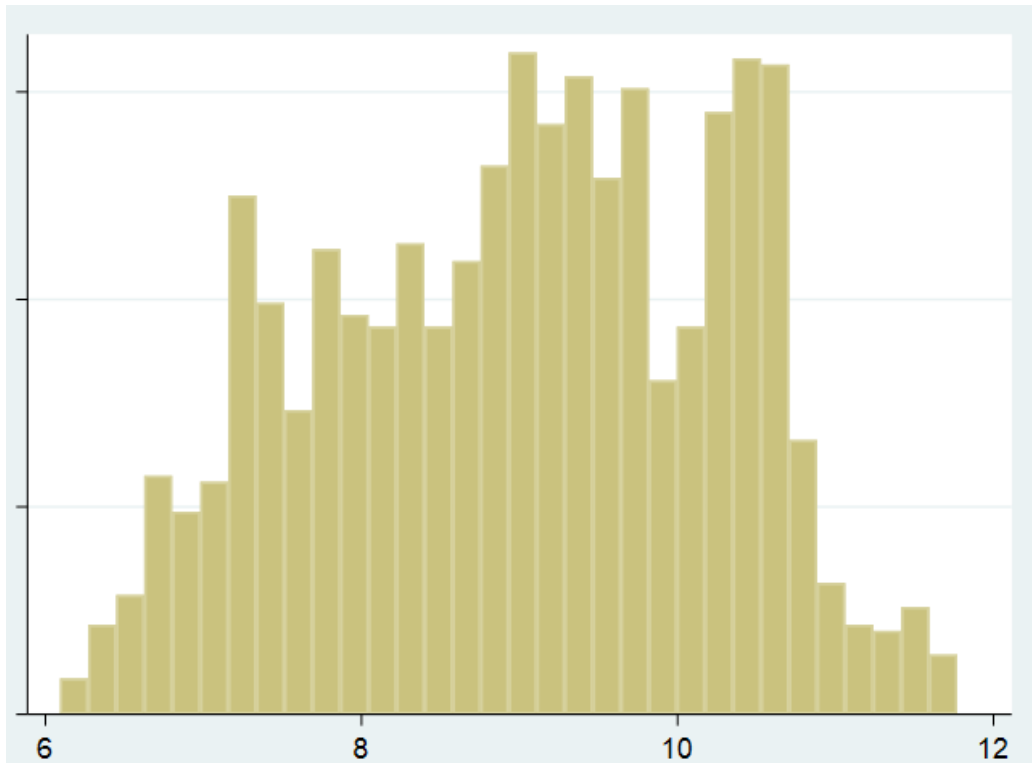
Figure 3. Log of GDP per capita, PPP Normalcy Test

After achieving a much more normal distribution with regard to the GDP per capita, PPP variable, the log of the variable was therefore used in place of the original GDP per capita, PPP variable for the quantitative analysis.

In many quantitative analyses within Political Science, Polity scores are also used as a control variable rating the democratic or autocratic tendencies of respective governments, where a score of -10 denotes a government is strongly autocratic, while a score of +10 signifies a government is strongly democratic. For this analysis I have chosen to use data from the Polity IV project, and more specifically have utilized the Polity2 variable. The Polity2 variable is a modified version of the original Polity variable meant for time-series analyses; the variable fixes

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traditional Polity ratings from the "standardized authority scores" of -66, -77, and -88, to scores within the range of conventional Polity scoring (i.e., -10 to +10). The coding of "standardized authority scores" for the new Polity2 variable are, according to Polity's authors, as follows:

"-66 Cases of foreign "interruption" are treated as "system missing." -77 Cases of "interregnum," or anarchy, are converted to a "neutral" Polity score of "0."-88 Cases of "transition" are prorated across the span of the transition. For example, country X has a Polity score of -7 in 1957, followed by three years of -88 and, finally, a score of +5 in 1961. The change (+12) would be prorated over the intervening three years at a rate of per year, so that the converted scores would be as follows: 1957 -7; 1958 -4; 1959 -1; 1960 +2; and 1961 +5" (Marshall et al., 2018).

Thus, the Polity2 variable is also included to see if there is significance between the type of government, democratic or autocratic, and if the size of the shadow economy has any sort of relationship, and if so, which direction that relationship exists.

As mentioned previously, this study utilizes data from the CIRI Human Rights dataset for its independent variables, which looks at three different models of Human Rights such as the Physical Integrity Rights Index, Empowerment Rights Index, and Women's Economic Rights, to see if the respect or abuse of these rights leads to increased levels of shadow economic activity as a percent to GDP.

The following is a breakdown of the main independent variables in each of the models to be tested: Physical Integrity Rights, which for this paper will be categorized as Survival Rights, is an additive index developed from measures including torture, extrajudicial killing, political

imprisonment, and disappearance indicators. Empowerment Rights, which for this paper will be categorized as Civil Liberties, measures a government's respect for the right of foreign movement, domestic movement, freedom of speech, freedom of assembly & association, workers' rights, electoral self-determination, and freedom of religion. Lastly, Women's Economic Rights, measures internationally recognized rights including equal pay for equal work, free choice of profession or employment without the need to obtain a husband or male relative's consent, the right to gainful employment without the need to obtain a husband or male relative's consent, equality in hiring and promotion practices, job security, non-discrimination by employers, the right to be free from sexual harassment in the workplace, the right to work at night, the right to work in occupations classified as dangerous, and the right to work in the military and the police force.

For the first model to be tested, I chose Survival Rights as I believe that these are the basic and most fundamental rights for citizens to have and from which all other rights grow out of. The Survival Rights Index rates a government's respect for rights regarding Disappearances, Extrajudicial Killings, Political Imprisonment, and Torture on a scale from 0 (no government respect for survival rights) to 8 (full government respect for survival rights). The primary source used in coding all the data for the CIRI dataset comes from the US State Department Country Reports on Human Rights Practices, with the one exception being the Survival Rights Index, which uses a second source, Amnesty International's Annual Report.

Following the Survival Rights Index, the second model to be tested is that of Women's Economic Rights, which is an index of multiple rights for women mentioned previously. Coding for this variable ranges from 0 to 3, with a 0 indicating no economic rights for women in the law,

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and the possibility of systemic discrimination against women built into the law. A score of 1 indicates that there are some legal economic rights for women, but that these rights were rarely or ineffectively enforced. A score of 2 in the Women's Economic Rights Index indicates the presence of laws protecting women's rights and these laws were enforced by the government, yet still allowed for a minor amount of discrimination against women in economic matters. Finally, a score of 3 was given to countries where all or almost all rights regarding economic rights for women were guaranteed by the law and energetically enforced by the government.

The third and final model to be tested would be what is historically thought to be the next line in rights attained by citizens after survival rights, which would fall under the Civil Liberties Index. Without the survival rights of citizens guaranteed, rights such as freedom of speech and worker's rights would more than likely not come about, but for those countries who historically honored the physical integrity of their citizens, such empowerment rights often were granted from the state to the people, or demanded from the state by the people, depending on philosophical perspective. For this model I utilize CIRI's New Empowerment Rights Index which combines the aforementioned civil liberties into a single variable that ranges from 0 (no government respect for civil liberties) to 14 (full government respect for civil liberties).

The data coded in the CIRI data are categorized by "country-year", for example "Albania 2005" and are a reflection of a government's human rights practices against its own citizens (versus foreign nationals, refugees, or undocumented immigrants) within its own borders rather than the government's human rights policies or human rights conditions in general. The distinction between these conditions is explained in the CIRI Coding Manual as:

"Human rights practices are the human rights-related actions of a government and any and all of its agents, such as police or paramilitary forces. A country's human rights policies are what a government says it is going to do to ensure the protection of the human rights of its citizens… but actual government human rights practices often diverge from policies… A country's human rights conditions constitute the whole universe of human rights-related events happening in a country. The state of a country's human rights conditions can be caused by all kinds of things aside from that country's government: foreign companies, domestic non-state actors such as guerilla groups, and so forth." (Cingranelli et al., 2014).

The table below is provided to show the names, short descriptions, and sources for the variables and controls to be used in the quantitative analysis.

Table 3. Variable Names, Source(s)

Variable Name	Description	Source
Shadow	Dependent Variable: Size of the shadow economy as a percent to a country's GDP	Mai Hassan and Friedrich Schneider
Survival Rights	Ranges from 0 (no respect for these rights) to 8 (full government respect for these rights)	CIRI Human Rights Data Project Coding Manual Version 5.20.14.
Civil Liberties	Ranges from 0 (no respect for these rights) to 14 (full government respect for these rights)	CIRI Human Rights Data Project Coding Manual Version 5.20.14.
Women's Economic Rights	Ranges from 0 (no respect for these rights) to 3 (full government respect for these rights)	CIRI Human Rights Data Project Coding Manual Version 5.20.14.
Tax Revenue	Tax Revenue as a percentage of GDP	World Bank: WDI September 2018
Unemployment	Unemployment rate as a percent of total labor force, national estimate	World Bank: WDI September 2018 IMF WEO – April 2018
Self-Employment	Total self-employed workers as a proportion of total employment, modeled ILO estimate	World Bank: WDI September 2018
Log of GDP per capita, PPP	Log of GDP per capita, PPP (constant 2011 international $)	World Bank: WDI September 2018
GDP Growth	GDP per capita growth, annual %	World Bank: WDI September 2018
Labor Force	Labor force participation rate as a percent of the total population aged 15-64	World Bank: WDI September 2018
Government Consumption	General government final consumption as a percentage to GDP	World Bank: WDI September 2018
Polity 2	-10 (Autocratic) to +10 (Democratic) scoring system regarding government tendencies	Polity IV Project

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CHAPTER FIVE: RESULTS

With the data compiled, the next steps were to look at the results for each individual model and how the models compared with the hypotheses. As mentioned previously, Hypothesis 1 stated that as Survival Rights decline or are abused, there will be an increase in the size of the shadow economy as a percent to Gross Domestic Product. Conversely, if Survival Rights are respected, the size of the shadow economy as a percent to Gross Domestic Product will decrease. The following table shows the Bivariate regression results of Survival Rights and their relation to the size of the shadow economy.

Table 4. Bivariate Regression of Survival Rights and the size of the Shadow Economy

Shadow Economy	Coefficient	Standard Error	t	P>|t|	95% Confidence Interval	
Survival Rights	-1.73	0.15	-11.26	0.00	-2.03	-1.43
Constant	42.14	0.82	51.39	0.00	40.53	43.74
Observations	1,914					
R2	0.062					
Adjusted R2	0.060					
Prob > F =	0.00					
Root MSE	14.253					

Looking at the table above, it is clear to see a very strong relationship between the respect of Survival Rights and the size of the shadow economy with a t-score of -11.26 and a p-value of 0.00, indicating that at the 99 percent confidence level, we can say that the relationship between Survival Rights and the size of the Shadow Economy is statistically significant. The route of the relationship is also in the expected direction given in H1, that being a negative relationship

existing between the two. As shown in the above table, for every 1-point increase on the Survival Rights scale, there is a decrease in the size of the shadow economy. The F statistic score shows that we can in fact reject the null hypothesis that there is not a relationship between Survival Rights and the size of the shadow economy, but with an Adjusted R2 of just 0.06, it does show that this singular connection doesn't do a very good job at explaining the entire variance within these variable's relationship. To fully investigate H1, a multiple regression analysis was performed including not only the Survival Rights variable, but the previously aforementioned control variables found throughout the literature. Because the data to be examined involved panel data, a Durbin-Wu-Hausman test was performed to specify the need for a random-effects or a fixed-effects regression model, with the results showing that a fixed-effects model was indeed necessary. The following table shows the results of the fixed-effects regression analysis of Survival Rights on the size of the Shadow Economy.

Table 5. Fixed-effects regression model of Survival Rights on the size of the Shadow Economy

	Size of the Shadow Economy			
	Coefficient	t-Score	95% Confidence Interval	
Survival Rights	0.05	0.48	-0.159	0.262
	(0.107)			
Tax Revenue	0.52***	10.82	0.430	0.620
	(0.048)			
Unemployment	0.21**	5.29	0.137	0.299
	(0.041)			
Self-Employment	-0.10***	-2.61	-0.179	-0.025
	(0.039)			
Log GDP cap	3.80***	5.5	2.445	5.155
	(0.690)			
GDP Growth	-0.23***	-8.67	-0.285	-0.180
	(0.026)			
Labor Force	-0.07	-1.24	-0.197	0.044
	(0.061)			
Gov Con	1.21***	21.58	1.105	1.326
	(0.056)			
Polity	-0.05	-1.06	-0.170	0.050
	(0.056)			
Constant	-27.60***	-3.84	-41.713	-13.490
	(7.190)			
Adjusted R2	0.459			
Number of Observations	1,065			

Notes: Standard errors in parentheses. * $p<0.1$; **$p<0.05$; ***$p<0.01$

Stark differences arise between Survival Rights and the shadow economy once the variables are moved from a bivariate regression analysis to a multiple regression analysis, and the statistical significance of Survival Rights drops once the other control variables are added in. This occurrence shows that by itself, Survival Rights have the expected hypothesized relationship with the size of the shadow economy, but there is something occurring when the control variables are added in that is causing that variable to fall out of significance. Checking

this variable for multicollinearity (see Appendix A) showed no strong signs of multicollinearity between Survival Rights and the rest of the control variables, thus leading me to accept the results of the multiple regression model and rejecting Hypothesis 1. While it is apparent a relationship does in fact exist between Survival Rights and the Shadow Economy, future research into why this variable loses significance once other factors are brought into account could be a viable route to further enhancing our understanding of the shadow economy.

Moving on from Survival Rights, the next model tested is that of Women's Economic Rights and their relationship to the size of the Shadow Economy. As stated in Hypothesis 2, the expectation is that as Women's Economic Rights are abused, there will be an increase in the size of the shadow economy as a percent to Gross Domestic Product. Conversely, as Women's Economic Rights are respected, the size of the shadow economy will decrease as a percent of Gross Domestic Product. The following bivariate regression shows the results for Women's Economic Rights and the size of the Shadow Economy.

Table 6. Bivariate Regression of Women's Economic Rights and the size of the Shadow Economy

Shadow Economy	Coefficient	Standard Error	t	P>|t|	95% Confidence Interval	
Women's Econ	-0.006	0.007	-0.94	0.34	-0.021	0.007
Constant	33.66	0.335	100.4	0.00	33.008	34.324
Observations	1,925					
R2	0.000					
Adjusted R2	0.000					
Prob > F =	0.35					
Root MSE	14.716					

As the table above shows, looking at just the relationship between the two variables, there does not seem to be any sort of statistical significance between the two variables, and the F-statistic and Adjusted R-squared figures point to an equally dismal picture of the two variables. While the coefficient is in fact pointed in the right direction as expected, there does not seem to be a very strong relationship, if any between the two variables. While the bivariate regression of Survival Rights and the Shadow Economy did show a statistically significant relationship, as we have seen that relationship ceased to exist after adding in other control variables. To see if the opposite would happen with regards to Women's Economic Rights, a multiple regression analysis was run as well in order to determine if an interaction was possibly occurring that would have caused Women's Economic Rights to show up as statistically significant. The results of the multiple regression analysis can be seen below. As with Survival Rights, a Durbin-Wu-Hausman test was performed to determine if random-effects or fixed-effects regression model should be used, with fixed-effects ultimately being the model deemed necessary.

Table 7. Fixed effects regression model of Women's Economic Rights on the size of the Shadow Economy

	Size of the Shadow Economy			
	Coefficient	t-Score	95% Confidence Interval	
Women's Econ Rights	0.00	1.12	-0.002	0.008
	(0.002)			
Tax Revenue	0.52***	10.79	0.427	0.618
	(0.048)			
Unemployment	0.21***	5.25	0.135	0.297
	(0.041)			
Self-Employment	-0.10***	-2.64	-0.180	-0.026
	(0.039)			
Log GDP cap	3.75***	5.47	2.409	5.107
	(0.687)			
GDP Growth	-0.23***	-8.59	-0.282	-0.177
	(0.026)			
Labor Force	-0.07	-1.17	-0.192	0.048
	(0.061)			
Gov Con	1.21***	21.66	1.107	1.327
	(0.056)			
Polity	-0.05	-1.05	-0.168	0.050
	(0.055)			
Constant	-27.20***	-3.84	-41.101	-13.316
	(7.079)			
Adjusted R2	0.46			
Number of Observations	1,067			

Notes: Standard errors in parentheses. * $p<0.1$; **$p<0.05$; ***$p<0.01$

As hinted at in the bivariate regression, the variable Women's Economic Rights has no statistical significance on the size of the shadow economy. While many factors could possibly explain why this is the case, it is my assumption that in a lot of countries in which women have strong economic rights, there tends to be other factors such as overregulation or the strength of the economy, that would lead people into the shadow economy. On the other hand, it is my assumption that in countries where women have little to no economic rights tend to be more traditionalist countries, where women would not be expected to work in the same capacity as

men, therefore not creating a reason for men to move into the shadow economy as women compete for jobs. Further research possibly on the size and strength of an economy, or in modern versus more traditionalist societies and the relationship between women's economic rights and the size of the shadow economy might have good exploratory value. When checked for multicollinearity (see Appendix B), all variables in the women's economic rights model showed no signs of multicollinearity, therefore the results from the regression analysis were kept.

This final model to be run was to explore the possible relationship between Civil Liberties and the size of the shadow economy. As a reminder, Hypothesis 3 stated that as Civil Liberties decline or are abused, there will be an increase in the size of the shadow economy as a percent to Gross Domestic Product. Conversely, if Civil Liberties are respected, the size of the shadow economy as a percent to Gross Domestic Product will decrease. The following bivariate regression analysis shows the variable "Civil Liberties" and its relationship with the size of the shadow economy.

Table 8. Bivariate Regression of Civil Liberties and the size of the Shadow Economy

Shadow Economy	Coefficient	Standard Error	t	P>|t|	95% Confidence Interval	
Civil Liberties	-0.45	0.088	-5.21	0.00	-0.63	-0.28
Constant	37.59	0.826	45.49	0.00	25.97	39.21
Observations	1,916					
R2	0.014					
Adjusted R2	0.013					
Prob > F =	0.00					
Root MSE	14.622					

The respect or abuse of civil liberties have a clear statistical significance on the size of the shadow economy as seen in the above table. With a p-value of 0.00 and a t-score of -5.21, it can be said with 99 percent confidence that the two are significantly related. With the F-statistic at 0.00, the null hypothesis can be rejected that the relationship is non-existent, though with an Adjusted R-squared of only .013, the respect or abuse of civil liberties is far from the only reason for participation in the shadow economy. As with the bivariate regression model of Survival Rights, the Civil Liberties bivariate regression seems to have value when looking at determinants of the size of the shadow economy, thus following up with the bivariate regression, a multiple regression model was run. In the below table the results of the multiple regression analysis can be observed. As with the previous models, a Durbin-Wu-Hausman test was performed to determine if the model needed to utilize fixed effects or random effects, with fixed effects regression model being chosen as the correct model to run. While in the bivariate regression model, an observation count of 1,916 was able to be achieved, when adding in control variables such as self-employment rate, labor force participation rate, and government consumption brought the total amount of observations down to 1,067 as many countries in the study simply did not have data with regard to those particular statistics.

Table 9. Fixed-effects regression model of Civil Liberties on the Size of the Shadow Economy

	Coefficient	t-Score	95% Confidence Interval	
			Size of the Shadow Economy	
Civil Liberties	-0.17**	-2.25	-0.325	-0.022
	(0.077)			
Tax Revenue	0.53***	10.96	0.436	0.627
	(0.049)			
Unemployment	0.23***	5.58	0.150	0.314
	(0.041)			
Self-Employment	-0.98**	-2.52	-0.175	-0.021
	(0.039)			
Log GDP cap	3.49***	5	2.121	4.859
	(0.697)			
GDP Growth	-0.22***	-8.5	-0.28	-0.175
	(0.026)			
Labor Force	-0.07	-1.15	-0.191	0.049
	(0.061)			
Gov Con	1.19***	21.2	1.088	1.310
	(0.056)			
Polity	-0.05	-1.06	-0.167	0.050
	(0.555)			
Constant	-23.21***	-3.18	-37.524	-8.896
	(7.293)			
Adjusted R2	0.462			
Number of Observations	1,067			

Notes: Standard errors in parentheses. * $p<0.1$; **$p<0.05$; ***$p<0.01$

Unlike survival rights, which was significant in its bivariate relationship with the size of the shadow economy yet fell out of significance when adding in control variables, the civil liberties variable continues to show statistical significance to the 95 percent confidence level, even after adding in the often-cited causal variables from previous shadow economy literature. With a p-value less than .05, a t-score of -2.25, and a coefficient of -0.17, in line with the expected direction, the above table shows that the respect or abuse of civil liberties does have a significant relationship with the size of the shadow economy. An Adjusted R-squared value of

.462 shows that the variables given in this model give pretty good explanatory value for the size of the shadow economy. As stated earlier, the civil liberties variable is an index that measures a government's respect for the right of foreign and domestic movement, freedom of speech, freedom of assembly & association, workers' rights, electoral self-determination, and freedom of religion. While some of these rights do fall into the sphere of economics, many of these rights are of a different nature, and show that while economic decisions partaken by a government can affect the size of shadow economic activity, a key component shows that the size of the shadow economy falls outside of purely economic concerns and rather points to a possible different, multifaceted explanation. Further discussion about civil liberties and their relation to the size of the shadow economy will be discussed in the following chapters. To check for multicollinearity within the regression model, a correlation analysis was performed (see Appendix C); all variables within the Civil Liberties model were sufficiently distinct from one another as to where issues of multicollinearity could be dismissed.

A multiple regression model was put together of all three hypotheses to give a singular overview of the three measures of human rights and their relation to the size of the shadow economy, as well as to see how each model and their variables relate to one another. While total observations for many of the bivariate regression models hovered around the 1,900 mark, as mentioned in the civil liberties model, when adding in certain control variables, the observations drop to 1,065 for the Survival Rights model, and 1,067 for the Women's Economic Rights and Civil Liberties models. While the drop is relatively large, having over 1,000 observations still results in a fairly large n-study and therefore still holds external validity.

Table 10. Multiple Regression Model of all Hypotheses

Human Rights and the Size of the Shadow Economy

	Model 1	Model 2	Model 3
Survival Rights	0.05		
	(0.107)		
Women's Econ Rights		0.00	
		(0.002)	
Civil Liberties			-0.17**
			(0.077)
Tax Revenue	0.52***	0.52***	0.53***
	(0.048)	(0.048)	(0.049)
Unemployment	0.21**	0.21***	0.23***
	(0.041)	(0.041)	(0.041)
Self-Employment	-0.10***	-0.10***	-0.98**
	(0.039)	(0.039)	(0.039)
Log GDP cap	3.80***	3.75***	3.49***
	(0.690)	(0.687)	(0.697)
GDP Growth	-0.23***	-0.23***	-0.22***
	(0.026)	(0.026)	(0.026)
Labor Force	-0.07	-0.07	-0.07
	(0.061)	(0.061)	(0.061)
Gov Con	1.21***	1.21***	1.19***
	(0.056)	(0.056)	(0.056)
Polity	-0.05	-0.05	-0.05
	(0.056)	(0.055)	(0.555)
Constant	-27.60***	-27.20***	-23.21***
	(7.190)	(7.079)	(7.293)
Adjusted R2	0.459	0.46	0.462
Number of Observations	1,065	1,067	1,067

Notes: Standard errors in parentheses. * p<0.1; **p<0.05; ***p<0.01

As the table shows, between all three human rights models, the Civil Liberties model is

the only one that has a significant relationship with the size of the shadow economy after adding

in all other control variables that have been previously cited as causal factors for shadow economic activity (see Schneider and Buehn, 2013; Schneider and Enste, 2000; Enste, 2010).

To make sure the three models didn't run into issues of multicollinearity, a correlation table was constructed to ensure no two variables were closely correlated with one another.

Table 11. Correlation Table of Dependent and Independent Variables

	Shadow	Survival Rights	Civil Liberties	Women's Econ
Shadow	1.0000			
Survival Rights	-0.2493	1.0000		
Civil Liberties	-0.1201	0.5736	1.0000	
Women's Econ	-0.0205	0.0587	0.0535	1.0000

(Observations = 1,913)

Correlation tables of each model, as well as a full correlation table of all variables used within the study can be found in the Appendix (see Appendixes A, B, C, D). After running correlations for each model as well as all variables within the study, no issues regarding multicollinearity was found to occur. With the threat of multicollinearity showing to be a nonexistent factor, descriptive statistics were performed to get a better idea of the amount of observations, the mean, standard deviation, and value ranges of each variable. Descriptive statistics of all variables can be found in the Appendix (see Appendix E) for further inspection.

With both correlation tables and descriptive statistics showing that all models run had validity, it is safe to say that each regression model does in fact yield the correct results.

As a recapitulation of the theoretical argument, Hypothesis 1 (Survival Rights) and Hypothesis 2 (Women's Economic Rights) do not hold statistical significance when adding in other variables thought to be causal factors for the size of the shadow economy. While Survival Rights do seem to have some sort of relationship with the size of the shadow economy, there appears to be something else occurring once adding in economic factors that causes it to lose its significance. As opposed to Hypotheses 1 and 2, Hypothesis 3 (Civil Liberties) does in fact hold statistical significance at a confidence level greater that 95 percent after adding in the control variables, and thus helps add to the literature of why shadow economic activity occurs. As stated previously, the Civil Liberties variable is an index of multiple variables from Cingranelli and Richards that includes freedoms such as the freedom of foreign and domestic movement, freedom of speech and press, freedom of religion, electoral self-determination, workers' rights, and freedom of assembly and association (Cingranelli and Richards, 2014). In the following section, a short qualitative study on Hungary and Slovakia from the years 2012 to 2015 will be used to supplement the quantitative element of this work to show how these two similar countries respect or neglect different aspects of civil liberties, as well as a look at their shadow economic activity to see if they reflect what the quantitative analysis purports.

CHAPTER SIX: CIVIL LIBERTIES AND THE SHADOW ECONOMY: HUNGARY AND SLOVAKIA 2012 TO 2015

As an addition to the largely quantitative analysis of this paper, a short qualitative addition was chosen to be added to get a better understanding on how the aforementioned human rights, with a special focus on civil liberties, are being respected or abused in a modern setting. For the qualitative section, I chose to focus on two nations that have a relatively new relationship with democratically elected leaders, Hungary and Slovakia. Both Hungary and Slovakia are part of Freedom House's Nations in Transit cohort which looks at the 29 formerly communist countries in Central Europe and Central Asia and their road to democracy. Both Hungary and Slovakia have been EU member states since May 2004, as well as being apart of the Schengen area since December 2007; Slovakia has been a member of the Euro currency since January 2009 while Hungary is still using the Hungarian Forint but has plans to adopt the Euro in the near future (European Union, 2019). With both countries transitioning from communism to democracy, having geographic proximity to one another, as well as having access to the financial and human capital offered by the European Union, an examination of their policies and the size of their shadow economies offered a great chance at two countries starting off on seemingly equal footing.

The years from which this section of the paper incorporate Hungary and Slovakia are from 2012 to 2015, which were specifically chosen as they fell outside of the years observed in the quantitative analysis portion of this work. Both countries have had relatively strong economies in the past, and even saw a double digit rise in GDP from the years 2007 to 2013 with Hungary earning a 12.42 percent rise in GDP and Slovakia garnering a 15.98 percent rise in GDP

over the same period (Turk, 2014). Throughout the qualitative analysis, the main focus of each country will be their adherence to or lack thereof, of their citizen's civil liberties, with specific attention paid to rights such as the freedom of assembly and association, freedom of speech, electoral self-determination, and worker's rights. All definitions of each variable are taken from the Cingranelli and Richards (CIRI) Human Rights Data Project and are used in the Civil Liberties index in the previous quantitative analysis. CIRI defines the freedom of assembly and association as the:

"… internationally recognized right of citizens to assemble freely and to associate with other persons in political parties, trade unions, cultural organizations, or other groups… organizations critical of a government or those that are perceived to have political agendas are not allowed to hold demonstrations, and their activities are severely curtailed and closely monitored by the state" (Cingranelli and Richards, 2014).

Within both Hungary and Slovakia there are cases involving different governing bodies respecting or clamping down on these freedoms, which can often overlap with other freedoms such as freedom of speech. As CIRI notes, freedom of speech indicates "the extent to which freedoms of speech and press are affected by government censorship, including ownership of media outlets… limits or prevents the media (print, online, or broadcast) to express views challenging the policies of the existing government." (Cingranelli and Richards, 2014). The remaining two categories of Civil Liberties to be focused on include worker's rights and electoral self-determination. Cingranelli and Richards (2014) state that electoral self-determination indicates to what extent citizens of a country are allowed political choice and the ability to change their laws and elected officials in both free and fair elections. While most of these

freedoms are upheld in modern democracies, as we will see, often times certain aspects of free and fair elections are corrupted in an effort for the ruling party to maintain power within a given country. The final aspect of Civil Liberties to be focused on is that of worker's rights, which Cingranelli and Richards (2014) proclaim as the freedom of association that workers enjoy at their workplaces, as well as the right to collective bargaining with employers. Similar to electoral self-determination, many of these rights are respected in modern democracies, especially in those countries that are a part of the European Union, but evidence will be sought to see if that relationship still holds in the transition countries of Hungary and Slovakia.

Since the fall of communism and the transition to liberal market economies, Eastern Europe has seen a marked increase on many 'quality of life' measures. Countries such as the Czech Republic, Hungary, Slovakia, and others have seen a rapid decrease in issues such as heart disease, with life expectancy in post-communist countries rising from 69 years old in 1990 to 73 years old in 2012 (Rohac, 2016). An additional note is the rise in household consumption per capita of formerly communist countries. "From 1990 to 2011, household consumption per capita… grew, on average, by 88 percent, compared with an average increase of 56 percent elsewhere in the world… Between 1993 and 2011, the average number of passenger cars climbed from one for every ten people to one for every four." (Shleifer and Treisman, 2014). The opening up of electoral systems, as well as an overall increase in quality of life measurements led researches, academics, and policy makers to determine that the transition of the old communist and oligarchical power structures, to a new pluralistic democracy was well under way and had a solid foundation.

6.1 Hungary's Transition from Communism to Democracy

With the rise in the quality of living and introduction of democratic norms, many saw countries such as Hungary as an extremely promising example of a post-communist transition to democracy (Rohac, 2016). Freedom House's 2003 "Nations in Transit" report on Hungary states that "Its speed and success… have made Hungary clearly one of the most solid democracies among the post-communist states." (Freedom House, 2003). Having completed multiple rounds of successful national and local elections, an independent media, strong civil society, and a constitution and court system that ensured the rule of law (Freedom House, 2003), Hungary's transition to a modern, liberal democracy was quickly becoming one of the success stories of post-communist transition countries. Like previous elections, the 2002 election was found to be free and fair by the Organization for Security and Cooperation in Europe, as well as garnering turnout of over 70 percent in both rounds of elections. Hungarian civil society also burgeoned in the years after communist rule, with over 68,000 registered organizations in 2002 (Freedom House, 2003), civil liberties such as freedom of assembly and association, and freedom of speech, were firmly established and well respected throughout Hungarian society. While Hungary started off on a solid foundation, the worldwide economic downturn in the late 2000s, caused structural issues to show through that were previously thought to be nonexistent; along with the rise of a strong populist leader in Viktor Orban who, while once championed liberal ideas, has more recently espoused a return to traditional values as well as anti-immigrant sentiments, and has preached the virtues of "illiberal democracy". Trends such as these are not limited to countries such as Hungary but are a growing concern within many post-communist countries. "A number of ex-communist states, particularly Hungary and Poland, have rejected an

ideology founded on individualism, human rights, economic transparency and multiculturalism… This new model is also frequently characterized by widespread, often systematic corruption and an increasingly authoritarian political culture" (Pogany, 2018). This rejection of liberal pluralism by populist leaders has created an atmosphere where "populists do not act as if they face a political opponent (or ethnic, religious, or sexual minority) with whom they can negotiate but rather an enemy whom they must destroy." (Rupnik, 2007).

6.1.1 Hungary's Backsliding into Autocracy

When the world-wide financial crisis struck Hungary in 2009, its government decided on taking an inconsistent and populist response to the crisis, rather than following on the path that had previously led it to prosperity. Along with the populist response to the crisis, Hungary's institutional qualities began to severely lack as well as high amounts of corruption found within its society when compared to its neighbors (Rohac, 2016). With the shift to a more autocratic approach to the economic crisis, the structural issues revealed were never mended, and are largely consistent to this day. Most prominent of these structural issues is in the labor market which is characterized by very low levels of labor force participation as well as high unemployment rates. As Rohac notes:

"Hungary's economy contracted by 6.8 percent in 2009 and has yet to resume pre-crisis growth rates. The average economic growth rate since 2010 has been less than half of that in Poland. Unemployment increased from 7.4 percent in 2007 to 11.2 percent in 2009 and has remained in double digits since." (Rohac, 2016).

On top of the lower economic output, Hungary, led by populist leader Viktor Orban, has clamped down more on civil liberties than it had ever done previously since its transition from communism to democracy. New laws and regulations have been put into effect to where government appointees have "considerable power to limit freedom of expression and punish perceived violations, creating an atmosphere that encourages self-censorship" (Kovacs, 2012) within both the media and in non-governmental organizations.

Attacks on freedom of speech, especially those regarding the media, have seen increasing numbers since 2012 with Orban's shift towards a more illiberal democracy. Political pressure from the government increased towards those press outlets that wrote critical pieces regarding government officials or policies. As Freedom House's 2013 report on Hungary notes, "half of the interviewed media managers have experienced direct pressure from political forces, and 35 percent think that the level of political pressure is so high as to hinder freedom of the press." (Kovacs, 2013). The pressures on the media have not been relegated to just political pressure but has been accompanied with a rise in economic pressure in the form of specifically targeted tax hikes. RTL Klub was one of those targeted media outlets in which economic pressure was applied in order to censor its journalistic viewpoints after switching from more sensationalistic tabloid coverage to coverage that was more critical of the government; heavy taxes of 40 to 50 percent were passed targeting RTL Klub in an effort to clamp down on its critical news coverage, with over 90 percent of the total revenue of the tax coming directly from RTL Klub by year's end (Kovacs, 2015). That same year, the online news outlet Origo.hu published multiple investigative articles on possible corruption within Orban's government, and in June, possibly because of government pressure, its editor-in-chief was unexpectedly fired by the

telecommunications firm Magyar Telekom (Kovacs, 2015). The trend in political and economic pressures towards media have been accumulating since as early as 2012, as conservative media outlets with pro-government reporting have seen a spike in profits, aided from government advertising on those channels, which has left liberal and left-leaning media outlets displaced and unable to compete on the same scale (Kovacs, 2013).

Abuses of civil liberties in Hungary have not been limited to just attacks on the press and on freedom of speech in general but have also been shown to occur within the realms of worker's rights, freedom of association and assembly, as well as within electoral self-determination. As Kovacs (2012) notes, not only did the government engage in reckless economic policies and try to exert political control over government institutions, but they also undermined labor protections, as well as engaged in gerrymandering in an effort to keep Fidesz, the leading political party, in power for the foreseeable future. The once thriving Hungarian civil society, which helps to ensure many freedoms such as freedom of speech, freedom of assembly and association, as well as acting as a watchdog on government activities, has often been attacked by the Hungarian government. With changes in the laws brought forth by the ruling Fidesz party, civil society in Hungary became largely dependent on government funding which was often decided in a partisan fashion. The attacks from the government on civil society, and non-government organizations in general have increased recently as well, with rhetoric becoming 'more hostile toward nongovernmental organizations (NGOs), and with the prime minister and government officials accusing civil society figures of being paid political activists' (Kovacs, 2015). Freedom of religion, part of the Civil Liberties index, while not explicitly observed within this qualitative study, has also been under attack from the ruling Fidesz party after the

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remodeling of a 'law on religions', which brought down the total number of state-recognized religious groups to 14, a drastic decrease from the previously recognized 352 groups. These actions drastically limited the financial flexibility of these organizations and banned them from partaking in government subsidies or tax benefits (Kovacs, 2012).

The attacks on the media and non-government organizations caused a worsening of the right to electoral self-determination within Hungary as well, with the 2014 elections being described by critics as free but unfair, and outside electoral monitoring groups such as the Organization for Security and Cooperation in Europe highlighting the lack of balanced media coverage within the election cycle (Kovacs, 2015). According to the World Bank's Worldwide Governance Indicators Voice and Accountability data about perceptions 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 "of the four Visegrad countries on this measure, Hungary comes last in the group, with the measure deteriorating dramatically since Hungary's entry in the EU in 2004" (Rohac, 2016). For reference, the term Visegrad countries refers to the countries of Hungary, Poland, The Czech Republic, and Slovakia.

A more worrying signal is Hungarian Prime Minister Viktor Orban's "opening to the East" movement, of which the aim is to forge closer economic and diplomatic ties with more authoritarian countries from the East including Russia and China (Kovacs, 2015). Orban's "opening to the East" movement was exemplified in a 2014 speech in which the Orban espoused the idea of creating an "illiberal state" in Hungary that, while not explicitly rejecting the principles of liberalism, would not make liberal ideology a central focal point of the country. Pointing towards successful countries such as China, India, Russia, and Turkey, Orban was

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quoted as saying how these countries are "not Western, not liberal, not liberal democracies, and perhaps not even democracies" (Kovacs, 2015).

The crackdown on civil liberties within Hungary, and the worrying moves towards autocracy have led some to call Hungary a "full fledged post-communist mafia state, with a centralized monopoly of corruption maintained by the country's political elite" (Rohac, 2016). The stark drop in civil liberties via attacks on the media, free assembly and association, workers' rights, and attacks on freedom of speech, as well as the overall backsliding into autocracy has caused Hungary to fall out of the category of "Consolidated Democracy" in Freedom House's 2015 Nations in Transit report of which it was apart of in 2014; Hungary's new category, with a score of 3.18 out of 7, is that of a "Semi-Consolidated Democracy" of which it shares that ranking with other countries such as Bulgaria, Serbia, and Romania. For reference, as opposed to Polity which ranks countries on a scale of -10 (strongly autocratic) to +10 (strongly democratic), Freedom House's Nations in Transit report ranks countries on a scale of 1 to 7, with 1 being considered the most democratic, and 7 being considered the most autocratic.

Given the results of the quantitative analysis above, with specific regard given to the model regarding civil liberties, as well as Hungary's backsliding into autocracy, a deeper investigation into Hungary's shadow economy is warranted to see if these changes in civil liberties have an effect in the size of Hungary's shadow economy.

6.1.2 Hungary's Shadow Economy

The causal factors for Hungary's shadow economic activity can be widespread, but its existence is documented both on a quantitative and qualitative level. Rohac (2018) mentions that Hungarian companies engage in shadow economic activity by underreporting salary expenditures and paying workers under the table to supplement their official earnings in an effort to lower their tax burden. Rohac (2018) also goes on to state that Hungary's regulatory burden is amongst the highest in the world, with a ranking of 128 out of 144 in the Global Competitiveness Report, thus causing the act of doing official business and investment in Hungary one of the most difficult in the world. In Freedom House's 2014 Nations in Transit report, it is stated that in an effort to regulate the selling of tobacco, but also in a possible sign of corruption and cronyism, the government took away the licenses to sell tobacco from independent retailers and instead installed National Tobacco Shops, which had the sole right to sell tobacco nationwide. The results, according to Freedom House, was the plunging of legal tobacco sales by approximately 40 percent, with many tobacco sales assumed to have moved to the shadow economy. Corruption is also a major issue in Hungarian business and political life and has become part of the norm for many within the country. According to a Eurobarometer survey cited by Freedom House (2015), 81 percent of business respondents believe favoritism and corruption hamper business competition, and that it is "the ruling party, through the state, that makes and unmakes dominant players in the Hungarian economy" (Kovacs, 2015). Policies such as these have long been derided by those in the Neoclassical school of thought as some of the main causes of shadow economic activity; and while these governmental practices do lead to shadow economic activity, it is the restraining of citizen's civil liberties that has also been shown to be a significant

part of the equation. With the alarming changes since 2012 in the rate at which Hungary has been

backsliding towards more authoritarian policies in mind, a look into the size and change in

Hungary's shadow economy over the course of the years 2012 – 2015 can be seen below.
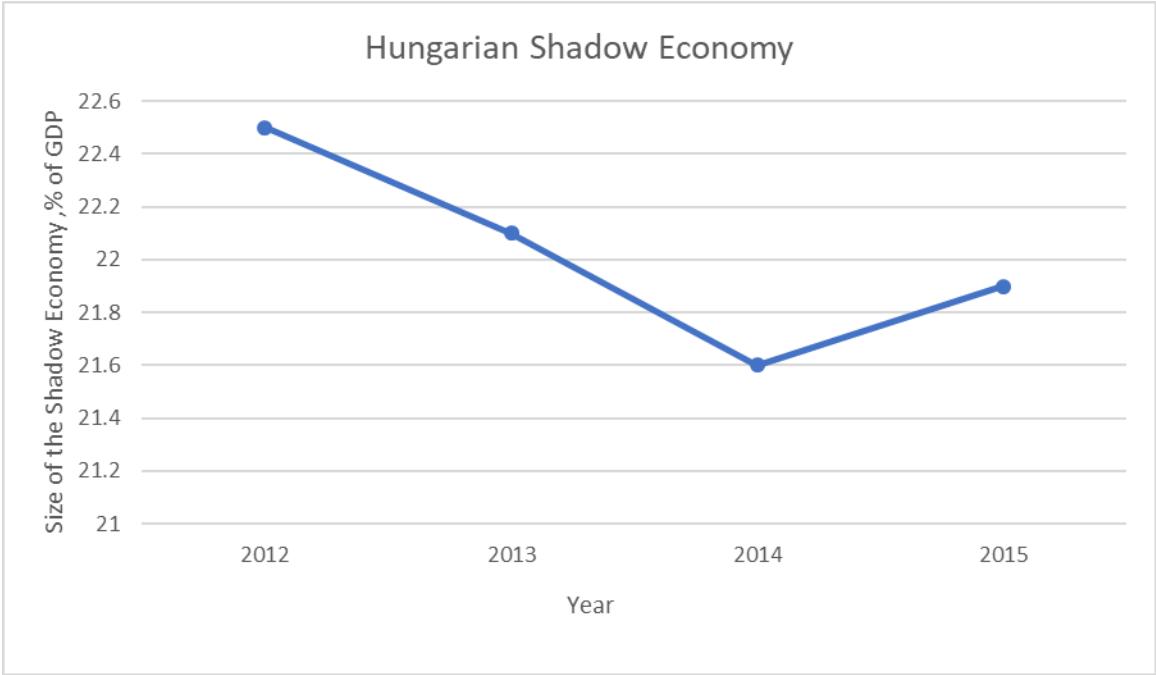
Figure 4. Hungary's Shadow Economy as a percent to GDP, 2012 to 2015

Interestingly, while certain governmental economic policies implemented by Viktor

Orban's party could possibly be attributed to the rise in shadow economic activity as seen in the

graphs, the correlation of Hungary's sharp backsliding into a more autocratic type of government

exemplified by the restricting of civil liberties of its citizens, and the coinciding rise in

Hungary's shadow economy should not be dismissed. The jump in the year to year change in

shadow economic activity can be most clearly seen in the below graph, where there is a 1.4

percent increase in the size of the shadow economy from the years 2014 to 2015.
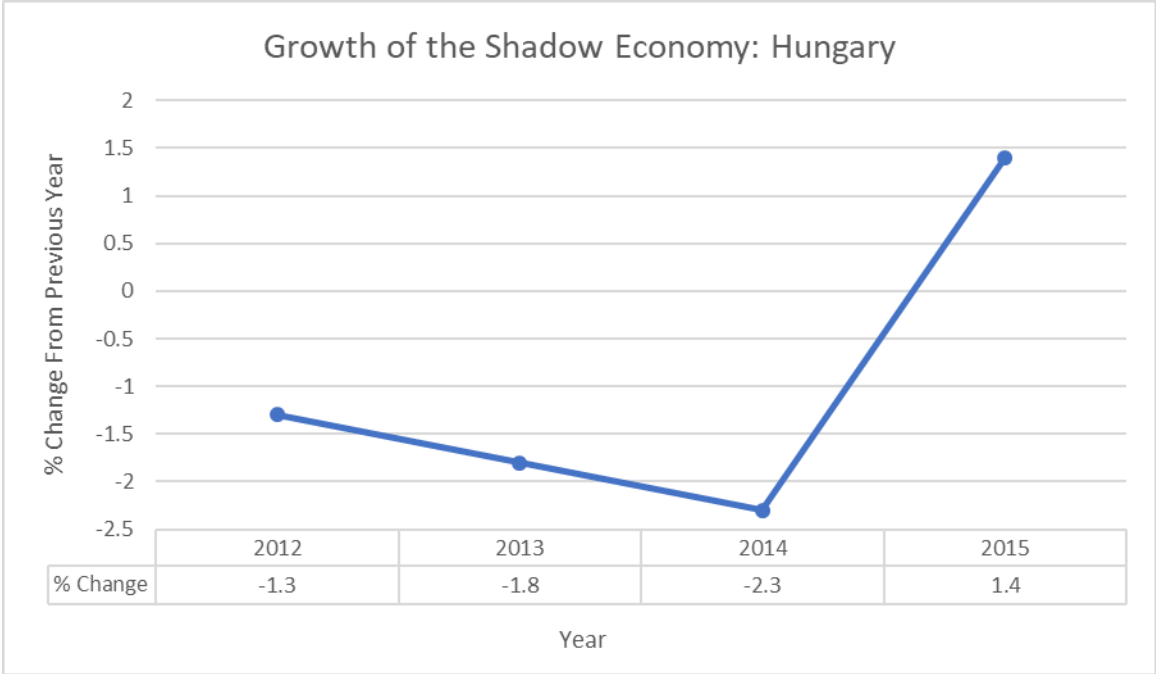
Figure 5. Year over year change of the Hungarian Shadow Economy, 2012 to 2015

As Prime Minister Orban of Hungary has espoused the virtues of an illiberal democracy,

and with his government's repeated attacks on the civil liberties of its citizens such as the

freedoms of the press, speech, and of assembly and association; there appears to be a shift from

the populace in reaction, as more people have moved out of the formal economy and into the

shadow economy. As shown in the previously mentioned quantitative study from 1999 to 2011,

encroachment upon civil liberties has a statistically significant relationship with the size of the

shadow economy, and in the case of Hungary, we get an on-the-ground view as to some of these

policies that may encroach on civil liberties, as well as being able to see the turn that citizens take from participating in the formal economy, to participating in the shadow economy as a possible response.

6.2 Slovakia's Transition from Communism to Democracy

Similar to both Hungary and other Visegrad countries, Slovakia has gone through major changes throughout its society since transitioning from communism to a liberal democracy. With the rise in expendable wealth mentioned previously in most of the Visegrad countries, Slovakians have seen an increase in personal wealth, as well as protections put into place to make sure freedoms that they have received are not abused. Slovakia's first direct presidential election, held in 1999, was considered both free and fair and had a turnout of over 95 percent (Freedom House, 2003). Since then, Slovakia has enjoyed relatively high electoral turnout, and is considered to have one of the most dynamic civil societies in Central Europe (Freedom House, 2003). Civil liberties, such as freedom of speech, freedom of religion, freedom of assembly and association, and freedom of expression are enshrined in the country's constitution, with enhancements of those freedoms, such as the outlawing of censorship and the right to information also being included. Survival Rights are also constitutionally protected in Slovakia, with laws stating that a judge must sign a warrant for a person's arrest, and that the individual must be put in front of a judge to state their plea within 48 hours of detention (Freedom House, 2003). Although many civil liberties and survival rights have been enshrined in Slovakian law, the path to democratic consolidation has hit its share of speed bumps in the mid to late 1990s. As Kovacs, writing for Freedom House notes in its 2012 "Nations in Transit" report:

"From 1993 to 1998, Slovakia was ruled by a series of coalitions between nationalist and populist parties, whose governance was repeatedly criticized by the international community for violations of minority rights, misuse of the secret service, and corruption." (Kovacs, 2012).

In an effort to set Slovakia back on a path to European Union membership, of which Slovakia became a member in May 2004 as well as joining the Schengen area in 2007 and adopting the Euro as its currency in 2009 (European Union, 2019), the negative trends of the mid to late 1990s were reversed when a coalition of pro-democratic groups were elected in the 1998 parliamentary elections (Meseznikov et al., 2012). However, with the economic downturn of the worldwide financial crisis in the late 2000s, as well as generally unpopular economic measures imposed as a requirement to join the European Union, the people of Slovakia ousted the center right party led by Prime Minister Iveta Radicova and brought to power the center left coalition of Smer-SD, led by Robert Fico, who applied pressure to many of the civil liberties that were protected by previous governments. While the government of Iveta Radicova often had a close and cooperative relationship with civil society organizations, think tanks, and environmental groups, the Slovakian government under Robert Fico was plagued with clientelism, mismanagement of European Union funds, and an overall unwillingness to engage civil society at any level in the decision-making process (Meseznikov et al., 2012). Attacks against media outlets critical of public officials via libel lawsuits, as well as the abolishing of the Office of the Deputy Prime Minister for Human Rights, Ethnic Minorities, and Gender Equality (Meseznikov et al., 2013) all occurred within the first few years of Prime Minister Robert Fico's tenure, along with an increase in nationalist and ethnocentric rhetoric, exemplified by Prime Minister Fico

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himself in his attacks on minorities accusing them of blackmail, stating that "the state was established for Slovaks, not for minorities" (Meseznikov et al., 2014).

The attacks on civil liberties, especially freedom of speech, continued under Prime Minister Fico's government with the film director, Zuzana Piussi, facing two years in prison for using identifiable shots of Supreme Court Chairman Stefan Harabin without his permission in a film critical of Harabin's dominance of the judiciary (Meseznikov et al., 2013); as well as police attempts to pressure investigative journalist Tom Nicholson to reveal sources about a transcript published on his website involving a conversation between a former government advisor and the suspected leader of a criminal organization, Libor Jaksik (Meseznikov et al., 2014). On top of the attacks on civil liberties such as freedom of speech and freedom of the press, more serious accusations of human rights abuses were levied against the government by Public Defender of Rights Jana Dubovcova in a 2013 report in which she criticized the government's protection of fundamental rights as well as the highlighting of different human rights violations by the authorities, particularly against the ethnic minority Roma population (Meseznikov et al., 2014).

From the start of both Smer-SD's, and Prime Minister Robert Fico's rise to power in the 2012 election after former Prime Minister Iveta Radicova's government collapsed in October of the previous year, Smer-SD systematically attempted to concentrate and centralize power in its hands in an effort to retain control of government. At times holding enough seats to form a one-party rule of government, Smer-SD often enacted policies that would sideline Parliament, such as obstructing the work of parliamentary committees by refusing to discuss agenda items put forth by opposition parties (Meseznikov et al., 2014). However, in a surprise upset in March of 2014, Prime Minister Robert Fico lost in a presidential run-off to independent candidate Andrej

Kiska, and longtime Fico and Smer-SD ally Stefan Harabin was ousted as the head of the

Supreme Court and the Judicial Council leading to signs of public dissatisfaction of the ruling

party's policies in not only the economic sphere but in the political and social spheres as well,

thus leading to the possibility of future governments having to form coalitions between both

center right and center left parties, and ending Smer-SD's one-party rule.

6.2.1 Slovakia's Consolidation of Democracy

While many setbacks regarding the consolidation of democratic freedoms did occur

under Smer-SD and Prime Minister Robert Fico's tenure, as a whole, Slovakia's Parliament and

Constitution have made sure to enact reforms and pass laws to protect its citizens and expand or

codify the freedoms they have. During the tenure of Prime Minster Iveta Radicova, many laws

were put forth to hamper down on possible corruption as well as ensuring freedoms of the press

such as "key legislation aimed at increasing transparency in public procurement and the judiciary

and reducing political pressure on journalist" (Meseznikov et al., 2013), as well as amendments

on laws regarding access to information that made it more difficult for the government to ignore

citizen's formal request for information (Meseznikov et al., 2012).

Even after the government takeover by the center-left Smer-SD and Robert Fico, both

Parliament and the Judiciary maintained a dedication to civil liberties through different rulings

and passages of laws or amendments. In May of 2013, the Slovakian Parliament approved an

amendment to the Penal Code that adopted a provision on the prohibition of hate crimes based on

sexual orientation, as well as an expansion on the list of extremist criminal offenses such as

Holocaust denial or denial of crimes committed by totalitarian regimes (Meseznikov et al.,

2014). On top of the expansion of protections for those in the LGBT community, Parliament also

enacted laws protecting whistleblowers from reprisals as well as enacted an amendment separating the positions of Supreme Court chairman and head of the Judicial Council in what many viewed was a move towards depoliticizing the Judiciary (Cunningham, 2015). The Judiciary itself also ruled in favor of rights protecting free speech in 2012 when they adjudicated that internet portal operators couldn't be held responsible for the comments of anonymous users, setting the precedent against future attempts of monetary collection against online discussion forums (Meseznikov et al., 2013).

While the road to the consolidation of liberal democracy and the protection of civil liberties in Slovakia has not been free of setbacks or opposition from populist political parties such as Smer-SD, a strong civil society that has not backed down in the face of political pressure, a judiciary that has upheld civil liberties in court and a parliament that has, at times, passed laws and amendments further protecting the civil liberties of its citizens has ensured that while Slovakia will have its growing pains as it becomes a more consolidated democracy, the chances of it backsliding in autocracy seem minimal. Because of these actions taken by Slovakian civil society, as well as the Parliament and Judiciary, Freedom House's 2015 "Nations in Transit" report on Slovakia gave it a rating of 2.64 on its democracy score, keeping it in the most democratic "Consolidated Democracy" category, while Hungary's democratic rating in the 2015 report was a 3.18 moving it into the more autocratic "Semi-Consolidated Democracy" category.

6.2.2 Slovakia's Shadow Economy

While suffering from the same worldwide economic downturn of the late 2000s as Hungary, as well as the rise of a strong populist leader, poor economic policies, and even one-party rule at times, a look into Slovakia's shadow economy is warranted for a comparison to

Hungary's shadow economy given the different outcomes in their democratic scores for the years 2012 to 2015 to see if the original hypothesis that the respect of civil liberties is just as important as economic policies for determining shadow economic activity. The following graph shows the size of the Slovakian shadow economy from the years 2012 to 2015.
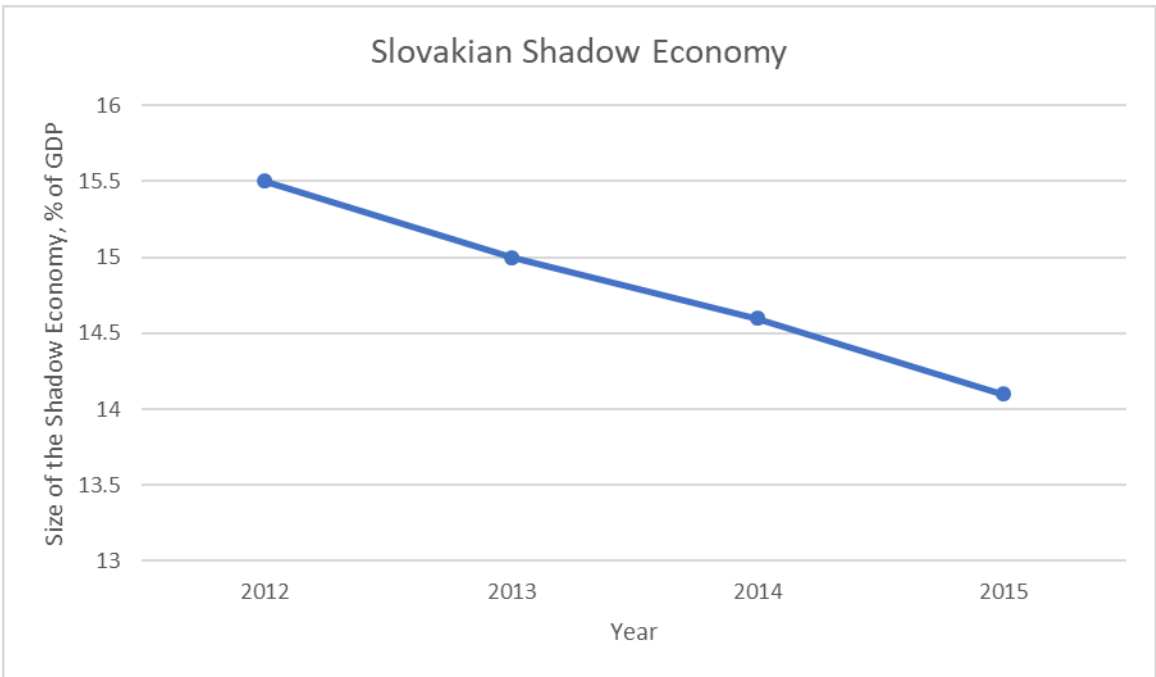
Figure 6. Slovakia's Shadow Economy as a percent to GDP, 2012 to 2015

As shown in the above graph, not only does Slovakia have a smaller percentage of its GDP estimated to be in the shadow economy compared to Hungary throughout the years 2012 to 2015, but unlike Hungary, which has seen an increase in the size of its shadow economy as it becomes more autocratic, Slovakia has seen a continued downward trend in the size of its shadow economy throughout the time period observed. The same can be said in the year over

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year growth in the size of the shadow economy for Slovakia, with the country maintaining a negative growth rate in every year observed from 2012 to 2015 as seen in the graph below.

Growth of the Shadow Economy: Slovakia

	2012	2013	2014	2015
% Change	-3.1	-3.2	-2.7	-3.4
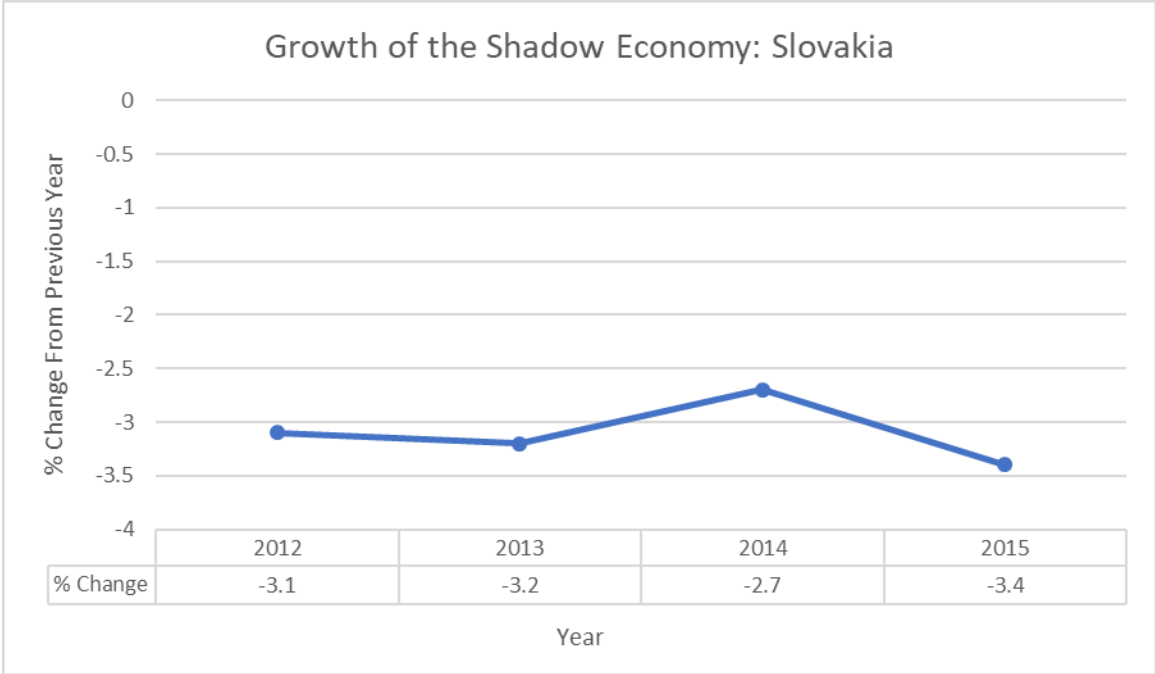
Year

Figure 7. Year over year change of the Slovakian Shadow Economy, 2012 to 2015

Graphs comparing both the Hungarian and Slovakian shadow economies can be found in the Appendix (see Appendixes F and G). In the final year observed, 2015, Slovakia saw its most drastic change in year to year shadow economic activity with a change of -3.4 percent over the previous year, coinciding with the electoral defeat of Prime Minister Robert Fico as well as the ousting of Smer-SD ally Stefan Harabin as the head of the Supreme Court and the Judicial Council. On top of the general backsliding into autocracy experienced by Hungary and the continued consolidation of democracy by Slovakia, a comparison of the different policies

enacted by both countries and these policies' interaction with civil liberties may give a deeper explanation as to why Slovakia is able to maintain negative growth rates in the size of its shadow economy, while Hungary has seen positive growth rates recently.

6.3 Comparison of Hungary's and Slovakia's Policies

When comparing the history of both Hungary and Slovakia from 2012 to 2015 as was done in the qualitative section of this report, both the successes and hardships these countries have faced have been detailed by both individual scholars (Rohac, 2016) as well as multiple scholars, journalist, and civil society members on behalf of organizations such as Freedom House. While these individuals and organizations often look at political or societal occurrences within a country, there are other organizations that take a much more economically focused view towards countries when devising country-rankings such as the economic growth potential a country has, the economic freedom enjoyed within a country, or the return on investments that can occur within a country. The World Economic Forum's Global Competitiveness Report is one such instance where the strength of a country's economy, amongst other economic factors, are considered when developing their Global Competitiveness Report. For the 2014 to 2015 Global Competitiveness Report, the World Economic Forum ranked Hungary over Slovakia in economic competitiveness with a ranking of 60 compared to Slovakia's rank of 75 (Klaus, 2014). Other reports such as the Heritage Foundation's Index of Economic Freedom for 2015 also has Hungary earning equal or higher scores over Slovakia in many categories such as Property Rights, Government Integrity, Business Freedom, Labor Freedom, Monetary Freedom, Trade Freedom, and Financial Freedom (Heritage Foundation, 2015). While many in the Neoclassical school of thought (See Enste, 2010; Schneider and Buehn, 2013) will argue that economic

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environmental factors such as the ones looked at by both the World Economic Forum and The Heritage Foundation are the main determinants for shadow economic activity, this study has shown that other factors such as the respect or abuse of citizens' civil rights plays a statistically significant role in the size of the shadow economy and that economic factors alone cannot explain why a country such as Hungary can seem to be more economically sound than a country as Slovakia, yet still have a higher growth rate in the size of its shadow economy.

On top of the successes and hurdles Hungary and Slovakia have faced on their road to democracy, a cursory look into some of the policies enacted by both countries, in regard to protecting or abusing civil liberties, can help to explain in more detail as to why Hungary has seen a rise in its shadow economic activity while Slovakia has not. Although both countries have a history of attacking media outlets that are openly critical of the ruling party, more stringent laws and regulatory rules within Hungary have been passed that give "considerable power to limit freedom of expression and punish perceived violations, creating an atmosphere that encourages self-censorship" (Kovacs, 2012). And though Prime Minister Robert Fico has threatened libel lawsuits against Slovakian media outlets in the past, many of these lawsuits have been dropped as freedom of speech protections in Slovakia are enshrined in the Slovakian constitution and often upheld by the Slovakian Judiciary. On top of the laws and regulations passed in Hungary that gives government appointees considerable influence over freedom of speech, direct political pressure has also been found to occur against those in the media, with over half of media managers in one survey reporting to have experienced direct political pressure, and 35 percent of media managers noting the political pressure to be so great as to the point of hindering freedom of the press (Kovacs, 2013). More subtle influences on press freedom

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have occurred in Hungary as well, with Kovacs (2013) noting that in recent years the media landscape has become much more conservative than in the previous two decades, with many media outlets receiving investments from affluent businesspeople with ties to Prime Minister Viktor Orban's ruling Fidesz party, resulting in a media empire consisting of "15 intertwined companies controlled by four individuals" (Kovacs, 2013).

Overt and subtle threats against media outlets are not the only distinguishing features of Hungarian and Slovakian policy towards civil liberties. Whether it is because of the center-left philosophy of Slovakia's ruling party, Smer-SD, or policies respecting civil liberties in general, workers in Slovakia tend to have more robust rights, which could point to reasons for lower shadow economic activity. As Cunningham (2015) notes, trade unions in Slovakia have a close relationship with Smer-SD and often operate openly, with very few labor strikes occurring. Protections for whistleblowers in Slovakia have been strengthened as well, with the passing of legislation in the Slovakian Parliament in November of 2014 that provided protections for whistleblowers who "report on corrupt or unethical behavior by their employers" (Cunningham, 2015). These protections of worker's rights, which under the Cingranelli and Richards Index fall into the category this paper calls Civil Liberties, stands in contrast to the policies undertaken by Hungary, where the systematic undermining of labor protections (Kovacs, 2012) as well as the "country's economic woes and a general sense of pessimism about the future have driven record numbers of Hungarians to emigrate to Western Europe" (Kovacs, 2014).

In addition to weaker rights for workers and more overt attacks on the freedom of the press in Hungary, other civil liberties, such as the right to electoral self-determination, have also experienced abuse within recent years under Fidesz and Prime Minister Viktor Orban's tenure.

Laws limiting citizens' access to the constitutional court as well as intimidation of the courts, have "led to inaction on important cases related to the protection of private property" (Kovacs, 2012) for the citizens of Hungary. Furthermore, the government's attempts to exert political control over state institutions, pursuits of ideologically driven cultural transformations, and the redrawing of electoral maps in an attempt to entrench itself in power (Kovacs, 2012) have all occurred. In 2014, Prime Minister Orban's attacks on the civil liberties of the Hungarian people continued when he turned his ire towards and tried to delegitimize those in civil society who were at odds with him and his party, stating that the government "is not dealing with civil society members, but paid political activists who are being paid by specific foreign interest groups" (Kovacs, 2015).

By most measures (Klaus, 2014; Heritage Foundation, 2015), Hungary's economy is stronger, more competitive, and freer than Slovakia's, yet Hungary has seen an increase in shadow economic activity while Slovakia has seen a consistent reduction in the size of its shadow economy from the years 2012 to 2015. While it is difficult to point to the policies enacted by both Hungary and Slovakia as having a definitive, causal effect on the size of shadow economic activity, when observed as a companion to the quantitative analysis earlier showing the statistical significance that the respect or abuse of civil liberties can have on the size of the shadow economy, the validity of the results are strengthened by facts found in the qualitative data.

6.4 Predictions for the Future on the Size of Hungary's Shadow Economy

Shadow economy data for the qualitative analysis for the size of Hungary's and Slovakia's shadow economies was retrieved from Friedrich Schneider's "Size and Development

of the Shadow Economy of 31 European and 5 other OECD Countries from 2003 to 2015", thus giving the ability to examine shadow economy data after the observation period used in the quantitative analysis. Data after 2015 is not yet available to determine the size of the Hungary's shadow economy, though given the results of the qualitative analysis, as well as updated data available from Freedom House's 2018 "Nations in Transit" report, I predict Hungary will see an increase in shadow economic activity for the years 2015 to 2018. In Freedom House's "Nations in Transit" report for 2015, Hungary had a "Democracy Score" of 3.18 out of 7, meaning that Hungary had become less democratic than in the previous year, thus causing the country to be removed from its previous category of "Consolidated Democracy" and into the "Semi-Consolidated Democracy" category. Since 2015, Hungary has seen a rise in its scoring from Freedom House every year, up to and including the most recent report in 2018, which has Hungary with a "Democracy Score" of 3.71 out of 7, signifying that Hungary has become more autocratic than at any other time since 2003, which was the first year in which Freedom House utilized their current methodology (Hegedus, 2018). Given the results of both the quantitative and qualitative analysis, expectations of an increase in the size of the shadow economy for Hungary after 2015 has factual grounding, and future research on the size of Hungary's shadow economy after 2015 has academic, political, as well as economic merit.

CHAPTER SEVEN: CONCLUSION

This study has looked both quantitively and qualitatively at possible causes to the growth and the size of shadow economic activity throughout numerous countries over multiple years spanning from 1999 to 2015. The theoretical argument of this work was, and continues to be, that a wider investigation into the determinants of the shadow economy is warranted, and that the primary schools of thought investigating shadow economic activity are overlooking important variables that can help researchers and policy makers develop new strategies to combat the rise in shadow economic activity. Previous research by those in the Political Economy and Neoclassical schools of thought have been focused almost entirely on economic conditions and policies as a determinant to shadow economic activity, but as this paper has shown, other variables such as the respect or abuse of citizen's civil liberties have a statistically significant impact on the size and scope of shadow economic activity.

Although the multiple regression model regarding Hypothesis 1 (Survival Rights) did not have statistical significance on the size of the shadow economy once other control variables were introduced, the strong statistical significance in the bivariate regression model shows that there is a correlation between the two, and further investigation as to why Survival Rights drops out of statistical significance in multiple regression models is warranted. Possible reasons surmised for the falling out of significance could be that the countries involved already have these Survival Rights guaranteed by their governments, and thus Survival Rights are inherently respected, therefore other factors become strong causal reasons for engaging in shadow economic activity. Another possible reason for Survival Rights having bivariate significance, yet falling out of

significance once control variables are introduced, would be that in the countries in which Survival Rights are in fact abused, reporting on the size of the official and unofficial economies might suffer from accuracy issues, or that the citizens of these countries are so terrified from the abuse of their Survival Rights, that they choose not to engage in shadow economic activity for fear of reprisals from the authorities.

Hypothesis 2, regarding Women's Economic Rights, was found to not have significance with the size and scope of the shadow economy, both in bivariate and in multiple regression models throughout this study, nevertheless possible future research into other rights earned by women might give further insight into shadow economic activity. While this study chose to utilize Women's Economic Rights, Cingranelli and Richards' Human Rights data also incorporates variables that include Women's Political Rights and Women's Social Rights, which could possibly impact the size of the shadow economy. In a previous, more rudimentary study by Gahagan and Strickhouser (2017) Women's Political Rights were found to have a statistically significant impact on the size of the shadow economy, although in the opposite direction than what was hypothesized. In that study, it was found that increases in Women's Political Rights caused shadow economic activity to increase rather than decrease and this relationship held after a limited number of control variables were introduced. While the authors of that paper hypothesized that an increase in the rights of women might have led the men in the society to move into informal work, thus causing the shadow economy to grow, future research into the role that women's rights plays into shadow economic activity can have informative results.

The final hypothesis of this study looked at the effect the respect or abuse of citizens' civil rights had on the size of the shadow economy. This variable held statistical significance in

both bivariate and multiple regression models after the introduction of control variables and was further validated in the qualitative analysis of Hungary and Slovakia. The multiple regression analysis consisted of over 1,000 country-year observations from 1999 to 2011 which showed statistical significance of less than .05, thus allowing for good external validity of the theoretical argument for protections of civil liberties to combat shadow economic activity. As stated previously, the variable Civil Liberties is an additive index of multiple empowerment variables from the Cingranelli and Richards' Human Rights Dataset that include empowerment rights such as freedom of domestic and foreign movement, freedom of speech, freedom of assembly & association freedom of religion, workers' rights, as well as electoral self-determination.

Many scholars who have studied shadow economies in the past have neglected non-economic factors when determining the causality of shadow economic activity, but as this study has shown, political factors can, and do, have a statistically significant impact on the size of shadow economies. While scholars in both the Neoclassical (Schneider and Buehn, 2013) and Political Economy (Williams and Kayaoglu, 2016) schools of thought have always considered the movement of people into the shadow economy as a choice done by rational actors, the idea that those who engage in shadow economic activity are doing so for reasons outside of purely economic factors is only starting to gain attention. As mentioned previously, one reason in which scholars have put forth as a cause for shadow economic activity is the idea of Tax Morale, which is the attitude in which citizens and firms want to pay taxes in a given society. While this variable is still economically focused, the concept incorporates a larger notion of a citizens' relationship with the state, and to the degree citizens feel as if the state is spending their tax money in a way that aligns with their values. Another possible cause put forth in regards to non-

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economic variables' effect on the size of the shadow economy has been explored by Williams and Kayaoglu (2016) with the idea of a "social actor approach", in which those who move into the shadow economy are doing so based off of not only low tax morale, but because of other relationships perceived between individuals and the state (Williams and Kayaoglu, 2016). This study builds and expands off of Williams and Kayaoglu's conclusion, and further argues that the respect or abuse of human rights is one of the casual factors for shadow economic activity.

To the author's knowledge, no paper to date has linked the respect or abuse of civil liberties with the size of the shadow economy, and future research by both those in academia as well as policy-makers is necessary to help expand our knowledge on the determinants for the size of the shadow economy as well as policies to combat its growth. The policy implications for this study go beyond traditional academic research of shadow economies as well, and shows that citizens will reward their governments' respect of their civil liberties by opting to stay in the official economy, thus allowing governments to reap higher tax revenues as more money will be in the official economy, as well as allowing the country's official economy to grow and become stronger, alleviating possible complications with regard to loans or grants from international organizations such as the IMF and World Bank.

APPENDIX A: CORRELATION TABLE OF SURVIVAL RIGHTS

	Shadow	Survival Rights	Polity	Unemployment	Self-Employment	Log GDP cap	GDP Growth	Labor Force	Gov Con
Shadow	1.00								
Survival Rights	-0.29	1.00							
Polity	-0.04	0.39	1.00						
Unemployment	0.07	-0.02	0.08	1.00					
Self-Employment	0.50	-0.47	-0.24	-0.01	1.00				
Log GDP cap	-0.61	0.44	0.24	-0.11	-0.78	1.00			
GDP Growth	0.06	-0.11	-0.06	0.02	0.17	-0.17	1.00		
Labor Force	-0.13	0.30	0.19	-0.36	-0.07	0.19	-0.04	1.00	
Gov Con	-0.23	0.40	0.25	0.19	-0.54	0.40	-0.15	0.01	1.00

APPENDIX B: CORRELATION TABLE OF WOMEN'S ECONOMIC RIGHTS

	Shadow	Women's Econ	Polity	Unemployment	Self-Employment	Log GDP cap	GDP Growth	Labor Force	Gov Con
Shadow	1.00								
Women's Econ	0.02	1.00							
Polity	-0.03	0.02	1.00						
Unemployment	0.07	-0.01	0.07	1.00					
Self-Employment	0.50	-0.03	-0.24	-0.01	1.00				
Log GDP cap	-0.61	0.01	0.24	-0.11	-0.78	1.00			
GDP Growth	0.05	-0.03	-0.06	-0.02	0.18	-0.17	1.00		
Labor Force	-0.12	0.07	0.20	-0.36	-0.07	0.19	-0.04	1.00	
Gov Con	-0.23	0.03	0.25	0.19	-0.54	0.40	-0.15	0.01	1.00

APPENDIX C: CORRELATION TABLE OF CIVIL LIBERTIES

	Shadow	Civil Liberties	Polity	Unemployment	Self-Employment	Log GDP cap	GDP Growth	Labor Force	Gov Con
Shadow	1.00								
Civil Liberties	-0.14	1.00							
Polity	-0.03	0.68	1.00						
Unemployment	0.07	0.05	0.07	1.00					
Self-Employment	0.50	-0.31	-0.24	-0.01	1.00				
Log GDP cap	-0.61	0.31	0.24	-0.11	-0.78	1.00			
GDP Growth	0.06	-0.15	-0.06	-0.02	0.18	-0.17	1.00		
Labor Force	-0.12	0.29	0.20	-0.36	-0.07	0.19	-0.04	1.00	
Gov Con	-0.23	0.26	0.25	0.19	-0.54	0.40	-0.15	0.01	1.00

# APPENDIX D: CORRELATION TABLE OF ALL VARIABLES

	Shadow	Survival Rights	Civil Liberties	Women's Econ	Polity	Unemployment	Self-Employment	Log GDP cap	GDP Growth	Labor Force	Gov Con
Shadow	1.00										
Survival Rights	-0.29	1.00									
Civil Liberties	-0.15	0.60	1.00								
Women's Econ	0.03	0.05	0.07	1.00							
Polity	-0.04	0.39	0.69	0.02	1.00						
Unemployment	0.08	-0.03	0.06	-0.01	0.08	1.00					
Self-Employment	0.51	-0.48	-0.32	-0.03	-0.25	-0.01	1.00				
Log GDP cap	-0.62	0.45	0.32	0.01	0.25	-0.11	-0.78	1.00			
GDP Growth	0.06	-0.12	-0.16	-0.03	-0.07	0.03	0.18	-0.18	1.00		
Labor Force	-0.13	0.31	0.29	0.07	0.20	-0.37	-0.07	0.19	-0.05	1.00	
Gov Con	-0.23	0.41	0.26	0.04	0.25	0.20	-0.55	0.40	-0.16	0.01	1.00

(Observations = 1,285)

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APPENDIX E: DESCRIPTIVE STATISTICS OF ALL VARIABLES

Variable	Observations	Mean	Std. Deviation	Min	Max
Shadow	1,963	33.65	14.6	8.43	81.85
Survival Rights	1,914	4.88	2.11	0	8
Civil Liberties	1,916	8.57	3.78	0	14
Women's Econ	1,925	-1.04	45.79	-999	3
Tax Revenue	1,395	16.8	8.06	0.32	62.85
Unemployment	1,360	8.84	6.23	0.19	38.4
Self-Employment	1,963	42.75	27.24	0.41	94.33
Log GDP cap	1,961	9	1.25	6.09	11.77
GDP Growth	1,959	2.61	4.55	-31.34	56.88
Labor Force	1,963	67.9	9.89	39.95	90.34
Gov Con	1,899	15.62	5.97	2.05	81.4
Polity	1,891	4.12	6.06	-10	10

APPENDIX F: SIZE OF THE SHADOW ECONOMY FOR HUNGARY & SLOVAKIA
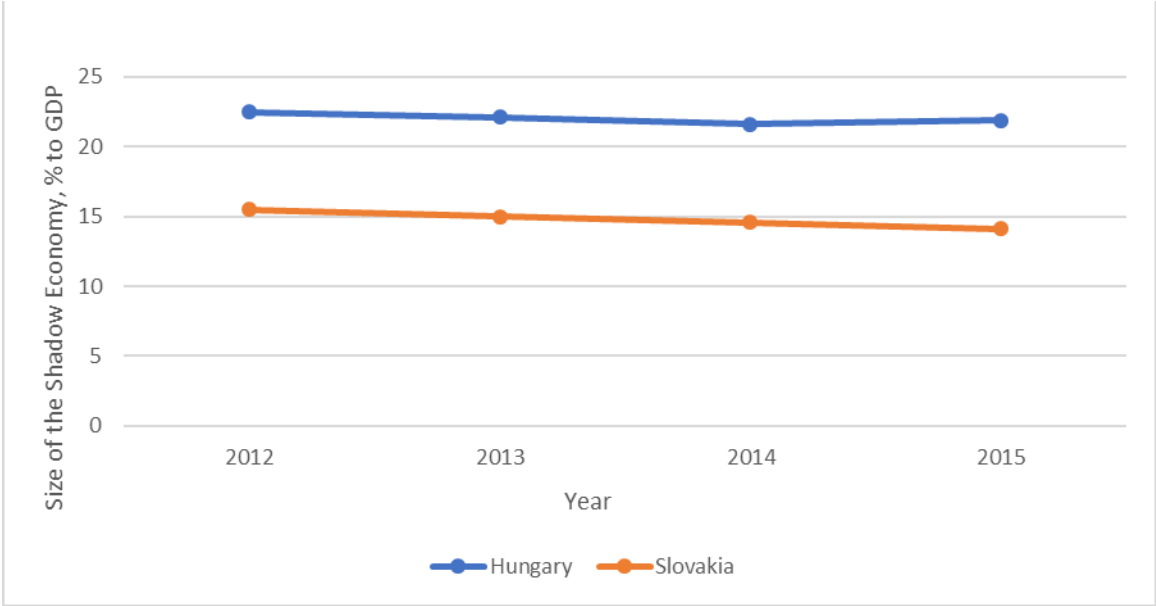
APPENDIX G: GROWTH OF THE SHADOW ECONOMY FOR HUNGARY & SLOVAKIA

	2012	2013	2014	2015
Hungary	-1.3	-1.8	-2.3	1.4
Slovakia	-3.1	-3.2	-2.7	-3.4
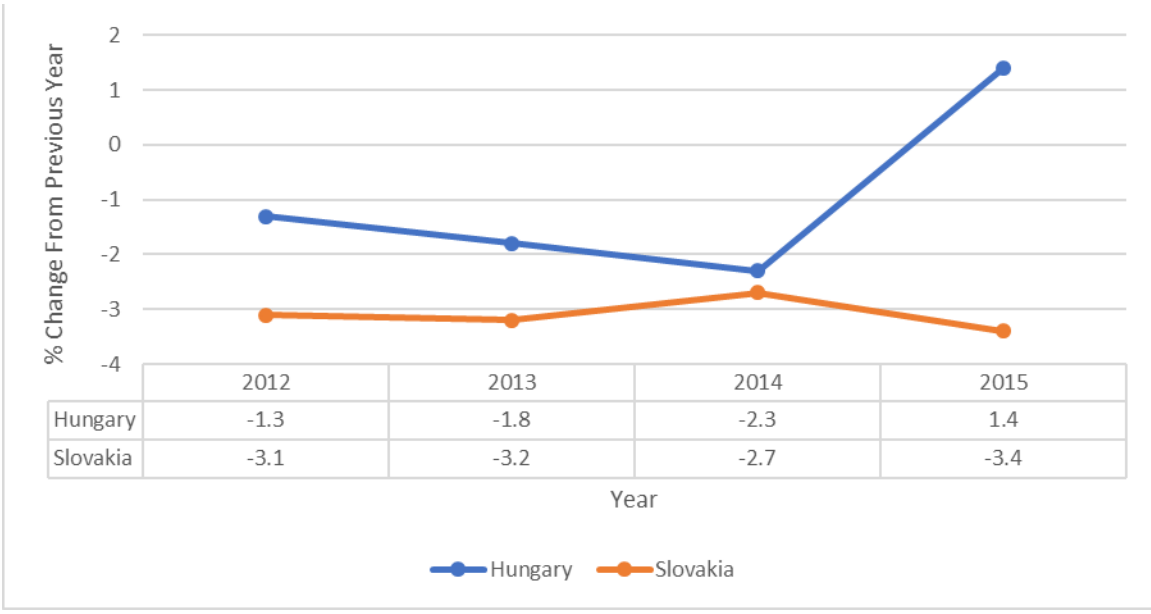
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Permission by me, Friedrich Schneider, granted.

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Sent from my iPad:
em.Prof. Dr. Friedrich Schneider
Research Institute of Banking and Finance
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Am 21.03.2019 um 17:43 schrieb Chris Gahagan <ChrisGahagan@knights.ucf.edu>:

From: Chris Gahagan
Sent: Thursday, March 21, 2019 12:42 PM
To: econstor-publish@zbw.eu ; friedrich.schneider@jku.at; lmedina@imf.org
Subject: Copyright permission for use of figure illustrating a MIMIC model

Hello,

My name is Christopher Gahagan and I am a graduate student at the University of Central Florida writing my Thesis on issues regarding the shadow economy. I am writing a request for use of a figure you have previously created regarding the hypothesized MIMIC path for estimating the shadow economy as seen below:
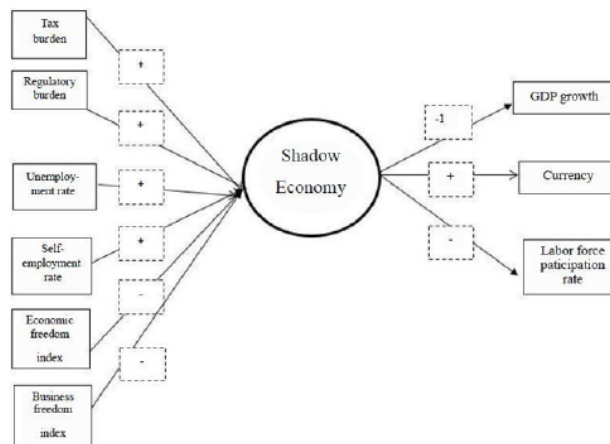
The graph specifically is from the paper: Shadow Economies around the World: New Results for 158 Countries over 1991-2015 by Leandro Medina and Friedrich Schneider.

My thesis will be published electronically by the University of Central Florida after it is completed.

If approved, please respond back to this email stating your given permission to use your work as an illustration for a MIMIC model so that I may insert it (the permission) into my Appendix.

Thank you very much and I look forward to hearing back from you at your earliest convenience.

APPENDIX J: LIST OF COUNTRIES USED IN QUANTITATIVE ANALYSIS

COUNTRY LIST - QUANTITATIVE ANALYSIS

ALBANIA	BANGLADESH	BRAZIL	CHINA	DENMARK
ALGERIA	BARBADOS	BULGARIA	COLOMBIA	DOMINICAN REPUBLIC
ANGOLA	BELARUS	BURKINA FASO	COMOROS	ECUADOR
ARGENTINA	BELGIUM	BURUNDI	CONGO, DR	EGYPT
ARMENIA	BELIZE	CAMBODIA	CONGO, REP	EL SALVADOR
AUSTRAILIA	BENIN	CAMEROON	COSTA RICA	EQUATORIAL GUINEA
AUSTRIA	BHUTAN	CANADA	COTE D'IVOIRE	ERITREA
AZERBAIJAN	BOLIVIA	CENTRAL AFRICAN REPUBLIC	CROATIA	ESTONIA
BAHAMAS	BOSNIA HERZEGOVENIA	CHAD	CYPRUS	FIJI
BAHRAIN	BOTSWANA	CHILE	CZECH REPUBLIC	FINLAND

FRANCE	GUYANA	ITALY	LATVIA	MALI
GABON	HAITI	JAMAICA	LEBANON	MALDIVES
GAMBIA	HONDURAS	JAPAN	LESOTHO	MALTA
GEORGIA	HUNGARY	JORDAN	LIBERIA	MAURITANIA
GERMANY	ICELAND	KAZAKHSTAN	LITHUANIA	MAURITIUS
GHANA	INDIA	KENYA	LUXEMBOURG	MEXICO
GREECE	INDONESIA	KOREA, REPUBLIC OF	MACEDONIA	MOLDOVA
GUATEMALA	IRAN	KUWAIT	MADAGASCAR	MONGOLIA
GUINEA	IRELAND	KYRGYZ REPUBLIC	MALAWI	MONTENEGRO
GUINEA-BISSAU	ISRAEL	LAOS	MALAYSIA	MOROCCO

MOZAMBIQUE	PAKISTAN	RWANDA	SURINAME	UGANDA
NAMIBIA	PAPUA NEW GUINEA	SAUDI ARABIA	SWEDEN	UKRAINE
NEPAL	PARAGUAY	SENEGAL	SWITZERLAND	UNITED ARAB EMIRATES
NETHERLANDS	PERU	SERBIA	TAJIKISTAN	UNITED KINGDOM
NEW ZEALAND	PHILLIPINES	SIERRA LEONE	TANZANIA	UNITED STATES OF AMERICA
NICARAGUA	POLAND	SLOVAK REPUBLIC	THAILAND	URUGUAY
NIGER	PORTUGAL	SLOVENIA	TOGO	VENEZUELA
NIGERIA	QATAR	SOUTH AFRICA	TRINIDAD & TOBAGO	VIETNAM
NORWAY	ROMANIA	SPAIN	TUNISIA	YEMEN
OMAN	RUSSIA	SRI LANKA	TURKEY	ZAMBIA

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